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Strengthening Coastal MSMEs' Brand Competitiveness Through AI-Driven Digital Marketing and Strategic Market Partnerships in Support of SDGs 8 and 17

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ABSTRACT: Coastal Micro, Small, and Medium Enterprises (MSMEs) face challenges in branding, digital marketing, and market access despite their significant contribution to local economic development. This study reports a community empowerment program integrating AI-driven digital marketing, continuous mentoring, and strategic market partnerships to strengthen the competitiveness of coastal MSMEs in Tambakmulyo and Tambakrejo, Tanjung Mas Subdistrict, Semarang City, Indonesia. Using a Participatory Action Research (PAR) approach, the program involved 12 MSMEs through needs assessment, capacity building, business strengthening, and evaluation. The intervention enhanced digital competencies, strengthened brand identity through AI-assisted branding, and expanded collaboration with key stakeholders. Overall, the program demonstrates an effective community-based approach to improving coastal MSME competitiveness while supporting SDG 8 (Decent Work and Economic Growth) and SDG 17 (Partnerships for the Goals).

KEYWORDS: artificial intelligence; coastal MSMEs; community empowerment, digital marketing, strategic market partneps, sustainable development goals

1. INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) play a fundamental role in Indonesia's economy, contributing approximately 61% of the national Gross Domestic Product (GDP), absorbing around 97% of the workforce, and accounting for nearly 99% of all business establishments [1]. These contributions position MSMEs as key drivers of employment, income generation, and inclusive economic development. In coastal regions, MSMEs further create added value from marine resources, diversify household livelihoods, and strengthen local food security, thereby enhancing the resilience of coastal communities [2], [3]. Strengthening the capacity and competitiveness of coastal MSMEs is therefore essential for promoting sustainable livelihoods and maximizing the economic potential of local marine resources [4].

As digital transformation accelerates, the competitiveness of coastal MSMEs increasingly depends on their ability to access wider and more diversified markets through digital technologies. AI-driven digital marketing offers new opportunities for MSMEs to improve promotional effectiveness, expand market reach, strengthen customer engagement, improve business performance, and support sustainable business growth [5]. These initiatives directly contribute to the Sustainable Development Goals (SDGs), particularly SDG 8 (Decent Work and Economic Growth) by enhancing entrepreneurship, productivity, and business competitiveness, and SDG 17 (Partnerships for the Goals) by fostering stronger collaboration among government, academia, the private sector, and local communities to facilitate knowledge exchange, technology transfer, innovation, and broader market access. [6].

Despite these opportunities, significant challenges remain among coastal MSMEs. These issues are evident in Tambakmulyo and Tambakrejo, Tanjung Mas Subdistrict, Semarang City, Central Java, Indonesia, where local MSMEs produce a wide range of products and many have already obtained legal certifications. However, their competitiveness remains constrained by inconsistent branding, limited digital marketing capabilities, and weak business networks. Marketing activities continue to rely predominantly on conventional channels, while AI-supported marketing has yet to be systematically adopted despite its potential to improve promotional efficiency and digital visibility. Consequently, a substantial gap persists between the productive capacity of coastal MSMEs and their ability to effectively communicate product value and compete in increasingly digitalized markets [2], [7].

Beyond digital capability constraints, limited strategic partnerships further hinder market expansion and long-term business sustainability. Existing collaborations remain largely transactional and have yet to develop into sustainable partnerships with

distributors, tourism businesses, souvenir retailers, e-commerce platforms, and other commercial actors capable of providing stable market access. Consequently, many MSMEs continue to depend on temporary sales channels, including local markets, bazaars, and personal networks, restricting opportunities for market diversification and brand development [8], [9]. Developing strategic partnerships is therefore crucial not only for expanding distribution channels but also for facilitating knowledge exchange, resource sharing, collaborative innovation, and greater market resilience, all of which are essential for strengthening the long-term competitiveness of coastal MSMEs [10], [11].

Previous studies have demonstrated that digital transformation and marketing innovation enable SMEs to create new distribution channels, enhance customer value creation, and strengthen their competitive capabilities [5], [12], [13]. In parallel, recent advances in artificial intelligence (AI) have shown considerable potential to support marketing activities through automated content generation, customer interaction, and data-driven decision-making [5]. However, most existing studies have examined digital transformation, marketing innovation, AI adoption, or business partnerships independently. Limited attention has been given to integrating AI-driven digital marketing with strategic market partnership development as a comprehensive community-based empowerment approach to strengthen the local brand competitiveness of coastal MSMEs.

To address this gap, this study reports a community empowerment program implemented by Diponegoro University students in collaboration with local stakeholders. The program integrates AI-driven digital marketing, continuous mentoring, and strategic market partnerships to strengthen the brand competitiveness of coastal MSMEs in Tambakmulyo and Tambakrejo, Tanjung Mas Subdistrict, Semarang City. AI was utilized to support logo design, product packaging, promotional content, product descriptions, and other digital marketing materials, while mentoring facilitated digital marketing adoption and partnership development to expand market access. By integrating technological innovation with community-based empowerment, this study examines how these interventions enhance brand competitiveness and support the sustainable economic development of coastal MSMEs.

2. METHOD

2.1. Program Design

This community engagement program employed a Participatory Action Research (PAR)-based community empowerment approach to strengthen the competitiveness of coastal Micro, Small, and Medium Enterprises (MSMEs) in Tanjung Mas, Semarang, Indonesia. PAR was adopted because it actively involves community members in identifying problems, designing interventions, implementing activities, and evaluating outcomes, thereby ensuring that the program addresses local needs while fostering community ownership and long-term sustainability [14], [15]. The intervention consisted of four sequential stages: Needs Assessment, Capacity Building, Business Strengthening, and Monitoring and Evaluation (Figure 1).

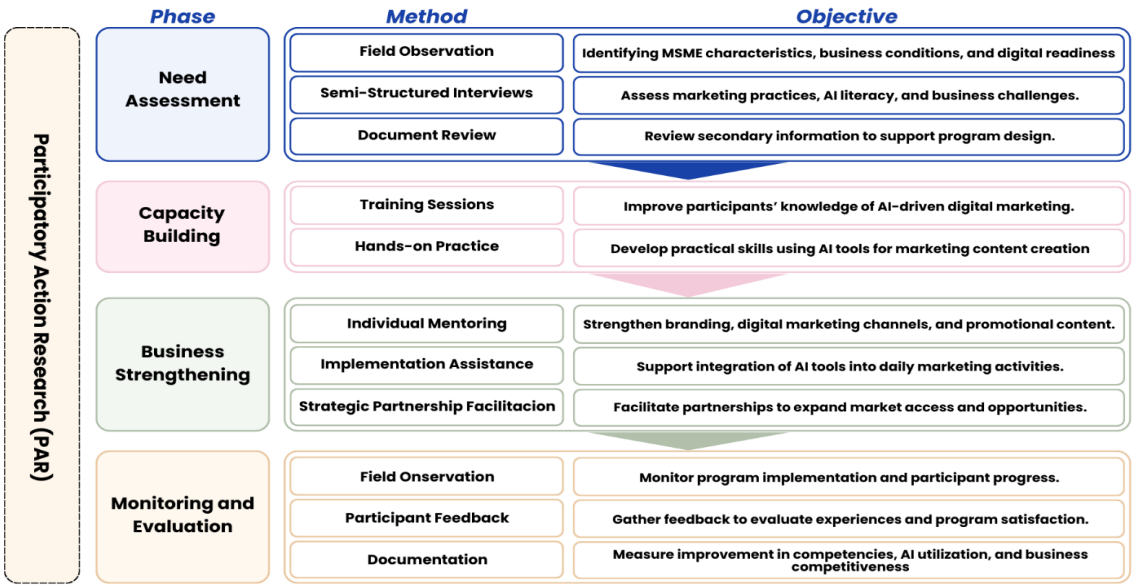


Figure 1. Participatory Action Research (PAR) framework for community empowerment.

2.2. Study Area and Participants

This community empowerment program was implemented in Tambakmulyo and Tambakrejo within Tanjung Mas Subdistrict, Semarang City, Central Java, Indonesia, a coastal area where Micro, Small, and Medium Enterprises (MSMEs) engaged in seafood processing, culinary products, handicrafts, and other home-based businesses play an important role in supporting the local economy. The participants consisted of 12 coastal MSME owners selected through purposive sampling based on three criteria: (1) actively

operating a business in Tambakmulyo or Tambakrejo within Tanjung Mas Subdistrict, (2) willingness to participate in all program activities, and (3) commitment to implementing the AI-driven digital marketing strategies and business development practices introduced during the program. The profiles of the participating MSMEs are presented in Table 1.

Table 1. Profile of Participating Coasal MSMEs

No	MSME Owner	Business Products	Location
1	Wahyu Kristiana	Coastal Handicrafts	Tambak Mulyo
2	Yuni	Salted Egg & Syrup	Tambak Mulyo
3	Lutfiatun	Assorted Peyek Crackers	Tambak Mulyo
4	Partinah	Crispy Wader Fish and Layur Fish	Tambak Mulyo
5	Wahyu	Mangrove Chips	Tambak Mulyo
6	Puji Lestari	Traditional Herbal Drink	Tambak Rejo
7	Al Ahladah	Catering and Snack Box	Tambak Rejo
8	Muslimah	Green Mussel Crackers	Tambak Rejo
9	Kotiah	Mangrove Chips	Tambak Rejo
10	Paini	Spicy Chips	Tambak Rejo
11	Sumarni	Mangrove Chips	Tambak Rejo
12	Ningrum Mawati	Shrimp Paste	Tambak Rejo

2.3. Program Implementation

The program was implemented through four sequential stages as follows.

a. Need Assessment

The initial stage identified participant' business characteristicts, digital readiness, marketing practices, and business development challenges through field observations and semi-structured interviews [16]. Particular attention was given to assesing AI literacy, digital marketing adoption, branding practices, and existing market partnerships. The finding served as the basic for designing training materials and mentoring activities tailored to the needs of coastal MSMEs.

b. Capacity Building

Capacity-building activities were conducted through training sessions and hands-on practice focusing on AI-driven digital marketing. The training covered branding, logo and product packaging design, social media marketing, prompt engineering, AI-assisted content creation, and the utilization of generative AI tools to develop promotional materials, product descriptions, and other digital marketing content. During the practical sessions, participants directly applied these AI tools to develop branding elements, create digital marketing content, and strengthen their business promotion strategies across various digital platforms.

c. Business Stregthening

Business strengthening emphasized the practical implementation of AI-driven marketing strategies through individualized mentoring. Participants received assistance in optimizing digital marketing channels, strengthening local brand identity, improving promotional content, and integrating AI tools into daily marketing activities. Furthermore, the program facilitated strategic market partnerships by connecting MSMEs with government agencies, business communities, digital marketplaces, and other potential partners to expand market opportunities and strengthen local brand competitiveness.

d. Monitoring and Evaluation

Monitoring and evaluation were conducted throughout the program to assess participant's progress in adopting AI-driven digital marketing practices and developing strategic market partnerships. Evaluation was carried out through field observations, participant feedback, and documentation of program activities to examine the implementation of the acquired knowledge and skills [17]. The evaluation focused on improvements in digital competencies, AI utilization, marketing practices, and participants' perceptions of business competitiveness following the intervention.

2.4. Data Collection and Analysis

Data were collected through field observations, semi-structured interviews, documentation, and participant feedback throughout the program [16]. The collected data were analyzed using descriptive qualitative analysis, involving data reduction, data categorization, data interpretation, and conclusion drawing to evaluate the implementation of AI-driven digital marketing, strategic market partnerships, and their contributions to strengthening local brand competitiveness. To enhance the credibility of the findings, information obtained from multiple data sources was compared and interpreted comprehensively to identify recurring patterns and evaluate the effectiveness of the community empowerment program [18].

3. RESULT

3.1. Initial Assessment of Coastal MSMEs Communities

An initial assessment was conducted by Diponegoro University students through field observations and semi-structured interviews to identify the existing conditions of participating coastal MSMEs before implementing the community empowerment program. As part of the community engagement initiative, the assessment identified key challenges and provided baseline information for designing interventions tailored to MSMEs' needs. The assessment focused on business characteristics, digital marketing practices, branding conditions, AI literacy, business development needs, and market access.



Figure 2. Field observation and interview activities

The assessment revealed that most participating MSMEs had not yet implemented digital marketing effectively to support business promotion and market expansion. Digital marketing activities were generally limited to irregular social media postings without a structured content strategy. In addition, branding elements, including product logos, packaging, and promotional content, had not been developed consistently to establish a strong brand identity and improve product competitiveness. These limitations reduced the effectiveness of product promotion and the ability of MSMEs to reach broader market segments.

Furthermore, the assessment showed that limited digital marketing capacity had restricted the market reach of many MSMEs, with most businesses relying on local customers and personal networks. Access to wider markets through digital platforms and strategic partnerships remained limited, constraining product visibility and business growth. Although participants had limited experience using AI-based digital marketing tools, they showed strong motivation to adopt new technologies. These findings guided the design of AI-driven digital marketing training, branding assistance, continuous mentoring, and strategic market partnership activities implemented by Diponegoro University students.

3.2. Strengthening Brand Identity Through AI-Driven Digital Marketing

Capacity-building activities were conducted through interactive training sessions followed by hands-on practice to strengthen the digital marketing capabilities and brand identity of participating coastal MSMEs. The training was facilitated by Diponegoro University students as part of the community empowerment program and introduced participants to the practical application of generative Artificial Intelligence (AI) for business branding and digital promotion. The sessions covered fundamental branding concepts, prompt engineering, AI-assisted content creation, social media marketing, and the use of AI tools to develop visual and promotional materials tailored to MSME products.

During the practical sessions, participants used AI applications to design business logos, develop product packaging, prepare social media content, generate promotional copywriting, and optimize digital marketing materials for online platforms. Diponegoro University students provided continuous technical assistance to help participants effectively use AI tools and adapt the outputs to their business needs. Participants also refined AI-generated logos, packaging designs, promotional messages, and content to better reflect their products and brand identity. This mentoring process strengthened participants' confidence in applying AI for branding and digital marketing. Examples of the training activities and hands-on practice are presented in Figure 3.



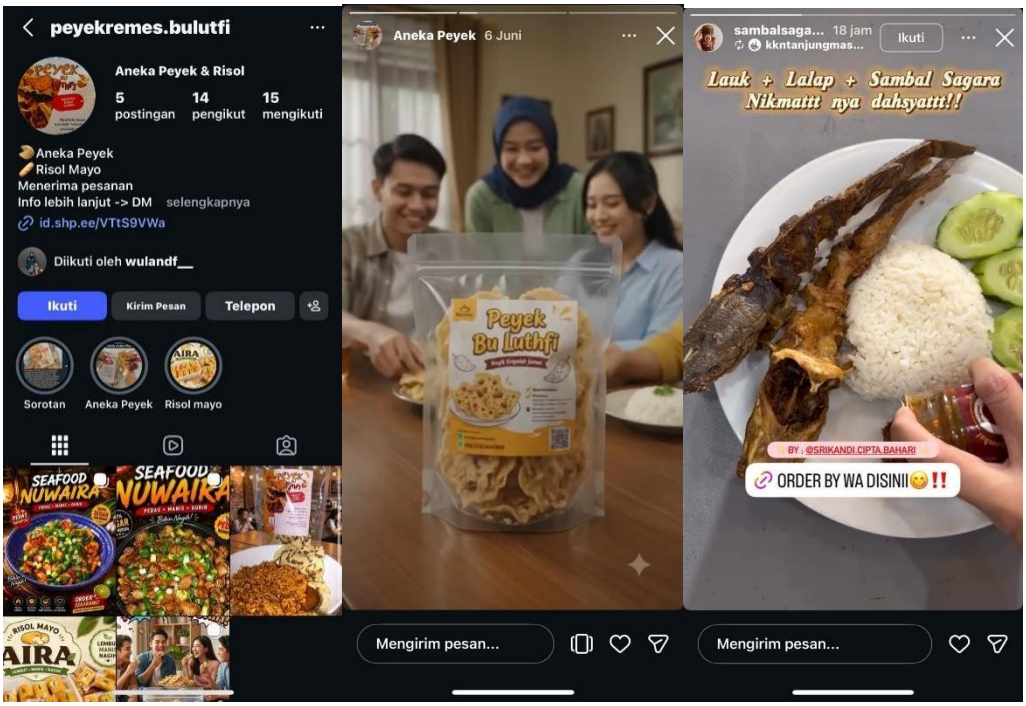
(a)



(b)



(c)



(d)

Figure 3. AI-driven digital marketing training and branding activities: (a) training session, (b) hands-on practice, (c) logo and packaging design, (d) AI-assisted social media content and promotional materials

The implementation demonstrated noticeable improvements in the visual identity and digital marketing readiness of the participating MSMEs. Prior to the program, many businesses relied on simple product labels, inconsistent packaging designs, and unstructured promotional content. Following the training and mentoring sessions, participants produced more professional logos, attractive product packaging, structured social media content plans, persuasive promotional captions, and more consistent branding materials. These improvements strengthened product presentation and increased the readiness of MSMEs to promote their products through digital platforms and broader market channels. The improvements in branding quality before and after the program are summarized in Table 2.

Table 2. Comparison of AI-Driven Digital Marketing Practices Before and After the Program

Digital Marketing Component	Before Program	After Program
Logo	Simple logo or no logo	AI-assisted professional logo
Product packaging	Basic packaging with limited visual appeal	More attractive and consistent packaging
Product description	Brief and incosistent	Clear and persuasive product descriptions
Content planning	No structured content planning	Monthly AI-assisted content planning
Copywriting	Simple promotional captions	More engaging promotional copy

Social media	Irregular postings	More consistent and optimized promotional content
Brand identity	Inconsistent visual identity	Stronger and more recognizable brand identity

3.3. Developing Strategic Market Partnership

Following the AI-driven digital marketing and branding activities, Diponegoro University students facilitated the development of strategic market partnerships to strengthen the business sustainability and market competitiveness of participating coastal MSMEs. The mentoring focused on expanding business networks and introducing participants to collaboration strategies that could improve market access, increase product visibility, and support long-term business development. Participants were also encouraged to identify external stakeholders that could contribute to strengthening their business performance.

Diponegoro University students conducted mentoring sessions on strategic market partnership development by introducing participants to the importance of building sustainable collaborations with external stakeholders. The activities included discussions on partnership opportunities, business communication strategies, and the preparation of business profiles to support future collaboration. Figure 4 shows one of the strategic market partnership mentoring sessions conducted during the community empowerment program.



Figure 4. Strategic market partnership mentoring session

Following the mentoring session, Diponegoro university students and participants collaboratively identified and mapped potential strategic partners based on the characteristics and development needs of the participating coastal MSMEs. The mapping categorized potential partners into government agencies, digital marketplace platforms, business communities, tourism stakeholders, and supporting institutions, each expected to contribute to market expansion, business networking, promotion, and capacity building. The resulting partner mapping is presented in Figure 5.



Figure 5. Potential strategic partner mapping for coastal MSMEs

The strategic partnership initiatives identified several potential stakeholders that could support the sustainable development of participating coastal MSMEs. The partner mapping highlighted opportunities for collaboration with government agencies, digital marketplace platforms, business communities, tourism stakeholders, and supporting institutions to strengthen business networks, expand market access, and enhance promotional activities. These strategic partnerships are expected to improve product visibility, strengthen local brand competitiveness, and contribute to the long-term sustainability of coastal MSMEs. The identified potential partners and their expected roles are summarized in Table 3.

Table 3. Potential strategic partners and their roles in supporting coastal MSMEs

Partner Category	Potential Partners	Roles in Supporting Coastal MSMEs
Government	Central Java Provincial Government, Department of Cooperatives and SMEs of Central Java, Department of Industry and Trade of Central Java, Department of Marine Affairs and Fisheries of Central Java	Facilitate MSME development programs, business licensing, product exhibitions, business incubation, and policy support to improve market competitiveness.
Marketplace partners	Shopee, Tokopedia, TikTok Shop	Expand digital market access, increase product visibility, facilitate online transactions, and strengthen digital marketing performance.
Business community	KADIN Semarang, HIPMI Semarang, Semarang BISA MSME Community (USB)	Strengthen business networking, encourage collaboration among MSMEs, provide entrepreneurship support, and create opportunities for business partnerships.
Tourism partners	Ayo Wisata Semarang, Pusat Oleh-Oleh MaDua 52, Djoe Souvenir Center, PT Kereta Api Indonesia (DAOP 4 Semarang)	Promote local products through tourism activities, souvenir centers, and strategic tourism destinations to increase market exposure.
Financial institutions	Bank Rakyat Indonesia (BRI), Bank Jateng, Bank Negara Indonesia (BNI)	Provide financial services, business financing, digital payment solutions, and financial literacy programs to support MSME growth.
Supporting institutions	Universitas Diponegoro (LPPM), PLN Indonesia Power, Bank Indonesia	Provide mentoring, capacity-building programs, institutional assistance, business consultation, and support for sustainable MSME development.

4. DISCUSSION

The community empowerment program demonstrated that combining training, direct mentoring, and practical implementation was more effective than one-time knowledge transfer in strengthening the digital capabilities of coastal MSMEs. Previous studies have highlighted that continuous mentoring facilitates technology adoption because business owners are able to immediately apply newly acquired knowledge to their daily business activities, thereby increasing the effectiveness of digital transformation [19], [13], [20]. In addition, community-based capacity building has been recognized as an effective approach to improving entrepreneurial resilience and business sustainability among MSMEs [20]. In this program, participants not only gained knowledge of AI-driven digital marketing but also developed practical skills in managing social media, utilizing digital marketplaces, improving product branding, and producing promotional content. These findings indicate that sustained assistance can accelerate digital transformation while strengthening the competitiveness of coastal MSMEs in increasingly digital markets [21], [19].

The program also strengthened participants' AI literacy by introducing accessible generative AI tools, including ChatGPT, Gemini, and Canva, to support branding and promotional activities. Rather than replacing entrepreneurs' creativity, these technologies functioned as practical assistants that simplified the creation of product descriptions, promotional posters, logos, and digital marketing content. Artificial intelligence has increasingly been recognized as an important driver of marketing innovation because it enables firms to automate content creation, personalize customer engagement, and improve marketing efficiency [21], [22], [23]. Furthermore, previous studies have reported that AI adoption enables MSMEs with limited financial and human resources to enhance brand equity and digital competitiveness through more efficient marketing practices [24], [25]. Therefore, integrating AI into community empowerment programs represents a practical strategy for accelerating digital capability development among coastal MSMEs.

Beyond improving digital marketing competencies, the program facilitated the development of strategic market partnerships involving government institutions, tourism stakeholders, business communities, marketplaces, universities, and other supporting organizations. Previous research suggests that collaborative partnerships strengthen MSME competitiveness by expanding market access, encouraging knowledge exchange, and increasing business resilience [19], [20]. The integration of AI-driven digital marketing with strategic partnerships enables coastal MSMEs to improve product visibility, strengthen local brand identity, and access broader business networks, thereby creating greater opportunities for sustainable business growth [21], [24]. Collectively, these outcomes contribute to SDG 8 (Decent Work and Economic Growth) through enhanced entrepreneurial capacity and business competitiveness, as well as to SDG 17 (Partnerships for the Goals) through multi-stakeholder collaboration [6].

5. CONCLUSION

This community empowerment program demonstrates that integrating AI-driven digital marketing, continuous mentoring, and strategic market partnerships can strengthen the brand competitiveness of coastal MSMEs. The Participatory Action Research approach ensured that each intervention was based on local needs, implemented collaboratively, and directed toward sustainable business development.

1. Need Assessment identified inconsistent branding, limited digital marketing capabilities, low AI literacy, and weak market linkages. Despite these constraints, the participating MSMEs showed strong motivation to adopt digital technologies and expand their markets.
2. Capacity Building improved participants' practical ability to use ChatGPT, Gemini and Canva for logo design, product packaging, product descriptions, social media content, and other promotional materials. Hands-on practice also increased their confidence in applying AI to marketing activities.
3. Business Strengthening translated the acquired knowledge into business practices through individualized mentoring. This phase strengthened brand identity. Improved digital marketing channels, and mapped potential partnerships with government agencies, marketplaces, business communities, tourism stakeholders, financial institutions, and supporting organizations.
4. Monitoring and Evaluation showed early improvements in digital competencies, AI utilization, promotional consistency, and market readiness. These outcomes support SDG 8 through stronger entrepreneurial capacity and business competitiveness, as well as SDG 17 through multi-stakeholder collaboration. Longer-term monitoring remains necessary to evaluate sustained technology adoption, partnership implementation, business performance, and effects on coastal livelihoods.

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