Chapter 4

ABSTRACT
There are at least three disciplinary views associated to enterprises and markets: the economic view, the management view, and the information systems view. Thinking of each of them as representations of a particular complex system has been a historical endeavor, which evolved through several distinct theories, models, approaches, and dimensions. To think about these three disciplinary views, collectively, is, however, a subject matter that is unusual by nature, and is related to a specific and complex area of knowledge: the field of interdisciplinary studies. Therefore, this chapter is organized in order to introduce two novel and innovative models and methodologies—the AID (Analyticsize-Integrate-Decide) Model and the AGG (Architecture-Governance-Growth) Model (which is the core reason of this book)—to help academics and professionals to deal with the interdisciplinary context of combining the economic view, the management view, and the information systems view (characterized here as a unified view) of the enterprise in the digital age.

1. INTRODUCTION

From what is shown in Chapters 1, 2, and 3 one can easily infer that in fact there are the disciplinary views associated to enterprises and markets: the economic view, the management view, and the information systems view. Thinking of each of them as representations of a particular complex system (the nature and behavior of enterprises and markets) has been a historical endeavor which evolves through several distinct theories, models, approaches and dimensions.
To think about these three disciplinary views collectively, is, however, a subject matter that is unusual by nature, has not been successfully tried before (perhaps because of idiosyncratic aspects of each disciplines’ scope and depth), and is related to a specific and complex area of knowledge: the field of interdisciplinary studies.

According to Newell (2001), complex systems and phenomena are a necessary condition for interdisciplinary studies. An interdisciplinary approach is justified only by a complex system. So if a behavior is not produced by a system or the system is not complex, interdisciplinary study is not required.

Another problem to overcome in this kind of undertaking is that the professional charged with the challenge of dealing with the three disciplines object of the present analysis (Economics, Management and Information System) is neither readily available nor is due to be prepared (in the formal education system) so soon. Who is this professional? What are his (or hers) core competences and abilities? And, what are his (hers) responsibilities?

Certainly the main tools of such a professional are the pools of models and methodologies from the three disciplines described in this book, besides the ones related to the unified view that emerges from an interdisciplinary context. The challenge here is how to generate efficient and effective combinations of models and methodologies that can lead to easy ways to deal with problems facing the enterprise, from analytics to the decision making processes.

Therefore, this chapter is organized in order to present a few models and methodologies to help academics and professionals to deal with the interdisciplinary context of combining the economic view, the management view, and the information systems view (characterized here as a unified view) of the enterprise in the digital age.

2. BACKGROUND

As already stated in the previous chapters, the modern economy is a complex system. When one sees the modern enterprise through the lens of the three fields of knowledge dealt here in this book individually (the economic view, the management view, and the information systems view), it seems that such a complexity accelerates. However, when these three views are treated as a collective, the scenery turns out to be a different one.

As pointed out by Newell (2001), the phenomena modeled by most complex systems are multi-faceted. Seen from one angle, they appear different than they do from another angle, because viewers see facets (represented as sub-systems) where different components and relationships dominate.

Newell (2001) argues that like the phenomena modeled by all systems, their overall pattern of behavior is self-organizing, thus different from the sum of its parts and not fully predictable from them. Because the various facets are connected by nonlinear relationships, the overall pattern of behavior of the phenomenon (and thus the system) is not only self-organizing but also complex. As such, the pattern is only quasi-stable, partly predictable, and dynamic.

In Newell’s point of view:

An effective method for modeling such a phenomenon must offer insight into its separate facets as well as into the self-organizing, complex pattern produced by their overall interaction. Since the various disciplines have been developed precisely to study the individual facets or sub-systems, interdisciplinary study is a logical candidate for developing specific, whole, complex systems to study such phenomena. By definition, interdisciplinary study draws insights from relevant disciplines and integrates those insights into a more comprehensive understanding.