Strategies of Product Managers: Negotiating Social Values in Digital Product Design

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ABSTRACT

Product managers are central figures in digital product development, coordinating teams and prioritizing features. Despite their influence, little research explores how their decisions affect user experience, especially in integrating social values into product architecture. Employing a mixed-methods framework, we conducted semi-structured interviews with 20 product managers and an online survey with an additional 81, all based in Israel. Our study identifies four unique strategies product managers utilize to balance business goals, user satisfaction, and ethical considerations. The survey data further substantiates the prevalence of these strategies across diverse sectors, confirming they reflect industry-wide approaches in the Israeli tech sector rather than isolated practices. To conclude, we emphasize how "soft resistance" tactics, such as adjusting data interpretations based on personal values, impact digital product designs. Moreover, our findings highlight that maintaining an ethical reputation in the job market can be pivotal in shaping product design.

CCS CONCEPTS

• **Human-centered computing** → **Empirical studies in HCI**; • **Social and professional topics** → **Codes of ethics**.

KEYWORDS

Product managers, design, values, ethics

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1 INTRODUCTION

Recently, tech industry workers from leading companies have actively spotlighted and questioned ethical issues tied to their products, services, and work environments. Revelations such as those made by Frances Haugen [71] and the events surrounding the Cambridge Analytica scandal [32] have sparked media headlines on the eroded public trust in commonly used digital platforms. These developments have magnified media attention on ethical dilemmas within the tech sector, leading to a discourse termed "Techlash" [69]. This shift has impacted both users' [27, 50] and developers' [76] perceptions of digital product design and continually influences various aspects of technology culture [19, 60]. However, despite the media's prominent coverage of this backlash against tech companies, a substantial gap remains in our understanding of the day-to-day experiences and ethical strategies employed by technology professionals in this evolving landscape [1, 3, 69].

Studies in Human-Computer Interaction (HCI) have investigated the incorporation of values and ethics in the professional practices of technology stakeholders like user experience designers [11, 26, 79], data scientists [3, 52], software developers [4, 29], and scientists [14]. Subsequent research has aimed to construct new paradigms to assist these practitioners in more effectively embedding social values and ethical considerations into their work [5, 44, 51, 63, 64] However, to understand how to value and ethical considerations impact the user experience, we need to examine how design plays a role in managerial decision-making processes in technology companies. To elucidate the implications of "soft resistance" within product design, our analytical scope must extend beyond singular professional domains, such as UX designers (as previously examined by Wong's study of UX professionals [79]). A comprehensive exploration requires assessing how design decisions are made holistically, considering user feedback's intersection with business goals and organizational and professional standards.

Product managers are instrumental in orchestrating the design and oversight of digital products, particularly at the nexus of corporate objectives, social values, and ethical considerations. They are responsible for setting the product's direction, planning its development, deciding which features are most important, and overseeing its launch [9, 34, 67]. The product management role within the digital technology sector has seen substantial growth in recent years. As of 2022, the number of product managers in the United States surged to nearly 700K, marking a 400% increase over the past six years [82]. With the growing prevalence of agile methods, users are continuously engaged with software products, which are constantly analyzed and improved using detailed user data [28, 73, 83]. Product managers are tasked with coordinating the various components of modern software and making collaborative decisions that align with user research and development goals [68]. According to Gürses and van Hoboken, product managers determine how software services are presented and configured, acting as "chief curators" of their features and capabilities [28].

Understanding how product managers make daily design decisions can provide an indispensable view into how value and ethics design-making processes are carried out, as they are positioned

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in organizational roles that encounter ethical conflicts. As Chisa writes, "Product managers talk to users to help figure out what to build, define requirements, and write functional specifications. They work closely with engineers throughout the process of building software. They serve as a sounding board for ideas, help balance the schedule when technical challenges occur—and push back to executive teams when technical revisions are needed." [9]. The position of the role of product managers as a go-between users, engineers, and management means that conflicts between user wellbeing and profitability need to be directly addressed in their daily work. As exemplified in the Congress hearing of the Facebook whistleblower Frances Haugen, her role as a product manager meant that she could confidently claim that "the company systematically and repeatedly prioritized profits over the safety of its users", as she had access to information about user safety as well as to financial metrics [71]. Initial studies investigate the role [9, 17], daily work [34, 73], and technical challenges of product managers [7, 67, 68], did not address ethics and user-wellbeing.

To narrow this research gap, we ask several research questions about the day-to-day ethical strategies employed by product managers:

(1) How do product managers conceptualize and address social values in their work?
(2) How do product managers manage conflicts between business interests, user well-being, and social values in their decision-making processes?
(3) What strategies do product managers employ to balance conflicting priorities and ethical considerations?
(4) How do product managers measure user experience in their work, considering the intersection of user feedback with business goals and social values?

To address these questions, we have used a mixed-model approach. We first conducted semi-structured interviews with 20 experienced product managers in Israel to understand how they conceptualize their decision-making processes concerning social values, ethical considerations, and user well-being. Using grounded theory and iterative coding, we have formulated a preliminary model of the conflicting values product managers face and their strategies to resolve them. We then quantified these findings using an online survey of 81 Israeli product managers. Using k-means clustering, we assessed the strategy distribution and the measures used by product managers. Our findings portray how Israeli product managers use four strategies to balance business interests, user advocacy, and social values. Our survey data confirms that these strategies are not anomalies but reflect broader industry trends. We summarize the paper by discussing how our findings might benefit user experience design and how they can aid in developing new ethical engineering frameworks.

2 BACKGROUND

2.1 Values in technology

The exploration of the interplay between values and technology development is an ongoing endeavor within the field of human-computer interaction [23, 24, 28, 41], as well as in the realm of science and technology studies [39, 77]. In HCI, the concept of "value" embraces what holds significance for individuals or groups. This spectrum ranges from intimate personal relationships and daily rituals to profound philosophical concepts like morality, beauty, truth, and virtue [23, 64]. Values are frequently described as elements that find their way into technologies, whether through the deliberate actions of developers [20, 24] or unconsciously, and are subsequently made tangible through a technology's functionalities [65]. This perspective, which sees values as integral to technology's design, distinguishes it from the approach taken by the business administration literature [25]. In the latter, values are viewed as a collection of practices and policies implemented by companies.

Research in HCI is placing an increasing emphasis on values in design. This underscores the profound impact of ethical considerations and societal norms on the design of artifacts, systems, and infrastructures [15, 28, 30, 33, 66, 66]. For instance, Houston et al. define 'valuation' as the methods by which something is determined to be important, valuable, or beneficial [30]. This can be understood as the way we determine or recognize value. Conversely, "values" refer to specific moments when these overarching valuation processes solidify or gain acknowledgment. In short, valuation is the ongoing act of assigning importance, whereas values represent the concrete results of that act. Designers navigate their work through a certain collection of beliefs and attitudes that function in the organizational constraints they work in [40]. How these values are operationalized also depends on the technological framework the products are created in [16] and the nature of the design and product processes [73].

Questions of values in design are becoming more urgent with the shifting technological world into Artificial Intelligence (AI). Studies focusing on algorithmic production have unveiled discrepancies between managerial and developmental ideals for 'good' algorithm design versus on-ground realities. Ibáñez and Olmeda demonstrate this disconnection among Spanish AI leaders, emphasizing the relationship between ethical decision-making and feature selection in development processes [31]. Similarly, Avnoon et al. (2023) noticed this incongruence and presented a threefold typology detailing the ethical standpoints of Israeli data scientists regarding AI: (1) ethics as a personal endeavor; (2) ethics as hindering progress; and (3) ethics as a commodity [3].

Other works have emphasized that understanding how ethics and values are institutionalized in tech companies is an endeavor that should involve examining the process of meaning-making by actual tech workers and how they prioritize values within the for-profit ecosystem they operate in [49]. Especially in fields such as engineering, where professional codes exist but are not heavily enforced [3], ethics should be viewed as something ''soft", in the sense that what constitutes as 'ethics' evolves as people's work unfolds [79]. Findings from prior work indicate that the practice of ethics in the technology industry is not grounded in formal ethical frameworks or philosophical reasoning processes. Instead, it often hinges on an individual's intuitive sense of what is right or wrong [26] as well as on their identity and background [10]. However, when companies make multi-faceted decisions considering business interests, social values, and user experience goals, the practitioners' ethical sense can often clash with others in the same organization [11]. Therefore, we need to expand our understanding of tech organizations to understand more holistically how these conflicting aspects

are assessed together. To illustrate, while UX professionals championing user interests are largely insulated from financial imperatives as they interpret user data [79], product managers are tasked with defining product attributes, and their decisions must encapsulate both user-centric perspectives and financial considerations.

2.2 Product Managers

Product management processes were created to bridge the gap between engineering and customer-centric product design -— a gap fundamentally rooted in translating marketing insights and research into actionable product design and execution [9]. Addressing this divide grew increasingly vital with the rising concerns around usability, quality, and market fit in digital product design [17]. Consequently, a specialized role was necessary to facilitate communication between programmers, marketers, researchers, user experience professionals, and customer service representatives [46, 74].

Product managers come from a variety of educational and professional backgrounds, including computer science, business, and user experience design [8, 34]. Although they usually have strong technical skills and are aligned in engineering teams [9], they typically do not manage development teams directly [57]. Instead, their main job takes the role of middle management: to communicate business success metrics and customer feedback to development teams [46]. After a product is launched, product managers continually revise and adjust the plan to make sure the product stays on course to meet its goals [8]. They also have a key role in speaking up for the needs of users and clients [9] and in managing any risks or uncertainties that may come up [67].

Unlike their peers in UX designers [26, 79], data science [3], game design [35, 38, 75], and software development [4, 29], product managers not only devise digital products but also grapple with business concerns, primarily their profitability. Their position, balancing product design with economic viability, intensifies their ethical challenges, especially in environments prioritizing profit over social values. And this prioritization may be embedded within professional norms. For example, a Software Product Management handbook from 2022 does not list ethical concerns or social values as one of the strategic management sections, but rather "compliance management" [36]. Furthermore, one of the main tasks of product managers is to set quantitative Key Performance Indicators (KPIs) that seemingly provide comprehensive insights [67]. However, this approach often risks reducing complex human behaviors and ethical nuances to mere quantifiable metrics [3]. The heavy reliance on data-driven KPIs can perpetuate a myopic focus on short-term goals, potentially sacrificing long-term sustainability and ethical considerations in product development.

As the pressure for organizations to integrate societal values and ethical considerations in technology development intensifies, there's a rising trend of appointing 'ethics owners' [48]. These are individuals entrusted to weave ethical considerations throughout an organization's varied sectors and hierarchies. Typically anchored in executive or managerial capacities, we propose that the product managers—with their decisive roles in determining product trajectories warrant closer examination. Gaining insights into their perspectives can guide us in understanding how societal values are processed in design processes and how attitudes, professional norms, and business environments contribute to the final user experience. For example, why are user research observations heard in some organizations but not others? This, in turn, can help us understand how to better bring ethics and values into digital products and services [44, 53, 78].

2.3 Values in the Israeli Tech Sector

The research literature in business ethics consistently highlights the pivotal role of cultural context in defining business ethical practices. A notable study by Lu and colleagues delved into the contrasting ethical perspectives in marketing between Taiwanese and American cultures, emphasizing the necessity of appreciating cultural nuances in ethical decision-making processes [43]. In the context of Israel, a distinct blend of influences shapes business ethics, especially within Israeli tech firms. There is a noticeable inclination towards individualistic values [37], aligning with the privatization and neoliberalism that has increasingly become part of Israeli society [56]. This tendency is potentially influenced by global technology culture and Israel's strategic imperatives in technology and security sectors. Additionally, Schwartz's research on Israeli business ethics reveals that despite significant advancements in integrating ethical principles in both academia and industry, challenges such as nepotism, favoritism, and discrimination remain prevalent. These challenges underscore a disparity between ethical aspirations and actual practices in the business realm [61].

Another important study of the interplay between values and technology production in Israel is the work of Avnoon et al., which offers insightful observations on how values in the Israeli context are often motivated by specific beliefs [3]. They highlight three core beliefs shaping algorithmic ethics among Israeli data scientists. Firstly, there is a strong sense of individualism, where ethics are viewed as a personal endeavor, indicating that moral decisions in technology are often seen as the responsibility of individuals rather than as a collective or institutional concern. Secondly, there is a prevailing belief that ethical considerations can hinder technological progress. This view prioritizes innovation and development, sometimes at the expense of ethical considerations, reflecting a techno-optimistic mindset prevalent in the Israeli tech community. Lastly, Avnoon et al. identify a tendency to see ethics, especially around data privacy, as a commodity that can be managed and protected within market dynamics. This commodification of ethics suggests a market-driven approach to ethical issues, where ethical values are intertwined with and influenced by capitalist market relations.

3 STUDY 1: INTERVIEWING PRODUCT MANAGERS

In the first study, we interviewed 20 Israeli product managers to obtain insights into the social and business values product managers employ in their daily work and the organizational, professional, and personal attitudes related to these values.

3.1 Method

We developed a set of open-ended questions to ensure uniformity in the data collection process while accommodating an exploratory inquiry into personal experiences. Although the interviews possessed

the flexibility to adapt to the natural progression of the conversation, they adhered to a structured guide that encompassed five principal domains: the conceptualization of the product manager role, ethical quandaries, pertinent case studies and exemplars, motivational factors and challenges, and criteria evaluated during job transitions or recruitment processes (the full interview questions can be found in Appendix A.1).

To ensure a diverse range of participants, we used a multi-step approach for recruitment that included peer recommendations, informal networks, and targeted outreach on LinkedIn. Our final participant group comprised experienced product managers from various tech sectors such as ad tech, ed-tech, and fin-tech (see Table 3 for the full details on the participants' demographics and industry). These professionals had backgrounds in B2B, B2C, and B2B2C products (which we labeled as 2-sided markets in the table), and most had studied computer science. The group had a balanced gender representation, with 12 men and 8 women. Interviewees were not paid and were mainly motivated by wanting to share their personal experiences and professional dilemmas. The Institutional Ethics Review Board approved our study protocol[1]. To protect the participants' privacy, we have asked our participants not to provide specific details about their customers, projects, or companies, which may go against their employment contracts. We have also obfuscated professional demographic details and several details from their quotes.

Our study focuses on Israeli practitioners for several reasons. Firstly, Israel's significant role in the global software startup ecosystem is well-documented [22]. Israel has emerged as a central hub for computer software, information and communication technologies, electro-optics, and cybersecurity in the past thirty years. Notably, it boasts the highest per capita startup presence globally, with over 9,300 active high-tech companies as of 2022, including 91 unicorns [80]. The high-tech sector accounts for 9% of Israel's total employment and 12% in the business sector, surpassing the OECD average and leading the organization in these metrics [45]. Our sample includes employees from globally influential companies and emerging startups, showcasing Israel's dynamic tech ecosystem and its global impact. Secondly, existing literature often shows a North American bias in ethnographic studies of technology practitioners [3, 26]. By including Israeli perspectives, our study contributes to a more geographically diverse understanding of this field.

We conducted interviews on a video conferencing platform, typically lasting around 60 minutes. With participants' consent, we recorded and transcribed the sessions. Recruitment concluded when discussions became repetitive across participants. The team of researchers included a student and a postdoctoral fellow who had academic training in qualitative research, led by a PI with expertise in qualitative research. Initially, two researchers individually coded two different themes of the interviews. A third researcher had overseen the coding and participated in discussions when disagreement occurred.

Our analysis, anchored in an abductive analysis framework [72], combined several rounds of inductive coding. We began inductive coding after the first ten interviews, adding codes as new rows. We examined each transcript as a cohesive narrative, spotting recurrent themes within and across interviews. Subsequently, these themes were discussed and used to tag relevant text segments, employing descriptive coding [59]. New inductive codes emerged, relating to categories and themes identified during the initial coding phase. By the 16th interview, new insights fit into existing themes without introducing novel concepts. To confirm data saturation, we conducted four additional interviews. For the findings section, quotes originally in Hebrew were translated to English and edited for clarity, ensuring anonymity by avoiding references to specific products.

[1]Ethics approval by Tel Aviv University Institutional Review Board, no. 0007519-1.

3.2 Qualitative Findings

Our analysis revealed several emerging themes capturing the essential aspects of product management value work, which can be described in managing two types of tensions: the tension in the perception of *influence* they exercise on the design of the product and the tension between *user-centric* values and business interests. Through iterative coding, we were able to identify we observed that participants tended to have a consistent approach towards these tensions, which we modeled as four main strategies, which are visualized in Figure 1.

3.2.1 The Influence Tension. An ongoing theme in our interviews is the tension between the formal position of product managers and the actual influence they can exercise in their organization. Participants had very different, and sometimes conflicting, views of their abilities to influence the final product outcome. While product managers have a formal position of middle management, the difference between their actual influence over people and outcomes is a constant source of tension. Only 3 participants agreed with the saying that "the Product Manager is the CEO of the Product". For example, P3 said that *"I emphasize with this saying, the role is to construct holistically and to make the product stand."* and that product managers are *"Responsible for the product life cycle; they are the god of the product, bringing it to the world and killing it if needed."*

However, most participants have acknowledged that the product manager's power is a sort of "soft power" [79], because, almost always, they are not the direct managers of the people who develop the product and that they need to employ sophisticated tactics to carry out their work. Our participants often describe a need to persuade or coerce both their superiors and their peers, mainly developers, to carry out their vision of the product. For example, P2 talked about the downside of not being a direct manager of people:

> *"The CEO leads the team directly. The Product Manager, though, is in a tricky spot. They're responsible, but they can't just order people around. They have to lead without having that direct authority. We've got to come up with inventive ways to motivate folks." (P2)*

Similarly, other participants, such as P18, described the need to convince and provide justifications in the design phase to make the product manager's vision come to life: *"A Product Manager collaborates with their team and doesn't have the final say. Just like any team member, they need to persuade others."*

3.2.2 The User-Centricity Tension. The second tension participants reported is in conflicts between business interests and user-centric values. Several interviewees had seen themselves as central players

in tension; for example, P4 said, *"Product managers have superpowers, and it's their choice whether to use them for good or otherwise'.* These conflicts arise mainly in meetings in which requirements for software product features are analyzed and prioritized. In these situations, participants have mentioned conflicts between revenue and social values such as transparency (P6, P18, and P20), user manipulation (P9, P11, P12, P15), infringing on user privacy (P2, P13, P14, and P20), not repairing accidental user actions (P1 and P3), delaying payments to customers (P9), and user addiction to the product (P9).

In analyzing how our participants navigated these conflicts, we observed that a minority involved simple revenue trade-offs between the company and its customers. However, the majority of conflicts presented multifaceted ethical and business dilemmas. The conflict often revolves around design choices that achieve short-term profits while neglecting user-wellbeing that can then jeopardize long-term business goals. For example, P3 described how they could influence:

> *"We used long term KPI [Key Performance Indicator] – we must save ourselves from ourselves." (P3)*

Such complexities were particularly pronounced in multi-sided markets, where the consumer is not always the primary stakeholder, which may be the service provider. In such scenarios, various types of users engage with the company in distinct ways, financially and otherwise. Specifically, participants P10 and P20 highlighted instances where they grappled with prioritizing the needs of paying customers over those of non-paying users. In situations requiring product managers to balance the interests of different user groups, finding a clear-cut solution to the conflict proves elusive.

Most conflicts revolve around user needs and well-being. However, two participants mentioned the tension between automation and traditional businesses, where automation can deliver a competitive offering to users, harming and wiping out traditional services. This tension surfaced with two participants (P4 and P17). P17 has surfaced the same tension and described that they could "break the market by introducing much lower prices" with technology. P4 reflected that *"I overcame this tension by setting a Key Performance Indicator (KPI) that measures the portion of customers that have historically used the traditional service".*

3.3 Strategies of Product Managers

Product managers must formulate a strategy that aligns with their personal beliefs, organizational values, and professional standards to operate effectively amid these complexities. A strategy is a pattern of decision-making actions, which 'develops out of a continuous, interactive learning process involving managers throughout the organization' [21]. The theoretical framework was inspired by Floyd and Wooldridge's typology for middle-management decision-making, which broadens the idea of a strategy beyond high-level executive decisions to encompass the influence of middle management [81]. We adapted the framework to the type of decision-making product managers need to make as middle managers, with respect to the amount of power they have in the organization (influence) and their attitude towards the users (user-centricity). Each strategy allowed them to position themselves in a way that best fit their values, the values of their organization, and their own position in the organization. To implement that strategy, product managers employ specific tactics to influence others to implement their product vision and explain their positions to development teams and management.

Through iterative coding of our data, we discerned four distinct strategies that product managers employ to navigate these dual tensions. These strategies manifested consistently across various responses from the participants. They highlight both commonalities and divergences in the viewpoints of our interview subjects. Strategies are not mutually exclusive, and product managers may mix and match different approaches depending on the context. Generally, each participant favored a primary strategy, which enabled them to align their actions and decisions with their professional orientation, role, and status within the organization.

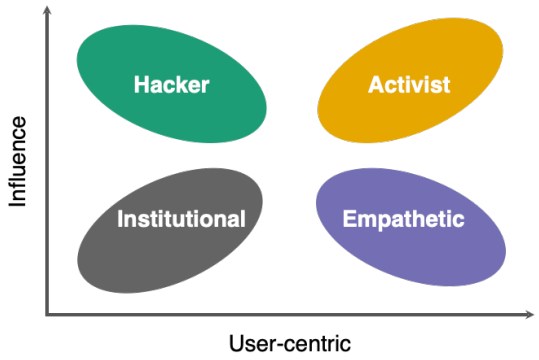

Figure 1: A diagram showcasing the two primary tensions, influence and user-centricity, highlighting the strategic placement relative to these dimensions.

3.3.1 Activist. The Activist strategy prioritizes social values, particularly the well-being of users, over business interests and a stronger perception of influence. Activist product managers will report on prioritizing and actively fighting for users' well-being, social values, and professional norms when facing conflicts between business interests. For example, P3's quote *"It was clear to me that we would not charge for our service in advance, only after the customer gets the expected outcome. Risk vs. trust"* is an example of having a firm belief about how to resolve a design conflict that encourages trust in users but adds some additional financial risk for the company.

The company mission and culture may sometimes support the Activist strategy and sometimes derail it. For example, P10 and P18 reflect a decision made in the user's favor at the company revenue's expense. For them, the fact that this type of event did not even start a discussion relates to the company's mission and culture:

> *"In our business ecosystem, I was faced with a dilemma: Should I prioritize the experience of our end-users, that of our paying partners, or the company's revenue? I harmed the company's revenue to improve the user experience while still working within our partners' boundaries. The decision seemed straightforward. In hindsight, it might've stirred debate, but no one raised concerns. Given our company's steadfast mission to serve our*

> *users, this kind of decision isn't typically questioned. Harming the user for revenue just doesn't sit right with us." (P10)*

However, activist product managers often face challenges in promoting this approach in companies whose side is stronger than their values. They often report on their need to actively fight for social values and user well-being in the design and feature prioritization of the product. P15 reflects mixed feelings around applying a feature that felt wrong to roll out and the unsuccessful organizational case that she and her colleagues have tried to make in order to cancel it:

> *"For the user, this is a small price; for the company, this is a huge profit. When this request came from the management, the team initiated a 'war' against it. We felt uncomfortable; it just felt wrong. There were discussions about not releasing it, but finally, management put their foot down." (P15)*

Activist product managers may use a variety of tactics to push for social values. These tactics may include creating and advocating for Key Performance Indicators (KPIs) that prioritize long-term goals, as is highlighted in the following quote:

> *"You cannot be an asshole to users and get revenue in the long term. I would not present $8M vs. "doing good". I will show the complexity, actual cases from the Customer Experience team, and cases of how we can damage revenue by choosing an immediate charge." (P18)*

Another tactic is to become a "gatekeeper" for a specific set of values and use user research to advocate for user voices. For example, P3 works in a company that optimizes revenue first. Being an activist in this type of company requires a thick skin. In his words:

> *"We had a few dilemmas: balancing customer value and harmful experience [to users]. The decision was that this product is viable only if the organic content to ad ratio is high (70% compared to 30% by default). Ever since, I have been a gatekeeper for this decision. I need to act as a silent stakeholder because the users' voices are not heard." (P3)*

P3's perspective demonstrates an understanding that while being less aggressive in the short term may result in lower revenue, it will ultimately lead to higher returns in the long run.

Outside regulation and the currency of high ethical standards are also often used to pressure or persuade the company towards a certain design:

> *"Nobody understood [the regulation]; I studied it, interpreted it, and deeply understood its implications for our customers. Based on it, I made a conscious decision on what to apply and what not in terms of privacy. Being customer-focused, I wanted to provide transparency while complying with regulations. It was much more expensive from a development aspect but was important to me." (P14)*

In this story, P14 tells of how her being the single source of knowledge allowed her to make decisions aligned with her activist approach with no questions asked.

3.3.2 Empathetic. The Empathetic Strategy is employed by product managers who place social values, user needs, and professional standards ahead of business interests, although they do not consider themselves as influential as activist product managers. While they cannot fully veto decisions that compromise user well-being, they leverage soft power tactics to lessen the adverse effects of such decisions. When articulating their choices, they frequently underscore users' autonomy in interacting with the system. For instance, P15 discussed her involvement in an A/B testing process that could potentially manipulate customers. She elaborated as follows:

> *"An idea came from the CFO [about a feature that can be added to the product]. We thought to ourselves - well, people are not that stupid – but it actually showed an increase in revenue. Back in the day, numbers were 'the king', and we didn't think of anything else but the data. We've set it for a few months, but it felt wrong because it's against the norms." (P15)*

The product manager deemed it appropriate to release the feature, despite its potentially manipulative nature, trusting users' discretion to avoid misuse. However, when the feature was measured as successful, it was hard to argue against it. When users' wellness is not aligned with revenue, empathetic product managers will feel obligated to stick with the managerial terms. In such cases, empathetic product managers will attempt to address the harmful decision by educating users afterward rather than completely reversing it, as described by P20:

> *"A feature that harms some users and benefits others, I won't ignore it; I will test it carefully and I will work with the user who got harmed to adjust it." (P20)*

In this example, the participant is aware of an ethical 'red line' that goes against their values. However, they feel they lack the means to avoid crossing this boundary, so they try to adjust and make minor changes to the feature.

As part of the motivations to prioritize social values and user well-being, participants have quoted career and hiring considerations. Several emphasized the value of being involved in products that have a societal impact. P15 mentioned that in her last job hunt, she was looking to "find a product that [she] would potentially be the user of. That will have a good cause." As an illustration, P5 stated that *"I will never work again on a product that does not do good"* and declared that *"I would never hire candidates that used to work in gambling companies"*.

3.3.3 Institutional. The Institutional Strategy is marked by a minimal focus on user-centricity, prioritizing business objectives over social values, coupled with a low sense of personal influence. Product managers adopting this approach often express strong trust in their company's processes and goals, assuming that these will neither harm users nor violate laws or regulations. They commonly delegate the responsibility for ethical and value-based discussions to other departments within the company, most notably legal teams or specialized councils. When questioned about the importance of incorporating social values, P5 responded as follows:

> *"There are numerous procedures in place to ensure that only ethical decisions are taken. We have strict protocols,*

and there are definitive legal gates to ensure compliance with privacy standards." (P5)

Our interviews showed that this approach is predominantly adopted by individuals working in well-established companies. These respondents were generally more reserved in sharing details, often speaking as if they were official spokespersons for their organizations despite assurances of anonymity. They emphasized the company's established protocols and systems, which alleviate their personal responsibility for making ethical decisions. For example, P11 discussed how product management operates within the framework of their current organization:

"Money drives the company to hire top talent and create quality products. However, as a PM at [company], we don't have any revenue targets. There are no revenue goals at all in the entire org. The revenue org is separated. Our only goal [for users] is 'time well spent'." (P11)

In this scenario, the participant works for a large corporation. He noted that the product and development group is distinctly separate from the sales division. While the sales division is driven by revenue objectives, his department operates independently and is measured by 'time well spent' on the platform. They are not accountable for, nor measured by, any revenue-related objectives. This quote illustrates how organizational processes and metrics can alleviate the burden of "ethical decision-making" on product managers. This allows them to rely on institutional mechanisms to represent social values rather than on their own.

3.3.4 Hacker. Product managers who embrace the "hacker strategy" display low levels of user-centric focus but a high sense of personal influence. Their primary objective is to increase revenue and maximize company profits, often at the expense of user well-being. While cognizant of ethical guidelines, they tend to give precedence to business imperatives, even if it means overstepping ethical boundaries. They manage the tension associated with such choices by focusing on personal accomplishments, industry recognition, and the entrepreneurial spirit often associated with startups. To meet their goals, they value deep insights into customer behavior and technology and are often willing to explore ethical ambiguities and take calculated risks. This approach prioritizes organizational profits over user needs and interests. P1 encapsulates this mindset, noting that he frequently operates close to what he describes as the 'ethical red line':

"Business values often take precedence over ethics, especially when it comes to pricing, payments, and data. We have a rule: if a practice we're using were to be made public, could we defend it? If we couldn't, we wouldn't do it." (P1)

To achieve their goals, hacker product managers are willing to operate in a gray area take risks and may use tactics such as manipulating costs and payments in favor of the company. A tactic that was evident in some of our interviews is using cynicism as a way to justify their actions. These motivations and tactics demonstrate a prioritization of personal and corporate success over ethical considerations and the needs and interests of others. The justification tactics used by hackers focus on cynical view on how the industry works, e.g., *" this is the way the world works." (P12)*, and mentioning of the competition the firm faces from other companies. In our paper, we use the term "hacker" not to denote a technical capability but as a characterization of behavior. Within this framework, a "hacker" product manager is identified by their readiness to operate in close proximity to ethical and legal boundaries to optimize business value. We recognize that this approach may not always conflict with optimizing for user value, appreciating the nuance in the motivations of product managers. If a product manager's primary motivation is to maximize user value efficiently, they would align more closely with the characteristics of a clever and efficient activist rather than a "hacker."

"I came up with a feature that rounded up the cost for the [user] while rounding down the payment to the [service provider]. The business team loved it. But when we rolled it out, the [service providers] found out and were furious. We had to shut it down. Fortunately, it didn't hurt us much because [the service provider] hate our app anyway." (P12)

These motivations and tactics demonstrate a prioritization of personal and corporate success over ethical considerations and the needs and interests of others. The justification tactics used by hackers focus on cynical view on how the industry works, e.g., *" this is the way the world works." (P12)*, and mentioning of the competition the firm faces from other companies.

4 STUDY 2: ONLINE SURVEY

We developed an online survey to quantify our findings from the interviews and evaluate how representative they are in the population of product managers in Israel. The questionnaire aimed to explore product managers' design strategies and how they measure user well-being and other derivatives of social values and career path decisions.

4.1 Method

The survey contained a screener, the core task, and a demographic section (the full survey questions can be found in Appendix A.2). The questionnaire is designed to explore various aspects of the role of a product manager. The first section assesses the level of agreement with statements regarding decision-making influence, company values, and ethical considerations, as well as questions based on the observations from the qualitative study. The second section evaluates the perceived effectiveness of various metrics in product management, ranging from user engagement to equality measurements. The Job Market Considerations section asks respondents to prioritize what they look for in a new job. Demographic questions round out the survey, asking about job titles, academic backgrounds, years of experience, company size, and industry.

To create the questionnaire part asking about the KPIs product managers used, we have surveyed product managers' professional handbooks [36, 68, 73], as well KPIs based on the experience of our participants from our qualitative study. Specifically, Marr's handbook on KPIs [47] provided metrics such as Customer Satisfaction Index (CSAT), Customer Engagement, and Customer Complaints (Pushback). Reichheld's handbook [58] underscored the significance of Net promoter score (NPS) for business growth. The findings of

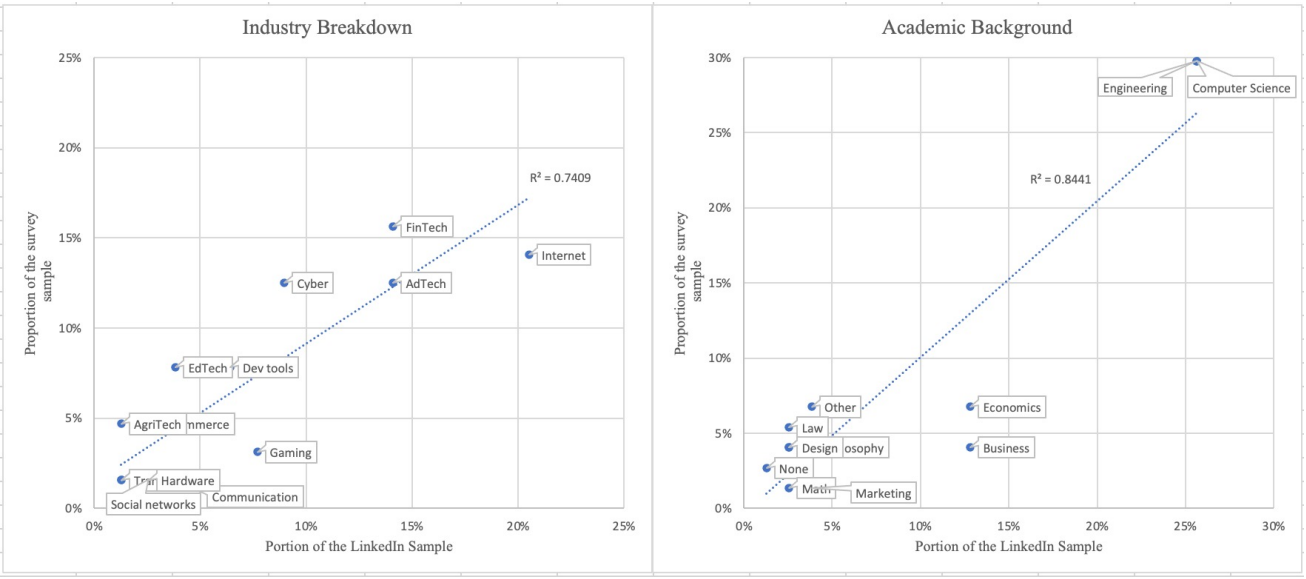

Figure 2: Industry & Academic background distribution of a sample of product managers' LinkedIn profiles compared to the survey participants

the qualitative study inspired other KPIs. For example, P17 discussed measuring "cannibalism with traditional services," and P11 described the use of "Meaningful time spent" as a leading indicator.

A rolling survey was distributed around product managers' community groups on different platforms, WhatsApp groups, LinkedIn, and Facebook communities, by people with a social presence in the community and during meetups. A total of 181 people opened the survey. Out of these, only 126 have moved past the screener and answered questions on the first page. 81 participants answered all the questions in the survey, and the analysis is based on their answers. The study protocol received approval from the Institutional Ethics Review Board, and the study research questions were pre-registered at the Open Science Framework website.

To assess our sample's external validity, we analyzed our participants' academic and industry backgrounds and compared them to a random sample of 78 product managers' Israeli LinkedIn profiles that had the term "Product Managers" in the title. As illustrated in Figure 2, the correlations between the survey sample and the LinkedIn profiles are very high, with linear regression models with a coefficient of determination of R^2 of 0.74 for industry breakdown and a correlation of R^2 of 0.84 for academic background. The online survey analysis included a factor analysis to construct measures of user-centricity and influence, unsupervised clustering of participants to strategies, and Anova tests to establish model strength. After calculating factor loading values, three items for each factor were selected, as presented in Table 4. The results showed a satisfactory level of reliability, with an alpha value of 0.617.

4.2 Clustring Strategies

To analyze the profiles of the product managers who participated in the survey, we applied unsupervised clustering through K-Means Cluster Analysis. In determining the optimal number of clusters K, we calculated the Silhouette Score methods. In our analysis, the Silhouette Score for $K = 4$ was 0.369, up from 0.357 for $K = 3$, indicating that the data is most naturally divided into four distinct clusters. This result suggests that choosing four clusters leads to our dataset's best-defined, most separated groupings. Our choice of K was further corroborated by a significant ANOVA test, reinforcing the validity of the cluster differentiation. Table 5 shows that the clusters are significantly different with respect to both the influence and user-centric values.

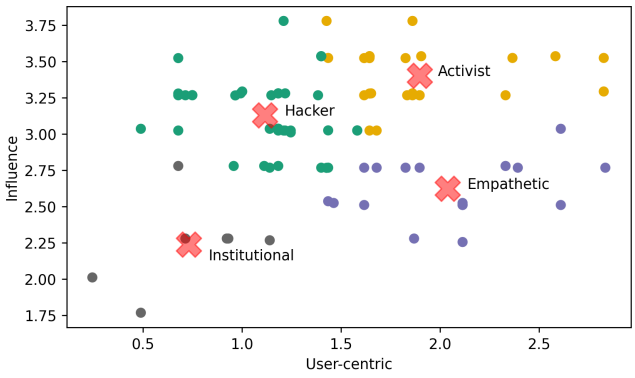

Figure 3: K-means clusters plot of the strategies, identified by color, over the axis of user-centric and level of self-perceived as influential

The four distinct strategy clusters—Activist, Hacker, Empathetic, and Institutional—are visually represented in Figure 3. Furthermore, Table 1 provides an in-depth look at the average centers, or centroids, of these clusters based on two critical factors: User-Centricity

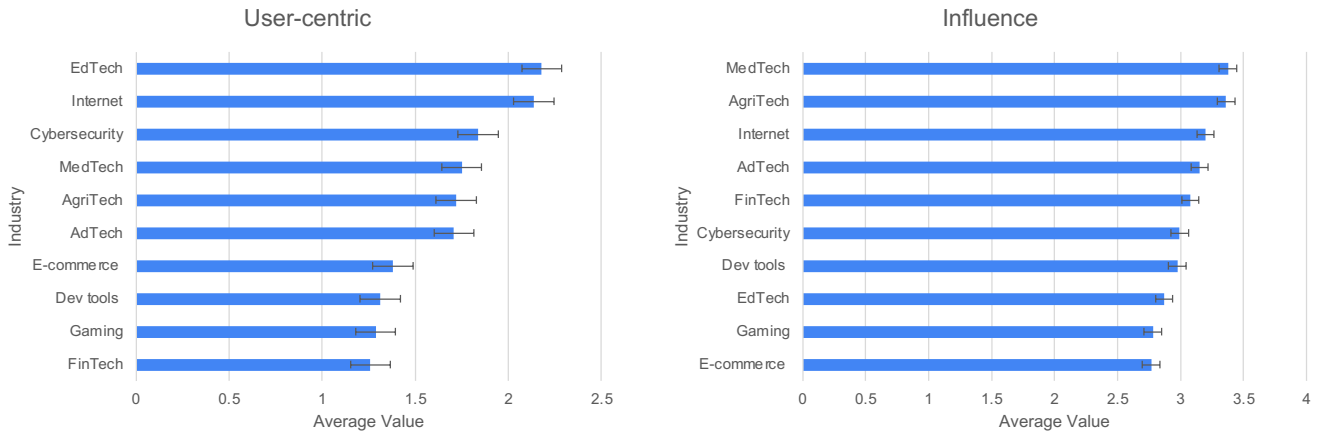

Figure 4: The average values and standard error for user-centric and influence values according to the participants' industry.

and Influence. These centroids serve as the mathematical averages for each cluster in a multi-dimensional space created by the intersection of these two defining factors. The table also includes the count of participants who have been categorized into each respective cluster. Hackers are the most numerous, with 34 participants who prioritize business objectives while maintaining a sense of influence. Following are Activists with 23 participants, highlighting a strong focus on user needs and organizational influence. The Empathetic group includes 16 participants who are user-centric but perceive themselves as less influential. Lastly, the Institutional cluster, with only 7 participants, is the smallest group, suggesting a lesser focus on user-centricity and personal influence.

Table 1: The strategy cluster analysis average centers of the user-centric factor and the influence factor, with the distributions of the number of participants in each cluster

Cluster	User-Centric	Influence	Count
Activist	1.89	3.40	23
Hacker	1.232	3.12	34
Empathetic	2.0	2.62	16
Institutional	0.73	2.23	7

The Activist Cluster has an average User-Centric score of 1.89 and an Influence score of 3.40, making it the cluster with the highest influence score. There are 23 participants in this cluster, indicating a significant group that balances both user-centricity and influence in their decision-making process. The Hacker Cluster contains the highest number of participants (34) and shows a balance between influence and user-centric factors with scores of 1.232 and 3.12, respectively. These product managers might prioritize influence but still maintain a focus on the user experience. The Empathetic Cluster, with 16 participants, is characterized by the highest User-Centric score (2.0) but a moderate Influence score of 2.62. These product managers are likely to put user needs at the forefront while still maintaining a balanced approach to influence. The Institutional Cluster has the lowest number of participants (7) and is characterized by the lowest User-Centric (0.73) and Influence scores (2.23). These product managers might be most constrained by organizational rules or priorities. The values of each cluster can be compared to the summary statistics of the values: the average user-centricity of 1.523, with a standard deviation of 0.576 and a standard error of 0.064. The average influence is 3.023, with a standard deviation of 0.432 and a standard error of 0.048.

4.3 Demographic Factors

To explore the relationship between demographic factors and the strategies, we examined the correlation between demographic variables and both influence and user-centric values. Senior-level participants reported a higher perception of their own influence compared to junior-level participants, supported by a Pearson correlation value of 0.435. This is not surprising and adds some reliability to the influence variable. Conversely, there was no discernible correlation between the level of user-centricity and an individual's rank.

The industry in which a participant is currently employed also played a role in these perceptions. Figure 4 showcases the varying values attributed to participants from different industries. Different industries have statistically significant different levels of user-centricity (one-way ANOVA, $F(10, 80) = 2.76$, $p = 0.008$.) No statistically significant effects were found between the influence levels of participants in different industries. Product managers who work in Ed-Tech and the Internet have the highest average User-centric scores, at 2.178 and 2.135, respectively, indicating a strong focus on user experience. Despite being technology-intensive industries, Gaming and FinTech have lower user-centric scores (1.288 and 1.259), which may point to a focus on revenue. When looking at how industries fare with regard to the perception of influence, product managers in Agri-Tech and Medical Tech have the highest Influence scores (around 3.36 and 3.38, respectively), suggesting they may have significant influence or leadership in their respective fields.

Participants were queried regarding the key considerations when seeking a new product manager role. The aspect of a "technically interesting product" emerged as the top criterion, cited by 44 respondents. This was followed by "competitive compensation," which garnered 36 mentions. Notably, the factor of "positive impact on society" was highlighted by 32 individuals, suggesting that societal benefits are a significant consideration for approximately 44% of the participants.

4.4 KPIs and Social Outcomes

We evaluated to gauge participants' perceptions of the utility of various KPIs, as depicted in Figure 5. The KPI deemed most useful was "users' engagement with the product," followed closely by other behavioral KPIs such as "meaningful time spent" and "users pushback." These findings suggest that product managers value behavioral metrics more than conventional direct user feedback measures like CSAT (Customer Satisfaction Score), NPS (Net Promoter Score), and CES (Customer Effort Score).

KPIs centered on social responsibility, including metrics related to equality (Small-Medium Businesses - SMBs vs. big brands, gender, ethnicity, geography, and parity in markets), accessibility, non-responsible usage, and impact on traditional industries, showed a more specialized appeal within our participant group. A significant number of participants rated these KPIs as "not at all effective" and "low effectivity". "Meaningful time spent," which measures the actual value provided to users, ranked second in usefulness. It was followed by the "Customer Satisfaction Rate," which measured short-term value and was rated marginally lower than the "Net Promoter Score," known for assessing long-term customer loyalty.

In the survey, we introduced novel Key Performance Indicators (KPIs) based on insights from the interviews. One such KPI, titled "Impact on the Traditional Industry," aims to curb the large-scale migration from traditional, non-technological services to disruptive new products, which could be seen as aggressive and potentially detrimental to small businesses in established markets. Although seemingly at odds with profit maximization, this KPI was mentioned by two interviewees and one survey respondent in an open-ended question. All three attest to its utility in their decision-making processes. Figure 5 illustrates the participants' perceptions of the effectiveness of this KPI. Encouragingly, 30% of respondents rated it as moderately effective, and an additional 10% considered it very to extremely effective. This response may validate the KPI's relevance and a reason for its broader adoption.

5 DISCUSSION

Product managers crucially navigate the intersection of value and design, balancing user advocacy with business optimization. We have argued that understanding their decision-making processes offers insights into aligning user experience with social values. Through our interviews and survey analysis, we classified product managers in tech firms into four strategic archetypes, each embodying a unique approach to balancing social and business values in their roles, as displayed in Table 2.

Grasping these strategies is pivotal for shedding light on the intrinsic motivations that inform product decisions. This enhanced understanding enriches our grasp of the complex relationship between ethical considerations and business objectives in the technology sector. From an organizational perspective, the role of product managers is indispensable in tech firms, as they are instrumental in bringing in and adapting new ideas within the organizational context [55]. A professional strategy is a dynamic mix of premeditated and emergent influences, acting as a 'narrative through a series of choices [70]. While influence remains a critical factor in current middle management strategy models [13, 81], adding a user-centric lens to our analysis provides a novel theoretical avenue for comprehending the environment in which design decisions occur.

5.1 "Soft Resistance" in Tech Firms

In the context of our work, Wong's [79] adaptation of Dawn Nafus and Jamie Sherman's concept of 'soft resistance' serves as an analytical lens to explore types of resistance employed by individuals that 'do not fall into these more familiar frames of what counts as technological counterculture' [42, p.16]. Much like Wong's research on UX professionals, our study highlights how product managers' tactics of soft resistance engage with, yet critique and challenge, prevalent logic and cultures. For instance, when advocating for their views, product managers might lean into the prevailing logic of market fundamentalism [48]. They could argue that in the face of the current techlash, adopting an 'ethical' stance might entail short-term expenses but promises significant financial and reputational benefits in the long haul. This modern perception of ethics as a potentially lucrative commodity is reflected in recent works [3].

Our research into product managers, distinct from UX specialists [79] or game designers [35, 38], unveils their unique position. They are not directly in charge of employees, necessitating the use of soft power and resistance similar to UX specialists. However, simultaneously, they must balance product-centric and business-driven objectives. This inquiry into their role has deepened our appreciation of the intricate balance of ethical considerations and business priorities in the tech sector. Analytically, we have identified four strategies of engaging with social values in digital product design. If we juxtapose Wong's participants with our findings, many could be classified as 'activists'. Our research has uncovered a wider array of strategies and corresponding value-driven tactics within the design process. Given the product managers' accountability towards profitability, our study has provided insights into how values are integrated into digital products, emphasizing the pervasive influence of a profit-centric system.

5.2 Navigating Analytics and Social Values

The social sciences have long observed that people tend to place significant 'trust in numbers' [54] more than in other sources. This trust has increased with the introduction of user analytics and big data into the design process of digital products [28]. However, our study noted that even though product managers recognize that 'numbers are kings' in the industry—as expressed by P15—they consciously apply values to their own interpretation to these numbers. They sometimes even reject what the data suggests to prioritize their personal values.

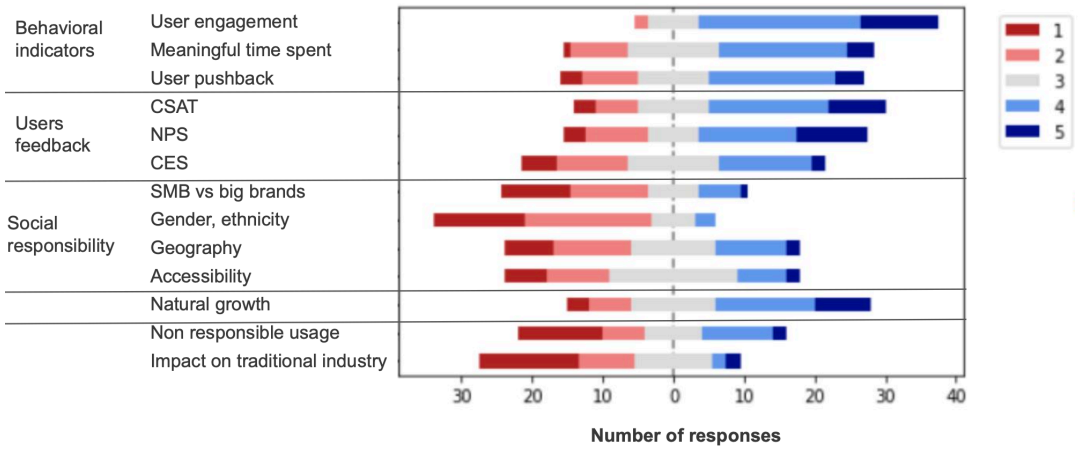

Figure 5: How useful were performance measures to the participants, with 1 being not at all effective to 5 being extremely effective, divided to types

Table 2: Types of Product Managers' Strategies and Their Ethical Considerations

Strategy	Description
Activists	Product managers within this strategy prioritize ethical imperatives, occasionally at the potential cost of near-term profitability. They are acutely aware of the vulnerabilities of end users and feel a responsibility to safeguard them. Their approach to reconciling values like transparency and privacy with business profitability rests on the belief that ethical decisions, even if costly in the short term, yield long-term financial benefits.
Empathetic	These product managers are driven by user well-being and societal values and often grapple with feelings of ineffectiveness when confronting decisions that seem incompatible with their ethical stance. They often rationalize non-intervention by assuming users are discerning adults capable of making informed choices for themselves.
Hackers	These product managers' objective is to drive profitability, often at the expense of social values, while ensuring they do not excessively estrange users or attract scrutiny, should their methods come to light.
Institutional	These product managers are predominantly found in large tech firms; they place unwavering trust in their company's established protocols. Relying on these guidelines, they believe they inherently avoid releasing features with dubious ethical implications.

Our findings align with research showing how various professionals resist the infusion of big data analytics into their domains and the tactics they employ to do so. An important piece in this area is Angèle Christin's (2017) work on 'algorithms in practice' [12]. In her research, Christin delves into the strategies used by established professionals like judges and journalists to adapt and resist the arrival of big data analytics into their work.

Our research is distinct as we focus on product management—a relatively nascent profession in tech, which, as the literature indicates, owes its emergence and growth to big data analytics and agile methodologies [73]. Our observation that product managers, too, sometimes challenge or reinterpret data is both significant and revealing. We contend that it is crucial to investigate the unique values of product managers in their ongoing engagement with data. This is because, unlike more established professions, this emerging field is interdisciplinary and lacks a standardized ethical protocol. Thus, we had to probe into individual product managers' meaning-making processes, looking at how they navigate the confluence of numbers, profit, user advocacy, and personal values. Given the interdisciplinary nature of this profession, it is unsurprising that we identified a spectrum of strategies and tactics that reflect a diverse range of mindsets and value systems yet to be codified.

5.3 Ethical Reputation and Product Managers' Careers

During the period of our study, April – August of 2022, the professional tech ecosystem in Israel was thriving, offering product managers numerous career opportunities that matched their aspirations. In this favorable context, they felt empowered to shape their career trajectory, believing they could choose employers that

resonated with their values. Despite the predominantly employee-centric environment, we observed that several product managers believed that possessing an 'ethical' reputation made it easier for them to secure their next job. According to some respondents, having experience with companies perceived as ethical provided a career advantage over affiliations with entities deemed harmful to users, such as certain gaming companies.

Since our data collection, there's been an observable shift in the professional climate in Israel towards decreased hiring. This emerging trend raises compelling questions for future research. How would this development reshape product managers' perceptions and decision-making in a more uncertain job market? Might they bolster their endeavors to be recognized as ethical? On the other hand, with the job market becoming more competitive, could a more significant proportion of product managers lean into the "empathetic strategy"? This strategy could then be characterized by remorse over profit-driven decisions, justified by their perceived lack of agency in their roles and the anticipated challenges of finding employment that aligns more closely with their ethical standards. A darker option is that more product managers will lean into the "hacker strategy" which is more aligned with a vision to increase revenue and growth [2], even on behalf of user wellness and professional norms.

5.4 Limitations

This study, with its specific focus on the Israeli tech industry, offers a distinctive addition to the predominantly EU-American-centric academic dialogue on technology. However, this concentration inherently constrains the generalizability of our findings. While the Israeli tech sector is influential [80], and some of the products that are managed by our participants are used by billions of users worldwide, the insights and conclusions drawn are applicable primarily to this unique context and may not extend to broader global technology trends.

The diversity of our sample might not capture all practices, challenges, and experiences. Moreover, the secretive corporate culture within the technology sector presented obstacles to our research [62]. Although we were encouraged by the willingness of our participants to speak candidly, it should be noted that some may have opted to present themselves more favorably. The study also did not take into account aspects that may require a larger sample of participants. We did not ask our participants about regulatory policies (e.g., data protection laws) or about specific norms in their industry. We also did not have a diverse enough sample to analyze company size, structure, and team characteristics, all factors that will surely be important. Our survey tool can also be extended to ask participants about different contexts of engagement and to evaluate how they might mix strategies in different organizations or situations.

5.5 Implications and Future Work

Our findings regarding the role of ethical dimensions in design decision-making by product managers suggest multiple areas for future work and implications for ethically-focused methods and hiring decisions. First, while existing value-centered methods supported by individuals from industry and research aid in ethical awareness in design practice [6, 18, 44], our work provides implications for further work to be carried out in developing new bottom-up methods that allow for a more comprehensive understanding of the dynamics of ethical decision-making in tech firms. These methods may build upon existing approaches, contextualized through how business interests and social values are discussed, balanced, and interpreted. One crucial tool was reflected by all participants, which is the ability to set and measure KPIs. With that in mind, we wanted to learn about how this tool can be useful in navigating a product to an outcome that benefits society.

Our findings provide additional support to the importance of the dynamics in technological organizations in understanding ethical decision-making [3, 79]. This shift from focusing on designers' moral characteristics [11] to organizational dynamics should impact HCI education, especially in understanding the impact of user research. We underscore the relevance of incorporating Key Performance Indicators (KPIs) that gauge user-centricity, which is pivotal in balancing user well-being with other competing interests. For instance, industry-specific KPIs like non-responsible usage should be uniquely defined and utilized as foundational elements in discussions about user well-being. While ethical codes serve as a vital baseline for value-sensitive design practices, there is a need for additional strategies to navigate value conflicts within organizations rather than merely enforcing ethical guidelines. In tech companies, integrating discussions centered around values into agile methodologies, as suggested by Zuber [83], offers a practical approach. This can be achieved through designated reflection points in design sprints, which provide opportunities to deliberate on the values ingrained in design choices.

Another important implication is the relationship between the job market and the way product managers perceive the place of ethics when thinking about future positions. This observation is essential in making hiring decisions, for example, by hiring product managers who use particular strategies. While we have analyzed the rather small Israeli job market, this pattern might also be observed in other digital technology markets. It also reveals a range of organizational and design complexity that warrants further, more detailed study into hiring decisions and practices in tech firms and their relationship to ethics and user experiences. In light of these findings, future work should continue to interrogate product managers' specific methods and tools to measure user experience and social values. Further exploration into how these measures influence company policies and practices could also provide more comprehensive insights into the real-world impact of these roles. Given the increase in product managers and their growing influence on software products, understanding their decision-making processes becomes a scholarly pursuit and a societal imperative.

6 CONCLUSIONS

Our study portrays the crucial role that product managers play in the era of "Techlash", marking them as pivotal agents at the intersection of digital product design and ethical decision-making. Given their unique position of advocating for end users while also optimizing for business outcomes, the complexities they face are crucial for understanding how value work is carried out. We used mixed-model approach—encompassing qualitative interviews and

quantitative surveys to provide a view of how Israeli product managers conceptualize and navigate the often conflicting realms of business interests, user advocacy, and social values. Notably, our survey data substantiates this model, revealing that these approaches are not isolated cases but indicative of broader industry trends in the Israeli digital technology industry.

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A APPENDIX

A.1 Study 1 Interview Questions

Background information:

(1) Domain (of product), Position, Years of experience, Number of subordinates, Formal education, Additional professional training

The Product Manager Role:

(2) How did you become a Product Manager?
(3) Define the Product Management role from your own perspective
(4) Briefly describe what you do in your job?
(5) I heard a saying "the Product Manager is the CEO of the Product?". How do you feel about this?

Deepdive to a certain product

(6) Describe a product you lead
(7) What are the KPIs / OKRs you optimize towards (Short term and long term)?
(8) Who is influenced by your product? Try to breakdown to:
  (a) Paying customer (recipient)
  (b) Payment recipient (sender)
  (c) Subjects that the success of the product is based on (for example readers information, communities in destinations your product is available in).
(9) Do you have communication with each persona influenced by the product? How do you collect feedback?
(10) What is the expected behavior of the product by each persona influenced by it? Is it consistent with the actual behavior?

Introduction to ethics in the context of Product Management

(11) Can you define the term "ethics" in the context of your work?
(12) How often does the user's wellbeing affect your day to day work? In what ways?
(13) Would you describe the outcome of the product you lead as "appropriate"? For specific users, for society as a hole? Different aspects

Addressing Ethical Dilemmas - Cases and examples :

(14) Can you think of cases around you where there was a clear tradeoff between business value and an ethical alternative? What was the case, who made the final call (position)?
(15) Have you ever made an ethical decision on the account of business value? Give me an example. How did you communicate it to the executives?

Motivation and challenges

(16) Do you feel motivated to promote user ethical decision making in your work? If so, what motivates you? (formally or informally)
(17) What do you find rewarding about promoting ethical decision making?
(18) What do you find challenging or frustrating about promoting ethical decisions?
(19) Think about formal or informal strategies that you use to promote or support ethical decisions in product design and development:
  (a) Which ones do you find most effective? Why? How do you know it's effective?
  (b) Which ones do you find least effective? Why? How do you know it's ineffective?

Open discussion

(20) Is there anything else you'd like to add with respect to what we've talked about today?

A.2 Study 2 Survey Questionnaire

A.3 Screener

Throughout our years as a product manager, I have often had to make decisions that were not straightforward. I am interested in gaining a broad understanding of how other product managers perceive their role and level of responsibility in relation to social values. To explore this topic, I am conducting research under the supervision of Prof. Eran Toch at the IWiT laboratory at Tel Aviv University. As part of this research, I have created an anonymous survey for product managers to share their experiences with professional dilemmas. The confidentiality of participants' identities will be ensured in any scientific publications resulting from the study. Our goal is to learn from your experiences and insights through this survey.

I hereby declare that I agree to participate in research on the role and degree of responsibility of product managers in the context of social values.

A.4 Product Management Decisions

Indicate your agreement to the following statements on a scale of: 1 - strongly disagree, 2 - disagree, 3 - neutral, 4 - agree, 5 - strongly agree

Q1 As a product manager I feel that I have the right to make the final decision regarding product features and design
Q2 As a product manager I feel that I have sufficient influence regarding the actual implementation and assimilation of the product
Q3 As a product manager I feel that I have a broad cross-organizational influence
Q4 I feel that our values coincide with the leading values of the company where I work
Q5 I believe that a product that improves the well-being of users will ultimately generate business value
Q6 I believe that I am expected to focus on the development that contributes to the level of the company's business performance
Q7 In the company where I work, the products are developed according to clear ethical protocols

A.5 Metrics

How useful the following metrics might be in making product management decisions on a scale of: 0 - statement is not clear to me, 1 - not at all effective, 2 - slightly effective, 3 - moderately effective, 4 - very effective, 5 - extremely effective

Q8 Users engagement - The evaluation of the utilization of the product's advanced features over an extended period, which encompasses multiple actions and experiences.
Q9 Meaningful time spent - A metric that tracks the behavioral patterns of product users, specifically designed to quantify activities that positively impact their well-being.
Q10 Users pushback - A metric that monitors the frequency of users actively choosing not to use a new feature, measured by the percentage of times they skip, turn off, close, or stop using it.
Q11 Customer Satisfaction Score (CSAT) - A metric that indicates the level of satisfaction of users with their product experience.
Q12 Net Promoter Score (NPS) - The metric evaluates the probability of users recommending the product to others.
Q13 Customer Effort Score (CES) - A metric that quantifies the level of effort required by users to derive value from the product. This can be measured by assessing the degree of ease with which users are able to perform specific actions within the product.
Q14 EXTAC / EBITDA - Direct and immediate profit metric (which can be measured within a quarter)
Q15 Equality measurements: SMBs vs big brands - A metric that compares the value provided to small businesses versus large organizations through the use of the product. For instance, if the product facilitates a 2-sided market platform, this metric would assess whether all players have an equal chance of success.
Q16 Equality measurements: Gender, ethnicity - A metric that compares the product experience across different genders and ethnic groups.
Q17 Equality measurements: Geography, markets offering parity - For global products, measuring the quality of the product in different markets, making the product accessible in terms of localization for different cultures and languages, prioritizing requests that come from different markets
Q18 Accessibility - A measure that describes the ability of people with disabilities to use the product
Q19 Natural growth - The index reflects the natural increase in product usage that is independent of marketing and sales endeavors. This metric can signify the actual worth of the product to users and their eagerness to advocate for it.

Q20 Non responsible usage - An index describing excessive use of a product which can indicate an addiction to the experience

Q21 Impact on traditional industry - The index evaluates if customers are migrating to the new product from conventional suppliers. Its objective is to prevent a large-scale shift from non-technological, traditional services to the new product, which may be deemed aggressive and predatory, causing significant harm to small businesses within an established market.

Indicate your agreement to the following statements on a scale of: 1 - strongly disagree, 2 - disagree, 3 - neutral, 4 - agree, 5 - strongly agree

Q22 To what extent does the intuition regarding a long-term measure that cannot be tested in the short term (such as user retention over years) influence decision-making in the management of a product that you are leading now

Q23 I find satisfaction in making profit-based decisions

Q24 I experience a challenge when I try to prioritize development that is aimed at improving user experience only

Q25 "Ethics" is under the purview of the legal department and is therefore not part of our day-to-day life

A.6 Job Market Considerations

Q26 Mark the three considerations that are most important to you when looking for a new job:

- □ High and competitive salary
- □ Promotion in position
- □ The desire to work on a product that has a positive outcome for society
- □ A product that would interest me professionally and technically
- □ Team members that I like on a personal level and value on a professional level
- □ Product culture is advanced and mature
- □ Entrepreneurs and strong management
- □ Other

A.7 Demographics

Q27 Job title

Junior Product Manager
Associate Product Manager
Product Manager
Senior Product Manager
Product Director
Group Product Director
Head of Product
VP Product
CPO
Other

Q28 Academic background

- □ Computer Science
- □ Industrial engineering and management
- □ Psychology
- □ Mathematics/Statistics
- □ design
- □ Sentences
- □ Other

Q29 Years of experience in product management (free text)

Q30 The size of the company where I am employed today:

1-10
10-100
100-300
300-1000
1000-10,0000
>10,000

Q31 The industry of the company where I am employed today:

Hi-Tech
Health
FinTech
Retail
Travel
Education
Energy
Other

ID	Title	Gender	Educational Background	Industry	Years of Experience	Primary strategy
P1	Director of Product	Male	Computer science	Ad-tech	5 - 9	Hacker
P2	Director of Product	Female	Computer science	Ad-tech	5 - 9	Empathetic
P3	Senior Product Manager	Male	Communication	Ad-tech	5 - 9	Activist
P4	CPO	Female	Computer science	Fin-tech	5 - 9	Activist
P5	VP of Products	Female	Computer science	Ed-tech	10 - 14	Institutional
P6	Senior Product Manager	Female	Computer science	Fin-tech	5 - 10	Institutional
P7	Directors of Product	Male	Computer science	Fin-tech	5 - 10	Empathetic
P8	VP of Products	Male	Computer science	Fin-tech	5 - 10	Empathetic
P9	Directors of Product	Female	Computer science	Gaming	> 20	Institutional
P10	Senior Product Manager	Male	Computer science	Hardware	5 - 10	Activist
P11	CPO	Male	Computer science	Social network	> 20	Institutional
P12	Heads of Products	Male	Communication	Transportation	10 - 14	Hacker
P13	CPO	Male	Computer science	Project management	5 - 9	Empathetic
P14	VP of Products	Female	Computer science	Fin-tech	5 - 9	Activist
P15	Senior Product Manager	Female	Industrial Engineering	2-sided Market	10 - 14	Activist / Empathetic
P16	Senior Product Manager	Male	Computer science	Fin-tech	5 - 9	Hacker
P17	VP of Products	Female	Chemistry	Hardware	5 - 9	Activist
P18	Heads of Products	Male	Computer science	Project management	10 - 14	Activist
P19	Senior Product Manager	Male	Computer science	Fin-tech	5 - 9	Empathetic
P20	CPO	Male	Computer science	2-sided market	15 - 19	Empathetic

Table 3: Summary of Participant Details

Table 4: Items reliability, for the perceived influence and user-centric factors

Item	Average	STD	Influence	User-centric
Q1. Right to make the final decision	4.10	0.686	0.770	
Q2. Influence on final implementation	3.94	0.856	0.767	
Q3. Cross organization influence	3.98	0.861	0.730	
Q6. Focus on contribution to business performance (reversed)	1.61	0.636		0.757
Q14. Decision driven by impact on EXTAC (reversed)	3.05	1.252		0.651
Q23. Satisfaction from revenue-based decisions (reversed)	2.49	0.912		0.733

Table 5: K-Means cluster analysis – ANOVA

Factor	**mean square**	**df**	**mean square error**	**df**	**F**	**Sig.**
Influence	56.000	3	0.689	80	81.230	< .001
User-Centric	131.689	3	1.298	80	101.440	< .001