Exploring the forces of application-sharing technologies upon NVivo: Promoting and supporting adoption

Dan Kaczynski
Linda S. Gilbert
Melissa A. Kelly

Part 1
Crossing the Chasm: How do users of technology approach adoption?

Dr. Linda S. Gilbert

Overview

- Why does this matter?
- Theories of change models
  - General
  - Technology/IS
  - Education
- Implications for QDA software

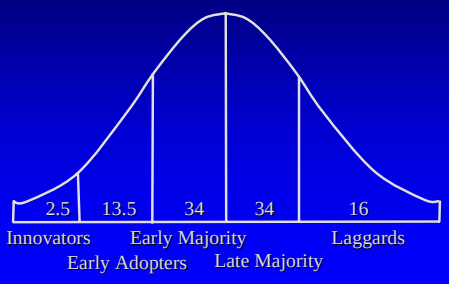
The issue

- Despite long history, QDA still not accepted in "mainstream" qualitative research
  - Teaching sporadic – not integrated into training programs
  - Literature thin
  - Old concerns/arguments lingering
    - "Debate… stuck in the mud of methodological territorialism and conservatism, weighed down by technical incompetence." – Lyn Richards

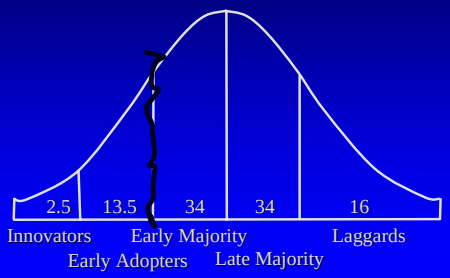
Examining change models

- Rogers (1962, 1995)
- Moore (1991)
- Venkatesh et al. (2003)
- Others…
  - Carr
  - Hall and Hord (CBAM)

Rogers: Diffusion of Innovations



Moore: Crossing the Chasm



Comparing early/late adopters

- EARLY
  - Tech focused
  - Visionary
  - Project-oriented
  - Willing to take risks
  - Willing to experiment
  - Individually self-sufficient
  - Tend to communicate horizontally
- LATE
  - Not tech focused
  - Pragmatic users
  - Process oriented
  - Averse to risks
  - Looking for proven applications
  - May require support
  - Tend to communicate vertically

- Carr (1999)

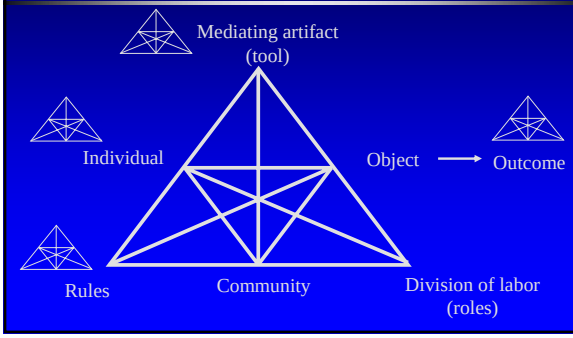
"Perceived attributes" of innovation

- Relative advantage – offers clear advantage over the present or competitors
- Ease of use – not overly complex to learn/use
- Image – perceived to enhance status
- Visibility – can see others using
- Results demonstrability – results can be observed
- Compatibility – Fits into circumstances in which it will be adopted
- Voluntariness of use – free will to use or not
  - Moore and Benbasat (1991, building on Rogers)

Other model attributes of interest

- Macro-level theories vs. Micro-level theories
- Determinist (developer-based) vs. Instrumentalist (adopter-based)
- Change (adoption) as an event vs. change (adoption) as a process
  - Stages of Concern (CBAM)
  - Learning/adoption trajectory (Sherry, 2000)

Activity System



Stages of concern (CBAM)

- 0. Awareness – no concern
- 1. Informational – like to know more
- 2. Personal – how will using it affect me?
- 3. Management – seem to spend all my time…
- 4. Consequence – how is my use affecting___? How can I refine it to have more impact?
- 5. Collaboration – how can I relate what I'm doing to what others are doing?
- 6. Refocusing – I have some ideas about something that would work even better.
  - Hall and Hord

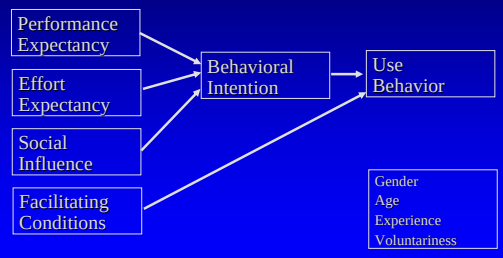
Key ideas from other models

- Non-linearity (Sherry 2000)
  - "Re-affirming/rejecting" stages
- Creativity with software
  - "Co-learning" and "co-exploring" (Sherry 2000) or "invention" (Apple 1991)
- Innovations, esp. tech, not static
- Links between "change" and "learning"

Venkatesh, Morris, Davis and Davis

- Unified Theory of Acceptance and Use of Technology (UTAUT)
- Focused specifically on user acceptance as dependent variable
- Examined 8 models, tested statistically, developed UTAUT, retested
  - Venkatesh, Morris, Davis and Davis (2003)

UTAUT model



Early majority needs

- Recognition and process involvement [social]
- Well-defined purpose or reason [performance]
- Ease of use and low risk of failure [effort/social]
- Vertical support structure to overcome technophobia [conditions]
- Institutional/administrative advocacy and commitment [conditions]
  - Carr (1999)

Enlarging the focus

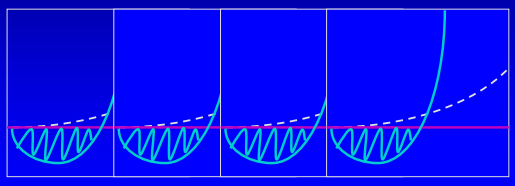
- Adoption as a process, not an event
  - Re-confirmation stages for prior adopters
  - Impact stages: consequence, collaboration
  - "Inventive" stage, only sketched in literature
    - Growth of individual expertise
    - Accumulated insights of community
- What do *early* adopters need as they continue to use the innovation?

Implications

- How to foster individual expertise at various levels?
  - Early majority/initial adoption
  - Early adopter/inventive stages
- How to accumulate insights of community?

Implication for the innovation

- Tool stability/continuity needed to allow time for expertise to develop



- Capturing knowledge improves tool

Implications for building expertise

- Learning Communities
  - Task-based learning community
    - Focus: Product, outcome, task
  - Practice-based learning communities
    - Focus: Movement from novice to expert
  - Knowledge-based learning community
    - Focus: Advance collective knowledge
      - Riel & Polin, 2004

Aspects of Communities

- Membership
- Task features or learning goals
- Participation structures
- Reproduction and growth mechanisms
  - Riel & Polin, 2004

QDA context

- "Inventiveness" has historically been captured through creation of a training/learning community
  - Lyn's networking between users
  - Trainer network, evolving into LC
  - This conference
- Distinct groups needing support
  - Early majority, needing
    - Performance expectations clarified
    - Effort expectations lowered
    - Social support increased
    - Infrastructure support enhanced
  - Adopters past initial level – growing number!

QDA context

- LCs as an answer
  - Horizontal and vertical
- Considerations
  - Geographical constraints
  - Varying levels of expertise
    - WIIFM – especially for advanced users?
  - Participation structures
    - Setting group norms that support work

References

- Carr, V.H. (1999) *Technology Adoption and Diffusion.* United States Air Force Air War College Gateway to Internet Resources. Available at www.au.af.mil/au/awc/awcgate/innovation/adoptiondiffusion.htm. Accessed September 7, 2006
- Hall, G., & Hord, S. (1987). *Change in schools: Facilitating the process.* Albany, NY: State University of New York Press. (ED 332 261)
- Moore, G. A. (1991). *Crossing the chasm: Marketing and selling technology to mainstream customers.* New York: Harper Business.
- Riel, M., & Polin, L. (2004). Learning communities: Common ground and critical differences in designing technical environments. In S. Barab, R. Kling & J. Gray (Eds.), *Designing for Virtual Communities in the Service of Learning.* Cambridge, MA: Cambridge University Press.
- Rogers, E. M. (1995). *Diffusion of innovations* (Fourth ed.). New York: The Free Press.
- Sherry, L., Billing, S., Tavalin, F., & Gibson, D. (2000). New insights on technology adoption in communities of learners. *Society for Information Technology and Teacher Education International Conference: Proceedings of SITE 2000*
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly, 27*(3), 426-478.

Part 2
Utilizing Application-Sharing Technologies in Qualitative Research: Considerations and Implications for Integration

Melissa A. Kelly
Dan Kaczynski

Scenario 1

- On-Line Teaching
  - Knowledge based learning community
  - Building – Transferring - Disseminating

Scenario 2

- Research Evaluation Team
  - Task-based learning community
  - Product-driven reporting

Qualitative Data Analysis Software (QDAS)

- Current adoption status
  - Early majority
  - Late majority
  - Laggards
- Intersecting technologies
  - QDAS and application-sharing

Application-Sharing Technology

- Utility
  - Reach broad and disperse audiences
  - Increase and enhance collaboration
  - Enhance exchange of information
- Leverage
  - Expand QDAS

Technical Considerations: Product Model

Product	Vendor
Centra Live	Saba
Elluminate Live!	Elluminate
Interwise Connect	Interwise
Live Classroom	Horizon Wimba
Live Meeting	Microsoft
Macromedia Breeze	Adobe
Webex Training Center and Meeting Center	WebEx

Technical Considerations: Hosting

- Internal or External Hosting
- Buy or Subscribe
- Factors
  - Usage
  - Cost
  - Infrastructure
  - Security

Technical Considerations: Scope of Usage

- Early Majority
  - Features
  - Benefits
- Late Majority
  - Ease of use

Technical Considerations: User Capabilities

- Internal to User
  - Attitudes and perceptions
  - Experience
- External to User
  - Setup requirements and procedures
  - Hardware requirements and limitations
  - Software requirements and limitations
  - Cross-platform applications
  - Connectivity issues

Promoting Adoption: Application-Sharing

- Minimize impact of discontinuity
- Demonstrate utility
- Address concerns

NVivo and Application-Sharing: Course Delivery

- Advantages
  - Demonstrate use of NVivo
  - Give students control of application
  - Collaboratively review project file
- Challenges
  - Hardware and software limitations
  - Bandwidth and connectivity
  - User proficiency with technology

NVivo and Application-Sharing: Training and Practice

- Advantages
  - Eliminate geographic constraints
  - Extend collaboration and information exchange
- Challenges
  - Hardware and software limitations
  - Bandwidth and connectivity
  - User proficiency with technology

Crossing the Chasm: NVivo and Application-Sharing

- The adoption curve
- Factors promoting or hindering adoption
- Advantages of adoption
- Barriers to adoption
- Consequences of adoption
- Rules or standards applicable to adoption practices

Part 3:

Distance sharing technologies: academics and trainers shaping future mainstream adoption of NVivo

Dr. Dan Kaczynski

FOCUS GROUP DISCUSSION

Questions

1. Where do you perceive the adoption curve at for application sharing technology and NVivo?
2. What are your thoughts regarding Lyn Richards' question - 20 years on; why aren't they using NVivo?
3. Is geographic isolation a major issue in promoting the use of application sharing technology? What are other major factors?
4. What are the potential advantages of adoption?
5. What are the potential barriers to adoption?
6. What are potential consequences to adoption?
7. What rules or standards should apply to adoption practices?