# Chapter 6
# Enterprise–in–Environment Adaptation:
## Enterprise Architecture and Complexity Management

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## ABSTRACT

*Enterprise Architecture (EA) is a consulting practice and discipline intended to improve the management and functioning of complex organizations. The various approaches to EA can be classified by how they define what is to be architected and what, as a result, is the relevant environment. Traditionally, management has been understood as "Planning, Organizing, Command, Coordinating, and Controlling" (POCCC), that is, the role is bounded within the organization. The corresponding EA approach suggests architecting IT systems to support management, with the implicit environment being members of the organization as well as partner organizations. As the objective of EA practice expands to include organizational members, technical systems, and a wider set of stakeholders, so too does the complexity it must address. This results in an enlarged domain of issues and concerns. Finally, if the objective of EA is a sustainable enterprise, then physical, societal, and ecological environments radically increase the complexity of actualizing this goal. Corresponding to this increase in scope is a parallel shift in the scope of management concerns. With the goal of pushing EA towards concerns regarding enterprise sustainability, an open socio-technical system design perspective of EA, which we have named Enterprise-in-Environment Adaptation (EiEA), is discussed. EiEA offers a comprehensive approach to respond to the demands for complexity management that arise when working towards enterprise sustainability; yet, it requires that organisations also embrace deep culture changes, such as participative design, worker empowerment, as well as shared accountability and responsibility, to name a few.*

## INTRODUCTION

The world has become an increasingly challenging place to live in, especially in the last decade. Modern information and communication have played key roles in shrinking the previously perceived "large world" into a "global village" (McLuhan, 1962). Virtually speaking, your next-door neighbour could be halfway across the planet and be contacted through the click of a button. Keeping cultures and ways of living relatively separate in a "large world" was challenging in the past, especially nations in close geographical proximity. However, in a relatively "small global village," it is impossible to avoid a mingling between the residents of the various "global neighbourhoods." Consequently, as cultures mix, ways of living and thinking are changing across the globe; but there are many more challenges in the world besides cultural transformation. At one time, governments were considered almost as solid as bedrock; they were the foundation on which societies and civilisations were built. One could hardly imagine the fall of a government or a country as an outcome of a civil or intercountry war. Today, these once rock-like governments are recognized as large piles of pebbles that can be toppled by the winds of social change, population uprisings, and market turbulence. Just in the last couple of years, significant countries, such as Greece, Italy, Egypt, and Tunisia, have been profoundly shaken. People are now face-to-face with the fact that governments will not necessarily last throughout their lifetime and that they have the power to instigate change.

As the world has become a challenging place to live in, it has also become a very challenging place in which to manage an organisation! Similar to people, organisations now face "global markets" that are subject to ongoing cultural transformation and impacted by governmental instabilities. In addition to being affected by the turbulence that comes from outside of their boundaries, organisations are also faced with the complexities of the world's challenges within their boundar-

ies. As organisations span across the globe, their personnel have become richly multicultural and are constantly evolving. Modern personnel must be able to function with the challenges of cultural diversity as well as the resulting plurality of perspectives. Today's organisations must "survive" in the modern world where, in the blink of an eye, allies become foes and foes become allies. As an example from the business sector, the customer of the past, who was faithful and content with procuring the goods and services that companies decided to make available, has now become a sophisticated consumer who wants what they want and when they want it. Moreover, the contemporary consumer will, when possible, approach competitors in the "global village neighbourhood" in a heartbeat if he/she is not satisfied.

Put simply, the world has become a complex place within which complex organisations operate. How are organisations to cope with such pervasive complexity? Enterprise Architecture (EA) is a practice and discipline intended to improve the management and functioning of complex organisations. In the literature and in practice, there are many different, and at times contradicting, perspectives on the nature of EA, especially with regards to its scope and the nature of its activities. We interpret the term "scope" to mean the breadth of elements that are considered inputs, constraints, and items to be architected, in other words, that which is encompassed by, and is relevant to, the enterprise. We interpret the term "nature" to refer to the characteristics of the activities encompassed by the act of architecture. This chapter will focus on a particular perspective of EA for the management of complexity. The perspective is grounded in open socio-technical system theory, which is a specific system thinking theory about organisations. Our intent is to present how open social-technical systems theory can serve as a foundation for the management of organisational complexity and dynamism and how it would inform the operationalization of enterprise architecture.

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