



PMDE PROGRAM

MODULE 3: THE PRODUCT MANAGEMENT ORGANIZATION

CLASS: PMDE BATCH , MODULE 3

SESSION-1 & 2



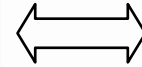
FOCUS

- Digital & product mindsets
- Unique economic properties of information & digital goods
- Digitization, and characteristics of digital products
- What is different about new-age digital products

THIS COURSE

The Digital mindset

- ✓ Digitization and digital transformation
- ✓ Utilizing Digital technologies
 - Data, algorithms and AI
- ✓ Sale and access/delivery via internet
- ✓ *User experience*



The Product mindset

- ❖ Design thinking – identify the problem worth solving
- ❖ Lean - experimentation
- ❖ Agile – product design and development



- Digital products based on target consumers:
 - Business-to-business/government/consumers (B2B, B2G, B2C)
 - Government-to-citizens (G2C)
- ‘Phygital’ (physical + digital) products



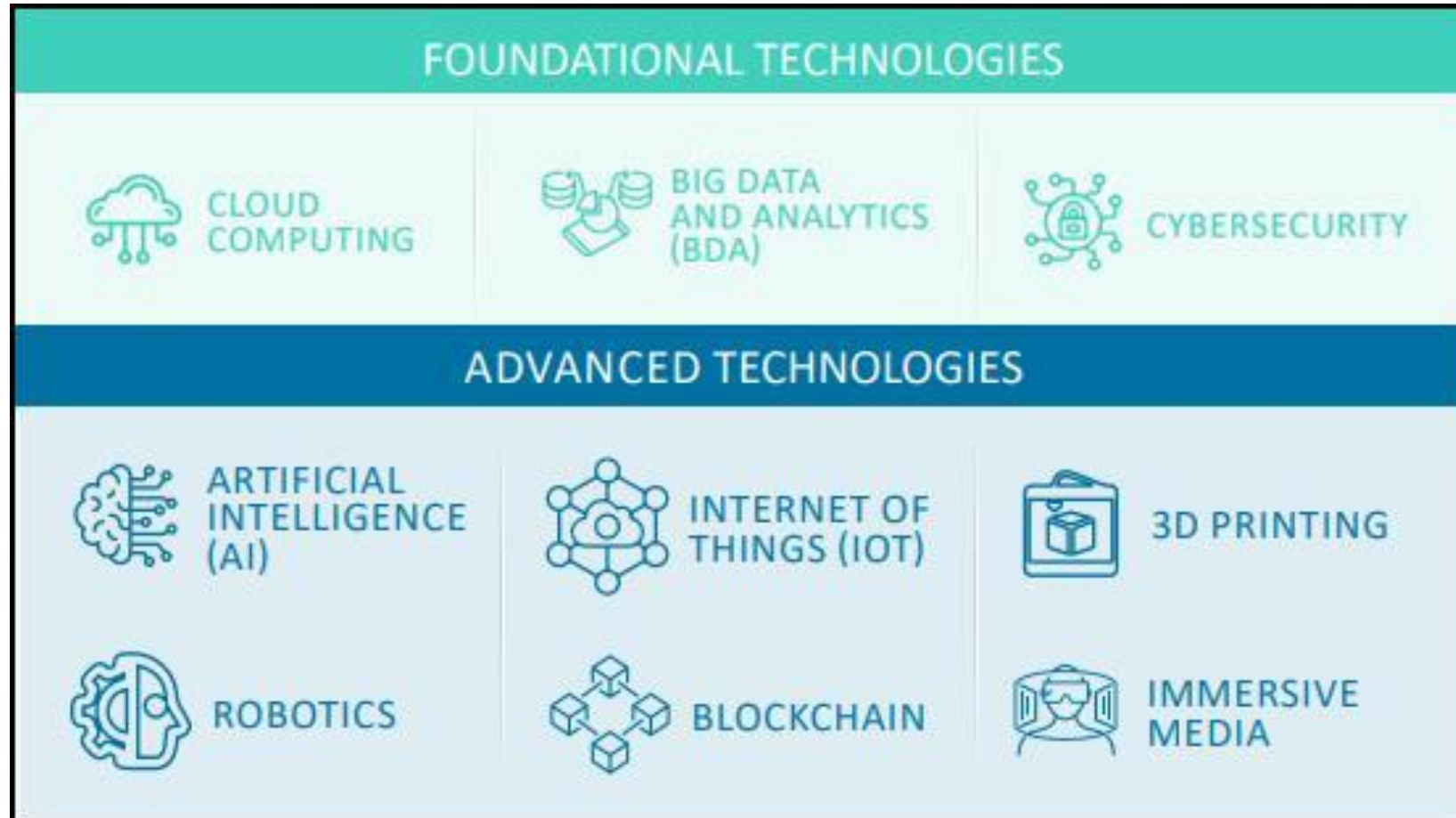
ALL PRODUCTS ARE BECOMING SOFTWARE PRODUCTS

“Software is eating the world.”

–Marc Andreessen, VC



THE TECHADE AND THE 'DIGITAL FIRST' ENTERPRISE



Source: NASSCOM 2020

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DIGITAL GOODS & THEIR PROPERTIES

DIGITAL GOODS

- **‘Digital goods/products’** that can be distributed over **digital networks** and consumed over **digital devices**
- Information goods → expressed, stored, delivered and sold as digital goods
 - Music, movies, newspapers, magazines, books
 - information, entertainment, education, or training
- Digital goods can be **easily made into versions or variants**
- Most of these are **‘experience goods’** – i.e., the true value of the goods is evident only after they have been experienced

• **Unique Economic Properties Of Digital Information**

- **Non-rival** – digital information does not get used up, unlike rival goods that can only be consumed only by one person

e.g., all information goods

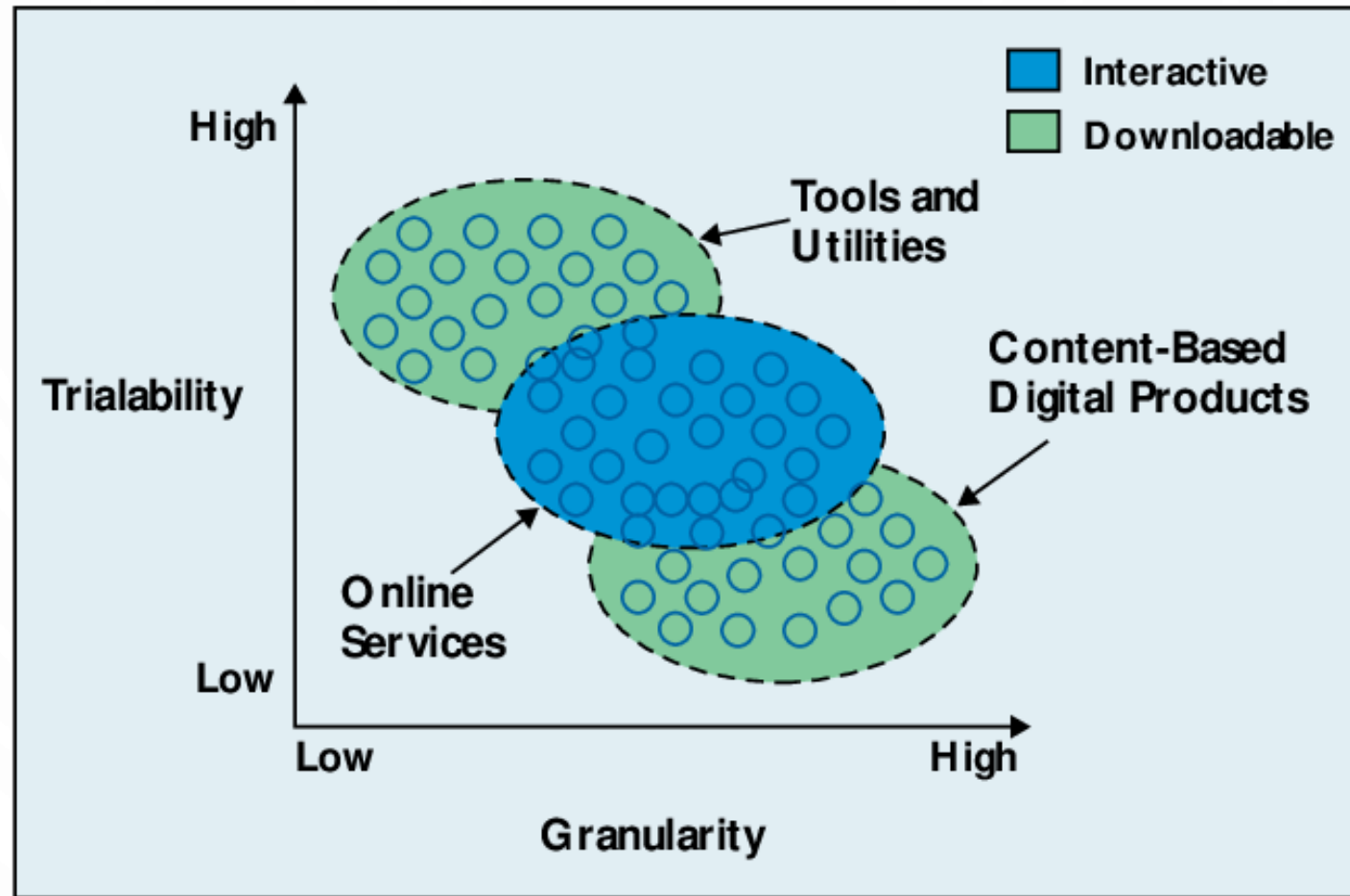
- **Zero marginal cost of reproduction** – making additional copies of information has zero cost; cheaper to copy information even if producing it is costly

e.g., software applications using statistical pattern matching (google translate)



Compare books and ebooks

CLASSIFYING DIGITAL PRODUCTS



Source: Hui and Chau (2002)

CHARACTERISTICS OF DIGITAL PRODUCTS

- Understand properties to evaluate opportunities for creating new product variants, revenue & pricing
 - Pay-to-use, pay-per-use, period-pricing/licensing, volume discounts, membership schemes, subscription
- **Tools & utilities**

Category/ characteristic	Tools and utilities	Content-based digital products	Online services
Delivery mode	By download	By download	Interactive
Granularity	Low	High	Medium
Trialability	High	Low	Medium
Pricing	?	?	?

In the current digital age cloud enables most digital products to be delivered 'as-a-service' !!

EARLY DIGITAL PRODUCTS

- Mainly made for enterprises
- Packaged software
- Customized software
- **Consumerization of IT changed this, novel digital products emerged in the consumer market and moved into enterprises !**



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DIGITAL PRODUCTS – WHAT IS DIFFERENT NOW?

THE DIGITAL AGE

Waze video

Waze video 2- [Get to Know Waze - YouTube](#)

Waze specializes in ‘personalized and community-based’ transit – an oxymoron?

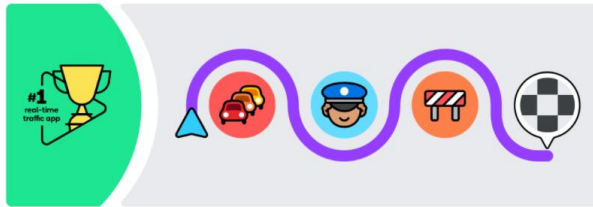


- How does Waze exploit the properties of digital information?

GPS



Get the best routes with real-time alerts for traffic, police, accidents & more



Source: Waze 2021

- A Mobile App
- Uses a variety of data from multiple smartphones– location, accidents and congestion information, speed limits...
- Processes information received from multiple smartphones to give the ‘current’ best route
- Uses smartphones as sensors; when more phones run the app, a more complete sense of traffic flow is developed by the app
- Utilizes high processing power & sophisticated algorithm

UNPRECEDENTED LEVELS OF DIGITIZATION

Digitization : encoding information as a stream of bits

- Explosion in **volume, velocity** and **variety of information**
 - Information : text, sound/audio, video, data from instruments and sensors, smartphones and other devices
- Widespread usage of digital goods due to the availability of computers, networks, mobile phones & internet
- Consequences: new ways of acquiring knowledge and higher rates of innovation

USER GENERATED CONTENT (UGC)

UGC the primary content for the top content sites in the world

- Started with Wikipedia, Blogger, Facebook...and Siri & IBM Watson run on large UGC collections/databases

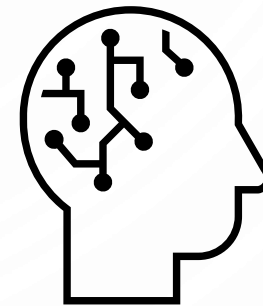
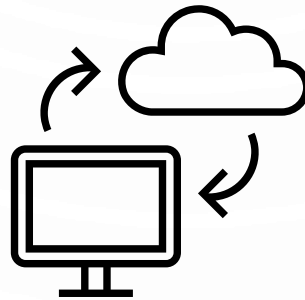
Information is no longer costly to produce, information is free

- Information is voluntarily created and made available free of charge (creators don't expect direct monetary reward)
e.g., blogs, reviews, posts, pictures, videos, etc
- Data explosion with increased UGC and Machine2Machine (M2M) communication – basis for further innovation



NEW AGE APPLICATIONS – THE DIGITIZATION STORY

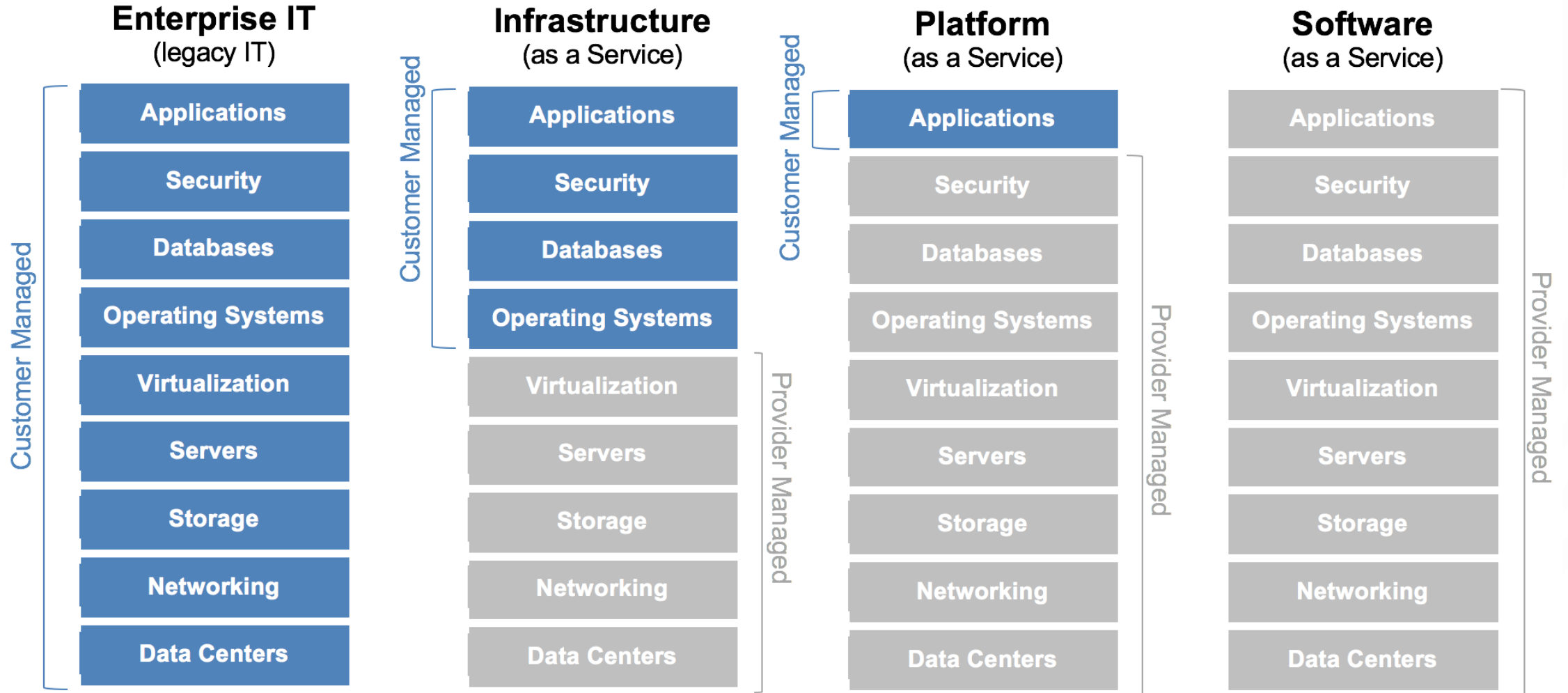
- What's happening with these??
 - **Addressing customers' real needs** – overcoming the shortcomings of traditional systems (e.g., GPS navigation)
 - **Network effects**
 - **The rise of the internet** – access through multiple devices



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DIGITAL PRODUCTS FOR THE ENTERPRISES

FROM ON-PREMISE TO CLOUD-DRIVEN IT





- **Products based on:**

- Cloud, artificial intelligence, algorithms, internet-of-things, blockchain, augmented reality & virtual reality

- **‘Data’ as a product**

- **Application programming interfaces (APIs)**

- **Digital assets and tokenization, thanks to web 3.0!**



PAUSE AND ASSIMILATE.....

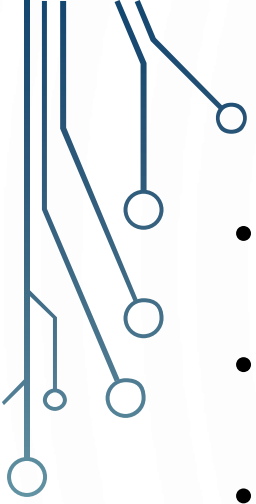
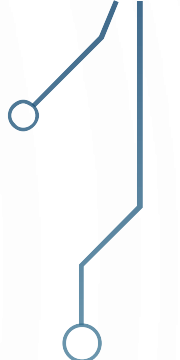
What we have learnt so far....

- Characteristics of digital products
- What is different about new-age digital products

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WHAT IS DIFFERENT WITH MANAGING DIGITAL PRODUCTS?

- Digital products are novel products embodied in or enabled by digital technologies
- Digital product **innovation in a greater state of flux** relative to non-digital products
- Unprecedented levels of ***uncertainty and dynamism***
 - Different actors can readily extend the features, program sequences, scope and value of digital products after they have been launched

- 
- 
- Physical –digital mashup –software is part of even physical products
 - Solving the right problems is of essence
 - Focus on user experience (UX) - the digital customer experience
 - Business model changes

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MOBILE STRATEGY FOR ORGANIZATIONS

DIGITAL PRODUCTS - MOBILE APPS & WEBSITES

- Websites are usually for a good 'search' experience
- **Mobile utility:** Mobile users also look for 'curation', ease of navigation in the limited mobile screen space (mobile real estate)
- Mobile strategy must ensure that the customers' fundamental mobile utility expectations is served – i.e., address the '**mobile mind shift**'

WHAT IS YOUR MOBILE STRATEGY?

- When companies attempt to deliver on mobile apps, their strategies vary based on the following:
 - The Quality of (customer) experiences
 - The frequency of (customer) experiences
- Mobiles strategies to get your customers think favorably about the products/and company.
 - Move towards using mobile apps to generate more frequent quality experience to the customers

THE MOBILE STRATEGY OPTIONS

Quality of experiences

(measures : net promoter score, customer experience index)

Companies that deliver great experiences but less frequently

- Strategy – use (free) mobile apps to generate more frequent experience

e.g., Nike Plus running app – aimed at generating more frequent interactions between Nike and runners (customers)

Companies that deliver frequent, high quality experiences

- At this point, customers remain loyal
- e.g., Tesco stores – enables smartphone users to take pictures of items displayed on subway walls and get them delivered

Frequency of experiences

(the frequency of interactions of the customers with the company/product)

Companies that deliver bad experiences and disappoint customers

- Mobile app will not solve customer problems; partnering with a digital disruptor is an option

e.g., Health insurers teaming up with mobile meditation apps

Companies that deliver frequent experiences but disappoint customers

- Strategy – fixing customer problems can be slow, so create good mobile experiences to counteract this

e.g., Verizon delivering TV channels via an app; what about *airtel*?

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DO ALL DIGITAL PRODUCTS SUCCEED?

- DIGITAL MINDSET & PRODUCT MINDSET

- IT products appear in the market rapidly and some disappear rapidly
- Marketing hype on any new technology! Commercial viability of technologies??
- Key challenges for managers– understand the technology trends before adopting IT innovations
 - Technology has the potential to solve business problems?
 - Make an early move to reap rewards of early adoption? Risky-investment?Or wait till maturation of technology?

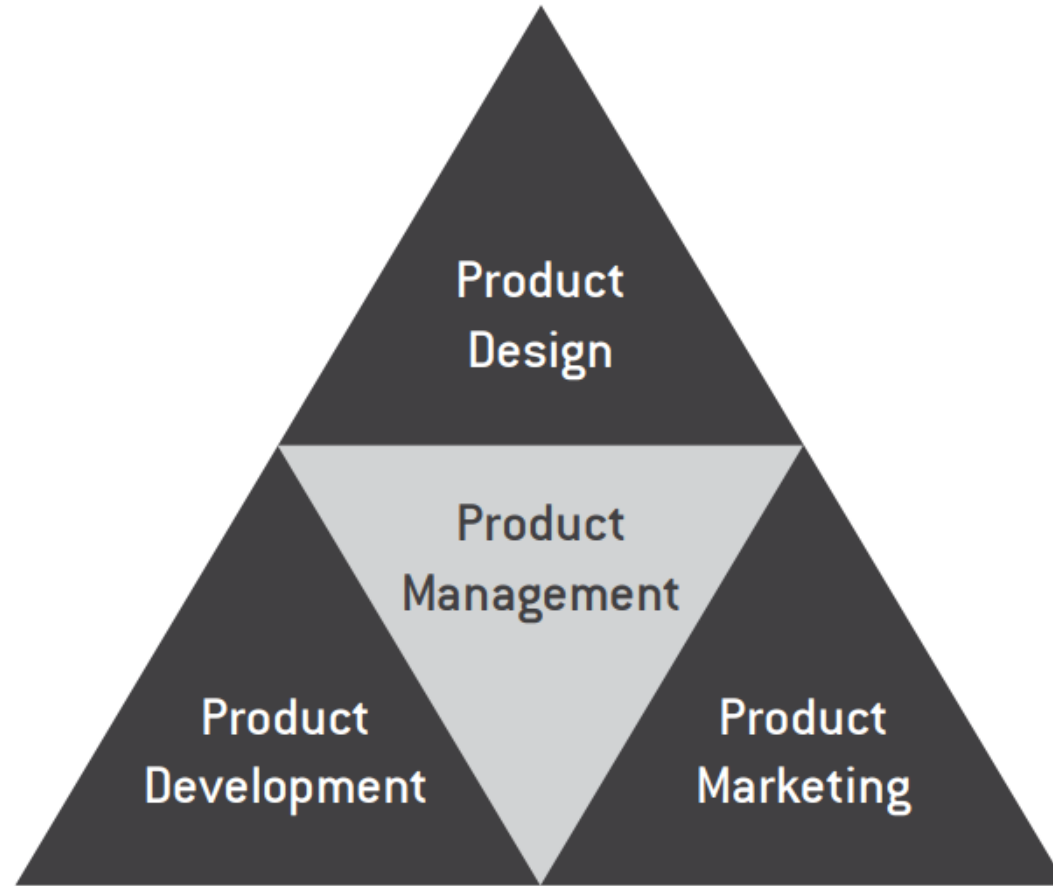


THE NEED FOR A PRODUCT MANAGER?

PRODUCT PLANNING ASPECTS...

- Various product planning events
 - Product vision -
 - Product plan – high-level plan with a longer time horizon
 - Product roadmap – map the periodic progress (e.g., quarterly) and evolution for the product
 - Wave planning – planning for the iterations - each wave corresponds to an iteration of product; features planned for each iteration
 - Scrum meetings -

THE PRODUCT TRIANGLE

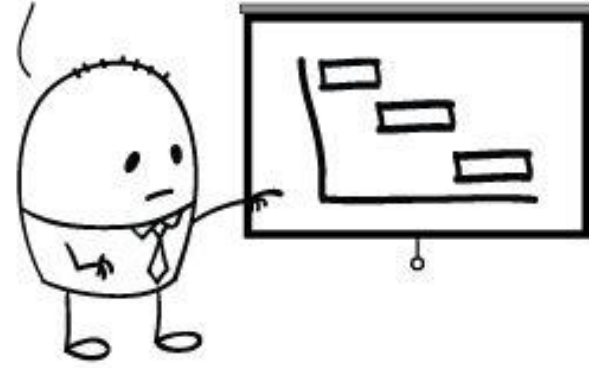


TYPICAL PROBLEMS FOR PRODUCT COMPANIES?

- The tension between (engineering & design) and (sales & marketing)
 - The standardization Vs customization problem
- Product roadmap in flux !
- Commitment to too many customer requests (idiosyncratic) for features; exceeded the overall product management capacity
- Product-engineering –sales tensions!

Our app was on schedule for release next month. But last week, Sales signed a new customer promising them 3 additional features in this release.

So, our release will be delayed by 2-3 months at least. We're all pulling 12 hour days.

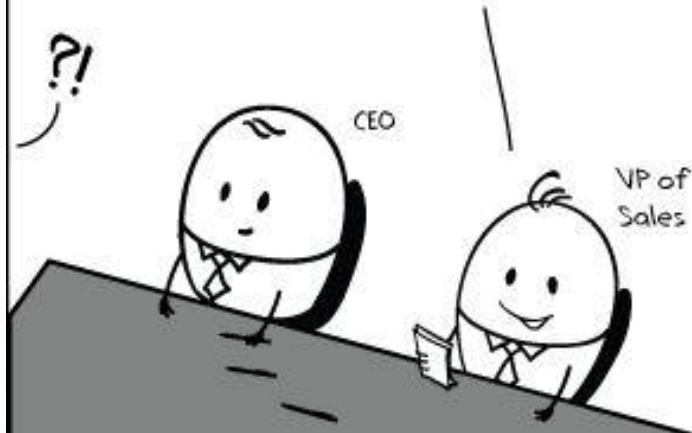


PRODUCT MANAGER

We have to find a way to hit the release date, while implementing as many additional features as we can.



Would this be a bad time to add these 5 other features to this release? My guys tell me our competitors already have it.



A Day in the Life of a Product Manager

Episode 4
"Can We Add a Few Features?"

A cartoon by the
Team @ Accompa, Inc.

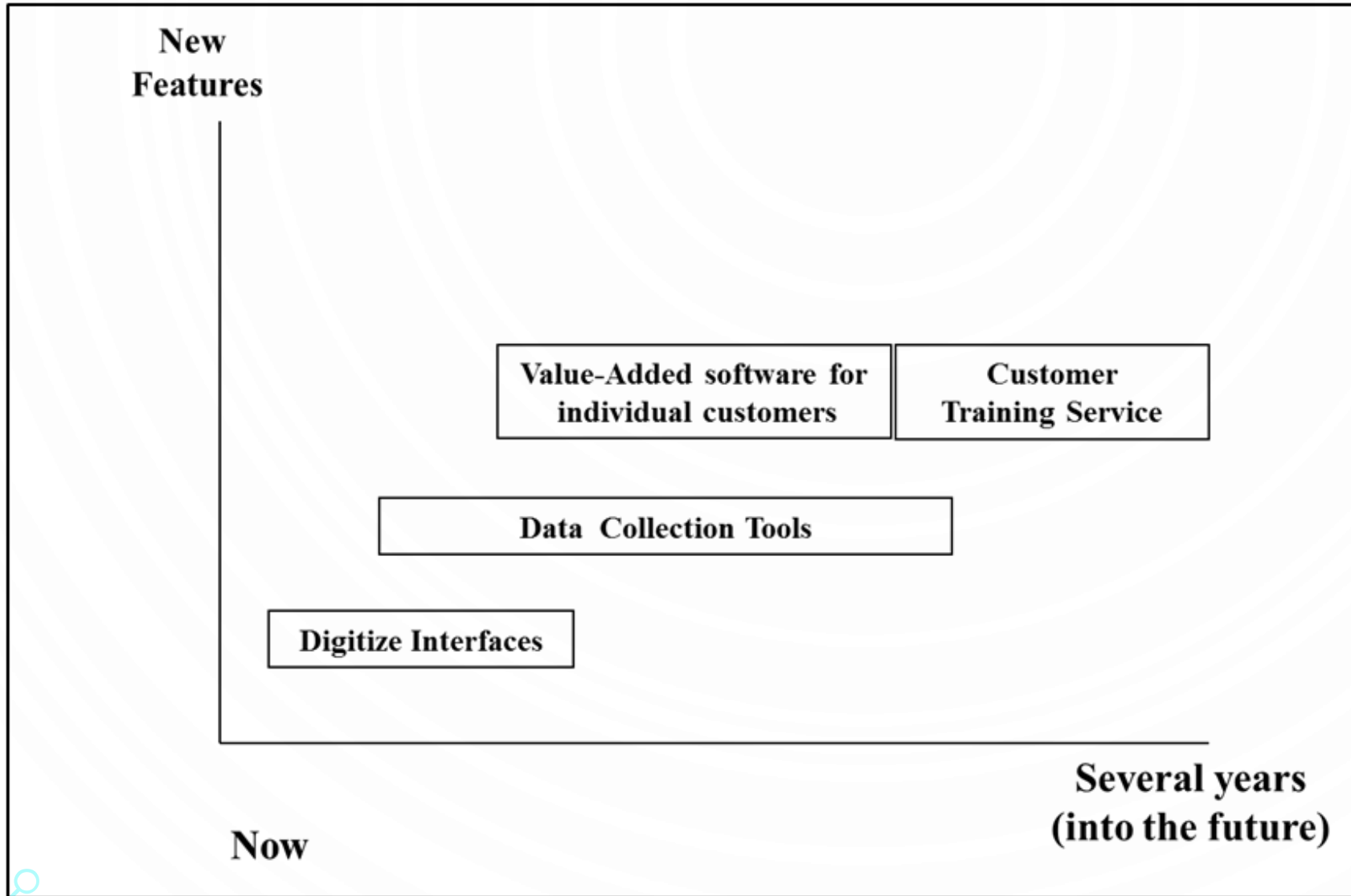
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PRODUCT MANAGER ROLE & RESPONSIBILITIES

- What do you understand about a PM's role from the reading?
- Coming up with and owning product roadmaps
- **Need for a product roadmap?**
 - Helps align different departments to a unified view about the product
- What other product roles did you find..how are they different?

SAMPLE PRODUCT ROADMAP



In a B2B context, roadmaps also can be used as signs of commitment between the product company and their customers

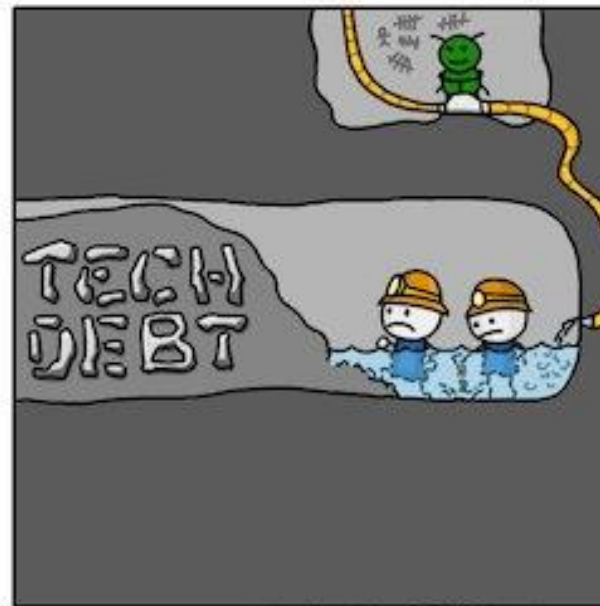
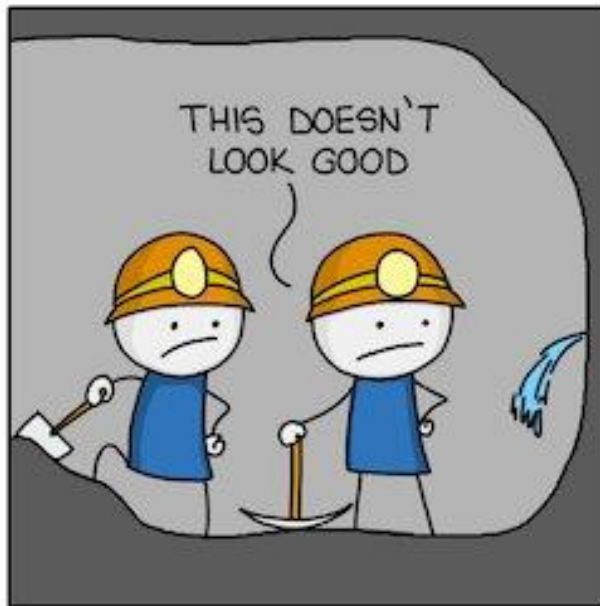
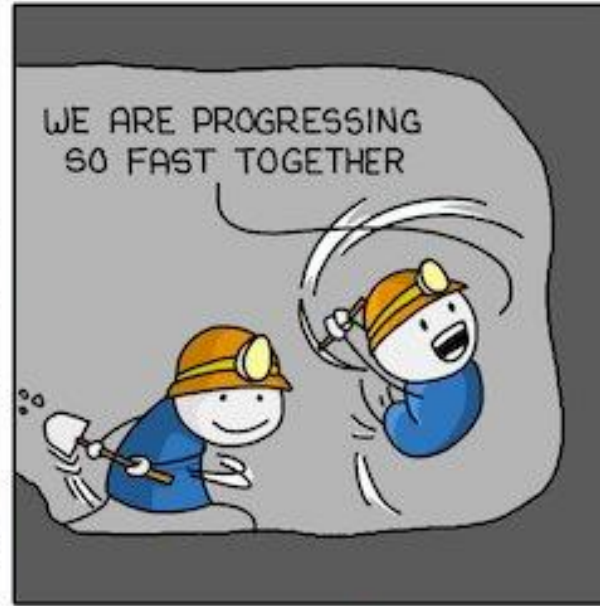
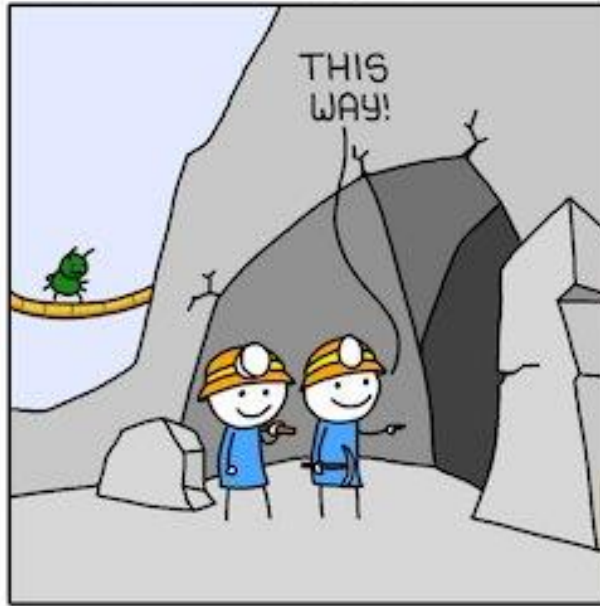
DEALING WITH TECHNICAL DEBT

- Technical debt is incurred when quality is sacrificed over speedy delivery

“When taking short cuts and delivering code that is not quite right for the programming task of the moment, a development team incurs Technical Debt. This debt decreases productivity. This loss of productivity is the interest of the Technical Debt.” – Ward Cunningham, who coined the metaphor of technical debt

The notion of "build now and fix later"

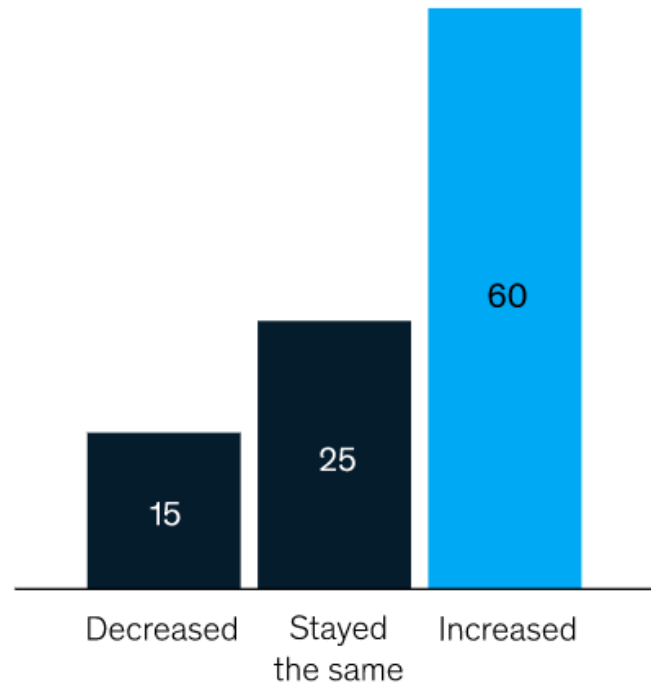
TECH DEBT



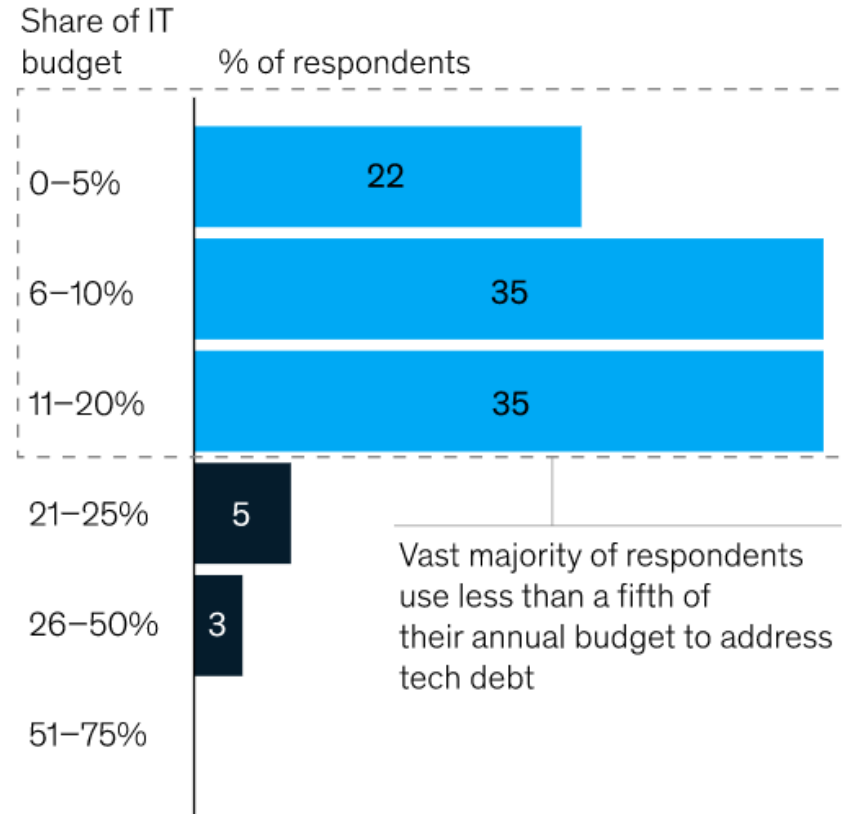
Technical debt could run into a few millions for large companies!

CIO estimates of spend on tech debt

Perceived change in tech debt over past 3 years
% of respondents (n = 45)



Share of tech budget allocated to paying down tech debt



Source: McKinsey survey of tech debt among 50 CIOs, July 2020

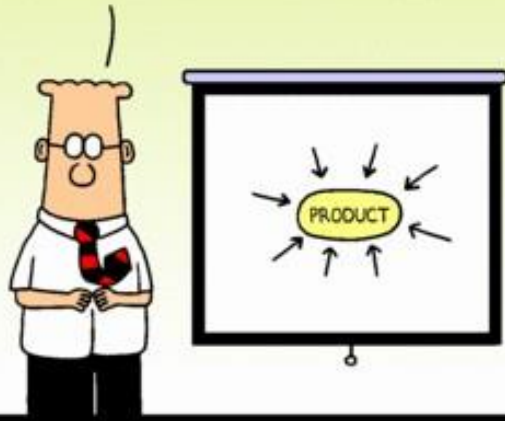
- ***Product managers have the responsibility to look for trade-offs with technical debt***
 - Accept short-term technical debt to deliver customer value?
 - Product complexity?
 - Product backlog?
- ***They must address the problem of technical debt too***
 - How to pay off the technical debt?



- ***A more pertinent issue for growing product companies, scaling in the B2B space...***

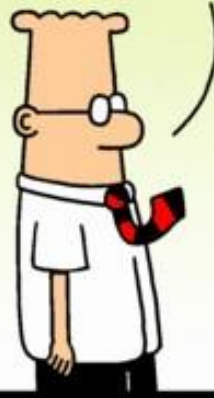
- Finding the ‘golden mean’ of customization
- Difficulty in clearing the ‘yellow’ requests/ necessary customizations on the product roadmap

I ADDED ALL OF THE
PRODUCT FEATURES
THAT EACH OF YOU
DEMANDED.



Dilbert.com DilbertCartoonist@gmail.com

NOW OUR PRODUCT
IS A WORTHLESS
HODGEPODGE OF
COMPLEXITY.



2-25-13 © 2013 Scott Adams, Inc. /Dist. by Universal Uclick

I APPRECIATE YOUR
INPUT. I COULDN'T HAVE
FAILED WITHOUT YOU.



PRODUCT MANAGER ARCHETYPES



Technologist

Profile: Deeply technical

Focus: Technology solutions

Product: Back-end platforms or highly complex B2B products

May take technological risks on “cool ideas” that aren’t tied to a metric



Generalist

Profile: Technical depth and business savvy

Focus: User delight

Product: B2C products or front end for B2B products

Measured by ability to drive end-user metrics



Business-oriented

Profile: Business background

Focus: Maximizing specific business metrics

Product: B2C products that have another source for creative inputs

VMware Amazon
Web Services

Facebook LinkedIn
Airbnb

Salesforce Zynga
Chase



SUMMARIZE...

What does a product manager do?

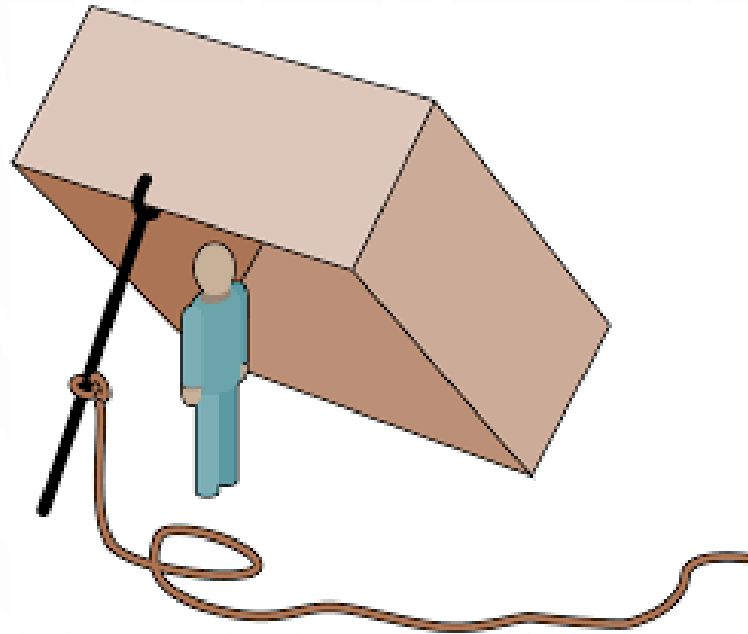
- Communicate with all departments as necessary for getting the product out to the market
- Establish a product roadmap
- Balancing the customer interests & product roadmap
 - Assess whether product addresses a dominant market need, and a significant customer segment
- Prevent, identify and resolve technical debts
- Oversee the product's journey through the product-development life cycle - asking the right questions!

PRODUCT MANAGER VS 'THE OTHER ROLES'

- Product marketing
- Project management
- Program management
- Design
- Engineering

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THE BUILD TRAP



“ The build trap is when organisations become stuck measuring their success by **outputs rather than outcomes.**

It's when they focus more on shipping and developing features rather than on **actual value those things produce. ”**

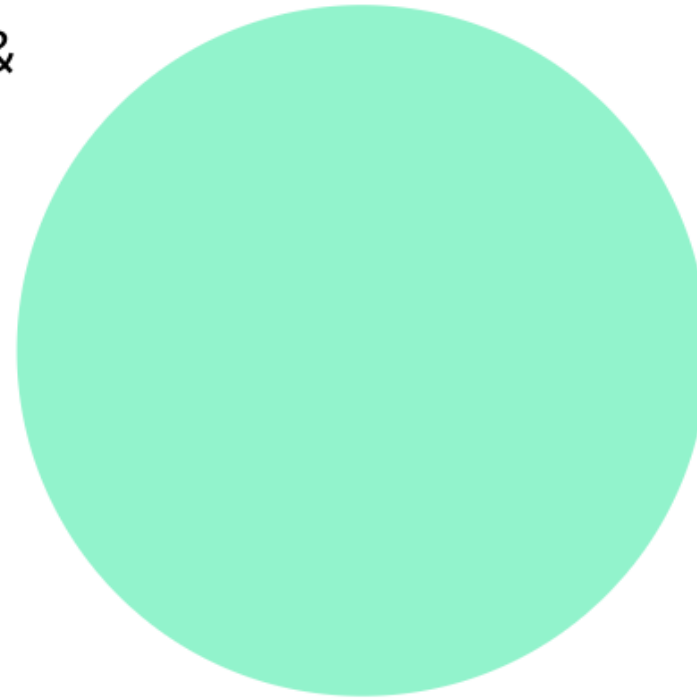
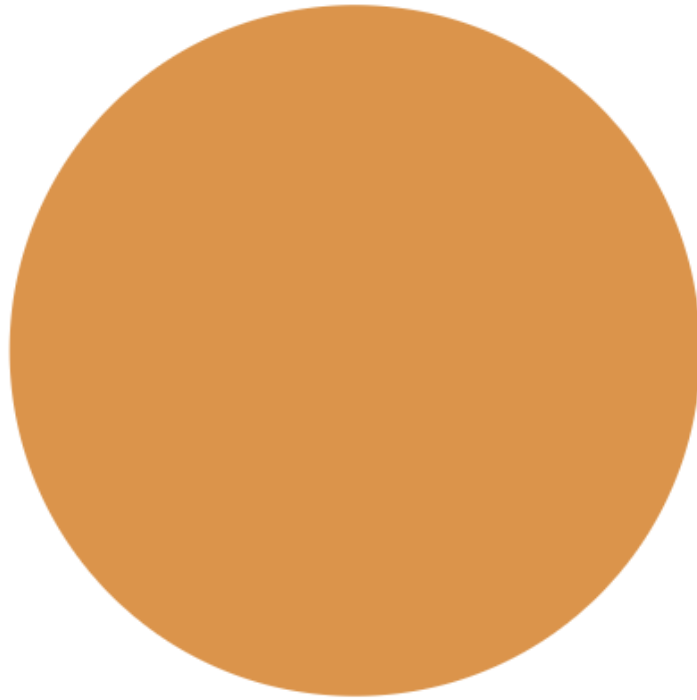
MELISSA PERRI

AVOID THE BUILD TRAP !

FOCUS ON THE VALUE EXCHANGE

Customers

Organization



Products & services



Money

Value realized

Value realized

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UNDERSTANDING THE PRODUCT COMPANY & THE 5C ANALYSIS

UNDERSTAND YOUR COMPANY FIRST

1. What product(s) does the company build?
2. Why does the company exist?
3. Whose problem(s) does the company solve? – **Customers & Personas**
4. Is the company's product good? **Metrics**
5. What else has been, is being, and will be built? **Product roadmap**
6. Competition & climate - 5C analysis; (company, customers, collaborators, competitors, climate)

DIGITAL INNOVATIONS – WHAT TO INNOVATE?

- *Innovating not just the technological component, but also the organizational process and structure in which the technology is embedded, or modifying the habits of users*
- IT innovations often emerge from IT experts or IT managers inside the firm
 - Need the buy-in from users
 - Important to consider IT innovations in the context of their organizational environment
- *Alternative scenario (instead of a formal top-down process) - user-driven IT innovations*



HOW TO INNOVATE?

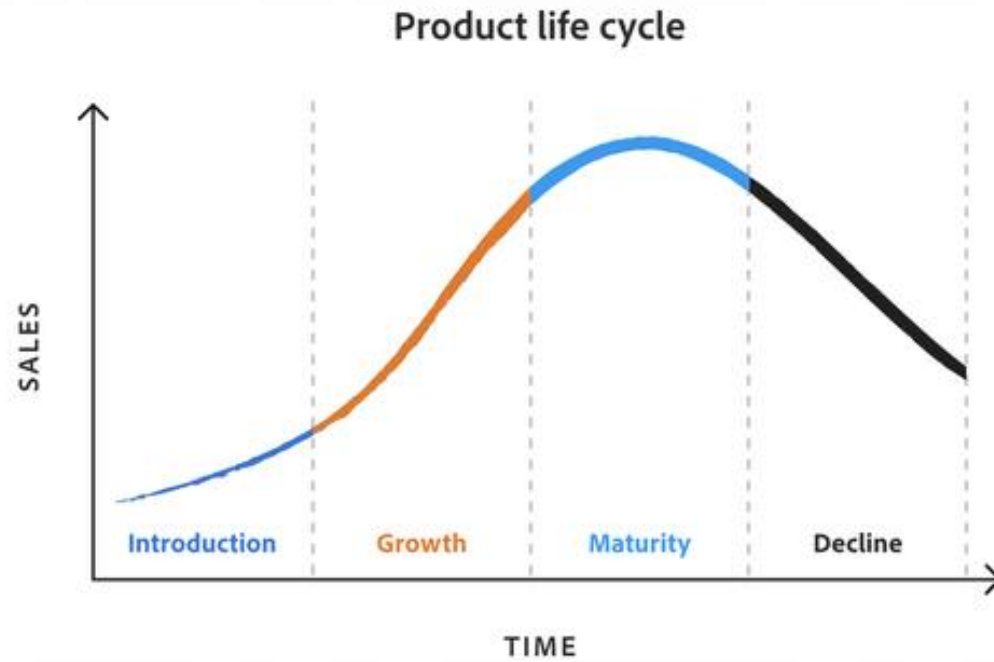
Two questions to ask

- How well can we define a problem?
- How well can we define the skill domain(s) needed to solve the problem?

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DIGITAL PRODUCT-DEVELOPMENT LIFECYCLE

THE PRODUCT LIFECYCLE



THE PRODUCT-DEVELOPMENT LIFECYCLE

1. Finding & planning the right opportunity
2. Designing the solution
3. Building the solution
4. Sharing the solution
5. Assessing the solution

- Popular methodologies to implement these steps ?

1. Finding & planning the right opportunity

- Define the opportunity to pursue, create a hypothesis and validate it
 - Basis: Product company's strategic context, target customers, competitive landscape
 - Prioritize goals (growth/revenue/customer satisfaction)
 - Build new or improvise existing product?
 - Use metrics, user and usage data to find an opportunity (for an existing product)
 - **Create a minimum viable product (MVP)**



2. Designing the solution

- Define a feasible solution to the identified problem
 - Working with the design team and the engineering team
 - PM actively involved in the process...
 - Working together to solve customer's problems



3. Building the solution

- Different approaches to build the solution
 - lean development, agile, continuous delivery
 - Watch out for technical debt, minimize it
 - Collaboration of product, design and engg. teams



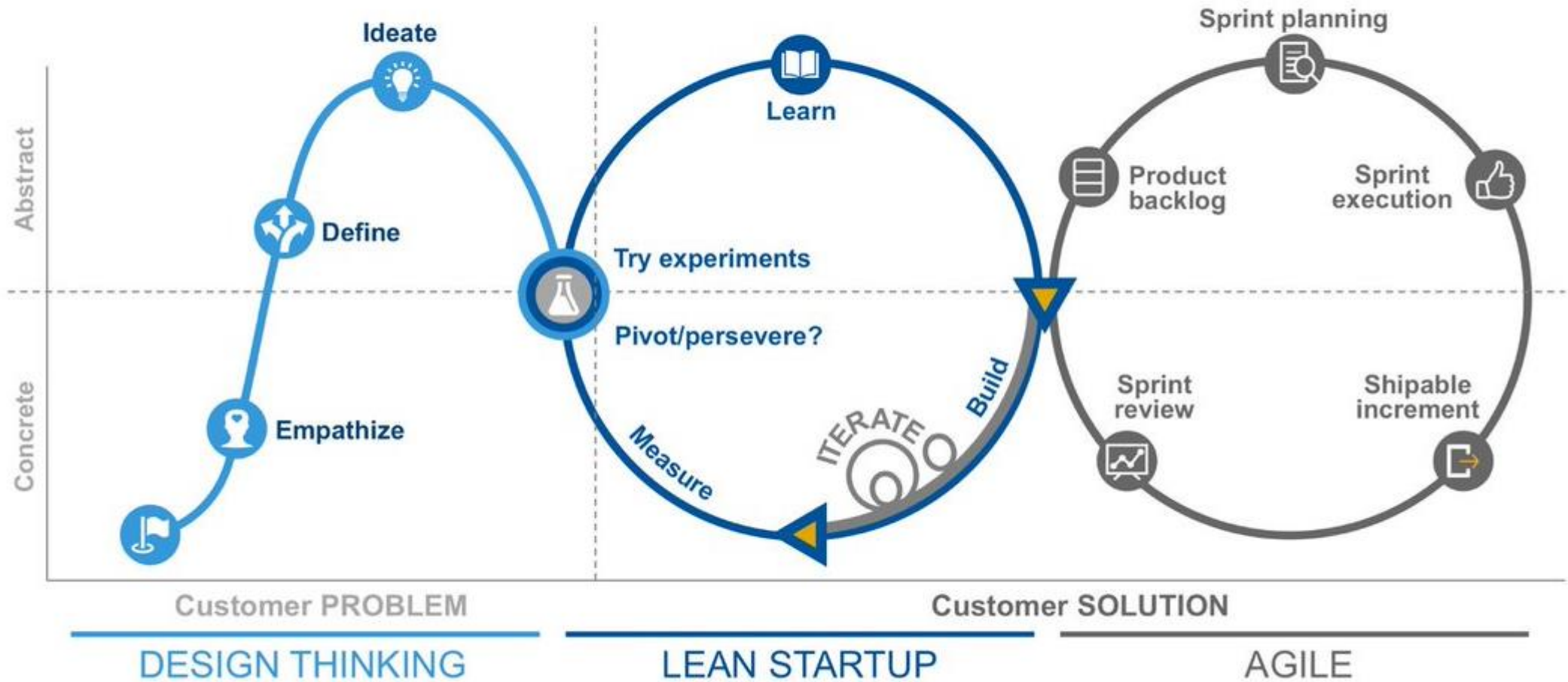
4. Sharing the solution with the world

- Product launch, marketing

5. Assessing the solution

- Examining the iteration of the product and the associated process
- Assessing through metrics

Combine Design Thinking, Lean Startup and Agile



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