Why AIS Research?

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Agenda

- *Who we are (epistemologically) and what is AIS research?*
- *Beyond the "what", the "how" and "why"*
- *More on the "how:" A dialectic of AIS research methodologies*
- *More on the "why:" AIS research themes*
- *Journal quality essential to strength and sustainability of discipline – IJAIS efforts*

What is AIS Research?

- Information technology implications of accounting; control and reporting implications of information systems.
- *Research* to enhance our understandings of the role of information technology in the substantive context of accounting and information systems problems.
- At the inter-relations of the above.

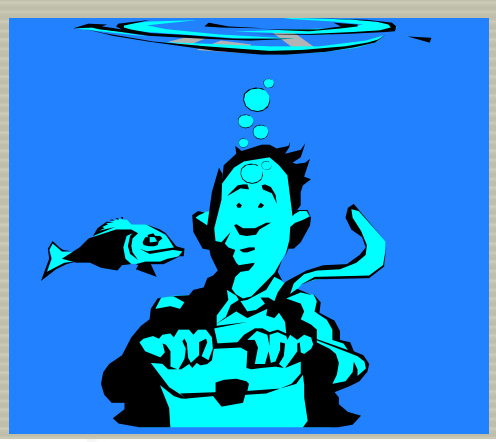
AIS Research Contributions

- Research not a unitary activity – must constantly question its assumptions so it expands its conceptual understandings and methodological bases.
- AIS is a specialty field, but its research contributions should not be isolated in a specific area.
- AIS research both draws from as well contributes to substantive knowledge in its primary cognate domains of accounting and information systems.

Blue Ocean Strategy

- AIS research best served if we adopt a broad view of the world (many editorials in AIS journals), and do exciting research.

The Difference Between Blue and Red Ocean Strategies (Kim and Mauborgne 2005 – INSEAD)



Red Ocean Versus Blue Ocean Strategy

The imperatives for red ocean and blue ocean strategies are starkly different.

Red ocean strategy	Blue ocean strategy
Compete in existing market space.	Create uncontested market space.
Beat the competition.	Make the competition irrelevant.
Exploit existing demand.	Create and capture new demand.
Make the value/cost trade-off.	Break the value/cost trade-off.
Align the whole system of a company's activities with its strategic choice of differentiation *or* low cost.	Align the whole system of a company's activities in pursuit of differentiation *and* low cost.

“extended” AIS

- tradition in leading design science research in accounting
- extended focus aiming at a primarily *conceptual* understanding of the implications of sharing, control, and monitoring of data due to interactions among the advancement of IT artifacts and the “design / development / use” of information systems in organizational contexts.

Research foci

- on the effects of IT and its use in accounting, reporting, auditing, and management control contexts
- on how problems relating to information communication and reporting, data quality and assurance, decision making and control, and the integrated nature of the information supply chain, shape the design and use of IT within and across organizations.

Relevant Questions

- Which Research Questions are Relevant? (adapted from Agarwal & Lucas 2005)
  - a. Is there a non-trivial aspect of the underlying theory that draws upon the unique nature of the relationship between the use and the IT artifact in MC/DM/Reporting/Audit contexts?
  - b. Would the phenomenon be approached differently were the IT artifact not involved?
  - c. Does the research inform scholarly and practitioner understanding related to the implementation, management, and use of the IT artifact in such contexts?

Research Space

- Intellectual map of reality
  - Risk is in knowing where map is wrong and knowing consequences
  - "Platonic Fold" (Taleb 2007)
- Key Parameters (Benthon et al 2002):

Research Space = $_{def}$ (problem, theory, method, context)

Research Aims

- Research Replication…
  - Significant sameness across studies
  - Focus should be on robustness to errors than improving predictions.
  - Not just taxonomic errors but errors that could have serious and cumulative consequences (errors of inclusion/exclusion – type I/II errors)
- Research Extension…
  - Alter some parameters
- Research (knowledge) Generation…
  - All parameters are changed relative to target study.
- *RESEARCH PROGRAMS*

On the Why (and How)

AIS Methodologies

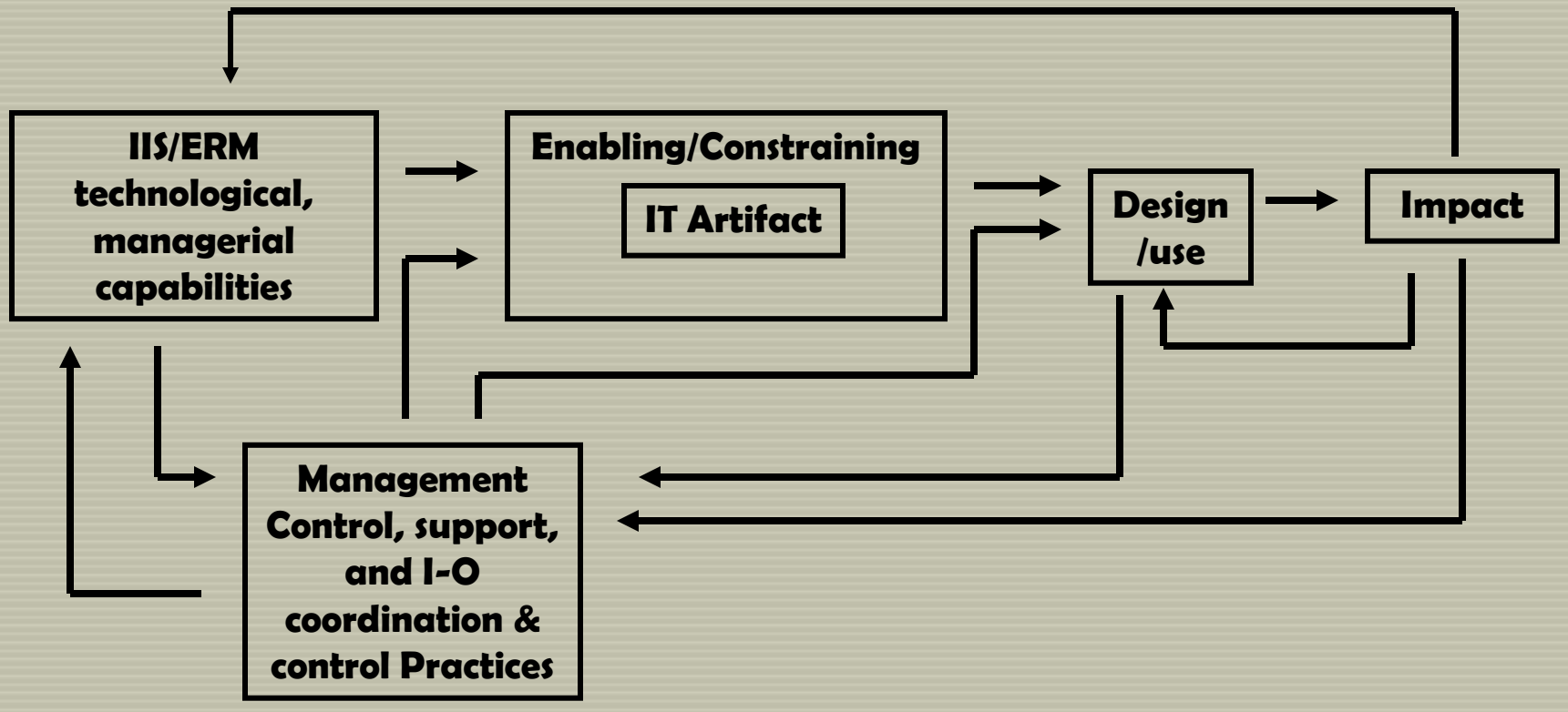
- Why we study certain problems in AIS and how to go about their study
- Dialectic on research methodologies in AIS research:
  - *IJAIS* Special Issue(s)

Research Opportunities

- View of IT and accounting : neither are discrete, independent, fixed phenomena -- accounting systems as information systems.
- Need to develop conceptualizations and theories of IT artifacts in accounting/decision contexts.
- Incorporating such theories in our studies.
- We need to theorize about IT artifacts in realistic ways, recognizing they are dynamic, context-embedded, emerging.

Potential (but limited) AIS Research Framework

(adapted from Benbasat and Zmud 2003)



Useful Concepts

- Explain
  - Capabilities, Options
  - Practices/objectives
  - Artifact interaction: constraining/enabling
  - Range of impacts
    - Agarwal & Lucas (2005): majority of research should deal with the *impacts* of the IT artifact…
    - Macro-focus: transformational aspects of IT – how technology is changing organizations, environments, and strategy (ERM?).

Unique AIS research opportunities?

Over-arching framework of AIS Research (our uniqueness)

- AIS/IT and:
  - Assurance
  - Control systems design
  - Business value
  - Reporting
  - User behavior
  - Transparency
  - Relationship (risk) management
  - Economics
  - etc

- AIS and:
  - Strategy
  - Modeling
  - Design
  - Business Reporting
  - User behavior
  - Organizational sociology (trust, risk)
  - Individual beliefs
  - Economics
  - etc

AIS Research Lens

- Design of AIS (design science)
- Economic value of IT (economic theory)
- Individual, organizational, society impacts (behavioral theory, sociology)
- Individual and organizational adoption and use (organization theory)
- Strategic management, formulation, transformation

Multiple theories, multiple methods

- Theories
  - Economic complementarity/ information processing/fit
  - Org. learning (knowledge management, absorptive capacity…)
  - Institutional (processes of legitimation & isomorphism)
  - Org. sociology (social cognition; social exchange)
  - Actor-Network
  - Agency
  - Real/digital options
- Research Questions:
  - Design science
  - Economic
  - Behavioral
- Methods
  - Experimental
  - Analytical
  - Archival (qualitative, quantitative)
  - Field research
  - Case / critical

A dialectic on methodologies in AIS research

- Dialectic:

  an inquiry with the aim "to find a method to argue about a proposed problem from probable premises, while avoiding self-contradiction" (Aristotle, *The Organon*).

Research Methods

- Qualitative:
  - Interaction of context and human actors to develop 'theoretical' understanding of situation
  - Signature matrix method (unpacking frame elements in systems workability analysis)
  - Use in system adoption/implementation/post-impl. research
- Social Construction methods:
  - Study construction of things normally taken for granted – ANT: relationship between technology in use and IT artifact
  - Intended and unintended consequences of IT adoption and use (structuration theories)
  - Patterns of actions in enterprise systems and org. change
  - Narrative Network Method
  - *Tracing effects post-adoption as well as qualitative assessment of post-implementation review practices.*

Research Methods

- Social network analysis:
  - How outcomes are not just affected by individual attributes but also by social ties that connect individuals to each other.
  - Network nodes as actors: individual level, dyadic level, network level of analysis.
  - Examples: fraud, forensics, process mining (both process improvement & monitoring).

Research Methods

- Experimental:
  - Need theory to justify/predict the “why” behind the “what” one expects to find in a controlled experiment (e.g., decision aids studies).
- Experience Sampling Method:
  - Role of emotions, feelings, moods in understanding and predicting human behavior
  - Established in social, psychological, neurological sciences
  - Technology acceptance, adaptation, continuance models; decision making.
  - Enhance internal validity in field surveys and ecological validity in experimental research

Research Methods

- Archival:
  - Event study method
  - Cross-sectional quantitative analysis
  - Longitudinal quantitative analysis
- Analytical:
  - Systems reliability analysis – evidential reasoning.
  - Bayesian audit risk analysis and belief functions to model uncertainty in decision problems.
- Hybrid:
  - Continuous audit innovation strategies and paradigmatic propositions into future of assurance

AIS Research Themes

AIS Research Themes

- IT/MCS Interactions: ***Bundles of Features*** in MCS design.
- Enterprise Systems: individual and organizational impacts
- ERM and SEM: conditions of use
- Technology adoption/use: organization theory; inter-organizational relations
- Continuous assurance/monitoring: technology-use mediation

ES and MCS

- IT/MCS Interactions: ***Bundles of Features*** in MCS design.
  - Are there complementarities in bundles of features?
  - Do coordination/control requirements affect MCS design (what constitutes the bundle)?
  - Intra-organizational versus inter-organizational uses of integrated IT -- IIT/ MCS?
  - IIT as a control system?

Individual and Organizational Impacts

- Technology, by itself, is a bundle of features and is neutral in its impacts?
  - – Study the IT Artifact.
- Management's (TMT) intentions for IT implementation are key in shaping impacts
  - [automation, empowerment, control, or transformation]
- Prevailing cultures, work processes, and social networks influence the impacts of IT
- Individual Impacts:
  - While individual users make voluntary decisions about how to use technologies, management can create incentives to influence their attitudes, beliefs, and behaviors
- Computer-mediated work has significant beneficial impacts on individual and group behavior

Adoption and Use of Technology

- What perspectives might help the study of enterprise systems?
- Individual and organizational adoption of IT
  - The enterprise-wide usage and assimilation of IT is subject to significant post-adoption lags
    - Push-pull dynamics
  - Inertia and knowledge barriers inhibit the extent to which a technology is assimilated into work processes
  - Individual beliefs about the ease of use and usefulness of IT are salient in their attitudes toward the use of technology
  - Individual users' beliefs are shaped by their own prior experiences and by their social networks

ERM and SEM

- Enterprise risk management (ERM) and governance or Strategic Enterprise Management (SEM)
  - How should firms assess and manage risks in their IT assets, digitized processes, and outsourcing partnerships?
  - How should the value and risks of IT assets be incorporated into overall corporate value and risk profiles?
  - What are the salient ERM capabilities and what are their relationships with firm performance?
  - What is the role of the Board and how should they provide oversight on IT management?

Enabling Role of IT on Assurance

- Continuous assurance/monitoring: technology-use mediation
  - Innovations in continuous audit shaping IT-in-Use
  - Increased digitization of organizational structures and processes enhances prospects for continuous assurance, process monitoring & management.
  - Changed role of audit function (not just interest in the role itself, but what it implies for the audit process and user assurance function).
  - Importance of Data Exchanges in Assurance Function
    - Links of system design to risk, assurance, governance

Inter-Organizational Exchanges

- Relational/Information Sharing
  - Opportunism vs coordination-cooperation
  - Information sharing and trust
- Uncertainty/sources of
  - Risk in exchange itself (e.g., outcome) or in structures surrounding use
- Time/Embeddedness
  - Different issues at relationship inception and as relationship progresses.
- Data Exchanges: role of IOS system design and data quality (PIQ) on IOS Adoption

Underlying Theories

- Economics
  - B2b relationship success contingent on ability of IT to reduce transaction costs (coordination / motivation costs)
  - Improved PIQ enables coordination mechanisms that induce market rather than hierarchical structures (implications for alliances & use of IIS in IORs).
- Social networks – structural relationships
  - IOS adoption related to embeddedness: partner trust, info sharing, joint problem solving.
- Organization theory
  - Contingency perspectives: IP needs (driven by task, partner, environment uncertainty) & IP capabilities match.

Research Program Findings

- Spot B2B exchanges –
  - Most notably, 2006 ISR study found that system design interventions affect users' perceptions of information quality. Contributing to IOS literature, PIQ was found to affect use continuance intentions, but mediated by assessments of partner trust and perceptions of risk (outcome risk) in the exchange.
  - Other studies: decomposed trust/risk constructs, and transaction performance relationships
  - Extension: Longitudinal Revision in Effects

Initial Adoption vs Longitudinal Use

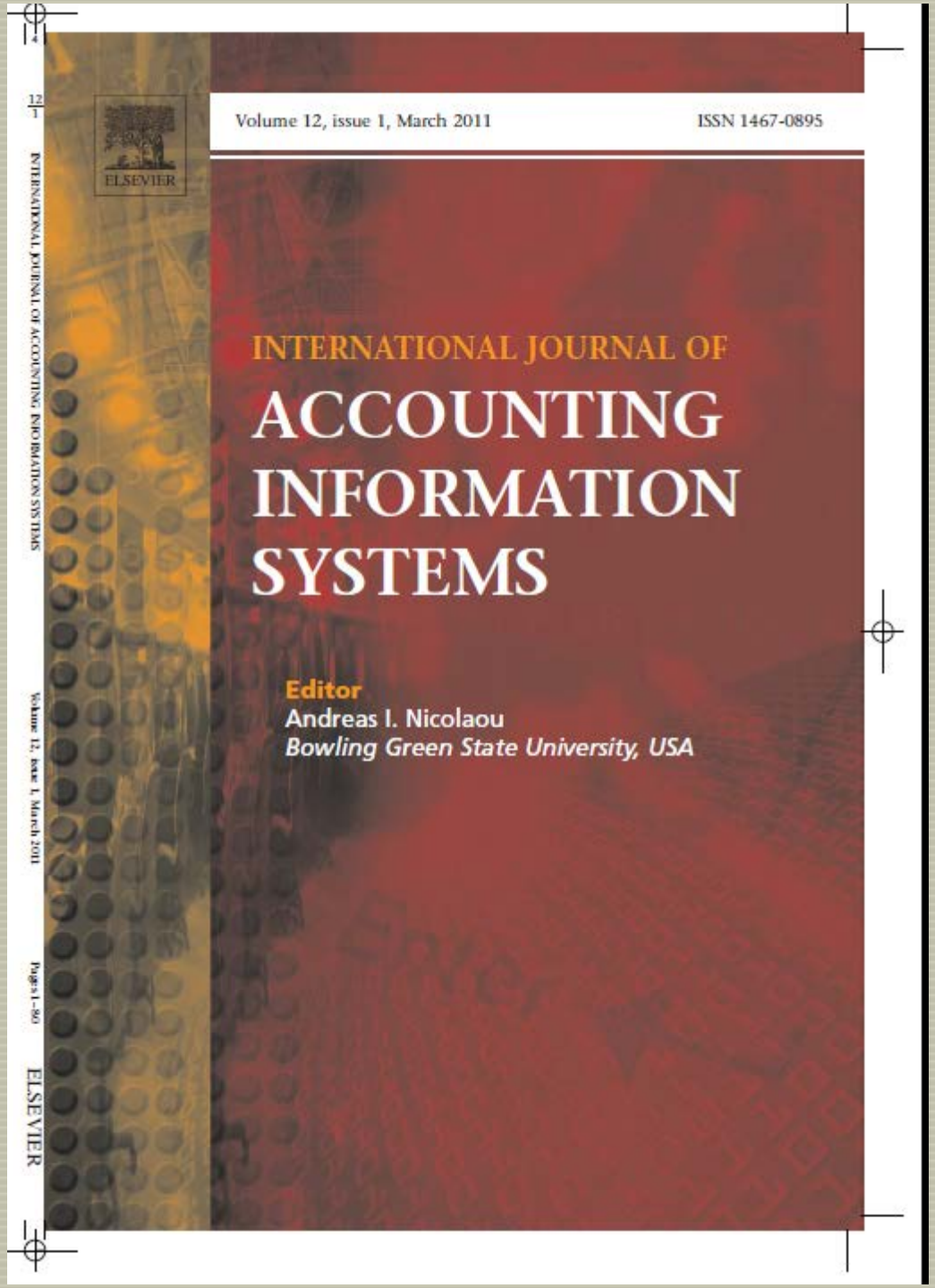
- All of the above used one-time use of simulated web exchange and survey of constructs (DVs).
- Time/embeddedness of relationships could vary importance of model relationships
- Theorizes and tests the *sustainable* effects of perceived information quality (PIQ) on both Intent to Use and Supplier Performance DVs.
- Examines trust and distrust in the exchange environment across time.
  - Distrust: negative side of trust equation.
  - Distinct effects from trust and risk, especially across time.
- Examines effects of control transparency and confirming/disconfirming outcome feedback over time.

Theoretical Underpinnings - Longitudinal

- Economic Exchange (e.g., Williamson, 1975)
  - Assumes risk, moral hazard, opportunism
  - Suspicion of the other over trust of the other
  - Strong need for controls, structural assurance
- Social Exchange (e.g., Blau, 1964)
  - Assumes goodwill, reciprocal obligations
  - Ties and trust build slowly by interaction
  - Develop norms of cooperation, sharing
- Both theories have limitations
  - Safeguards and deterrents of opportunism can operate alongside trust; inter-personal and I-O relationships are not always harmonious, as SET expects.
- Social Cognition (Fiske and Taylor 1991)
  - How system design features are evaluated over time
  - Belief updating over time
  - Negative information treated differently than positive information (attribution via lens of goal-oriented objectives)

E-Hubs and Professional Assurance

- General vs Specific Assurance over reliability of exchange system (professional assurance report)
  - Users more likely to recommend use of the exchange when general assurance is present than when specific assurance over the reliability of transaction information is present.
- Continuous vs Static Assurance Report
  - More likely to recommend using the exchange when the assurance report is continuous…
- However, ….
  - Other factors, especially *trust in the trading partner*, have stronger influence on usage intentions than the presence of either continuous or systems assurance (indirectly corroborates findings of other studies that control transparency and PIQ effects are mediated by trust/risk perceptions).
- Redesign existing assurance services to provide continuous assurance, de-emphasizing formalized reports, and consider contemporaneous effects of such factors as web site design over assurance services.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Special Issue on Methodologies in AIS Research

1. Editorial Nicolaou, A.I. "A Dialectic on Methodologies in AIS Research"

2. IJAIS-10-23 D. H. McKnight "Good Science, Bad Science: Preventing Paradigm Paralysis and Method-Bias Malaise"

3. IJAIS-10-33 R. Baxter & Hunton J. "Capturing Affect via the Experience Sampling Method: Prospects for Accounting Information Systems Researchers"

4. IJAIS-10-37 Konchitchki & O'Leary "Event Study Methodologies in Information Systems Research"

5. IJAIS-10-27 A Yeow& S. Faraj "Using Narrative Networks to study Enterprise Systems and organizational change"

6. IJAIS-10-34 R. Srivastava "An Introduction to Evidential Reasoning for Decision Making under Uncertainty: Bayesian and Belief Functions Perspectives"

7. IJAIS-10-35 M. Masoner "Meta-Analysis Of IS Success: A Reconsideration of its Dimensionality"

8. IJAIS-10-31 G. Geerts "A Design Science Research Methodology and its Application to Accounting Information Systems Research"

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10. IJAIS-10-20 P. Wheeler & U. Murthy "Experimental Methods in Decision Aid Research"

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New additions

- New AE:
  - Jacqueline Reck, U South Florida
- New Editorial Board Members ("extended" AIS relationship):
  - D. Harrison McKnight, Michigan State University
  - Samer Faraj, McGill University
  - Waleed Muhanna, Ohio State University
- I strive to add diversity to the board, still need to reach out to high quality researchers at a global level.

JCR Business, Finance Category (Social Sciences)

Sorted by: Impact Factor

	Abbreviated Journal Title	2009 Total Cites	Impact Factor	5-Year Impact Factor	Immediacy Index	2009 Articles	Cited Half-life
1	J FINANC ECON	12058	4.020	5.675	0.376	93	>10.0
2	J FINANC	18039	3.764	6.536	0.551	78	>10.0
3	REV FINANC STUD	4416	3.551	4.465	1.211	147	9.6
4	J ACCOUNT ECON	2819	2.605	3.931	0.448	29	>10.0
5	ACCOUNT REV	3278	1.938	3.316	0.333	69	>10.0
6	J BANK FINANC	4369	1.908	2.200	0.767	215	6.9
7	ACCOUNT ORG SOC	2215	1.904	2.749	0.364	55	>10.0
8	J ACCOUNT RES	2981	1.870	3.069	0.450	40	>10.0
9	WORLD BANK ECON REV	1224	1.766	2.340	0.381	21	9.5
10	J MONETARY ECON	4613	1.755	2.514	0.140	86	>10.0
11	REV ACCOUNT STUD	461	1.750	2.345	0.389	18	6.4
12	J CORP FINANC	836	1.628	2.073	0.763	38	5.6
13	J FINANC QUANT ANAL	2490	1.603	2.259	0.185	54	>10.0
14	J RISK UNCERTAINTY	1732	1.519	1.984	0.222	27	>10.0
15	J FINANC INTERMED	553	1.364	1.767	0.370	27	8.1
16	J FINANC MARK	447	1.281	1.819	0.219	32	7.2
17	FINANC STOCH	749	1.240	1.920	0.545	22	7.4
18	MATH FINANC	1261	1.214	1.837	0.103	29	>10.0
19	J MONEY CREDIT BANK	2383	1.194	2.043	0.161	87	>10.0
20	WORLD ECON	1083	1.159	1.244	0.111	72	6.6
21	CONTEMP ACCOUNT RES	891	1.129	1.669	0.438	16	9.4
22	J IND ECON	1826	1.111	1.802	0.297	37	>10.0
23	EUR ACCOUNT REV	380	0.961		0.211	19	7.3
24	AUDITING-J PRACT TH	808	0.946	2.068	0.077	26	>10.0

IJAIS 2009 Projected I. F. : 2.61

RANK: 4 out of 53

ISI citations increase

O'Leary 2010 : on the number of ISI citations to JETA, JIS, IJAIS, and ISAFM

	2008		2010	
Journal	Citations	Entries	Citations	Entries
JIS	301	97	448	110
ISAFM	254	NA	970	166
IJAIS	138	51	506	131
JETA	4	4	16	10

Most recent 2011 data consistent with above

IS Journals JCR (2009) (information science & library science)

1	MIS QUART	0276-7783	6186	4.485
2	J AM MED INFORM ASSN	1067-5027	4183	3.974
3	J COMPUT-MEDIAT COMM	1083-6101	1279	3.639
4	J INFORMETR	1751-1577	253	3.379
5	ANNU REV INFORM SCI	0066-4200	563	2.929
6	INT J COMP-SUPP COLL	1556-1607	229	2.692
7	J AM SOC INF SCI TEC	1532-2882	5167	2.300
8	INFORM MANAGE-AMSTER	0378-7206	3276	2.282
9	J ASSOC INF SYST	1536-9323	430	2.246
10	SCIENTOMETRICS	0138-9130	3508	2.167
11	GOV INFORM Q	0740-624X	598	2.098
11	J MANAGE INFORM SYST	0742-1222	2650	2.098
13	J INF TECHNOL	0268-3962	879	2.049
14	INFORM SYST RES	1047-7047	3037	1.792
15	INFORM PROCESS MANAG	0306-4573	2412	1.783
16	J INF SCI	0165-5515	939	1.706
17	INT J GEOGR INF SCI	1365-8816	1997	1.533
18	HEALTH INFO LIBR J	1471-1834	330	1.521
19	ONLINE INFORM REV	1468-4527	324	1.423
20	INFORM SYST J	1350-1917	598	1.419

IJAIS Future Plans

- Web of Science inclusion
- New initiatives:
  - Journal page budgets lifted @ 4 issues per year
  - Article-based publishing
  - Consistent high quality in manuscripts
  - Consistent issue size/volume
  - Special issues: Research Methodologies, XBRL, IT/MC, BPM (issues to be published up to 2013)
- Expansion of Editorial Review Board
- Long-term Senior Editorial Board Structure