Quality in IS Research: Theory and Validation of Constructs for Service, Information, and System

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Agenda
- Motivation
- Literature Review: Delone-McLean IS Success Model and Marketing Exchange Theories
- Problems with Existing Quality Constructs
- Research Questions
- Research Methods

Motivation
- Importance of quality dimensions in IS Success research (e.g., Delone and McLean, 1992)
- Significance increase in quality research in recent years to meet organizational needs (e.g., Kettinger and Lee, 2005; Parasuraman and Zeithaml, 2005)
- Atheoretical introduction of service quality into IS Success Model (Delone and McLean, 2003)
- Lack of validation of instruments measuring quality
- Little work exploring relational links among information quality, system quality, and service quality
- No studies finding a clear link between service quality and satisfaction
Delone & McLean IS Success Categories (1992)

Delone & McLean Models

Sub-Constructs of Quality To Date

New Service Theories Needed (Marketing Exchange Theories)
New Service Theories Needed (Marketing Exchange Theories)

- Barbara A. Gutek (1995): *The dynamics of service*
  - Service is “a special kind of interaction between a customer and a provider … an interaction that usually involves the *exchange* of money for service or goods”
  - An *exchange* between two or more parties and a transformation (potentially intangible) received by a customer
- Henry Chesbrough, Jim Spohrer (2006): *A research manifesto for services science*
  - It involves a negotiated *exchange* between a provider and an adopter (supplier and customer) for the provision of (predominately) intangible assets
  - The *exchange* is co-generated by both parties, and the process of adoption or consumption is an integral part of the transaction

IS Role In Service Scenarios

Problems with Existing Quality Constructs

- There have been no complete tests of the DeLone-McLean 1992 or 2003 IS Success Model (nomological validity).
- Each new researcher tends to develop his/her own quality measures and criteria but validation effort is often missing.
- Most research focuses on understanding how information quality and system quality influence satisfaction.

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<td>Flexibility of System</td>
<td>Shell Quality</td>
<td>Perceived Ease of Use</td>
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<td>Ease of Learning</td>
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<td>Response Time</td>
<td>Interface Satisfaction</td>
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<td>Perceived importance of information items</td>
<td>Timeliness Information Overload</td>
<td>Performance Level</td>
<td>Relevance</td>
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<td>Facilitating Conditions</td>
<td>Mutual Understanding</td>
<td>E-S-QUAL</td>
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<td>Tangibles</td>
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Our Research Questions

RQ1: What are the items that capture all essential characteristics of IS quality?

RQ2: Are the constructs of System Quality, Information Quality, Service Quality distinct from each other?

RQ3: What is the nomology of these constructs in the IS Success Model?

System Quality
Information Quality
Service Quality

Intention to Use
Use
Net Benefits
User Satisfaction

RQ3 - Our Alternative IS Success (Model 1)

System Quality
Information Quality
Service Quality

Intention to Use
Use
Net Benefits
User Satisfaction

RQ3 - Our Alternative IS Success (Model 2)

Information Quality
System Quality
Service Quality

Intend to Use
Use
Net Benefits
User Satisfaction

RQ3 - Our Alternative IS Success (Model 3)

Information Quality
System Quality
Service Quality

Intend to Use
Use
Net Benefits
User Satisfaction
Research Methods for Our Study

Three Phases *(following, to some extent, Moore and Benbasat, 1991)*

1. Theorizing IS quality (Content validity)
2. Instrument development and validation (N=120)
3. Nomological validity tests (N>120)

Phase 1 - Theorizing IS Quality: Role of IS in Service

- IS as intermediary (e.g., Amazon)

Phase 1 - Theorizing IS Quality: Role of IS in Service (continued)

- IS as co-producer (e.g., Amazon)

Phase 1 - Theorizing IS Quality: Role of IS in Service (continued)

- IS as support for providing service (e.g., Amazon)
Phase 2: Factor Analysis

- Questionnaire development
  - Items resulting from phase 1

- Factorial analysis
  - Formative and reflective construct validation

- Test of reliability for reflective constructs

Phase 2: Other Validity Tests

- Examination of first and second order of models for each construct

- Discriminant validity

- Convergent validity

- Test using SEM

Phase 3: Nomological Validity Tests

- Test of DeLone-McLean IS Success Model

- Examine wide ranges of theoretical linkages among IS success constructs
## Validity Checks in Phases

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### Questions

It's QUESTION TIME!!