

MONETICAL

Identifying and Sharing Best Practices for Implementing Configuration Management

Robin Fawcett - Monetical Ltd
www.monetical.com

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Introduction MONETICAL

- My Recent Background
 - My current job, developing process improvement and root cause analysis products
 - My previous job, managing Configuration Management, development tools and processes
- Review why a new CM system and processes were introduced, combined experience from both roles
- The underlying needs and justification
- Applying past experience to new projects

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Background MONETICAL

- 8+ Independent project teams developing loosely coupled products
- Different technology and tools
- Project specific variations of largely undocumented processes based on "V model" with some Agile techniques too
- Common pain points and project specific implementations of (what should be) project independent components

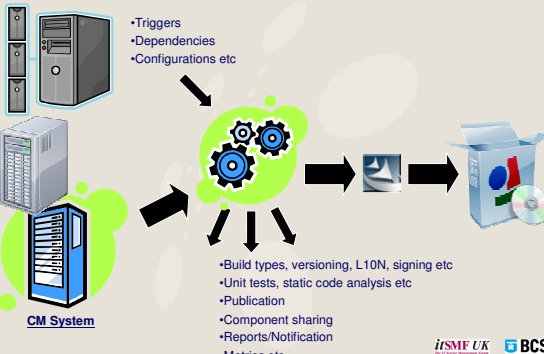
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Initial Objective MONETICAL

- Improve effectiveness of product builds
 - Build process is a strategic factor in ensuring overall product quality
 - Must be reproducible and automated at each step
 - Provide traceability, notification and reporting
 - Avoid weeks of build system maintenance each team makes per release
 - Avoid dependency on one member of the project to fix broken builds
- Adopt a common build system
 - Benefit from standardisation and support

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Builds are ... MONETICAL



Triggers
Dependencies
Configurations etc

CM System


- Build types, versioning, L10N, signing etc
- Unit tests, static code analysis etc
- Publication
- Component sharing
- Reports/Notification
- Metrics etc

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Fact Finding - Immediate Issues MONETICAL


- Configuration Identification – inconsistent use of versioning and naming conventions
- Configuration Management – multiple repositories and CM systems copies of “shared code”
- Configuration Status Accounting – lots of detective work
- Configuration Audit – reliant upon updating file headers and timestamps

Meeting our goal required improving CM process

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CM Requirement Gathering MONETICAL

- Ownership
 - Executive sponsor
 - Establish new role of CM engineer to lead the project
- Gain buy-in and avoid barriers to adoption
 1. Working group - representation from different functions and teams, stakeholders and practitioners
 2. Better understand the current situation
 3. Define and agree goals, common understanding of how and why, not just what
 4. Make more informed decisions, know when and where to make trade-offs





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Inputs MONETICAL

- Past projects “lessons learned”
- Views from the coal face, understand:
 - What we currently do and the rationale for doing so
 - Current barriers to what we want to do
- Senior management input on business requirements for Engineering
 - Greater organisational flexibility and distributed development
 - More flexible release process (parallel development)

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Understanding the problem MONETICAL

Plan		Inference Analysis
Execute		Scenario Analysis
Release		Performance Analysis
Support		Cost of quality Analysis

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Why? MONETICAL

- Understanding current processes
 - What works well?
 - What restrictions and difficulties are there?
 - What do we want to do?
- Understand the rationale to provide informed input
- Each requirement must have a use case
 - Unless the use case was agreed (WIBNI), requirement was scratched
 - Avoid unnecessary constraints and work

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Root-cause analysis MONETICAL

Established root-cause	Probability	Select
763 Insufficient technical analysis earlier in prog	77%	<input type="checkbox"/>
799 Lack of historical data to assist estimate	35%	<input type="checkbox"/>
28 Poor resource management	21%	<input checked="" type="checkbox"/>
102 Lack of quality processes	20%	<input type="checkbox"/>
938 Unclear project sponsor	11%	<input type="checkbox"/>

Established root-causes	Weighting
276 Lack of quality processes	70%
892 Resource constraints	30%

Master root-cause map

Alternative root-cause

- Resources
 - People
 - Marketing
 - Engineering
 - Contracting
 - Facilities
 - Financial
 - Other
- Schedule
 - Phase 1
 - Phase 2

Selected root-cause description


Root-cause search

Name

Description

Search results


Potential root-causes
<input type="checkbox"/> Insufficient technical analysis earlier in prog
<input type="checkbox"/> Lack of historical data to assist estimate
<input checked="" type="checkbox"/> Poor resource management
<input type="checkbox"/> Lack of quality processes
<input type="checkbox"/> Unclear project sponsor

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Performance influence characteristics MONETICAL

Monetical's Optimisation Analysis has established that the following parameters have a significant inference of performance:
 Quality of Model Fit (R² as a percentage) 78%
 Degrees of Freedom (number of records used for analysis) 47

Group	Parameter Inferences	Estimated costs	T-Ratio	Characteristic
1	Methodology	-1,232	-1.093	David Jones
3	Sponsor	-1,129	-1.845	Arthur Thomas
4	Technical Analysis	-1,066	-1.662	75man-days
5	Engineering locations	-935	-1.229	2
6	Testing schedule	-873	-1.092	35 man-days
7	Engineering budget	-528	-1.003	XXX
8	Requirements solicitation types	-259	-0.993	4

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Analysis MONETICAL

- Root-cause analysis
- Scenario management & Inference analysis

Sweet Fruit
determine corporate strategy
to drive long term performance

Bulk of Fruit
identifying, acquiring or
implementing new tools,
training needs, resources and
process changes

Low Hanging Fruit
identifying them and
addressing them

ground fruit
known issues

Timescales MONETICAL

- Immediate
 - Performance insight typically means performance bottlenecks and performance status on individual projects. WHY!
- Short-term
 - Life cycle reporting measures how individual projects and departments are performing against plan and understand the main influences of performance
- Medium-term
 - Cost of quality provides a clear understanding of how failing to 'take action' i.e. invest in additional technology, resources or make process changes will impact the performance of the organisation in the future.
- Long-term
 - Investment Insight provides a detailed annual report, which executives and senior managers shall call upon when developing their overall IT strategy for the organisation.

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Defining the scope MONETICAL

- Guiding principles
 - Identify the key contributors to performance (resources, processes & applications)
 - Steer organisations to make changes in real-time that will optimise performance
 - Share project experience

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Constraints MONETICAL

- Budget – H/W & S/W licences
- Implementation resources
 - Customisation
 - System Admin
 - Training
- Corporate IT Approval (technology, security, platform integration and support)
- Internal support
- Flexibility to enable tailoring to project specific needs where appropriate – avoid “one size fits none” compromise

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The solution MONETICAL

- New standard CM tool and issue management
- Introduction of CM patterns and process
- Custom reporting and notification tools
 - Process Support
 - Parallel development
 - Focussed testing
 - Project management
 - Component sharing
 - Build dependency management
- Inhouse training for tools and processes

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Integration MONETICAL

- Developer IDEs
- Test management system
- Excel and Access – slice and dice reports, historical data trend analysis, publication to management reports
- Component publishing and consumption
- Build system

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Roll out MONETICAL

- Initial roll out on a team by team basis
- Parallel test system
 - Data migration tools
 - Changes to existing tools and processes
 - Training
 - Switch over to live system on Friday evenings

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Support MONETICAL

- Maintain communications
 - Monitor feedback, use wiki to keep people informed
 - Develop FAQ, publish plans
 - Dialogue with project managers
- Customisations
 - Prototypes to elicit input
 - Work with two or three people to pilot ideas
 - Instrumentation to monitor how the system is being used
 - Short iterations to maintain momentum and

Manage Expectations

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Thank you
Robin.Fawcett@monetical.com

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