

Some Issues of e-Business Research in the Context of Emerging Technologies

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Contents

1. New moves
2. Some issues
 - Individual behaviors
 - Operations
 - Enabling/supporting technologies

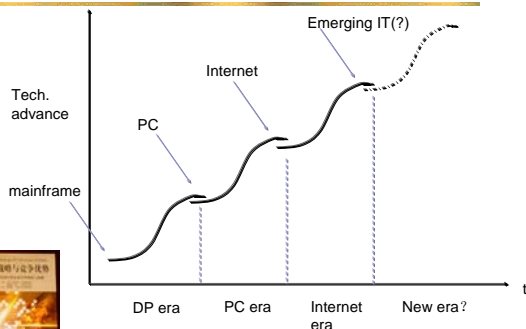
1. New moves

- *IT fusion*
 - *Bring business and technology together*
 - *A characteristic of information age*
 - *Two important aspects*
 - *Technology pervasiveness*
 - *Both necessity/survival and strategic advantage*
 - *Technology transparency*
 - *Inherent in products/services*



- All-IP Enterprise
- Rethinking business models
- Services surrounding products
- Rethinking of "I" in IT

Technology and Era



e-Business development

- e-B: both technical and behavioral
- Locus:



- New features

2. Some issues

- A collaborative effort of research nationwide
 - Tsinghua university
 - Dalian University of Technology
 - Academy of Science
 - Xi'an Jiaotong University
 - Harbin Institute of Technology
- 3 perspectives

Perspectives

Individual

- ◆ participants' behaviors in search and business
- ◆ e-business adoption and diffusion
- ◆ e-business value and service strategies

Operational

- ◆ e-markets
- ◆ business models and operational strategies
- ◆ channel coordination and optimization

Technical

- ◆ platforms and supporting technologies
- ◆ complex data collection and mining
- ◆ e-business security

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Questions

e.g.,

- Behavioral patterns and trust of e-business participants in the context of Chinese culture?
- E-business systems adoption and impact factors?
- Relationship between social factors and e-market efficiency?
- Innovation and evolution of business models in China?
- Dynamic pricing and resource allocation in e-business enterprises?
- Unstructured data collection and mining in mobile and virtual contexts?
- Emotion and natural language expression in personalization?
- E-business security mechanisms and managerial means?
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Examples

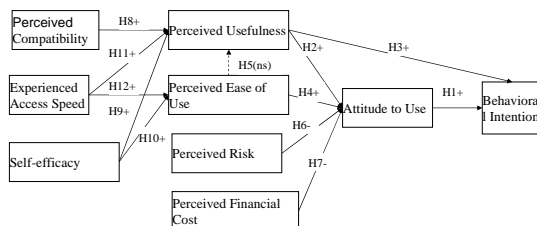
- mobile banking service adoption
- adoption with Chinese culture
- information extraction
- e-business security
- associative classification
- ...

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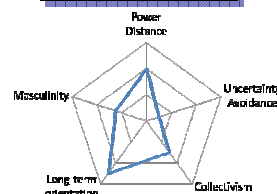
(a) Mobile banking service adoption

Extended Technology Acceptance Model

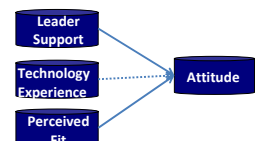


(b) Adoption with a Chinese Cultural Perspective

China in Hofstede's Culture Model



- ◆ Power Distance ↔ Leader Support
- ◆ Uncertainty Avoidance ↔ Technology Experience
- ◆ Long-term orientation ↔ Perceived Fit



(c) Information Extraction

- Web/text search
 - interestingness
 - simplicity
 - compactness
 - relevance
 - information-equivalence
 - ...
- ➔ Wide e-business applications

Search outcome

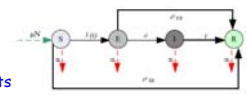
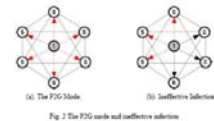
- "compactness"?
 - "information-equivalence"?
- webpages
-
- databases
- Original result
- Compact result

(d) e-Business Security

- Social network (e.g., information sharing)
 - pattern of technology diffusion
 - mode of virus threads
 - ...
- ➔ Virus propagation?
Managerial countermeasures?

Control virus propagation in e-business networks

- network features
 - wired, mobile
 - physical, virtual
- nodes
 - devices, PCs
 - business units, logical
- virus threads
 - propagation pattern
 - state transition
 - affecting and control elements
 - business implications
 - managerial countermeasures
 -



(e) Associative Classification (GARC/GEAR)

- Applications in precise marketing, dynamic grouping, recommendation/personalization systems, ...
 - CBA
 - AR: $X \Rightarrow Y$
 - Special case: classification rule: $X \Rightarrow C$
 - Apriori algorithm
 - Other major approaches: Decision-tree, NN, SVM, ...
 - Measures: understandability, accuracy, efficiency
- ➔ CBA: +: understandability(rule), accuracy
–: rule set (big, redundancy, conflicts)
- ➔ GARC/GEAR

Further Enhancements

- GARCII
 - Class information gain
 - Reduction of rules (23% of GARC) with a comparable accuracy
- GEAR
 - Semantic enrichment (redundancy/conflicts)
 - Reduction of rules (21% of GARCII) with a satisfactory accuracy (in comparison with several major classifiers)

conclusion

- Emerging IT and new era?
- New/intensified e-business features
- E-business research
 - behavioral vs. technical
 - theoretical vs. applied
 - general vs. specific
(World vs. China)

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China Journal of Information Systems

- Gordon Davis
- F. W. McFarlan
- Rick Watson
- K. K. Wei
- M. Myers
- Patrick Chau
- JW Han
- 王众托
- 汪应洛
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Thanks!

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