Driving Software Quality through Formalized Business Analysis

Chicago Software Process Improvement Network

October 7, 2009

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Agenda

- Introductions
- Focus on the topic
- State of Chaos
- What’s a BA?
- Getting Better
Your speakers tonight

- **Carl M. Manello, PMP**
  - Mr. Manello is an experienced senior consultant with over 22 years of line management, program management and operational experience in manufacturing, insurance, retail and non-profit sectors.
  - Focused specifically on assessing, designing and implementing “PMO” solutions for corporations for the last 12 years (including R. R. Donnelley & Sons Company, CNA Insurance, Zurich North American Insurance, Sears Roebuck & Company and Motorola), he has also helped organizations improve their BA capabilities.

- **Jenna Evans**
  - Ms. Evans has over 10 years experience in CMMI-based Process Improvement. She has helped several organizations address competency gaps, including a CMMI assessment for a 10,000-person, international organization within a large IT services corporation. Jenna is currently engaged with a Business Analyst transformation effort for one of the nation’s largest health insurers.
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Creating better requirements reduces rework and defects, which improves efficiency. We can create better requirements by improving our BA functions.

BA skills have been undervalued – the BA is often considered a low-level job entry position that resources “age out” of as they become more skilled.

Many software development organizations have placed an emphasis on improving their methodology, but the detailed processes that guide a resource through Business Analysis often aren’t part of that effort.

Process Improvement training alone isn’t sufficient to produce a good BA
- Skills that define and support the role go beyond typical PI activities
- Organizational change management is also important

If an organization wants to move any development activities off-shore, it is imperative that they have the ability to produce excellent requirements.

The availability of automation tools (for requirements, test activities, etc.) has resulted in a laissez-faire attitude toward the skills required to populate them. Dependence on a tool can be disastrous if the human factor behind it isn’t capable of thinking/doing on their own!
BA Skills are growing ever more critical

- Successful implementations are based on a thorough business analysis of desired outcomes. Insightful business analysis relies on skilled and experienced investigators, whose curiosity drives them to discover the heart of an issue or problem and then participate in devising a solution. In-depth business analysis, at the conclusion of the implementation, leads to a "Wow!" from users of the new system, not an "Oh, that is not what we wanted."...

- ... [I]n the next several years implementation teams will routinely include business analysts who are certified by the International Institute of Business Analysis, because business analysis is fast becoming a profession, not a part-time job. – “5 Traits of a Successful Project” by Michael Vinje, PMP, 14 August 2008, Baselinemag.com, Ziff Dave Enterprise Holdings, Inc.
What’s so hard about writing requirements?

- Exercise
  - I will pick one word. Each of you will think about what that word means

- Dog

- Discuss interpretations

So many variations/interpretations from one word...imagine what happens with a whole requirements document!!
I know that you believe that you understand what you think I said, but I am not sure you realize that what you heard is not what I meant.

Don’t leave it up for interpretation! Document each requirement!
Getting to “Good” takes a new perspective

- An approach to getting better requirements:
  - calls for a broad view of the business opportunity or challenge
  - makes BA’s need to think end-to-end as we examine process/systems
  - demands that BA’s become Big Picture people
Quick Discussion

- How many of you have dedicated BAs in your organization?

- How many Business Analyst are there in those organizations?
  - By count?
  - By percent of the delivery organization?

- How many formally trained or IIBA certified BAs?

- How many have a network (formal or informal) to support their success?
  - Like the Project Management Institute
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IT Project failure rates are going up!

- 32 percent of IT projects were considered successful, having been completed on time, on budget and with the required features and functions.
- 24 percent of IT projects were considered failures, having been cancelled before they were completed, or having been delivered but never used.
- 44 percent were considered challenged: They were finished late, over budget, or with fewer than the required features and functions.
Standard IT Project Problem Areas

Causes of Challenged Projects

- Technology Issues 11%
- Project Management Issues 29%
- Specification/Requirement Problems** 37%
- Other 23%

Projects that are late, over budget and fail to meet expectations

** Typical specification problems: Lack of user involvement, incomplete requirements and specification, changing requirements and specification

*** Includes cost of recall, repair and redeployment

Cost to repair specification errors by phase of detection

- Specification
- Design
- Implementation
- Rollout***

[Cost values: 1x, 3-5x, 10-20x, 50-100x]

Source: Standish Group; Leffingwell, Widrig; BTO IT Management Group

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As Process Improvement Professionals... you already know

How you improve success and quality?

- Identify the problems and where they begin (root cause analysis)
- Develop a plan to fix the problems
- Implement the “fixes”
  - New processes
  - New tools
  - New skills
  - Training & Mentoring on all of the above
How to Address Standard IT Project Problem Areas

How many of you have launched corrective activities in the area of Requirements?

☐ Gathering
☐ Documentation
☐ Review & approval
☐ Traceability
☐ Management

- Why doesn’t process improvement alone fix these things?
  - A PI focus can help us improve delivery, but only if the **appropriate skills exist**
  - We need to address the resources responsible – **NOT just the processes**

- We start by going “back to the basics” of Business Analysis

BA’s *should* focus on the “what needs to happen” to support the business user and not on “how it needs to happen”
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What Business Analysis is...

- Business Analysis bridges the gap between IT and “The Business”
  - A Business Analyst understands users’ business needs using their culture and language, and conveys to technicians the right information to build solutions for those needs

- Activities include
  - Requirements elicitation, development and management
  - Process modeling
  - Data modeling

- Requirements are the major contribution of a BA
  - A requirement is:
    - A capability that a system must deliver
    - What the system must do to satisfy the user’s needs
    - A desired end goal or result
    - Success criteria or other measurable indications of quality
What Business Analysis is NOT...

- Business analysts do *not* need to be experts at computer systems
  - BAs do not need to know which module, program or master file our requirements will impact (although it can be useful to know this)

- Activities that are *not* typically BA related
  - System architecture or modeling
  - Logical design
  - Program design
  - Project manager

Business Analysis is *not accepting the first response* you get when you ask the user, “what do you want?”
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How do we get good requirements?

Improve the skills, processes and tools of the BAs who create the requirements

- **Skills** (some can be taught – others should be looked for in hiring BAs)
  - Written & Oral communication
  - Analytical
  - Logical
  - Facilitation skills

- **Processes** – the details within methodology guidelines
  - Basic steps defining how to elicit, document, review/approve and manage requirements

- **Tools**
  - Process Flows
  - Requirement documentation/management software (Quality Center, ReqPro, etc.)
  - Content management / configuration management

There is no formula to writing excellent requirements.
It is largely a matter of experience.
How do we get Good BAs?

- Establish formal BA skills required
  - Set the expectations that your BAs must have these skills
  - Hold BAs accountable for addressing any skills gaps
  - Encourage BAs to pursue certification through the IIBA

- Ensure that the SDLC, methodology, organizational processes and controls support the BA role
  - Process Improvement has its place, but make sure it takes into account the distinction of BA responsibilities

- Offer appropriate training opportunities
  - Tailored, in-house sessions
  - Vendor offered training

- Provide coaching and mentoring from experienced BAs

- Organizational Change Is KEY
  - Set expectations of formal BA skills
  - Hold BAs accountable for formal BA skills
  - Ensure that the SDLC / methodology / organizational processes and controls support the BA role (PI is great, but make sure that it takes into account the distinction of BA responsibilities)

Requirements are only as good as the BAs who create them
Industry needs to expand it’s focus beyond the Project Manager

- Given the high rate of project failure (68%), it is critical that we apply the same attention to Business Analysis -- where 37% of faults are -- as we have to other project areas

- Establishing Business Analysis as a disciplined, controlled process will help to lay a firm foundation for later project work
Consider putting a program in place to improve your PEOPLE as well as your processes.

In addition to process and methods changes, provide:

- **Training**
  - Access to IIBA or other formal training programs
  - Develop in-house material to support your companies processes and methods
  - Tie personal development and education to annual goals

- **Coaching Support**
  - Utilize your organizational structures
  - Leverage external specialists
  - Enable cross-fertilization between teams

- **Business Analyst Position Definition**
  - Not a “hobby job” or just for entry level
  - Define capabilities and skills...not just job descriptions
Practical next steps

- A final word on Formal Business Analysis
  - More than half of all projects fail or are challenged
  - Poor requirements caused failure in 37% of those projects
  - The main responsibility of Business Analysts is to develop and maintain requirements

  - So if we turn our focus to Business Analysis, we have the potential to SIGNIFICANTLY improve our project success rate and quality!

- How do I implement Formal Business Analysis in my organization?
  - Below are some basic steps you can take to evaluate your current BA Program and make changes that will drive more successful projects.

  ![Diagram of the six steps: Define Desired State, Assess Current State, Identify Gaps, Determine Focus Areas, Develop & Deploy Solution, Measure & Record Progress]

  - Define Desired State
  - Assess Current State
  - Identify Gaps
  - Determine Focus Areas
  - Develop & Deploy Solution
  - Measure & Record Progress

  • New Processes
  • New Tools
  • Training
  • Mentoring & Coaching
What questions do you have?
Appendix

REMOVE BEFORE PRESENTATION
Building quality into our processes/systems takes good requirements

- Good requirements need to be testable
- Testable requirements have the following attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correct</td>
<td>Technically and legally possible</td>
</tr>
<tr>
<td>Complete</td>
<td>Express a whole idea or statement</td>
</tr>
<tr>
<td>Clear</td>
<td>Unambiguous and not subject to interpretation*</td>
</tr>
<tr>
<td>Consistent</td>
<td>Not in conflict with other requirements</td>
</tr>
<tr>
<td>Testable</td>
<td>It can be determined that the requirement was implemented</td>
</tr>
<tr>
<td>Traceable</td>
<td>Uniquely identifiable and can be tracked</td>
</tr>
<tr>
<td>Feasible</td>
<td>Can be accomplished within cost and schedule</td>
</tr>
<tr>
<td>Specific</td>
<td>Detailed and unambiguous</td>
</tr>
</tbody>
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* Exercise on next page
Business Analysis Considerations

- Think of existing processes *(as-is)*
  - Workflows
  - Interactions
  - Data

- Envision the future environment *(to-be)*
  - Workflows
  - Interactions
  - Data

- Define the future environment
  - Who
  - What
  - Where
  - When
  - Why
  - *NOT How*
We must confirm that the software product, as provided (or as it will be provided), will fulfill its intended use.
Chaos Report Summary Graphs I found (thru 2009) showing project failure %s

Standish Group – CHAOS Summary

- 1994: 16% Succeeded, 31% Challenged, 53% Failed
- 1996: 26% Succeeded, 28% Challenged, 46% Failed
- 1998: 28% Succeeded, 23% Challenged, 49% Failed
- 2000: 34% Succeeded, 34% Challenged, 31% Failed
- 2002: 32% Succeeded, 34% Challenged, 29% Failed
- 2004: 32% Succeeded, 29% Challenged, 53% Failed
- 2009: 44% Succeeded, 32% Challenged, 24% Failed
June 18, 2009 (CIO) Recession-related IT budget slashing and layoffs are taking their toll on IT project success rates, according to the results of the latest CHAOS Summary 2009 report from The Standish Group.

The Boston, Mass.-based IT project management research and consulting firm surveyed 400 organizations and found a decrease in IT project success rates and an increase in IT project failure rates during the past two years.

http://www.computerworld.com/s/article/print/9134547/Recession_Causes_Rising_IT_Project_Failure_Rates?taxonomyName=Project+Management&taxonomyId=73

What’s the Purpose of Business Analysis?

A business analyst helps achieve the following:

- **Documented requirements**
  - Being able to define the application in a way that meets the end-users’ needs (remember, the customer doesn’t always know how to say what they really mean!)
  - Delivering a complete set of clear business/functional requirements to the technical team
  - Prioritizing requirements (“must have” vs. “nice to have”)

- **Solutions**
  - Understanding the customer and the business needs helps the BA identify opportunities to offer improvements

- **Timely Delivery**
  - Effective requirements definition and requirements management help to reduce rework, speed development, and can lead to dramatic time and cost savings

- **Efficiency by Reducing Rework**
  - If we follow the process and use the tools, we’re more likely to “get it right the first time” and reduce rework