A Soft System Perspective on Information Quality in Electronic Commerce
(Research in Progress)

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1 Introduction

In spite of the relatively large amount of literature being put out on quality of information in web-based technologies, there is no coherent model or theory bearing on complex aspects and dimensions of information quality (IQ) in that context. This paper makes a beginning in this direction by outlining a soft system framework for understandings IQ in the domain of electronic commerce (EC) in order to improve IQ standards and perceptions by different actors. The growing attractiveness of the Internet and EC has resulted in exciting prospects for organisations to reach out for customers with minimum additional costs. Ensuring information quality (IQ) in the Web page is needed for performing effective interaction with customers through WWW. Yet, the factors that affect IQ in the Web site are unclear.

2. IQ in EC: A Soft System Perspective

Soft system methodology (SSM) can be described as 7-stage model (Fig. 1) that concerns with *finding out about a real-world situation* (Atkinson & Checkland, 1988). The pattern of stages in the methodology evolves as a cycle in which each stage informs and modifies the other, as the user learns a way towards improvements through desired and feasible changes in the real world situation that is perceived as being problematic. The line between the real world and the systems thinking defines the boundary between the use of everyday language and systems language. Stages above the line (1&2, 5-7) represent actions and interactions in a problematic real world situation, while stages below the line (3&4) forming abstract definitions and models of concepts based on adopting a particular view about the real world situation (Checkland, 1988). Fig. 2 proposes an application of seven stages of SSM to IQ in the domain of EC.
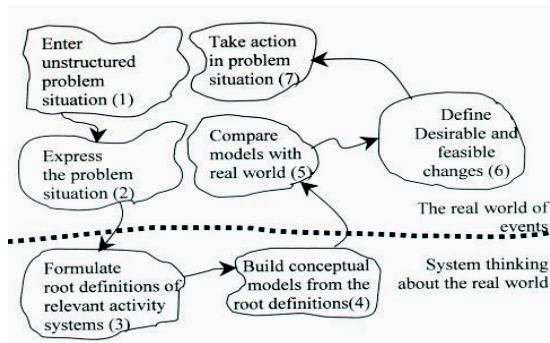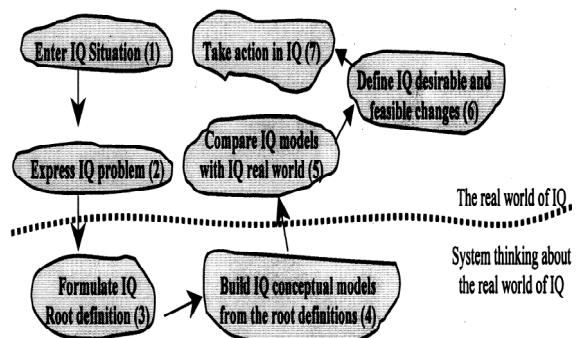

Fig. 1 Seven stages of SSM   *Fig. 2 Seven stages of SSM applied to IQ*

Such techniques as Rich Picture (Fig. 3), *Root Definition* and *CATWOE* are useful in bringing out a number of problematic themes within an IQ situation (stages 1, 2, & 3) in order assist in building conceptual models for that situation (stage 4). *Root Definition* expresses the relevant human activity systems in tightly constructed and descriptive statements. Since the problematic situation is viewed from different worldviews, several *Root Definition*s would be developed for each problematic situation. *Root Definitions* that could be developed from the buyer's point of view, for example, may include: 1) *IQ is a buyer-owned & defined system; 2) IQ is a seller-owned & defined system*, or 3) *IQ is a cybermediary-owned & defined system.*

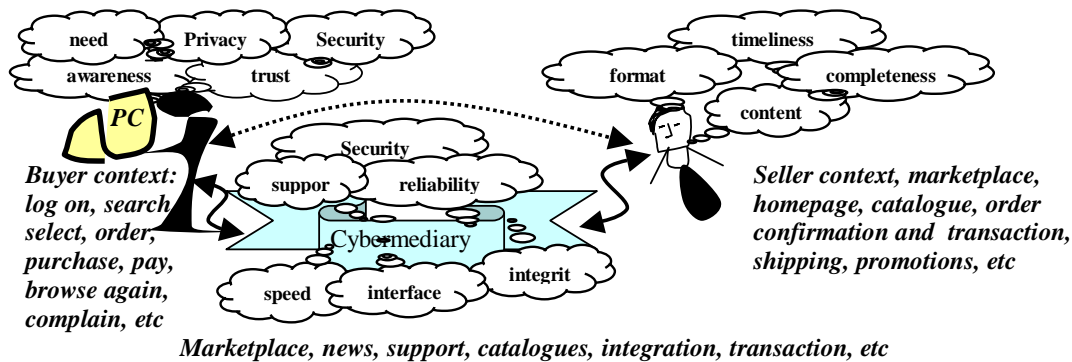*Marketplace, news, support, catalogues, integration, transaction, etc*

Fig. 3 A rich picture of IQ in EC

Each *Root Definition* has its own *CATWOE* mnemonic as illustrated in the following example with an application on Root Definitions 1:

C (Customer): Who are the victims or beneficiaries of IQ? People like us

A (Actors): Who would do IQ activities? Seller

T (Transformation): What input is transformed into what output? Our information need met

W (Worldview): What does make IQ Root Definition meaningful? IQ is vital for buying

O (Owner): Who could abolish IQ system? Site promoters

E (Env. constraints): What does IQ take as given? Our technological & economic features.

A single *Root Definition* and *CATWOE* provide a conceptual model IQ that enrich our understanding of hidden and dominant activities of any system within IQ rather than looking at structured activities which are not reflected in the real world. Conceptual model illustrates the minimum necessary set of operational, monitoring, and controlling activities to carry out one of the transformation processes related to IQ. Ensuring that the activities in the conceptual model could survive in changing environment and keep on track to achieve its purpose, monitoring and control activities are added to the conceptual model associated with three criteria for evaluating the transformation process (Checkland and Scholes, 1990). An example of applying conceptual model to IQ is illustrated in the following figure based on modelling *CATWOE & Root Definitions* 1.
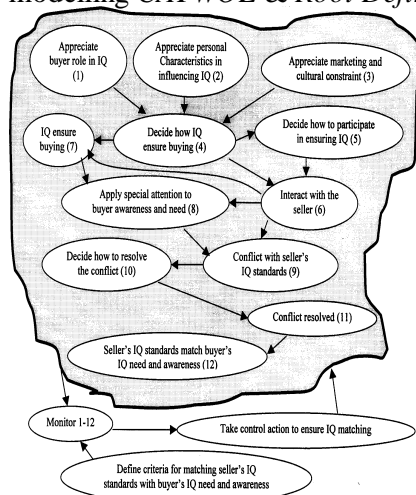

Fig. 4 A conceptual model of CATWOE1

Detailed comparison between conceptual models and real world is achieved in stage 5 using rigorous inquiries such as what are the implications of filling IQ gab? How might it be filled? How does IQ performance be measured? What are the IQ improvements that could be made? How is it carried out? Ideas about possible feasible and desirable changes to IQ real-world situation are derived from those new perceptions of IQ real world activities. New IQ problem situations may emerge during or after taking such actions and as a result further investigation is applied. The author would suggest that future research in IQ should be directed deeply toward comparing emergent IQ problems in the real life with IQ conceptual models. These comparisons could be based on IQ nature, impact, life cycle, actors-network, construction, means of treatment and recovery, and drawing such boundaries between the physical and social forms of IQ.

References

References available upon request from the author.