

Product Analysis and Development

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Lecture 7

جامعة الجميع الذكية

ENT 614

New Product Development (Part One)



جامعة الجميع الذكية
EVERYONE'S SMART UNIVERSITY

In the previous
lecture

Product lifecycle PLC

Topics covered :

- What Is a Product Life Cycle?
- The Importance of Product Life Cycle
- 5 Stages of the Product Life Cycle
- Factors Affecting the Product Life Cycle
- Managing the Product Life Cycle



Product Portfolio and the Boston Matrix

Topics covered :

- What Is a Product Portfolio?
- What Should You Include in a Product Portfolio?
- What Is the Importance of a Product Portfolio?
- How To Build a Product Portfolio?
- How To Optimize an Existing Product Portfolio?

Some Examples of Product Portfolios

Definition of Product Portfolio

- A product portfolio (also called a **product mix**) refers to the total collection of products or services that a company sells. It may simply be a single product or a series of products

Apple Inc.					
iPhones	iPads	Macintosh	Apple Watch	TV	Music
iPhone 11 Pro	iPad Pro	MacBook Pro 13"	Apple Watch Series 5	Apple TV+	Apple Music
iPhone 11	iPad Air	MacBook Pro 16"	Apple Watch Studio	Apple TV pp	AirPods Pro
iPhone SE	iPad	MacBook Air	Apple Watch Nike	Apple TV 4K	AirPods
iPhone Xr	iPad mini	Mac mini	Apple Watch Hermes	Apple TV HD	HomePod
		iMac	Apple Watch Edition	AirPlay	iPod touch
		iMac Pro	Apple Watch Series 3		Beats



Product Portfolio

- 1) A product portfolio is the collection of all the services or products that a company offers.
- 2) The product portfolio of a business includes the following types of products:
 - ☐ Products they offered during the foundation period.
 - ☐ Products they are currently selling.
 - ☐ Products that are in the pipeline.
- 3) Now, many big enterprises segment their products into **product lines or verticals**. However, their product portfolio combines all their products and product lines. .

Product Life Cycles and the Product Portfolio

- ❑ **Product Life Cycle** – shows the stages that products go through from development to withdrawal from the market
- ❑ **Product Portfolio** – the range of products a company has in development or available for consumers at any one time
- ❑ **Managing product portfolio is important for cash flow**
- ❑ A product portfolio analysis helps you **stay on top of the market** and **understand how to innovate.**



How to organize your product portfolio

- Your product portfolio should include **all your products**, whether you have 10 product lines, five sub-brands, or four single products.
- The key is to **organize and segregate** your product portfolio accordingly.
 - To organize your product portfolio, begin broader and then narrow down. First organize by brand, then subsidiary, then perhaps the product lines, and finally the products under each.

Note that each **product's market share** and **growth** play an essential role in your product portfolio.



Importance of product Portfolio

- ❑ It optimizes product **investments**.
- ❑ It strengthens the **product's competitive standing**, increasing its chances of being sold.
- ❑ It increases product focus.
- ❑ It significantly improves collaboration and communication.
- ❑ A diverse product offering raises overall **brand awareness**.
- ❑ It becomes easier for businesses **to introduce new or updated products**.

Importance of product Portfolio

- ❑ The product portfolio helps enterprises to expand globally.
- ❑ Creating a product portfolio allows a company to address the needs of several market segments.
- ❑ A product portfolio determines your IPO in the stock market.
- ❑ As a product's life cycle concludes, newer products may replace it.
- ❑ It helps identify weak and robust products, assisting in the transparency of resource allocation.
- ❑ It also aids in ensuring that product investments align with corporate objectives.

Balanced Product Portfolio

- Your product portfolio will contain **all your products** and their **market share** and **revenue**.
- However, when you analyze your portfolio, you may realize that some products are rewarding while others slow you down.
- A **balanced product portfolio** ensures that your risks and assets are equally distributed.
- Moreover, having a balanced portfolio means that you can take advantage of the current and future market possibilities. In the absence of a balanced product portfolio, the market rules you instead of the other way round.
- A balanced product portfolio is an essential tool for **change management**.

Product Portfolio Management (PPM)

- Product Portfolio Management is an approach to managing the balance of investments in a company's product initiatives to increase **market share** and **revenues**

- There are two aspects to Product Portfolio management (each with different stakeholders):
 1. New Product Portfolio; for programs currently in development [New Product Development].
 2. Product Life Cycle Management is for products that have already been launched and are currently sold.

Role of a Product Manager

- In general, a Product Manager focuses on the portfolio of development programs while Product Marketing Managers focus on in-market products.
- Product lifecycle management includes decisions that influence marketing and sales budgets (including promotion), and decisions are often made in real-time.
- There are **four commonly used frameworks** for managing a company's product portfolios in product development and in-market.
- These matrices help managers decide relative investment levels based on market and product characteristics.

Tools for Product Portfolio Management

There are several very popular and useful tools for Product Portfolio Management – each having a slightly different take on the product portfolio analysis that a product manager should have in their tool kit. **The best-known frameworks** are:

- Boston Consulting Group's Growth Share Matrix
- GE/McKinsey's Portfolio Analysis Matrix
- Ansoff Matrix
- Nagji & Tuff's Innovation Ambition Matrix

Innovation Ambition Matrix

Innovation is a means to an end, not a goal in itself. Innovation enables you to achieve your organization's strategic objectives. Portfolio management is **a tool to monitor** whether you are on track with closing the gap between where your organization is and where it wants to be.

❖ Make a start with innovation portfolio management in four steps

Step 1: Define your organization's strategic priorities

Define &Weight

30% Lean

50% Reach more customers

20% Reduce safety incidents

100% Total

Innovation Ambition Matrix

Step 2: Track all ongoing projects and products

Create **a list of all ongoing projects**, that is, all projects related to business development, improvement, innovation, research, etc.

Objective: To which strategic priority does the project contribute?

Status: When will the solution be implemented in practice (for research this may take years)?

Burn rate: How many resources does the project consume monthly (development costs, FTEs)?

Complexity: What is the degree of complexity of the project or its deviation from current practices (how novel is the approach)?



Innovation Ambition Matrix

Step 3: Plot your portfolio

Use the information collected in Step 2 to plot your portfolio. You can do this with paper and pencil, but its simplest form is a spreadsheet bubble plot.

You can start with the following set-up, use:

The x-axis for completion duration

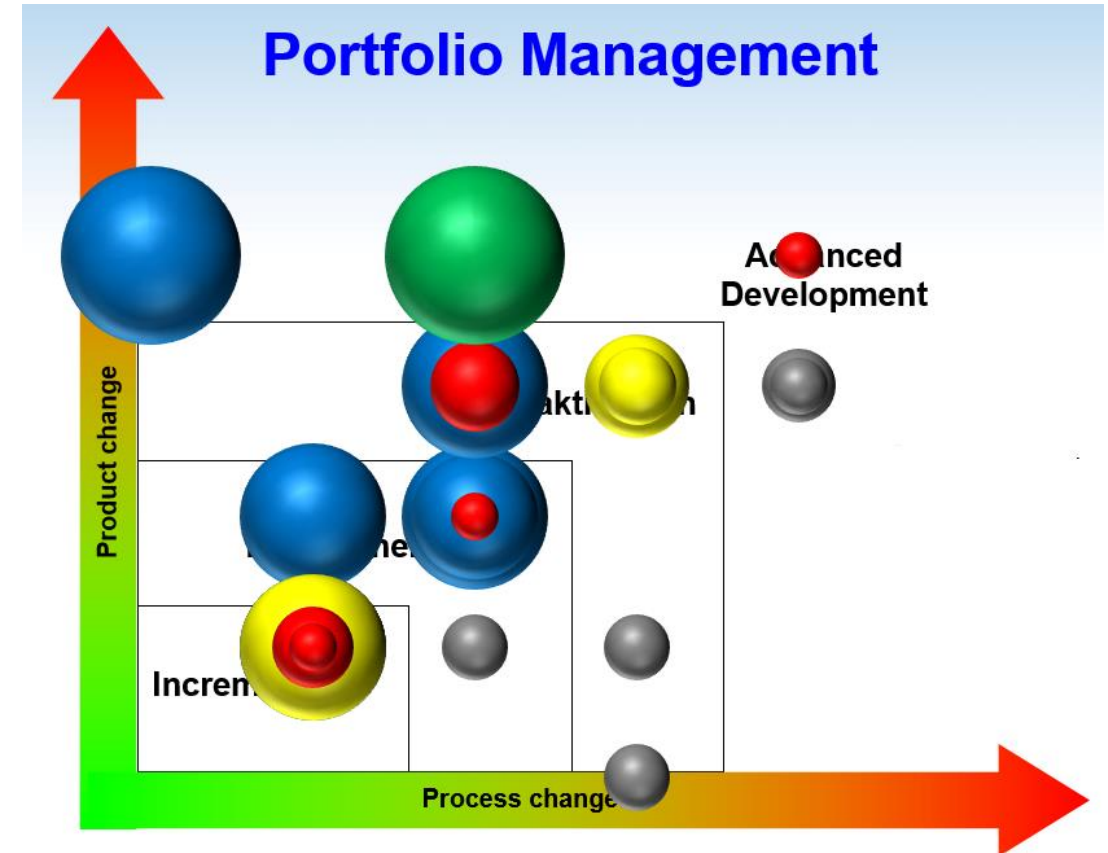
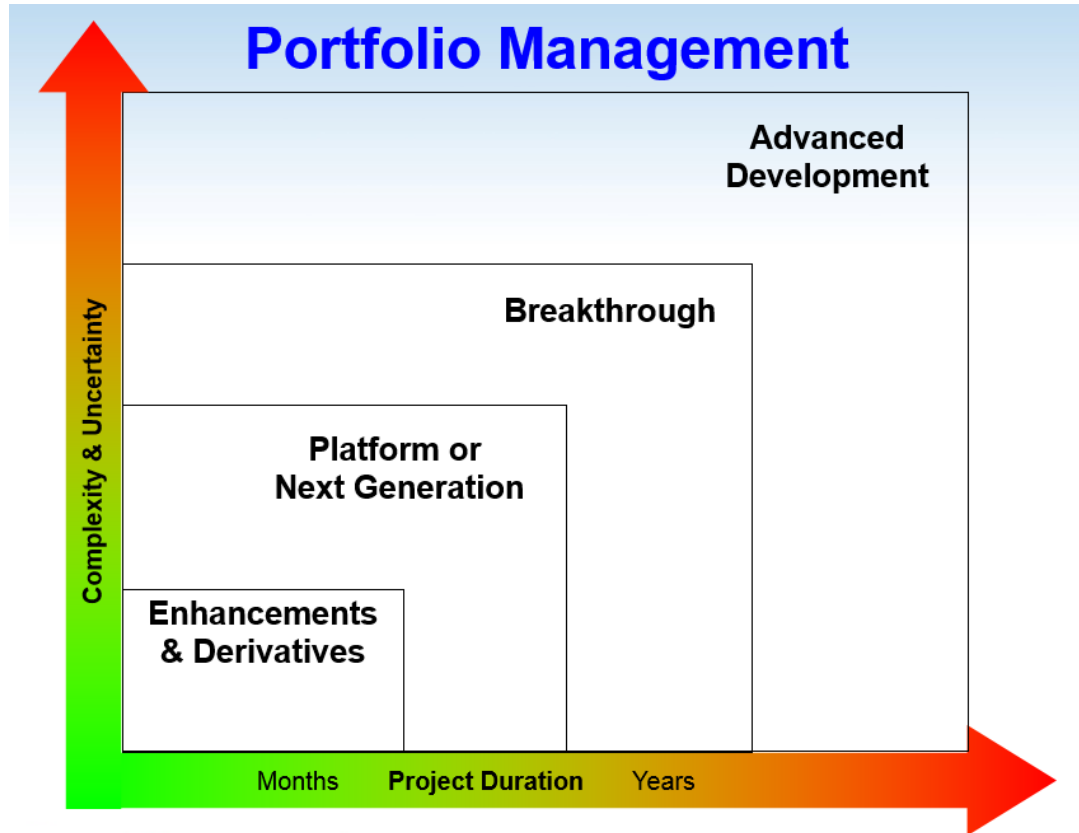
The y-axis for the degree of complexity

Color to indicate the strategic area the project contributes to

Size of each of the bubbles to indicate burn rate



Innovation Ambition Matrix



Innovation Ambition Matrix

Step 4: Analyze

Analyze

- Are there sufficient projects to help achieve the short- and long-term goals for each strategic priority?
- Is the distribution of projects aligned with the distribution of priorities in Step 1?
- Are these the right projects? Will these projects get the organization where it needs to be?
- Can the organization support all these projects with current resources—e.g., capital and

Ansoff Matrix

- The **Ansoff Matrix**, often called the **Product/Market Expansion Grid**, is a two-by-two framework used by management teams and the analyst community to help plan and evaluate growth initiatives. In particular, the tool helps **stakeholders** conceptualize the level of risk associated with different **growth strategies**
- It features Products on the X-axis and Markets on the Y-axis
- Ansoff Matrix contains **a market dimension** (existing versus new markets) and a **product dimension** (existing versus new) and based on the quadrant, recommends everything from conservative market penetration (Existing products, existing markets) to diversification (New Products and new Markets)



Ansoff Matrix



Each box of the Matrix corresponds to a specific growth strategy.

- **Market Penetration** – The concept of increasing sales of existing products into an existing market
- **Market Development** – Focuses on selling existing products into new markets
- **Product Development** – Focuses on introducing new products to an existing market
- **Diversification** – The concept of entering a new market with altogether new products



The GE-McKinsey Matrix



- The GE-McKinsey Matrix uses multiple variables to determine the two dimensions:

- ❑ Industry attractiveness, and
- ❑ Competitive strength

- ✓ Market share it commands
- ✓ Market share growth potential
- ✓ Brand awareness
- ✓ Profit margins of the business
- ✓ Customer loyalty and satisfaction
- ✓ Uniqueness of its products or services

GE/McKinsey's Portfolio Analysis Matrix includes one market dimension and one firm dimension. It combines internal and external factors to guide investment

INDUSTRY ATTRACTIVENESS	HIGH	INVEST GROW	INVEST GROW	SELECTIVITY EARNINGS
	MEDIUM	INVEST GROW	SELECTIVITY EARNINGS	HARVEST DIVEST
	LOW	SELECTIVITY EARNINGS	HARVEST DIVEST	HARVEST DIVEST
		HIGH	MEDIUM	LOW
		COMPETITIVE STRENGTH		

GE/McKinsey's Portfolio Analysis Matrix



- The three degrees (High, Medium and Low) of Industry Attractiveness and Competitive Strength provide 9 different strategic postures for a business. **The strategic actions** to choose from are:

- Invest / Grow strategy
- Selectivity / Earnings strategy, and
- Harvest/Divest strategy

Each box of the Matrix corresponds to a specific growth strategy.

INDUSTRY ATTRACTIVENESS	HIGH	INVEST GROW	INVEST GROW	SELECTIVITY EARNINGS
	MEDIUM	INVEST GROW	SELECTIVITY EARNINGS	HARVEST DIVEST
	LOW	SELECTIVITY EARNINGS	HARVEST DIVEST	HARVEST DIVEST
		HIGH	MEDIUM	LOW
		COMPETITIVE STRENGTH		

(Invest/Grow strategy)

The best position for a business to be in is the Invest/Grow section. A business can reach this scenario if it is operating in a moderate to highly attractive industry while having a moderate to highly competitive position within that industry. In such a situation, there is a massive growth potential.

However, to grow, a business needs resources, such as assets and capital. These investments are necessary to increase capacity, reach new customers through marketing or improve products through Research & Development. A business can also choose to grow externally via Mergers & Acquisitions (M&A), in addition to organic growth. Again, it will require investments to execute



(Selectivity/Earnings strategy)

This strategy is also referred to as **Hold strategy**. A business in the selectivity / earnings section is a bit more tricky. The business is either in a low – moderate competitive position in an attractive industry or in an extremely high competitive position in a less attractive industry. Deciding whether to invest or not to invest largely depends on the business's outlook. It could expect to, either improve its competitive position or shift to a more attractive industry

The business should carefully decide its competitive move. As a business, you want to use most of your investments in the Invest/Grow section. Then, use the remaining investments in the selectivity / earnings section to improve your competitive position. You should closely monitor the progress and improvements and correct course as necessary

(Harvest/Divest strategy)

This strategy is most appropriate for a business that:

- ✓ has a low competitive position
- ✓ is active in an unattractive industry, or
- ✓ a combination of the two

These businesses do not have too many promising outlooks. The strategic responses to consider are:

Divest the business units by selling it to an interested buyer for a reasonable price. This also known as a carve-out , or Choose a harvest strategy

(Harvest/Divest strategy)

Selling the business unit to another player in the industry that has a better competitive position is not a strange idea at all. The buyer might have better competences to make it a success. Or, the buyer can create value by combining activities i.e. leverage synergies. The business can use the cash it results from divestment in Invest/Grow section elsewhere in its portfolio.

Harvesting means that the business unit gets just enough investments to keep it operational. In other words, the business cashes whatever is left. This is a very short-term perspective that allows a business to subtract as much remaining cash as possible. However, such businesses are eventually liquidated and exit the industry.

The BOSTON Matrix

- ❑ A means of analyzing the product portfolio and informing decision making about possible marketing strategies
- ❑ Developed by the Boston Consulting Group – a business strategy and marketing consultancy in 1968
- ❑ Links growth rate, market share and cash flow



How to build a product portfolio using The BOSTON Matrix

The two critical components while building a product portfolio are:

- ❑ The market share of the product.

what the total market share of the product is. Is the percentage high or low?

- ❑ The market growth of the product.

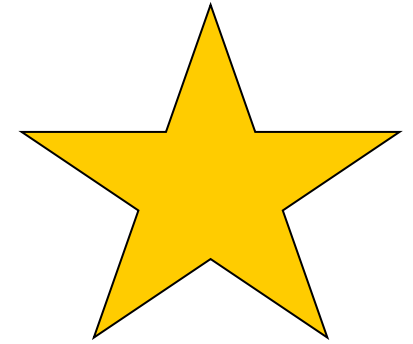
Does the product have a growing market?

What's the growth rate of this market?

Identify whether your product's market will grow or decline with time.



The BOSTON Matrix



Classifies Products into four simple categories:

Stars – products in markets experiencing high growth rates with a high or increasing share of the market

- Potential for high revenue growth
- Products with high growth and market share are stars.
- These demand a significant upfront investment. They also need investment to maintain development.
- If their growth slows down, they become cash cows with a significant market share

The BOSTON Matrix

Classifies Products into four simple categories:

Cash Cows:

High market share

Low growth markets – maturity stage of PLC

Low-cost support - High cash revenue – positive cash flows

Cash cows are products that reach maturity and require very little capital to preserve their market share.

The cash cows consistently supply money, which the company can use to invest in its stars



The BOSTON Matrix

Classifies Products into four simple categories:

Dogs:



Products in a low growth market - Have low or declining market share (decline stage of PLC)

Associated with negative cash flow - May require large sums of money to support

Dogs are products that have a low market share and a poor growth rate. These products may reach their break-even point, but investing in them is ineffective. A business may simply call sunset on these products. And with that, you can build and categorize your product portfolio!

The BOSTON Matrix

Classifies Products into four simple categories:

Problem Child or Question Mark:

Products having a low market share in a high growth market

Need money spent to develop them - May produce negative cash flow-----Potential for the future?

These products have a small market share yet a rapid growth rate.

A business must determine which question marks to invest in and which to avoid. To grow their market share, question marks typically require some investment.

Product analytics can help you understand the needs of your product for better investment decisions.

Sometimes, stakeholders play an important role in ruling out the question marks.



The BOSTON Matrix

Dogs:

Are they worth persevering with?

How much are they costing?

Could they be revived in some way?

How much would it cost to continue
to support such products?

How much would it cost to remove
from the market?

Question Mark or Problem

Children:

What are the chances of these products
securing a hold

in the market?

How much will it cost to promote them
to a stronger position?

Is it worth it?

The BOSTON Matrix

Stars:

Huge potential

May have been expensive to
develop

Worth spending money to promote

Consider the extent of their
product life cycle in decision
making

Cash Cows:

Cheap to promote

Generate large amounts of cash – use for further
R&D?

Costs of developing and promoting
have largely gone

Need to monitor their performance – the long term?

At the maturity stage of the PLC?

How To Optimize an Existing Product Portfolio?

Hold

- ☐ You continue along the same path. You run business with the product in question in the same way to hold the status quo.

Build

- ☐ You want to develop further. Here, you may choose to invest more. You can either invest in a Question Mark and make it a Star. Or you may increase your investments in a Star.
- ☐ Product portfolio management helps to make such decisions.

How To Optimize an Existing Product Portfolio?

Harvest

- ❑ Here, you don't make new investments but rather utilize incoming cash flow. You may decide to use the revenue from a Star and Cash Cow product to reduce investment burdens.

Divest

- ❑ You sell off or sunset Dogs to invest your human resources and financial capital in your Star and Question Mark products and divisions.

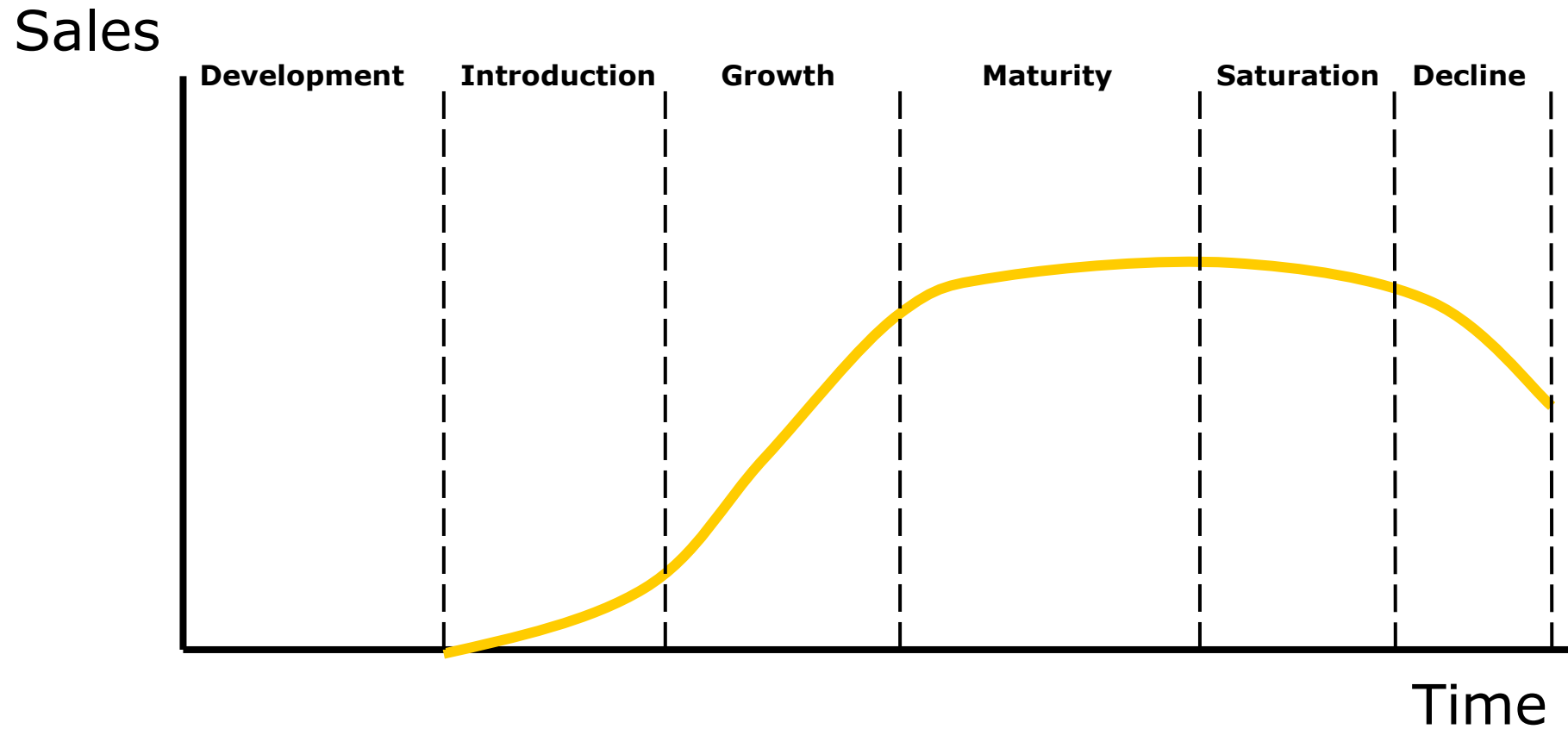
How To Optimize an Existing Product Portfolio?

Which tool to use???

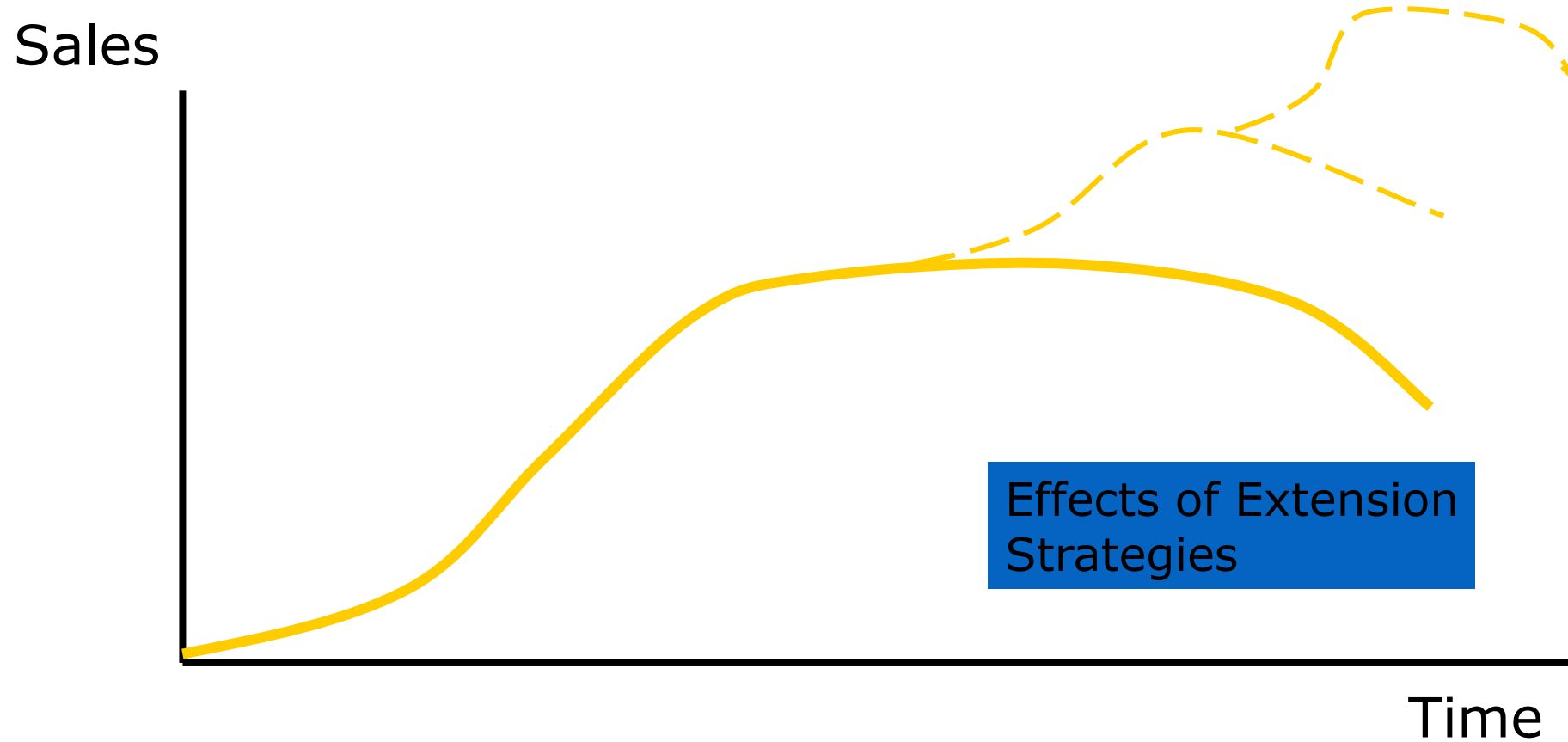
largely is dependent on your situation. If you are a...

- ❖ Large company looking at the business unit level use the GE/McKinsey Matrix.
- ❖ Tech company then the Innovation Ambition matrix is for you.
- ❖ Mature business in multiple markets, the BCG Matrix would be most helpful to achieve your business goals.
- ❖ A typical company looking at framing your business strategy should use the Ansoff Matrix.

Product Life Cycles and the Boston Matrix



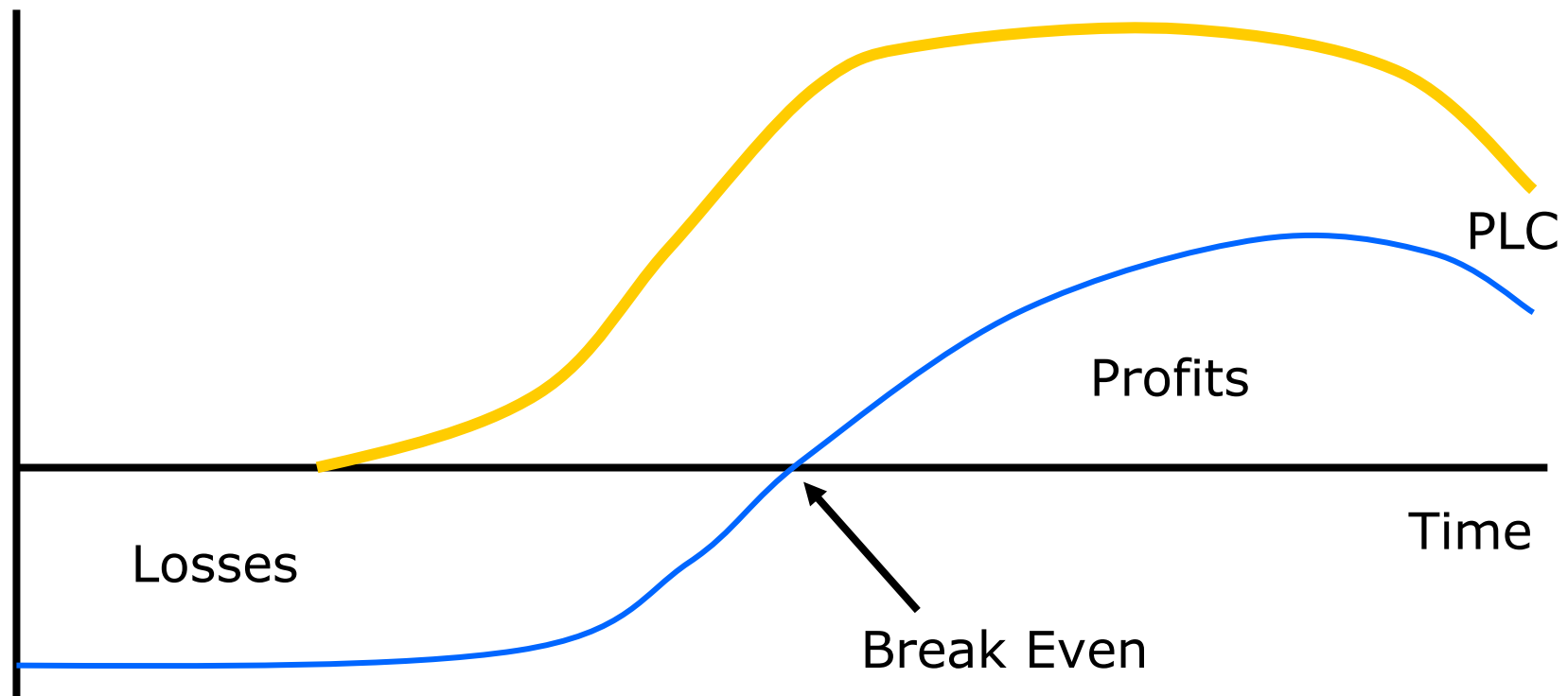
Product Life Cycles and the Boston Matrix



Product Life Cycles and the Boston Matrix

Sales/Profits

PLC and Profits



Some Examples of Product Portfolios

Apple

Apple's product portfolio includes the iPhone, iPad, Mac, and iPod. Even individual brands serve as umbrella brands, with many portfolios' models, such as the iPhone X, iPhone 12, and iPhone SE.

Proctor And Gamble

P&G provides a wide range of products such as Ariel, Gillette, Pampers, Pantene, Tide, Duracell, and Olay that span multiple categories, price points, and customer demographics. Unilever is another company with a comparable product portfolio.

Cola-Cola

The Coca-Cola Company's product portfolio includes well-known brands such as Cola (Original, Diet, Zero), Sprite, Fanta, Minute Maid, Kinley, and Smart water.

Some Examples of Product Portfolios

PRODUCT STRATEGY

STRATEGY
Vision Guides
Strategy and Portfolio



EXAMPLES

APPLE: Product Innovation & Disruption

AMAZON: Customer Needs & Relentless Iteration/Execution

GOOGLE: Technology Driven Solutions to Big Problems

IKEA: Design Focus on Low Cost and High Quality

MICROSOFT: Governance, Funding and Process for Product Strategy

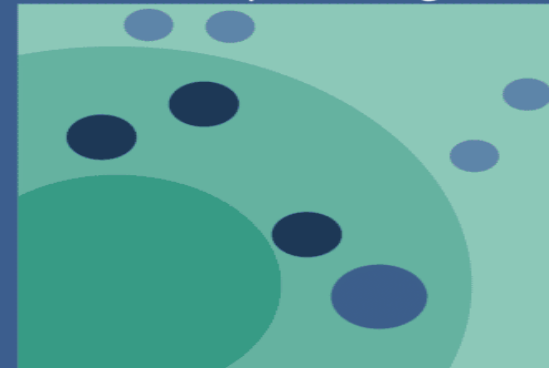
COCA-COLA: Strategy that is all about the voice of the customer

APPROACHES

1. **BROADEN:** Extend Innovation Outside the Core Product (into Augmented Product)
2. **DECIDE:** Choose Your Strategic Position as an Innovator, Follower, or Lowest Cost Producer
3. **INVEST:** Consider Investing in Transformational Products if your Culture Tolerates Risk
4. **LINK:** Align Your Vision to Your Product Development Strategy to Yearly Budget Commitment
5. **IMPLEMENT:** Ensure Your Governance, Funding Model, and Process Supports Your Product Strategy

PRODUCT PORTFOLIO

Portfolio Guides
Roadmaps and Budgets



Allocating Investment

- For a risk-based approach, a company might allocate its investments in three categories:

Core Products

- A core product introduces a modification of an existing offering to create a new product or new product line. Often this core product has the highest market share and often delivers the most to the bottom line. Core products are sold to existing customers and leverage existing product technologies. Typically, they have the highest resource allocation in the product portfolio.

Adjacent Products

- Adjacent products are conceptually and functionally the same as core products, but they serve a market that is new to the company. Or they may consist of a substantial modification to a product, expanding the market the company has already entered. These are often variants or derivative products from an existing product line.

Transformational Products

- Transformational products innovate in products and markets simultaneously. They may involve a ground-up design or a new-to-the-world product. They often include dramatic improvement in functionality or performance

Allocating Investment

➤ Examples of Product Portfolio Management Investment areas

❖ Company Type	Core	Adjacent	Transformational
❖ Mature Company	70%	20%	10%
❖ Growth Company	40%	40%	20%
❖ Startup	0%	0%	100%



Overall, by understanding the stage of the product lifecycle, companies can maximize the success and profitability of their products and ensure their long-term success in the market..

Conclusion

Product Portfolios, Product Roadmaps, and Product Development are Tied Together

Regardless of which kind of matrix that you choose, it is important to link the portfolio to the overall business strategy (upstream link) and to tie the portfolio strategy to product roadmaps (downstream link). The portfolio basically serves a bridge between market strategy and product development.

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Thank You



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