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Professional Issues in IT

Topic 5:
Software Deployment (1)

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Software Deployment 1 Topic 5 - 5.2

Scope and Coverage

This topic will cover:

- What is software deployment?
- Key stages within software deployment
  - Product release
  - Installation
  - Documentation
  - Training
  - Maintenance
  - Monitoring
  - Reviewing
  - Updating
- ISO standards

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Software Deployment 1 Topic 5 - 5.3

Learning Outcomes

By the end of this topic students will be able to:

- Define and describe software deployment;
- Identify and explain key stages within software deployment;
- Name ISO standards associated with software deployment;
- Form opinions and communicate those opinions on software deployment.

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Software Deployment 1 Topic 5 - 5.4

What is Software Deployment?

- Software Deployment is:

"..the process of putting software and software solutions into use or action and ultimately driving business success."

(IBM 2004:1)

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Software Deployment 1 Topic 5 - 5.5

Software Deployment

- Is an 'overview' term
- Does not just happen
- Requires participants to be proactive
  - Supplier *and Client*
- Takes commitment from developers **and** clients
- Should have a formal strategy
  - Ideally during the planning phase
- Issues: traditional mentality of the industry

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Software Deployment 1 Topic 5 - 5.6

Product Release - 1

- Release management
- Newer expanding area
- Increasing technicality
- Incorporates:
  - Software faults
  - Upgrade requirements
  - Deployment
- Release control
- Timing control

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Software Deployment 1 Topic 5 - 5.7

Product Release - 2

- ITIL Release Management (Information Technology Infrastructure Library)
- ITIL
  - Best practices
  - Software support tools
- Benefits
  - Improving software success rates
  - Providing release process consistency
  - Improving live environment stability
  - Controlling software release
  - Reducing error rates

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Software Deployment 1 Topic 5 - 5.8

Installation

- Multiple approaches
- Handover to client
- Traditionally resource heavy
- Traditionally scheduled (e.g. Public holidays)
- Installation script – a common problem
- Delete before install
- Risk of running multiple versions
- Current approaches: *Pilot, Parallel, Big bang, and Web*

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Pilot Installation

- Isolated installation (one or two departments)

- Minimum impact

- Error/issue identification before wider installation

- Successful organisation-wide rollout then follows

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Parallel Installation

- New system runs side-by-side with old one

- Error/issue identification

- Minimise impact

- Comparative

- Switch over – good training opportunities

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Big Bang Installation

- Organisation wide switch over
- Dramatic results
- Integration
- Live error identification
- Greater planning
- One version

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Web-based Installation

- More common in software industry
- No installation
- Uniformity
- Light on resources

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Documentation

- Essential
- Considerations
  - Methodology/approach
  - Organisation philosophy
  - Target audience:
    - Technical abilities
    - Product familiarity
    - Spectrum of ability
- Documentation Types
  - User
  - Technical

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User Documentation - 1

- How to use product
- Diverse readership
- Identifies product features
- Maximise user ability
- Logically ordered
- Consistent and usable

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User Documentation - 2

- Troubleshooting
- Formats
  - *Tutorial*
  - *Themed*
  - *Reference*
- Online help
  - More common
  - Green credentials
  - Easy access

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Technical Documentation

- Vast
- Evolved
- Technical / descriptive balance
- Auto generation
  - During process
  - Coder dependent
- Overlooked

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Training

- Essential?
- Pitched at correct level?
- Fulfils requirements?
  - Organisation
  - Individuals
  - Different training approaches
- Costs / Benefits?

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Cascade Training

- Approach
  - Workforce percentage official training
  - Remainder in-house
- Diluted
  - Lose integrity
- Cost effective?
- Time effective?

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Workplace Training

- On the job training
- Time taken out
  - Organisation provision
- Real life environment
- Knowledge base
- Pressure
  - Performance
  - Missing knowledge/skills by not asking key questions
- Cost benefits

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User Manual Training

- Requires little monetary investment
- Self directed learning
- Own speed
- Little /no control
- Proof
- Varying ability
- Missing knowledge

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No Training

- Realistic?
- Dependant on:
  - Workforce abilities
  - Prior experience
  - Software importance
  - Organisational investment
  - Time constraints
  - Economic conditions

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Maintenance - 1

- Interchangeable language
  - Evolution/Support
- Software change
  - Environmental
- Asset
- Business evolution alignment

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Maintenance - 2

- Includes
  - Fault fixing
  - Compatibility
    - User
    - Environment
    - Hardware/software

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Maintenance - 3

- 4 Classifications (Leintz & Swanson,1980)
  - *Corrective*
    - Identification and correction of errors
  - *Perfective*
    - New functionality
    - Existing functionality increase
  - *Preventive*
    - Increase software longevity
  - *Adaptive*
    - Environment changes

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Maintenance - 4

- Should set boundaries
  - Size/ cost
  - Beneficial

- Identify reasoning
  - Why change requested
  - Appropriate change to make

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Software Deployment 1 Topic 5 - 5.26

Evolution Software Lifecycle - 1
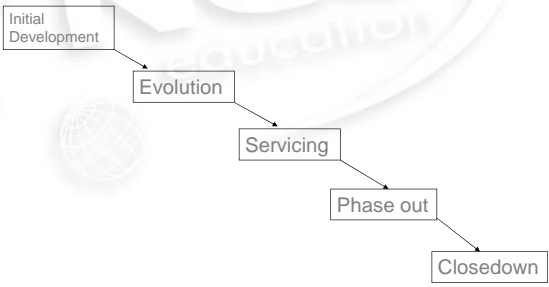
- Created by Bennett and Rajilch (2000)
- Published by IEEE
- 5 stage approach:
  - *Initial*
  - *Evolution*
  - *Servicing*
  - *Phase out*
  - *Close down*

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Software Deployment 1 Topic 5 - 5.27

Initial Development

Evolution

Servicing

Phase out

Closedown

Adapted from Bennett & Rajilch 2000

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Software Deployment 1 Topic 5 - 5.28

Monitoring

- Observation
- Live environment
- On-going
  - Installation team
  - Client organisation
- Issue identification
- Upgrades
- Resolution

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Reviewing

- On-going
- Client feedback
  - Complaint reports
  - Fault reports
  - Functionality improvements
  - Change in standards
  - Business re-focus

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Updating

- Upgrading/updating
- Environmental changes
- Within current contract
- New project
- Limited number
- Updated/new documentation
- Training

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Software Deployment 1 Topic 5 - 5.31

ISO 12207

- Software life cycle processes
- Launched 1995, revised 2008
- Software lifecycle framework
  - Standard language
  - Reference
  - Processes, activities and tasks
  - Includes maintenance
    - ISO 14764

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Software Deployment 1 Topic 5 - 5.32

ISO 14764 - 1

- Extension of ISO 12207
- Maintenance process
  - Maintenance classifications
    - Corrective, perfective, preventive, adaptive
  - Stages:
    - Planning
    - Execution
    - Control
    - Review
    - Evaluation
    - Closure

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Software Deployment 1 Topic 5 - 5.33

ISO 14764 - 2

- Framework
  - Adaptable
    - Generic and specific
  - Assist
    - Executing
    - Evaluating
- Launched 2006

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Software Deployment 1 Topic 5 - 5.34

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Topic 5 – Software Deployment

Any Questions?

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