Business Studies
L6 - Quality, maintenance and documentation

Jack Lang and Stewart McTavish
jal1 sam56
6. Quality, maintenance and documentation

Development Cycle

Productisation

Plans for quality

Plan for maintenance

Plan for documentation
Development cycle:

<table>
<thead>
<tr>
<th>Specification</th>
<th>Analysis</th>
<th>Build</th>
<th>Test</th>
<th>Maintain</th>
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<td>Alpha</td>
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<td>Beta</td>
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Effort

Time
Productisation

Generalisation

- Does the product work on all target systems?
  - Hardware variants
  - OS variants (run time environment variants)

- Internationalisation
  - Language, number, date and time formats

- Testing
  - Usability
  - Market
  - Standards approvals
Productisation II

Documentation
- System manual, maintenance documentation
- Conformance

Legals
- IPR generated (Copyright, trademark)
- IPR used
- Licence, contract, liability
Productisation III

Packaging
  - Artwork, Box, Deliverable

Manufacture
  - Reproduction, Manual printing, Stocking
  - Distribution set-up

Marketing Materials
  - Leaflets, brochure, advertisements
    - Text, Artwork, approvals
Productisation IV

Maintenance and after sale support
- Support organisation setup and training
- Help desk, staff, facilities, FAQs, training
- Report forms, databases and summaries
Supply side management

Quality control - monitoring and contingency planning

Information Systems - stock control, JiT, shipping, supplier integration

Reliability of supply - multiple sources

Change management - evolution, tracking and support
Scale Up

Takes time and money

New markets

- Regulations, translation, adaption
- High volume manufacturing

Time

- 18 week lead time or more for new silicon
- Line set up
- Staff recruitment and training
- Approvals (and testing)
Plan for Quality

Cheaper in the long run

Build in from the start; can’t be added later

Board-level function

“Good Practise”
Standards

ISO 9000 / BS 5750
- Quality management systems
- Traceability

BS 7799
- Information Management and Security

Internal standards
Control and review

Record key decisions

Control key documents

Control versions and deliverables

Define standards

- coding standards (naming, structure, testing)
- documentation standards (style, conventions and examples)

Review and Audit
Key Documents

Project Definition
- User Requirements Document
- Project Constraints Document

Base definition
- Functional Specification or prototype
- Top Level Design

Control
- Project Plan
- Project Log
- Quality Plan
- Document Plan
Detailed Controlled Documents

Sub-system specs and interfaces

Data model and dictionary

Module specs and interface

Released code and documentation
Monitoring

Early warning of impeding disaster
- Time to do something about it
- Avoid unpleasant surprises

Culture
- Communication (internal and external)
- OK to ask for help
- Requests taken seriously

Milestones
- Roughly one every 1-2 weeks

Review meetings
- Weekly
Meetings

Keep it short
- meetings are expensive

Circulate agenda and papers BEFORE

Start on time

Purpose and structure

Finish on time

1 page minutes
Brain-storming

Problem solving
Purpose
List ideas/topics, no matter how crazy
Vote
Work on top three
   - break up into subgroups
Report back
Board Meeting

Place for decisions, not discussions

Agenda

- Call to order
  - Attendance
  - Minutes
  - Matters arising
- Statutory Business
- Reports
  - Finance
  - Business Development
  - Personnel
  - Shareholder’s Issues
- AOB
- Date of next meeting
SWOT

Strengths
Weaknesses
Opportunities
Threats
Testing

Test plan

Test suite
- Base functionality
- Specific bugs
- Performance
- Correct failure
- re-run the entire suite each time

Bug reports and database

Action plan for fixes & prioritisation
Plan for maintenance

The relationship goes on
- Revenue stream
  - 12% p.a.
- Future sales Cancel

Levels

Help desk

Internal documentation

Record keeping
Plan for documentation

10 x the coding effort

Specialist skill

Levels of documents

- User
- Training
- System
- Maintenance

Avoid forward references!

Conformance