Rapid Application Development in Small Organizations Part II: Observations, Folklore, and Survey

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Outline

→ Introduction
→ Why do we care?
→ What is a small organization anyway?
→ Folklore vs. survey data
→ 13 Observations and survey results
→ Discussion
Rapid Application Development in Small Organizations Part II: Observations, Folklore, and Survey

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Why do we care? (cont.)

There are a lot of small organizations

- U.S. Bureau of Labor Statistics:

<table>
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<th>Size</th>
<th>1979 Employment</th>
<th>1996 Employment</th>
<th></th>
<th>share</th>
<th>% share</th>
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<td>18,343,810</td>
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<td>97,537,914</td>
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</tbody>
</table>

What is a small organization?

- Difficult to quantify
  - What is “small”?

- Difficult to classify
  - Family businesses
    - sometimes seen large (for e.g. Thompson Publishing)
  - What about franchises?
  - Spin-off's
  - Semi-autonomous parts
RAD in small organizations - a worthy discussion -

- Explore some differences and similarities of RAD between large and small organizations (LO's & SO's)
  - Clearly have many similar goals (main goal: reduce development time)
  - Surprising differences do exist
    - Many due to constraints
    - Some purely cultural
    - Some just "are"
- How? Informal, general, non-technical, interactive discussion (please interrupt!)
- Main goal: raise issues of possible interest to RAD

Why do we care?

- Many incredible success stories!
  - What made them succeed?
    - Can we duplicate / apply in general?
    - What do they have in common?
  - Caution: for every success there are 1000 failures
    - Do not hear much about failures...
  - Main issue: what's effective vs. dumb luck?
How Large is Your Company?

Number of Employees

- 1 - 5: 25%
- 6 - 20: 10%
- 21 - 40: 13%
- 41 - 150: 42%
- 151 - 5000: 3%

Is it minority/female owned?

Women/Minority Owned

- Women: 1%
- Minority: 2%
- No: 98%
What is a small organization? (cont.)

» Three types of SO's:
  1) Small product developers
     - create applications for sale
       - "Everybody's got a great idea"
  2) Small service providers
     - create applications for others
       - Ex. Consulting companies (particularly WWW, ISP's)
  3) Small product vendors
     - Create applications for themselves
       - Ex. Shops (both real and virtual, pay web-site)

» Many are combinations in various proportions
     - Typical example: SBIR Grant Recipients

Folklore vs. Survey Data

» Hard data hard to come by
   - Due to previous considerations
   - What are we interested in anyway?

» Will consider qualitative information from survey
   - Likely biased, sample size may be too small
   - Plenty of exceptions
   - No real point of references
   - It's all we have...

» Observations originally taken from successful RAD projects in "small" (by窍port def.) organizations
   - Some wise, some unwise (often flip-flops)
Is there a particular market focus or industry that you pursue?

Would you classify your company as a product developer, product vendor, or service producer?
What size applications do you typically work on?

Application Size

- Small 15%
- Medium 10%
- Large 25%
- Very large 20%

What is the scope of your typical application?

Application Scope

- SW tools 12%
- Dev 24%
- QA 6%
- SW staff 10%
- Network 15%
- Governance 0%
Observation #2

- Teams are autonomous, self-governing
  - Highly focused on getting results by any means
  - Not concerned with following methodology or common practice
  - Not concerned with reporting
  - "2-stroke" cycle, little evaluation

Observation #3

- Rarely use formal development methodologies
  - Usually leads to poor quality
  - Reputation not as important as innovation
  - Little quality assurance (SQA)
  - Forecasting, cost models non-existent
  - Exception: consulting companies
    - Often "roll their own" domain specific, informal
Observation #1

- SO’s RAD projects use small (usually 3) teams of multi-talented (analysis, design, implementation) individuals of approximately equal skill levels.

Observation #1 (cont.)

- No "guru’s"
  - Rarely more than a few teams
  - Teams work on non-overlapping areas
  - Large organizations tend to have several teams working on highly overlapping areas
Observation #4: Survey Results

Observation #5

- SO's more willing to partner, less willing to contract or out-source.
  - Often not able to contract
  - No problem with "tail wagging the dog" - everyone's a dog or tail
Observation #3: Survey Results

Observation #4

- SO's more willing to incorporate COTS products rather than build most in-house
  - Time to market more important than external dependencies.
  - SO's often do not have contractual restrictions
  - Not concerned about long-term support and maintenance
  - RAD often becomes more of an intense integration effort
Observation #8

- SO's place more focus on organization/domain modeling rather than problem requirements.
  - Surprising? No...
  - SO's often do not have a well established or pre-existing domain knowledge.
  - Important point: Part of the RAD process for an SO is discovering where they fit in!
  - Still, SO's tend to focus much on technical issues

![Modeling Vs. Requirements](image1)

Observation #9

- SO's RAD cycle tends to jump directly into implementation.

![Implementation Vs. Research](image2)
Observation #6

- SO's rarely support or consider legacy systems
  - Unless they are directly part of the application
  - Often, they have no legacy systems
  - More interested in new technologies
    - higher risk -> higher possible gain
    - less established -> easier market entry

Time and cost about equal drivers

- Often constrained on both
- VERY much worth looking at!
  - LO's often willing to spend $$$'s to decrease time
  - Is this wise?
Observation #12

→ SO's RAD very much depend on a few (maybe three) highly skilled people to drive the entire project.

Observation #13

→ Paradoxically, SO's focus more on general purpose applications and systems rather than very specialized.
  - Start general, find niche, focus on that specialization.
Observation #10
- SO's tend to quickly build very specific custom development frameworks and tools to support their RAD efforts.

Observation #11
- SO's must do RAD
  - It's often all they have!
    - Can not survive without rapid production
  - R&D? Forget it!