

Product Ops: Understanding and Defining an Emerging Discipline

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Abstract: Product Operations (Product Ops) is a concept gaining momentum among product management practitioners in the software domain. Practitioners share success stories and describe various benefits of implementing Product Ops in software organizations. However, there is a lack of consensus on a definition and areas of responsibility of the role, which may lead to inconsistencies and flaws in its implementation. An abundance of practitioner publications on the subject with varying descriptions of the discipline calls for standardization and the development of a systematic approach to discussing Product Ops. Moreover, only a handful of academic publications have briefly touched upon this concept. In response to this research gap, the paper reports the results of a grey literature review and proposes a definition of the Product Ops concept emerging in the software product management practitioner literature. The tasks and responsibilities of the function are described, alongside the expected positive outcomes of implementing the Product Ops. The risks of flawed implementations are also acknowledged. Furthermore, the paper outlines potential avenues for future research in this domain.

Keywords: Software Product Management, Product Ops, Software Business Definition, Grey Literature Review

1 Introduction

Product Operations (Product Ops) is a relatively new company function intended to enhance product management with an explicitly separated operational component, to create a more efficient approach to developing and delivering software-intensive products. Many of the responsibilities now attributed to Product Ops have historically fallen on the shoulders of product managers. The reorganization and redistribution of duties between Software Product Management (SPM) and Product Ops is meant to enable product managers to concentrate on the core SPM areas related to product strategy and product planning, while attracting experts with operational and analytical skills to assume some of the operational responsibilities. Product managers are commonly referred to as “mini-CEOs” [Ki22, Eb07], and this comparison can be extended to Product Ops, which could be referred to as “mini-COOs” [Pe19a], where COO stands for Chief Operating Officer, a high-level executive position responsible for the operations of a company.

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The introduction of Product Ops eliminates certain functions and responsibilities of software product managers and allows them to focus on the overall strategic direction of product development [Me20, It22]. Product Ops practitioners optimize the product development lifecycle by identifying and removing bottlenecks and inefficiencies. Product Ops and SPM work together to ensure successful product development [Es21]. While SPM sets the strategy and tactics, Product Ops provides the methods, tools, and processes to achieve these goals and ensure the product fully meets customers' expectations and needs.

The current rise of Product Ops aligns with the trend of expanding operations in software and digital businesses, and introducing such novel business functions as Sales Ops (sales operations), RevOps (revenue operations), DevOps (development operations), DevSecOps (development, security, and operations) and Marketing Ops (marketing operations) [Bu17, Ca23, Fe22]. Organizations have been driven to introduce these roles and functions to bridge the gap between business units and create cohesive and well-coordinated teams. Such cross-functional teams should improve the efficiency, effectiveness, and agility of company initiatives, as well as keep up with the changing market conditions, new technologies, and the increasing complexity of modern business operations.

Practitioner publications on the subject of Product Ops offer a variety of definitions, rife with metaphors and analogies to other disciplines and domains [Ja22, Pe19a, Sa18, Na22, LS23]. Several publications explicitly state that the role is “different at every company” [Pe19a, Ja22, Ca21]. One expert, for example, shares encountering six vastly different company functions all titled “Product Ops” [Ca21]. The lack of clarity around a specific definition and responsibilities calls for a more systematic look at Product Ops since “*the dust appears to still be settling*” [Pe19a]. Given the abundance of practitioner publications on the subject with varying degrees of specificity, it is worth establishing a coherent definition for the discipline. Wide usage of a term in varying contexts may lead to it losing its original meaning, and, eventually, all its meaning, becoming what Ulrich Beck describes as a “zombie category” [HH19]. Despite the different organizational contexts and perspectives, there are elements of Product Ops that are consistently mentioned across publications. These include the areas of responsibility of Product Ops professionals - supporting product managers in the areas of data management [Pe19b, Ja22, Pe19a, Pe19c, Pe18], experimentation [Pe19b, Ja22, Pr22a, Pe19a], tooling and processes [Pr22b, Ja22, Pr22a, Ca21, Pe19a, Pe19c, Na22, Dr22]. Commonalities can also be observed in the descriptions of the positive impact of the role, including increased organizational efficiency and improved ability to scale [Ja22, Pe19a, Ha20, Pe18, Dr22].

As of now, Product Ops has not been adequately studied in academic literature. We could not identify any research paper, in January 2023, that directly addressed the concept of Product Ops. The lack of scientific publications necessitates employing a grey literature review and focusing on identifying, analyzing, and integrating non-peer-reviewed sources [GFM19, SS21]. Reviewing grey literature promises to provide valuable insights and knowledge about the phenomenon by revealing practitioners' perspectives, voices, and

viewpoints [ASH17, La14]. Once conducted, our study offered insights into the current state-of-the-practice of Product Ops in software-developing organizations and contributed to a more comprehensive and nuanced understanding of this concept.

The rest of this paper is structured as follows. Section 2 defines the research questions of this review and introduces the methodology used in the process. Section 3 shows the results of the review and presents our definition of Product Ops. It is followed by a discussion with proposals for further work avenues in Section 4 and concluding remarks in Section 5.

2 Methodology

Facing the lack of prior research on Product Ops, this study aims to address the following research questions:

RQ1 What are the definitions and schools of thought on the concept of Product Ops?

RQ2 What are the responsibilities of Product Ops?

RQ3 What outcomes or impacts can be expected when implementing Product Ops?

The identified research questions and the lack of prior academic studies on Product Ops suggest employing a grey literature review. Grey literature includes a wide range of sources, such as industry reports, white papers, and knowledge shared by practitioners through podcasts, interviews, and blogging. Traditional literature reviews often overlook grey literature and focus on peer-reviewed journal articles. However, grey literature can provide valuable insights and perspectives not represented in peer-reviewed literature and can therefore be an essential source of information for understanding the phenomena being studied [GFM19]. By answering these questions with a grey literature review, this study aims to clarify the definition and responsibilities of the Product Ops company function, and the potential benefits of implementing one.

The search of grey literature publication began by searching for the term “Product Ops” on Google. Sources were added to a spreadsheet, where they were numbered and classified by publication type and source type. The researchers then read the sources in their entirety and wrote condensed summaries of their contents to the same spreadsheet. New sources referenced from the reviewed sources were followed and added to the spreadsheet as well, in a “snowballing” approach. The condensed summaries of the identified sources were reviewed again, and the key ideas from the condensed summaries were placed into a mind map diagram. Similar themes, concepts, and arguments were grouped together in the mind map, with clear references to their sources.

Several sources were explicitly rejected, primarily based on their relevance and originality. One of the rejected sources was determined to duplicate the contents of another source, whereas another was in the Finnish language (the only one of the identified sources).

Additionally, several sources were left out from the body of literature for the review due to the scope of the study. For example, publications describing the implementation process of Product Ops in software organizations, and job postings from companies for Product Ops positions, were left for follow-up studies described in the discussion section of this paper. The search for more sources was paused when newly reviewed sources no longer added new information to the mind map, indicating reaching the required degree of knowledge saturation. Overall, 29 sources were identified and added to the spreadsheet. Of these, 3 were rejected, and 7 were left for follow-up studies. The review findings presented below were written based on the systematic analysis of the remaining 19 sources. The sources are mostly text-based (7 are web publications presenting an overview of the discipline, 2 are blog posts relaying personal experience, 6 are white papers, 1 is a written interview, and 1 is a book section), but also include 1 webinar and 1 podcast interview episode.

3 Results

RQ1: What are the definitions and schools of thought on the concept of Product Ops?

Several of the sources begin defining Product Ops through metaphors such as “*connective tissue between the teams building your technology and teams who interact with your users*” [Pe19a, Na22], “*the glue that helps move with unified energy to solve problems.*” [Sa18], “*the secret sauce to really making a product company run at scale*” [Ja22, Pe19c], or “*the secret weapon to keeping teams aligned and truly outcomedriven*” [Dr22]. The use of the term “secret” may indicate that for many organizations, this role is not yet familiar. Many publications make the analogy to other “Ops” roles in a company, including DevOps, Sales Ops, and Marketing Ops [Pr22a, Pe19a, Bu17]. Increased efficiency is the main focus — as one source puts it — Product Ops is “*applying the ruthless efficiency of sales operations to the R&D function*” [Pe19a]. Another describes the role as “*an efficiency engine dedicated to automating, streamlining, and optimizing*” [Pe18]. Other sources position Product Ops at the “*intersection of product, engineering, and customer success*” [Pe19b, Pr22a, Pe19a, Dr22].

Several reviewed publications state that the Product Ops role is “*different at every company*” [Pe19a, Ja22, Ca21], because the role is relatively new, and companies use it to address different needs [Pe19a]. But this, as Cagan points out, “*might be true, but isn’t very helpful*” [Ca21]. A loosely defined Product Ops function is a risk that may lead to “weak” product managers delegating most of their decisions and losing ownership of the product strategy and roadmap [Ca21]. Still, publications reviewed indicate that companies benefit from a thoughtfully implemented Product Ops, especially when in an execution

mode (a term coined by Blank [Bl06] to describe the phase in a life cycle of a venture after a repeatable and scalable business model is found) [Ja22, Pe19c]. A clear definition would ensure Ops does not hinder the SPM function, but rather acts as a “*force multiplier*” [Ca21].

By studying, comparing, and summarizing the varying definitions and descriptions provided in grey literature, we developed the following definition:

Product Operations (Product Ops) is a function that makes product companies more efficient and allows them to scale without friction. Product Ops empowers product teams in four ways:

1. Ensuring that software product managers regularly receive clean and reliable data to base their decisions on (**data management dimension**);
2. Managing the tooling, processes, and infrastructure used by the product team, establishing and communicating best practices (**tool and process management dimension**);
3. Allowing software product managers to focus on core SPM work by reducing the administrative burden and acting as a pro-active assistant (**operational complement dimension**);
4. Fostering cross-departmental and cross-team communication, collaboration, and coordination, ensuring alignment and preventing silos (**collaboration dimension**).

The four identified dimensions have the overarching impact of **optimization** and **alignment**. We elaborate on what exactly is optimized and aligned in our answer to RQ3.

RQ2: What are the responsibilities of Product Ops?

Four significant dimensions of Product Ops were identified in the analysis and included in the definition above. These dimensions also characterize the responsibilities. These are data management, tool and process management, operational complement, and collaboration.

Data management. One source describes data management as the “make or break piece of product operations” [Pe19a]. Product Ops is responsible for equipping product managers with reliable data, in order to support informed decision-making [Ja22, Ca21, Pr22b, Pe18, Dr22]. To achieve this, Product Ops must set up processes to collect qualitative and quantitative data about the product from across the organization. This includes conducting customer research, facilitating interviews and market research (at larger companies, this can be done in collaboration with a dedicated user research team).

Product Ops is involved in determining which users to talk to, how best to reach them, and what information in what format should be collected.

A commonly mentioned aspect is the management of data coming out of experiments [Pe19a, Ja22, Pr22a]. Product Ops standardizes the procedure of conducting experiments on products and features. This involves standardizing the format in which data is collected across different experiments and product teams. Product Ops is also supposed to track the status of planned and ongoing experiments, and sequence them in such a way that they do not interfere with each other's results [Pe19a, Ja22, Pr22a, Dr22]. One publication compares experiments to airplanes, and describes the role of Ops as “*running launch logistics on the ground*” and “*performing air traffic control*” [Pe19a].

Collecting data, however, is not enough. Product Ops is also in charge of organizing and cleaning the incoming data, and maintaining its integrity over time [Pe19a, Ja22, Pr22b, Pe19c]. Product Ops analyzes the collected data and looks for qualitative and quantitative insights that can be shared with product managers. Some practitioners describe this function as “*raising the data IQ of the broader product organization*” [Ca21] and adding “*more analytical horsepower to process data and gain insights*” [Bu17]. Product Ops ensures the data and insights they generate are known and considered by product managers when making strategic decisions. As one source puts it, the value of this product data and insights “*hinges on reaching the right people at the right time*” [Pe19a]. Product Ops ensures data such as customer feedback reaches the product team effectively and in a way that enables them to better meet customer needs [Na22]. For this, Product Ops must set up cadences and workflows for sharing the collected and analyzed data with stakeholders involved in product development [Pe19a, Na22, Pe18].

Tool and process management. Product Ops is responsible for managing the “tech stack” and infrastructure used by the broader product team. This includes instruments for product portfolio management, product design, user research, survey execution, and various collaboration and messaging tools [Dr22]. Product Ops learn how to use tools from various vendors, select the most suitable ones for their organization, and set them up [Pe19a, Ja22, Pr22a, Pr22b]. Once the tooling is configured, Product Ops educate product teams on how to use it, develop and communicate best practices for working with it by writing guides and conducting training sessions [Pe19a, Ja22, Ca21, Pr22b, Ha20, Dr22]. Product Ops become the source of best practices within the organization, and consult the team on various problems around workflows and tooling [Ca21, Ha20, Pe18]. If necessary, Product Ops communicate with the vendors of the tools directly to request changes or improvements, and manage the relationships with the vendors [Pe19a, Pr22b, Bu17].

Another aspect of the tooling dimension is automation. Product Ops automates product-related functions [Pr22b] and various repetitive and time-consuming tasks [Ja22, Ha20, Pe18]. For example, data correlation, analysis, and reporting can be automated to an extent [Pr22b, Pe19c]. Product Ops may also create new tools for product teams [Ja22, Pr22a, Ca21, Dr22]. As an example, the Product Ops team at payment processing software company Stripe has created a tool for product teams to smoothen the process of rolling out

new releases. By answering a set of questions about the scope, contents and maturity of the release, the team automatically receives recommendations about which cross-functional teams should be informed and involved in the roll-out of the release [Na22].

To determine whether the processes are working, Product Ops must also continuously measure the product development process, identify bottlenecks, and strive for more efficiency [Bu17, LS23]. This may include measuring the time it takes to roll out a release or launch a feature, as well as the number of features launched per quarter or per development sprint [LS23]. Product Ops may strive to keep this speed relatively consistent as the organization grows and the number of products, employees and customers increases [LS23]. A proper understanding of the organizational capacity to deliver prevents pursuing roadmaps that are overly ambitious [Pe19c]. Understanding the process allows Product Ops to also understand development costs. This lets them provide meaningful decision support to executives conducting a cost-benefit analysis of company initiatives [Pe18, Pe19c].

Operational complement. As the operational complement to product management, Product Ops is able to provide support and increase the impact of their counterpart. As organizations scale, the increased amount of customers, colleagues, products in a portfolio, and product data may become too challenging for product managers to handle alone [Ja22]. Introducing Product Ops to organizations means making a shift in task ownership [Pe19a] and redistributing the work [Pe18]. Product Ops take over the day-to-day tasks, including the aforementioned data management, market research activities, and team process establishment [Ja22]. This reduces the “*administrative burden*” [Pr22a] or the “*cognitive load*” [Ha20] on product managers and allows them to focus on core SPM work [Ha20].

One commonly mentioned responsibility of Product Ops is handling staff onboarding [Ja22, Pr22a, Ca21, Pr22b, Ha20, Dr22, Bu17]. Being in charge of establishing team processes and best practices, Product Ops is perfectly positioned to quickly bring new hires up to speed with the organizational dynamics and ways of working. Some sources suggest that Ops should also handle staff professional development by providing coaching [Pr22a, Ha20, Pe18, Dr22].

Finally, Product Ops may act as an assistant to product managers even outside their primary operational domain [Ja22, Pr22b]. One source describes it as “*simply an extra body familiar with the product and processes that can jump in when needed*” [Pr22b]. Some of the responsibilities of Product Ops at companies may be defined rather loosely, and professionals in those roles need to take the initiative when they identify the gaps they can fill to improve the overall product development experience [Pr22b].

Collaboration. Product Ops fosters cross-team and cross-departmental communication and collaboration. One source describes this as creating “*clarity on strategy across all levels*” [Dr22]. Product Ops ensures connections and communication channels between the product team and other teams [Pe19a, Ja22, Pr22a, Pr22b, Pe19c]. Product Ops

prevents silos by clearly and consistently sharing product-related ideas, data, and insights with teams outside the product team, and channeling data from other teams to the product team [Ja22, Ha20]. In larger organizations, cross-team dependencies can grow complex, and stall development [Dr22]. Product Ops is in charge of managing these dependencies between units and teams with the ultimate goal of improved coordination, alignment, and more efficient work across the board [Pe19a, Pr22a, Na22, Ha20, Pe18, LS23].

Part of Product Ops' responsibilities in the "collaboration" dimension is creating product documentation and becoming the best source of information about the product across the company. Product Ops set up internal knowledge bases accessible to all interested company stakeholders from a central place in a consistent way [Ja22, Pr22b, Na22, Ha20, LS23]. These central information hubs may contain educational materials about the product [Ja22], experiment results [LS23], the current state of the product in terms of quality and meeting the stated Objectives and Key Results (OKRs) [Pe19a, Pr22b]. Product Ops can also keep track of historical decisions made during product development to quickly bring staff and stakeholders up to speed and trace the justifications for the direction the product has taken [Ha20]. Another task for Product Ops can be to establish, document, and communicate the full context for reported problems, so that teams or individuals tackling these problems have a full understanding of the problem space [Ha20].

In addition to establishing information repositories, Product Ops must set up regular cadences to communicate this information across the organization. This involves scheduling regular cross-functional meetings [Pr22b, Na22, Ha20, Pe18], conducting product education for stakeholders [Ja22, Pr22b, Pe19c], and proactively sharing insights, status, and latest developments via announcements [Ha20]. All this leads to a scalable process where interested stakeholders can "*plug in when interested or needed*" [Na22, Dr22] for deeper engagement, but also remain "in the loop" from a distance.

RQ3: What outcomes or impacts can be expected when implementing Product Ops?

At this point we have established an overall definition of Product Ops and the responsibilities of Product Ops professionals in software organizations. Some of the benefits of implementing the function have already been alluded to. To fully answer this third research question, we formalize the outcomes and impacts of the Product Ops function across the four dimensions discussed above. The result is presented in Table 1.

For each of the four dimensions, the impacts are **optimization** and **alignment**. Optimization can mean accelerating certain company processes and initiatives, and more efficient use of resources. Alignment can mean improved coordination and communication between stakeholders and teams, and an improved shared understanding of the product strategy, current quality, and place on the roadmap. The optimization and

alignment across the four dimensions reduce the friction that companies experience when scaling up. Establishing a Product Ops function helps the companies prepare for or react to growth [Ha20].

	Optimization (Opt.)	Alignment (Algn.)
Data management	<ul style="list-style-type: none">• Opt. of time to learn from and react to insights• Opt. of time to react to negative user feedback• Opt. of R&D costs by determining what to prioritize	<ul style="list-style-type: none">• Algn. of development work with business outcomes• Algn. of experiment scheduling to prevent interfering with each other's results
Tool & process management	<ul style="list-style-type: none">• Opt. of team work with tools tailored to specific team needs / company goals• Opt. of time spent on routine tasks by automation• Opt. of bottlenecks slowing down release times• Opt. of R&D costs by measurement and improvement of product development process• Opt. of overall financial performance	<ul style="list-style-type: none">• Algn. of cadences and engagement rules to collaborate and share information with other teams• Algn. of the contents and the quality of inputs and outputs produced by teams, leading to more efficient collaboration and better outcomes
Operational complement	<ul style="list-style-type: none">• Opt. of staff onboarding by following clear processes and documentation• Opt. of solving urgent problems by proactively jumping in to assist product managers	
Collaboration	<ul style="list-style-type: none">• Opt. of cross-functional interactions and cross-team dependencies• Opt. of time it takes to carry out cross-team initiatives• Opt. of time it takes for stakeholders to get up to speed on product status• Opt. of effort to stay in the loop about the product status	<ul style="list-style-type: none">• Algn. of strategy across all company levels• Algn. of stakeholder expectations by clearly and regularly communicating current status of products• Algn. of product teams distributed across the globe in larger organizations

Tab. 1: The Product Ops impact matrix

In the data management area, Product Ops cleans and analyzes incoming product data, and makes sure the data is available to product managers when making product-related decisions. Incorporating insights at regular intervals into the product development process improves the agility of product development teams. The teams are able to learn from the data quicker, and react to user feedback faster. Some practitioners refer to this as setting up “tight feedback loops” [Na22], systems to collect feedback and act on feedback [Ja22, Dr22]. Moreover, market and user research may indicate which aspects of the product need to be prioritized to achieve maximum impact, saving the time and therefore cost required to achieve the stated business goals [Ja22, Pr22a, Pe19c, Dr22, Sa18]. This ensures the work the product team is doing is in service of the business strategy, and helps quickly correct course when a deviation is discovered [Pr22a, Pe19c, Pe19a, LS23]. Furthermore, having a bird’s-eye view of the experiments carried out by various product teams, Product Ops can sequence the experiments so that they don’t interfere with each other’s results [Pe19a, Ja22, Pr22a, Dr22]. This leads to more conclusive and reliable data coming out of experiments and influencing the decisions made by product managers.

In the tool and process management dimension, Product Ops optimizes the workflows of the product teams. Teams across the organization and members of the same team use a consistent set of tools, for which they have guides and documented best practices. Product Ops is always available to consult them on difficult problems [Ca21, Ha20, Pe18]. Product

Ops also templativizes and automates as many repetitive tasks as possible, making more time available for meaningful work [Ja22, Pr22b, Ha20, Pe18, Pe19c]. By constantly measuring and evaluating the product development process and studying cross-team dependencies, Product Ops can identify and tackle bottlenecks to accelerate the roll-out of features [Pe19c, Bu17, LS23]. Moreover, understanding the R&D costs, the business goals, and the needs and requests of various stakeholders lets Product Ops make informed suggestions on how best to prioritize development work for maximum impact [Dr22]. Increased alignment is achieved by establishing regular cadences for cross-functional meetings, as well as rules for when certain teams must be consulted and engaged [Pe19a, Na22, Ha20, Pe18, Dr22]. Product Ops establishes the format and the quality standards for the inputs and outputs produced by teams and departments in an organization, all in service of better outcomes [Pe18].

In the “Operational complement” area, optimization is the primary impact. New staff can get up and running quicker via a standardized and information-rich onboarding procedure. Product Ops are available as proactive assistants to product managers. Being familiar with the product domain and processes, they can assist in tackling urgent problems as they arise [Ja22, Pr22b].

In the “Collaboration” dimension, Product Ops optimizes cross-functional and cross-team interactions. This reduces the time it takes to execute initiatives that require several teams and departments to work together. Teams understand each others’ schedules, have uniform communication channels, and exchange deliverables in a shared format. By setting up centralized information repositories about products, Product Ops reduce the time it takes for interested stakeholders to seek product information and get up to speed on the state of the product. Moreover, by regularly communicating research insights and product milestones, Product Ops reduce the time and effort for executives and others to stay informed on how the product is doing. This increased visibility across the organization increases the alignment of all units with the product and business strategy. Moreover, this ensures a clear shared understanding of the product, where it is on the roadmap, how well it meets quality standards, and what the users share about it. This prevents stakeholders from having unrealistic expectations or making unrealistic promises about the product. In larger organizations, teams distributed across the globe can also use the established information hubs and communication channels to share unique regional problems they may be facing. For example, high-speed network availability may be taken for granted in some areas of the world, but the lack of it may render a product hardly usable at other locations [Na22].

4 Discussion

Product Ops is a relatively new area in the software engineering and product management domain. It is an outgrowth of the spread of a variety of Ops functions across technology companies. While it is expected that implementing Product Ops would have a significant

impact on an organization's product development process, leading to a variety of positive outcomes, there is still much to be understood about how it can best be implemented and practiced in organizations.

Many reviewed grey literature publications focus on the positive impacts of implementing Product Ops, positioned as a kind of sales-pitch for the function. A degree of skepticism is therefore warranted, and a few authors do point out the possible risks of misunderstanding the role. One source of risk comes from the loose definition of the term. Cagan, for example, identifies six possible variations of "Product Ops" encountered in his practice, and considers some of those damaging [Ca21]. Specifically, in some cases, an older problematic role emerges under this new title ("*the reincarnated PMO model*"), and in others, product leaders delegate too much of their responsibility to the Ops function and lose ownership of the decisions about the product [Ca21]. In some cases, a different role that has existed for a long time is rebranded with the new title of Product Ops to attract professionals. This is the case with Production Operations (monitoring and maintaining the product post-launch) and Product Marketing Management, both of which are sometimes advertised as Product Ops [Ca21]. A study of job postings for the Product Ops position could further refine the definition we propose in this paper, and evaluate to which extent our definition encompasses the discipline. Another risk is that the overly empowered Product Ops function gatekeeps access to users and user feedback [Na22]. A healthy implementation does not prevent product managers from communicating with users directly, but rather sets up the system where SPM can rely on the research and insights provided by Product Ops, but can also connect to the customers, collect feedback, and run experiments personally whenever deemed necessary.

Publications seem to agree that the Product Ops function becomes more relevant for organizations after finding a product-market fit and beginning to grow [Ja22, Pr22a, Pe18, Pe19c]. Smaller companies may not need the role initially [Ja22, Pr22a]. A single person on the product team may be in charge of some of these responsibilities, or everyone contributes to an extent [Pr22a]. Introducing Product Ops for the sole reason of helping product managers handle "*too much work*" may indicate that product managers need additional coaching to cope with their responsibilities [Ca21].

Furthermore, the standardization and uniformity establishment function of Product Ops can become excessive, resulting in a bureaucracy that hinders innovation and becomes detrimental to productivity [Ca21, Na22]. This challenge can be viewed as drawing the line between chaos and bureaucracy [Na22]. Having experienced people with various backgrounds on a Product Ops team may help find the proper balance [Ca21, Na22]. The processes and practices must also be reconsidered over time as circumstances inevitably change [LS23]. Still, if the aforementioned risks are navigated carefully, Product Ops can act as a "force multiplier" to its SPM counterparts [Ca21].

Quality bias is also a concern, as practitioners may miss important details, make bold claims, or manipulate the results to make them more appealing. Some of the reviewed publications are authored by companies and individuals who are involved in selling tools

and consulting services for software product managers and organizations. One could easily see the motivation for these sources to rally around a new discipline that involves educating companies on how it should be implemented, and the procurement and maintenance of tools for data and process management. But these sources are offset by seemingly neutral publication channels and positive examples from personal experiences.

Time frame bias is another possible issue since there may be a focus on short-term experiences due to the relative novelty of the concept, and not every included source is a longitudinal case or experience report.

In addition to source-related challenges, we as researchers may face selection bias if we failed to identify all relevant publications, or confirmation bias if we failed to summarize everything appropriately. In summarizing the grey literature findings, we focused on the aspects of Product Ops that fit into the “force multiplier” paradigm [Ca21] and emphasized the ways in which Product Ops can be helpful to SPM without hindering or taking over their core responsibilities. To balance this positive look at the discipline, we presented the possible risks in this discussion section.

Based on our grey literature review, we aim to shape a research agenda for Product Ops studies and research. This agenda could be a first step toward developing a strategic plan for guiding and focusing research efforts to help advance our understanding of this concept. Some possible key themes and areas of focus for further studies might include:

1. The aforementioned review and analysis of job postings for Product Ops to determine the expectations of the established players in the software industry.
2. The best practices and success factors for implementing the Product Ops function in software organizations, including the prerequisites, the timing, and the step-by-step guide to implementing the role. A research question may be formulated as “What factors contribute to the successful implementation of Product Ops?”
3. The various ways to structure the Product Ops team within organizations. Several options were already discovered during this literature review. Melissa Perri proposes one configuration (“the Perri model”) [Pr22a, Pr22b, Pe19c], where a data-driven Product Operations Analyst takes charge of data analysis without deep domain experience, and a Product Operations Manager is more of a domain expert that works with the Analyst to streamline all processes and build organizational consistency. Another configuration is offered by Blake Samic (“the Samic model”) [Na22], an expert who built the Product Ops function from the ground up at Uber and later at Stripe. In that model, a central generalist Product Operations Programs team establishes best practices, tools and processes for a variety of globally distributed Embedded Product Ops teams, who are deep domain experts in their product and region. These models should be studied and evaluated further, and other possibilities should be identified. A research question may be formulated as “How Product Ops can be structured in software development organizations?”.

5 Conclusion

In this study, we addressed the lack of a comprehensive definition and academic publications on the subject of the emerging discipline of Product Ops by conducting a grey literature review. Based on blog posts, white papers, interviews, podcasts, webinars, and magazine articles by practitioners, we proposed a definition of Product Ops, described the responsibilities of Product Ops in software organizations, and created an “impact matrix” describing the positive outcomes of implementing the Product Ops function.

Product Ops is a function that makes product companies more efficient and allows them to scale without friction. Product Ops aims to optimize the use of resources, and align product teams and company departments to ensure successful product development, delivery, and maintenance. The literature review has highlighted the potential benefits of Product Ops, including improved collaboration and communication between product teams and other departments, faster and more reliable software releases, and increased agility in responding to market changes. These benefits are realized by implementing standardized methodologies and processes. Additionally, the usage of automation, monitoring, and measurement tools can reduce human error and improve the speed and quality of software delivery.

However, Product Ops is not a one-size-fits-all solution. Its implementation should be tailored to meet the specific needs and goals of the organization, as well as the current skill set and culture of the team. Publications reviewed indicate that new companies often do not immediately require a Product Ops function. In smaller teams, a single individual may handle these responsibilities, or they can be distributed between all employees. After the company finds a product-market fit and grows, Product Ops can have a strong positive impact. Moreover, having inexperienced individuals on the team may result in the enforcement of overly rigid processes that are counter-productive. Having knowledgeable professionals with various backgrounds on the team, and reconsidering the established norms and practices over time based on ever-changing conditions, are named by practitioners as success factors towards a good implementation of the role. The introduction of Product Ops will usually shift the emphasis of the responsibilities of product managers, and it is important to clearly communicate the duties of both functions when implementing the role.

Overall, the reviewed grey literature suggests that Product Ops can effectively improve the product development process. Its potential benefits can be significant, but organizations should be aware of the potential challenges involved in its implementation. With careful planning and implementation, Product Ops has the potential to drive significant improvements in product development efficiency and effectiveness.

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