Using Grounded Theory in an interpretive research study

A beginner's guide to using grounded theory to analyse data, and surviving to tell the tale

Gillian Reid

Presentation components

1. Context of research example
2. Why Grounded Theory?
3. Beginning the process
   - Adaptation of GT
4. GT data analysis
   - Open, Selective, Theoretical coding
5. Building the theory
Research Focus

- Explore the issues surrounding delivery of ICT Infrastructure projects, (as opposed to software development projects) from a senior non-ICT executive perspective.
- Determine whether executive perceptions & attitudes help, or hinder, the outcomes of such projects.
- Develop a theory about the reasons for those perceptions & attitudes.
- The theory would be intended to assist executives, ICT project teams, client stakeholders, and ICT project sponsors, to understand what they need to do to address those issues.

Context of this research example

- Organisationally based
- Exploratory
- Inductive theory-building field study
- Responses to inquiry likely to be –
  - Interpretive
  - Subjective
  - Context & role-sensitive
  - Unstructured
  - Rich in content
Background to data analysis & theory generation approach:

- Data capture
  - 15 CEO/GM interviews – 1.5 hrs each
  - 12 to 15 pages of transcription per interview
  - Questions semi-structured, starting with general business background
  - Questions loosely around elements/constructs derived from literature review and own ICT PM experience
  - Body of interviews generated very ‘rich’ data

Why Grounded Theory?

- Inductive approach, but draws on positivist principles
- Provides good coding procedures to analyse captured data
- Comparative analysis heart allows theory development compatible & consistent with (grounded in) original collected evidence
- No literature or theoretical constraints
- Researcher can get immersed in the data
- Theory emerges entirely from constant comparison of patterns in the data
Beginning the analysis process

- Tried to develop codes for, and directly from, lines of the text in each interview
- Got hopelessly bogged down in the sheer mass of data
- Decided to try a “jigsaw” approach as an adaptation of the GT method
- Firstly – split out all the “business” info. on to a separate table
- Abandoned the piecemeal line by line coding attempts, and used a “mixed method” approach to rest of interview data
Continuing the analysis process
(Getting helpful ideas from anywhere I could)

- With each interview, extracted key phrases (chunks of data, sound bites, vignettes, or ‘nuggets’) from the interview transcript, and wrote them on to Post-Its. (Dey 1998, Garvin 2000)
  - About 100 nuggets per interview
- Created early coding “start lists” by putting condensed interview question as the Post-It heading. (Miles & Huberman 1994. p58)
- Clustered Post-Its on Study wall.
More pre-coding work -
(putting the jigsaw together – step 1)

- Dealt with each interview separately
- Regrouped individual Post-Its where appropriate/necessary into different clusters.
- Created new headings for phrases that didn’t fit the first start lists.
- Some “nuggets” moved clusters 2 or 3 times.
- Transferred Post-It contents to Word document under the start list headings

Typical “Nuggets” for Coding
(Company A)

ICT/Business Communications  COMMS

- Even if someone is technically competent, the IT guys treat them as technically incompetent.
- The IT people don’t believe anyone outside the IT dept understands IT.
- IT people probably think we “just haven’t a clue”.
- People in ICT are techos, and these people generally are not very good communicators.
- ICT people just not user friendly. Not customer driven.
- ICT people simply not good communicators.
- Average person in a business unit doesn’t understand the technology – at the level a discussion could be held with the ICT people.
- Technical jargon is a barrier to understanding what is happening.
Open coding

- Went with original GT (G&S 1967) approach
- Assigned ‘formal’ codes to nuggets within these coding clusters.
- Some codes appeared in more than one cluster
- Some nuggets could sit in multiple codes
- No “right” answer to deciding name of code. Choosing one that made sense was the thing, and kept consistent with its meaning to me each time it was used.
- Wrote a list of the codes. Compared each new nugget from subsequent interview transcripts with those on the list and added new codes when an existing one didn’t apply.

Coded Nuggets

- Even if someone is technically competent, the IT guys treat them as technically incompetent.  
  **IT Imperialism**
- The IT people don’t believe anyone outside the IT dept understands IT.  
  **IT Imperialism**
- IT people probably think we “just haven’t a clue”.  
  **IT Insularity**
- People in ICT are techos, and these people generally are not very good communicators.  
  **IT Comms quality**
- ICT people just not user friendly. Not customer driven.  
  **IT Insularity**
- ICT people simply not good communicators.  
  **IT Comms quality**
- Average person in a business unit doesn’t understand the technology – at the level a discussion could be held with the ICT people.  
  **User/IT Interface**
- Technical jargon is a barrier to understanding what is happening.  
  **Jargon Barriers**
Selective Coding — (putting the jigsaw together 2)

- Grouped codes into categories. Sometimes one code appeared in more than one category. New categories created to address this duplication, and the codes moved into them.
- First cut generated 31 categories. These crept up and down as further interviews were coded and new codes and categories appeared/got merged.
- All interviews approached/coded the same way. Any new codes listed and added into most appropriate categories, (or used to create new categories).
- Final 41 low-level categories then ‘rolled up’ into high-level ones.

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<td>ICT/Communications Quality</td>
<td>Infrastructure Challenges</td>
<td>Executiv e Involvement</td>
<td>Org. Leadership &amp; Strategy</td>
<td>ICT Project Skills Sourcing</td>
<td>ICT/I Project Delivery</td>
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<td>ICT Imperialism</td>
<td>Technological Dependence</td>
<td>ICT/I Expertise Concerns</td>
<td>Project Priority Conflicts</td>
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Theoretical Coding (putting the jigsaw together 3)

- Constant comparative analysis showed category relationships developing
- Relationships between the categories were mapped. (A bit like entity relationship modelling)
- Relationships also described as analytic memos (G&S 1967)
- Theoretical concepts & themes emerging
Building the theory - (putting the jigsaw together 3)
- Second deviation from pure GT – not one core category
- Category relationship mapping & analytic memos showed 3 themes emerging
  - Executive perceptions of ICT/I – (Jargon Barriers, ICT/Professional Relationships, Business of ICT/I)
  - Strategic alignment of ICT/I projects – (Tech/org Issues, Executive Engagement Issues, Strategic Issues)
  - ICT/I project outcomes – (Implementation Issues, ICT/I Project Skills Issues, ICT/I Project Success Factors)
- Relationship between themes more complex than could be described by single core category – (like wheel cogs)

Theme to Theme Connections

1. Executive Perceptions of ICT/I
   - Jargon Barriers – ICT Professional Relationships
   - Exec. Engagement Issues

2. Strategic Alignment of ICT/I Projects
   - ICT/I Project Success Factors

3. ICT/I Project Outcomes
The Substantive Theory

- Jargon barriers created by ICT staff generate poor relationships between ICT staff and their executives,
- which in turn causes low levels of executive engagement with their ICT infrastructure projects,
- and consequently affects executive perceptions about the outcomes of these projects.

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Lessons learned

- Being methodical and systematic, rules!
- Separating the “nugget” collection from the Open Coding labelling process cleared a lot of debris out of the way.
- As a “spatial” person, seeing as much of the picture as possible, all the time, very helpful
- Letting the data “speak” to me, took a bit of a mental shift for a process-driven person.
- As a consequence, new concepts emerged, not part of original constructs, which influenced themes & theory development

GT Options

- **Glaser:**
  - Theory should arise naturally with little detailed attention to process
  - Theoretical sampling, constant comparison
  - Open coding, selective coding, theoretical coding
  - Theory generation discovers/uncover the research problem
- **Strauss & Corbin**
  - Retain principles of good science, i.e. replicability, generalisability, precision, significance, verification
  - Open coding, axial coding, selective coding
  - Emphasised theory verification & validation