Big Bang Agile Roll-out

Cerner's Journey from Pilot to Mass Adoption

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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

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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

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Migration to Agile

Cerner's Journey

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"
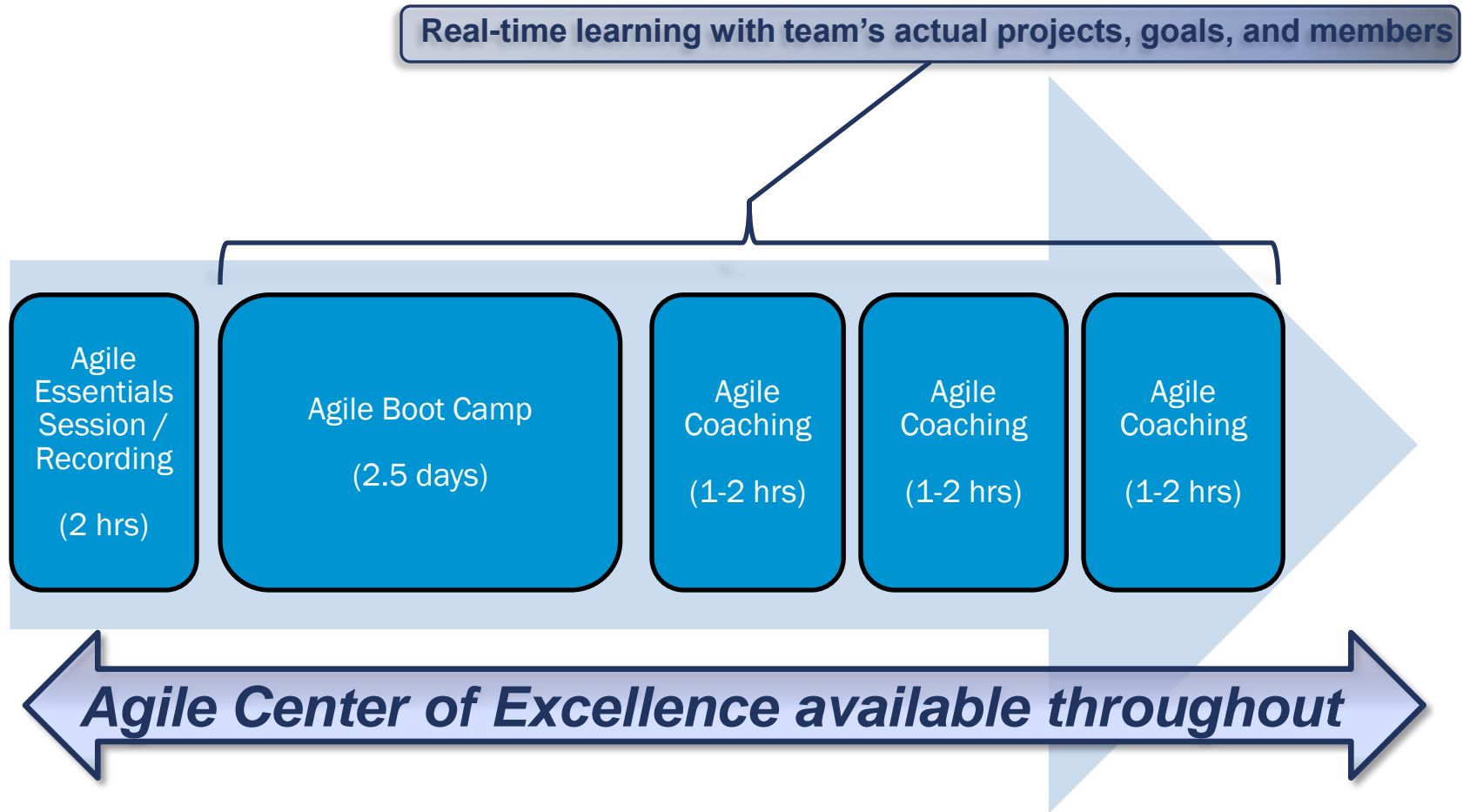 - Back to the planning board

Big Bang Plan Elements

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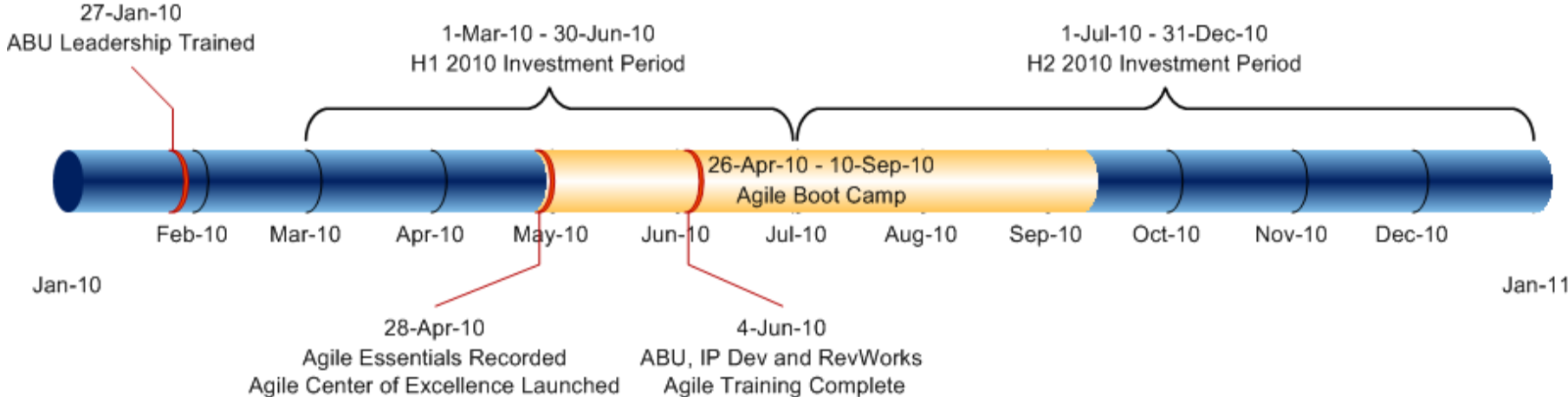 - Clients

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**

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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) | Agile Coaching (1-2 hrs) | Agile Coaching (1-2 hrs) |

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

1-Jul-10 - 31-Dec-10
H2 2010 Investment Period

26-Apr-10 - 10-Sep-10
Agile Boot Camp

Jan-10 Feb-10 Mar-10 Apr-10 May-10 Jun-10 Jul-10 Aug-10 Sep-10 Oct-10 Nov-10 Dec-10 Jan-11

28-Apr-10
Agile Essentials Recorded
Agile Center of Excellence Launched

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**

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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

Slide for Executives –
Agile Executive

- **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**

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Slide for C-Level Execs – 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

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Slide for Clients –
Key Client Responsibilities

- **Engage with Cerner ABUs regularly to provide feedback**

- **As a Development Partner…**
  - Work with the ABU and Development teams to create prioritized list of Capabilites
  - 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

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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

Additional Topics

Questions and Answers