Actability Criteria for Design and Evaluation:
Pragmatic Qualities of Information Systems

Göran Goldkuhl, Linköping University & Stockholm University, Sweden

ABSTRACT

Information systems actability theory builds on a communicative action perspective on IS. Information systems are seen as instruments for technology mediated work communication. Human actors are communicating (i.e. sending and/or receiving messages) through an information system. Information systems actability emphasises pragmatic dimensions of information systems. The paper presents 19 actability criteria divided into three groups: 1) criteria concerning user-system interaction, 2) criteria concerning user-through-system-to-user communication, and 3) criteria concerning information system's contribution to workpractice processes. These actability criteria should be possible to use in design and evaluation of information systems.

Keywords: *Actability, Communication, Communicative Action, Design, Design Ideal, Evaluation, Information System, Pragmatism, Value*

INTRODUCTION

Information systems (IS) cannot be seen just as repositories of facts of the world. An IS is a communicative instrument in organisations. Actors can perform communicative actions by support of an IS. An IS is thus a mediator of communication and action between organisational actors. An IS is also an agent with capabilities to perform predefined communicative actions. This gives IS a dual role of an instrument for users and an agent interacting with users. These roles raise demands on pragmatic qualities of information systems.

DOI: 10.4018/jissc.2011070101

Information systems actability theory (ISAT) is a conceptualisation of information systems emphasising their pragmatic dimensions. It can be seen as a practical theory according to this notion by Cronen (2001). Practical theories have a function of *directing* actors' *attention* towards certain types of phenomena. Cronen describes practical theories in the following way: "Its use should, to offer a few examples, make one a more sensitive observer of details of action, better at asking useful questions, more capable of seeing the ways actions are patterned, and more adept at forming systemic hypotheses and entertaining alternatives" (Cronen, 2001, p. 30). Goldkuhl (2008a) has elaborated the notion of practical theory and divided it into several constituents:

Conceptualisation, patterns, normative criteria, design principles and models.

ISAT has evolved over several years with contributions from many scholars (e.g. Ågerfalk, 2003; Ågerfalk & Eriksson, 2004; Broberg, 2008; Cronholm & Goldkuhl, 2002; Goldkuhl 2008b, 2009; Goldkuhl & Ågerfalk, 2002; Sjöström, 2008). Information systems actability has also been operationalised into 1) methods for specification and design of IS (e.g. Ågerfalk, 2003; Ågerfalk & Eriksson, 2004; Cronholm & Goldkuhl, 2002; Sjöström & Goldkuhl, 2004) methods for evaluation of IS (e.g. Ågerfalk, 2004; Ågerfalk et al., 2002; Cronholm & Goldkuhl, 2003; Sjöström, 2008). ISAT and its methodological operationalisations have ambitions to cover several aspects of information systems and their designs; as relations to business process, human-computer interaction, conceptual modeling and database design. An information system is considered as a technology-based system for communication and information processing including storage and transfer. This means that within ISAT, we use the concept of IS in a restricted sense corresponding to IT-system or IT artefact.

ISAT gets its current theoretical backing from theories and knowledge traditions like pragmatic philosophy, speech act theory, classical semiotics, social action theories, affordance theory, semiotic HCI engineering, conversation analysis, discourse theory and activity theory. Confer Goldkuhl (2009) for an overview of how these different background theories have influenced ISAT. As a practical theory, ISAT comprises a conceptualisation of IS and several models (Goldkuhl, 2009). ISAT also comprises normative criteria of pragmatic character (quality ideals) which can be used for design and evaluation. There have earlier been several contributions of actability criteria (e.g. Ågerfalk, 2003, 2004; Ågerfalk et al., 2002; Cronholm & Goldkuhl, 2002; Röstlinger & Cronholm, 2009; Sjöström, 2008).

The *purpose* of this paper is to make a further contribution to actability criteria. Nineteen actability criteria will be presented. These criteria will be structured in three different groups. The different criteria groups depend on what pragmatic scope is applied (confer Figure 5). There are 1) criteria associated with the user interacting with the system (interaction quality). There are 2) criteria for a broader scope, the user-via-system-to-user communication (communication quality). There are 3) criteria for an even broader pragmatic scope; the use of IS as part of a business process (process quality). The nineteen different actability criteria that have been identified will be articulated and clearly related to ISAT conceptualisations and models of information systems.

The *research approach* is a combined theory-informed (deductive) and empirically based (inductive) endeavour (Figure 1), following the principles of Goldkuhl (2004). The conceptualisation of IS in actability theory is of course a main source of inspiration. I have also looked into earlier actability criteria; some references mentioned above. However, my partial discontent with some of these criteria has been a driving force for conducting this research, i.e. developing a new set of actability criteria. I will not go through these earlier criteria and make any critical review of them; this is beyond purpose and scope of this paper. I acknowledge also an influence from other IS theories, especially from human-computer interaction. There are many other criteria concerning IS usage and human-computer interaction (HCI); e.g. well-known usability criteria from Shneiderman (1998) and Nielsen (1993). There has been an influence from such criteria on earlier ISAT criteria.

I have also used learnings from several empirical studies. I have (together with colleagues and students) studied several existing information systems based on the actability perspective. When using an actability lens we have identified some feature of a system that seemed to make the system less actable. Such an empirical observation was a basis for generation of an actability criterion. The IS defi-

Trust in the Digital Era

Joe Nandhakumar, Niki Panteli, Philip Powell and Richard Vidgen (2004). *Social and Economic Transformation in the Digital Era (pp. 77-94).*
www.igi-global.com/chapter/trust-digital-era/29029?camid=4v1a