I.S. Research of Business Practices: Many, One or Zero Academic Disciplines?

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Gezinus J. Hidding: Background

- **Loyola University Chicago Faculty (I.S.)** since 1996

- **Andersen Consulting (now Accenture)** 1986 – 1996
  - Methodology Development
  - Strategic Technology Research
  - Artificial Intelligence Consulting

- **Carnegie Mellon University** PhD 1992
  - School of Business: Information Systems
  - Leave of absence 1986-1988
  - In residence 1982 – 1985

- **University of Groningen (NL)** MSc 1982, BSc 1979
  - Information Systems
  - Econometrics
Session Objective

- “Last Lecture”
  - Share my Personal View
  - Learn about Other Views

- Information Systems (I.S.) as an Academic Discipline
  - Stimulate a Debate about
  - I.S. as an Academic Discipline
  - Stimulate Debate
    - At Conferences, e.g., ITI
    - In Journals,
    - …
Agenda

- I.T. (= Hardware + Software, including Telecom)
  - Supply-side
  - Demand-side

- I.S. as an Academic Discipline

- Issues

- Suggestions

- Discussion
I.T. Supply – Exponential Growth

- By Information Technology ("I.T."), I Mean:
  - Hardware and Software for Processing Digital Data
  - Including for Telecom for Routing and Sending of Digital Data

- By I.T. Industry, I Mean:
  - Collections of Organizations that Provide I.T.

- I.T. Industry Started around the 1950’s
  - UNIVAC Delivered in 1951 to U.S. Census Bureau
  - Payroll Application Developed for GE in 1954

- I.T. Industry: 10 - 15% of U.S. GDP
I.T. Demand – Exponential Growth

- I.T. Is Everywhere
  - *In (Almost?) Every Country*
  - *In Every Type of Organization*
    - For-profit, Not-for-profit, Government, …
    - Small, Medium, Large, …
  - *In Every Industry*
  - *In Every Business Function*
    - Operations, Administration, Business Intelligence, …

- I.T. Is Used Increasingly
  - *To Support or Automate Almost Every Activity*
    - Business, Learning, Health, Entertainment, Government, …
  - *To Communicate*
  - *Towards Better, Faster, Cheaper, Cleaner, …*
I.S. as an Academic Discipline - Established

- By I.S., I Mean:
  - The Discipline that Concerns Itself with:
    - I.T. (“Artifacts”),
    - People,
    - Processes, and
    - Impact of I.T.

- Started around the 1970’s
  - First ICIS Conference in 1980 (Philadelphia)
  - Textbooks: Davis (1974), Lucas (1979)
  - Degree programs: Carnegie Mellon (1954), Groningen (mid ‘70s)
I.T. Growing …I.S. Identity Crisis …

- I.T. Is Everywhere:
  - Is Everywhere
  - Becoming More Ubiquitous
  - Job Prospects for Students Are Good

- I.S. Is In (Identity) Crisis:
  - Hard to Explain what I.S. Is/Does (Mother)
  - Enrollments Decreasing (Loyola)
  - Departments Closing (Groningen)
  - Moving to Separate Schools (Carnegie Mellon)
Crisis in I.S. – Issues in the Literature

- Not Enough Emphasis On:
  - I.T. Artifacts
  - Impact on People, Workflows, etc.

- Rigor v Relevance - But, They Are Not Opposites

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<thead>
<tr>
<th>Rigor</th>
<th>Relevance</th>
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<tbody>
<tr>
<td>High</td>
<td>Theoretical</td>
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<tr>
<td>Low</td>
<td>Ignore</td>
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<tr>
<td>Low</td>
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Issue: Impact of I.T. Depends on Domain

Impact, e.g., on Business
## Issue: I.T. Impact Depends on System Level

<table>
<thead>
<tr>
<th>Level (Miller, 1978)</th>
<th>Study Impact, e.g., in:</th>
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<tbody>
<tr>
<td>Cell</td>
<td>Biology</td>
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<td>Organ</td>
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<td>Organism</td>
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<tr>
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<td>Business</td>
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<tr>
<td>Society</td>
<td>Economics, Sociology</td>
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<tr>
<td>Supranat’l System</td>
<td>Internat’l Public Policy</td>
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Issue: I.S. Has No Dominant Paradigm

- Per My Reading of Kuhn (1970), I.S. Is:
  - Too Broad (e.g., Impact): Many Disciplines (= Zero)
  - Pre-Paradigmatic
    - Competing Views of What I.S. Is About
  - Not a “Normal Science”
    - (-) Does Not Focus on Key Facts of Interest for Practice
    - (-) No Well-Known Theory that Predicts Practical Phenomena
    - (+) Compares Predictions with Theory

- Not a Science
  - But Behaves like a Science (Isolated)

- Is A Professional Discipline
  - But Does Not Behave like One (Isolated)
Issue: What Is The Question Anyway?

- If I.S. is the Answer, What Is the Question?
- If I.S. Were a (Normal) Science,
  - What Is the Core Research Question?
- If I.S. Is a Professional Discipline
- i.e., Driven By Pressing Needs from Society
  - Who/Which Professionals Are Our Customers?
  - What Are Their Questions?
Issue: Key Practical Topics Are Missing

- Key Topics from my Consulting Experience
- Are Largely Missing from Research and Teaching:
  - Transaction Processing
  - ERP Systems
  - System Architecture
  - Project Management
    - Incl. Estimating?
- Design: Separate High-level and Detailed Issues
Suggestion: Customers of I.S. Direct I.T.

**Business Manager**
- *Tools for Information*

**Chief Operating Officer**
- *Platform for Tools*

**Chief Infrastructure Officer**
- *Architecture for Platform*

**Third Party Providers**
- *Infrastructure for Architecture*
Suggestion: I.S. Is About “Management of”

- **I.S. as a Professional Discipline**
- **Key Customers:**
  - CIOs and Directors of I.T.
  - Business Managers who Specify I.T. Requirements
- **Key Question:**
  - How to Manage the Provisioning, Operation, and Maintenance Of I.T. Artifacts
- **Deeper Question (example):**
  - Are Programmers Different from Other Employees? If So, How?
- **I.S. Researcher = I.S. Practitioner**
  - Externships, Reviews re: Relevance and Methods, Editors
Examples from My Own Research

- Redesigned Methodology Content to Make it Useful for I.S. Managers
- How to Think about Strategic (Business) Planning
  - In Markets that Change Fast because of I.T.
    - Sustainability Analysis
    - Fast-follower Advantage
    - Information Industries
- Rethink (I.T.) Project Leadership:
  - Manage Organizational Change towards Value
  - based on Solution Architecture
### Feedback So Far … My Reaction

- **Your Focus Is (Too?) Narrow**: Guilty
- **You Are Ignoring “Information”**: Mostly
- **B.I.?**
- **Which Profession Is Your Model?**: Medicine
- **What About Design Science?**: Too Broad
- **Good Luck …**: Thank You
Discussion

- I Am Looking Forward to the Debate …