

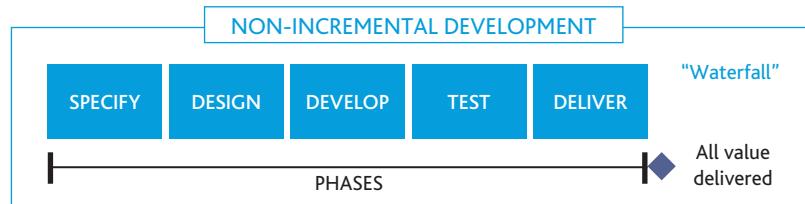


# INCREMENTAL DEVELOPMENT

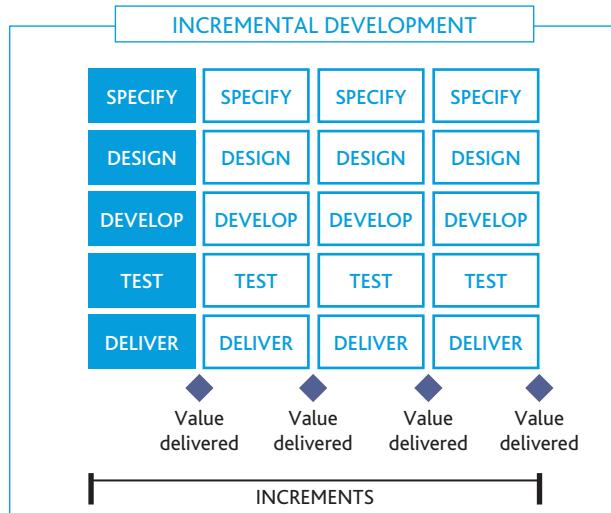
Incremental development is a development strategy that involves identifying, prioritising and sequentially completing subsets of an envisaged product, known as 'increments'. An increment is a cohesive set of features or changes that, if released, would be valuable to a customer. The main benefits are:

- It makes it possible to release value early and often, which is a better return on investment.
- It enables early demonstration of working increments for feedback from customers and users when the cost of change is lower.
- It enables better predictability of estimating future increment development based on data from previous increments.
- Better motivation and sense of urgency for the development team.

The essential difference with incremental development is that we progress by getting a subset of the whole product 100% developed and ready for use, and then doing the same for the next subset, and so forth. The alternative is to work on the whole product, first 10% done, then 20% done and so forth, meaning "nothing is finished until everything is finished").



Outcome



Benefit

Who

Scaling Factors

Difficulty



## Implementation

### Prerequisites

- Agree what outcomes you want: typically the kind of value you are looking to deliver, your target customers, and what kind of constraints you will have to operate within (e.g. legal, technical or financial).

### Doing incremental development

1. Start breaking the product down into subsets. Each subset must provide independent value, although some may be sequential to others.
2. Decide on the minimum viable increment – the essence of the product without which no value could exist.
3. Agree an increment order using an appropriate prioritisation technique.
4. Develop, test and demonstrate the first increment.
5. Decide what to do next based on the feedback – including deciding whether the increment should be released or not.
6. Decide what increment to develop next and keep iterating until it is decided that we should not develop any more increments.

### Potential pitfalls

- Impact on previous work - we need to make sure that new increments do not inadvertently make changes that stop previous increments from working properly. This means that we need to be able to regression test all previous increments each and every time we develop a new increment. This in turn means that the cost of regression testing can mount up if we cannot keep the cost of running regression tests low, for example by automating them.
- We need to ensure that the structural integrity of the product or service does not degrade over time as we continually add to it. This means we need to spend time and effort refactoring the design of previous increments as we develop new increments to ensure that the product can be safely and cost-effectively extended over time.

If you want to learn more, consider reading:

*Agile and Iterative Development: A Manager's Guide* by Craig Larman