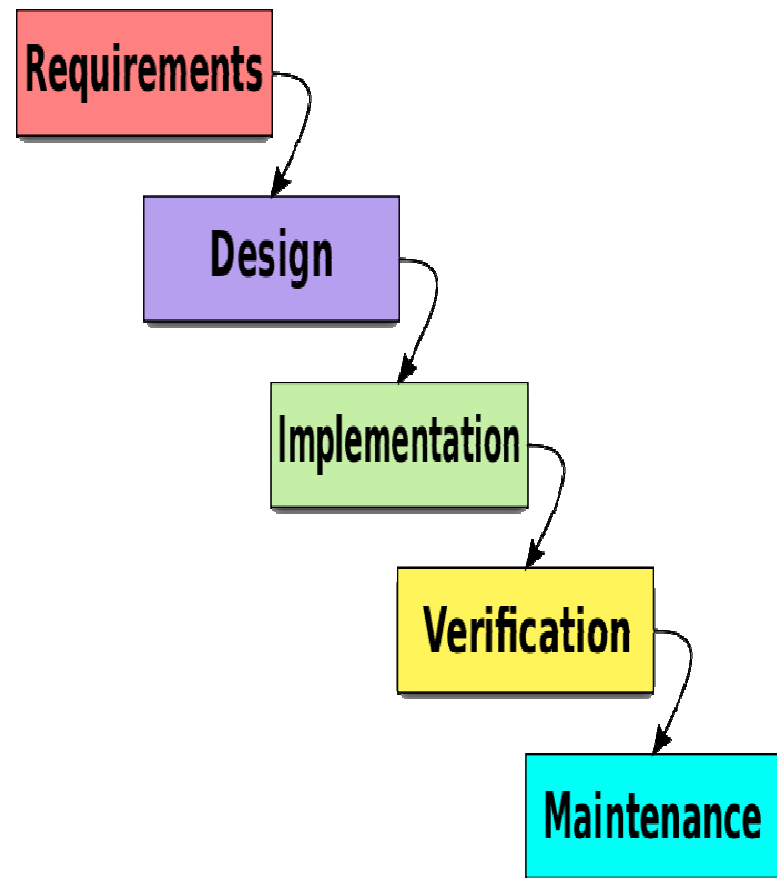# SOFTWARE DEVELOPMENT METHODOLOGIES

Methodologies

- Waterfall
- Prototype model
- Incremental
- Iterative
- Spiral
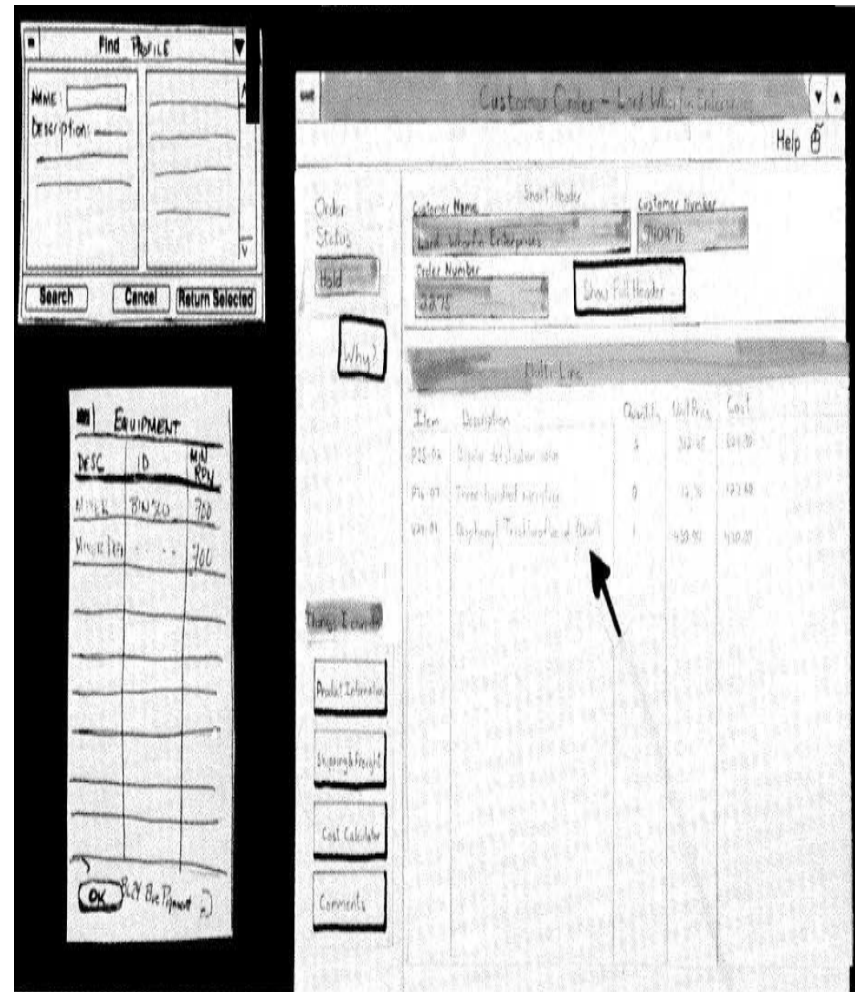- RAD

Waterfall

- Sequential design process
- Progress is seen as flowing steadily downwards (like a waterfall) through SDLC

Requirements

Design

Implementation

Verification

Maintenance

Prototyping

- Creating prototypes of software applications i.e. incomplete versions of the software program being developed

- A prototype typically simulates only a few aspects of, and may be completely different from, the final product.
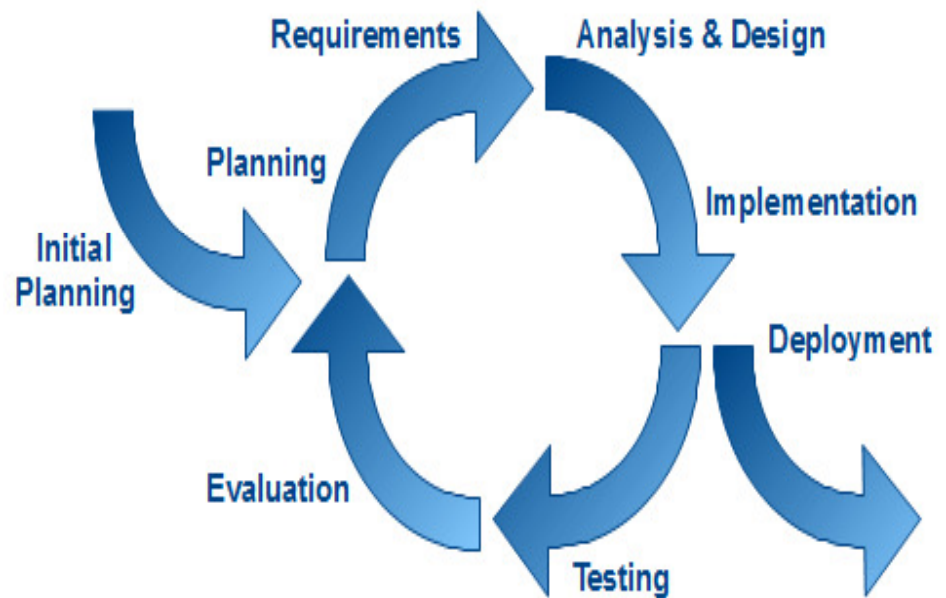
Incremental Build Model

- The model is designed, implemented and tested incrementally (a little more is added each time).
- Finished when satisfies all the requirements.
- Combines the elements of the waterfall model with the iterative philosophy of prototyping.

Iterative and Incremental Development

- Iterative and incremental development is any combination of both iterative design or iterative method and incremental build model for development.

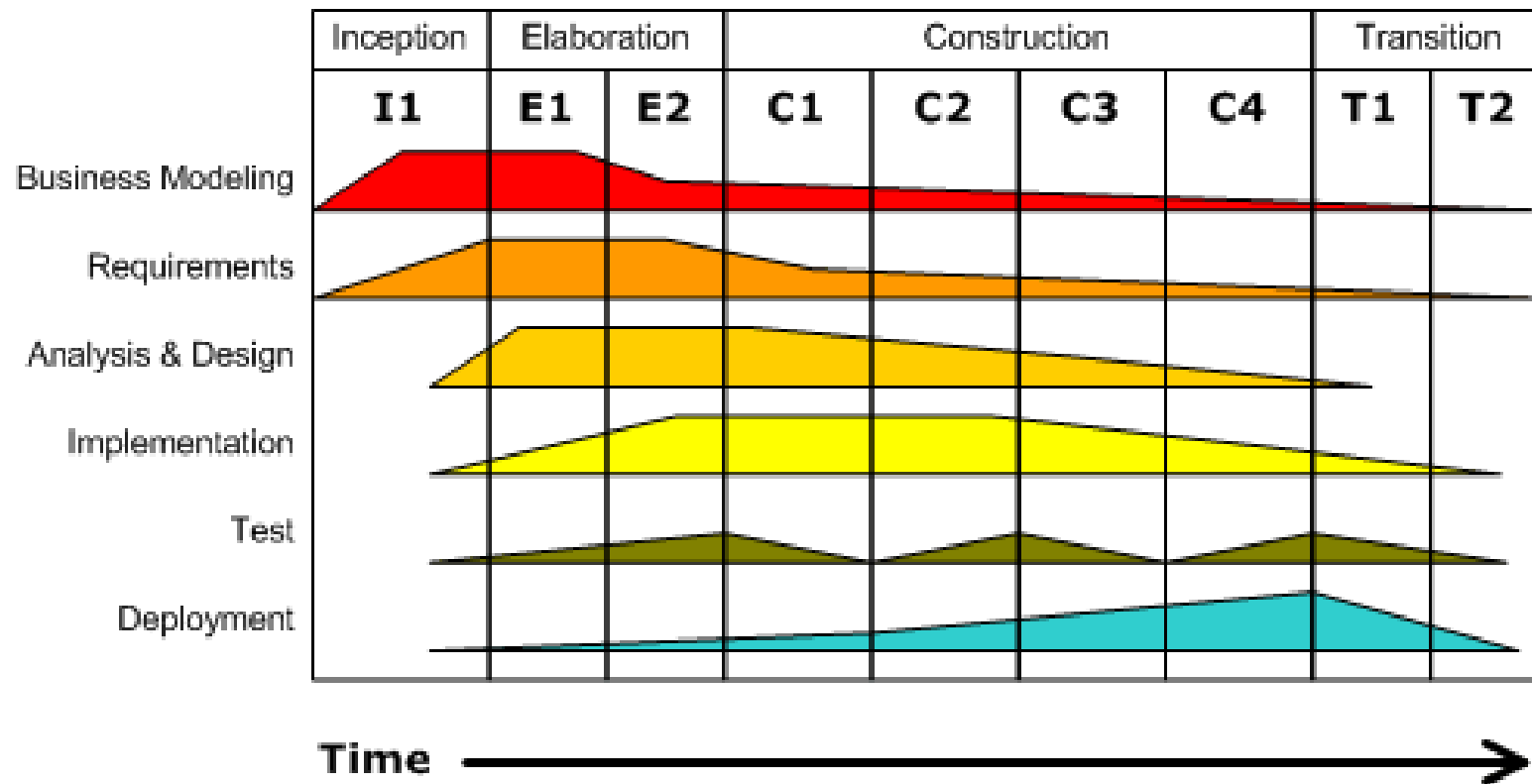# Incremental vs. Iterative

A Bit Different Understanding
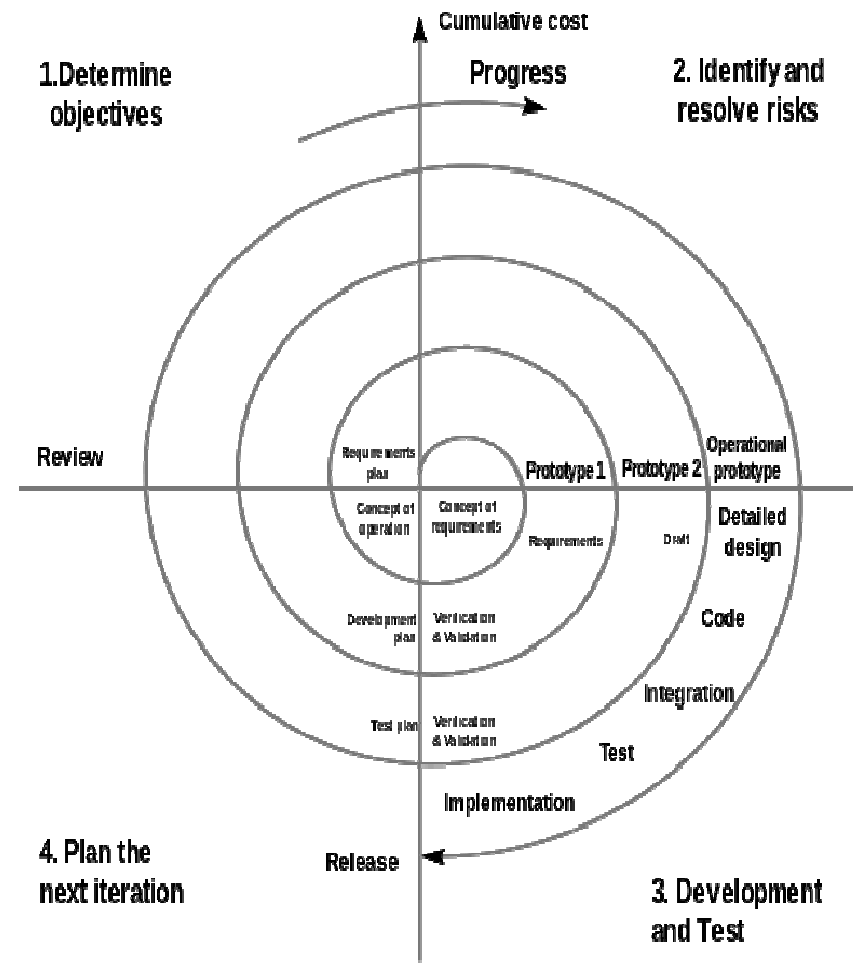
Effort in Iterative Development

Iterative Development
Business value is delivered incrementally in time-boxed cross-discipline iterations.
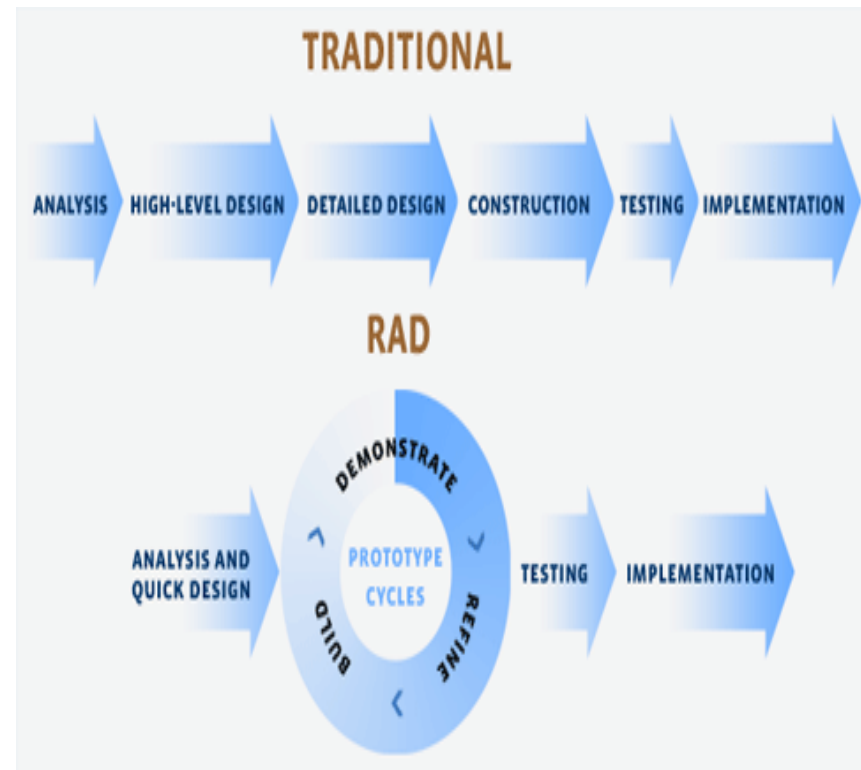
Spiral Model

- Combining elements of design and prototyping-in-stages
- Combines the features of the prototyping and the waterfall model
- The spiral model is intended for large, expensive and complicated projects
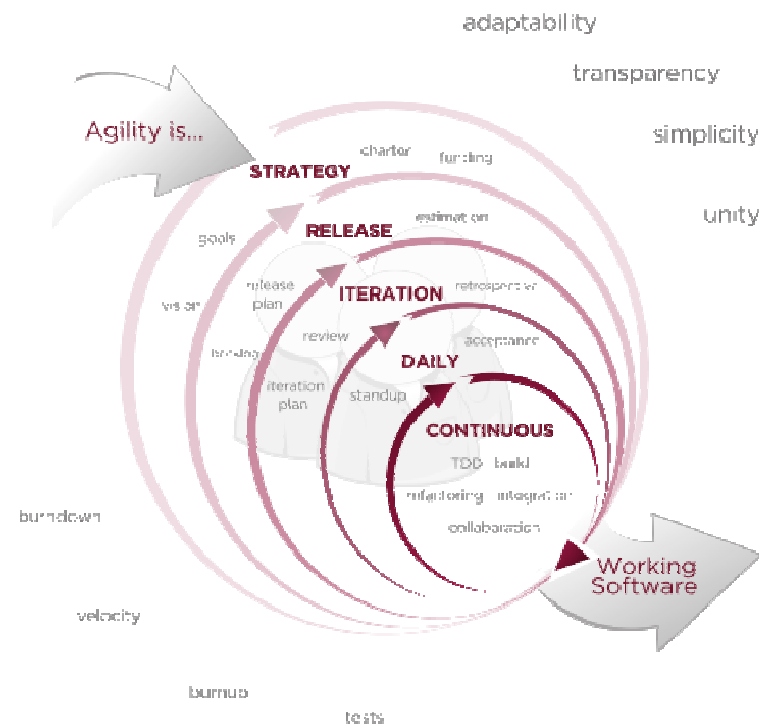- Advantages of top-down and bottom-up concepts

RAD

- Minimal planning and fast prototyping.
- Developing instead of planning
- The lack of pre-planning generally allows software to be written much faster, and makes it easier to change requirements.

Agile

- Group of software development methods
- Based on iterative and incremental development
- Most important phrases
  - self-organizing, cross-functional teams
  - adaptive planning,
  - evolutionary development and delivery,
  - a time-boxed iterative approach,
  - rapid and flexible response to change.
- A conceptual framework
- The Agile Manifesto in 2001.