

Chapter 40

The Use of Experts Panels in ERP Cost Estimation Research

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ABSTRACT

This chapter is an effort towards illustrating the use of expert panels (EP) as a means of eliciting knowledge from a group of enterprise resource planning (ERP) experts in an exploratory research. The development of a cost estimation model for ERP adoptions is very crucial for research and practice, and that was the main reason behind the willingness of experts to participate in this research. The use of EP was very beneficial as it involved various data collection and visualization techniques, as well as data validation and confirmation. Arguments for using EP over other group techniques are presented in this chapter. Experts modified and enhanced the initial cost drivers list and their sub-factors significantly, as they added, modified, merged and split different costs. Moreover, they ranked the cost drivers according to their weight on total costs. All of this helped the authors to better understand relationships among various cost factors.

INTRODUCTION

As they say, *it's about the journey, not the destination*, research techniques are very crucial for any research endeavour. They can lead researchers to the right path, or deviate them away from the desired destination. Moreover, the significance of any research results is determined by several

measures, and the data collection and analysis techniques are on top of them.

In our proposed research phases, different data collection techniques are *used* and proposed. Some of those techniques are qualitative in nature, some are quantitative, and some are mixed approaches. The variety of methods chosen should help in identifying the different costs and factors that influence costs in the Enterprise Resource Planning systems (ERP) adoption processes, in order to

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establish a cost estimation model. In addition, these techniques should provide a multi-perspective on costs through involving various key stakeholders from beneficiaries, independent consultants, and vendors that participate in Enterprise Resource Planning adoption projects. The focus of this research is on *ERP cost factors* within the small and medium enterprises (SMEs) domain. The *Egyptian context* was chosen as a research kick-off, as it was convenient to the authors due to the availability and access to data. Moreover, based on preliminary pilot interviews with ERP consultants, many of them assured that the current cost estimation methods are *not valid* or applicable for ERP settings. In addition, some experts argued that the usual European or American cost factors weight distributions (e.g. labours' rate/hour) are not appropriate in the Egyptian context. The results presented in this chapter could supplement ERP literature and practice if further validated, extended, and compared with other research in other countries or contexts.

In particular, this chapter discusses the Experts Panel approach that was used as a part of our "initial model development phase" (see Figure. 2). The chapter is an effort on arguing why *group discussions and interviewing* techniques are proposed in our initial exploratory research phase, and why we preferred the term "Experts Panels" over Delphi and Focus Groups.

In this chapter, the experts panel (EP) is contrasted with other group techniques. In general, *group techniques* are recommended for use when the phenomenon studied is emerging, or doesn't have clear boundaries. Moreover, group techniques benefits from participants' (field experts) brainstorming and field expertise. Furthermore, these techniques are recommended for initial exploratory research, or when it is hard to find a statistically valid sample.

The remainder of the chapter is organized as follows: the next section presents the chapter overview, cost estimation background and research motivation, followed by research scope

and researchers' perspective of costs. Followed by a description of the experts panel conducted. Moreover, a brief comparison between the experts panel and other related techniques followed by a conclusion.

CHAPTER OVERVIEW

In the next sections, cost estimation background and motivation, scope, perspectives, and research methods are discussed.

Cost Estimation Background

ERP system implementation is a significant project that requires commitment, and consumes a substantial amount of resources, and requires organisational changes and fits (Moon, 2007). Many variables affect ERP implementations, size and structure of organisations are not the only variables within the ERP project. Its specific context factors, industry, existing system reuse, and the adoption of a specific vendor ERP implementation method are also important factors (Daneva, 2007). Furthermore, cultural context can radically influence an ERP project (Soh, Kien, & Tay-Yap, 2000).

Given the high costs of ERP systems and their complexity, when organisations take the first step towards adopting an ERP system, they need to think about various things, foremost among which is the adoption cost (Van Everdingen, Van Hillegersberg, & Waarts, 2000). Costs in this research are defined as the budget expenditures needed for the attainment of the ERP adoption goal. Besides direct costs and system price, costs can have other forms that can be mapped to a monetary value, like search for vendors, time, and human resources costs related to the ERP adoption project.

With the scarcity of proper cost estimation methods, ERP systems implementation projects are facing difficulties in estimating costs, size, time, effort, productivity and other cost factors

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