

Why Local Game Industries Struggle to Scale

A Structural Analysis of Indonesia's Game Development Ecosystem

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Abstract—The gaming industry in Indonesia presents a significant paradox where a massive domestic market value of nearly two billion dollars contrasts sharply with a local market contribution of less than one percent. This study analyzes the systemic structural factors hindering the scaling of the local game development ecosystem, moving beyond simple symptom identification to understand the mechanisms of industrial stagnation. Unlike prior studies that examine talent, financing, regulation, and market barriers separately, this research offers a novel ecosystem-level perspective that reveals how these barriers reinforce one another. Employing an exploratory qualitative approach, this research integrates data from three years of Focus Group Discussions with developers, associations, and government bodies, alongside a thematic analysis of recent policy documents and secondary industry data. The findings reveal a critical phenomenon of structural lock-in caused by six mutually reinforcing barriers. These include a micro-scale trap where studios rely on outsourcing rather than intellectual property creation, a talent gap characterized by a mismatch between vocational education and industry management needs, and a financing disconnect in which more than 90 percent of studios rely on self-financing because financial institutions reject intangible assets as collateral. Furthermore, the ecosystem is plagued by market inequality favoring global publishers and regulations that function only as administrative frameworks without implementation power. It is further weakened by an unsustainable reliance on community volunteerism to bridge institutional gaps. The study concludes that current isolated interventions are ineffective because these barriers are interlocked. Consequently, sustainable growth requires a holistic ecosystem transformation that aligns education, financing, and policy execution to break this cycle of stagnation. These findings offer practical guidance for policymakers, financial institutions, and industry associations seeking to design interventions that address the lock-in rather than its symptoms individually.

Keywords— Game Industry, Creative Economy, Structural Lock-In, Intellectual Property, Indonesia

I. INTRODUCTION

The gaming industry has evolved to become one of the most dynamic sectors in the global digital economy. A market value that reaches hundreds of billions of US dollars and surpasses other entertainment sectors, such as music and film [1]. In recent decades, even the game industry has had a strategic role, namely, not only as a source of entertainment, but also as a motor of technological innovation, creative job creation, and knowledge-based intellectual property

producers [1], [2]. These developments confirm that the game industry can no longer be understood simply as an entertainment subsector, but rather as an arena where creativity, digital technology, and economic value are intensively intertwined.

In the framework of the creative economy, the game industry has distinctive characteristics because it combines artistic expression, technological sophistication, and business models that rely on intellectual property rights and are oriented towards the global market, so it is natural that Casey [3] mentioning the gaming industry as a mix of the application industry with a touch of art and intense design. The industry's core value lies in its ability to transform digital ideas, narratives, and experiences into economic assets that can be reproduced, distributed, and commercialized across borders [4]. Therefore, the protection of copyright and intellectual property is a crucial element in maintaining the sustainability of innovation, especially in the midst of the challenges of piracy, global competition, and differences in regulatory regimes between countries [5].

However, the global development of the game industry is not always directly proportional to strengthening industry capacity at the national level. In Indonesia, findings from Akbar et al [6] shows the existence of a structural paradox. On the one hand, Indonesia has a huge and growing gaming user base, making it one of the most potential gaming markets in the Southeast Asian region. On the other hand, the structure of the national game developer industry is still dominated by micro and small-scale studios with limited capital, human resources, and business durability [6].

According to Akbar et al. [6] also revealed that most local studios are still in the early stages of development, with business models that tend to rely on short-term, outsourced or work-for-hire projects. Only a small number of studios can develop their own intellectual property sustainably and penetrate the global market. This condition shows that the main challenge for the national game industry does not lie in creativity or market interest, but in the ability of the ecosystem to support the process of scaling up and accumulating long-term economic value. Despite this paradox, few studies have systematically examined why a large and growing user base has not translated into a competitive local development industry, and fewer still analyze how talent, financing, regulation, and market access interact to produce this outcome. This study addresses that

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gap by offering an integrated, ecosystem-level analysis rather than treating each barrier in isolation.

Currently, research on the game industry ecosystem is still limited. Most of it is in ecosystem map research conducted regularly by the Ministry of Communication and Digital [6], [7], [8]. Several studies have addressed the problem of talent gap [9], [10], Innovation and business [11], [12], Copyright protection [13], creative process, and cultural content [14]. However, research on the game industry ecosystem in Indonesia has rarely examined its structural problems in depth. This study addresses that gap by analyzing the structural factors that hinder the growth and scaling of the local game industry, treating the industry as a creative economy system grounded in intellectual property. Using an exploratory qualitative approach that integrates cross-stakeholder focus group discussions, policy document analysis, and secondary industry data, this study identifies patterns of structural lock-in, a self-reinforcing condition in which limitations in one dimension of the ecosystem, such as talent, financing, or regulation, restrict progress in the others and trap the industry in a low-growth equilibrium. These patterns arise from the interaction between talent capacity, financing mechanisms, regulatory frameworks, market access, and the role of supporting institutions.

II. RESEARCH METHODOLOGY

A. Research Design

This study uses an exploratory qualitative approach [15], [16], which aims to analyze the structural barriers in the development of the local game industry in Indonesia. This approach was chosen because the game industry is part of a knowledge-based creative economy that has complex, cross-sectoral characteristics, and is strongly influenced by the interaction between industry actors, public policy, and global market dynamics. Therefore, understanding the problems of the game industry cannot be reduced to a single quantitative indicator, but rather requires an in-depth analysis of the processes, relationships, and mechanisms that make up the industry ecosystem.

This study positions the game industry as a creative economy system based on intellectual property, where the growth of the industry is determined by the linkage between talent capacity, financing, regulation, market access, and the role of communities and supporting institutions. This study does not aim to test causal hypotheses, but rather to identify systemic and recurrent structural patterns and barriers in the national game industry ecosystem.

B. Data Collection

Research data was collected through a series of focus group discussions (FGD) that were conducted continuously over the past three years. The FGD was held as part of the policy review process, including the preparation of a Presidential Regulation on accelerating the development of the national game industry and a study of the Indonesian Game Industry Ecosystem Map. The FGD involved a variety of key stakeholders, including local game developers of various business scales, representatives of industry associations, academics, and government representatives involved in the formulation and implementation of creative economy and digital economy policies. The discussion

focused on practical experience of game development, production and financing challenges, intellectual property management, market access, and evaluation of policies and programs that have been running. Within this longer three-year process, the most recent round comprised six FGD and bilateral discussion sessions held between April and June 2026: PAK 1 (22 April 2026), PAK 2 (13 May 2026), PAK 3 (21 May 2026), Bilateral 1 and Bilateral 2 (both 17 June 2026), and Bilateral 3, convened specifically to inform the revision of Presidential Regulation Number 19 of 2024 on the Acceleration of the National Game Industry. Key stakeholder categories represented across these sessions include central government ministries and agencies engaged in formulating and implementing the Presidential Regulation on accelerating the national game industry, among them the Ministry of Communication and Digital, the Ministry of Creative Economy/Creative Economy Agency, the Ministry of Industry, the Ministry of Higher Education, Science and Technology, the Ministry of Culture, the National Research and Innovation Agency, and Bank Indonesia, alongside game industry associations, companies, and communities.

In addition to FGD, this study also uses analysis of policy documents, including laws and regulations, development planning documents, and official government reports relevant to the development of the game industry. Supporting data is obtained from secondary industry data, such as market reports, game user statistics, as well as publications of research and industry institutions, which are used to provide empirical context to qualitative findings. This iterative and longitudinal approach to data collection allows research to capture the consistency and change dynamics of local game industry barriers over a relatively long period of time.

C. Data Analysis

Data analysis was carried out using thematic analysis with an inductive approach to all qualitative data collected [17]. The five stages of this process are summarized in Table I.

TABLE I. STAGES OF THEMATIC DATA ANALYSIS

Stage	Description
1. Familiarization	Reading and repeated review of FGD notes and policy documents.
2. Initial coding	Identifying relevant issues, statements, and patterns in the data.
3. Theme grouping	Grouping codes into main themes.
4. Review and refinement	Ensuring internal consistency and interconnectedness between themes.
5. Thematic interpretation	Interpreting themes in the context of the national game industry ecosystem.

The resulting main themes are then further analyzed using a systemic approach, with the aim of understanding the relationships between the factors and mechanisms that make up structural barriers in the game industry. This approach is used to identify structural lock-in conditions, which are situations where limitations in one aspect, such as financing or talent, interact with other aspects and limit the ability of

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the local gaming industry to increase business scale and competitiveness.

To improve the validity of the findings, this study applied triangulation of data sources by comparing the results of FGDs, policy documents, and industry secondary data. This approach allows for cross-verification of the consistency of findings as well as reducing single-interpretation bias. A limitation of this approach is that thematic coding of FGD and policy-document data involves interpretive judgment and is not intended to establish statistical generalizability; findings should be read as analytically generalizable patterns rather than population-level estimates, and future work could complement this qualitative design with quantitative or survey-based triangulation.

III. RESULTS AND DISCUSSION

The gaming industry has developed into one of the strategic sectors in the global digital economy, with a market value of hundreds of billions of US dollars and enormous growth potential in the Southeast Asian region [1]. In Indonesia, this sector is part of 17 creative economy subsectors recognized by the government, playing an important role in encouraging innovation, creating creative jobs, and creating added value based on intellectual property[10]. However, despite having a large market share and a high population of gamers, the contribution of local developers to the total national market is still relatively low, at around 1%, indicating a gap between the potential and realization of the digital economy in the industry [6].

In the national context, Indonesia's gaming industry has shown significant development, especially after being officially recognized as part of the creative economy sector in 2014. The growth of local game studios, developer communities, and support from educational institutions began to form a more organized ecosystem [12]. However, research shows that the main challenges are still related to the limited number of high-skilled human resources, weak legal protection for game work, and low government policy and investment support [12], [13]. This condition confirms that although Indonesia's gaming industry has grown creatively and independently, its sustainability still depends heavily on the national ability to overcome these structural barriers. Fig. 1 summarizes these six barriers and how they converge into the structural lock-in identified by this study.

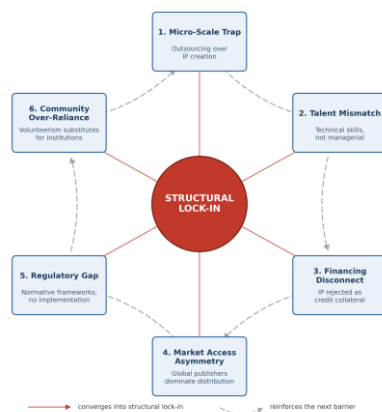


Fig. 1. The six interlocking structural barriers converging into structural lock-in in Indonesia's game industry ecosystem.

A. The Pitfalls of Business Scale and the Fragility of Local Game Studio Resilience

"We prefer to work on projects from outside because the cash flow is certain, while if we make our own IP, it will not necessarily pay back in the near future." Founder micro game studio X.

Most local game studios in Indonesia are still operating on a micro and small scale with weak business resilience. This condition is in line with the findings in Indonesia's creative economy sector in general, where more than 90% of creative industry players are still dependent on personal financing and have not been able to access formal funding such as bank credit [18]. The study highlights structural barriers such as the lack of acceptance of intellectual property (IP) assets as collateral for credit, making it difficult for creative industry players, including game developers, to obtain working capital support to finance high-risk, long-term projects. These findings are reinforced by other research showing that limited access to formal financing is a major factor holding back the growth of small businesses in Indonesia's digital creative sector[19], [20].

In the face of limited capital and a competitive domestic market, many small game studios have opted for a short-term survival strategy through outsourcing, commissioned work, or white-label development projects for overseas clients. This strategy provides relatively stable cash flow but comes at the expense of opportunities for studios to develop original products and long-term IP portfolios. This phenomenon reflects what is referred to as a micro-scale trap, which is a condition in which limited resources reinforce a conservative business model, thus hindering the accumulation of experience, reputation, and innovative capital needed to move up. Studies on the micro-creative industry in Indonesia show that this scale trap is a systemic barrier, exacerbated by low financial literacy and weak cross-stakeholder collaboration in the creative ecosystem [21], [22]

In addition, this trap is reinforced by the reluctance of small studios to scale up in the face of unfair structural incentives. The MSME industry has a privilege in policy governance in Indonesia. They do not need to get layered taxes (VAT and Income Tax). In addition, if the company is upgrading, then they will need to improve their financial and managerial literacy, which may require hiring tax accountants and other specific workers. In many cases, one studio even created several companies, just to maintain their MSME status.

B. Talent Available, but Not Fully Industry-Ready

"The graduates we recruit are pretty good at creating assets and coding, but once they get into project management or monetization strategy, they still have to learn from scratch." — Mid-sized game studio representative, FGD.

The availability of labor in the Indonesian game industry shows that the main challenge is not the number of talents, but rather the relevance and distribution of competencies. Study by Akbar & Asmara [9] Highlights the fundamental

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gap between indie game developers and incorporated developers in terms of human resource utilization. The study found that indie entities tend to rely on *outsourced workers* and self-taught workers with diverse educational backgrounds, while corporate studios are more able to employ professionals with formal qualifications. This pattern shows that the workforce ecosystem in the national game industry is still dualistic: on the one hand it is based on creative spirit and autonomy, but on the other hand it faces limitations in the management and professionalization of human resources.

In addition, the problem is the quality and relevance of competencies to industrial needs. Various studies show that the vocational education and creative training system in Indonesia has produced graduates with good basic technical skills, such as graphic design, animation, and software development, but have not been able to prepare the workforce with the soft skills and managerial abilities needed to compete in the global market. Study by Muharam et al [23] emphasized that the misalignment between the vocational education curriculum and the need of the creative industry is one of the roots of skills mismatch in Indonesia. The weak integration between educational institutions and the industrial sector means that the learning process often does not emphasize real practices such as production management, cross-functional collaboration, and product monetization strategies, even though these competencies are needed in the management of modern game projects.

This gap in managerial and strategic aspects is also highlighted by research on human capital in the creative industry era, which emphasizes the importance of combining creativity, analytical skills, and digital literacy as the foundation of workforce competitiveness [24]. In the Indonesian context, the role of public policy in integrating education and industrial needs is becoming increasingly important to build talents that are adaptive to global technology and production standards. This is confirmed in the study of Langoday et al [25], which highlights that the implementation of the Independent Curriculum aims to bridge these gaps through project-based learning, digital literacy, and strengthening critical thinking skills in the Society 5.0 era. However, without a mechanism of continuous collaboration between the education and industry sectors, this curriculum reform still has the potential to stop at the conceptual level.

The mismatch between the competencies of graduates and the real need of the industry shows that the problem of talent in the gaming ecosystem is structural and systemic. The study of vocational partnerships in Indonesia also emphasizes the importance of co-design, co-teaching, and co-training between educational institutions and industry so that practice-based learning that is relevant to the needs of the world of work [26]. Thus, without investment in the integration of education and industry, as well as leadership and entrepreneurship training in the creative sector, local talent will continue to struggle to penetrate the global value chain that demands multidisciplinary competence and strategic resilience.

C. Financing That Is Not in Line with the Character of the Game Industry

"Banks always ask for collateral in the form of physical assets. Even though our main asset is the intellectual property of the game itself, and that is never considered a valid guarantee." — Independent game developer, FGD

Access to financing is one of the most fundamental obstacles in the development of the game industry in Indonesia. As an intellectual property-based sector, the industry needs a form of funding that is able to adapt to its distinctive characteristics, namely long production cycles, high levels of risk, and unpredictable commercial outcomes. However, until now, the financing system in Indonesia is still dominated by conventional approaches that emphasize tangible collateral, making it irrelevant to the nature of digital assets such as games and copyrights. Research by Mayana & Santika [18] shows that more than 92 percent of creative industry players in Indonesia still rely on self-financing because financial institutions do not yet have a mechanism to assess the economic value of intellectual property as a credit guarantee. Although the government has issued Government Regulation Number 24 of 2022 concerning the Creative Economy which explicitly regulates intellectual property-based financing, the implementation of the policy is still limited to the normative level without adequate banking system support [18].

Studies conducted by Santoso & Dachyar [27] emphasized that there are four main obstacles that hinder the effectiveness of intellectual property-based financing schemes in Indonesia, namely unadaptive financing regulations, weak law enforcement of IP assets, lack of IP economic valuation standards, and low liquidity in the intellectual property market. This research underscores the importance of establishing an institutional framework that is able to bring together the government, financial authorities, assessment institutions, and industry players in one integrated system. In the context of the game industry, these barriers imply that it is difficult for small studios to gain access to working capital to develop original products, so many of them opt for the safer path of bespoke projects but are not oriented towards the creation of long-term intellectual property [27].

Mahmudah [28] highlighting that the gap between policies and practices of financing or *policy-finance gap* is one of the main obstacles in the implementation of the creative financing system. Through policy analysis, they recommend three strategic steps that need to be taken, namely strengthening the regulation of financial institutions to be able to accept IP as a credit guarantee, establishing a standard formula for assessing the economic value of intellectual property, and building an IP market ecosystem through cooperation with guarantors and insurance companies. This approach is reinforced by the findings (Santoso & Dachyar, [29] which shows that Indonesia is still lagging behind countries such as South Korea and Singapore, which have successfully implemented IP-based financing schemes with the support of independent assessment agencies, IP credit insurance mechanisms, and the existence of secondary markets for intellectual property assets [28], [29].

Specifically, regarding financing from the government, it shows an unsustainable scheme. Government funding often

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uses a government project system with a low level of flexibility and the use of a calendar year. Meanwhile, game development often takes more than a year, so the government cannot provide financing assistance. However, another solution is to open a financing system or channel such as business matchmaking and showcase products. This approach has been carried out since 2019 by Komdigi (formerly Kominfo) with the Indonesian Game Developer Exchange (IGDX). It's just that IGDX's coverage is limited, namely in a big city with limited capacity.

D. Large Markets That Don't Automatically Benefit Local Producers

Indonesia is often described as one of the largest gaming markets in Southeast Asia with the number of players continuing to increase along with the penetration of the internet and mobile devices. However, the size of the domestic market does not automatically create balanced opportunities for local game developers. Based on the results of a study of the Indonesian game industry ecosystem, the market value reached around 25 trillion rupiah or equivalent to 1.92 billion US dollars, but only a small part of this revenue was enjoyed by domestic producers due to the dominance of foreign publishers and developers who controlled the main distribution channels [30]. The study confirms that despite the large local market potential, Indonesian game developers face difficulties in breaking into the global value chain due to limited promotional capital, digital distribution access, and technology infrastructure support.

The distribution of digital content on global platforms such as Steam, Google Play, or the App Store is largely determined by financial strength and an international network of publishers capable of financing large-scale marketing campaigns. In this kind of market structure, local developers operate in an unequal position, where product visibility is more influenced by distribution algorithms and promotional costs than content quality. This phenomenon is in line with the findings Ortiz-Ospino et al [31], which explains that digital transformation in the creative and cultural sectors has changed distribution structures globally. Only actors with access to technology and a strong digital marketing strategy can gain significant exposure in the global market [31]. As such, the sheer size of the digital market does not guarantee commercial success for small developers who do not have the capacity to compete in promotion and visibility management.

This limited market access confirms the existence of structural inequality in Indonesia's creative industry. According to Mahrinasari et al [32], The competitiveness of Indonesia's creative industry is still greatly influenced by the level of digital literacy and entrepreneurial orientation of business actors. Low digital marketing capabilities and limited adoption of entrepreneurial marketing make it difficult for local actors to build sustainable advantages in the global market. The study also highlights the importance of the role of governments in providing information technology infrastructure and policy support to expand access to the national creative market [32]. Without policy interventions that strengthen the promotion, digital distribution, and discoverability of local products, domestic markets have the potential to deepen inequality between local producers and global publishers.

A broadly similar pattern is observed in other large but still-developing Southeast Asian game markets. Comparative analysis of creative industry models across the region shows that countries such as Indonesia, Vietnam, and the Philippines have historically been linked to the global game industry mainly as outsourcing and localization partners, whereas countries such as Singapore, Malaysia, and Thailand have pursued policies that more deliberately foster the establishment of local game studios producing original content [40]. This comparison suggests that Indonesia's market-access gap is not unique but is shaped by the same policy choices that have allowed some neighboring markets to build a stronger base of local game producers.

Another reason for limited market access is the difficulty of native Indonesian game publishers to grow. This is due to the layered taxes by the Indonesian government obtained by Indonesian publishers. So, games sold at Indonesian publishers tend to be more expensive than publishers in countries like Malaysia or Singapore. The weakness of local publishing entities affects the lack of opportunities for local game studios to be able to get distribution channels.

"The algorithms of platforms like Steam or Google Play prioritize games with large promotional budgets. Our local games are losing out not on quality, but on visibility." — Representative of the game developer's association, FGD

E. Regulation as a Framework, Not an Industrial Engine

The regulatory framework for the gaming industry in Indonesia is quite well available. The government has issued several policies such as Law Number 24 of 2019 concerning the Creative Economy and Government Regulation Number 24 of 2022 which places this sector as part of an innovation-based development strategy and intellectual property. The policy direction shows the state's recognition of the potential of the creative economy as a new growth engine. However, in practice, this regulation has not fully functioned as a driving instrument. Many rules are only normative references without being translated into implementation mechanisms that are really able to strengthen the foundation of the national game industry.

One of the fundamental regulations is the issuance of Presidential Decree 19/2024 regarding the acceleration of national game design. This regulation is basically an ideal execution tool to move all government agencies in accelerating the development of the game industry. However, unfortunately, there are three main problems why this framework failed, including (1) the age of this presidential regulation is only one year, because in 2025 all nomenclature of ministries and national agendas will change due to the change of president. This Presidential Regulation has been in development for too long so that it does not have the right momentum (2) unrealistic indicators, such as controlling the domestic market as much as 70% for local games. The indicator does not have a strong basis (3) This regulation does not have a strong direction and is aggravated by poor coordination.

A number of studies show that creative economy governance in Indonesia still faces complex institutional problems. Regulations regulate administrative coordination

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more than creating an ecosystem that supports innovation. Dellyana et al [33] assessed that Indonesia's digital bureaucracy is still in the adaptation stage towards innovative governance. In this context, policies often stop at the procedural level without generating the collaboration between sectors needed to grow the competitiveness of the creative industry.

This limitation is also seen in the policy approach that tends to be symbolic. The government often uses the term creative economy as a form of development commitment but has not prepared a strong institutional tool to drive structural transformation. Fahmi et al [34] shows that creative economy policies in Indonesia function more as an image strategy than as a results-oriented industrial policy. In the gaming industry, this is seen in the lagging behind regulations against rapid changes at the global level. Business model innovations such as continuous services, online platforms, or community-based monetization are evolving faster than the ability of public policy to adapt.

Regulations ultimately act more as a marker of direction than an industry driver. It provides political legitimacy and a strategic framework but has not been able to channel the energy needed to accelerate the growth of the gaming sector. Firmansyah et al. [35] noted that creative economy policies in Indonesia are still facilitative, not transformative. Regulations provide space for industry players but have not encouraged the birth of sustainable innovation. To function effectively, public policies need to be designed to be more adaptive and experimental, with cross-sector learning and collaboration at the heart of governance. That way, regulations can move in tune with the ever-changing dynamics of the digital industry, rather than just being a formal document about the country's ambitions.

"The Presidential Regulation on this game is good on paper, but in the field inter-ministerial coordination is still slow so its implementation has not been felt by business actors." — Representative of Ministry X, FGD.

F. Community as a Support, but Not a Substitute for the System

One of the prominent strengths in the gaming industry ecosystem in Indonesia is the role of community. During limited institutional support, developer communities are often a collective learning space and a real source of support for industry players. Through activities such as game jams, workshops, and online forums, the community provides a forum to share technical experiences, build professional networks, while maintaining a spirit of collaboration among young developers. Study of Loeis, Hubeis, Suroso, & Dirdjosuparto [10] emphasizing the importance of forming a community of practice in the education environment and the game industry as a means of strengthening skills as well as a link between the academic and professional worlds. Communities like this have proven to be able to reduce the skills gap and open up access for new developers to learn from practical experience in the field.

One of the dim developer communities in Indonesia is the Indonesian Game Association (IGA) which has made many initiatives, become a paying game developer, and become a liaison to the government. IGA has succeeded in being the

driving force behind the creation of Presidential Regulation 19/2024. Playing an active role in research and development of local games. Drive mentoring, knowledge transfer, and better shape the gaming ecosystem.

However, over-reliance on communities reveals structural weaknesses in the industrial ecosystem. Community-based activities often rely on individual initiative and a spirit of volunteerism. Limited resources make it difficult for many activities to continue consistently. In a broader context, this phenomenon reflects how Indonesia's creative ecosystem still relies on informal social networks, rather than on well-established institutional support. Research by Yudistia dan Hasrullah [21] shows that small creative companies in Indonesia, including those engaged in digital games, face difficulties in entering formal innovation networks due to weak connections with research institutions and the government. The study highlights the importance of building cross-actor collaborations that connect communities, universities, and the public sector to strengthen the sustainability of digital innovation [21].

The power of the community should not be an excuse for the state to neglect its responsibility in building a system that underpins industrial growth. When institutional support is weak, community energy is indeed able to maintain sustainability, but its capacity is limited in creating structural change. Hilmiana et al [36] emphasizing that collaboration between the creative community, local governments, and the business sector is an important foundation for the creation of a sustainable industrial ecosystem. Through strategically designed partnerships, communities can transform from just a social space to a development partner that plays an active role in strengthening industrial competitiveness.

"Community activities like game clocks run because of the voluntary initiative of their own friends, not because there is consistent institutional support from the government."
— Game developer community member, FGD.

G. Structural Lock-In as the Main Pattern of Industrial Barriers

TABLE II. SUMMARY OF THE SIX INTERLOCKING STRUCTURAL BARRIERS

Barrier	Core Mechanism	Key Interlinkage
1. Micro-scale trap	Reliance on outsourcing/work-for-hire limits IP accumulation.	Reinforced by the financing disconnect and MSME tax incentives that discourage scaling up.
2. Talent mismatch	Vocational education builds technical skills but not managerial/business skills.	Limits studios' ability to convert IP into sustainable business models, deepening the micro-scale trap.
3. Financing disconnect	Financial institutions do not accept IP as loan collateral.	Forces reliance on self-financing, reinforcing outsourcing-

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		based survival strategies.
4. Market access asymmetry	Global publishers dominate distribution and visibility on digital platforms.	Limits revenue that local studios could reinvest in IP, reinforcing the financing disconnect.
5. Regulatory gap	Policies remain normative frameworks without implementation mechanisms.	Fails to correct financing, market, or talent barriers despite legal recognition of the sector.
6. Community over-reliance	Volunteer-based communities substitute for missing institutional support.	Cannot resolve financing or regulatory gaps; only partially buffers their effects.

When viewed as a whole, the obstacles faced by the Indonesian game industry form a systemic pattern that is interlocked. The limitations of business scale, competency gaps, financing difficulties, and weak market access do not stand alone, but interact and strengthen each other. Studi Denny Doly [37] shows that many creative sectors in Indonesia experience an innovation gap due to weak coordination between actors in the digital ecosystem, especially between business actors, financial institutions, and the government. This condition is similar to the findings Awatara et al [38], which highlights that internal barriers such as management and learning capacity contribute to the limited growth ability of small business actors. Both findings indicate that improvement efforts in one aspect are often hampered by the inefficiency of the system as a whole [37], [38].

This lockdown is increasingly complex because it is multidimensional, covering economic, institutional, and cultural aspects. Obstacles in the financing sector, for example, are not only related to capital limitations but also to the perspective on the economic value of digital assets. Wibowo et al [39] found that public and formal institutional perceptions of games in Indonesia are still fraught with cultural bias and low recognition of their educational and economic value. In such conditions, industry players face a double obstacle: they operate in a market that is not yet fully supportive and in a policy system that is not yet ready to accept new forms of innovation. A similar pattern was also observed by Yudistia et al [21], which highlights that weak relationships between the creative sector, educational institutions, and research institutions lead to low integration of knowledge and innovation in the industrial value chain. As a result, the ecosystem's ability to adapt to global changes has become severely limited[21], [39].

IV. CONCLUSION AND RECOMMENDATION

A. Conclusion

This study shows that the difficulty of Indonesia's local game industry to grow and scale cannot be explained solely by limited talent, capital, or market in isolation. On the contrary, these obstacles are structural and systemic, formed

from the interaction of various factors that reinforce each other and create a condition of structural lock-in in the national game industry ecosystem.

Key findings show that most local game studios are trapped in the trap of business scale due to limited financial resilience and defensive business models. This condition is exacerbated by the mismatch of talent competencies with industrial production needs, the weak intellectual property-based financing ecosystem, and the asymmetry of market access that benefits global publishers. Existing regulations, although they demonstrate state commitment, have not fully functioned as an adaptive and transformative industrial policy instrument.

In addition, the role of a strong game developer community is an important support for the sustainability of the industry, but it has not been able to replace the institutionalized support system function. Over-reliance on community-based initiatives signals a weak integration between industrial collective energy and long-term public policy.

Overall, this study confirms that the main challenge of Indonesia's local game industry lies not in the absence of potential, but in the lack of an industrial system that allows talent, financing, regulation, and markets to interact productively and sustainably. Without policy interventions that are able to break this pattern of structural lock-in, the local gaming industry will continue to struggle to upgrade and compete globally. Theoretically, this study contributes an ecosystem-level structural lock-in framework that extends prior single-factor accounts of creative-industry underdevelopment. Practically, it offers policymakers, financial institutions, and industry associations a diagnostic basis for sequencing interventions so that progress in one area, such as financing, is not undone by inaction in another, such as regulation or talent development.

This study is subject to several limitations. The FGD-based qualitative design, while rich in contextual detail, relies on stakeholders who were willing and able to participate in policy-related discussions, which may underrepresent the perspectives of the smallest and most informal studios. The findings are also specific to Indonesia's regulatory and market context and were not tested against a comparative cross-country dataset, so the generalizability of the structural lock-in framework to other emerging game markets remains to be verified. Future research could address these limitations through longitudinal or quantitative surveys of studio performance, structured interview coding with reported inter-coder reliability, and comparative case studies with other Southeast Asian game industries.

B. Recommendation

Based on the findings of the study, the development of Indonesia's local game industry requires a shift in policy approach from sectoral programs to an ecosystem-based systemic approach. It is not enough for policies to focus only on increasing the number of studios or talent but must be directed towards building mechanisms that allow studios to survive, grow, and expand sustainably.

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First, policies are needed that are explicitly aimed at breaking the trap of business scale. This can be done through the development of medium- and long-term funding schemes tailored to the character of the game industry, including IP-based funding, milestone-based funding, and risk-sharing mechanisms between countries and industry players. Without relevant financing instruments, efforts to increase production capacity will be difficult to achieve, for example, through multi-year government grant instruments that match the multi-year production cycle of game development rather than the current single fiscal-year disbursement model.

Second, strengthening the talent ecosystem needs to be directed at developing managerial and strategic competencies, not just technical skills. The integration of vocational education, industry-based training, and real-world production experience is key to producing talent capable of managing game production, monetization, and distribution pipelines professionally. This approach is important for bridging the gap between creativity and business sustainability, for example, through mandatory industry-mentored capstone or apprenticeship modules within vocational and higher-education game curricula, delivered in partnership with studios and industry associations such as the Indonesian Game Association (IGA).

Third, the game industry's development policy needs to be more responsive to the global digital market structure. Support for the visibility and discoverability of local games, whether through digital platforms, national promotional programs, or cross-sector collaborations, is crucial to reduce market access asymmetry. Without intervention on the market side, the large domestic user base will not provide optimal benefits for local producers, such as export-readiness grants, curated participation in international publishing showcases, and a national digital catalog that increases the discoverability of Indonesian-made games on global platforms.

Fourth, regulation of the development of the game industry needs to be transformed from a normative framework to an adaptive and experimental industrial policy instrument. This includes regulatory capabilities to respond more quickly to changing technologies, business models, and global dynamics, and provides a policy testing space that allows for continuous learning and adjustment, including revising unrealistic targets such as the 70% domestic market-share indicator in Presidential Regulation 19/2024 and establishing a standing inter-ministerial coordination body that persists across changes in government.

Finally, the role of the game developer community needs to be strengthened through ongoing institutional support, not just through ad hoc activities. The integration of communities into policy systems and industrial ecosystems can increase collective leverage and ensure that the energy and knowledge that grows at the community level contributes directly to the structural transformation of the industry, for instance, by giving organizations such as the Indonesian Game Association (IGA) a formal, funded role in policy implementation and monitoring, rather than relying solely on their continued voluntary contribution.

REFERENCES

- [1] J. Peri, "Video gaming industry in the US," *International Journal of Science and Research Archive*, vol. 11, no. 1, pp. 1257–1265, Feb. 2024, doi: 10.30574/ijrsra.2024.11.1.0194.
- [2] H.-H. Hsiung, C.-Y. Lin, and G.-Y. Zhu, "The impact of intellectual capital efficiency on value creation in video game industry—An evidence from Taiwan," *Journal of Infrastructure, Policy and Development*, vol. 7, no. 3, Oct. 2023, doi: 10.24294/jipd.v7i3.2340.
- [3] Casey, "This is Not a Software Industry," in *The Video Game Industry: Formation, Present State, and Future*. Oxon, U.K.: Routledge, 2012, pp. 17–33, doi: 10.1386/jgvw.6.1.83_5.
- [4] P. C. Oguguo, "Innovation and intellectual property use in the global video game industry," *SSRN Electronic Journal*, 2024, doi: 10.2139/ssrn.4816102.
- [5] Mihus, "Strengthening intellectual property protection in the EU: IT law and its impact on the computer games industry," *Public Administration and Law Review*, no. 4(20), pp. 20–34, Dec. 2024, doi: 10.36690/2674-5216-2024-4-20-34.
- [6] M. Akbar et al., *Peta Ekosistem Industri Gim Indonesia 2024: Menuju Transformasi Ekonomi Digital Nasional 2025+*. Jakarta, Indonesia: Ministry of Communication and Digital, Republic of Indonesia, 2025. Accessed: Oct. 6, 2025. [Online]. Available: https://www.researchgate.net/publication/396196002_Peta_Ekosistem_Industri_Gim_Indonesia_2024_Menuju_Transformasi_Ekonomi_Digital_Nasional_2025
- [7] M. Akbar et al., *Peta Ekosistem Game Indonesia 2020*. Jakarta, Indonesia: Ditjen Aptika, 2021. Accessed: Oct. 6, 2025. [Online]. Available: https://www.researchgate.net/publication/394347887_Peta_Ekosistem_Industri_Game_2020
- [8] Kemkominfo, *Peta Industri Game Indonesia 2015*. Jakarta, Indonesia, 2015.
- [9] M. Akbar and I. J. Asmara, "Worker in video game industry," *Journal of Games, Game Art, and Gamification*, vol. 7, no. 1, pp. 22–26, Jun. 2022, doi: 10.21512/jggag.v7i1.8569.
- [10] M. Loeis, M. Hubeis, A. I. Suroso, and S. Dirdjosuparto, "A strategy for reducing skills gap for the game development sector of the Indonesian creative industries," *Decision Science Letters*, vol. 12, no. 1, pp. 97–106, 2023, doi: 10.5267/j.dsl.2022.10.003.
- [11] M. Loeis, M. Hubeis, A. I. Suroso, and S. Dirdjosaputro, "Leadership types in support of creativity and innovation within video game studios in Indonesia," *Jurnal Aplikasi Bisnis dan Manajemen*, vol. 9, no. 2, p. 455, May 2023, doi: 10.17358/jabm.9.2.455.
- [12] S. Allifiansyah, "The genesis and self-reliance of Indonesian local game developers as the national creative workers in contemporary Indonesia," *Communication & Society*, vol. 36, no. 4, pp. 67–81, Oct. 2023, doi: 10.15581/003.36.4.67-81.
- [13] J. M. Angelia, A. A. Mulia, and D. A. Pramesti, "Copyright protection of video game for game developer in Indonesia," *Notaire*, vol. 2, no. 2, p. 213, Aug. 2019, doi: 10.20473/ntr.v2i2.13097.
- [14] E. Wartika, "Online video games of Indonesian culture content as one of the creative ways to introduce nation culture values," in *Proc. 2nd Int. Conf. Arts Design Education (ICADE 2019)*, Paris, France: Atlantis Press, 2020, doi: 10.2991/assehr.k.200321.014.
- [15] L. Berg, *Qualitative Research Methods*. Michigan, MI, USA: Pearson, 2001.
- [16] Silverman, *Interpreting Qualitative Data*, 6th ed. London, U.K.: SAGE Publications, 2020. Accessed: Nov. 29, 2025. [Online]. Available: https://books.google.co.id/books/about/Interpreting_Qualitative_Data.html?id=wMyYDwAAQBAJ&redir_esc=y
- [17] Braun and V. Clarke, "Using thematic analysis in psychology," *Qualitative Research in Psychology*, vol. 3, no. 2, pp. 77–101, Jan. 2006, doi: 10.1191/1478088706qp0630a.
- [18] R. F. Mayana and T. Santika, "Intellectual property-based financing scheme for creative industry in Indonesia: Policy, progress, challenges and potential solutions," *Journal of World Intellectual Property*, vol. 28, no. 1, pp. 95–113, Mar. 2025, doi: 10.1111/jwip.12322.
- [19] T. T. H. Tambunan, "Indonesian small businesses and their access to financing," *International Journal of Business Management and Economic Review*, vol. 2, no. 3, pp. 88–105, 2019, doi: 10.35409/IJBMER.2019.88105.
- [20] N. Nareswari, N. D. Nurmasari, and L. Putranti, "Financial constraints of micro, small, and medium-sized enterprises (MSMEs) in the Indonesia creative industries," *Journal of Economics, Business, &*

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- Accountancy Ventura*, vol. 25, no. 3, pp. 312–321, Mar. 2023, doi: 10.14414/jebav.v25i3.3433.
- [21] T. T. Yudistia, H. Hasrullah, M. Yahya, and A. Rahmadiansyah, "Strategic integration of creative and blue economies through digital media: A case study of PT Digipedia Karya Pratama in Indonesia's maritime region," *CHANNEL: Jurnal Komunikasi*, vol. 13, no. 1, pp. 100–112, Apr. 2025, doi: 10.12928/channel.v13i1.1062.
- [22] D. S. Budiarto, M. A. Prabowo, and T. N. Kartika, "Does performance improve sustainability? Empirical research on Indonesian MSMEs," *International Journal of Business and Society*, vol. 24, no. 3, pp. 1252–1265, Dec. 2023, doi: 10.33736/ijbs.6422.2023.
- [23] R. S. Muharam, U. Anita Afrilia, and S. Sudarma, "Integrating vocational education and industry through public policy: Towards excellent and competitive human capital," *International Journal of Multidisciplinary Sciences and Arts*, vol. 4, no. 2, pp. 65–74, Jun. 2025, doi: 10.47709/ijmdsa.v4i2.6097.
- [24] Kalenuk and N. Kuznetsova, "Human capital development in the conditions of creative economy," *Central Ukrainian Scientific Bulletin. Economic Sciences*, no. 4(37), pp. 77–85, Sep. 2020, doi: 10.32515/2663-1636.2020.4(37).77-85.
- [25] Y. R. Langoday, N. Nurrahma, and S. Rijal, "Policy reflection: Kurikulum Merdeka as educational innovation in the era of Society 5.0," *Edunesia: Jurnal Ilmiah Pendidikan*, vol. 5, no. 2, pp. 957–978, Jun. 2024, doi: 10.51276/edu.v5i2.915.
- [26] N. Fitria, "Localizing global goals: Bekasi's paradiplomacy in vocational education cooperation with Japan," *International Journal of Environmental, Sustainability, and Social Science*, vol. 6, no. 4, pp. 888–901, Jul. 2025, doi: 10.38142/ijess.v6i4.1613.
- [27] M. G. Santoso and M. Dachyar, "Modeling the barriers and enablers of intellectual property-based financing scheme for developing economies: An Indonesian context," in *Proc. Int. Conf. Industrial Engineering and Operations Management*, Michigan, MI, USA: IEOM Society International, Mar. 2021, doi: 10.46254/AN11.20210303.
- [28] F. Mahmudah, M. B. Alexandri, and Y. S. Sugandi, "Intellectual property commercialization policy to expand financing options for Indonesian creative economy businesses," *Eduvest—Journal of Universal Studies*, vol. 4, no. 10, pp. 8592–8603, Oct. 2024, doi: 10.59188/eduvest.v4i10.43131.
- [29] M. Rifqi, K. Roisah, and S. N. Lestari, "The prospects of intellectual property rights as a credit collateral: An Indonesia-Singapore comparative study," *Jurnal Hukum Novelty*, vol. 14, no. 2, p. 170, Dec. 2023, doi: 10.26555/novelty.v14i2.a27017.
- [30] L. Suciasih and S. Santoso, "Analysis of strategies for strengthening the online game industry using an industrial cluster approach," *Indonesian Journal of Business Analytics*, vol. 4, no. 4, pp. 1629–1642, Aug. 2024, doi: 10.55927/ijba.v4i4.10833.
- [31] L. Ortiz-Ospino, E. González-Sarmiento, and J. Roa-Perez, "Technology trends in the creative and cultural industries sector: A systematic literature review," *Journal of Innovation and Entrepreneurship*, vol. 14, no. 1, p. 39, Apr. 2025, doi: 10.1186/s13731-025-00497-6.
- [32] M. S. Mahrinasari, S. Bangsawan, and M. F. Sabri, "Local wisdom and government's role in strengthening the sustainable competitive advantage of creative industries," *Heliyon*, vol. 10, no. 10, p. e31133, May 2024, doi: 10.1016/j.heliyon.2024.e31133.
- [33] D. Dellyana, N. Arina, and T. R. Fauzan, "Digital innovative governance of the Indonesian creative economy: A governmental perspective," *Sustainability*, vol. 15, no. 23, p. 16234, Nov. 2023, doi: 10.3390/su152316234.
- [34] F. Z. Fahmi, P. McCann, and S. Koster, "Creative economy policy in developing countries: The case of Indonesia," *Urban Studies*, vol. 54, no. 6, pp. 1367–1384, May 2017, doi: 10.1177/0042098015620529.
- [35] Y. Firmansyah, W. Rafdinal, A. M. Sayuti, C. Juniarti, and N. Hardiyanto, "Cultural innovation in Indonesia as a development of the creative economy," *Jurnal Ekonomi, Bisnis & Entrepreneurship*, vol. 18, no. 1, pp. 87–99, May 2024, doi: 10.55208/jebe.v18i1.539.
- [36] H. Hilmiana, I. Soemaryani, and J. Joeliaty, "Strategic partnership model on creative economy development in Indonesia based on local arts and culture in Bandung Regency," *International Journal of Creative Industries*, vol. 2, no. 3, pp. 1–14, Mar. 2020, doi: 10.35631/IJCREI.23001.
- [37] P. D. Doly, "Bridging the innovation gap: Strategic digital transformation in Indonesia's creative industries," *Journal of Social Research*, vol. 4, no. 9, pp. 2407–2423, Sep. 2025, doi: 10.55324/josr.v4i9.2737.
- [38] G. P. D. Awatara, A. Hamdani, S. Fatonah, L. N. Susila, and A. Gunardi, "Analysis of internal barriers toward the growth of start up business in Indonesia," *International Journal of Business and Economic Development*, vol. 6, no. 1, Apr. 2018, doi: 10.24052/IJBED/V06IS01/C-04.
- [39] T. Wibowo, A. N. C. Pee, and I. Ahmad, "The barriers of using video games as a media for teaching and learning purposes: A case study in Indonesia," *Journal of Informatics and Telecommunication Engineering*, vol. 7, no. 2, pp. 587–596, Jan. 2024, doi: 10.31289/jite.v7i2.11333.
- [40] P. Chung, "Revisiting creative industry models for game industry development in Southeast Asia," in *Global Game Industries and Cultural Policy*, A. Fung, Ed. Cham, Switzerland: Palgrave Macmillan, 2016, pp. 125–151, doi: 10.1007/978-3-319-40760-9_7.