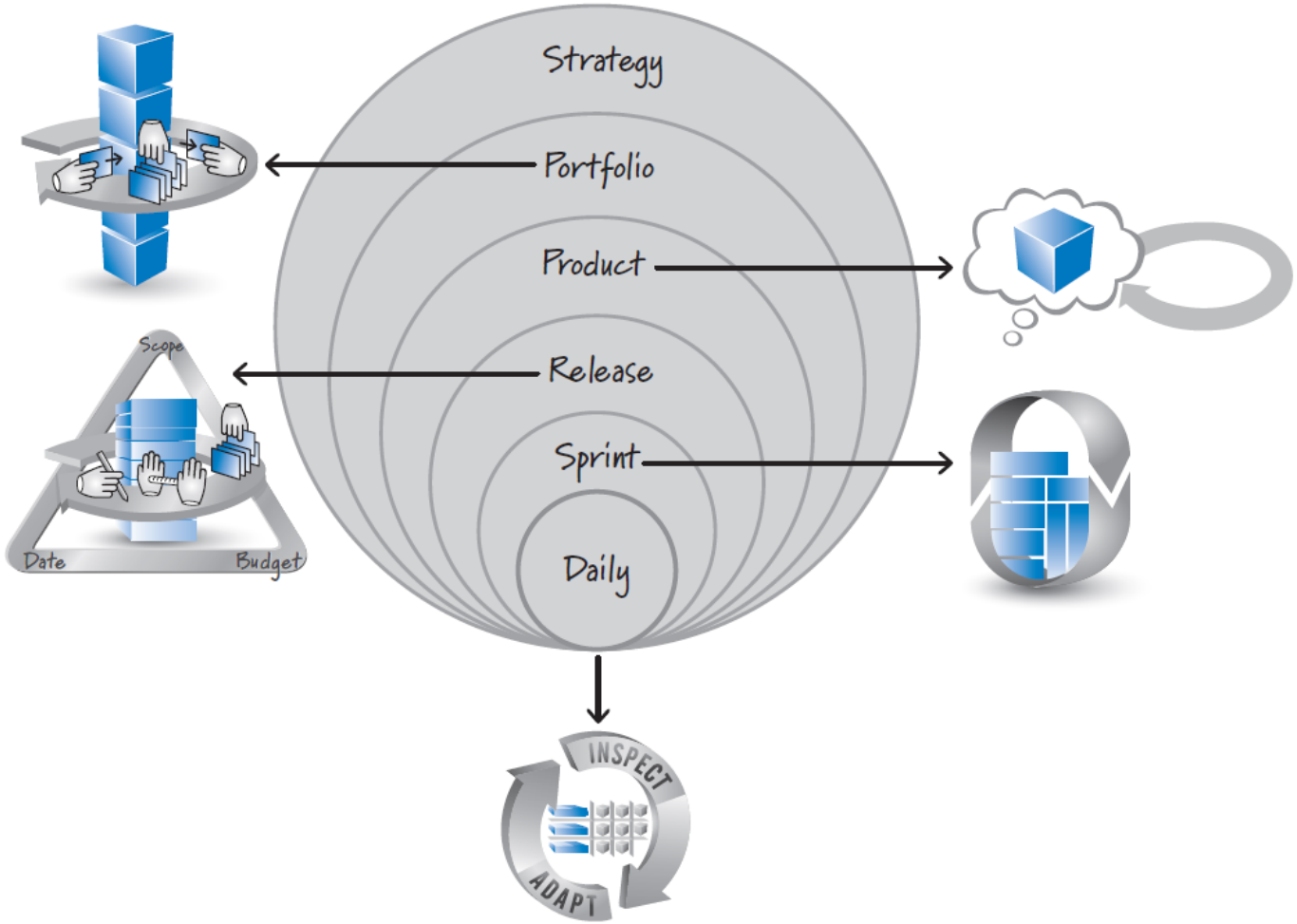
Portfolio

CE418: Systems Analysis and Design
Maryam Ramezani
Sharif University of Technology
maryam.ramezani@sharif.edu

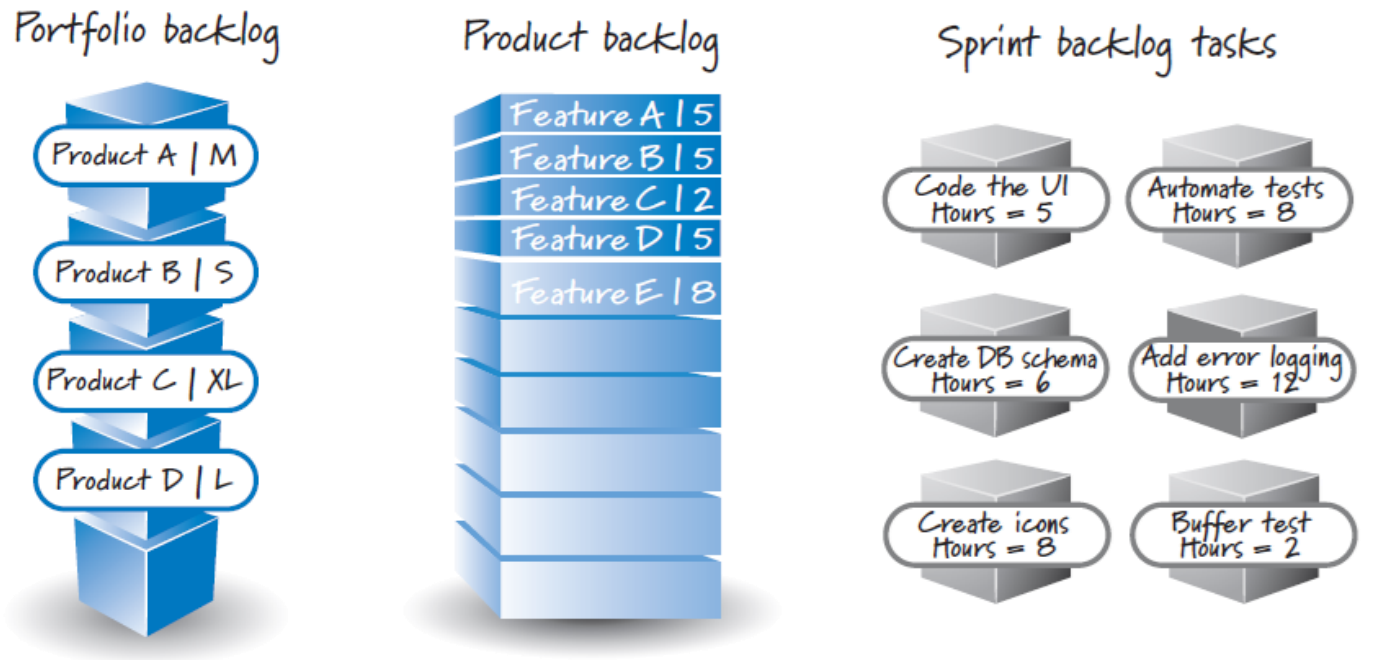
Overview

Different Levels of Planning



Introduction

- Most organizations want or need to produce more than one product at a time.
- These multiproduct organizations need a way to make economically sound choices regarding how to manage their product portfolios.



Item	Portfolio backlog	Product backlog	Sprint backlog tasks
Unit	T-shirt sizes	Story points / ideal days	Ideal hours / effort-hours
When	Portfolio planning	Product backlog grooming	Sprint planning

Terms

- **Portfolio Backlog**: A backlog composed of products, a product increment (one release of a product), or a project (if your organization prefers to plan work around projects), programs, or high-level epics.
- **Portfolio Planning**: An activity for determining which products (or projects) to work on, in which order, and for how long. Sometimes referred to as portfolio management.

Portfolio Planning

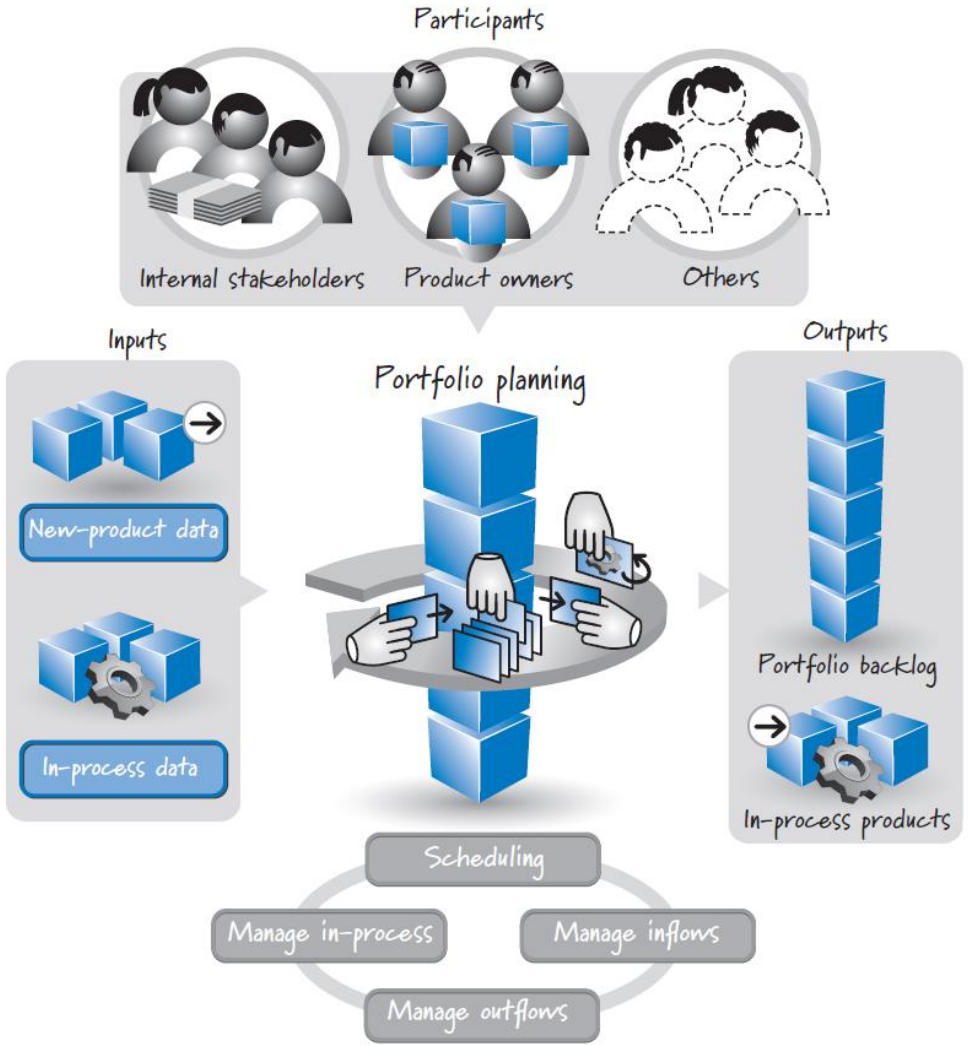
Timing

- Portfolio planning is a never-ending activity. As long as we have products to develop or maintain, we have a portfolio to manage.
- The output of planning or envisioning a new product is an important input to portfolio planning.
- It also occurs at regularly scheduled intervals to review products that are already in process (under development, already live in production, or currently being sold).

Participants

- set of internal stakeholders
  - must have a sufficiently broad business perspective to properly prioritize the portfolio backlog and make decisions regarding in-process products.
- product owners of individual products
  - as champions of their respective products and advocates for necessary resources
- senior architects and technical leads (optionally, but frequently)
  - to ensure that important technical constraints are factored into portfolio-planning decisions.

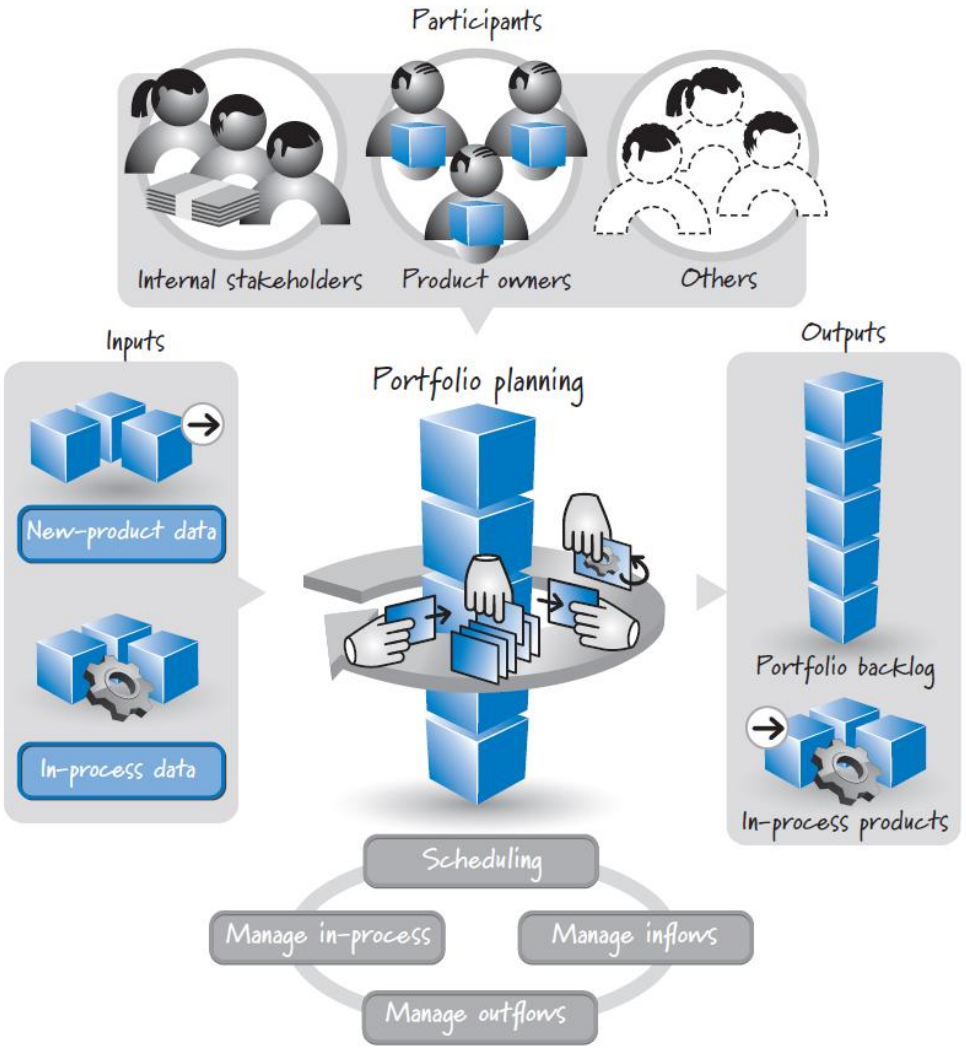
Process


Participants
Internal stakeholders
Product owners
Others
Inputs
New-product data
In-process data
Portfolio planning
Outputs
Portfolio backlog
In-process products
Scheduling
Manage in-process
Manage inflows
Manage outflows

Process

The new products come with data that was gathered during envisioning, such as cost, duration, value, risk, and so on.

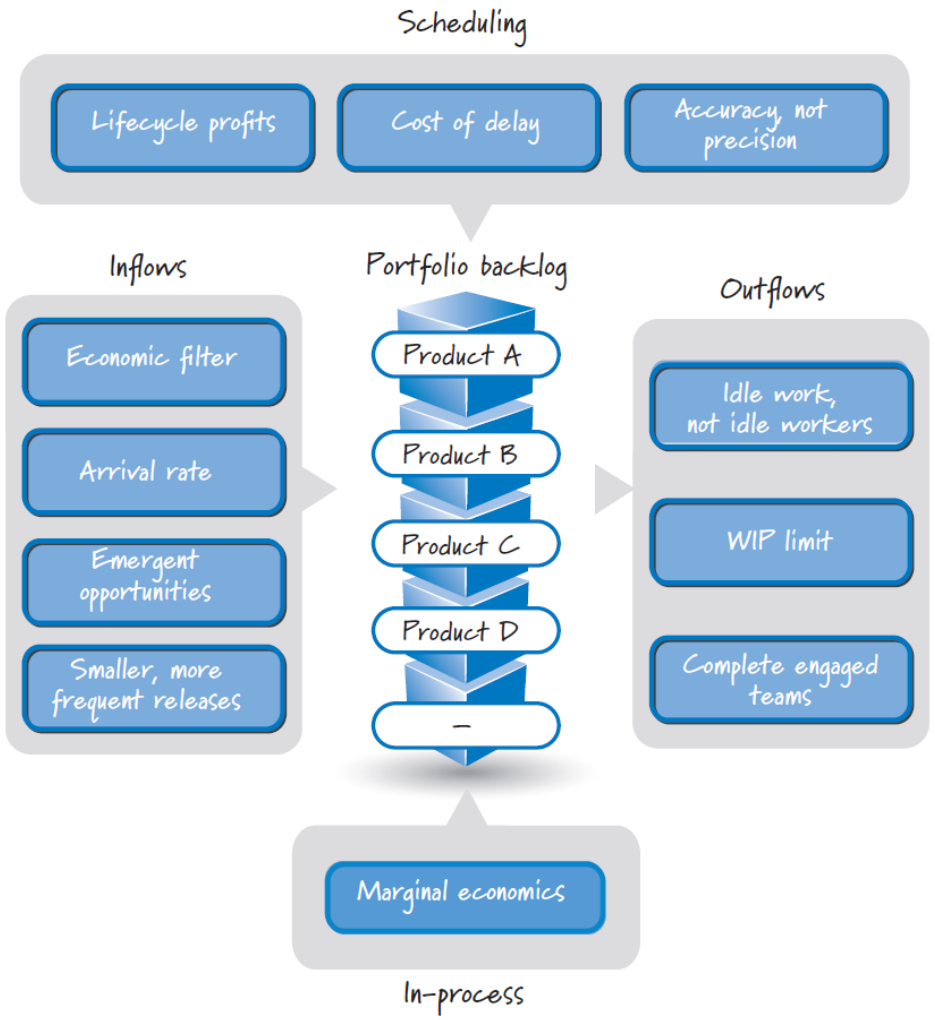
In-process products come with their own set of data, such as intermediate customer feedback, updated cost, schedule, and scope estimates, technical debt levels, and market-related data, which will help determine the path forward for these products.



(1) Portfolio backlog, which is a prioritized list of future products, ones that have been approved but for which development has not yet begun.

(2) set of active products—new products that have been approved and are slated for immediate development, as well as products that are currently in process and have been approved to continue

Portfolio-planning strategies



Scheduling Strategies

- Although there are many ways to decide the sequence of products, We focus on three strategies:
  - Optimize for lifecycle profits.
  - Calculate the cost of delay.
  - Estimate for accuracy, not precision

Different Portfolio Scheduling Principles

(If) Cost of Delay	(And) Duration/Size	(Then) Scheduling Approach
Same across all products	Varies across products	Shortest job first
Varies across products	Same across all products	High delay cost first
Varies across products	Varies across products	Weighted shortest job first

TABLE 16.2 Example of Using Cost of Delay to Sequence the Portfolio

	Project A	Project B
Return on investment (ROI)	20%	15%
Cost of delay (1 month)	$5K	$75K

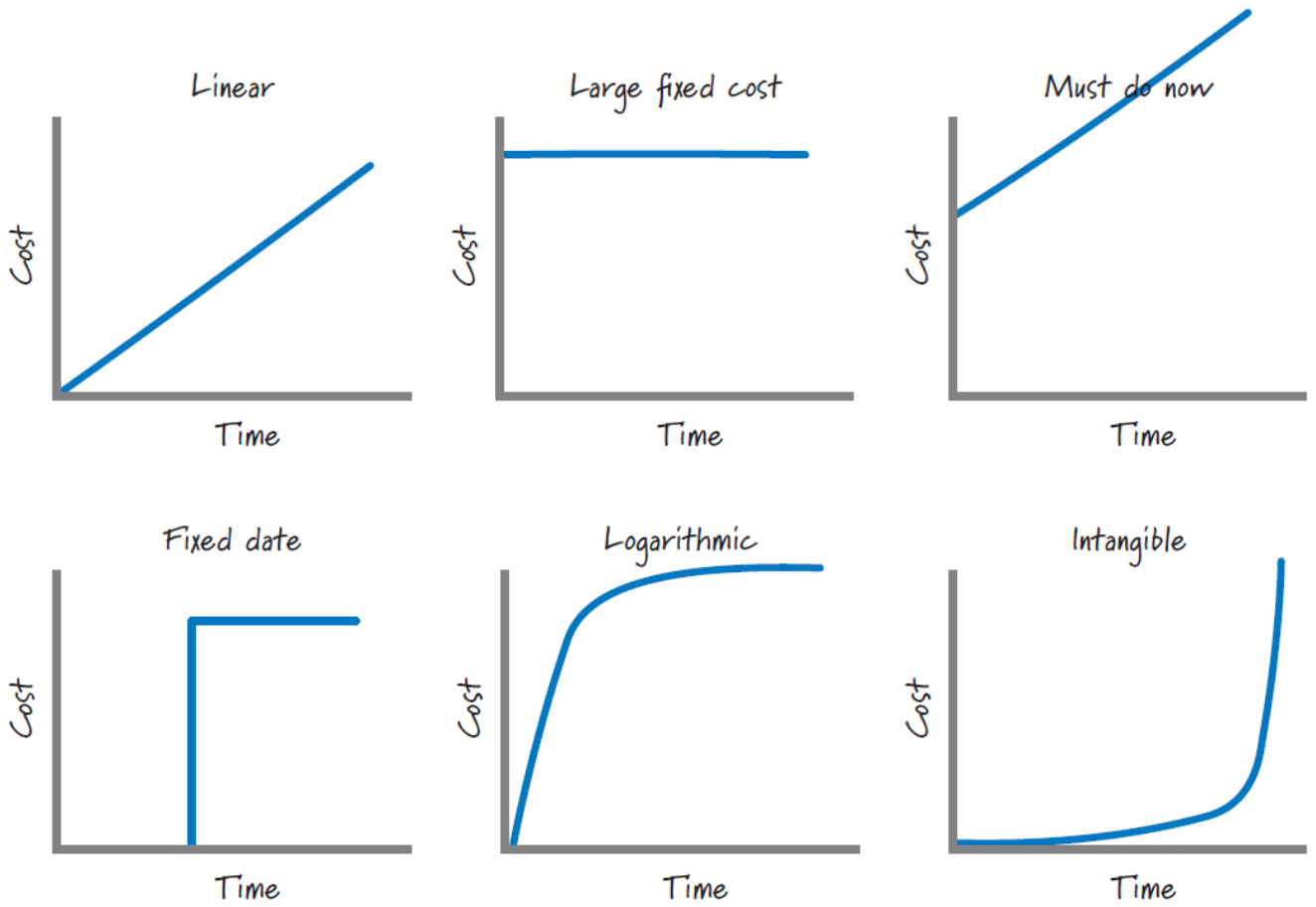


FIGURE 16.3 Cost-of-delay profiles

TABLE 16.4 Example of T-Shirt Size Estimation

Size	Rough Cost Range
Extra-small (XS)	$10K to $25K
Small (S)	$25K to $50K
Medium (M)	$50K to $125K
Large (L)	$125K to $350K
Extra-large (XL)	>$350K

Planning Level

Level	Horizon	Who	Focus	Deliverables
Portfolio	Possibly a year or more	Stakeholders and product owners	Managing a portfolio of products	Portfolio backlog and collection of in-process products
Product (envisioning)	Up to many months or longer	Product owner, stakeholders	Vision and product evolution over time	Product vision, roadmap, and high-level features
Release	Three (or fewer) to nine months	Entire Scrum team, stakeholders	Continuously balance customer value and overall quality against the constraints of scope, schedule, and budget	Release plan
Sprint	Every iteration (one week to one calendar month)	Entire Scrum team	What features to deliver in the next sprint	Sprint goal and sprint backlog
Daily	Every day	ScrumMaster, development team	How to complete committed features	Inspection of current progress and adaptation of how best to organize the upcoming day's work