

## Chapter XXI

# The Role of Expectations in Information Systems Development

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### ABSTRACT

*This chapter reviews the significance of expectations to information systems development with particular emphasis on the process of requirements analysis. In accordance with a socio-technical perspective, it argues that the expectations of key stakeholders involved in this process impact the emerging technology solution while the emergent technology simultaneously impacts stakeholder expectations for the solution that is ultimately developed. The primary aim of the chapter is to synthesize the relevant literature to provide insights to those seeking to improve their requirements analysis capabilities and to highlight potential avenues for future research that stem from a consideration of the role of expectations in the information systems development process.*

*For [a product] to surprise me, it must be satisfying expectations I didn't know I had. No focus group is going to discover those. Only a great designer can.*

—Paul Graham, Made in USA

## INTRODUCTION

The information systems (IS) literature identifies incomplete requirements, changing requirements, misunderstood requirements, and inadequate management of user expectations during the requirements analysis process as significant threats to the successful development of information systems (Hansen, Berente, & Lyytinen, 2007; Keil, Cule, Lyytinen, & Schmidt, 1998). The significance of these threats has resulted in considerable attention being directed toward tools and techniques of potential utility to the analysis of both functional and non-functional requirements (Mathiassen, Saarinen, Tuunanen, & Rossi, 2007). Despite these initiatives, recent research has reported the presence of notable dissatisfaction with the requirements analysis efforts of many organizations (Neill & Laplante, 2003) that suggests a need for further work aimed at better understanding and improving the effectiveness of this process. Toward this end we adopt a socio-technical perspective (Thomas, Gupta, & Bostrom, 2008), emphasizing process over outcome, in an exploration of how the interactions between people, processes, tasks, and technology during the course of requirements analysis can impact the expectations of key stakeholders. We also consider some of the potential implications of these expectations for user satisfaction and system success.

Grounding our analysis in expectation confirmation theory (ECT) (Oliver, 1977, 1980), we explore how user expectations are created and evolve as a result of the information exchanges that occur among various stakeholders as requirements are developed and refined. These exchanges are seen as being essential to system success and as occurring over a significant portion of any given project, particularly in environments based on agile development methods (Sommerville, 2007). In addition to examining the process of expectations transfer from prospective users to analysts, that is analogous to the transfer of requirements that occurs during requirements elicitation, we consider the implications that the expectations of designers and other stakeholders have for understanding

and influencing users' requirements and for the effectiveness of the requirements analysis process as a whole. Improving our understanding of stakeholder expectations and how they evolve is seen as making a potentially important contribution to efforts to ensure that systems remain well-grounded in the real human needs that they are intended to meet (Whitworth, 2008).

We begin with a description of expectations confirmation theory which is then followed by an analysis of the implications of expectations for information systems design. Our analysis builds primarily on the theoretical foundations that we present and is augmented with examples provided by three design managers at a large software development company.<sup>1</sup> The anecdotal evidence that these examples provide is intended to give real life context to our theoretical arguments. We incorporate the insights derived from the interviews throughout our theoretical analysis to concretely illustrate the points that we are making and lend preliminary support to our analysis. Finally, we conclude with thoughts on future opportunities including some questions raised by the literature and our analysis.

## THEORETICAL FOUNDATIONS

### Expectation Confirmation Theory

Marketing researchers have long recognized the impact that expectations can have on the ultimate success of products and services. Consumer reactions to a movie can, for example, vary widely depending on whether *a priori* expectations were low ("what a pleasant surprise!") or high ("what a disappointment!"). This understanding has been formalized in expectation confirmation theory which seeks to account for satisfaction with a product or service by positing that the level of satisfaction experienced depends on the magnitude and direction of the gap between the perceived performance of a product or service and a consumer's expectations for its performance (Oliver, 1977, 1980). This gap is

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