Development Lifecycles for Web sites

Thomas J. McCabe
Software Life Cycles for e-commerce businesses

Thomas McCabe
McCabe Technologies
tom@mccabetech.com
5501 Twin Knowls Rd
Columbia Md 21045
301 596 4207
Web Swirl

- Swirl … a whirling confusion of rapid and steady mix of business and software changes
- Speed, quality, and vision are the keys
- Winner takes all, no 2nd place
Outline

- Web age continuous delivery
- Leveraging technologies
- Business Intelligence
- Management Metrics
- McCabe metrics
- Testing
The Requests Swirl

- Adds
- News
- Links
- New interface
- Reengineering
- C to Java
- XML
- Audio in interface
- Data Base
- E-commerce
- business rules
Speed

- To market
- To new technology
- Of integration
- Of outsourcing
- To fix – of maintenance
- To competitive advantage

- Enablement with quality
The Projects Swirl

- New Links
- Adds
- Data Interface
- XMLElement to Java
- Reengineering
- E-commerce Business Rules
The Products Swirl

Adds
News
Links
New interface
Reengineering
XML
Audio in interface
E-commerce
Data Base
business rules
C to Java
Process Swirl

- Different life cycles – pick the one that fits
  - Development and maintenance LC’s
- Groupware assisted
- Defined yet collaborative
- All records are cross referenceable
- All in one portal
Map the change

Risk, Criticality of change

Complexity of change

- Low
- High

lifecycle - months
new eCommerce business engine

lifecycle - days
change to eCommerce purchasing rules

lifecycle - hours
web content change

volume ... unreal demand

time ... e-speed required

quality ... right first time!
Fit the life cycle

- **Risk, Criticality of change**
  - Low
  - High

- **Complexity of change**
  - Low
  - High

- **lifecycle - hours**
  - simple request form, many sections

- **lifecycle - days**
  - enhancements, tests, defects

- **lifecycle - months**
  - charter, requirements, plans, releases, issues, designs, risks, reports, metrics, standards, tests, configurations, etc.

... add collaboration and process to match risk and complexity
Size the tools

**Request Manager**
- make requests
- evaluate versus business priority
- assign the work to a queue

**Product Manager**
- implement in a lifecycle of hours

**Project and Product Manager**
- implement in a lifecycle of days

**Process Manager & Collaborator**
- implement in a lifecycle of months

add process and collaboration as complexity and risk rises
Other Concurrent Swirls

Integration
Delivery
Fixing errors
Testing technology
Dispersed team
Dispersed tools
Old Project management

- Every project a new start
- Different tools – non interfaced
- Project management by command and control
- Project management and software tools don’t talk
- Standards have no consistent application
- Didn’t include software management
Brave New World

- Collaborative vs. authoritarian
- Not by command and control
- Everybody see’s it
- Shared publicly – across companies and organizations
- One firewall, one style, one place
- Continuity from project to project
- Emphasis on speed and simplicity
- Uniformity of standards and metrics
collaborative environment

workflow
document management
discussion databases
Outlining documents
integration with calendars / schedules
index of projects, processes, products, systems, etc.
web, e-mail integration
publication, reporting, metrics
every document is a part of a relational database
etc.
# Request Management

<table>
<thead>
<tr>
<th>Request/Issue Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capture and track requests</td>
</tr>
<tr>
<td>Manage work queue</td>
</tr>
<tr>
<td>Manage/deal with requests through workflow</td>
</tr>
<tr>
<td>Escalate requests to; requirements enhancements; defects, etc.</td>
</tr>
</tbody>
</table>
# product management

define / manage requirements and changes  
create and run tests  
manage reviews and defects  
measure all progress

<table>
<thead>
<tr>
<th>general project deliverables</th>
<th>specify</th>
<th>build</th>
<th>test</th>
<th>evaluate</th>
<th>measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>requirements</td>
<td>code control capability</td>
<td>test plans</td>
<td></td>
<td>reviews</td>
<td>metrics -standard -defined</td>
</tr>
<tr>
<td>design objects</td>
<td>software building tools</td>
<td>test objectives</td>
<td></td>
<td>inspections</td>
<td></td>
</tr>
<tr>
<td>build/release -plans -reports</td>
<td></td>
<td>test scripts procedures use cases</td>
<td>defects -pre ship -post ship</td>
<td></td>
<td></td>
</tr>
<tr>
<td>enhancements</td>
<td></td>
<td>test runs</td>
<td></td>
<td>test reports</td>
<td></td>
</tr>
</tbody>
</table>
**Project Management**

define, plan and track projects
manage project deliverables

<table>
<thead>
<tr>
<th>General project phases</th>
<th>General project deliverables</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Project Definition</strong></td>
<td></td>
</tr>
<tr>
<td>- project statements</td>
<td></td>
</tr>
<tr>
<td>- goals</td>
<td></td>
</tr>
<tr>
<td>- scope</td>
<td></td>
</tr>
<tr>
<td>- business case (go/no go)</td>
<td></td>
</tr>
<tr>
<td>- roles/groups</td>
<td></td>
</tr>
<tr>
<td><strong>Project Planning</strong></td>
<td></td>
</tr>
<tr>
<td>- project plans</td>
<td></td>
</tr>
<tr>
<td>- phases / tasks</td>
<td></td>
</tr>
<tr>
<td>- commitments</td>
<td></td>
</tr>
<tr>
<td>- critical resources</td>
<td></td>
</tr>
<tr>
<td>- estimates</td>
<td></td>
</tr>
<tr>
<td><strong>Project Tracking</strong></td>
<td></td>
</tr>
<tr>
<td>- reports</td>
<td></td>
</tr>
<tr>
<td>- evaluations</td>
<td></td>
</tr>
<tr>
<td>- meetings</td>
<td></td>
</tr>
<tr>
<td>- metrics</td>
<td></td>
</tr>
<tr>
<td>- issues</td>
<td></td>
</tr>
<tr>
<td>- risks</td>
<td></td>
</tr>
</tbody>
</table>

- manage project deliverables
- create projects from external sources
- integrate with ms project scheduling tool
# Process Management

- Define, maintain process assets
- Relate processes to standards
- Manage process deliverables
- Change and improve processes
- Manage people skills, training

<table>
<thead>
<tr>
<th>standards</th>
<th>policy</th>
<th>process</th>
<th>procedure/guideline</th>
<th>template</th>
<th>lifecycle, phases, tasks</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEI-CMM (SW, SA, people, cmmi)</td>
<td>-forms</td>
<td>-forms</td>
<td>-forms</td>
<td>forms</td>
<td>-forms</td>
</tr>
<tr>
<td>ISO 9000</td>
<td>-examples</td>
<td>-examples</td>
<td>-examples</td>
<td>examples</td>
<td>-examples</td>
</tr>
<tr>
<td>SPMN 16</td>
<td>-document control</td>
<td>-document control</td>
<td>-document control</td>
<td>document control</td>
<td>document control</td>
</tr>
<tr>
<td>Point Plan</td>
<td>-workflow (review &amp; approval)</td>
<td>-workflow (review &amp; approval)</td>
<td>-workflow (review &amp; approval)</td>
<td>workflow (review &amp; approval)</td>
<td>workflow (review &amp; approval)</td>
</tr>
<tr>
<td>PMBOK</td>
<td>-change requests</td>
<td>-change requests</td>
<td>-change requests</td>
<td>change requests</td>
<td>change requests</td>
</tr>
<tr>
<td>IEEE</td>
<td>-links to standard(s) coverage for analysis</td>
<td>-links to standard(s) coverage for analysis</td>
<td>-links to standard(s) coverage for analysis</td>
<td>links to standard(s) coverage for analysis</td>
<td>links to standard(s) coverage for analysis</td>
</tr>
</tbody>
</table>
Software Management - “Just Enough”

Add more process, controls, management, collaboration, etc. until “just enough” but no more !!!
Sample Metrics- View and Count by:

- **Errors**
  - By product
  - By phase
    - By cause
    - By severity

- **Requirements**
  - By Tests
    - By run
    - By pass
    - By fail
Relationship to McCabe Metrics

- Prior -- McCabe and Assoc. --- the code
- Now – the management
Business Intelligence Swirl

- The web front door of our business
- What are the customers requesting
- Affinity analysis
- The operational profile as BI
- Predicting the order pipeline from:
  - Requests management – relational cross referencing
  - Modeling the click history of orders
The Testing Swirl

- Catastrophe testing
- Security testing
- Integration testing
- Operational profiling
- Load testing
- Acceptance testing
- Regression testing
References

- Aimware             www.aimware.com
- eProject            www.eproject.com
- Inovie Software     www.inovie.com
- Primavera Systems   www.primavera.com
- WebProject          www.wproj.com
- Netmosphere         www.netmosphere.com
Software Life Cycles for e-commerce businesses

Thomas McCabe
McCabe Technologies

tom@mccabetech.com
5501 Twin Knowls Rd
Columbia Md 21045
301 596 4207
Friday 8 December 2000

Keynote 1

Development Lifecycles for Web sites

Thomas J. McCabe

Thomas J. McCabe, founder of McCabe & Associates in Columbia, Maryland, is internationally known for his development of software metrics and his leadership in developing methodology and automation that foster the continued improvement of quality in software development, testing and maintenance. In 1998 he sold his business to venture capitalists and made the transition from scientist to entrepreneur. In 1999 he was appointed to lead the Washington DC chapter of the Chief Executive Officers (CEO) Club, a group consisting of founders and entrepreneurs. Additionally he chairs a group of Mentors, this group consists of CEOs who have built, run and sold companies and are in pursuit of their next challenge. Tom also actively speaks across the country on software development as well as on entrepreneurship. His newly formed company is McCabe Technologies.

Tom McCabe was the 1998 recipient of the fourth international Stevens Award and presented the Stevens Lecture on Software Development Methods on March 10th in Florence, Italy. He also testified before congress in the hearing entitled, “Year 2000: Biggest Problems and Proposed Solutions” in June of 1998. CNN Headline News aired a segment featuring Tom McCabe where he was interviewed on the Year 2000 in 1998.