

Product Analysis and Development

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Lecture 9

New Product Development (Part two)

ENT 614



In the
previous
lecture

New product Development Process

Topics covered :

- What is a Product Development Process?
- The 6 Steps of The New Product Development Process [NPD]
 1. Ideation and Ideation techniques
 2. Idea screening
 3. Concept development & testing

In this lecture

New Product Development (Part Two)

Topics covered :

- What Is a Product Development Process?
- A. Product Definition
- B. Prototyping
- C. Initial Design
- D. Validation & Testing
- E. Commercialization

What is a Product Development Process?

- A Product Development Process refers to the entire range of activities where a company conceptualizes and realizes a new offering.
- Product development is the process of building a new product, from **ideation** all the way through **launch**.
- Identifying market need, searching the competition and developing a minimum viable product (MVP).

Product definition

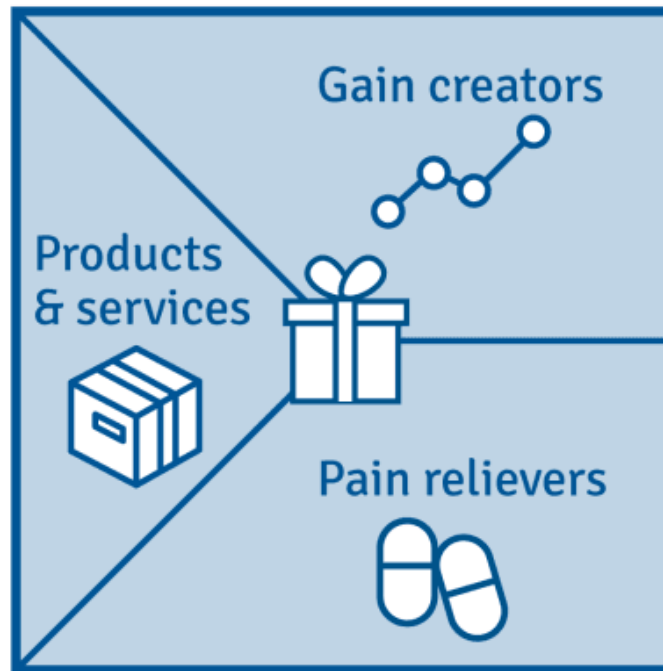
- This is also referred to as **scoping** or **concept development** and focuses on refining the product strategy.
- During this stage, it's important to define:
 1. **Business analysis:** A business analysis consists of mapping out distribution strategy, ecommerce strategy, and a more in-depth competitor analysis.

The purpose of this step is to begin building a clearly defined **product roadmap**.

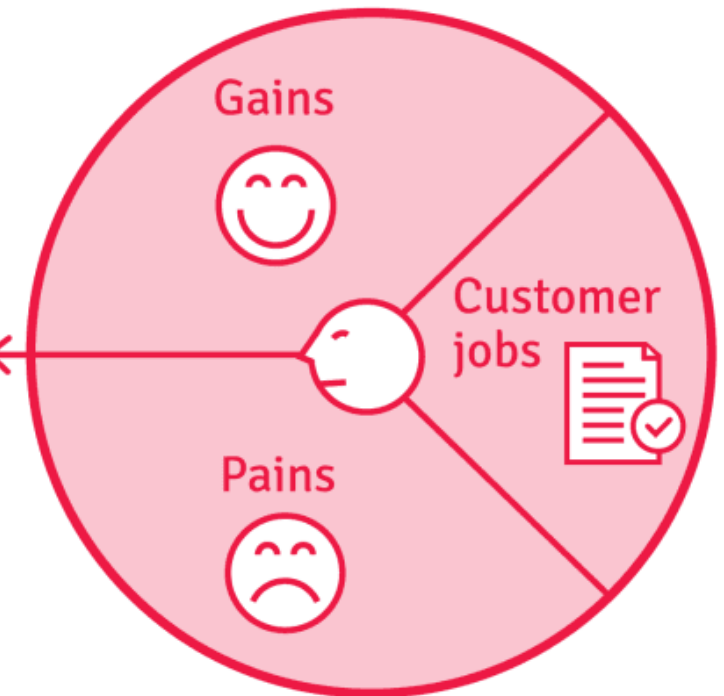
Product definition

2- Value proposition: The value proposition is what problem the product is solving. Consider how it differs from other products in the market. This value can be useful for market research and for developing your marketing strategy.

Value Proposition



Customer Profile



Product Definition

3- Success metrics: It's essential to clarify success metrics early so you can evaluate and measure success once the product is launched. Are there key metrics you want to look out for? These could be basic KPIs like average order value, or something more specific like custom set goals relevant to your organization.

4- Marketing strategy: Once you've identified your value proposition and success metrics, begin brainstorming a marketing strategy that fits your needs. Consider which channels you want to promote your product on—such as social media or a blog post.

Market strategy and business analysis

identifies the product strategy of how to optimally market and sell a product or service. It's comprised of **the four P's of marketing** -- product, price, promotion and place.

Product. The service or good that's been designed to satisfy the demand of a target audience.

Price. Pricing decisions affect everything, including profit margins, supply and demand as well as market strategy.

Market strategy and business analysis

identifies the product strategy of how to optimally market and sell a product or service. It's comprised of **the four P's of marketing** -- product, price, promotion and place.

Promotion. The goals of promotion are to present the product to the target audience -- increase demand and illustrate the value of the product. Promotion includes advertisements, public relations and marketing campaigns.

Place. The transaction may not occur on the web, but in the digital economy, customers are generally engaged and converted on the internet. Whether the product is provided in a traditional brick-and-mortar business setting or is available through an omnichannel approach, the optimal channel or channels must be determined.

Marketing Strategy Statement Formulation

Part One - Overall:
Target Market
Planned Product Positioning
Sales & Profit Goals
Market Share

Part Two - Short-Term:
Product's Planned Price
Distribution
Marketing Budget

Part Three - Long-Term:
Sales & Profit Goals
Marketing Mix Strategy

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- The marketing strategy formulation takes place in three parts
 - The first part describes the size, structure and behavior of the target market, the planned product positioning and the sales, market share and profit goals sought in the first few years.
 - The second part outlines the product's planned price, distribution strategy and marketing budget for the first year.
 - The third part describes the long run sales and profit goals and marketing mix strategy overtime.
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Product Development

- Making of pilot models
- Making prototypes
- Running laboratory tests
- Turning the concept into the workable product
- Functional test
- Consumer test

A/B Testing

- A/B Testing Definition
- An A/B test pits two items or variations against one another to see which performs better. A/B testing is frequently used in product management to find the most appropriate functioning option.
- Performing an A/B test is a common strategy in today's market to analyze the customer's responses to two different products and understand which one could serve better

Prototyping

- A prototype is an **unfinished version** of any product used for user testing. A prototype must incorporate all the features and functions of the final product but without the final design elements.
- Prototypes enable the companies to assess the product's value proposition, and quality before its final launch.



(prototype)



(minimum viable product)



(product)

Prototyping

- Prototyping tools help find **black holes** in the product design before launching it.
- Prototyping makes it easier for you to **confirm** or **disprove** the hypotheses.
- It helps in getting access to **early feedback** from your customers.

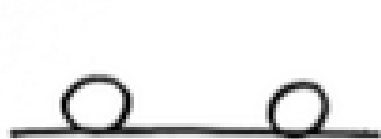
Prototyping

- During the prototyping phase, you will work on :
- **Feasibility analysis:** The next step in the process is to evaluate your product strategy based on feasibility. Determine if the workload and estimated timeline are possible to achieve. If not, adjust your dates accordingly and request help from additional stakeholders.
- **Market risk research:** It's important to analyze any potential risks associated with the production of your product before it's physically created. This will prevent the product launch from being derailed later on. It will also ensure you communicate risks to the team by documenting them in a risk register.

Prototyping

- **Development strategy:** Next, you can begin working through your development plan. In other words, know how you'll be assigning tasks and the timeline of these tasks. One way you can plan tasks and estimate timeline is by using the critical path method.
- **MVP:** The final outcome of the prototyping stage is a minimum viable product. Think of your MVP as a product that has the features necessary to go to launch with and nothing above what's necessary for it to function. For example, an MVP bike would include a frame, wheels, and a seat, but wouldn't contain a basket or bell. Creating an MVP can help your team execute the product launch quicker than building all the desired features, which can drag launch timelines out. Desired features can be added down the road when bandwidth is available

Not like this...

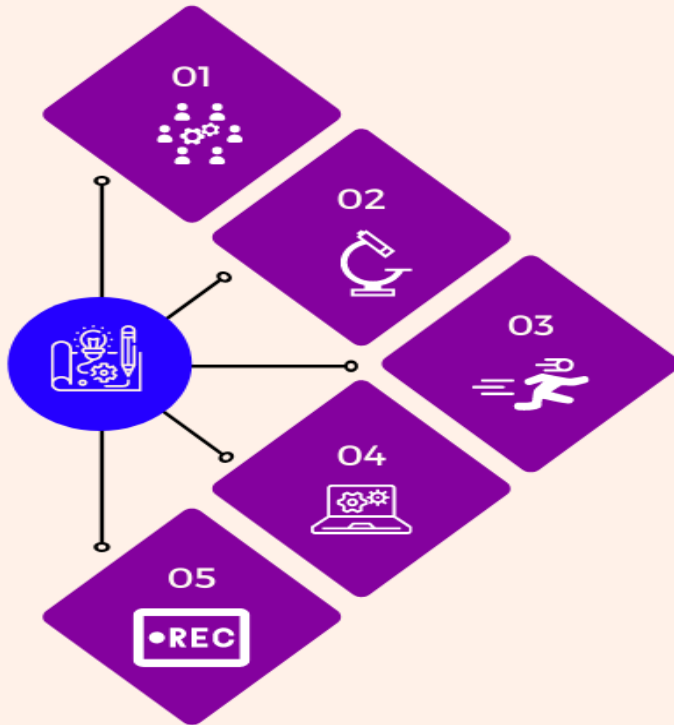


...instead like this!



Prototyping

TIPS TO BUILD AN EFFECTIVE PROTOTYPE



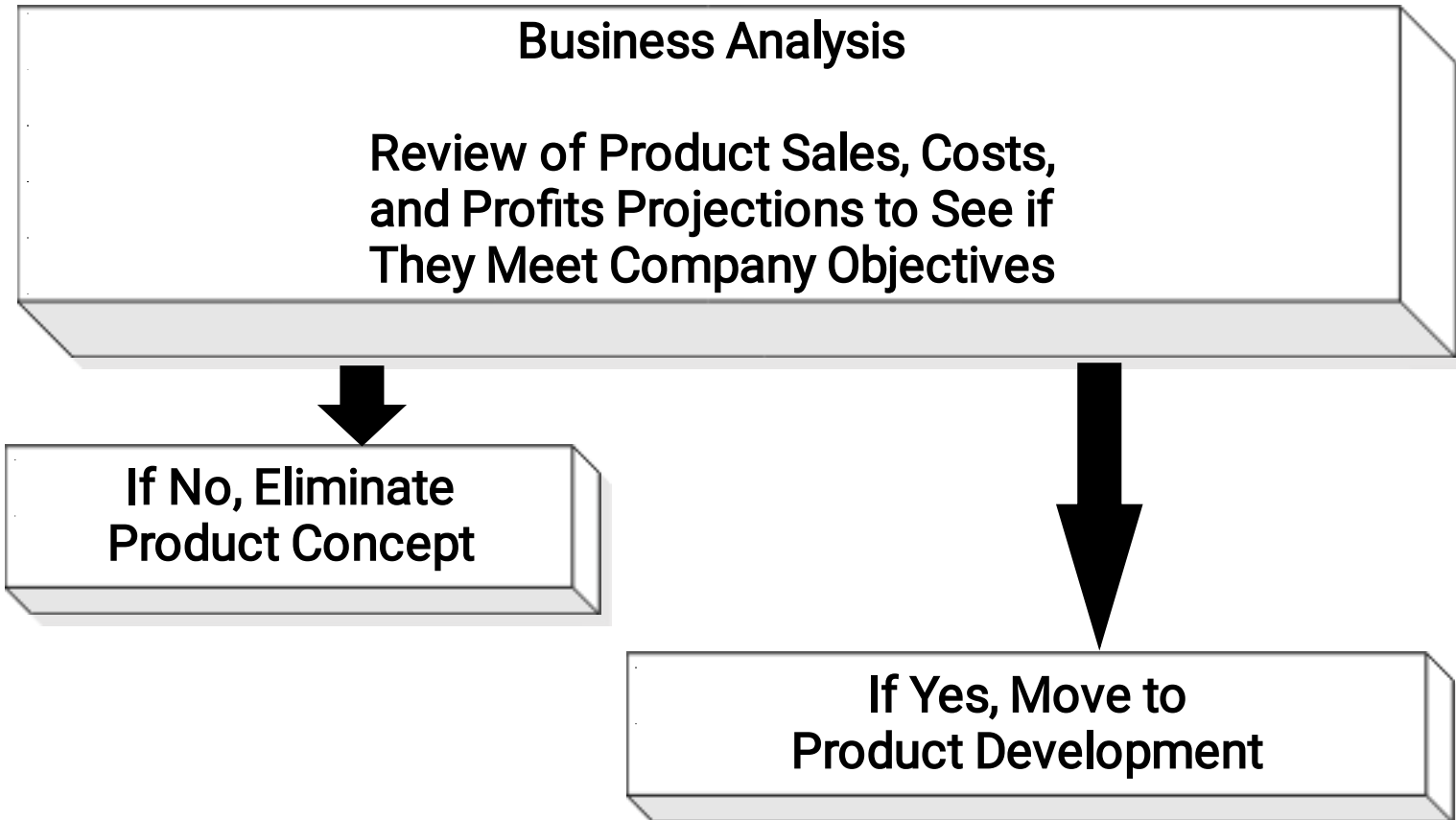
01 | KEEP IT USER CENTRIC
Your prototype should be made keeping user in mind, this will enable better product performance.

02 | PLAN THE SCOPE OF TESTING
Its very important to plan the scope as it ensures systematic testing of the prototype.

03 | TAKE QUICK ACTION
Be fast with the prototyping process and don't be afraid to fail. It will only help you grow.

04 | CHOOSE RIGHT TOOLS
Research well and invest in the right tools. This will save time and help in getting better results.

05 | RECORD THE TESTING QUESTIONS
Recording will help you in systematic testing. It will also enable you to evaluate the results properly.



Initial Design

To produce the initial design, you will:

Source materials: Sourcing materials plays an important role in designing the initial mockup. This may entail working with various vendors and ordering materials or creating your own. Since materials can come from various places, you should document material use in a shared space to reference later if needed.

Connect with stakeholders: It's important to keep tight communication during the design phase to verify your initial design is on the right track. Share weekly or daily progress reports to share updates and get approvals as needed.

Receive initial feedback: When the design is complete, ask senior management and project stakeholders for initial feedback. You can then revise the product design as needed until the final design is ready to be developed and implemented.

Validation and testing

Concept development and testing: You may have successfully designed your prototype, but you'll still need to work through any issues that arise while developing the concept. This could involve software development or the physical production of the initial prototype. Test functionality by enlisting the help of team members and beta testers to quality assure the development.

Front-end testing: During this stage, test the front-end functionality for risks with development code or consumer-facing errors. This includes checking the ecommerce functionality and ensuring it's stable for launch.

Test marketing: Before you begin producing your final product, test your marketing plan for functionality and errors. This is also a time to ensure that all campaigns are set up correctly and ready to launch.

Test Marketing

Standard Test Market

Full marketing campaign
in a small number of
representative cities.

Controlled Test Market

A few stores that have
agreed to carry new
products for a fee.

Simulated Test Market

Test in a simulated
shopping environment
to a sample of
consumers.

Commercialization

In this stage you should be working on:

Product development: This is the physical creation of your product that will be released to your customers. This may require production or additional development for software concepts. Give your team the final prototype and MVP iterations to produce the product to the correct specifications.

Ecommerce implementation: Once the product has been developed and you're ready to launch, your development team will transition your ecommerce materials to a live state. This may require additional testing to ensure your live product is functioning as it was intended during the previous front-end testing phase.

Examples of product development

Taco Bell

Taco Bell has a unique approach to new product development, as its innovation team looks to grocery stores, social media and competitors for its inspiration.

Idea generation. The development team reviews 4,500 new product ideas each year.

Concept development and testing. The team generated 80 iterations of the Waffle Taco before deciding on the final one. Unfortunately, Taco Bell discontinued the Waffle Taco after only a year, replacing it with the Biscuit Taco.

Product technical design. For the Doritos Locos Taco, the product team discovered a process to evenly distribute seasoning on the shells and contain cheese dust in the production process.

Test marketing. Between 350-500 ideas end up in consumer tests.

Market entry. Eight to 10 products end up on the national menu



Examples of product development

Roomba

an autonomous robotic vacuum cleaner sold by iRobot.



Idea generation. The idea for Roomba originated with a do-it-yourself Lego challenge when Jones worked at the Massachusetts Institute of Technology Artificial Intelligence Lab. The challenge was to make something innovative from Legos.

Idea screening. Jones showed initial concepts to companies -- Denning, Bissell and Proctor & Gamble -- but the companies declined to move forward.

Product technical design. After they invested \$1-2 million in the project, due to personnel changes, SC Johnson decided to stop supporting the Roomba.

Market entry. IRobot continued to fund the project. In September 2002, less than a year after SC Johnson withdrew financial support, the Roomba launched

What is product-market fit?

The phrase product-market fit (PMF) describes how well your product **meets the needs** of your customers. Does your product give the people who make up your market something they need? Do you have a sustainable business with customers that keep coming back?

According to Marc Andreessen, Silicon Valley investor and engineer, getting to product-market fit is “the only thing that matters.”

Andreessen defines having a great market as the most important variable in start-up success, since without a great market, even the strongest products and most brilliant teams can't survive.

Success lies in finding your market and supplying a product to fit it.



The 4 stages of product-market fit

1. Ideation

Coming up with the initial idea for your product or service

2. Validation

Validating your idea and fitting your solution to the customer's problem

3. Scaling

Scaling your product with a repeatable selling motion

4. Product-market fit

The 4 stages of product-market fit

Stage 1: Initial idea

This is where you generate ideas about the product you want to build and who it's for. Remember: your product has to solve a real-life problem – a problem that many people have and are willing to pay money to resolve. At this stage, you need to take the following steps:

- ☐ Choose the problem you're going to solve
- ☐ Define your target audience
- ☐ Create a customer persona
- ☐ Do competitive research
- ☐ Come up with a value proposition
- ☐ Decide on your minimum viable product's (MVP) feature set
- ☐ Build your MVP

The 4 stages of product-market fit

Stage 2: Idea validation and problem-solution fit

At this stage, you need to identify whether or not there's actual interest in the MVP you've built, which means you need to validate your MVP.

How do you validate your MVP?

Validation means testing out your idea in the real world with the kinds of people you're interested in having as customers. It might take the form of surveys, interviews, focus groups, online outreach.

You also need to discover who your ideal customer is and reach a problem-solution fit. Of course, if you can't manage to do any of this, you'll need to pivot and change tack to something else.

The 4 stages of product-market fit

Problem-solution fit is when you have confirmed through research and testing that real people experience the need you identified with your idea, and that they feel your product or service could be the answer to that need.

Product-market fit is when you've gone beyond that first group of enthusiastic people and found the same need and appetite in the wider population. You will also have tweaked and refined your product to meet the need of that wider market, and have build a solid foundation that gives you the potential to scale and grow.

Both of them are important – however, only the second will keep your business alive.

The 4 stages of product-market fit

Stage 3: Scaling with a repeatable selling motion

At this stage you have to start scaling. Remember: scaling doesn't mean that the founder of the business is making sales calls over the phone. It means your product is selling itself through different channels and selling mechanisms. This stage is characterized by:

- ✓ Thorough understanding of who your ideal customer is
- ✓ Core group of happy customers who continuously refer you to other customers
- ✓ Go to market strategy that constantly generates new customers

At this stage, you also need to focus your efforts on a series of trackable metrics that reflects the overall growth of the company. This success metric is the reason why you need to build a feedback loop – in other words, a feedback collection

The 4 stages of product-market fit

Stage 4: Product-market fit

According to Eric Ries, the author of The Lean Startup, the PMF stage is:

“When a startup finally finds a widespread set of customers that resonate with its product.”

One common mistake among many businesses is the perception that product-market fit can protect you from competition, or that finding a product-market fit keeps you safe from market changes. If only that were true. The reality is that when you find a product-market fit, that's when you actually need to get your gears turning and start seeking growth

4 Key Types of Product Development Methods

1. Agile methodology

Agile product development focuses on continuous and iterative development of a product where each sprint/ build-cycle represents a complete iteration, and is repeated again.

Rather than being linear in progress, where one stage is completed and not looked back on till the product is fully complete, the agile method focuses on the following:

- Delivering in updated 'versions'
- Monitoring performance and taking user/customer feedback
- Going back to the drawing board to plan delivery of improvement updates
- Finalizing next sprint updates and aligning team on upcoming sprints
- Delivering improved version
- Repeat

4 Key Types of Product Development Methods

2. Kanban process

Kanban is a process that uses the agile framework for development, while focusing on continuously decreasing the amount of work in progress.

Kanban is more of an agile method that applies deliberation to reduce work-in-progress. The key reason to do so is to test the limit of strain that the pipeline can take while working smoothly and not getting clogged with bottlenecks.

4 Key Types of Product Development Methods

2. Kanban process

The Kanban WIP limits enable teams to break down larger development goals into smaller cycles and monitor the pipeline for any issues that may come up, before increasing the weight of work in each cycle.

The weight of each cycle depends on the amount of work the team is able to complete on time, while following hygiene practices are necessary to maintain code-base health.

4 Key Types of Product Development Methods

3. Scrum process

Scrum is an agile-based process where it focuses on team interactions and meetings to plan and execute each sprint. A scrum is a set of meetings, organized and documented by the scrum master who typically reports to the product manager.

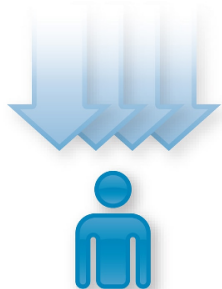
The process of scrum includes collectively identifying and prioritizing new updates, identifying and managing backlogs, and sharing feedback on learnings, successes, and gaps.

Both Kanban and Scrum focus on two different and complementary aspects of further detailing out individual processes within the agile framework.

While Kanban focuses on 'how to do the work efficiently', Scrum focuses on 'how to plan the work effectively'.

The Agile Scrum Framework at a glance

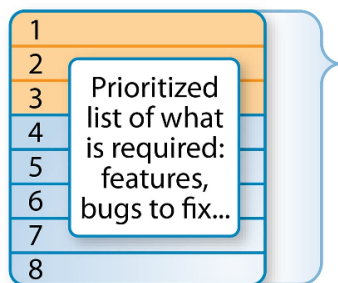
Inputs from
Customers, Team,
Managers, Execs



Product Owner



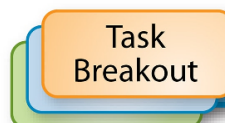
The Team



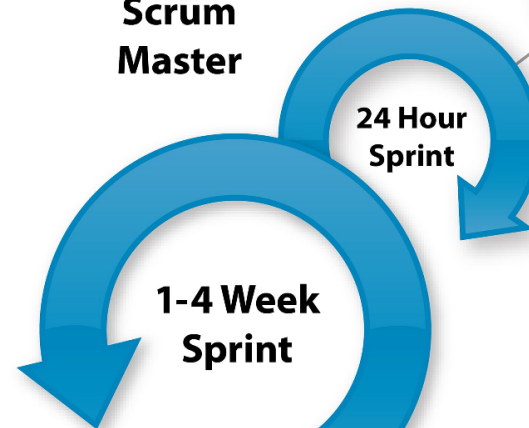
Product Backlog

Team selects starting at top as much as it can commit to deliver by end of Sprint

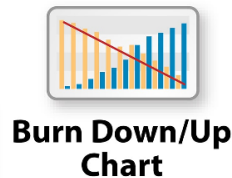
Sprint Planning Meeting



Sprint Backlog



Scrum Master



Sprint Review



Finished Work



Sprint



4 Key Types of Product Development Methods

4. Waterfall methodology

Waterfall methodology is a stage-based developmental framework, where the entire product's development is completed in linear stages.

Unlike the agile-framework which delivers iterations of the product and is a continuous process based on user feedback. Waterfall takes a linear approach to delivering the finished product.

Updates to the product are, therefore, less flexible, and can only be incorporated once the product development stages are completed.

4 Key Types of Product Development Methods

4. Waterfall methodology

Updates to the product are, therefore, less flexible, and can only be incorporated once the product development stages are completed.

Waterfall also focuses on intense documentation for each stage of work, unlike agile, which focuses on sprint-based documentation and generally maintains a clean-code health that can be easily coded on top for regular updates.

With the rise of customer-centric product development that depends on changing customer preferences and opinions to fuel product updates, waterfall has less practitioners than it did 15 years ago.

A COMPREHENSIVE COMPARISON BETWEEN THE AGILE, SCRUM, *and* WATERFALL METHODOLOGY

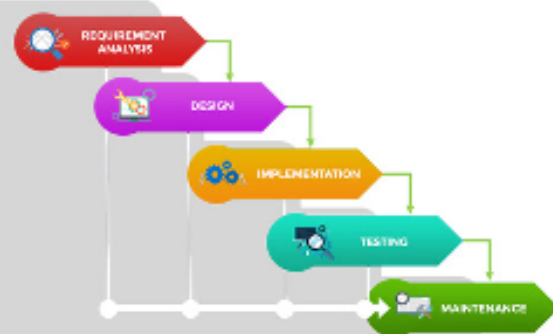
AGILE METHODOLOGY



SCRUM METHODOLOGY



WATERFALL METHODOLOGY





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- Product Definition
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- Commercialization
- Product Market Fit
- 4 Key Types of Product Development Methods

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Thank You