

Chapter 2

A Problem Oriented Enterprise Architecture Approach Applied to Wicked Problems

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ABSTRACT

This chapter proposes that a problem oriented approach to Enterprise Architecture can deliver a better outcome than one based upon needs and requirements, especially when dealing with Wicked Problems. A distinction is drawn between what an Enterprise Architect does, solve business problems, and what the architect produces, descriptions of end states. It also suggests that the approach to modeling and understanding a problem can have significant impacts on the quality, effectiveness, and efficiency of potential solutions and the decisions made in identifying optimal solutions and implementation projects. Finally, the chapter discusses the use of the proposed problem oriented Enterprise Architecture approach to Wicked Problems in the context of e-Government.

INTRODUCTION

Successful problem solving requires finding the right solution to the right problem. We fail more often because we solve the wrong problem than because we get the wrong solution to the right problem (Ackoff, 1974).

This chapter makes a number of assertions about why wrong problems are solved, how this error can be prevented, and how problem solving can be made more effective by utilising an approach that will result in more optimal solutions.

The assertions in this chapter are that:

1. The current needs/requirements based approach to Enterprise Architecture is not

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- suitable when applied to large scale and socially oriented systems development;
2. Business goals are achieved by identifying and solving business problems;
 3. Implementing a solution to a business problem will create or result in new problems;
 4. The way that a problem is understood and analysed can significantly impact the effectiveness of the solution; and
 5. Taking a problem oriented approach to Enterprise Architecture will bring a better result than the current approach.

The objective of this chapter is to propose that a problem oriented approach to understanding how an enterprise should best achieve its goals is a more effective mechanism than the current approach based on needs and requirements.

The structure of this chapter is as follows:

1. An overview of current needs and requirements based approach to Enterprise Architecture and reasons why it is not optimal when applied to Wicked Problems
2. An outline of a problem oriented approach to Enterprise Architecture and why it is preferable to the current approach.
3. A discussion on techniques and methods of problem solving.
4. The application of a problem oriented approach to Enterprise Architecture to e-Government.

BACKGROUND

The Role and Purpose of Enterprise Architecture

Enterprise Architecture is a means to an end.

For Enterprise Architecture to be of use to the enterprise, the end needs to be of benefit. The means is the mechanism by which it delivers that benefit.

It is suggested that the purpose of Enterprise Architecture is to deliver benefit to the business by identifying and solving business problems. Solving business problems often, but not always, results in solutions that utilise information systems.

For too long, enterprise and information systems architectures, and the projects that implement these architectures have been driven by needs and requirements. Unfortunately, needs and requirements are not a good way to describe problems or the solutions to those problems.

If Enterprise Architecture does not bring, or enable, business benefit by solving problems, and is not recognised by the business for doing so, then it is doubtful that Enterprise Architecture will be perceived as being of any use to the enterprise.

It is useful to distinguish between what Enterprise Architects do (the process) and what they produce (architecture).

The Enterprise Architecture Process

The architecture process is the set of activities that develops end states and other architecture artefacts.

Requirements engineering approaches to Enterprise Architecture such as that of The Open Group Architecture Framework (TOGAF) Application Development Method (ADM) start with business needs and then develop requirements for a system that will satisfy those needs. (TOGAF, 2009).

Figure 1 illustrates the relationship between needs and requirements that the TOGAF ADM defines.

The difficulty with this approach is that needs and requirements are both solution oriented. Needs are satisfied, requirements are met. Neither describes goals or problems.

TOGAF has been used here only as an example of a needs and requirements based approach. Most, if not all, architecture frameworks make the assumption that the business has identified, analysed, and solved the problem to be addressed. In many cases, especially in large information

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