Big Bang Agile Roll-out

Cerner’s Journey from Pilot to Mass Adoption

Matt Anderson, PMP

Director, Program Management
Objectives

- Provide strategies for doing a Big Bang Agile roll-out
  - Provide foundation for a successful plan
  - Help avoid potential pitfalls
  - Create a sustainable model
Cerner Corporation

- **Started in 1979, based in Kansas City, MO**
- **Leading global supplier of healthcare solutions, healthcare devices and related services**
  - Focus on creating a safer and more efficient healthcare system
  - Key solutions include:
    - *Computerized Physician Order Entry (CPOE)*
    - *Electronic Medical Records (EMR)*
    - *Personal Health Records (PHR)*
- **Clients in 25 countries serving more than 9000 unique facilities**
  - Hospitals
  - Physician Practices
  - Retail Pharmacies
- **NASDAQ – CERN**
  - $1.8B revenues in 2010
Cerner Development Profile

- **8 Global Development offices**
  - England, Ireland, France, Germany, India, US (MO, VA, CA)
  - Majority of development in Kansas City, MO and Bangalore, India

- **70+ unique solutions**
  - 1600+ associates on development teams

- **Core technologies**
  - Java, C++, C#, VB6, JavaScript
  - Oracle
  - AIX, Linux, Windows Server
Cerner’s Challenges to Agile

- FDA regulated
  - Had to prove we could be Agile and meet compliance
  - FDA, CE Mark, ISO guidelines perceived as very waterfall centric

- Culture change
  - Command and control style – just get it done

- Development Ecosystems
  - Some legacy code still on Visual Studio 6 so difficult to fully
Why Agile?

**Business**

- **Speed to Market**
  - *Major innovations took an average of 30 months from concept to client adoption*
  - *Retain market leadership*
- **Return on Investment**
  - *Too many projects adopted at only a small subset of client base – “Shelfware”*
- **Improve Quality**
  - *Develop the Right Solution*
  - *Develop the Solution Right*
- **Support “Edge” teams**
  - *Core solutions released together, but “edge” teams unnecessarily held up by inflexible methodology*
Grassroots Movement

- **September 2008**
  - Several teams express frustration with rigid process
    - *Cerner culture is “kill a snake”, so alternatives sought*
  - Recommendations to “look into agile” as a possibility from a couple engineers
    - *General feeling was that due to FDA regulation, it could not happen*

- **Q4 2008**
  - Small group of teams begin discussions to start unofficial agile pilots

- **January 2009**
  - 5 teams kick-off pilots with minimal support
  - Group meets together weekly to discuss progress and share ideas

- **April 2009**
  - Development executives hear about pilots and are exposed to the positive results
Top Down Support

- **July 2009**
  - CEO Neal Patterson states intention to “Blow up the Waterfall” to entire company
    - Based on positive results of pilots

- **Q3-Q4 2009**
  - Pilot program expanded to 8 teams and several key initiatives to determine if it could scale
  - High executive visibility
  - Tooling pilots to plan for scale
  - Education provider pilots held
  - FDA and other regulatory impacts mitigated

- **Jan 2010**
  - Key business leaders trained in Agile principles

- **March 2010**
  - Plan and budget presented for a planned incremental training and coaching roll-out
  - After reviewing options, decision from VP of Engineering to go big bang instead of incremental – “Go fast”
  - Back to the planning board
Big Bang Plan Elements

- Agile Center of Excellence
- Education and Coaching
- Development Process
- Tooling
  - Ecosystem
  - Metrics
- Manage Expectations
  - Engineering
  - Rest of Cerner
  - Clients
Agile Center of Excellence

- Created a virtual center for “all things agile”
  - Web 2.0 technologies
  - One stop shop for Agile questions, coaching requests and general information
  - Accountable for Agile success

- Named “Agile Champions” from pilot teams
  - Training
  - Coaching
  - Community participation

- Manage vendor relationships and budget
2010 Agile Training/Coaching Plan

Real-time learning with team’s actual projects, goals, and members

Agile Essentials Session / Recording (2 hrs)

Agile Boot Camp (2.5 days)

Agile Coaching (1-2 hrs)

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Agile Center of Excellence available throughout

- Train the Trainer model with 50% External / 50% Internal; KC and India
Cerner 2010 Agile Timeline

- 27-Jan-10: ABU Leadership Trained
- 1-Mar-10 - 30-Jun-10: H1 2010 Investment Period
  - 26-Apr-10 - 10-Sep-10: Agile Boot Camp
  - 28-Apr-10: Agile Essentials Recorded
  - Agile Center of Excellence Launched
- 1-Jul-10 - 31-Dec-10: H2 2010 Investment Period
  - 4-Jun-10: ABU, IP Dev and RevWorks Agile Training Complete
Development Process Update Plan

- **Major overhaul to support Agile**
  - Worked closely with FDA, ISO and other regulatory groups to reinterpret regulations from an Agile mindset
  - Determined where “additional process” would be required from Agile applications in other industries

- **Audits**
  - Initial internal audits performed on pilot teams to find potential gaps
  - Early roll-out of planned changes (March 2010)
  - Follow-up internal audit of pilot teams prior to official launch

- **Official launch July 1, 2010**
Tooling

- **Ecosystem**
  - Defined approved tools and guidelines for new tooling
  - Created education and “brown bag” discussions to promote appropriate usage

- **Metrics**
  - Set expectations that they would significantly change
  - Eliminated most existing metrics in favor of a few key metrics
Setting Expectations

■ Create training materials for each audience
  • Development and Business executives
  • C-level Executives
  • Clients

■ Tailor Agile message to support their goals
  • Follow-up with results to maintain trust
Establish, maintain and communicate vision
Enable and trust teams to deliver
  • Empower and inspire Agile Business Unit teams
Provide ongoing solution input and direction ahead of iteration planning
Prioritize, Adapt and Embrace
Servant Leader
Remove Obstacles
  • Identified by the teams
  • Obstacles not seen by the teams
  • Protect the high performing teams
Measure what is needed
Cerner Adoption Measurements

- Training Records
- Coaching Assessments
- Quarterly Team Assessment
  - Baseline at Boot Camp
- Measurement of Success Criteria
  - Speed to Market
  - Client Adoption
- Team Performance
  - Delivery against commitments
  - Client Demos
- Lead Time
  - Time from Investment to Adoption
Slide for Clients – Success Measures

- **Value & Experience**
  - Client Interest
  - Client benefits quantification
  - User Experience & Usability

- **Client Adoption**
  - Time to put major release into production
  - Time to activate capabilities into production

- **Solution Quality**
  - Client Found Defects
  - Ratio Client Found vs Release Validation Defects
Engage with Cerner ABUs regularly to provide feedback

As a Development Partner...

- Work with the ABU and Development teams to create prioritized list of Capabilities
- Attend client demos at the end of each development iteration
- Provide regular feedback on progress and ensure proper priority
- Test Capabilities and take them live as soon as they are available
Keys to Cerner’s Success

- **Strong Grassroots and Top Down support**
  - Engineering momentum
  - Vision and Funding

- **Connected to key associates within organization early in the process**
  - “Mavens” – Distinguished Engineers, PMO
  - “Connectors” – key pilot teams, PMO
  - Associates with high trust within organization

- **Leveraged current culture to change future culture**
  - Build on the past, don’t throw it “under the bus”

- **Excellent Training Partner**

- **Business driven implementation**
  - Agile to “win the game” not just to be Agile
Drawbacks from Big Bang

**Coaching post training**
- Large scale enabled only 3 visits per team and some teams fell into less than optimal practices
  - *Some teams “adapted” before “adopting” so they are not consistently getting the results*
  - *Some key items to Agile have lower adoption*  
    - Burndown charts  
    - Physical tasks board (favor electronic tooling instead)

**Hiding behind the tool**
- Agile team adoption limited by tool selection

**If we did it again, what would we change**
- Try and get full-time Agile Champions at least for a quarter to improve coaching
- Less emphasis on electronic tooling early in team adoption