

Waterfall vs. Evolutionary Model

Waterfall Model Phases

- Requirement Analysis and Definition
- System and Software Design
- Implementation and Unit Testing
- Integration and System Testing
- Operation and Maintenance

Evolutionary Model Phases

- Initial Description
- Concurrent Activities – Specification, Development and Validation
- Exposure to User – Initial Version, Intermediate Version and Final Version

Waterfall Model Attributes

- Consists of a set of phases that a project progresses through in a sequential order.
- Each phase must be completed before the project can progress to the next phase.
- At the end of each phase is some form of gateway, usually a formal review where that decision is made.
- There is no overlap between phases.
- Straight forward, simple to understand and use.
- Deliverables are frozen at the end of each phase and serve as the baseline for the following phases.
- You do not see the software until the end of the project (big bang software development).
- Changes are not supposed to happen or are limited or are tightly controlled.

Evolutionary Model Attributes

- Releases, tend to overlap each other: As testing and preparations for deployment of one release are underway, planning for the next release has already started.
- Used to develop a quick implementation of the software prior to or during the software requirements phase
- The customer uses the prototype and provides feedback to the software developers as to its strengths and weaknesses
- This feedback is used to refine or change the prototype to meet the real needs of the customer

Waterfall Model Assumptions

- The requirements are known in advance.
- The requirements have no unresolved high risk implications.
- The nature of the requirements will not change significantly.
- The requirements are compatible with key stakeholders.
- There is sufficient time to proceed in a sequential manner.

Evolutionary Model Assumptions

- The initial version is suitable to stakeholders.
- The initial version is capable of being expanded to the final version.
- The production environment is adaptable to the various versions that has been adopted.
- The dimensions of the system evolution are compatible with the legacy system it is replacing.

Ethical Considerations

- Delivery of what they need and want.
- When they want it
- At a high enough quality to be fit for use
- With an eye towards reducing cost and
- Addressing risks appropriately.
- Provide adequate communications.

Evolutionary vs. Waterfall – Which is the Ethical Choice?

- Which approach will ensure that we are providing real value to our customer?
- Which approach will provide the most effective means of communication?
- What will help your project team focus on its objectives and do its best work?
- What is working well for you now?