Chapter I

The Panorama of Information Systems Quality

Evan W. Duggan, University of Alabama, USA
Han Reichgelt, Georgia Southern University, USA

Abstract

Business organizations are still struggling to improve the quality of information systems (IS) after many research efforts and years of accumulated experience in delivering them. The IS community is not short on prescriptions for improving quality; however the utterances are somewhat cacophonous as proponents of quality-enhancing approaches hyperbolize claims of their efficacy and/or denigrate older approaches, often ignoring the importance of context. In this chapter we undertake an extensive review of the IS quality literature to balance the many perspectives of stakeholders in this heterogeneous community with the necessarily varied prescriptions for producing high-quality systems. We develop an IS quality model, which distills determinants of IS product quality into effects attributable to people, processes, and practices and denote that IS success results from the
combination of discernible IS quality and stakeholders’ perceptions of IS quality. This chapter serves as a general introduction to the detailed analyses of topics that follow in subsequent chapters but also provides insights that are not covered elsewhere in the book.

Introduction

The crusade to effectively confront information systems (IS) quality problems is as persistent as the problems themselves and the issue has been on the radar screens of IS researchers and practitioners for a long time (Bass et al., 2003; Dromey, 1996; Duggan, 2004a; Floyd, 1984; Floyd et al., 1989; Harter et al., 1998; Kautz, 1993; Khalifa & Verner, 2000; Kitchenham, 1989; Meyer, 1988; Miles, 1985; Rae et al., 1995; Ravichandran & Rai, 2000). Systems builders, whether developing customized products for proprietary use or generalized commercial packages, have long contended with the challenge of creating sophisticated software applications of high-quality, with the requisite features that are useable by their clients, delivered at the budgeted cost, and produced on time. The dominant experience, however, is that these goals are not frequently met; hence, the recurring theme of the past several years has been that the IS community has failed to exploit IT innovations and advances to consistently produce high-quality business applications. This apparent paradox has been dubbed the “IS crisis” (Brynjolfsson, 1993; Gibbs, 1994).

This perceived crisis manifests itself in a variety of ways. For example, many systems delivery projects are initiated without adequate planning and with unresolved feasibility concerns (Hoffer et al., 2002). Some are aborted before deployment, and others are implemented with significant errors due to faulty design and inadequate testing (Butcher et al., 2002). Ineffective process management is also prevalent (Gladden, 1982) and some successfully deployed IS consume a disproportionate share of organizations’ development resources for maintenance activities (Banker et al., 1998). Even technically sound systems are not immune to failure; some remain unused because of unfavorable user reactions (Lyytinen, 1988; Markus & Keil, 1994; Newman & Robey, 1992).

The list below is a chronological sample of twenty years of negative scholarly and practitioner commentary on various IS problems. Although the entire list does not pertain to IS quality — which we will define shortly — it depicts a range of issues that gives credence to the perception of a crisis:

- IS development is fraught with recurrent problems caused by poor, undisciplined, and incomplete development practices (Gladden, 1982)
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