

MARTIVE: Development of an Integrated Web Platform as a Creative Hub and Digital Commerce to Support the Visual Content Creator Digital Ecosystem

Amar Ferdiansyah

Department of Informatics,
Faculty of Science and
Technology, State Islamic
University of Sultan Maulana
Hasanuddin Banten, Banten,
42171, Indonesia
amarferdi254@gmail.com

Christine Cecylia Munthe

National Research and
Innovation Agency, Serpong,
15314, Indonesia
chri010@brin.go.id

M. Iman Wahyudi

University of Sultan Maulana
Hasanuddin Banten, Banten,
42171, Indonesia
Iman.wahyudi@uinbanten.ac.id

Abstract

Digital creators increasingly rely on multiple platforms to manage portfolios, collaborate, and monetize their work, resulting in fragmented workflows and reduced efficiency, particularly within Indonesia's growing creator economy. This study proposes MARTIVE, an integrated web platform that combines a Creative Hub, Community Space, and Digital Commerce System within a unified ecosystem to reduce platform fragmentation. The platform was developed using a Research and Development (R&D) methodology with a Human-Computer Interaction (HCI)-oriented prototype approach and implemented using the Laravel framework. Functional validation through Black Box Testing achieved a success rate of 91.67%, while usability evaluation involving 50 digital creators produced an average System Usability Scale (SUS) score of 80.35 (Grade B, Excellent). These findings indicate that MARTIVE is a usable, functionally reliable platform that supports creator productivity, collaboration, and digital monetization through an integrated ecosystem.

Keywords

Creator Economy, Digital Commerce, Creative Hub, Integrated Platform, Human-Computer Interaction.

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1. Introduction

The development of digital technology over the past two decades has fundamentally changed the way humans produce, distribute, and consume creative works. This transformation is not only technical but also gives rise to a new economic structure known as the creator economy, which is an ecosystem that enables individuals to create, manage, and monetize digital content independently (Craig et al., 2022). This phenomenon is further reinforced by the concept of platform capitalism, which explains how digital platforms play a dominant role in regulating the distribution of value and economic interactions between creators and audiences (Srnicek, 2019).

Globally, the growth of the creator economy shows a very significant trend. Goldman Sachs (2023) projects that the market value of the creator economy will reach USD 480 billion by 2027. This indicates that the digital content-based economy has become one of the strategic sectors in the rapidly growing global economy (Sach, 2023).

In Indonesia, the development of the creator economy has also experienced a significant increase. The creative economy sector contributes about 7.1% to the national Gross Domestic Product (GDP) and employs tens of millions of workers (Ministry of Tourism and Creative Economy of Indonesia, 2023). With an estimated more than 17 million active content creators, Indonesia has become one of the countries with the largest creator ecosystems in Southeast Asia. However, the growth in the number of creators has not yet been matched by the readiness of integrated digital infrastructure to support all creator activities.

Specifically, visual content creators face various challenges in managing their digital activities. They still rely on many different platforms to meet diverse needs, such as portfolio management, content distribution, community interaction, and monetization. This condition is known as platform dependency and causes fragmentation of the digital ecosystem. As a result, creators must manage multiple accounts and systems separately, which increases operational burdens, causes digital identity inconsistencies, and hampers the sustainable development of their careers.

An analysis of various global creative platforms such as Behance (Behance, 2026), Dribbble (Dribbble, 2026), ArtStation (ArtStation, 2026), Fiverr (Fiverr, 2026), Etsy (Etsy, 2026), Freepik (Freepik, 2026), and Pexels (Pexels, 2026), shows a significant functional fragmentation. Each platform tends to focus on one main function, such as portfolio, community, or monetization, but has not yet been able to provide comprehensive service integration within a unified digital ecosystem. This indicates that no platform currently can accommodate the entire cycle of digital creator activities comprehensively within a single system.

From a theoretical perspective, this condition aligns with the concepts of platform capitalism and platform dependency, where the success of creators is heavily influenced by the structure, policies, and algorithms of digital platforms (Srnicek, 2019). Cunningham and Craig's (2022) study also shows that creators are required to build presence across multiple platforms simultaneously, which ultimately increases work complexity and reduces productivity efficiency (Craig et al., 2022).

If this situation continues, the significant potential of the digital creator economy will not develop optimally, despite the increasing number of creators. Therefore, a solution is needed in the form of an integrated platform that can simplify the creator's workflow while enhancing efficiency and productivity within a single digital ecosystem. Based on these issues, there is a research gap both theoretically and practically. Theoretically, studies on designing an integrated platform architecture capable of supporting the entire cycle of digital creator activities within a single system are still limited. Practically, there are no technological

solutions available that can combine portfolio management, community interaction, and monetization functions in an integrated manner.

This research specifically focuses on visual content creators who need integration between work management, community collaboration, and monetization systems within a single platform. Therefore, this study aims to design and develop MARTIVE, an integrated web platform that combines three main components: Creative Hub, Community Space, and Digital Commerce System within a cohesive digital ecosystem. Specifically, this study proposes a unified creator-ecosystem architecture that integrates portfolio management, collaborative community features, and digital commerce within a single platform, an architectural-level integration that is not offered by existing portfolio-oriented platforms such as Behance, community-oriented platforms such as Dribbble, or marketplace-oriented platforms such as Fiverr and Etsy, each of which addresses only a single function of the creator workflow. This integrated-architecture contribution constitutes the central novelty of the present study relative to prior, function-specific creator platforms and research.

The system development is carried out using a Research and Development (R&D) approach with a Human-Computer Interaction (HCI)-based prototype method, so that the resulting system can be tailored to user needs and experiences. With MARTIVE, it is hoped that work efficiency, productivity, and the independence of Indonesia's digital creators' economy can be sustainably improved.

2. Background

2.1. Creator Economy and Digital Economy Transformation.

The concept of *creator economy* refers to a digital economy ecosystem that allows individuals to generate income through the production and distribution of content based on digital platforms. According to Stuart (Craig et al., 2022), the creator economy is an evolution from the traditional media industry to a more decentralized system, where creators have a role as producers as well as distributors of digital content.

In this context, creators are not only relying on large media institutions, but leveraging digital platforms to build audiences and monetize them directly. Research by Brooke Erin Duffy (2017) shows that the creator economy also involves *aspirational labor* dynamics, where creators invest time and resources without a guarantee of stable income. This confirms that although economic opportunities are wide open, there are significant structural challenges in these ecosystems (Duffy, 2017).

In addition, a report by Goldman Sachs (2023) projects the rapid growth of the creator economy globally, which further strengthens the urgency of developing platforms that support the sustainability of creators economically and technologically (Sach, 2023).

2.2. Platform Capitalism and Platform Dependency

The concept of platform capitalism introduced by Nick Srnicek (2019) explains that digital platforms serve as the main mediators in digital economic activities by controlling data, algorithms, and user interactions. In the context of digital creators, this condition creates a dependency on platforms (platform dependency), where a creator's success is heavily influenced by platform policies and algorithms (Srnicek, 2019).

Recent research shows that the digital platform ecosystem shapes a new governance structure that affects the distribution of visibility, audience access, and monetization opportunities for creators. As a result,

creators need to manage their activities across multiple platforms simultaneously, which can increase work complexity and dependence on digital platform infrastructure (Kerssens & Dijck, 2024).

A study by Hu et al. (2024) indicates that digital platforms not only function as distribution channels for services but also shape mechanisms for value creation, governance, and interaction patterns within the digital ecosystem. These findings reinforce the need for integrated platforms capable of supporting creators' activities more efficiently and sustainably within digital ecosystems (Hu et al., 2024).

2.3. Platform Fragmentation in the Creator Ecosystem

Platform fragmentation has been conceptualized in the literature as a structural condition in which creators are compelled to distribute their activities across multiple, functionally specialized services rather than operate within a single integrated system (Gui, n.d.). Ma et al. (2023) show that content creators must continuously prioritize platforms, synchronize content, and manage audiences separately in order to sustain their creative and monetization activities, illustrating fragmentation as a recurring operational burden rather than an isolated inconvenience (Gui, 2023).

2.4. Existing Creator Platforms and Competitive Landscape

A review of prominent creator-oriented platforms illustrates the extent of this functional specialization. Portfolio-oriented platforms such as Behance (Behance, 2026), Dribbble (Dribbble, 2026), and ArtStation (ArtStation, 2026) are designed primarily to showcase visual work and build professional identity, with limited native support for monetization or community collaboration. Monetization-oriented platforms such as Patreon and Ko-fi concentrate on recurring creator income, while marketplace-oriented platforms such as Fiverr (Fiverr, 2026) and Etsy (Etsy, 2026) facilitate transaction-based services and product sales. Resource-oriented platforms such as Freepik (Freepik, 2026) and Pexels (Pexels, 2026) provide creative assets rather than creator-facing infrastructure. Across this landscape, each platform addresses a single function of the creator workflow — portfolio, community, monetization, or resources — without offering an architecture capable of unifying these functions within one ecosystem.

Consequently, no existing platform is able to integrate the full range of creator needs. Creators still rely on several separate platforms to manage content distribution, build audiences, and monetize their work, which increases the complexity of managing creative activities and reinforces reliance on multiple digital platform ecosystems (Gui, n.d.). This fragmentation of function across competing platforms reinforces the case for an integrated architecture, rather than an additional single-purpose tool, as the appropriate response to the problem identified above.

2.5. Digital Commerce Systems in the Creator Ecosystem

Digital commerce is an important component in supporting creator monetization through the integration of product management, digital payment systems, and customer interactions in one unified platform. The development of social commerce shows that the integration of social features can increase user trust, customer engagement, and consumer purchase intent. Therefore, the combination of digital commerce services and community features is an effective strategy in supporting the economic growth of digital creators as well as building long-term relationships with audiences (George et al., 2023; Wang et al., 2022; Zhao et al., 2023).

2.6. Previous Research

Research on the creator economy, digital platforms, and integrated systems shows a growing interest in technologies that support digital creators, although most studies still address monetization, community, or content distribution as separate, partial concerns.

At the conceptual end of this literature, van Dijck, Poell, and de Waal (2021) examine the notion of *a social platform explains* how digital platforms shape social and economic ecosystems. While this account offers a valuable theoretical lens on platform structure, it remains conceptual and does not extend to the design or implementation of an integrated system for creators.

Whereas van Dijck et al. focus on platform structure at a societal level, Duffy, Ononye, and Sawey (2024) examine the creator's lived experience, highlighting revenue uncertainty, visibility pressure, and algorithmic exposure. Their study calls for platforms that support creators more sustainably, but stops short of proposing an integrated platform combining portfolio management, community, and digital commerce (Duffy et al., 2024).

Closer to the commercial and technical dimensions of integration, Molina-prados et al. (2024) show that combining social commerce with community interaction features increases engagement and conversion, though without extending to integrated portfolio management or content distribution (Molina-prados et al., 2024). In a similar vein, Schreieck et al. (2024) note an emerging trend toward all-in-one creator platforms that combine monetization, community, and content distribution, but observe that truly integrated and scalable implementations remain limited (Schreieck et al., 2024).

Bleier, Fossen, and Shapira (2024) reinforce this diagnosis: the creator economy continues to expand even as creators struggle to manage multiple platforms simultaneously, underscoring the urgency of an integrated system (Bleier et al., 2024). Taken together, these studies show that although research increasingly gestures toward service integration, most contributions remain conceptual or partial, motivating a new integrated platform that combines monetization, content distribution, portfolio management, and community interaction within a single system.

2.7. Research Gap

Based on a comprehensive analysis of literature studies and previous research, a number of research *gaps* can be identified that show limitations both conceptually and practically in the development of the digital creator ecosystem, as outlined below.

First, limited system integration remains a recurring concern in the literature: most prior studies remain focused on a single function, such as content management, community interaction, or monetization, treated in isolation. As a consequence, digital creators continue to depend on several platforms simultaneously to support the full range of their creative activities. This condition indicates that the development of platforms capable of integrating portfolio management, community, and digital commerce within a single ecosystem remains limited (Bleier et al., 2024; Schreieck et al., 2024).

Second, a lack of real technology implementation is also apparent: most research on digital platforms is still dominated by conceptual and analytical approaches, while the implementation of directly applicable systems is still limited. This condition shows that there is a gap between the development of theory and the application of practical solutions that are able to support user activities in the digital platform ecosystem (Hawlitschek et al., 2024; Yi & Kim, 2025).

Third, insufficient attention has been paid to visual content creators specifically: most research on the creator economy still discusses digital creators in general, without specifically accommodating the needs of visual content creators, such as graphic designers, illustrators, and photographers. In fact, this group of creators has special needs in portfolio management, presentation of high-quality visual works, and professional identity development through digital platforms (Duan et al., 2024).

Fourth, the implementation of a user-centered (HCI) approach remains suboptimal: although various digital creator platforms continue to develop, the application of Human-Computer Interaction (HCI) and User-Centered Design (UCD) approaches in the development process is still not carried out consistently. Most research focuses more on feature and functionality development than an overall evaluation of user experience, so usability, efficiency, and user satisfaction aspects have not been systematically measured. This condition shows the need to develop a platform that integrates HCI principles from the design stage to the evaluation of the system (Bastardo, 2024; Kim et al., 2022).

Finally, studies addressing the practical implementation of supporting technologies remain scarce: most previous research has focused more on conceptual aspects, user needs, or system functionality, while discussions on the selection and implementation of development technologies are limited. As a result, there are not many studies that provide practical guidance on choosing a technology stack that is able to support scalability, maintainability, and service integration on digital platforms. This condition shows the need for the implementation of a system that not only meets the needs of users, but is also supported by an appropriate architecture and technology for sustainable development (Ghorbani et al., 2024).

Based on previous research, there are still limitations in the development of platforms that are able to integrate portfolio management, community collaboration, and digital monetization into one unified ecosystem. Most platforms and research still focus on specific functions, so digital creators still have to use several different services to support their creative activities. This condition shows the need for the development of a platform that not only integrates various services, but is also oriented to the needs and experience of the user (Bleier et al., 2024; Peres et al., 2024).

Therefore, this research contributes by developing MARTIVE as an integrated web platform that combines Creative Hub, Community Space, and Digital Commerce System in one digital ecosystem. This approach is expected to improve the efficiency of work management, strengthen the digital identity of creators, expand collaboration opportunities, and support sustainable monetization of works for visual content creators in Indonesia (Bleier et al., 2024; Peres et al., 2024).

2.8. Human-Computer Interaction (HCI) in Platform Development

Human-Computer Interaction (HCI) approach focuses on designing systems that are oriented towards the needs and user experience. Research by Kivijärvi and Pärnänen (2023) shows that usability is a major factor that affects the quality of user experience, where easy-to-use systems tend to result in higher levels of user satisfaction (Kivijärvi et al., 2023).

In the HCI approach, user-centric interface design emphasizes effectiveness, efficiency, and user satisfaction. Research by Paton et al (2024) shows that increasing usability through HCI modeling can reduce user interaction problems and improve the quality of the experience of using digital systems (Paton et al., 2024).

In the context of creator platforms, the implementation of HCI is critical to ensure that the system is capable of supporting a wide range of complex activities in a single, integrated, easy-to-use interface. Accordingly,

this study adopts an HCI-oriented approach, described in the Methods section, to guide the design and evaluation of the integrated creator-platform architecture proposed in response to the gap identified above.

2.9. Research Questions

Based on the research gap identified above, this study is guided by the following research questions:

RQ1: How can an integrated web platform architecture be designed to reduce platform fragmentation among visual content creators?

RQ2: To what extent does the developed platform, MARTIVE, meet the functional requirements expected by digital creators, as measured through Black Box Testing?

RQ3: How usable is MARTIVE from the perspective of digital creators, as measured by the System Usability Scale (SUS)?

3. Methods

This research uses the Research and Development (R&D) method which aims to produce products in the form of an integrated web platform for digital creators. The system development approach adapts the Human-Computer Interaction (HCI)-based Prototype Development model which emphasizes system iteration based on user feedback. The product developed is MARTIVE, which is a digital platform that integrates creative hubs, creator communities, and digital commerce systems in one integrated digital ecosystem (Wang et al., 2023).

3.1 System Development Method: Prototype

The system development method used is *Prototype*, which is an approach that emphasizes creating an initial model of the system which is then developed iteratively based on user feedback. This method was chosen because it is in accordance with *the Human-Computer Interaction* (HCI) approach that focuses on usability and user experience.

The stages of the prototype method in this study include:

1. User Needs Analysis

Identify functional and non-functional needs based on literature studies and observations.

2. System Planning

Make the initial design of the system in the form of wireframes and user interface structures

a. Use Case Diagram

The use case diagram on the MARTIVE system illustrates the interaction between users and systems in an ecosystem that integrates creative hubs, creator communities, and digital commerce. This diagram is used to model the functional needs of the system, so that all major services such as work management, digital transactions, community interaction, and order tracking can be clearly defined according to the needs of the user (Imtiaz et al., 2023).

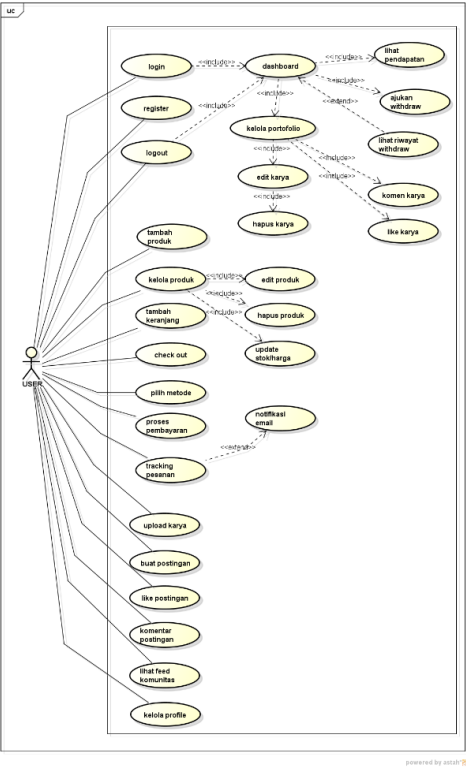


Fig. 1. Use Case Diagram MARTIVE System

b. Class Diagram

Class diagrams are used to describe the class structure, attributes, methods, and relationships between entities in the MARTIVE system. This diagram is designed using a modular approach consisting of user and community modules, creative hubs, and digital commerce. A modular approach is used to improve the maintainability and scalability of the system (Chen & Lian, 2024).

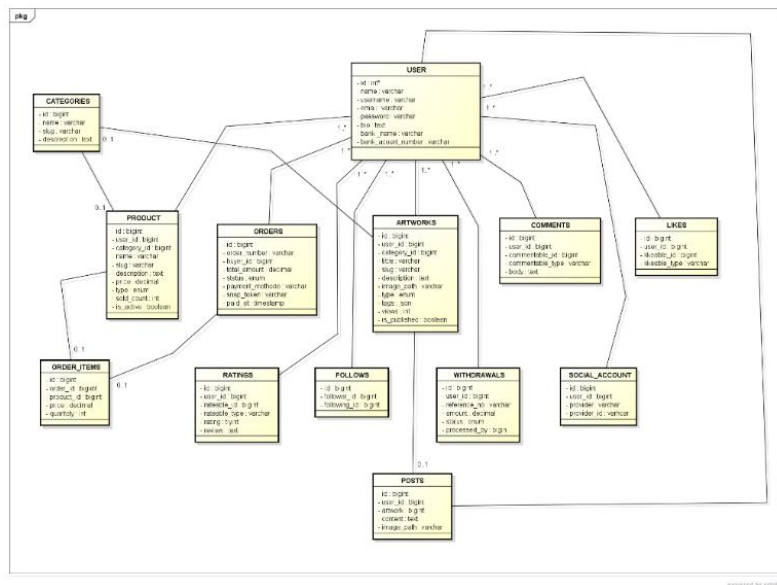


Fig. 2. MARTIVE System Diagram Class

c. Activity Diagram

The activity diagram in the Figure below illustrates the flow of digital transactions on the MARTIVE platform starting from product selection, checkout process, payment through payment gateway API, to transaction completion and sending email notifications to buyers and sellers. The diagram uses a swimlane approach to clarify the interaction between system components and business process flows on modern digital commerce platforms. The use of activity diagrams in UML is effective for modeling system workflows, user activities, and relationships between business processes in a structured manner (Ade Oktarino & Imti Tsalil Amri, Adam Afriansyah, Ahmad Ferdian Shobur, Brestina Gultom, 2024).

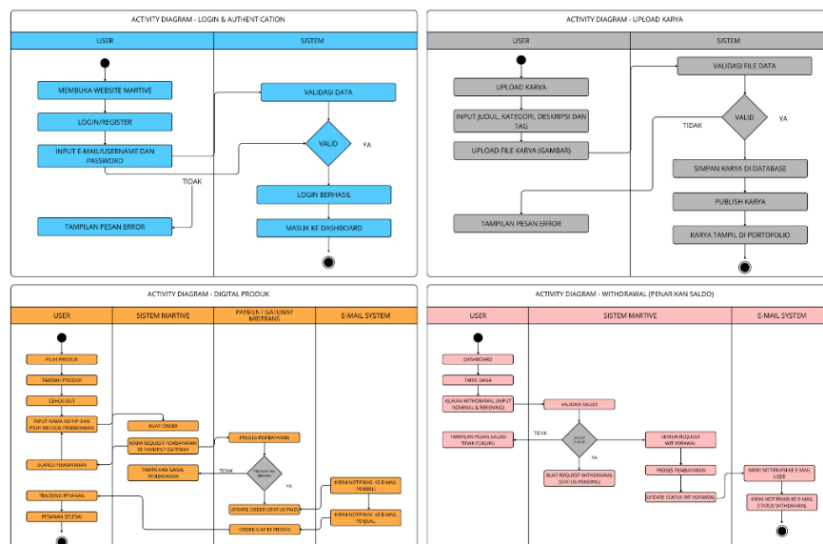


Fig. 3. MARTIVE System Activity Diagram

3.2 Subjects and Objects of Research

The study involved 50 digital creators selected through purposive sampling based on their experience in using digital platforms for content distribution, community interaction, and monetization. The research object was the MARTIVE web platform. The number of respondents was determined based on Roscoe's rule and was considered sufficient for prototype usability evaluation using the System Usability Scale (SUS) (Hertzum, 2026).

3.3 Data Collection and Analysis Techniques

Data collection was carried out through literature studies of journals and scientific articles that discuss the creator economy, digital platforms, Human-Computer Interaction (HCI), and the development of web-based systems. Literature studies are used to obtain a theoretical foundation and identify research gaps (Rieder et al., 2023).

Second, observations were made on various digital platforms used by creators, such as social media, portfolio platforms, and digital marketplaces. The observation aims to understand the pattern of platform use, creator activities, and problems that arise in portfolio management, work distribution, community interaction, and monetization of digital works (Tafesse & Dayan, 2023).

Third, the questionnaire was distributed to 50 digital creator respondents using a 5-point Likert scale. The questionnaire was used to analyze user needs, the level of acceptance of the system concept, and the evaluation of the usability of the developed system. In addition, this study also uses *the System Usability Scale* (SUS) instrument to measure the level of ease of use and user experience of the system (Hyzy et al. 2022).

The data analysis technique uses a quantitative descriptive approach. The analysis of system needs is carried out through observation and questionnaires to identify the functional and non-functional needs of the user. Questionnaire data was analyzed using the percentage of positive responses with the formula:

$$P = \frac{f}{N} \times 100\%$$

Description:

- a. P = Percentage of results
- b. f = Number of positive responses
- c. N = Number of respondents

with P as the percentage of results, f as the number of positive responses, and N as the number of respondents (Alshurideh, 2023).

The instrument validity test was conducted using Pearson Product Moment, while the reliability test used Cronbach Alpha to ensure the consistency of the research instrument (Taber, 2018). The system usability evaluation was carried out using the System Usability Scale (SUS), calculated using the formula $SUS = (\sum x) \times 2.5$, to measure the level of ease of use from the user's perspective (Hyzy et al. 2022). In addition, system functionality testing is carried out with Black Box Testing to ensure that all features function according to the needs and specifications that have been set (Alshamaa & Saleem, 2025).

Table 1. Validity and Reliability Test Results of the Research Instrument

Instrument Testing		Result
Total Items	11	
Valid Items	10	
Invalid Items	1	
Cronbach's Alpha	0.87	
Reliability Category	High Reliability	

The instrument validity test showed that 10 out of 11 questionnaire items met the validity criterion, while one item was excluded from further analysis. The reliability test yielded a Cronbach's Alpha value of 0.87, indicating high internal consistency and reliability of the instrument.

4. Result and Discussion

4.1. User Needs Analysis

The analysis of 50 respondents using a five-point Likert scale revealed high and statistically significant demand for an integrated work management platform (80%), professional portfolio features (90%), and collaboration spaces (88%) ($p < 0.001$). These findings indicate that digital creators require an ecosystem that integrates content management, professional identity development, and collaborative activities within a single platform, consistent with the growing creator economy that increasingly relies on integrated digital services and platform-based infrastructures (Bleier et al., 2024; Peres et al., 2024).

The sample size of 50 respondents was considered adequate because the primary objective of the study was to identify user needs and evaluate usability during the prototype development stage rather than to make broad population generalizations. Furthermore, the sample size complies with the minimum recommendation for usability evaluation studies and prototype-based system development, where relatively small samples are commonly considered sufficient to identify user requirements and assess system usability.

Table 2. User Needs Analysis with Confidence Intervals 95% dan Z-test (n = 50)

No	Indicator	%	95% CI	z-value	Significance.
1	Integrated work management platform	80%	68,9%–91,1%	5,30	p<0,001
2	Professional portfolio medium	90%	81,7%–98,3%	9,43	p<0,001
3	Creator collaboration space	88%	79,0%–97,0%	8,27	p<0,001
4	Challenges in monetizing work	60%	46,4%–73,6%	1,44	Marginal
5	Limited platform features	62%	48,5%–75,5%	1,75	Marginal
6	Difficulties in work distribution	48%	34,2%–61,8%	-0,28	Not Sig.
7	Platform lacks integration	58%	44,3%–71,7%	1,15	Not Sig.

4.2. Analysis of System Concept Acceptance

The system concept acceptance analysis revealed high levels of agreement across all indicators, with statistically significant results ($p < 0.001$). A total of 84% of respondents stated that MARTIVE could improve work management efficiency, 82% perceived benefits from the integration of a creative hub and digital commerce, 84% expressed willingness to use the platform, and 88% believed that MARTIVE could support creators' career development. These findings indicate strong user acceptance of MARTIVE as an integrated platform that supports creative activities, collaboration, and monetization within a single digital ecosystem. The results are consistent with previous studies suggesting that perceived usefulness, service integration, and creator support are key factors influencing the adoption and acceptance of digital platforms in the creator economy (Bleier et al., 2024), (Peres et al., 2024).

Table 3. Acceptance of the System Concept with Confidence Intervals 95% (n = 50)

No	Indicator	p	95% CI	Category
1	An integrated platform enhances the efficiency of managing creative work.	84%	73,8%–94,2%	Very High
2	Creative hub and digital commerce systems deliver benefits.	82%	71,4%–92,6%	High
3	Willingness to use the MARTIVE platform.	84%	73,8%–94,2%	Very High
4	MARTIVE supports the career development of digital creators.	88%	79,0%–97,0%	Very High

4.3. MARTIVE Architecture and Competitive Position

MARTIVE was developed using the Laravel framework with an MVC (Model-View-Controller) approach to maintain the modularity and scalability of the development. The system architecture includes three main components that are connected in a single digital ecosystem:

(1) Creative Hub: A portfolio management center that includes visual work uploads, work category management, portfolio showcase, engagement statistics, and digital work metadata integration; (2) Community Space: Supports interaction between creators through discussion forums, project collaborations, comment and appreciation systems, and community activity feeds; and (3) Digital Commerce System: Enabling digital asset sales, creative product management, transaction history, and API payment gateway integration.

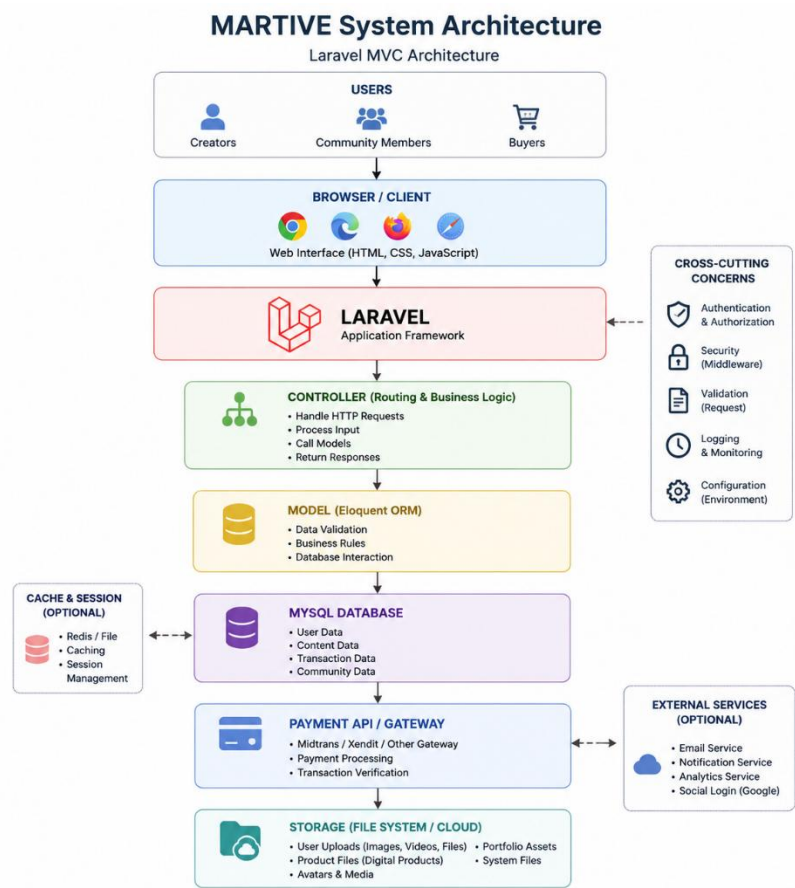


Fig. 4. System Architecture of the MARTIVE Platform

Figure 4 illustrates the overall architecture of the MARTIVE platform. The platform supports three primary user roles: Creators, Buyers, and Administrators, who access the system through a web browser. User requests are processed by the Laravel framework using the Model–View–Controller (MVC) architecture, where the Controller manages request handling and business logic, the Model interacts with the MySQL database, and the View delivers dynamic content to users. The platform is further integrated with external services, including a payment gateway for processing digital transactions and a storage service for managing portfolio files, digital assets, and media resources. This architecture ensures modularity, scalability, and maintainability while enabling seamless integration of portfolio management, community collaboration, and digital commerce within a unified ecosystem.

This integration approach differs from conventional platforms such as Behance, which primarily focuses on portfolio presentation, and Fiverr, which primarily operates as a service-oriented marketplace. Table 4 compares the availability of key features across these platforms based on their official documentation and publicly available feature descriptions.

Table 4. Comparison of MARTIVE Features with Existing Platforms (May 2026)

Feature	Behance	Fiverr	MARTIVE
Creative Portfolio	✓	X	✓
Creator Community	Limited	X	✓
Digital Marketplace	X	✓	✓
Full Integration	X	X	✓

4.4. System Implementation

MARTIVE was developed using an agile approach and Human-Computer Interaction (HCI) principles to ensure usability and intuitive navigation (Hertzum, 2026), (Hyzy et al. 2022). The platform integrates portfolio management, community interaction, and digital commerce within a single ecosystem, addressing the main user requirements identified during the analysis phase.

The Creator Dashboard provides access to portfolio analytics, transactions, and community engagement data. In addition, the Digital Product, Community, and Creative Hub features support content monetization, creator collaboration, and portfolio management. These functionalities align with the increasing demand for integrated creator platforms that combine creative activities, networking, and commercial opportunities (Peres et al., 2024), (Bleier et al., 2024).

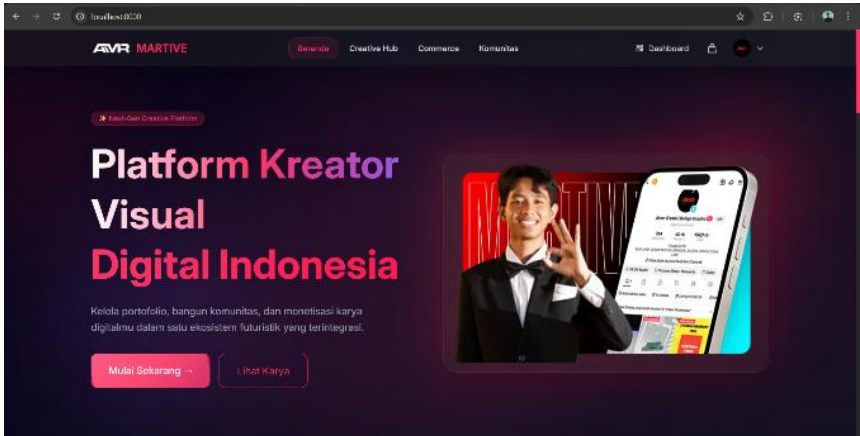


Fig. 5. Homepage of MARTIVE

The Creator Dashboard provides comprehensive analytics that allow creators to monitor portfolio performance, transaction volume, and community engagement within a single unified view. This *data-driven dashboard* approach helps creators make data-driven decisions related to content strategy and monetization.

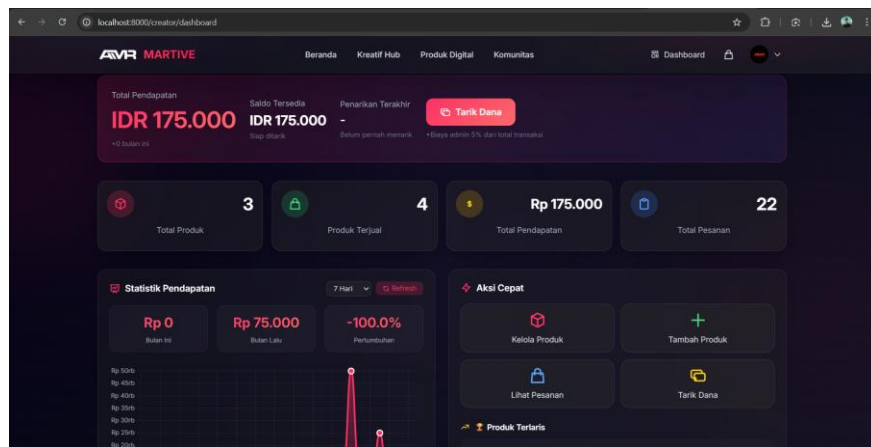


Fig. 6. Creator Dashboard displaying portfolio analytics, transaction statistics, and community engagement

Digital Product is a marketplace that allows creators to publish, market, and sell digital products such as templates, design assets, and creative services. This feature supports work monetization through an integrated transaction system.

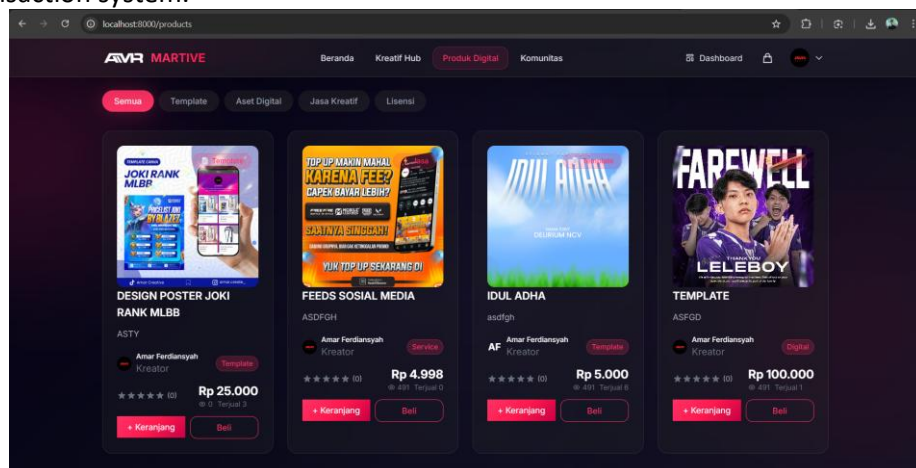


Fig. 7. Digital Commerce interface for publishing and managing digital products page

The Community Space feature enables creators to share their work, engage in discussion, and build collaboration with other users, supporting the exchange of ideas and network development within the digital creative ecosystem.

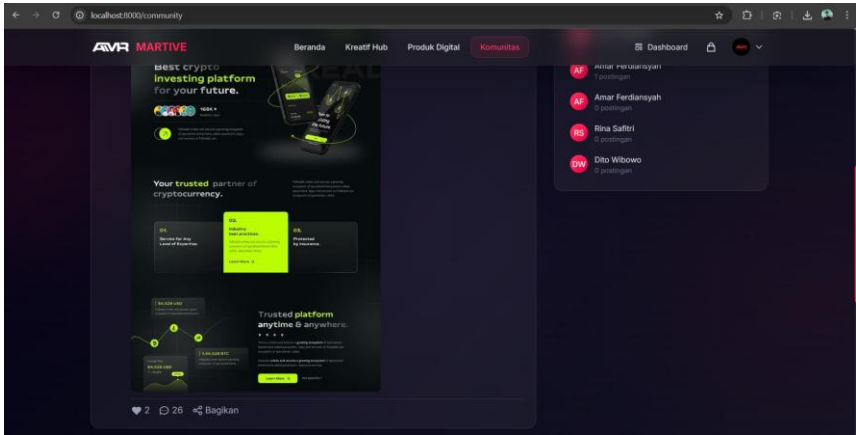


Fig. 8. Community Space interface for creator interaction and collaboration

The Creative Hub provides a range of creative assets and resources within a single integrated platform, helping creators discover references, manage portfolios, and carry out the digital work creation process more effectively.



Fig. 9. Creative Hub interface providing creative assets and resources

5. Testing and Evaluation

5.1. Blackbox Testing

Black-box testing is conducted on all key system features to ensure functional alignment with user requirements.

Table 5. System Testing Results with Black Box Testing

No	Testing	Test Case	Expected result	Conclusion
1	Log in with Google	Click the Google icon	Access the dashboard	Valid

No	Testing		Test Case	Expected result	Conclusion
2	Register an account		Enter name, email, and password	Account successfully created	Valid
3	Access Hub	Creative	Click the Creative Hub page	Creative Hub page view	Valid
4	Access Products	Digital	Click the digital products page	Digital products page view	Valid
5	Add digital product		Click "Add product"	Product addition form filled out	Valid
6	Checkout product		Click "Checkout"	Access the payment page	Valid
7	Remove product from cart		Click "Clear cart"	Product successfully deleted	Valid
8	Update/Delete product		Click "Manage products" on the dashboard	Product successfully updated/deleted	Valid
9	Track order		Click "View orders" on the dashboard	Access the order management page	Valid
10	Add artwork		Click the profile section	Creation successfully added	Valid
11	Community interaction		Add post/like/comment/delete	Action successfully performed	Valid
12	Withdraw funds		Click "Withdraw funds"	Funds successfully transferred to the account	Invalid

Functional testing on 12 scenarios demonstrated a success rate of 91.67%, with 11 scenarios operating according to specifications (Alshamaa & Saleem, 2025). The only unresolved feature was the automated withdrawal function, which requires additional payment gateway verification. Therefore, the withdrawal feature was intentionally excluded from the current release and will be implemented in future development.

5.2. System Usability Scale (SUS)

The SUS evaluation was carried out on 50 respondents who were digital visual content creators. The SUS consists of 10 statements on a Likert scale of 1–5 that are used to measure user perception of the ease of use and experience of interaction with the system (Hyzy et al. 2022).

Table 6. System Usability Scale (SUS) Test Result

Component	Value
Value Components	50
SUS Score	4017.5
Average SUS Score	80.35
SUS Grade	B
Adjective Rating	Excellent
Acceptability	Acceptable
Conclusion	Highly Recommended

MARTIVE achieved an average System Usability Scale (SUS) score of 80.35, which is categorized as Excellent and Grade B. This score exceeds the commonly accepted SUS benchmark value of 68, indicating a high level of usability and positive user experience. Previous studies have identified a score of 68 as the average benchmark for interpreting SUS results, with higher scores reflecting better perceived usability and user satisfaction (Hyzy et al. 2022). On the standard SUS adjective rating scale, a score of 80.35 falls within the “Excellent” band, placing MARTIVE close to the upper end of commonly reported usability outcomes for prototype-stage digital platforms, which typically range from the “Good” (68–80) to “Excellent” categories. This suggests that combining three distinct service domains, the Creative Hub, Community Space, and Digital Commerce System, within a single interface did not come at the cost of perceived usability, a result that is noteworthy given the common assumption that feature-rich, integrated platforms tend to be more difficult to navigate than single-purpose tools. Furthermore, Black Box Testing demonstrated a functional success rate of 91.67%, confirming that the core features operated according to the specified requirements. These findings indicate that MARTIVE is both technically reliable and well accepted by users as an integrated platform for portfolio management, creator collaboration, and digital commerce activities.

6. Research Contributions

This study contributes to the body of knowledge on integrated creator platforms in three main respects. First, it proposes a unified creator-ecosystem architecture that combines portfolio management, community collaboration, and digital commerce within a single platform, addressing the conceptual and practical research gap identified in prior studies on platform fragmentation. Second, it provides an implemented, working system, MARTIVE, built using a modular Laravel-based MVC architecture, demonstrating that the proposed integration is technically feasible rather than purely conceptual. Third, it offers empirical validation of the proposed architecture through Black Box Testing and System Usability Scale (SUS) evaluation involving 50 digital creators, providing evidence-based support for the usability and functional reliability of an integrated creator platform.

6.1. Practical and Theoretical Implications

From a practical standpoint, MARTIVE offers digital creators, particularly visual content creators, a single platform through which portfolio management, community engagement, and monetization can be carried out without switching between multiple disconnected services, potentially reducing operational overhead and improving workflow efficiency. For platform developers and policymakers supporting the creative economy, the study provides a reference architecture for designing integrated digital infrastructure. Theoretically, the study extends the platform capitalism and platform dependency literature by demonstrating how integration at the architectural level can be used as a strategy to mitigate the fragmentation effects described in prior conceptual work, thereby bridging the gap between theory-oriented platform research and applied system development.

7. Threats to Validity

Several threats to validity should be considered when interpreting the findings of this study. Regarding internal validity, the usability and acceptance results were derived from self-reported questionnaire and SUS responses, which may be subject to social desirability bias; this risk was partially mitigated through the use of validated instruments (Cronbach's Alpha = 0.87) and Pearson Product Moment validity testing. Regarding external validity, the sample of 50 respondents was selected through purposive sampling of digital creators familiar with similar platforms, which may limit the generalizability of the findings to creators with different demographic or professional profiles; the sample size nonetheless meets common minimum thresholds recommended for prototype-stage usability evaluation. Regarding construct validity, the System Usability Scale and Black Box Testing instruments are widely validated in HCI and software engineering research, reducing the risk of construct misalignment, although they capture perceived usability and functional correctness rather than long-term adoption or economic outcomes. Regarding conclusion validity, statistical inferences (z-tests and confidence intervals) were applied to proportions derived from a moderate sample size, and results interpreted as "marginal" or "not significant" should be treated with caution rather than as definitive evidence of absence of effect.

8. Conclusion

This study set out to address three research questions concerning the design, functional reliability, and usability of an integrated platform for digital creators. In response to RQ1, the study proposes and implements a unified creator-ecosystem architecture, MARTIVE, that combines a Creative Hub, Community Space, and Digital Commerce System within a single Laravel-based web platform, thereby offering a concrete architectural solution to the platform fragmentation problem identified in the literature. In response to RQ2, Black Box Testing across 12 functional scenarios demonstrated a success rate of 91.67%, indicating that MARTIVE largely meets the functional requirements expected by digital creators, with the automated fund-withdrawal feature identified as an area for further development. In response to RQ3, usability evaluation involving 50 digital creators yielded an average System Usability Scale (SUS) score of 80.35 (Grade B, Excellent), exceeding the commonly cited benchmark of 68 and indicating strong perceived usability.

Collectively, these findings support the central claim of this study: that integrating portfolio management, community collaboration, and digital commerce within a single architecture, rather than treating them as separate services, can reduce the workflow fragmentation experienced by visual content creators while remaining functionally reliable and usable. Beyond the immediate technical contribution, the study contributes empirical evidence to the broader creator-economy and platform-dependency literature, and

offers a reference design that practitioners and future researchers can build upon when developing integrated creator infrastructure.

Nevertheless, several limitations should be acknowledged. First, the system evaluation was conducted with a relatively limited and purposively sampled group of 50 digital creators, which may restrict the broader generalizability of the usability and acceptance findings to the wider population of digital creators in Indonesia and beyond. Second, the automated fund-withdrawal feature has not yet been fully implemented due to ongoing payment gateway verification processes, meaning that the monetization cycle evaluated in this study does not yet represent the complete end-to-end transaction flow. Third, the evaluation focused on short-term usability and functional correctness rather than long-term adoption, retention, or economic outcomes for creators, which would require a longitudinal study design. Future research is recommended to involve a larger and more demographically diverse participant group, complete the integration of financial transaction services, incorporate longitudinal and comparative evaluation against existing creator platforms, and explore advanced analytical capabilities such as recommendation systems to further improve system effectiveness, usability, and overall user experience.

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