
# Unified Process

# What is the Unified Process



A popular iterative modern process model (framework) derived from the work on the UML and associated process.

The leading object-oriented methodology for the development of large-scale software

Maps out when and how to use the various UML techniques

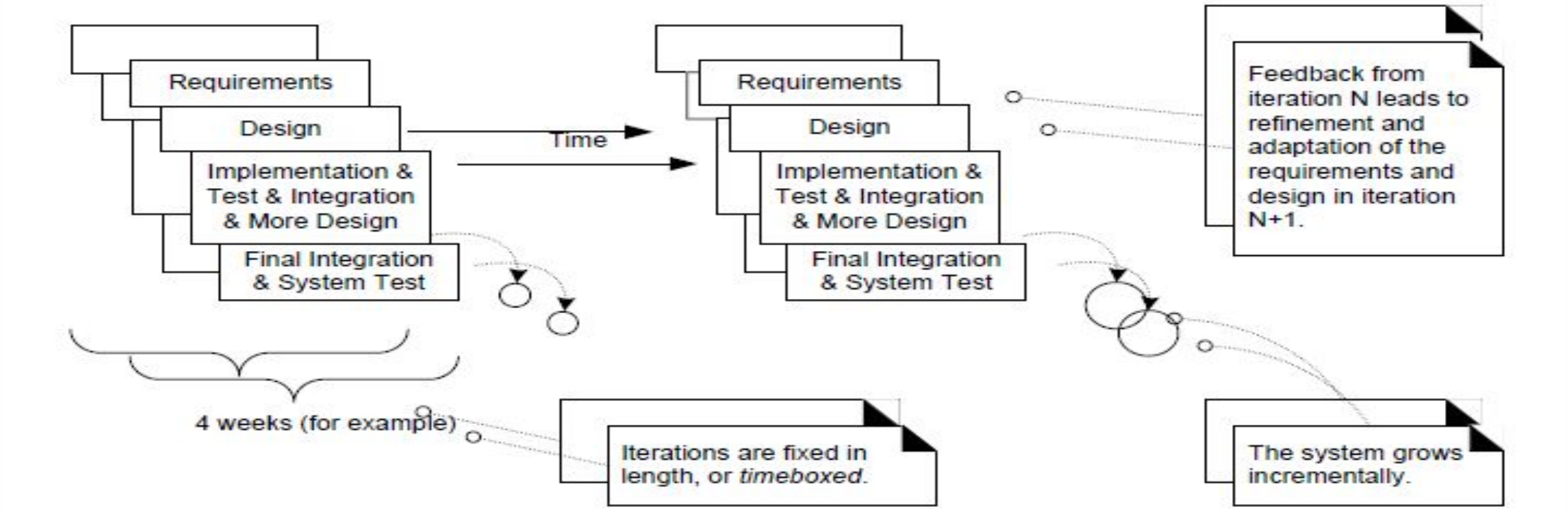
# The Most Important UP Idea: Iterative Development



- The UP(unified process) promotes several best practices, but one stands above the others: **iterative development.**
- In this approach, development is organized into a series of short, fixed-length (for example, four week) mini-projects called **iterations.**
- The outcome of each is a tested, integrated, into executable system.
- Each iteration includes its own requirements analysis, design, implementation, and testing activities.

# Iterative and incremental development

- The system grows incrementally over time, iteration by iteration, and thus this approach is also known as **iterative and incremental development.**



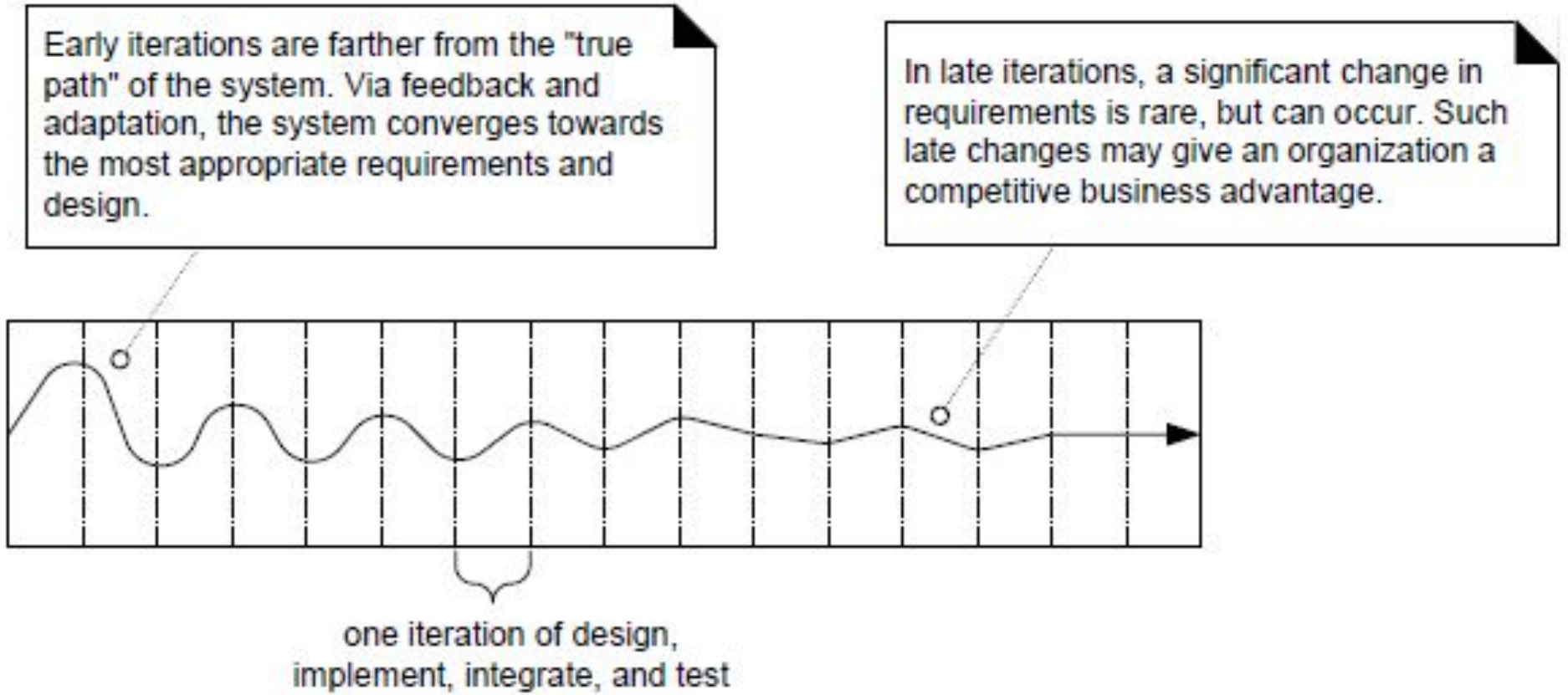
# Iteration result..



- The result of each iteration is an executable but incomplete system.

- The output of an iteration is *not* an experimental or throw-away prototype, and iterative development is not prototyping. Rather, the output is a production-grade subset of the final system.

# Iterative feedback and adaptation leads towards the desired system.



# Benefits of Iterative Development

It includes:

- early rather than late mitigation of high risks (technical, requirements, objectives, usability, and so forth)
- early visible progress
- early feedback, user engagement, and adaptation, leading to a refined system that more closely meets the real needs of the stakeholders
- managed complexity; the team is not overwhelmed by "analysis paralysis" or very long and complex steps
- the learning within an iteration can be methodically used to improve the development process itself, iteration by iteration

# Iteration Length


- The UP (and experienced iterative developers) recommends an iteration length between two and six weeks.
- Much less than two weeks, and it is difficult to complete sufficient work to get meaningful throughput and feedback;
- Much more than six or eight weeks, and the complexity becomes rather overwhelming, and feedback is delayed.
- A very long iteration misses the point of iterative development.
- Short is good.

# Time-boxed

- A key idea is that iterations are **time boxed,** or fixed in length.
- For example, if the next iteration is chosen to be four weeks long, then the partial system should be integrated, tested, and stabilized by the scheduled **date—date slippage is discouraged.**
- If it seems that it will be difficult to meet the deadline, the recommended response is to remove tasks or requirements from the iteration, and include them in a future iteration, rather than slip the completion date.

# The UP Phases



A UP project organizes the work and iterations across four major phases:

**1.Inception**— approximate vision, business case, scope, vague estimates.

**2.Elaboration**—refined vision, iterative implementation of the core architecture, resolution of high risks, identification of most requirements and scope, more realistic estimates.

**3.Construction**—iterative implementation of the remaining lower risk and easier elements, and preparation for deployment.

**4.Transition**—beta tests, deployment.

# Imp point about phases.

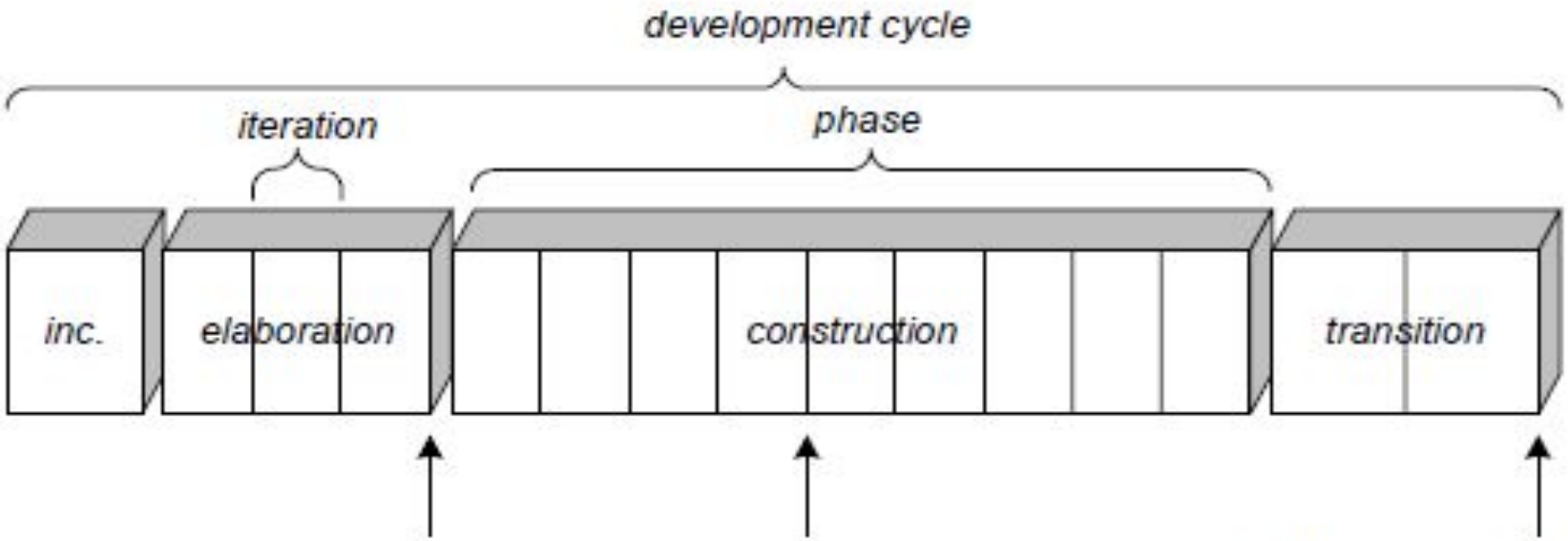


- This is *not* the old "waterfall" or sequential lifecycle of first defining all the requirements, and then doing all or most of the design.

- Inception is not a requirements phase; rather, it is a kind of feasibility phase, where just enough investigation is done to support a decision to continue or stop.

- Similarly, elaboration is not the requirements or design phase; rather, it is a phase where the core architecture is iteratively implemented, and high risk issues are mitigated.

# Schedule-oriented terms in the UP.




*milestone*

An iteration end-point when some significant decision or evaluation occurs.

*release*

A stable executable subset of the final product. The end of each iteration is a minor release.

*increment*

The difference (delta) between the releases of 2 subsequent iterations.

*final production release*

At this point, the system is released for production use.

# UP disciplines as Resource Histogram