

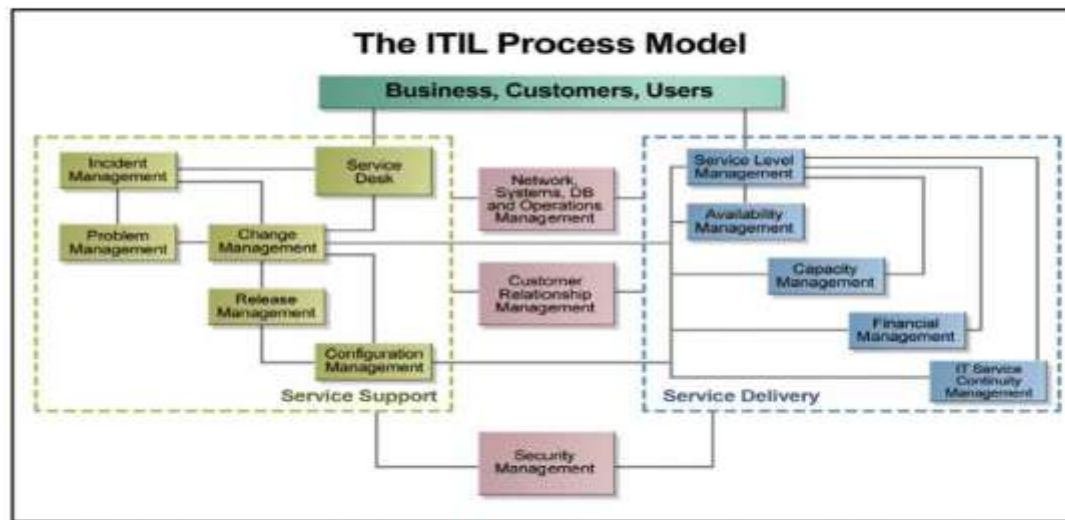
SOFTWARE DEVELOPMENT LIFE CYCLE: PHASES AND PROCESSES

Yvonne V. Richardson
BSCS, M. Ed

SOFTWARE DEVELOPMENT LIFE CYCLE PHASES

1. Requirements
2. Design
3. Development
4. Testing
5. Implementation
6. Maintenance

SIMILARITIES TO ITIL?



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<http://www.itsm-peoplecert.com/wp-content/uploads/2010/09/itil-process-model1.jpg>

SDLC PHASE 1: REQUIREMENTS

1. What is the problem that requires a solution?
2. What is the solution, and how does it address the problem?
3. What portions of the problem are not addressed by this automated solution?
4. What are the manual interfaces to the automated solution?

SDLC PHASE 2: DESIGN

1. Human language sketches
2. Describes the solution without being the solution
3. Answers 4 major questions
 - What is the solution?
 - What does it do?
 - How is it used?
 - Who uses it?
4. There is no code at this point

SDLC PHASE 2A: DETAILED DESIGN

1. Describes the solution without being the solution
2. Establishes context of portions of the problem that are not addressed by this solution
3. Answers 2 of the 4 major questions
 - What does it do? (processes)
 - Who uses it? (inputs, outputs)
4. May be a part of detail phase or the development phase
5. Documentation, documentation, documentation

SDLC PHASE 3: DEVELOPMENT

1. Sometimes this phase is named implementation, because it translates the design into model, pseudocode and code
2. Design principles:
 - What is object-oriented?
 - What is procedural?
 - Entity-relationship diagrams?
 - Load balancing?
 - Interfaces, manual and otherwise?

SDLC PHASE 4: TESTING

1. Tests can be optimized to include several cases at once
2. Three main test centers: software tester, business tester, and user acceptance tester
 - User acceptance testing signoff means system purchase
 - Business cases are aligned with the problems this solution should address
 - Software testing is basic functionality and software/hardware compatibility

SDLC PHASE 4: TESTING

Two main types of software tests: transparent and black box

1. Transparent testing - tests based on code
 - Bounds testing - all conditions in code
 - Code coverage - all code can run
 - Configuration testing - information flows to and from appropriate devices

SDLC PHASE 4: TESTING

2. **Black box - tester cannot view the code**
 - Regression testing - all previous test cases still work
 - Interface testing - interaction between modules or systems
 - Load testing - performance testing, bandwidth and throughput tests(buffering)

SDLC PHASE 5: IMPLEMENTATION

1. Sometimes this phase is named the deployment phase, especially when software development is named implementation
2. Product release to customer, production environment, or publisher for duplication
3. Minor customization occurs at this point

SDLC PHASE 6: MAINTENANCE

1. Discrepancies between the system as planned and the system in reality
2. A well-thought out system will have few changes in accepted or expected level of quality
3. Next phase of product - features that were not included in this implementation? New customer asks?