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The Network Orchestration Role of Accelerators for Value Creation

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Abstract— Corporate accelerators are becoming increasingly important in introducing innovative methods for companies to generate value. Despite their growing importance, the specifics of their activities in value creation, especially in orchestrating and managing network collaborations for companies and startups, are still poorly understood. This study attempts to fill this knowledge gap by describing a set of orchestration activities that shape the synergy between companies and startups in an accelerator program and correlating these activities with value creation. Empirical evidence was collected through a qualitative case study of a corporate accelerator program. The results show that orchestration activities inherent in the accelerator's network are critical to driving value creation. We identified five such orchestration activities: 1) knowledge mobility and innovation sustainability, which leads to novelty; 2) innovation appropriability and 3) network stability for lock-in, keeping members in the network and increasing relationship quality; 4) innovation coherence as a source of complementarity; and, 5) leveraging resources for efficiency. Additionally, our research shows that value for startups begins with expanding their network reach, which encourages the development of new skills, the introduction of novel concepts, and the expansion of existing knowledge. The findings from this study contribute to the theoretical discourse on the importance of network orchestration in the context of corporate accelerators. By integrating orchestration activities into the broader network narrative, we gain insights into the central connecting role of accelerators and their practical relevance.

Index Terms— Corporate Accelerators, Digital Innovation, Innovation Orchestration.

I. INTRODUCTION

IN today's rapidly evolving commercial environment, a corporation's competitive edge is increasingly determined by its ability to outperform rivals in value creation [1]. Within this dynamic context, it is impractical for a single entity to possess all the necessary resources and capabilities to innovate and bring new value propositions to market throughout the innovation lifecycle. Consequently, corporations are embracing a more collaborative strategy [2], utilizing 'network orchestration' to synergize the capabilities of their associated entities [3,4,5]. Network orchestration is referred to as a '*set of activities and roles performed by a hub actor*

(individual, team, or organization) to coordinate independent network members' interactions within a loosely coupled context' (6, p.1143). This paradigm shift has led to the rise of 'innovation hubs' such as accelerators and incubators, which are instrumental in facilitating innovation within large corporate ecosystems.

Accelerators are typically described as 'fixed term', cohort-driven programs encompassing mentorship and educational initiatives, culminating in 'demo days' [9, p.4] for pitching to potential investors and offering seed capital in return for equity stakes [10]. While traditional research on accelerators has concentrated on their capacity to provide mentorship, networking, resources, and training, there is a pivot towards understanding accelerators as value and network-centric entities that contribute to value creation through orchestrated efforts [8]. Despite a general theoretical grasp of how accelerators manage and steer such networked programs, there is limited knowledge about their specific activities in driving value creation through knowledge exchange, fostering new business opportunities, and innovation [12]. Only a few studies have recognized that accelerators play an orchestrator role [12, 13, 14], which extracts activities as they 'emanate from the creation of sensemaking processes that characterize each actor's own intentions and interpretations' (15, p. 172). The orchestration role consists of various activities for 'managing and directing the network', 'innovation search and formulation', and 'value generation' [5, 14]. This study investigates how accelerator orchestration-related activities facilitate value creation. We seek to identify network orchestration processes, underlying value-adding activities, and their relationship to the source of the value creation. We regard network orchestration as a process of 'assembling and managing an inter-organizational network to achieve common goals' [16, 17]. Based on [18], we classify accelerators as 'sponsor-orchestrators,' providing resources and leveraging their network positions to facilitate value addition. We define an accelerator as one that influences prominence acquired through innovative attributes and which sits in a central position in the network structure that employs its prominence and orchestration role in enabling mobilization and coordination of network partners.

Applying a qualitative research approach, we examined the Indigo Creative Nation program managed by Telkom Indonesia, a state-owned company in the telecommunications sector, as a case study. Our study tracks the progression of value-added activities within the accelerator program. Telkom Indonesia is at the forefront of building innovative digital ecosystems and increasing the country's economic prosperity through such accelerator initiatives. The insights gained from our case study are interpreted in relation to the existing literature on corporate accelerators and innovation intermediaries and enriched

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by insights from the broader discourse on value chain analysis and strategic networks.

This research augments our theoretical comprehension of accelerators and network orchestration. We contribute to research on network orchestration by theorizing upon the less studied type of network orchestration, namely ‘sponsored orchestration’ that characterizes corporate supporting networks (corporate orchestrator).

Corporate Accelerator and Network Orchestration

Corporations realize that an accelerator is a way to adopt open innovation and create value; large companies need to speed up their progress, or they will be left behind in the changing business landscape [2]. Innovative products that lead and change existing technologies and industries typically emerge from start-ups [19]. Corporations can engage with them and build an innovation network of start-ups around the corporation. This is achieved through a corporate accelerator programme. A corporate accelerator can create a bridge between corporations and start-ups to generate new ideas, disrupt innovations, and enable survival in the competitive modern business landscape [19]. While such corporate programmes have been increased, the management or orchestration that a corporate requires to organize, affect, and/or motivate other firms by introducing activities in the network remains silent.

Network orchestration research could help explain how the corporate accelerator could intentionally impact, manage, and add value to its network [3,20]. This reasoning is in line with the lead actor perspective in innovation network studies, such that network activities run by the accelerator will enhance the innovation of its member organizations (e.g., 12, 21, 22). The orchestration role of the accelerator is considered as the set of purposeful, planned actions [3, 23] that the accelerator considers that pursue the creation of value to other network partners and extract value from the network [13]. As such, the orchestrator role of the accelerator could act as the foundation for a value-creation system where network members generate value through a set of orchestration activities [5, 24]. Through such programmes, corporations can explore new ideas for their corporate innovation efforts with less costs and risk to their core operations [25, 26]. Start-ups could benefit from receiving mentoring, relying on knowledge spillovers [11], and network mobility [3, 14]. But, despite its importance, the orchestrating role of the corporate accelerator programme and its value creation activities within corporates and start-ups still needs to be better governed and understood. Most accelerator programmes have no formal process for fostering value creation for corporates or start-ups; typically, this is left to occur in an ad-hoc fashion. We address this gap by examining how corporate accelerators orchestrate innovation networks and what orchestration-related activities are essential for facilitating value creation. We use ‘orchestration’ to identify the role of corporate accelerators ‘that link two or more parties to bring about specific activities’ [27]. The orchestration role of the corporate accelerator is developed on the purposeful intention that specific aspects are crucial for the existence and performance of networks and that these aspects require to be active engaged in [13]. The corporate accelerator has a unique dual position in helping innovation: it allows the corporation that looks for innovation and the start-up that provides market-ready products.

Although there are many similarities between key activities for network orchestration, research on managing networks generally considers a process perspective [17], developing frameworks with interlinked process stages. These subprocesses and activities are vital to understanding the network orchestration role of accelerators, as explained in Table 1.

Identified Network Orchestration Processes	Activities Aimed Specifically at Developing Value (authors' emphasis)
Managing knowledge mobility [3, 28, 29]	Mobility of knowledge within a network promotes value creation (3, p. 662)
Managing innovation appropriability [3, 30]	Hub firms can ensure equitable distribution of value and mitigate appropriability concerns by focusing on the following processes: trust by focusing on the following processes: trust, procedural justice, and joint asset ownership (3, p. 663)
Managing network stability [3, 28, 30]	‘A network that is unravelling is not conducive to value creation or value extraction, so a critical orchestration task for hub firms is to promote network stability (3, p. 663)
Managing innovation leverage [21]	The term ‘leverage’ applies if the value generated by assets divided by the cost of creating, maintaining, and facilitating their share (reuse) increases rapidly with the number of network members that use or deploy them (21, p. 44)
Managing innovation coherence [21]	‘Coordinate interactions/activities among partners to ensure internal innovation coherence to add value’ (21, p. 43)

Table 1 Summary of the literature on the network orchestration subprocesses and activities

In *knowledge mobility*, hub firms provide resources that can be accessed across organizational boundaries by other network members, and knowledge can be combined and deployed in various ways to enhance innovation [3]. The hub firm can improve knowledge mobility through three specific processes: knowledge absorption, network identification, and inter-organizational socialization. Absorptive capacity relates to the organization’s learning capability, i.e., its ability to identify, assimilate, and exploit environmental knowledge [31]. Network identification is essential in knowledge mobility to motivate members to participate and openly share valuable knowledge. Identity provides the bond that determines whether knowledge flows in a limited or generous way [32]. Socialization between organizations in a network is designed to increase social and relational capital, where the serendipitous nature of innovation is expected to manifest in exchange forums and formal and informal communication channels.

Innovation appropriability is an essential process undertaken by hub firms to ensure that the value created from knowledge mobility is distributed equitably and perceived by all network members. This can be guaranteed by building trust, providing procedural justice, and through joint asset ownership [3, 28, 29]. The hub firm needs to act as a network champion in building trust and communicating clear, pre-established sanctions for trust violations. For procedural justice, hub firms can share early on the principle of bilateral communications, the ability to refute decisions, a complete account of final decisions, and consistency in the decision-making process. Joint asset ownership can enhance appropriability by strengthening actors' commitment toward shared goals and providing incentives for sharing rewards.

For hub firms, it is crucial to maintain *network stability* to avoid member isolation, migration, cliques, and attrition, which can decrease the network’s value-creation capabilities. The hub firm can increase network stability through a process of enhancing reputation, lengthening the shadow of the future, and building multiplexity [3]. Reputation provides two-fold support for network stability. First, it prevents network members from severing ties with the hub firm, and second, it encourages the formation of new relations. Reputation also has a signalling effect, indicating trustworthiness, and is significant in helping to attract alliances and acquisitions. The ‘shadow of the future’ refers to a bond developed through iterated conditions where the incidence of cooperation increases substantially between the future anticipated benefits and present actions. Network multiplexity refers to two or more types of relationships co-occurring. This increases

network stability as firms interact more broadly and deeply, building a better understanding of each other's capabilities and idiosyncrasies, thereby leading to more excellent network stability.

Innovation leverage relates to the sharing or reusing technologies, processes, intellectual property, and other innovation assets by a network member [21]. The hub firm must create opportunities for the members and facilitate the process. These opportunities can be created by identifying assets that may be owned by network partners and promoting the leverage of these within the network.

Innovation coherence relates to the hub firm's ability to synergize the network to increase innovation output. This can be viewed from two perspectives [21]. First, external innovation coherence is between a network's innovation goals, architecture, external technology, and market context. Hub firms must correctly interpret the waves of external technology/market changes and rally other members around those changes; this ensures the network's innovation output's continued relevance and market value. Second, internal innovation coherence is the alignment between the network members' innovation tasks, components, and interactions. The hub firm's ability to coordinate and align the various processes and outcomes in the network determines the overall innovation efficiency and effectiveness of the network.

II. BACKGROUND

Network Orchestration and Value Creation

The accelerator's value creation results from orchestrating resources and activities with its members (13) and building relationships via different processes. The accelerator programme is built on a multi-actor structure rather than operating on only the corporate's goals; the accelerator interacts with the corporate, start-ups, mentors, partners, investors and others, all sharing a need for value creation. The accelerator plays the role of network orchestration to facilitate coordination and collaboration, for which the needs evolve from the different value configurations.

The results of interaction and transactions between members in a network can create different types of value. In a multi-actor system like accelerator programmes, stakeholders cooperate and combine their assets via coordination, consultation, and negotiation processes, thereby steering the value outcomes of innovation, knowledge (technological, market, and managerial), and relationships [33]. In network innovation, collaboration is conceptualized as technological and market innovation as the value creation [34]. In an innovation network, the maintenance of value creation involves network sustainability in the long term and assuring longer-term network competitiveness [35].

Following the design view, we build on [1] value creation drivers: efficiency, complementarities, lock-in and novelty. These sources of value creation are considered design themes [1]. They are helpful when examining the extent to which an accelerator's orchestration activities create value. They also depict how the accelerator acts as a social bridge between start-ups and corporates to create value for both sides. Then, we investigate the design elements of orchestration activities for value sources (content, structure, and governance) (see Table 2). Content refers to all selected activities which could lead the value; structure describes 1) the interlinks of those activities in line with the value chain, and 2) captures their importance for the way the business works, and governance designates the responsibilities of those activities. The four value drivers present the organization's activity system by focusing on interdependent organizational activities between the hub organization and its members and assisting it to create and deliver value in line with its members. The interaction and transaction results between network members can create different types of value. In the multi-actor system, stakeholders cooperate and combine their assets via coordination, consultation, and negotiation processes, thereby steering the value outcomes of innovation,

knowledge (technological, market, and managerial), and relationships [33].

Design Themes	Value Drivers			
	Novelty	Efficiency	Complementarities	Lock-in
Content	Are there any new activities, products, service ideas emerging during and after the accelerator programme (AP)?	Are there any activities introduced or reorganized to reduce cost, scale of economies, simplicity, time to market during and after the AP?	Are any multiple services or products bundled and provided together to generate more value after AP?	Are there any new activities that retain customers and strategic partners after the AP?
Structure	Is there a new way of articulating activities?	Are there any reduced costs, scale of economies, reduction to market introduced after the AP?	Are there activities that complement each other to generate more value after AP?	Are any new arrangements favourable to customers' and strategic partners' retention after the AP?
Governance	Are there new ways of governing activities?	Are there activities in which the start-ups or corporates reduce costs, scale of economies, or time to market?	Is there any influence on who performs the activities in the generation of complementarity?	Is there an influence on who performs the activity in lock-in generation?

Table 2 Accelerator orchestration activities design and value drivers

Novelty drives value creation through new ways of developing content, structure, and governance of value-added activities. The lock-in theme focuses on the power to continue to attract third parties as network participants. Lock-in inhibits the customers' and strategic partners' migration to competitors via repeating transactions and collaboration opportunities with partners [36]. It would be acceptable to state that the lock-in theme shows the extent to which the value of the source continues for actors in the network if the accelerators influence the ability to sustain the partners engaged in the network. The accelerator enhances lock-in by enabling start-ups to co-produce products, services, or information to satisfy corporate needs. Complementarities are present whenever bundling goods and services activities within a network provides more value than the total value of obtaining each of the goods, services or activities separately.

Start-ups have often been described as innovative but need more resources, networks, market intelligence and business experience. Therefore, the accelerator program produces valuable complementarities or efficiencies for start-ups. [37] state that value creation offers enhanced efficiency (i.e., profit or volume), effectiveness (providing more valuable solutions to customers) and network access (i.e., gaining access to potential customers, partners, market intelligence). [38] suggest that good collaboration with customers and start-ups, as well as start-ups and their members, could increase the lock-in effect.

In this research, we adopted a single-study qualitative approach to examine how corporate accelerator network orchestration activities create value for corporate and start-ups. This methodological choice enabled an in-depth examination of complex interactions and orchestration activities in natural corporate environments, thereby

facilitating the discovery of connections between different aspects of orchestration activities and their impact on outcome-based value generation.

The empirical research was conducted as part of an Indonesian business accelerator, Indigo Creative Nation (ICN), initiated by Telkom Indonesia, a state-owned company in the telecommunications sector. Launched in 2009, ICN was Telkom Indonesia's strategy to promote a digital ecosystem that supports Indonesia's creative digital sector and contributes to the country's economic progress. In the developing country's entrepreneurial landscape, corporate accelerators are responding to the needs and objectives of local ecosystems. Therefore, corporates play varied roles aligning with regional ecosystems' and stakeholders' requirements. Corporates enhance local entrepreneurial capabilities, fostering the growth of emerging startups. This is achieved through facilitating support tailored to address new market demands and diverse regional contexts, providing growth opportunities.

Start-ups, especially those introducing novel IT-based solutions, are crucial to this industry. ICN aims to accelerate the growth of start-ups, prioritizing market expansion and skills development to propel them into advanced stages of digital trading and investment. Unique to ICN is its approach to driving start-up growth, providing distribution channels, expert advice, networking opportunities and access to best practices to improve skills, business processes and funding for thriving businesses. This support differs from similar initiatives and offers start-ups access to Telekom's extensive resources, including big data, cloud services and an extensive customer network (Figure 6). As part of ICN's seven-month acceleration program, startups receive support from experienced mentors with diverse global experience in the IMES (Information, Media, Edutainment and Services) sector. Their progress was methodically monitored throughout the program to assess their development and readiness for subsequent phases.

Data Sources	Total and Breakdown
Interviews	15 interviews (mean length: 65 minutes) with 8 interviews with 6 different start-ups, 3 with accelerator senior managers, 3 with Telkom managers
Observation	12 occasions, with average length of 8 hours, including 2 start-up evaluation events, 8 start-up mentoring events and 2 classes over 5 weeks.
Archival Data	Internal corporate accelerator documents worth of 350 pages (i.e., the corporate accelerator programme and report presentations, the application form, the evaluation form, demo day booklet - data and report of start-up participants, start-ups' progress reports, start-ups' matrix achievement reports, Telkom digital matrix report, Telkom incubation programme performance assessment reports), External public documents (i.e., corporate accelerator website, start-ups' websites, secondary sources based on published articles, books and papers.
Informal dialogue	With the corporate accelerator staff, network partners (i.e. mentors, venture capitalists, so on) during 3 months visit to accelerator programme, including phone conversations with Telkom managers

Table 3 Data Collection

The Accelerator selection process begins with a call for proposals and an application via the program website. The aim is to identify start-ups whose innovative concepts match the company's strategy vision for innovation. After a strict selection process, which includes interviews, successful start-ups are invited to take part in the program. The data was collected on-site directly from the locations where the corporation and the corporate accelerator program are based and where startups experienced the program first-hand. Data collection spanned from June to September 2019 and was supplemented by virtual

interviews, meetings and correspondence from October 2019 to March 2020. Semi-structured interviews conducted with different levels of management with Telkom Indonesia, and six start-up companies provided insights into the impact of the accelerator on their growth. These interviews were triangulated with additional sources, including corporate documents, start-up records, and direct observation, ensuring a robust construct validity for the case study [40].

Data was initially gathered in Indonesian, transcribed, and later translated into English. Comprehensive documentation was collected during the data-gathering phase, including evaluations, meeting summaries, annual reports, and policy guides. This was augmented by internal documents (start-up evaluation and progress reports) deemed essential by interviewees and external materials (demo day booklet and website content). Secondary data, such as corporate accelerator program annual reports, related corporate documents, and multimedia content, such as YouTube videos, website articles, and printed INC materials written by Telekom's innovation strategy, were also compiled to supplement the primary data.

The analysis began with the coding of orchestration activities, informed by a literature review. Utilizing NVivo 11 software [41] to find patterns in our data, the primary researcher performed the initial coding and was verified by a collaborator. An Excel spreadsheet, structured based on guiding literature, was instrumental in managing the data [42], enabling the sorting and analysis of codes according to different orchestration activities and value-creation elements. Our coding process involved reviewing interview transcripts following a thematic orchestration statement derived from the coded interviews and documentation. The analysis continued by summarizing and interpreting, and organizing the themes to discern the corporate accelerator's orchestration practices. These practices were then evaluated against the backdrop of value creation designs to identify the benefits accrued to the corporation throughout the accelerator program.

III. FINDINGS

Our research identified five key orchestration functions within the business accelerator network, each contributing to different forms of value creation: knowledge mobility, innovation appropriability, network stability and innovation leverage (see Table 4).

- We found that knowledge mobility concerns knowledge-creating activities where knowledge resources are combined and deployed to promote the generation and distribution of knowledge within the network. This dynamic interaction of knowledge resources is a catalyst for the serendipitous nature of innovation.

- Innovation appropriability is recognized as an essential mechanism that ensures all participants in the network obtain an appropriate value for their contribution. Our results suggest that while innovation can lead to positive and negative outcomes for units in the accelerator network, certain behaviors, such as sharing innovations outside the network, can discourage potential members from fully participating. In response, Telkom has introduced a policy of joint ownership of assets between Telkom and start-ups in the network, strengthening shared commitment to common goals and promoting a fairer distribution of benefits.

- Network stability is the process of maintaining a healthy balance between network participants that is essential to value creation. While a more loosely configured network may allow for greater adaptability and rapid response, member departures may negatively impact collective innovation output.

- Innovation coherence includes synchronizing innovation goals between Telekom and the network participants. Our analysis reveals two facets of innovation coherence: one within the organization and another that extends externally.

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- Innovation leveraging is associated with strategically reusing or redeploying corporate technologies, processes, and other corporate resources to facilitate or enable the development of start-ups' capacity.

	Orchestration activities [14, 15, 16]	Corporate accelerator programme orchestration activities	Value creation
Knowledge mobility	Knowledge absorption	Knowledge internalization for the corporation.	Novelty, create knowledge mobility to enhance innovation.
	Network identification	Formal and informal interactions among participants	
	Inter-organization socialization	Corporation gains access to start-ups' communities, enlarges its network, and finds additional sources of innovation.	
Innovation appropriability	Joint asset ownership	Seed funding for start-ups and equity for Telkom.	Lock-in, build innovation appropriability to keep members in the network.
Network stability	Reputation enhancement	Promotion activities through the website and articles in the online media.	Lock-in, activities to establish and maintain innovation network stability.
	Network membership	Periodic selection of potential start-ups through a registration process and interviews.	
Innovation coherence	Facilitate transition of innovation	The division that is responsible for the corporate accelerator program supports the adoption of start-ups' products in Telkom's subsidiaries.	Complementarity, all activities enable innovation coherence
		Collaboration activities between Telkom and start-ups.	
	Redefine innovation for new markets	Scoping Discovery	
Innovation leverage	Identify opportunities for asset leverage	Telkom application program interface (API) can be used by start-ups to develop their product.	Efficiency, leveraging resource use.

Table 4. Network orchestration activities of Corporate Accelerator

We address the nuances of five key network orchestration activities as described below:

Knowledge mobility

Our analysis shows that knowledge assimilation, communal identification within the network, and cross-organizational engagement fall within the scope of knowledge mobility activities. Most corporate activities included within knowledge absorption are associated with identifying, assimilating, and exploring knowledge from the environment. Likewise, establishing a collective identity

among network participants is an essential component of community identification, and the development of both formal and informal alliances correlates with inter-organizational socialization.

Under the Accelerator program, Telkom identified a lean start-up approach as an innovative technique through its startup assessment. The head of the Telkom Digital Services Division explained, "*Telekom has adopted this approach and integrated it into our innovation process*". Moreover, he also explained that

"*We emulate the start-up plan, starting with customer and product validation, through business model verification and all the way to the start-up plan Market exploration.*" He also noted: "*The unique characteristics of startups, such as their agility and non-hierarchical culture, are qualities we want to adopt.*" Despite their limited size and resources, their dynamism and entrepreneurial culture are noticeable and admirable.

These findings show that Telkom recognizes the valuable characteristics of start-ups. Telkom's senior open innovation manager explained: "*Our recognition of these valuable startup characteristics emerged from extensive dialogues and observations of their practices and led us to think about integrating these innovative methods into our larger corporate structure.*" This statement suggests that Telkom has captured the knowledge related to innovation methods through its interactions with start-ups, absorbed that knowledge, and will adopt the knowledge within its internal innovation process.

Formal and informal Interactions between start-up members, ranging from structured mentoring and educational sessions to casual conversations during accelerator events or in co-working spaces, are crucial for promoting the flow of knowledge within Telekom's innovation network. Such interactions strengthen social and relational capital for both Telekom and the start-ups. Telkom's Senior Manager for Open Innovation stated, "*The accelerator program has been invaluable, particularly in facilitating connections with investors and experts, and the guidance from mentors has been particularly helpful.*" He further explained: "*Through these engagements, we can identify key resources and other incubation opportunities, paving the way for expanding and strengthening our network.*"

For startups, mentoring and educational workshops are an opportunity to connect with experienced entrepreneurs, investors, and mentors and gain critical insights and advice on product development and business growth strategies. A representative from the startup Jarvis noted: "*We gained knowledge about pricing strategies from our mentors and moved from an annual to a monthly pricing model, which significantly lowered the barrier to entry. This adjustment produced positive results.*" He added: "*Mentoring extended to areas such as press releases, marketing campaigns and business strategy formulation, all of which were critical to our business validation process.*"

Pooling Knowledge mobility activities have brought about novel developments for Telkom, such as new strategic relationships or innovative methods. Facilitating knowledge mobility improves the innovation process for start-ups, from concept to market, and promotes a diverse range of potential offerings that could be merged with Telkom's current or future product line. As the head of Telekom's Digital Services Division, responsible for product innovation, explained: "*Although our product range is comprehensive, the introduction of new ideas is a constant necessity, which often results from start-up collaborations.*" In line with the literature on value creation [1], such Innovations represent a new approach to activities, novel interactivity or unique governance methods and embody the core of novelty. For instance, adopting innovative content, frameworks, and management practices are examples of this novel approach. Consequently, this study categorizes knowledge mobility as an example of the value created by the corporate accelerator program for both the company and the startups involved.

Build innovation appropriability

The start of the Corporate Accelerator program is marked by the execution of a contract by all participating start-ups, which creates a procedural fairness framework that defines mutual responsibilities and expectations for innovation appropriability. This contractual agreement creates trust and ensures transparent communication about the start-ups' achievements throughout the program. The Accelerator program is tailored to accelerate a startup's commercial and technical progress within a specific time frame through financial support, access to co-working spaces, and expanded networking opportunities. During their term in the program, startups are required to present their progress in terms of customer, product, and business model validations. Successful validations at any point lead to further funding, whereas failure to meet standards may result in termination of their participation. The program manager outlines the crucial phases of the program that force startups to disclose their business growth: *"There are three critical phases in the accelerator: First, customer validation, which includes customer interviews to ensure the product solves a customer problem and is used. This phase provides for one-month funding of 10 million rupiah; secondly, product validation, in which the developed product is presented to customers for a period of three months with funding of 120 million rupiah, including office space and educational events; and finally, validation of the business model, with a focus on the go-to-market strategy over a further three-month period with equivalent funding. The entire program will span seven months with a total investment of IDR 250 million and will be exchanged for a 12 percent stake in Telkom."*

Startups participating in the program such as Zelos and Kartoo have expressed with Kartoo the benefits of the office space provided. Commenting: *As part of Indigo, we received office space. Another company, Goers, used this space until they managed to acquire their own. The co-working environment offers startups the benefit of reduced operating costs [39], a common feature of accelerator programs [14], and initial seed funding. Jarvis noted, "Indigos' IDR 1 billion investment was a significant support, and Kartoo admitted: The three-month funding was critical for our runway."* This financial support aims to support start-ups' growth and prepare them for successful evaluations at every stage. The mutual relationship between start-ups and Telekom requires ongoing commitment from both parties. Start-ups are required to report their progress at the end of each phase, with failure to do so risking program cancellation. This pressure serves as a catalyst for them to improve their business skills to maintain their place in the program. For Telkom, as a program facilitator, there is an inherent motivation to lead start-ups to lasting success and ensure their continued participation.

The shared equity ties the start-ups to Telekom and creates a personal interest in their success, as Telekom's head of the Digital Services Division explained: *"The funds provided can be converted into equity; Even though we may not benefit directly from the product, our participation in the start-ups ensures that we as shareholders create added value."* The funds provided can be converted into equity. Even though we may not benefit directly from the product, our participation in the start-ups ensures that we, as shareholders, create added value. This concept of retaining the stakeholders of the business model [1] corresponds to the concept of lock-in, where the potential for value creation encourages the parties to maintain and improve their cooperation efforts [1]. Therefore, this study identifies innovation appropriability as a key lock-in design theme in value creation for the corporate accelerator program.

Establishing and maintaining innovation network stability

Our analysis suggests several strategies for securing network balance: enhancing reputation and building future position, known as 'building multiplexity.' As a central figure in the telecommunications sector, it was noted that Telkom as a hub firm, benefits from its

established brand and finds it more accessible to build new relationships, particularly with emerging companies seeking credibility alongside a market leader. However, in the digital creative sector, Telkom is actively working to strengthen its leadership image beyond Indonesia to be recognized across Asia. As part of this effort, Telkom is aggressively promoting its Corporate Accelerator and using preliminary engagement activities such as hosting events to enhance its reputation and encourage new contacts while maintaining trust. Telkom uses channels such as social media, workshops and its website to promote its Indigo brand. These funding measures attract startups to the innovation network and strengthen Telekom's image as a pioneer in the digital creative sector. A senior open innovation manager at Telkom explained: *"Our primary outreach platform is our website indigo.id, which serves as a portal for launching Indigo, distributing news and registering start-ups. Indigo is also our statement to the world about Telekom's efforts in the digital industry."* Another approach to maintaining network stability is through network membership, where the corporation recruits and selects partners. Startups are regularly evaluated throughout the accelerator program based on Telekom's benchmarks. Those who fail to meet these benchmarks may face termination of their participation, potentially resulting in a reduction in the size of the network. Through semi-annual recruitment campaigns, Telkom strives to keep the network vibrant and open to new ideas, *"The accelerator program is always looking for startups and inviting them to join in planned groups or as needed to ensure a constant flow of new insights"*, a senior manager in open innovation said.

Interviews with various startups showed that accelerator-supported events such as demo days are crucial for expanding their networks. For example, Jarvis reflected on the exposure gained at such events: *"Indigos Demo Day brought us together with investors and allowed us to build numerous new relationships"*. Similarly, visitors commented on the opportunities presented by these events: *"Indigos events opened doors for us to meet and attract investors."*

Telekom's promotional activities are intended to promote the Corporate Accelerator program and strengthen the Telkom brand in the creative digital sector. It is imperative to maintain a strong image of Telkom's commitment to this sector and ensure that startups remain on the Telkom network through the accelerator program. A senior manager noted: *"Open innovation increases our visibility. Telkom success stories and product launches by previous startup participants strengthen our external reputation."* This statement shows that startups remain in the program due to the possibility to their product being adopted by Telkom.

Additional findings suggest that participation in Indigo can significantly improve a startup's reputation, increase trust, and open up investment opportunities. Goers highlighted *"The trust gained through being part of Indigo,"* while Zelos pointed out *"The ease of networking with investors who knew about being part of Indigo and highlighted the perceived potential of Indigo-affiliated startups."* The findings from this interview indicate that involvement with Indigo fosters a prevalent perception of promising potential for the startup tenant, with this study referring to this perception as reputation.

In the context of value creation, the issue of lock-in refers to the strategic efforts to prevent the transition from partners to competitors. Therefore, this study identifies network stability as a value generated by the corporate accelerator program for both the company and its startup partners.

Facilitating Innovation Coherence

The tasks for aligning network processes at Telekom relate to achieving internal innovation coherence. In contrast, the tasks for aligning with external market and technology domains are linked to external innovation coherence. Typically, the primary company initiating network development in an innovation network seeks to

improve the innovation process or outcomes. This improvement often involves using network members' products as new offerings or integrating them into existing services. Through the activities of the Corporate Accelerator program, Telkom has achieved innovation coherence, thereby advancing its business and strategic goals.

Telkom operates a dedicated Corporate Accelerator Program Monitoring Department tasked with managing the program's results. The Digital Service Division (DSD) is responsible for driving product innovation and supporting the merger of start-up and telecom products for product improvement, capacity building and market commercialization. The Telkom Senior Manager for Open Innovation explains: *"First, we assess the scalability of the startup. As soon as they start working with Telekom, they must be prepared for expansion. We then evaluate the ability of their systems to handle such growth. At the same time, we hold a product forum every Thursday as part of the DSD in which innovation ideas are discussed. Through these forums, we identify the startups' offerings that need to be changed or redeveloped."*

Additionally, we offer startups the opportunity to showcase their solutions at trade shows, where their products can be rebranded for broader applications and integrated into other offerings. Customization is essential for this integration, and we facilitate the connection between startups and potential partners or customers." In addition, the department helps establish collaborations between startups and Telekom subsidiaries or customer-facing units. Telkom accelerator program manager stated: *"Under the Innovation and Strategic Portfolio Department, the DSD manages our Digital Valleys in Bandung, Yogya and Jakarta, as well as DiLO in partnership with MIKTI, to combine creativity with commercial opportunities. Our goal is to distribute startups' creative products or services to Telekom's huge customer base in several countries."*

Insights from the accelerator program are incorporated into developing an innovation sustainability strategy and are invaluable for understanding market trends and technological advances in the digital industry [32]. In connection with external consistency, this information is also crucial for comprehending the advancements in both market and technology within the digital industry. *As the head of digital services at Telekom explains: "Our strategy balances exploration and exploitation. We explore products at scale while maintaining initiatives to measure market needs, for example, through our open innovation platform, Indigo Creative Nation. At the same time, we are committed to internal innovation efforts for use."*

He also points to the role of open innovation management in promoting interaction with start-ups and the development of the digital ecosystem. *"Our approach involves external participants and is critical when planning new product developments to be delivered to customer-facing units within Telkom or its subsidiaries. The insights gained in this process guide our future innovation strategy."*

Startups within the program, such as Privy-Id, reflect on their commitments. *"We found synergies with other Indigo startups that led to collaborations. Jarvis shares this opinion: We have bundled our solutions with those of other Indigo startups, creating combined offerings."*

These interactions with startups represent efforts to develop marketable products through corporate channels. In terms of value creation, the design theme of complementarity is illustrated by bundling different activities to increase overall value [1]. This research combines complementarities with innovation coherence and derives creating value from the interaction of these concerted activities.

Optimizing Innovation Resources

The research found that the Corporate Accelerator program provides startups with access to three categories of assets to leverage innovation: 1) physical assets such as manufacturing networks, 2)

intellectual assets such as software platforms and technological expertise (know-how), and 3) financial assets such as investment portfolios.

In addition to financial support through seed capital, Telkom offers startups the opportunity to use their technological infrastructure throughout the entire product validation phase. Startups benefit from free access to Telekom's application programming interfaces (APIs), including billing systems, data analytics and cloud services, and server resources for product development. Explaining this, an accelerator manager from the Digital Service Division (DSD) explained: *"We have an open API sector within the DSD that allows startups to seamlessly integrate into Telekom's service infrastructure, for example, through the Integrating SMS functions or online payment systems into your applications."*

Kakatu, a participating startup, stated *"Our time in the Indigo program was educational not only in terms of product development, but also in business acumen, including lean startup methodology, financial planning and leadership skills. These findings concluded that startups experience an increased ability to innovate during the program."*

This study views Telkom's market reach as an invaluable asset for startups to drive innovation. In line with [43] views in management research that emphasize a platform perspective, Telkom's market access is critical for startups in customer validation to confirm market needs and the effectiveness of their solutions. In addition, Telekom's customer data becomes a crucial asset for the commercialization phase of startup products. A representative from Jarvis emphasized the importance of this access, explaining how penetrating Telkom's customer base represents a cost-effective user acquisition strategy, an otherwise costly endeavor for startups.

In addition, a Kakatu spokesperson noted *"thanks to the accelerator network, it is easier to enter into collaborations with Telekom subsidiaries"*. The program manager also mentioned that Telkom's marketing resources can be used to introduce startup products to a wide customer base.

An example of such synergy is Privi-ID, a startup that has developed a digital document application, Privi-doc, which has been integrated into Telekom's Indihome service and streamlines and accelerates the customer registration process. This integration illustrates how process efficiencies can arise through strategic partnerships between startup innovations and enterprise offerings.

Therefore, the concept of 'innovation leverage' is recognized as a crucial source of value creation within the Corporate Accelerator program and shows how restructured activities can lead to significant reductions in transaction costs and process improvements.

IV. DISCUSSION

Our study highlights corporate accelerators' key orchestration role in creating shared value, taking into account the perspectives of corporates and start-ups. Beyond simply listing activities, we examine how the orchestrating function of the accelerator improves interactions, particularly between companies and start-ups. Figure 1 shows the drivers of value creation for each element. The accelerator's orchestrated process is critical to delivering value and ensuring the program's effectiveness. In previous academic work, accelerator functions and phases were often viewed from a static perspective. By examining the orchestrating role within a social framework, the role of the accelerator becomes dynamic, integral to value creation and transformative for startups during orchestration.

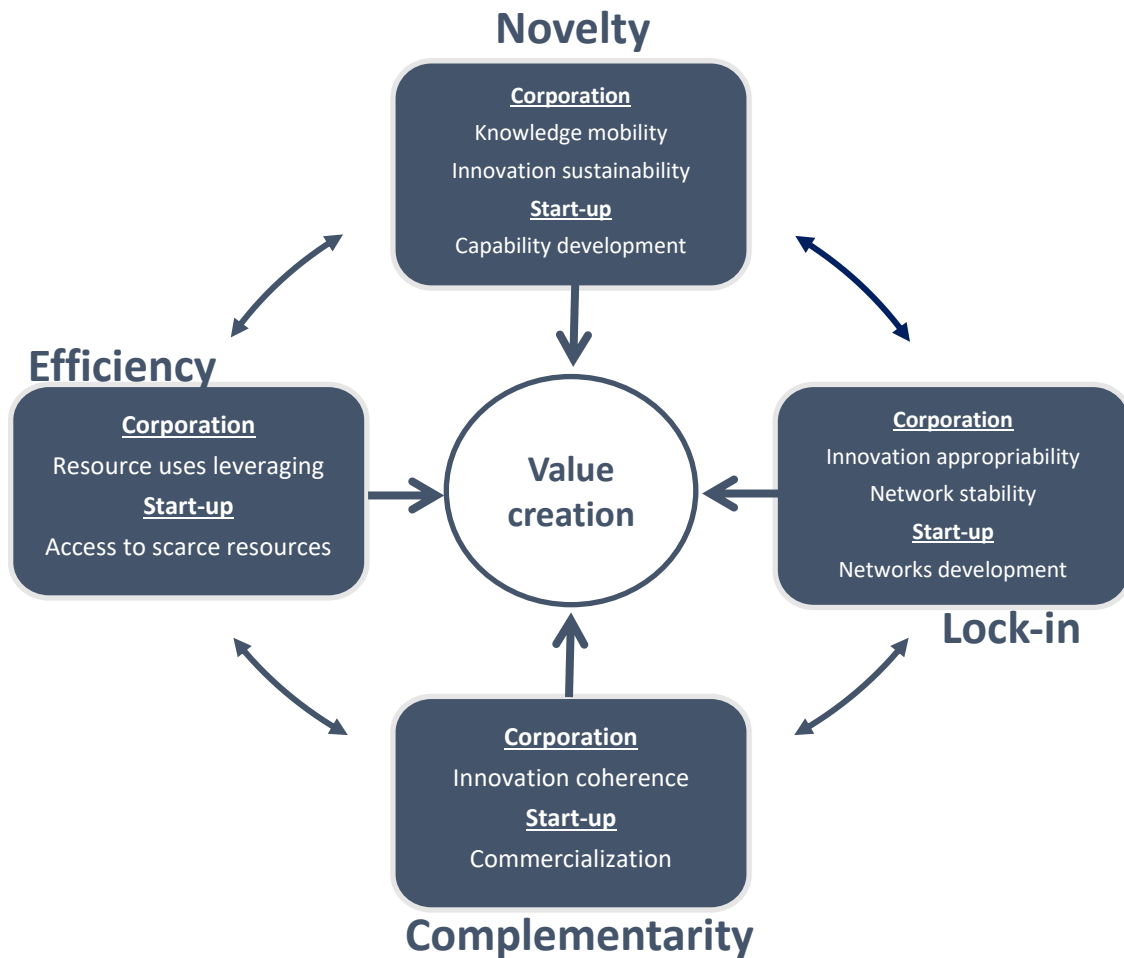


Figure 1. Source of value creation of the corporate accelerator programme

Our research is crucial in enlightening the dynamics and complexities of the entrepreneurial landscape, specifically corporate accelerator programs in developing countries, building local entrepreneurial capacity, strengthening entrepreneurial networks, facilitating market connection and stimulating capital investments. Corporate accelerators now have multiple roles and have evolved from providing essential support to becoming integral components of the entrepreneurial landscape, facilitating startup initiatives and offering opportunities to develop strategies that can foster a conducive environment for startup growth.

The study expands existing knowledge about accelerators [5, 8, 9, 11] by developing a better understanding of the intermediary role of the orchestrator, defining key orchestrating activities and their link to value creation. While recent literature on accelerators has focused on structural and relational outcomes [44], it has largely ignored the nuanced role of the orchestrator. Furthermore, previous literature has treated corporate accelerators as general engagement mechanisms and has not addressed their specific innovation and value creation functions that bridge corporations and startups. Understanding value creation in corporate accelerator programs involves redefining the traditional association between entrepreneurship and innovation literature, more specifically in the relationship of accelerator and innovation intermediaries that support nascent start-ups [8-25]. Our findings contribute to the theoretical understanding of network orchestration, particularly in the evolving context of accelerators.

They highlight how they act as network intermediaries and advance understanding of their central bridging function and practical application [45].

Our results suggest that recognizing diverse orchestrating activities can enlighten some unresolved questions in innovation network literature, particularly regarding the debate on how different actors within an ecosystem 'create' and "sustain value". Creating value for the company within the framework of the Corporate Accelerator program includes: 1) knowledge mobility and innovation sustainability, which leads to novelty; 2) innovation appropriability and network stability for lock-in, keeping members in the network and increasing relationship quality; 3) innovation coherence as a source of complementarity; and, 4) leveraging resources for efficiency. For startups, the value is evident in improved network access, stimulating the development of new skills, innovative ideas and the use of existing knowledge, with knowledge transfer acting as a mediator between structural dimensions and innovation outcomes.

Our study builds on the emerging but under-researched interface between innovation value creation and network orchestration by adapting an in-depth qualitative case study of Telkom Corporate Accelerator, we provide detailed insights into the structure and governance of orchestration activities, responding to current academic calls for more empirical research in this area.

V. CONCLUSION

We delved into the emerging concept of business accelerators and examined them from a theoretical and practical perspective. The role

of network orchestration within accelerators has been described as a strategic approach to sourcing and catalyzing value creation by harmonizing and merging activities that benefit both enterprises and startups. This process aims to promote network activities that initiate innovation, synergy, efficiency and sustainable engagement.

An analysis was conducted of how orchestration activities are linked to value creation, highlighting the dynamic interplay of various value drivers. For example, the introduction of new products has enabled corporates to integrate their offerings with those of start-ups, thus offering customers a broader, more coherent range of complemetarities (e.g. network coherence). Similarly, for startups, novelty was crucial in attracting and retaining customers, especially in developing a reputation and building their market presence, thus fostering a strong relationship between novelty and lock-in.

The results of this research contain several practical insights. First, it highlights the importance of orchestrated network activities by corporate accelerators as a means of creating value for both startups and corporate. While startups may not directly increase a company's immediate revenue streams, the diverse value-creating activities enabled by accelerators are essential to achieving significant value creation for corporate. This requires management actions within enterprise accelerators to ensure that orchestration activities are wisely managed and designed to deliver numerous benefits to both startups and corporates. Second, comprehensive knowledge creation activities within the network and innovation appropriability, the potential for interaction among network organizations, thus enriching the value creation landscape. Managers are encouraged to think about how the identified orchestration activities align with the accelerator's value drivers and identify potential for synergistic arrangements.

In assessing the network orchestration role of corporate accelerator programs, it is important to recognize that a comprehensive research design is somewhat elusive, which imposes certain limitations on this study. In addition to the challenges of generalizing findings from a single accelerator program and considering the specifics of a developing country context, this research focuses narrowly on a few selected value-added activities, particularly those related to network orchestration. Nevertheless, these limitations pave the way for future research opportunities and suggest the inclusion of a broader range of network organizations and key stakeholders such as mentors and venture capitalists in future studies.

This research was limited to a single corporate accelerator in Indonesia, where the implications of innovation implementation may differ significantly from those in a developed country due to differences in the availability of finance, technological advancement, and human resources. Future studies could improve the robustness of the results by comparing the model with corporate accelerator programs in developed countries or with other programs in Indonesia.

VII. MANAGERIAL IMPLICATIONS

The results of this study hold several important implications for practice. They highlight the role of corporate accelerators in providing orchestrated network activities that create value for both startups and corporates. While startups may not directly contribute to a company's immediate financial performance, the diverse activities enabled by accelerators are critical to driving significant value enhancement for corporate. This highlights the need for management oversight within corporate accelerators to ensure that orchestration activities are strategically managed and designed to deliver multiple benefits to startups and corporates. Furthermore, the presence of comprehensive knowledge generation within the network and the assurance of innovation results expands the range of potential interactions within network organizations and increases value creation. The impact of network orchestration extends to various facets of value creation and the structural design of the accelerator itself. Therefore, managers

should assess how the orchestration of the five activities aligns with the accelerator's fundamental value drivers and consider whether there are unexplored opportunities for synergistic configurations.

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