LOYOLA
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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*
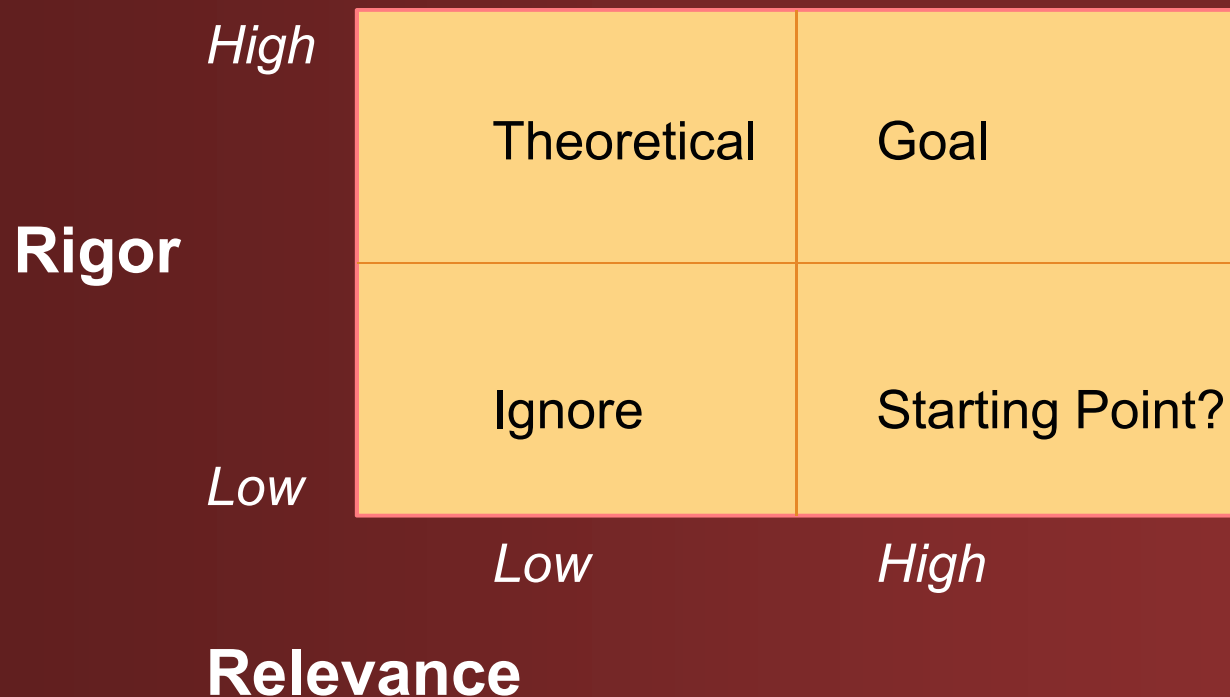 - *Job Prospects for Students Are Good*

- **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**

	Low	High
High	Theoretical	Goal
Low	Ignore	Starting Point?

High / *Low* — **Rigor**

Low / *High* — **Relevance**

Issue: Impact of I.T. Depends on Domain

People

Information

Impact, e.g.,
on Business

Software

Hardware

Process

Issue: I.T. Impact Depends on System Level

Level (Miller, 1978):	Study Impact, e.g., in:
Cell	Biology
Organ	Medicine
Organism	Cognitive Psychology
Group	Social Psychology
Organization	Business
Society	Economics, Sociology
Supranat'l System	Internat'l Public Policy

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
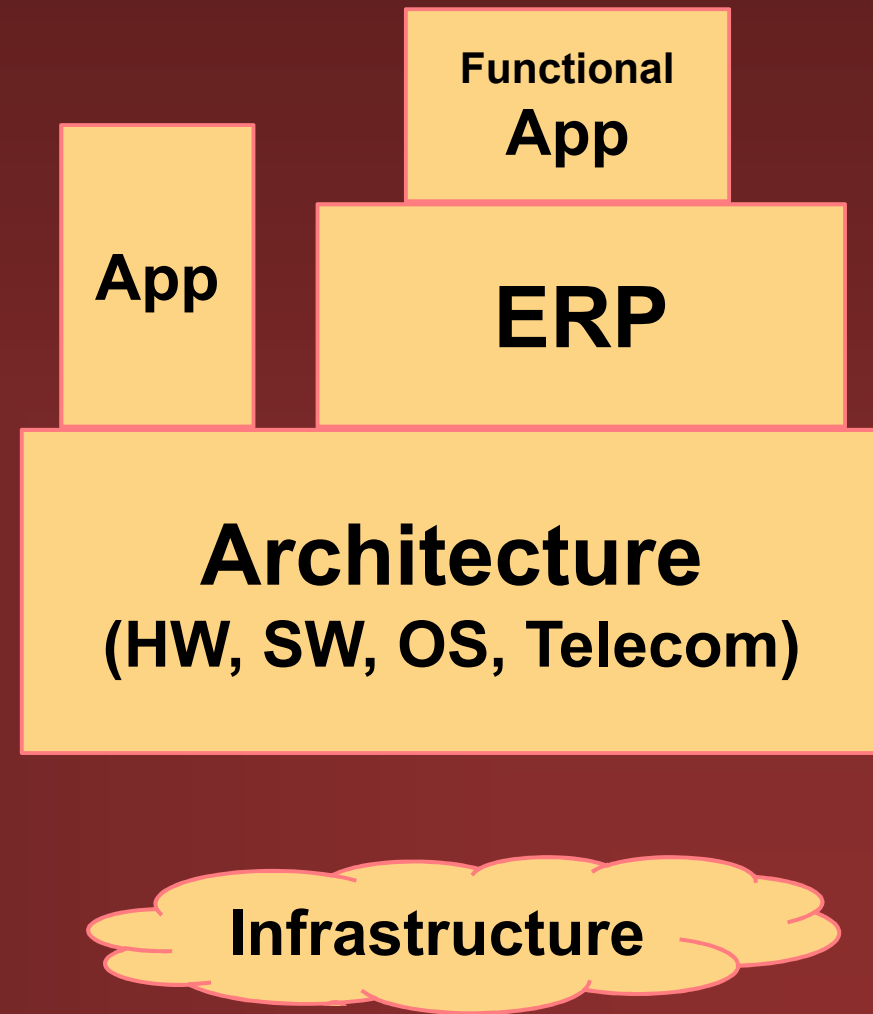– *Tools for Information*

Chief Operating Officer
– *Platform for Tools*

Chief Infrastructure Officer
– *Architecture for Platform*

Third Party Providers
– *Infrastruct. for Architecture*

Functional
App

App

ERP

Architecture
(HW, SW, OS, Telecom)

Infrastructure

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 …**