

Digital Platform Innovation and Reconfiguration of the Koi Fish Trade: A Case Study of Masterkoibot in Indonesia

Nursalim^{1*}, Ulil Hartono², Mohammad Wasi³

^{1,2,3}Master of Innovation Management Program, Graduate School, Universitas Negeri Surabaya, Surabaya, Indonesia

Abstract

In the rapidly evolving landscape of the 21st century, innovation is no longer a peripheral activity but the core of organizational competitiveness and sustainability. This paper synthesizes the key elements necessary for building and leading teams and a culture that fosters innovation. Drawing upon established literature and contemporary case studies, this paper explores the foundational principles of innovative team design—namely diversity, psychological safety, and T-shaped skills—and their interplay. It further examines the practical techniques for facilitating collaborative creativity and the leadership models that empower innovators. The paper also delves into the critical role of organizational architecture, specifically agile and ambidextrous structures, in enabling both efficiency and exploration. Finally, by analyzing case studies of successful Indonesian family firms, this research identifies the unique challenges and strategies for cultivating an innovation culture in a specific socio-cultural context. The findings underscore that sustainable innovation is a systemic outcome of integrating these elements, requiring leaders to act as architects, facilitators, and servants to their teams. Limitations of this synthesis are acknowledged, and avenues for future empirical research are proposed.

Keywords: digital platform innovation; koi fish trade; online auction; digital trust; reintermediation

JEL Code: D44; D82; L81

*Corresponding author
Email: nursalim.nursalim@gmail.com

INTRODUCTION

Digital technology has fundamentally changed the architecture of markets (Cennamo et al., 2020; Kretschmer et al., 2022; Parker et al., 2016). Digital platforms no longer merely function as additional communication channels but increasingly organize interactions among user groups, set exchange rules, reduce search and transaction costs, and create new forms of

© Authors. Published by Fakultas Ekonomi Universitas Negeri Surabaya, Indonesia. This article is published under Creative Commons Attribution License (Creative Commons: Attribution-NonCommercial 4.0 International) <https://creativecommons.org/licenses/by/4.0/legalcode>.

market governance (Gawer, 2021; Kretschmer et al., 2022). In online markets, platforms act simultaneously as market makers and regulators through infrastructure design and rules that enable independent sellers and buyers to interact (Parker et al., 2016; Rietveld & Schilling, 2021). Recent studies on Indonesian e-commerce SMEs show that adopting platform business models can improve operational efficiency, expand market reach, and strengthen customer loyalty (Agustin et al., 2024), while digital platform use also enhances entrepreneurial success through customer engagement and operational efficiency (Tarmizi et al., 2023).

Nevertheless, information asymmetry remains a major challenge. Sellers and buyers do not always possess equal information about product quality, transaction partner characteristics, or platform reliability (Rietveld & Schilling, 2021). In digital markets, seller uncertainty, product uncertainty, and platform uncertainty can influence users' decisions to participate in transactions (Rietveld & Schilling, 2021; Tamba & Sulisty, 2025). These problems become more complex in markets trading heterogeneous and difficult-to-standardize products. The koi fish market is a relevant example. Unlike relatively uniform consumer products, koi fish have highly diverse biological and aesthetic characteristics. Their value can be influenced by variety, body shape, skin quality, color, pattern, size, lineage, rarity, breeder reputation, and the subjective preferences of hobbyists (Arida et al., 2025; Saputra et al., 2025). Therefore, determining the value and price of koi fish cannot be fully equated with products that have objective standards. In many cases, purchasing decisions are also influenced by experience, hobbyist knowledge, social networks, seller reputation, and personal preferences (Gupta & Sharma, 2021; Hund et al., 2021). In the Indonesian context, research by Arida et al. (2025) shows that the marketing margin for ornamental fish varies greatly across distribution channels, with digital channels tending to be more efficient in expanding the market and increasing product accessibility. Saputra et al. (2025) also found that ornamental fish businesses in Bandung actively use social media to increase product visibility and expand market networks.

Traditionally, the koi fish trade involves relationships among breeders, dealers, intermediaries (*blantik*), and hobbyists. A similar pattern is also found in the Indonesian ornamental fish industry, where farmers, collectors, and retailers form a long and complex supply chain (Arida et al., 2025). Information regarding fish availability, quality, and price often circulates through personal networks, direct farm visits, communities, dealers, and informal communication. This system can create efficiency through social relationships and trust but also potentially generates information asymmetry (Rietveld & Schilling, 2021). Buyers, for instance, may have limited information regarding the actual quality of the fish or prevailing market

prices. Conversely, breeders or sellers may face limited access to potential buyers outside their geographic and social networks (Parker et al., 2016; Rietveld & Schilling, 2021).

The emergence of digital auction platforms presents a different market architecture. Platforms enable the aggregation of sellers and buyers, broader product information display, recording of bidding activity, provision of transaction history, and development of reputation systems (Parker et al., 2016; Rietveld & Schilling, 2021). Such platforms also enable auction mechanisms in which prices emerge from bidding competition, making them relevant for heterogeneous products whose value is difficult to standardize (Parker et al., 2016). Digital platforms also potentially alter the structure of intermediaries. In conventional view, digitalization is often associated with disintermediation—the removal of intermediaries—because producers can connect more directly with consumers. However, the development of digital markets shows that technology does not always eliminate intermediaries. In some cases, intermediaries actually adapt and gain new roles in the digital ecosystem. This phenomenon is known as reintermediation (Kretschmer et al., 2022; Rietveld & Schilling, 2021).

This phenomenon is relevant in the context of Masterkoibot, a koi fish auction platform that connects breeders, dealers, blantik, and hobbyists in a single digital ecosystem. The platform was developed partly in response to transaction problems, such as fish that had been paid for but not delivered or fish received not matching the offered specifications. Masterkoibot is interesting to study because its innovation is not merely the digitalization of product listings. Sellers can independently input information about the fish, including type, size, photos, videos, and auction closing time. Bidding activity is then integrated through WhatsApp, Telegram, Android, and iOS applications. In addition, the platform has developed various governance mechanisms, such as ratings, transaction history, identity verification, escrow accounts, deposits for new bidders, and device identification. In Indonesia, similar mechanisms are also applied on major e-commerce platforms, where data security and user trust have been proven to significantly influence purchasing decisions (Tamba & Sulisty, 2025).

Literature on digital platforms has largely discussed large-scale marketplaces, labor platforms, the sharing economy, and conventional e-commerce. However, studies on platform innovation in hobby-based markets with hybrid value characteristics remain relatively limited (Hund et al., 2021; Nambisan et al., 2019). The koi fish market is an interesting context because fish value is not solely formed by economic considerations. It also relates to aesthetics, prestige, competition, community identity, experience, and personal preferences (Gupta & Sharma, 2021; Hund et al., 2021). Fauziah et al. (2025) note that technology affects traditional markets in two ways:

increasing transaction efficiency and opening markets for traders who can adapt, but also creating difficulties for those who have not mastered technology.

Based on these conditions, this study poses the following question: How does digital platform innovation reconfigure the trade system, price formation, information asymmetry, and trust mechanisms in the Indonesian koi fish market? This study offers three main contributions. First, it extends the study of digital platform innovation into the context of hobby-based markets and heterogeneous biological products. Second, it shows that digitalization does not always result in disintermediation but can produce reintermediation (Kretschmer et al., 2022; Rietveld & Schilling, 2021). Third, it offers a conceptual framework on how digital platform innovation integrates market access, auction mechanisms, information transparency, and trust infrastructure in reconfiguring the traditional trade system.

LITERATURE REVIEW

Digital Platform Innovation and Market Reconfiguration

Digital platform innovation is not merely about using information technology to accelerate existing transactions. Platforms create infrastructure that enables various user groups to interact while establishing rules, standards, and governance mechanisms (Gawer, 2021; Kretschmer et al., 2022; Tiwana et al., 2010). In the platform economy, platform providers do not always own the products being traded. However, platforms play an important role in organizing exchanges between sellers and buyers (Eisenmann et al., 2006; Rochet & Tirole, 2003). A study by Agustin et al. (2024) on Indonesian e-commerce SMEs shows that adopting a platform business model can improve operational efficiency, expand market reach, and strengthen customer loyalty.

In the context of the koi fish trade, platform innovation can be understood as a process of market reconfiguration. Platforms do not merely move transactions from physical space to digital space; they change who can access the market, how information is disseminated, how prices are formed, and how trust is built (Callon, 1998; MacKenzie & Millo, 2003). Digitalization enables previously geographically fragmented markets to become more connected. However, market openness does not always produce fully symmetric conditions. Information asymmetry can still occur in different forms, particularly regarding product quality, seller reputation, and the reliability of digital information (Akerlof, 1970; Brynjolfsson & Smith, 2000; Rietveld & Schilling, 2021).

Information Asymmetry and Market Transparency

Information asymmetry occurs when one party in a transaction possesses information that the other party does not have or cannot easily access

(Akerlof, 1970). In digital trade, buyers often face uncertainty regarding product quality and seller reliability (Pavlou & Gefen, 2004). In the koi market context, information asymmetry has several dimensions. Buyers need to assess whether the fish received matches the photos and videos, whether the fish size matches the description, whether the seller can be trusted, and whether the formed price reflects the fish quality (Balon, 2004). Because buyers cannot always conduct physical inspection before a transaction, the quality of information provided by the platform becomes crucial (Pavlou & Gefen, 2004).

Digital platforms can enhance transparency by providing information about products, transaction history, reputation, and market activity. However, transparency does not automatically eliminate uncertainty. Digital information still has limitations, especially when products have visual and biological characteristics that are difficult to represent perfectly through photos or videos (Dellarocas, 2003; Resnick et al., 2000).

Digital Trust and Reputation Infrastructure

Trust is a crucial condition in transactions between parties who do not know each other directly and are located in different geographic locations (McKnight et al., 2002; Pavlou & Gefen, 2004). In digital marketplaces, rating systems, reviews, reputation, and transaction history become important instruments for signaling the past behavior of market participants (Dellarocas, 2003; Resnick et al., 2000; Shapiro, 1983). Similar findings are also reported by Tamba and Sulisty (2025) on TikTok Shop and Facebook Marketplace in Indonesia, where trust is a key predictor of purchasing decisions. Thus, digital reputation can function as an institutional mechanism that extends trust beyond traditional social networks (Kollock, 1999).

However, trust in digital platforms has a paradox. As buyers and sellers increasingly trust each other, there is a possibility they will conduct transactions directly outside the platform. Therefore, platforms need to continuously provide added value in terms of security, convenience, governance, and transaction infrastructure to remain relevant as intermediaries (Ba & Pavlou, 2002). In the context of Masterkoibot, trust is not only built through ratings. The platform has developed a layered system that includes identity verification, transaction history, ratings, deposits, escrow accounts, account blocking, and device identification.

Auction-Based Price Formation and Collective Behavior

Unlike fixed-price systems, auctions allow prices to form through competition among participants. This mechanism is highly relevant for heterogeneous products that are difficult to assign a single market value (Klemperer, 1999; Milgrom & Weber, 1982). In an auction system, prices can reflect the willingness to pay of various participants. However, price

formation is not only influenced by objective product characteristics (Bajari & Hortacsu, 2004). Digital markets can also generate collective behavior. When participants see many people bidding on a product, this activity can signal that the product has a certain quality or value. Other participants may then be encouraged to bid as well (Ariely & Simonson, 2003; Ku et al., 2005).

In the context of koi fish, this mechanism can be reinforced by the hobby-based nature of the market. Purchasing decisions are not solely based on economic calculations but are also influenced by aesthetic interest, competition, rarity, and emotional involvement (Belk, 1995; Gupta & Sharma, 2021). Therefore, auction prices can be understood as the result of interaction among: Fish Quality + Seller Reputation + Bidding Competition + Market Signals + Collective Behavior.

Conceptual Framework

Based on the literature review and preliminary findings from the Masterkoibot case, this study develops the following conceptual framework: Digital Platform Infrastructure Innovation → Market Access Expansion + Information Integration + Auction Mechanism + Trust Infrastructure → Intermediary Reconfiguration + Price Discovery + Reduction of Information Asymmetry → More Integrated and Adaptive Koi Trade Ecosystem. The framework also acknowledges feedback effects. Digitalization can create new opportunities but simultaneously give rise to new challenges such as bid manipulation, specification mismatch, logistics uncertainty, and supply sustainability.

Because this study is qualitative and exploratory, the following propositions are formulated as analytical guides rather than statistical hypotheses:

- H1: Digital platform innovation expands market access in hobby-based markets.
- H2: Digitalization in hobby-based markets leads to reintermediation rather than disintermediation.
- H3: Auction mechanisms shift price formation from fixed prices to competitive price discovery.
- H4: Digital trust infrastructure reduces transaction uncertainty but does not eliminate information asymmetry.
- H5: Hybrid market governance challenges persist in product representation, logistics, and seller sustainability.

RESEARCH METHOD

This study employs a qualitative approach with a case study design (Yin, 2018). This approach was chosen because the study aims to understand the processes, mechanisms, and meanings underlying the transformation of the

koi fish trade through digital platform innovation. The study is not directed at testing predetermined causal relationships but at exploring how market changes occur in a real-world context (Yin, 2018).

The selected case is Masterkoibot, a digital koi fish auction platform operating from Bondowoso, Indonesia. The platform brings together sellers and buyers from various regions in Indonesia and has a number of users from abroad. According to the informant, the platform had approximately 3,170 sellers and around 124,000 bidders at the time of the interview. Masterkoibot was selected because it has developed several forms of innovation, including a fish listing system, provision of photos and videos, digital auction mechanisms, integration with communication groups, rating systems, transaction history, identity verification, escrow accounts, bidder deposits, and device identification. Such innovations align with the findings of Tarmizi et al. (2023), which show that the use of digital platforms significantly enhances entrepreneurial success, particularly through digital customer engagement and operational efficiency.

Primary data were obtained through semi-structured in-depth interviews with Erfan Febriantoro, the manager of the Masterkoibot platform (Corbin & Strauss, 2008). The interviews explored various aspects, including: (1) background of platform establishment; (2) business and social objectives; (3) user characteristics; (4) transaction mechanisms; (5) price formation; (6) information transparency; (7) trust building; (8) risk mitigation; (9) bid manipulation issues; (10) logistics and distribution; (11) changes in market behavior; and (12) vision for the future koi trade system. The informant was selected because he possesses direct knowledge of the development, operations, challenges, and direction of platform innovation.

Interview data were analyzed using thematic analysis through four stages (Braun & Clarke, 2021; Gioia et al., 2013). First, data familiarization, which involved reading the interview transcripts repeatedly. Second, initial coding, identifying issues related to market access, intermediaries, prices, information, trust, risk, logistics, and digitalization. Third, theme development, grouping interrelated codes into broader patterns. Fourth, theoretical interpretation, connecting empirical findings with concepts of digital platform innovation, information asymmetry, trust, reputation, and digital intermediation. From this process, five main themes emerged: (1) market access expansion through digitalization; (2) reintermediation of traditional market actors; (3) price formation through auction mechanisms; (4) trust infrastructure and platform governance; and (5) sustainability challenges of hybrid markets.

This study has limitations because it is primarily based on the perspective of a single key informant. Therefore, the findings should be

understood as an exploration of platform innovation mechanisms, not as a generalization for all actors in the Indonesian koi industry.

FINDINGS AND DISCUSSION

From Local Trading Networks to a Broader Digital Market

One of the most significant changes produced by Masterkoibot is the expansion of market access (Cennamo et al., 2020; Parker et al., 2016). In the traditional system, the koi market tends to be limited by geographic location and social networks. Buyers must come directly to farms, dealers, or intermediaries to see available fish collections (Balon, 2004). Digital platforms change this structure by aggregating various sellers and buyers into a single market space (Parker et al., 2016). Saputra et al. (2025) found that ornamental fish businesses in Bandung actively use Instagram, WhatsApp, Facebook, and TikTok for transactions, increasing product visibility and expanding market networks without geographic boundaries. According to the informant, Masterkoibot has thousands of sellers and more than one hundred thousand bidders with market coverage across Indonesia and a number of users from Europe, Singapore, and Malaysia.

This transformation is not only geographic. Sellers can independently input fish information, including name, type, size, photos, latest videos, and determine auction closing time. Auction activity can then take place in an integrated manner through WhatsApp, Telegram, Android, and iOS. Bids made through one channel can be confirmed and displayed on other channels. Thus, the platform creates a distributed market space where location constraints are increasingly reduced (Parker et al., 2016). Breeders can gain broader access to hobbyists, while buyers can view fish options from various sellers and regions.

However, expanded access does not mean conventional channels have completely disappeared. The informant emphasized that sellers can still conduct transactions conventionally while selling through the platform. This finding indicates the emergence of a hybrid market structure, rather than a total replacement between physical and digital markets (Chircu & Kauffman, 2000; Kretschmer et al., 2022).

Reintermediation: Not Eliminating Blantik, but Changing Their Role

One of the most interesting findings of this study is that digitalization does not automatically eliminate traditional intermediaries (Chircu & Kauffman, 2000; Rietveld & Schilling, 2021). Masterkoibot does enable breeders to connect more directly with buyers. However, according to the informant, some of the highest-performing sellers on the platform actually come from the ranks of blantik or dealers. The informant explained that the top two sellers annually are blantik who do not always own fish from their

own cultivation but possess the ability to exploit trading opportunities through digital platforms.

This finding indicates a process of reintermediation (Chircu & Kauffman, 2000). In the traditional system, intermediaries play an important role in connecting breeders with buyers and controlling access to information and market networks (Giaglis et al., 2002). In the digital ecosystem, this role changes. Intermediaries no longer rely solely on control over physical access or market information but need to build new capabilities in product procurement, reputation management, digital communication, and utilization of platform technology (Chircu & Kauffman, 2000; Rietveld & Schilling, 2021).

Thus, digitalization not only creates the possibility of: Breeder → Buyer, but also enables: Breeder → Platform → Dealer/Blantik → Buyer, or: Dealer/Blantik → Platform → Hobbyist. This change indicates that digital innovation is more appropriately understood as a process of reorganizing market relationships rather than merely cutting the distribution chain.

Figure 1.

Reconfiguration of the Koi Fish Trade System

Traditional Configuration:

Breeder → Blantik/Dealer → Hobbyist/Buyer

Platform-Based Configuration:

Breeder / Dealer/Blantik / Community → Masterkoibot Digital Platform → Buyer/Hobbyist

Platform Functions: information aggregation, digital auction, reputation, verification, transaction governance, and market access expansion.
Source: Author's elaboration based on interview results.

From Fixed Prices to Price Discovery through Auctions

The second transformation concerns the price formation mechanism (Klemperer, 1999; Milgrom & Weber, 1982). According to the informant, koi fish do not have a single fixed price. Their value is strongly influenced by quality, assessment standards, breeder reputation, and the subjective preferences of hobbyists. Masterkoibot uses an open bid mechanism with a starting price and specified bid increments. The auction takes place within a predetermined time frame, allowing various bidders to compete for the fish (Bajari & Hortacsu, 2004). According to the informant, this mechanism creates prices considered more transparent than the fixed-price system. A fish can start at a low opening price but through bidding competition can reach a much higher price.

The findings show that price formation is influenced by at least four factors.

1. **Fish Quality.** Quality is the main factor. The informant explained that hobbyists increasingly possess knowledge of quality standards for various koi types. The availability of education through social media and various information sources makes buyers more critical in assessing the fish they will bid on.
2. **Seller Reputation.** The platform provides information about seller activity and ratings obtained from previous transactions (Dellarocas, 2003; Resnick et al., 2000; Shapiro, 1983). Reputation serves as a signal to potential buyers regarding the seller's reliability.
3. **Bidding Competition.** Auctions allow prices to form through competition. Buyers do not simply accept the price set by the seller but actively determine the maximum value they are willing to pay (Klemperer, 1999).
4. **Collective Behavior and FOMO.** A particularly interesting finding is the emergence of the fear of missing out (FOMO) phenomenon (Ariely & Simonson, 2003; Gupta & Sharma, 2021; Ku et al., 2005). According to the informant, when a fish receives many bids, this activity can attract the attention of other bidders. They become curious about why the fish is in high demand and then also place bids. Thus, market activity itself becomes a source of information.

The price of koi fish in the digital auction system is not merely a reflection of the fish's objective quality but is a result of collective market construction. The price formation model that emerges can be formulated as:
Auction Price = Fish Quality + Seller Reputation + Bid Competition + Market Signals + Collective Behavior

Digital Trust Infrastructure as a Platform Governance Mechanism

Trust is a major theme that emerged in the study (McKnight et al., 2002; Pavlou & Gefen, 2004). Masterkoibot was developed partly due to fraud problems, such as buyers having made payments but fish not being delivered or fish received not matching the offer specifications. To address these problems, the platform developed several layers of trust infrastructure (Ba & Pavlou, 2002; Pavlou & Gefen, 2004).

First, the platform provides information about seller performance (Dellarocas, 2003; Resnick et al., 2000). Sellers have levels such as newbie, silver, gold, and platinum. These levels are related to points earned from transaction value, number of transactions, and buyer ratings.

Second, there is an identity verification mechanism (Pavlou & Gefen, 2004). Sellers are required to submit their ID card, a photo of themselves with the ID card, and a bank account that must match the registered identity. If there is a discrepancy, the system can reject or block the account.

Third, the platform provides an escrow account service (rekening penjamin) as a transaction protection option (Ba & Pavlou, 2002).

Fourth, the platform monitors bidder behavior (Dellarocas, 2003). The platform has experienced bid and run problems, a condition where a bidder wins an auction but does not make payment. According to the informant, in mid-2025 the value of bid and run in one month reached more than IDR 420 million. After investigation, indications of jockey activity from new accounts were found. In response, the platform implemented a deposit policy of IDR 200,000 for new bidders and device ID identification to prevent perpetrators from using the same device with different numbers. After the policy was implemented, the bid and run value reportedly decreased significantly.

This finding indicates that platform innovation is not only technological innovation. The platform also carries out institutional and governance innovation through a combination of technology, rules, incentives, sanctions, verification, and reputation systems.

Table 1.
Masterkoibot Digital Trust Infrastructure

Trust Mechanism	Function	Problem Addressed
Seller rating	Provides signal of transaction performance	Uncertainty about seller
Transaction history	Provides information on past behavior	Information asymmetry
Seller level	Differentiates user performance	Reputation assessment
Identity verification	Ensures user identity	Fraud prevention
Escrow account	Provides transaction protection	Payment and delivery risk
Bidder deposit	Increases participant commitment	Bid and run
Device identification	Detects repeat offenders	Jockeys and manipulation
Account blocking	Provides sanction	Opportunistic behavior

Source: Author's analysis based on interview data.

Information Transparency Does Not Mean the Disappearance of All Asymmetry

Although the platform increases information availability, information asymmetry does not completely disappear (Akerlof, 1970; Brynjolfsson & Smith, 2000). Masterkoibot provides fish descriptions, photos, videos, seller ratings, transaction history, and average transaction information. However, the informant acknowledged that problems remain in ensuring consistency between digital representation and the actual condition of the fish. Fish size may differ from the displayed information. In addition, fish color may appear different due to camera quality, lighting, or the device used. The informant even identified the development of artificial intelligence technology as an opportunity to help standardize and verify fish quality in the future.

This finding shows that digitalization indeed increases transparency but does not produce perfect information (Brynjolfsson & Smith, 2000). Fauziah et al. (2025) note that technology affects traditional markets in two ways: increasing transaction efficiency and opening markets for traders who can adapt, but also creating difficulties for those who have not mastered technology. This relationship can be explained as follows: Digitalization → Broader Information Availability → Reduction of Traditional Information Asymmetry → Emergence of New Digital Uncertainty. In other words, the platform does not eliminate information problems but changes their form.

Hybrid Market Governance Challenges: Manipulation, Logistics, and Seller Sustainability

The Masterkoibot case also shows that platform innovation creates new governance challenges (Kretschmer et al., 2022; Plantin et al., 2018). The first challenge is the potential for manipulation through jockeys or inauthentic bidding behavior. Such activity can threaten the credibility of the auction mechanism and user trust (Dellarocas, 2003).

The second challenge is logistics (Ashley, 2007; Berka, 1986). Unlike ordinary e-commerce products, koi fish are living creatures. The delivery process carries biological risks and requires special handling. According to the informant, to date, the delivery process is still largely done manually because there is no koi fish expedition system widely integrated with information systems or APIs like general product expeditions. Delivery can be done by train, bus, or special expedition. The risk of fish dying or experiencing problems during the journey under certain conditions remains the seller's responsibility, with verification mechanisms such as unboxing documentation.

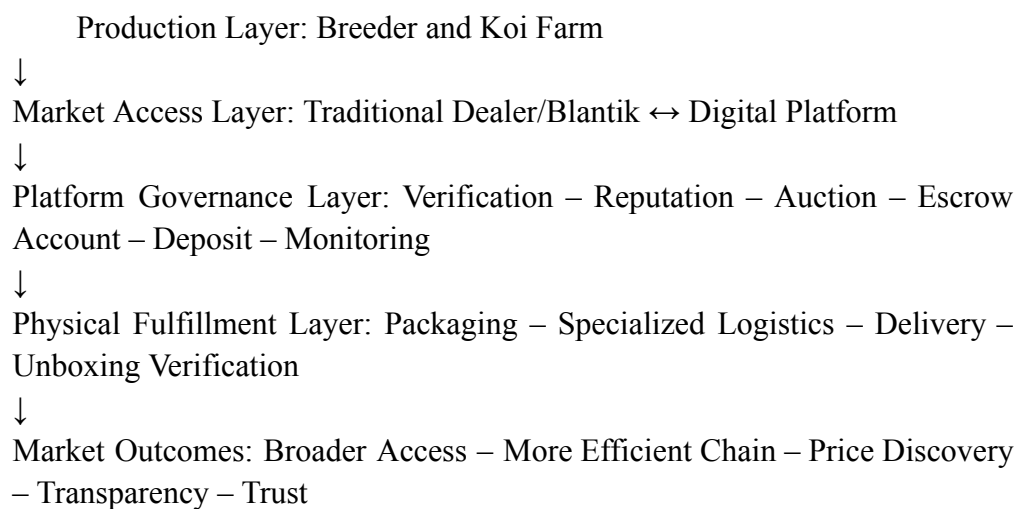
The third challenge is supply sustainability. The informant explained that a seller can become a top seller for several months but then become inactive because fish stock runs out or is unavailable. This shows that digital platforms remain dependent on the physical production system. Technology can digitalize information and transactions, but fish production, stock availability, biological risks, and distribution remain in the physical world

(Ashley, 2007). Therefore, future platform development requires stronger integration among digital marketplace infrastructure, quality verification systems, stock information, specialized logistics, breeder production systems, and community knowledge and standardization.

Toward an Integrated Koi Trade Ecosystem

According to the informant, an ideal koi trade system requires a combination of quality cultivation, efficient marketing chains, utilization of digital technology, conventional channels, and strengthening of community institutions (Hund et al., 2021; Parker et al., 2016). This view suggests that the future of the koi trade should not be understood as a choice between traditional or digital markets. Rather, the findings point to the formation of an integrated hybrid market ecosystem.

Figure 2.
Integrated Koi Trade Ecosystem



Source: Author's elaboration.

This framework shows that digital platforms can become organizing nodes connecting various previously fragmented market activities.

CONCLUSIONS

This study examines how digital platform innovation reconfigures the koi fish trade through a case study of Masterkoibot in Indonesia. The findings show that Masterkoibot does not merely function as a digital sales channel. The platform acts as a market organizing infrastructure that changes relationships among breeders, dealers, blantik, and hobbyists.

There are five main findings. First, the platform expands market access by connecting geographically dispersed sellers and buyers through various integrated digital channels. Second, digitalization produces a process of reintermediation, not total elimination of traditional intermediaries. Breeders may be closer to buyers, but dealers and blantik can also adapt and utilize the platform as a new trading channel (Chircu & Kauffman, 2000). Third, the platform reconstructs price formation through a competitive auction mechanism. Prices are formed through interaction among fish quality, seller reputation, bidding competition, market signals, and collective behavior such as FOMO (Gupta & Sharma, 2021; Klemperer, 1999). Fourth, trust is built through a combination of social and technological mechanisms, such as ratings, transaction history, identity verification, escrow accounts, bidder deposits, and device identification (Dellarocas, 2003; Pavlou & Gefen, 2004). Fifth, digitalization reduces some traditional information asymmetry but does not eliminate uncertainty. New challenges emerge in the form of digital product representation, bid manipulation, limited logistics integration, and seller stock sustainability (Akerlof, 1970; Rietveld & Schilling, 2021).

Based on these findings, digital platform innovation in hobby-based markets can be understood as a process of market reconfiguration, not merely a process of transaction digitalization. Platforms change market access, inter-intermediary relationships, price formation mechanisms, trust systems, and governance. The main theoretical contribution of this study is the development of the concept of platform-based hybrid market transformation, a condition in which digital technology does not fully replace traditional market actors but reorganizes their relationships and functions within a new ecosystem.

Practically, the findings show that platform success does not only depend on the number of users and transaction volume. Platforms also need to strengthen verification technology, quality standardization, logistics integration, stock visibility, and manipulation detection systems. For breeders and traditional intermediaries, digitalization should not be viewed as a threat. Conversely, the platform economy can open new opportunities for actors who can adapt to technology, build digital reputation, and develop business models suited to changing market behavior.

LIMITATION & FURTHER RESEARCH

This study has several limitations. First, the study is primarily based on in-depth interviews with a single key informant, namely the platform manager. Therefore, the research perspective is still dominated by the platform provider's viewpoint. The study has not directly integrated the experiences of breeders, blantik, dealers, buyers, hobbyists, logistics service providers, or koi community managers. Second, the study uses a single platform case. Therefore, the findings cannot be automatically generalized to all digital marketplaces or all ornamental fish markets. Third, the study has not used quantitative transaction data. Thus, the relationships among fish quality, seller reputation, number of bidders, bidding activity, and final price have not been statistically tested.

Future research can conduct multi-party interviews involving breeders, blantik, dealers, hobbyists, bidders, problematic sellers, community managers, and logistics service providers. Comparative research can also be conducted by comparing several koi trading or auction platforms. In addition, quantitative research can analyze the factors forming auction prices using transaction data, such as fish characteristics, seller reputation, number of bidders, auction duration, opening price, bid increments, and bidding activity intensity. Another potential research direction is the use of artificial intelligence for koi quality recognition, automatic size measurement, color standardization, manipulation detection, and identification of suspicious bidding activity. Research can also develop an integration model between digital auction platforms and specialized live fish logistics systems and product traceability systems (Moe, 1998; Regattieri et al., 2007).

AUTHOR CONTRIBUTION

Nursalim: Conceptualization, research design, data collection, qualitative data analysis, literature review, initial draft writing, and manuscript revision.

Ulil Hartono : Literature review, theoretical framework development, coding and thematic analysis validation, data interpretation, and manuscript editing.

Mohammad Wasil: Data collection support, interview transcription, documentation, visualization (figures and tables), reference management, and manuscript proofreading.

All authors have read and approved the final version of the manuscript.

Declaration of interest

The author declares that there are no financial interests or personal relationships that could have influenced the research reported in this article.

Acknowledgements

The author would like to thank the management of Masterkoibot for their openness and willingness to share information regarding the development, operations, challenges, and future direction of the koi fish digital auction platform. The author also expresses appreciation to the Master of Innovation Management Program, Graduate School, Universitas Negeri Surabaya, for the academic environment that supported the development of this research.

References

- Agustin, A. T., Al Hafidz, M. Z., Susanti, S., & Sanjaya, V. F. (2024). Inovasi model bisnis platform untuk meningkatkan keunggulan kompetitif teknologi digital di industri ecommerce Indonesia: Studi kasus UMKM [Platform business model innovation to enhance digital technology competitive advantage in the Indonesian e-commerce industry: A case study of SMEs]. *Labs: Jurnal Bisnis dan Manajemen*, 29(4), 19–24. <https://doi.org/10.57134/labs.v29i4.107>
- Akerlof, G. A. (1970). The market for “lemons”: Quality uncertainty and the market mechanism. *The Quarterly Journal of Economics*, 84(3), 488–500. <https://doi.org/10.2307/1879431>
- Arida, R. W., Sholihin, & Maulana, J. I. (2025). Evaluasi margin pemasaran ikan hias melalui saluran pemasaran dan media sosial [Evaluation of ornamental fish marketing margins through marketing channels and social media]. *SEIKO: Journal of Management & Business*, 8(1), 21–28.
- Ariely, D., & Simonson, I. (2003). Buying, bidding, playing, or competing? Value assessment and decision dynamics in online auctions. *Journal of Consumer Psychology*, 13(1–2), 113–123. https://doi.org/10.1207/S15327663JCP13-1&2_10
- Ashley, P. J. (2007). Fish welfare: Current issues in aquaculture. *Applied Animal Behaviour Science*, 103(3–4), 221–233. <https://doi.org/10.1016/j.applanim.2006.05.020>
- Ba, S., & Pavlou, P. A. (2002). Evidence of the effect of trust building technology in electronic markets: Price premiums and buyer behavior. *MIS Quarterly*, 26(3), 243–268. <https://doi.org/10.2307/4132332>

- Bajari, P., & Hortacısu, A. (2004). Economic insights from internet auctions. *Journal of Economic Literature*, 42(2), 457–486. <https://doi.org/10.1257/0022051042177685>
- Balon, E. K. (2004). About the oldest domesticates among fishes. *Journal of Fish Biology*, 65(Suppl. A), 1–27. <https://doi.org/10.1111/j.0022-1112.2004.00563.x>
- Belk, R. W. (1995). *Collecting in a consumer society*. Routledge.
- Berka, R. (1986). *The transport of live fish: A review* (FAO Fisheries Technical Paper No. 269). Food and Agriculture Organization of the United Nations.
- Braun, V., & Clarke, V. (2021). *Thematic analysis: A practical guide*. Sage.
- Brynjolfsson, E., & Smith, M. D. (2000). Frictionless commerce? A comparison of Internet and conventional retailers. *Management Science*, 46(4), 563–585. <https://doi.org/10.1287/mnsc.46.4.563.12061>
- Callon, M. (Ed.). (1998). *The laws of the markets*. Blackwell.
- Cennamo, C., Dagnino, G. B., Di Minin, A., & Lanzolla, G. (2020). Managing digital transformation: Scope of transformation and modalities of value co-generation and delivery. *California Management Review*, 62(4), 5–16. <https://doi.org/10.1177/0008125620913245>
- Chircu, A. M., & Kauffman, R. J. (2000). Reintermediation strategies in business-to-business electronic commerce. *International Journal of Electronic Commerce*, 4(4), 7–41. <https://doi.org/10.1080/10864415.2000.11044201>
- Corbin, J., & Strauss, A. (2008). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (3rd ed.). Sage.
- Dellarocas, C. (2003). The digitization of word of mouth: Promise and challenges of online feedback mechanisms. *Management Science*, 49(10), 1407–1424. <https://doi.org/10.1287/mnsc.49.10.1407.17308>
- Eisenmann, T., Parker, G., & Van Alstyne, M. W. (2006). Strategies for two-sided markets. *Harvard Business Review*, 84(10), 92–101.
- Fauziah, Hartono, R., & Heryadi, A. (2025). Analisis pengaruh perkembangan teknologi terhadap kegiatan pasar tradisional [Analysis

of the influence of technological development on traditional market activities]. *Jurnal Teknologi Pendidikan*, 13(2). <https://ejournal.uika-bogor.ac.id/index.php/TEK/article/view/18369>

- Gawer, A. (2021). Digital platforms' boundaries: The interplay of firm scope, platform sides, and digital interfaces. *Long Range Planning*, 54(5), 102045. <https://doi.org/10.1016/j.lrp.2020.102045>
- Giaglis, G. M., Klein, S., & O'Keefe, R. M. (2002). The role of intermediaries in electronic marketplaces: Developing a contingency model. *Journal of Strategic Information Systems*, 11(3), 231–246. [https://doi.org/10.1016/S0963-8687\(02\)00014-8](https://doi.org/10.1016/S0963-8687(02)00014-8)
- Gioia, D. A., Corley, K. G., & Hamilton, A. L. (2013). Seeking qualitative rigor in inductive research: Notes on the Gioia methodology. *Organizational Research Methods*, 16(1), 15–31. <https://doi.org/10.1177/1094428112452151>
- Gupta, M., & Sharma, A. (2021). Fear of missing out: A brief overview of origin, theoretical underpinnings and relationship with mental health. *World Journal of Clinical Cases*, 9(19), 4881–4889. <https://doi.org/10.12998/wjcc.v9.i19.4881>
- Hund, A., Wagner, H.-T., Beimborn, D., & Weitzel, T. (2021). Digital innovation: Review and novel perspective. *Journal of Strategic Information Systems*, 30(4), 101695. <https://doi.org/10.1016/j.jsis.2021.101695>
- Klemperer, P. (1999). Auction theory: A guide to the literature. *Journal of Economic Surveys*, 13(3), 227–286. <https://doi.org/10.1111/1467-6419.00083>
- Kollock, P. (1999). The production of trust in online markets. *Advances in Group Processes*, 16, 99–123.
- Kretschmer, T., Leiponen, A., Schilling, M., & Vasudeva, G. (2022). Platform ecosystems as meta-organizations: Implications for platform strategies. *Strategic Management Journal*, 43(3), 405–424. <https://doi.org/10.1002/smj.3250>
- Ku, G., Malhotra, D., & Murnighan, J. K. (2005). Towards a competitive arousal model of decision-making: A study of auction fever in live and internet auctions. *Organizational Behavior and Human Decision*

- Processes*, 96(1),
90–104. <https://doi.org/10.1016/j.obhdp.2004.08.001>
- MacKenzie, D., & Millo, Y. (2003). Constructing a market, performing theory: The historical sociology of a financial derivatives exchange. *American Journal of Sociology*, 109(1), 107–142. <https://doi.org/10.1086/375389>
- McKnight, D. H., Choudhury, V., & Kacmar, C. (2002). Developing and validating trust measures for e-commerce: An integrative typology. *Information Systems Research*, 13(3), 334–359. <https://doi.org/10.1287/isre.13.3.334.81>
- Milgrom, P. R., & Weber, R. J. (1982). A theory of auctions and competitive bidding. *Econometrica*, 50(5), 1089–1122. <https://doi.org/10.2307/1911865>
- Moe, T. (1998). Perspectives on traceability in food manufacture. *Trends in Food Science & Technology*, 9(5), 211–214. [https://doi.org/10.1016/S0924-2244\(98\)00040-5](https://doi.org/10.1016/S0924-2244(98)00040-5)
- Nambisan, S., Wright, M., & Feldman, M. (2019). The digital transformation of innovation and entrepreneurship: Progress, challenges and key themes. *Research Policy*, 48(8), 103773. <https://doi.org/10.1016/j.respol.2019.03.018>
- Parker, G. G., Van Alstyne, M. W., & Choudary, S. P. (2016). *Platform revolution: How networked markets are transforming the economy and how to make them work for you*. W. W. Norton & Company.
- Pavlou, P. A., & Gefen, D. (2004). Building effective online marketplaces with institution-based trust. *Information Systems Research*, 15(1), 37–59. <https://doi.org/10.1287/isre.1040.0016>
- Plantin, J.-C., Lagoze, C., Edwards, P. N., & Sandvig, C. (2018). Infrastructure studies meet platform studies in the age of Google and Facebook. *New Media & Society*, 20(1), 293–310. <https://doi.org/10.1177/1461444816686328>
- Regattieri, A., Gamberi, M., & Manzini, R. (2007). Traceability of food products: General framework and experimental evidence. *Journal of Food Engineering*, 81(2), 347–356. <https://doi.org/10.1016/j.jfoodeng.2006.11.003>

- Resnick, P., Zeckhauser, R., Friedman, E., & Kuwabara, K. (2000). Reputation systems. *Communications of the ACM*, 43(12), 45–48. <https://doi.org/10.1145/355112.355122>
- Rietveld, J., & Schilling, M. A. (2021). Platform competition: A systematic and interdisciplinary review of the literature. *Journal of Management*, 47(6), 1528–1563. <https://doi.org/10.1177/0149206320969791>
- Rochet, J.-C., & Tirole, J. (2003). Platform competition in two-sided markets. *Journal of the European Economic Association*, 1(4), 990–1029. <https://doi.org/10.1162/154247603322493212>
- Saputra, M. F., Maulina, I., Rostika, R., & Nurhayati, A. (2025). Pemanfaatan media sosial dalam pemasaran ikan hias di Kota Bandung [Utilization of social media in ornamental fish marketing in Bandung City]. *Jurnal Sosial Ekonomi Kelautan dan Perikanan*, 20(2). <http://dx.doi.org/10.15578/jsekp.v20i2.16520>
- Shapiro, C. (1983). Premiums for high quality products as returns to reputations. *The Quarterly Journal of Economics*, 98(4), 659–679. <https://doi.org/10.2307/1881782>
- Tamba, E. D., & Sulisty, W. (2025). Pengaruh keamanan data, kepercayaan dan kualitas website terhadap keputusan pembelian pada TikTok Shop dan Facebook Marketplace pada Kota Salatiga [The influence of data security, trust, and website quality on purchasing decisions on TikTok Shop and Facebook Marketplace in Salatiga City]. *JIPi (Jurnal Ilmiah Penelitian dan Pembelajaran Informatika)*, 10(1), 675–685. <https://doi.org/10.29100/jipi.v10i1.5526>
- Tarmizi, R., Septiani, N., Sunarya, P. A., & Sanjaya, Y. P. A. (2023). Harnessing digital platforms for entrepreneurial success: A study of technopreneurship trends and practices. *Aptisi Transactions on Technopreneurship (ATT)*, 5(3), 278–290. <https://doi.org/10.34306/att.v5i3.360>
- Tiwana, A., Konsynski, B., & Bush, A. A. (2010). Platform evolution: Coevolution of platform architecture, governance, and environmental dynamics. *Information Systems Research*, 21(4), 675–687. <https://doi.org/10.1287/isre.1100.0323>
- Yin, R. K. (2018). *Case study research and applications: Design and methods* (6th ed.). Sage.