Impactful Research on Transformational Information Technology: An Opportunity to Inform New Audiences

Authors: Henry C. Lucas, Jr., Ritu Agarwal, Eric K. Clemons, Omar A. El Sawy, and Bruce Weber

Professor: Soe-Tsysr Yuan

Presenter: Sandy
Introduction

• ITs are transforming organizations, markets, industries, societies, and the lives of individuals.

• An objective is to focus the IS community’s attention on the transformations in economic and social systems.

  • Seek to underscore the significance of IT-enabled transformations and encourage IS researchers to purposively identify research questions.
  • Urge researchers investigating papers based on their findings.
  • Recommend the creation of a new outlet to publish essays on the implications of their completed research and research in progress.

• They present four distinct sectors of the economy and propose policy-relevant questions.
Constitute an IT-enabled transformation

- Chandler & Cortada (2000), characterize a transformation as something that will shape and reshape the economy.

- The literature on radical innovation also offers suggestions, observing that to be radical, an innovation has to be novel and that it has to be adopted (Dahlen & Behrens 2005).

- Dehning et al. (2003) listed a number of criteria
  - It fundamentally alters traditional ways of doing business by redefining business capabilities, processes and relationships.
  - It potentially involves strategic acquisitions to acquire new capabilities or to enter a new marketspace.
  - It exemplifies the use of IT to dramatically change how tasks are carried out ... gain considerable competitive advantage by doing things differently.
<table>
<thead>
<tr>
<th>Transformation Criteria and Examples</th>
<th>Individual</th>
<th>Firm</th>
<th>Economy/Society</th>
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<tbody>
<tr>
<td>Process</td>
<td>A change in a personal process of more than half the steps (e.g., digital photography)</td>
<td>A change in a business process of more than half the steps (e.g., book publishing vs. e-books)</td>
<td>Creation of a new organization that changes at least two hours of individual behavior a day (mobile communications and web)</td>
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<td>New organizations</td>
<td>Creation of a new organization with a value of at least $100 million (as in Amazon, Facebook, and Google) or multiple organizations (as in Health Information Exchanges)</td>
<td>A change affecting at least half of relationships with other organizations or a doubling of the number of relationships (e.g., iTunes for Apple, e-books for Amazon)</td>
<td>A change affecting at least two hours of individual behavior a day related to social relations (e.g., Facebook, Twitter)</td>
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<td>Relationships</td>
<td>A change in social relations affecting at least half of one’s contacts or doubling the number of contacts (e.g., Facebook)</td>
<td>A change affecting at least half of relationships with other organizations or a doubling of the number of relationships (e.g., iTunes for Apple, e-books for Amazon)</td>
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<tr>
<td>User Experience</td>
<td>A change in user experience involving at least 2 hours per day (e.g., Facebook)</td>
<td>Entering or leaving at least one market served by the firm (a.k.a. idevices)</td>
<td>Creation of a new market with at least $100 million of transactions a year (such as music downloading, search advertising)</td>
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<td>Markets</td>
<td>A change in at least half of one’s vendors in a particular market (e.g., iTunes vs. CD purchases)</td>
<td>A change in which the firm serves at least 50% more customers (e.g., Amazon e-books, iTunes)</td>
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<td>Customers</td>
<td>A change that forces at least one competitor to move from a profit to a loss, exit a market, enter into a merger or declare bankruptcy (e.g., Netflix vs. Blockbuster, e-books vs. Borders, digital photography vs. Kodak)</td>
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<td>Reduction of at least $100 million in transactions a year in a market (e.g., print newspaper circulation)</td>
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Writing about transformations

- Recommend the following additions and changes to stimulate article
  - A brief review of the literature on selective perception and filtering to support the contention that people will filter their choice of web sites.
  - Some evidence that filtering is actually occurring.
  - An expanded conclusion about the dangers of this trend for democracy and recommendations on how to mitigate it.

- It would rely more on the author’s informed judgment and analysis than typical IS publications.
• How technology is transforming different sectors of the economy:
  • The consumer experience
  • The financial industry
  • Health care
  • Media

• The transformational impact of IT across four very distinct domains.
Customer Experience

• IT is creating four major changes in consumers’ experience.
  • **Consumer informedness**
    ✓ competition discount: has never been higher
    ✓ compromise discount: has never been higher
    ✓ uncertainty discount: has been virtually eliminated
  • **Enhanced choice**
  • **Consumer empowerment**
  • **Consumer frustration**

• The shopping process is different by at least half the steps for the consumer and the vendor.
Policy Question?

- The significant changes engendered in the retail experience by IT raise policy questions for the economy and for regulators.
  - Should firms adopt new strategies and policies to adapt to these changing circumstances?
  - Will consumers force changes in corporate and national policies in future cases?
Financial Markets

- The use experience has moved from making phone calls to a full-service broker to placing electronic orders.

- More than half the steps in the process of managing a portfolio have changed as have the vendors with whom one deals.
Policy Question?

- Can new policies funnel their efforts so that future “Great Recessions” are avoided or their adverse consequences diminished?
- Can policy be reconfigured so that losses will not make a firm “too big to fail”?
- Should the countries establish a National Academy of Information Technology to advise the government on It issues of critical national importance?
• Electronic medical records change at least half the steps in the process of providing health care for both the physician and the patient.

• The costs of technology are forcing physicians to form larger medical organizations to attain scale

• An IT-enabled transformation of health care is just beginning, and it cannot happen too fast
Policy Question?

- What role should government policy have in this transformation?
- What are the issues for public and health policy as HIT advances?
- What approaches are available to be sure that different medical records systems interoperate?
- What are the technical, financial, and organizational impediments that need to be overcome?
Media

- The process of acquiring and listening to recorded music has changed by more than half the steps, altering the user experience by more than two hours in many cases.

- IT has dramatically changed the process of obtaining and enjoying content, for much more than two hours a day for many consumers.
Policy Question?

- Should government policies be enacted to encourage media industries to move in certain directions?

- Does corporate policy play a role in encouraging such entities?

- Should new government policies be considered to ensure that all voices have a chance of being heard?
Summary and Conclusions

• Transformational research could help develop technology policies that would guide some important decisions, and contribute to the benefits.

• They suggest that IS field needs a new online publication to which authors contribute well-written and researched essays.

• Exactly how *IT Policy Letters* could be implemented is an open question that needs to be debated and discussed further.

• The IS field has knowledge of great value to policy makers around the world; the challenge is to make that knowledge accessible to everyone affected by transformational technologies.
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http://www.aesl.nccu.edu.tw

Research Topics: SOA & SSME (service science)