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Goliath vs. Goliath, IT product management at Amazon and IBM

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Abstract: Product management (PM) is nearing its centennial. The father of modern PM Neil H. McElroy laid the foundation for this ever-expanding role. Since 1931, this role has undertaken many changes and additions; a lot of literature covers these aspects. However, two of the most interesting aspects of this role are the introduction of PM in technology and the new product development theory (NPD). The goal of this paper is to examine and compare the PM practices of two giant corporations, Amazon and IBM, that seemingly use different techniques and approaches when it comes to their PM implementation and strategy. The research methods applied are two case studies and a comparative analysis. Through examining relevant literature and publicly accessible information, the comparative analysis is performed and the specific practices of strategy, product development, validate customer needs, service innovation, portfolio management, new product development and diffusion or adoption are selected to provide a spherical approach and information for the two selected companies. A plethora of literature papers are reviewed, and more emphasis is of course given to the aforementioned practices that information is more available and for the other topics a brief introduction is accomplished and space for further research is set.

Keywords: new product development; Amazon; IBM; product management; Schumpeterian theory; Kirznerian theory

1. Introduction

This paper analyses how two pioneers of their times, Amazon and IBM devise their strategy, manage their products and perform the development of new products (NPD) [1], in context of incorporating customer feedback into the NPD process, including methods for gathering and analysing customer insights and their strategies for fostering creativity and collaboration under two different theories the Schumpeterian theory [2] and the Kirznerian theory [3]. The Schumpeterian theory highlights innovation and creative destruction as key factors in economic progress, with a particular emphasis on radical, in some cases disruptive, innovation and the entrepreneur's market-disrupting role. On the other hand, the Kirznerian theory emphasises the significance of entrepreneurial discovery in markets, particularly focusing on gradual innovation and the entrepreneur's skill in recognising and taking advantage of market inefficiencies. It would be unfair to compare Amazon and IBM in all their aspects since they are quite different companies in what they represent; IBM a true technological pioneer with more than hundred years of existence and technological innovation versus Amazon an internet sales company that rose after the bursting of the internet bubble (1995) and started as an online bookstore to be today the fourth largest company of the world by revenue according to the Fortune (Fortune Global 500) Global 500 published in 2021. Focus is given only to PM and specifically in tech products, were IBM as a traditional technology giant and Amazon "The Everything Store" who has evolved over the last decade to become

even greater, have totally different approaches, both successful in their own way, a platform centric [4] and a customer-centric [5] approach respectively, a fact supported by the following use cases and literature review. This difference is not evident only from their products portfolio, but also from the workflows they implement related to NPD. By firstly setting the very foundations and some of the theory of product management and by providing specific examples to back the theory, the analysis is strengthened. The first section of this paper is an in depth-review with up-to-date information related to the companies’ operational framework. Next, a section with specific examples and comparisons is formulated. **Table 1** at a later section, not only presents the key scientific results extracted through the analysis but also presents how Amazon and IBM perform the specific activities in contrast, focusing though only to the selected practices of research interest. The practices examined and compared are strategy: This involves the overarching approach that each company takes towards market positioning, innovation, and growth. It includes how Amazon and IBM set long-term objectives, identify market opportunities, and allocate resources to sustain competitive advantage. The focus here is on understanding how their strategies are informed by customer feedback and how this shapes their approach to innovation and product development.

Table 1. Key scientific results.

Practice	Research interest	IBM	Amazon
Strategy	“Strategic positioning attempts to achieve sustainable competitive advantage by preserving what is distinctive about a company. It means performing different activities from rivals or performing similar activities in different ways” [6].	<ul style="list-style-type: none"> • Partnership with AWS • Institutional customers • Technology Inventors 	<ul style="list-style-type: none"> • Partnership with IBM • Loyal customer base • The Everything Store
Product management	“The rules of the game in new product development are changing. Many companies have discovered that it takes more than the accepted basics of high quality, low cost, and differentiation to excel in today’s competitive market. It also takes speed and flexibility” [7].	<ul style="list-style-type: none"> • Schumpeterian theory [2] • Smart products 	<ul style="list-style-type: none"> • Kirznerian theory [3] • Market/customer research
Techniques to understand and validate customer needs	Collaboration among various stakeholders and utilizing multiple information sources for identification and interpretation of diverging customer needs, is crucial for the success of market-driven product development [9].	<ul style="list-style-type: none"> • Open hubs [10] 	<ul style="list-style-type: none"> • PRFAQ [8]
Service innovation	“Service innovation” has become a term referring to innovation taking place in the various contexts of services, including the introduction of new services or incremental improvements of existing services. Whilst service innovation can take place in the service sector, it does not necessarily need to [11].	<ul style="list-style-type: none"> • IBM Service Transformation [12] 	<ul style="list-style-type: none"> • Amazon Prime
Portfolio management	A collection of projects, programs and other activities that are grouped together to meet strategic business objectives [13].	<ul style="list-style-type: none"> • Services provider • Integrator 	<ul style="list-style-type: none"> • Technology • Retail
New product development	New product development is described broadly as the transformation of a market opportunity into a product available for sale [14].	<ul style="list-style-type: none"> • Seven phases process 	<ul style="list-style-type: none"> • Top-down Agile approach
Diffusion or adoption	Diffusion refers to the process by which innovations are spread among the members of a social system over time (in your organizations), whereas adoption is a decision of implementing innovations based on knowledge, persuasion of individuals within a given system (e.g., Organizations or enterprises) [15].	<ul style="list-style-type: none"> • Evaluation of research results 	<ul style="list-style-type: none"> • Evaluation of expectations of customer needs

Product management: Examines the methodologies and processes used by each company to oversee the lifecycle of their products. This includes how they plan, develop, launch, and manage products, with a specific emphasis on how customer

insights influence product features, design, and evolution. The comparison might reveal differences in how Amazon and IBM prioritize product decisions and manage cross-functional teams to deliver value to customers.

Techniques to understand and validate customer needs: Focuses on the specific methods each company uses to gather and analyze customer feedback. This can include surveys, user testing, data analytics, customer interviews, and other feedback mechanisms. The practice explores how effectively Amazon and IBM identify, understand, and validate customer needs and preferences in their NPD processes.

Service innovation: Looks at how each company innovates in their service offerings, including how they use customer feedback to drive service improvements, create new service models, or enhance customer experience. This practice examines the role of service innovation in maintaining relevance and competitiveness in their respective markets.

Portfolio management: This practice assesses how Amazon and IBM manage their product portfolios to ensure alignment with strategic objectives, market demands, and customer needs. It includes how they decide on product additions, modifications, or discontinuations and how customer feedback influences these decisions.

New product development (NPD): Examines the end-to-end process each company employs to develop new products, from ideation to market launch. It focuses on how Amazon and IBM incorporate customer feedback at various stages of NPD to ensure the resulting products meet market needs and preferences. This practice also considers the role of cross-functional collaboration in bringing new products to market.

Diffusion or adoption: Analyses how each company facilitates the adoption of their new products by the market. This includes strategies for marketing, distribution, customer education, and support. The practice explores how Amazon and IBM leverage customer feedback to not only improve the product but also to enhance strategies for market penetration and adoption. The research aims to analyse how Amazon's customer-centric, and IBM's platform-centric approaches impact their product management and new product development processes, specifically in terms of incorporating customer feedback, promoting innovation, and attaining market success.

2. Research question

The research question focuses on the core themes and contrasts between Amazon and IBM within the realm of product management (PM) and new product development (NPD) practices:

How do Amazon's customer-centric and IBM's platform-centric approaches to product management and new product development reflect the principles of Schumpeterian and Kirznerian theories, and what impact does this have on their ability to incorporate customer feedback into the NPD process?

The scientific answer to this question seeks to provide analysis of how each company's strategy either conforms to or deviates from the Schumpeterian and Kirznerian theories of economic development and innovation. The methods and

tactics used by Amazon and IBM to collect and evaluate customer feedback. This refers to the tools, procedures, and cultural norms employed by each organisation to guarantee that client input is not only gathered but also successfully incorporated into the new product development (NPD) process to steer development and innovation. Moreover, to examine how Amazon and IBM's organisational culture, structure, and policies promote creativity and collaboration among their teams, especially in the realm of creating new technological offerings. The study analyses how the company's strategy (customer-centric or platform-centric) impacts the creation and introduction of new products. Finally, an in-depth analysis comparing the practices of product management (PM) and new product development (NPD) at Amazon versus IBM, with the backing of their case studies, examples, and literature study. This study question aims to fill a research gap between classical economic theory and explore the relationship between corporate strategy, innovation theory, and consumer feedback methods in two prominent technological companies.

3. Methodology

This research adopts an in-depth design that primarily utilizes qualitative methodologies, to examine how two classical economic theories relate to modern PM practices through the lenses of two major companies. The focus is on investigating individuals' testimonies, events and examples with particular attention to comparing Amazon and IBM's product management and new product development processes. Following Yin [16] and the guidance provided, the study is framed as a case study, examining these phenomena within their real-world contexts. This approach allows for a comprehensive analysis of the companies as social units, employing multiple data collection methods to ensure a thorough investigation. Additionally, the study uses a comparative method to analyse similarities and differences between Amazon and IBM, focusing on continuity and change in their product management and development processes. To perform each task, the analysis is dependent on a range of sources to collect pertinent data. Access academic literature, on product management theories, customer feedback integration, and case studies on Amazon and IBM using resources like Google Scholar and Scopus. Corporate public papers from Amazon and IBM, such as annual reports, press releases, product documentation, and customer service policies and finally public testimonies from ex-employees.

While this research attempts to offer practical insights and a thorough analysis of Amazon and IBM's product management and development techniques, it acknowledges specific constraints. The study relies on publicly accessible literature and material, which might not encompass all internal tactics and decision-making processes that are sensitive corporate secrets. The comparative study is restricted to two case studies, potentially lacking a comprehensive representation of the many approaches in the tech industry, relating to the economic theories.

Finally, the paper is intended to serve as a practical handbook for junior product managers, offering proven techniques and insights that can be quickly applied in real-world settings. Additionally, it aims to assist management in decision-making by providing a detailed comparison of successful product development theories as

applied by Amazon and IBM in relation to classical economic theory. By structuring the methodology section in this manner, the research paper will lay a solid foundation for a comprehensive study, ensuring that the investigation is both rigorous and relevant to the field of product management and development.

4. Literature review

Utilising a vast array of scholarly works, the literature review section of this paper is intended to provide the foundation for a comparative analysis of Amazon and IBM's PM and NPD practices. A comprehensive analysis of eighteen seminal papers from Google Scholar and Scopus, carefully evaluated and chosen for their pertinence to the subject of research, is encompassed in this review. The objective of this review is to furnish a robust theoretical underpinning for the presented use cases, substantiating the conclusions with evidence derived from prior scholarly works. By adopting this methodology, the examination is enhanced not only by real-world illustrations but also by the scholarly conversation pertaining to PM and NPD within the technology industry. The foundation for comprehending NPD in the context of platform-based ecosystems and the transition from product-centric to customer-centric strategies in emerging markets was established by Kahn [1] and Isckia and Lescop [4]. The authors introduce the reader to the dynamic nature of platform dynamics and the significance of ensuring that product strategies are in line with customer requirements through these foundational texts.

This is supplemented by the landmark work on strategy by Porter [6], which provides insights into achieving sustainable competitive advantage, a concept essential to comprehending Amazon and IBM's strategic positioning. In a similar way, the dynamics of the new product development game are examined by Takeuchi and Nonaka [7], who emphasize the criticality of speed and adaptability in the current competitive marketplace. This is a facet that is fundamental to the NPD processes of both IBM and Amazon.

The contributions made by Denning [8,17] enhance the discourse by directing attention towards agile transformation journeys and the production of market-creating innovations. This provides an analytical framework that enables an examination of IBM's innovation strategies and Amazon's customer feedback mechanisms. The significance of agility and market orientation in maintaining competitiveness and innovation is emphasized in these papers.

By conducting an analysis of customer needs through the prisms of product management and research and development [9] and service innovation and its consequences [11], one can gain a more comprehensive comprehension of the ways in which Amazon and IBM innovate their service portfolios and oversee their product lines. Furthermore, the predecessor work from Isckia and Lescop [4] provide valuable perspectives on open innovation in business ecosystems, emphasizing Amazon's strategy of harnessing external developers and establishing an e-business-friendly environment. Additionally, the current study examines the conceptual foundations of entrepreneurship and innovation as proposed by Śledzik [2] and Langlois [3]. It does so by employing the Schumpeterian and Kirznerian theories to the situations involving Amazon and IBM. This theoretical framework facilitates the

analysis of the strategies and methods employed by companies to integrate consumer feedback into the new product development (NPD) process. Finally, the scholarly works concerning agile product development [15], digitally driven NPD [10], and the function of distributed data flow platforms in the Internet of Things and Blockchain [18,19] provide valuable perspectives on the procedural and technical advancements that form the foundation of IBM and Amazon's product development strategies, respectively.

Following the above review, concrete examples from the chosen scholarly sources are provided to demonstrate how Amazon and IBM operationalize these conceptual frameworks in real-world scenarios. The companies' adherence to or deviations from established PM and NPD theories are not only illustrated through this integrative approach, but also their distinctive methodologies and results in product management and development. By conducting an in-depth examination of the PM and NPD practices of two prominent technology conglomerates, this paper intends to provide a comprehensive, academically sound, and practically applicable analysis via a literature review.

5. IBM and Amazon case studies

Amazon.com is a trillion-dollar technology corporation that specializes in e-commerce, cloud computing, digital streaming, and artificial intelligence. Jeff Bezos launched it in 1994 as an online bookstore that has now evolved into a multi-service and multi product e-commerce platform. Amazon is known for providing millions of things at the lowest possible price. Currently, Amazon is also a leading innovator and tests new concepts in order to expand into previously untouched sectors, literally space is the limit since Blue Origin sends now spaceships in orbit. Strong leadership values are at the heart of the business. This entails taking responsibility for short-term sacrifices in exchange for long-term gains and learning to be curious by always improving themselves and those around them, agile at its core, market and customer-centric [17].

In comparison, IBM is an American multinational technology corporation headquartered in Armonk, New York, with operations in over 171 countries. It's known as the Big Blue in the IT industry, and it is the oldest IT organization in the world. Its history, success, failure, broad portfolio of products, swift transition in the selling line and the innovation through actual technological advances which is the core of the organization makes IBM a perfect subject for research. Whether it's an ATM, floppy, hard disk, magnetic strip card, relational database, SQL, DRAM, AI based technology, Blockchain, thermal engineering and heat transfer simulations, all are innovations of IBM, one company which has truly disrupted the IT industry. While IBM used to be a true pioneer in computer technology, over the recent past has faced criticism that failed to quickly invest in cloud technology, however this fact has changed rapidly with new cloud products on offer and the partnership with AWS. One lesson that could be learned from IBM is that they continue to invest in disruptive technologies, like AI, Blockchain and the Internet of Things (IoT) [18,19]. Finally, IBM offers a wide range of those products as open source thus promoting research, product development and entrepreneurship at a great level.

An in-depth review of the product development themes and processes that have been concisely presented in **Table 1** follows. Public material published from people in authority for the companies has been chosen to demonstrate how both companies work, in an effort to provide a solid connection to the applicable theory and relevant literature and references while at the same time provide a basic understanding of all the themes and processes. In addition, effort has been made to highlight in a clear and distinct manner the significant differences between the two companies.

Two former executives of Amazon with more than ten years of working experience at the company, described in a recent public interview (DisrupTV Episode 226 Featuring Bill Carr & Colin Bryar—Hosted by Vala Afshar & R “Ray” Wang), the leadership principles of Amazon. This in depth-review can be allocated and further elaborated to match with the domains structured below. Fourteen principles in total are presented, some relevant to PM and some not. This analysis focuses on the ones related to PM.

Key driving force for Amazon is its customer obsession: Product managers start with the customer and work backward in a form of reverse engineering. According to the speakers, they work vigorously to earn and keep customer trust. Although Product Managers do pay attention to the competition, they target and obsess over customers.

Continuing with another principle, inventing and simplifying: Leaders expect and require innovation and invention from their teams and always find ways to simplify, traits that should apply to every product manager. They are extrovertly aware, on the lookout for new ideas from everywhere, and are not limited by “not invented here.” As they do new things, they accept that they may be misunderstood for long periods of time until recognition arrives.

Learning is a continuous habit and a core principle for Amazon leaders, learn and be curious: Leaders are never done learning and always seek to improve themselves. They are curious about new possibilities and act to explore them eventually pushing boundaries forward.

Expectations are always high and so are the standards. Insist on the Highest standards: Leaders have unwaveringly high standards, which many others may consider unreasonable. They push their people to create high-quality products, services, and procedures by constantly lifting the bar. Leaders ensure that no flaws are passed down the line and that problems are resolved and remain resolved.

Think big: It’s a self-fulfilling prophecy to think little. Leaders set and articulate a bold course that motivates people to act. They think beyond the box and look for new methods to service and impress clients.

Avoid death by over analysis. Bias for action: In business, speed is crucial. Many judgments and acts can be reversed, and they do not necessitate much research. A premium on prudent risk-taking is placed.

Acting in constraints, limited resources allow and not creating business overhead allow for frugality: Get more done with less. Constraints encourage resourcefulness, independence, and innovation. There are no bonus credits for increasing personnel, increasing budget size, or increasing fixed expenses.

When the team cannot reach consensus, have backbone; disagree and commit: Leaders of all levels are obligated to respectfully challenge decisions when they

disagree, even when doing so is uncomfortable or exhausting. Leaders have conviction and are tenacious. They do not compromise for the sake of social cohesion. Once a decision is determined, they and the team commit wholly.

Deliver results: Leaders concentrate on their company's main inputs and ensure that they are delivered in a timely and high-quality manner. Regardless of failures, they rise to the challenge and never give up.

Continuing with the in-depth analysis for IBM [20], the current CEO Arvind Krishna and many other top executives, briefed the stakeholders for 2021. Valuable information can be extracted to further solidify the assumptions and research. The antipode approach of IBM promotes a platform-centric mentality. Emphasis is given on systems development and further enhancing client's systems through research and integration. This approach is characterized from portfolio optimization, Increase of investments, simplified go-to-market model, ecosystem expansion, alignment of incentives to growth priorities and advancement of social cohesion, culture and growth mindset. Through its main open-source software provider Red Hat, four objectives are presented:

Scaling of core business: Increasing Red Hat's reach through digital engagement, ecosystem transformation, and reaching scale and synergy with IBM.

Extending Red Hat to cloud services and edge: Providing simple cloud services and extending Red Hat's Linux knowledge to markets that are undergoing transformation at the edge.

Evolve customer success: Ensure consistent, targeted, and repeatable lifecycle engagement that leads to the best possible customer outcomes.

Foster our open, inclusive culture: Increasing organizational skills and improving their open, inclusive culture to make the best place to make a difference together.

Apart from the extensive platforms, a key role in IBM's success is software. A set of core values is demonstrated. In helping clients to address their need for flexible deployment with software built on Red Hat to maximize value for hybrid cloud. Commercializing innovation together with IBM Research. Moreover, delivering innovative and pre-integrated capabilities via IBM Cloud Paks that provide AI-powered software designed to accelerate application modernization with pre-integrated data, automation and security for consistent client experience. Additionally, help clients get highest value from data and automation with AI and last but not least to extend value of portfolio via partner ecosystem e.g., AWS. The previously presented core values, lead to architecting IBM's clients complex digital transformation needs through a specific course of action and a set of distinct priorities. The course of action involves steps towards predicting outcomes in a complex and siloed data landscape, achieving scale through intelligent automation and AIOps, securing by applying Zero Trust to everything and finally modernizing client's systems. The priorities are devised as following:

- Key innovations: Together with IBM Research for goods and services provided.
- Acquisitions: To increase automation, data and AI capabilities, security, and hybrid cloud capabilities.
- Strategic partnerships: To broaden the reach of essential solutions by combining them with additional outstanding goods.

- Modern Cloud Pak solutions: To construct once and run anywhere.
- Go-to-market: Put a premium on technological know-how and hands-on selling.
- Client success: Managers to aid in the adoption and implementation of hybrid cloud and AI solutions.

6. Comparative analysis

The comparative analysis is done in two stages. The first stage of the comparative analysis that unfolds, provides a detailed summary of important scientific findings in several fields, showcasing the unique research focuses and methodologies used by two prominent technological firms, IBM and Amazon. The subject covers strategy, product management, service innovation, portfolio management, new product creation, and the diffusion or adoption of innovations. Each practice is explained briefly, providing insight into the theoretical foundations and practical applications that influence these companies' strategies for attaining sustainable competitive advantage, excelling in product development, promoting service innovation, managing portfolios efficiently, creating new products, and comprehending the diffusion or adoption processes within organisations. This summary captures the varied methodologies and ideologies embraced by IBM and Amazon, showcasing their distinct approaches to innovation and dominating the market.

The above-mentioned practices are visible in more details in the second stage of the analysis that follows with more detailed and practical examples, drilling in the themes and processes.

6.1. Strategy

IBM has drastically changed since the start of this decade to keep up with market expectations. IBM's ability to put disparate components of technology both in terms of hardware, software, and services, together in a way that delivers long-term value for its clients and answers their most pressing business challenges continues to give a competitive advantage over its rivals. A catalyst for businesses, innovating and deploying technology to propel business ahead. Increased capacity to speed customers' digital transformation journeys by simplifying its go-to-market approach, making choices throughout the firm much easier, and leaning more heavily into its ecosystem. As a result, sales staff is showing early signs of increased productivity. IBM Garages are a terrific example of the changes IBM is making to engage clients. The platform-centric strategy of IBM is represented through three key goals:

- 1) Optimization of its portfolio to drive sustainable mid-single digit revenue growth.
- 2) Increase of its focus and agility to better serve clients.
- 3) Generation of strong free cash flow to enable investments.

To conclude, AWS Premier Partner IBM, delivers consulting and software solutions to AWS customers. IBM has assembled a team of highly qualified experts dedicated to deploying customer solutions on Amazon Web Services.

Amazon, on the other hand, has been a highly strategic firm since its inception.

In the future, it will continue to use its customer-centric attitude as a compass. Open to strategic partnerships that add value to customers. Its customer obsession is distinct from and superior to competition obsession. Amazon's success is based on customer obsession. As per Bill Carr, Amazon is a customer-centric firm rather than a competitor-centric company. An interesting notion, leading to wonder if this method is used by Amazon for all of their products, it would be intriguing because not all products must be made public right from the start. Both companies successfully satisfy their customer needs, in a rather different manner, IBM relates more to the Schumpeterian Entrepreneurship theory whereas evidently Amazon adheres to the Kirznerian Entrepreneurship theory.

6.2. Product management

IBM puts great attention and value on Product Development [21] and Product Lifecycle (PLC) (IBM PLC) management. Key aspects of IBM's PLM are Innovation, integration, collaboration and experience through a mix of agile product development. A more than hundred years old company engulfs a lot of experience. Understands the need of collaboration in reaching goals. Knows that systems integration and exchange of information is invaluable in discovering new trends and insights that help decision making. Most importantly praises the need for innovation. The backwards approach that Amazon advocates, requires to respond a series of questions defining some product basics that will permit the product manager to concentrate on the user, address the user's pain points, delimit success under a storytelling framework, examine stakeholders and create a vision. Continuing with a press release that emphasizes customer benefits and the customer experience, Amazon is able to design items with the customer in mind. Starting with the customer and going backward, as Jeff Bezos suggests, is exactly what the PRFAQ is supposed to achieve. This technique is elaborated further at the below section.

6.3. Techniques to understand and validate customer needs

IBM is rather focused on research and invention of new products; a process of specific steps is applied and will be explained in detail further on. Main aspect of this process is to combine virtual communities into an innovation-hub, virtual communities and encourage the innovation process. The innovation-hub is a meta-organization that acts as a center of knowledge integration and value generation, similar to traditional R&D labs. Employees connect informally over the internet and collaborate openly on innovation to improve the firm's competitiveness thus promoting NPD.

Amazon on the contrary, employs a series of questions and a press release to choose whether concepts are worthy of being developed into new goods. The questions:

- 1) Who is your customer?
- 2) How will this make your customer's life significantly better? Solve their pain point?
- 3) Why is this a problem that needs to be solved right now?
- 4) What might disappoint the customer?

- 5) How will the customer discover or find our product?
- 6) How will you measure success?
- 7) How does this integrate with existing product features?
- 8) What is your rollout plan beyond the home market?
- 9) What is the most contentious aspect of your product? (What sparks the most intense debate?)
- 10) What are the key milestones in your roadmap?

The press release template:

Title: [COMPANY] ANNOUNCES [SERVICE | TECHNOLOGY | TOOL] TO ENABLE [CUSTOMER SEGMENT] TO [BENEFIT STATEMENT].

Subtitle: Provide a few more key details

Intro Paragraph: [City, State]—[Intended Launch Date]—[Provide a crisp 3–4 sentences that reiterate and expand on the title with a little more detail on the customers served and what is being launched.]

Customer Problems: [Lay out the top 3–4 (max) problems for the customers your product or service is intended to serve.]

Solution: [Describe how your product/service elegantly solves the problem. Give a brief overview of how it works, and then go through and talk about how it solves each problem you listed above.]

Leader's Quote: [Pick a leader in your company and make up a quote that talks about why the company decided to tackle this problem and (at a high-level) how the solution solves it.]

Customer's Job-to-be-Done: [Describe what a customer has to do to start using the product/service and how it works. Go into enough detail to give them confidence it actually solves the problem.]

Customer Quote: [Create a fake quote by a fake customer, but one that sounds like it could be real. The customer should describe her pain point or the goal she needs to accomplish, and then how the product you launched enables her to do so.]

To learn more, go to [Provide a URL or other information on the first place a customer should go to get access to the product/service.]

6.4. Service innovation

Amazon's major idea is to sell its supply chain directly to its retail customers, allowing them to buy loyalty with ease. This permits it to take on the traits of all the other businesses that are drawn into its event horizon, rather than innovating more than any other company, in this case IBM. Amazon has become not only the everything store, but also the everything company, thanks to Prime. Amazon Prime, introduced in 2005, offered customers free, fast postage, and it reinforced that loyalty as a membership programme by providing the same infrastructure that makes Amazon move. Even at its startup, at the end of 1996, Amazon launched its Amazon Associates Program. Within ten years, the number of associates jumped from 4000 to 1,000,000. The associates program was primarily a means to acquire new customers and thereby boost traffic and product sales on Amazon's site. In return, Amazon gave its affiliates a revenue share. From 1994 to 2002, Amazon developed numerous partnerships and created its own business ecosystem. Furthermore, this paper

presents how Leveraging external developers: Amazon as an incubator for e-business [22] and approach similar to IBM's open innovation hubs.

Over the span of years, IBM has reinvented itself several times in order to overcome the barriers that stand in the way of innovation and value for its clients. Scientists and engineers at IBM have been at the forefront of the never-ending innovation. A notable example is the recent transformation of IBM towards service providing. Integrating more intelligent, linked, and instrumented devices leads to a Smarter Planet. The service innovation of IBM relies strongly on scientific research that leads to new products.

6.5. Portfolio management

Software will make up little under half of IBM's portfolio, while consulting will make up just under a third. Both will be important growth drivers, with Red Hat rising at a robust clip. This enables to pursue a platform-centric strategy, with Red Hat at its center. Meanwhile, infrastructure remains a critical component of the organization's foundation. Starting in 2022, IBM's portfolio, along with investments and ecosystem expansion, will offer mid-single digit revenue growth.

Amazon's product strategy from solely selling books to a broader product offering was apparently the smart choice. Electronics, apparel, and hardware were quickly added in the line of products. Then, in 2006, Amazon introduced Amazon Web Services (AWS). In 2007, Amazon released the Kindle, a digital book reader. Amazon's product approach allowed it to develop a monopoly on all things related to books to return to the original product concept of digital bookselling.

IMDb, Zappos, Twitch, Audible, Ring, Whole Foods Market, AbeBooks, Goodreads, and, of course, Amazon Web Services are among Amazon's 40 subsidiaries.

6.6. New product development

IBM supports innovation-hubs in accomplishing its strategy and new product development in terms of opportunity identification and selection, concept generation and project evaluation. IBM's innovation consists of seven phases. Namely, business synthesis, ideas, collaborate, prototype, early deployment, evaluation and result. Each phase has its own unique characteristics and activities. From recognizing market needs to concept development and prototyping to innovation launch, the innovation process is divided in the previously mentioned phases. IBM uses an innovation-hub to foster creativity and discovery in addition to the usual research laboratories, product teams, and strategic alliances for innovation that are formally formed in the organization. By applying this adaptable, horizontal, and virtual structure, efficiency is increased, and employee contact is enhanced. Moreover, this way IBM supports recognition and incentives by keeping IBMers involved throughout the process and encourages proposals and the exchange of new ideas.

To be more precise, opportunity identification and selection phase is elaborated in the first three steps of the IBM innovation process as described in the paper [23], business synthesis, ideas, collaborate. The first step is conducted through the activities of Client input, Research, Bluepedia (IBM developerWorks), GBS White

papers, Exec Podcasts, Academy studies, Horizon Watch. Continuing there with Ideas step, which consists of IBM Jams, Innovation Hubs, Blogs, Connections, BlueTwit (internal social media network) and Instant Messaging (Sametime). Opportunity identification and selection is completed through the last step of Collaborate that encompasses more IBM Jams, Innovation Hubs, Wikis, Blogs and Communities. Moving forward, concept generation consists of two steps, prototype and early deployment. Someone could argue that the collaborate step from the previous step could belong to this phase, however since this is a theoretical approach describing an “Innovation Development LifeCycle (IDLC)” similarly to a System Development LifeCycle (SDLC), the steps should be iterative and may fluctuate. Prototype step involves the implementation of techniques and tools such as engaging and stimulating Innovators, BizTech, Research teams, Extreme Blue and Blue Opportunity, yet again traditional methods and proprietary tools of IBM. That leads to the Early Deployment step, which promotes a proprietary technique called TAP hosting, consisting of BlueHost, assigning Delivery Project Executive (DPE) and generation of innovation-hub programme (IHE). The final phase of concept/project evaluation has two steps, evaluation and result. IBM involves thousands of early adopters and testers to each new product that provides feedback, responds to surveys, discusses over forums, and fills surveys, one of the most important sources of information since to reach this audience through the previous stems Subject Matter Experts (SMEs) and right audiences have already been selected and filtered.

A study examined lessons learned from successful and unsuccessful Agile transformation journeys [17], according to the author, Jeff Bezos, formulated his theory of organizing work in “two pizza teams,” each of which was required to propose its own “fitness function”—a linear equation that it could use to measure its own impact without ambiguity. Amazon implements a top-down agile method teams working without interruptions from top management. The starting point is imagining the finished product, as described in PR/FAQ paper the same tool that helps to understand and validate customer needs. In other words, is a mockup of an Amazon product announcement written as if it were ready to launch. Its content reflects Amazon’s expectations for the product’s reception in the marketplace, including “customer quotations” about how it will improve customers’ lives.

6.7. Diffusion or adoption

The result step of the IBM Innovation Development LifeCycle will provide the decision making. At that moment, it will be decided if a product will go forward, or it will be abandoned. The product team is assembled, any research is published and any possibility of merger or integration with other products is addressed. As it was already presented, the Amazon PRFAQ helps PMs decide whether a product will go forward or not. Meaning, If the derived benefits don’t sound fascinating or thrilling to buyers, they probably aren’t and shouldn’t be developed. Instead, the product manager should keep refining the press release until it contains benefits that are genuinely benefits and satisfy product market fit rule.

7. Conclusion

The reviewed literature, the in-depth use cases and comparative analysis for both companies from external and internal sources, allow to conclude that the companies in question adhere to the presented theory and grasp the value of innovation although by totally different approaches. It is not possible to tell which approach, platform-centric or customer-centric is better than the other since both companies continue to grow and operate, despite the difficult business environment and international economic situation which at times affects positively and other times negatively, gazing at the future and innovating. It is crystal clear that Amazon is a true example of state-of-the-art Agile Product Management and how the right choices to satisfy customer needs at the right time prove prosperous. On the other hand, IBM, follows a more traditional approach, established and trialed over the hundred years of its operation, without being blind of course towards change and the need for welcoming modern approaches. The current research lays the ground for further work through an empirical study applying a mixed methods qualitative and quantitative article through interviews and questionnaires addressed to managers and employs to validate the findings. In more details, the comprehensive examination of the product management (PM) practices of Amazon and IBM provides significant knowledge regarding the application of Schumpeterian and Kirznerian theories in the technology industry. Amazon's approach, which is founded upon a steadfast commitment to satisfying customers and a perpetual drive for innovation, is consistent with the Kirznerian values of entrepreneurial exploration and capitalising on market inefficiencies. An approach that prioritises the needs and desires of customers and operates in reverse, this methodology integrates customer feedback into the core of NPD procedures, thereby cultivating an environment that encourages ongoing education and adjustment. Implementing this approach has enabled Amazon to attain dominance in numerous sectors, demonstrating its capacity for inventive thinking and prompt reactions to market needs. On the other hand, IBM exemplifies the Schumpeterian model by emphasising creative destruction and radical innovation. IBM exhibits a steadfast dedication to technological progress through significant investments in research and development, collaborative alliances such as the one with AWS, and a notable focus on technological advancements. IBM's PM practices, which prioritise cross-functional collaboration, integration, and a structured NPD process, underscore the company's history of pioneering advancements and its adaptability in the face of changing technological environments. Although they employ distinct strategies, both Amazon and IBM have successfully integrated customer feedback into their NPD procedures. In contrast to Amazon, which accomplishes this via direct interaction and iterative development, IBM employs a methodical, research-oriented strategy. The aforementioned approaches serve to emphasise their individual economic theories: Amazon prioritises gradual, customer-driven innovation, while IBM concentrates on revolutionary technological advancements.

Several practical recommendations are proposed for junior product managers and organisations seeking to enhance their PM and NPD practices, as indicated by this analysis. The implementation of a customer-centric approach, exemplified by

Amazon, is of the utmost importance for organisations, necessitating that they place a premium on comprehending and resolving customer requirements via direct interaction, feedback channels, and a corporate culture that regards customer insight as fundamental to product innovation. Likewise, organisations ought to allocate resources towards research and development to cultivate innovation, all the while maintaining the flexibility and adaptability to adjust course in light of novel insights or market developments (as IBM did).

Furthermore, both Amazon and IBM emphasise the significance of cross-functional collaboration, as evidenced by the fact that cooperative and transparent departmental communication results in more inventive solutions and a unified product strategy. Additionally, in accordance with market demands and strategic objectives, managing a diverse product portfolio requires striking a balance between investing in new innovations and optimising existing offerings.

Further research may delve into various directions in order to expand upon the findings of this comparative analysis. By incorporating companies from various sectors, the comparison could be more comprehensive in its examination of the ways in which PM and NPD practices differ across industries. Product management's future may be augured through an examination of the effects that emergent technologies, such as blockchain and AI, have on PM and NPD procedures. Additionally, future research could investigate the impact of organisational structure and company culture on the efficacy of PM and NPD strategies. Finally, longitudinal investigations that monitor the progression of PM and NPD practices over an extended period may shed light on patterns and changes in the technological sector's methodology towards product development. Such insights would be practical for organisations as they navigate the rapidly evolving technological environment.

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