

Information systems innovation in organizations: thinking like a social scientist

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On management

I understand management as the effort of steering organizations, whether business firms or public sector agencies

Management as a field of knowledge has a direct association with professional practice

It is widely seen as providing tools and techniques, guidelines, and problem solving methods

Nevertheless, there is a great deal of research in the management field that strives to understand phenomena related to the steering of organizations, drawing heavily from across the social sciences

I will present an example of such thinking in the area of my scholarly expertise: information systems (IS)

Information Systems

As an academic field,
is concerned with:

how organizations construct new – at least new for them – IT artefacts and information resources, and
how they do their business and change with them

A narrow focus on the IT artefact

- IS innovation as a mix of engineering and project management
 - IS development practiced through methodologies and techniques for the construction and/or implementation of software applications
- The 'impact' of IS innovation predicted on the basis of the physical properties of the technology, e.g.
 - fast data processing will lead to productivity gains,
 - websites of companies in rural regions of developing countries will sell their products across the world

But,

- IT artefacts rarely function on their own, as 'automation'.
- Focusing on artefacts alone and the potential impact of their physical properties without considering the human setting within which they are constructed and put into use is inadequate to produce much understanding of IS innovation.

Some early lessons learnt from problems of narrow technology focus

- Significance of considering the psychological/social needs of people who work with the technology artefacts

(findings of the socio-technical systems research in the 1970s)

- Significance of organizational change capabilities

(findings of the research stream that sought to explain the 'productivity paradox')

Viewing information systems as:

Intertwined

- Technologies (computer and communication hardware, software, databases, search engine algorithms, standards, etc.)
- People
- And organizations

i.e. information systems involve people and are always embedded in organizations and broader social institutions

Broadening of the field to include behavioural and business factors

- Streams of studies in the IS field that identify behavioural factors implicated in the development and take up of IT in organizations (e.g. TAM)
- Research perspectives on IS innovation that associate it with administrative, economic and business analysis (e.g. IT strategizing models, transaction cost analyses of e-business or outsourcing)

Persisting inadequacies, paradoxes, surprises

- IT innovation seen as highly precarious, or 'in crisis'
 - difficulties of IT innovation in important organizations, e.g. the NHS
 - the dot.com crisis in the early 2000s
- Paradoxes
 - increased data crunching and performance indicators do not improve citizens' trust in government services
- Surprises
 - Open source movement, social collaboration of the web 2.0 phenomenon

Exploring fundamental questions

about the nature of information systems in terms of the relationship between technology and society, and about the nature of IS innovation in terms of the relationship between technology construction and socio-economic processes of change

The 'social study of ICT' perspective

- IT innovation is inseparable from organizational change: it is an intertwined process of mutual shaping of organizations and their technology artefacts;
- a crucial part of the shaping of technologies and organizations occurs, not by purposive design and decision making, but by recurrent human activities in the context of an organization

3. technology designs and organizational plans are complemented, and sometimes subverted, by improvisations and tinkering, as human actors make sense of the potential of new technologies, cope with their limitations and failures, create new potential;
4. IT innovation takes place as the interests of multiple actors coalesce, at least temporarily;
5. IT innovation and organizational change unfold amidst the broader institutional dynamics of the historically formed context of an organization – history, culture, collective imagination do matter

Some ongoing tensions

- On the significance of human choice/agency *vis a vis* social structures and the materiality of technology
- On addressing politically and ethically critical issues
(uncovering 'subjugated knowledges', 'objectors', persistent inequalities and losers, risks of worsening the human condition)

Contribution to practice

- Rarely social studies of ICT innovation produce models to guide best practice.
- They inform practitioners and enhance their critical judgement
i.e. their ability to make their own decisions of appropriate courses of action when they face the messiness and uncertainty of their innovation endeavours

Some timely research areas

- how large scale information systems infrastructures are constructed, such as the information systems of the NHS. The potential benefits from such innovation are too important to ignore, but in large scale IT projects things that can go very wrong: financial problems, potential deterioration of resulting services, potential for surveillance and misuse of personal data.
- the emerging phenomena of internet and 'social collaboration'. We hardly understand their unfolding and their interaction with other social processes of change.
- the developmental potential of ICTs, i.e. IT innovation and organizational change in association with the efforts to improve business, government, and broader life conditions in developing countries.