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Transforming member development through AI: A case study of training, coaching, mentoring, and duplication in network marketing ecosystem

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Abstract: This study investigates how artificial intelligence (AI) can optimize the digital transformation of member development in a multi-level marketing (MLM) ecosystem. Focusing on the implementation of ChatGPT and Meta AI, the research explores their roles in supporting training, coaching, mentoring, and duplication processes. Using a qualitative case study design, data were obtained through semi-structured interviews, structured observations, and document analysis within Miora, an Indonesian MLM organization adopting AI-based learning support. The findings indicate that AI improves access to consistent knowledge, accelerates learning readiness, strengthens mentoring quality, and enhances duplication across geographically dispersed teams. Key challenges include differences in digital literacy, early user resistance, and the ongoing need to align technological assistance with human leadership. The study concludes that AI does not replace leaders but amplifies their capacity to guide and develop members more effectively. Practical implications highlight strategies for integrating AI into training ecosystems and designing scalable, AI-assisted development frameworks.

Keywords: *Actor-network theory, Artificial intelligence, Member development, Multi-level marketing, Technological pedagogical content knowledge.*

1. Introduction

Digital transformation has profoundly reshaped business models and learning systems worldwide, with artificial intelligence (AI) emerging as a disruptive force in education, healthcare, and organizational development [1, 2]. Generative AI tools such as ChatGPT and Meta AI are increasingly recognized for their ability to provide real-time feedback, automate content creation, and support personalized learning experiences [3, 4]. While these affordances have been extensively examined in formal educational contexts, their application within informal and entrepreneurial ecosystems remains insufficiently theorized.

Multi-level marketing (MLM) represents one such underexplored setting. Positioned as an alternative entrepreneurial pathway, particularly in emerging economies, MLM combines direct selling with network-building to foster inclusive business opportunities [5, 6]. However, sustaining member development at scale, encompassing training, coaching, mentoring, and duplication (TCMD), remains a persistent challenge. Traditional face-to-face mentoring fosters trust but lacks consistency, replicability, and scalability across geographically dispersed networks [7]. Recent digital adoption, including social media platforms, online modules, and messaging applications, has extended MLM's reach but has not resolved the problem of structured and sustainable member development [8, 9].

Although AI's role in enhancing motivation, autonomy, and performance is increasingly documented in formal education and corporate training [1, 3], research on AI's integration into MLM ecosystems remains scarce. Existing MLM scholarship primarily emphasizes marketing strategies, social networks, and growth performance [6, 10], while neglecting how AI might systematically

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transform internal developmental processes such as TCMD. This gap is critical, as MLM success depends less on customer acquisition and more on scalable member development that ensures consistent knowledge transfer and leadership building.

To address this gap, this study draws on two complementary frameworks. The Technological Pedagogical Content Knowledge (TPACK) model [11] provides a structured lens to examine how technology, pedagogy, and content intersect in supporting learning. While TPACK is widely applied in formal education [12, 13], it has rarely been extended to informal entrepreneurial contexts. Actor-Network Theory (ANT) [14] complements this by conceptualizing AI as a non-human actor that reconfigures power, trust, and authority relations in organizational networks [15, 16]. Integrating TPACK and ANT thus enables a holistic analysis of AI adoption, capturing both the pedagogical design of member development and the socio-technical dynamics of human–AI collaboration.

This study investigates how generative AI, specifically ChatGPT and Meta AI, supports member development in Miora, an Indonesian MLM enterprise pioneering AI adoption. Using an instrumental qualitative case study, it explores how AI is integrated into TCMD processes and how this integration impacts scalability, consistency, and engagement. The contributions are threefold. First, the theoretical contribution: extending TPACK and ANT into the underexplored domain of informal entrepreneurial learning, this study demonstrates how AI acts simultaneously as a pedagogical enabler and an organizational actor. Second, practical contribution: the study offers actionable design principles for building AI-enhanced mentoring systems that are scalable, replicable, and human-centered. Third, scholarly novelty: to the best of our knowledge, this is the first empirical study to systematically integrate TPACK and ANT in analyzing AI-enabled transformation of MLM member development.

By addressing these contributions, the paper advances the understanding of digital transformation in entrepreneurial ecosystems while offering strategic insights for practitioners navigating AI adoption in network-based enterprises.

2. Literature Review

2.1. Member Development in MLM

Member development is widely recognized as the cornerstone of MLM performance, typically operationalized through TCMD [5, 17]. Training ensures product and business knowledge, coaching provides targeted performance support, mentoring fosters long-term developmental guidance, and duplication enables scalable replication of successful practices [18]. Despite this centrality, implementation across MLM networks remains inconsistent, often fragmented by geographical dispersion, diverse demographics, and reliance on informal mentoring structures [7].

Scholars have noted that traditional face-to-face approaches strengthen interpersonal trust but lack scalability and standardization [6]. Attempts to digitize MLM development through social media platforms, online modules, and mobile applications have improved reach [10]. Still, they remain limited in providing structured and sustainable mentoring systems. Thus, while the literature acknowledges TCMD as vital, it has yet to theorize systematic mechanisms for scalable and replicable member development sufficiently.

2.2. AI in Informal and Entrepreneurial Learning

Artificial intelligence has been shown to enhance learner autonomy, motivation, and performance across formal education and professional training [1, 3]. Generative AI tools such as ChatGPT and Meta AI offer unique affordances: personalized feedback, real-time content generation, and automated guidance for repetitive tasks [2, 4]. These affordances align directly with MLM's scalable, standardized, and self-directed development needs.

However, research on AI in MLM ecosystems remains scarce. Existing studies primarily emphasize digital marketing, recruitment, or customer-facing strategies [8, 9] with little focus on internal member development. This omission is significant, given that MLM's sustainability depends less on external marketing and more on effective replication of knowledge, leadership, and mentoring practices. By

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overlooking AI's potential to transform TCMD, the literature leaves a critical gap in theory and practice.

2.3. Technological Pedagogical Content Knowledge (TPACK)

The TPACK framework [11] conceptualizes effective learning as the integration of technological knowledge (TK), pedagogical knowledge (PK), and content knowledge (CK). It extends Shulman's PCK by incorporating technology as a determinant of instructional success. TPACK has been extensively applied in educational research [12], and recent studies have explored AI-integrated extensions [13, 19].

Despite this progress, TPACK applications remain confined mainly to formal education. MLM member development differs in that mentors and leaders, not professional educators, deliver knowledge that combines business strategies, motivational coaching, and product expertise. Applying TPACK in this setting extends its scope into entrepreneurial learning, where structured educational systems are absent but developmental demands are continuous and high.

2.4. Actor-Network Theory (ANT)

Actor-Network Theory [14] views human and non-human entities as actants that collectively shape networks through negotiation and association. It has been employed to study technology adoption and organizational transformation [15, 20] with recent studies highlighting AI's role in reshaping power relations and agency in hybrid networks [16, 21].

In MLM contexts, ANT allows researchers to conceptualize AI as a tool and a co-actor that redefines authority, trust, and relational dynamics. For example, AI-generated scripts and onboarding routines can decentralize leadership functions, while AI's presence in mentoring reshapes communication flows. This perspective complements TPACK by moving beyond instructional design to highlight how power and agency are redistributed when AI is embedded in mentoring ecosystems.

Recent scholarship continues to highlight the accelerating role of artificial intelligence in learning, mentoring, and organizational capability-building. Studies show that generative AI enhances formative feedback, accelerates learner readiness, and strengthens mentoring consistency across digital environments [1, 22]. AI-driven transformation also reshapes communication, decision-making, and knowledge dissemination within distributed teams [2]. Extensions of the TPACK framework demonstrate the need for alignment between pedagogy, content, and AI-based technologies to improve digital learning effectiveness [13, 19]. More recent evidence reinforces these findings, showing that generative AI enhances organizational learning capability and supports more accurate, scalable coaching and feedback processes in digital training environments [23, 24]. Collectively, these studies confirm that AI adoption requires integration with leadership practices, knowledge architecture, and organizational readiness, elements that are highly relevant to MLM ecosystems seeking scalable and consistent member development.

2.5. Conceptual Framework

This study integrates TPACK and ANT to analyze AI-enabled member development in MLM. TPACK provides a pedagogical lens to evaluate how AI supports knowledge delivery, mentoring strategies, and duplication processes. ANT complements this by framing AI as a non-human actor that negotiates authority, influences trust, and reshapes human–technology relationships. Together, these frameworks capture the instructional coherence of AI-enhanced TCMD and the socio-technical reconfiguration of mentoring ecosystems.

As illustrated in Figure 1, the conceptual model demonstrates how AI mediates TCMD through pedagogical alignment (via TPACK) and relational dynamics (via ANT). This integrated lens addresses a key theoretical gap. While previous research has analyzed MLM through either marketing or social network perspectives, this study offers a socio-pedagogical framework to understand how AI transforms internal developmental practices in entrepreneurial ecosystems.

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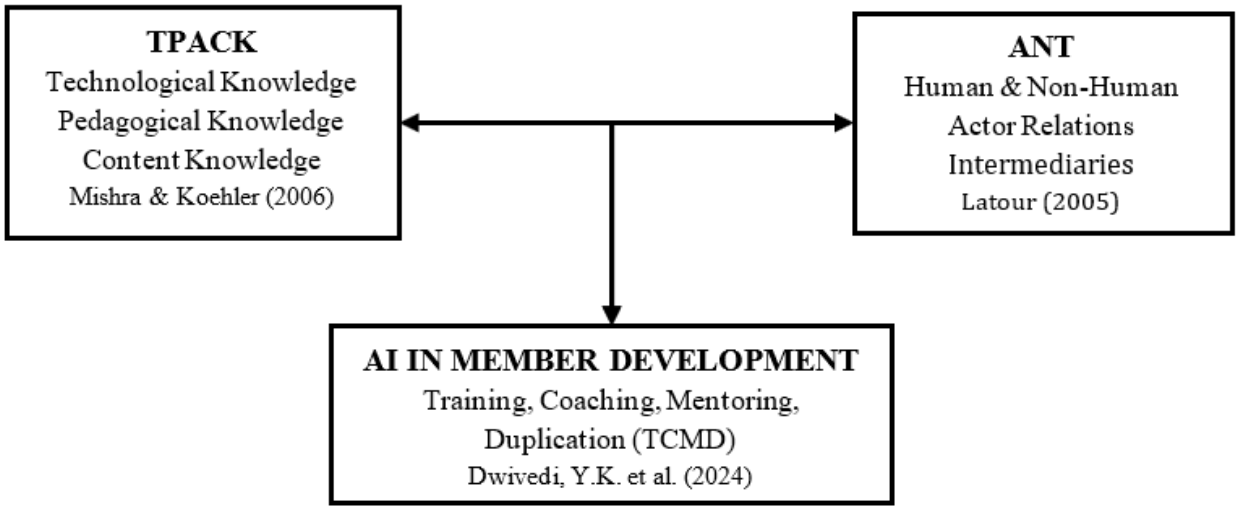

Figure 1.
Integrated Conceptual Framework using TPACK and ANT for AI-supported Member Development in MLM.
Source: Mishra and Koehler [11], Latour [14], and Dwivedi et al. [2].

3. Methodology

3.1. Research Design

This study employed an instrumental qualitative case study approach suitable for exploring complex real-world practices and generating an in-depth understanding of bounded systems [25]. By focusing on Miora, an Indonesian multi-level marketing (MLM) organization pioneering generative AI in member development, the case study design allowed the researchers to examine how AI is integrated into TCMD. The instrumental case design was chosen to document practices in a single organization and generate transferable insights that inform theory and practice in similar entrepreneurial ecosystems [26].

The qualitative case study approach facilitated the collection of multiple sources of evidence, including interviews, documents, and observations, enabling triangulation and enhancing the credibility of findings [27, 28]. This methodological choice reflects the need to capture the nuances of human–AI interaction in MLM networks, where processes are deeply embedded in organizational culture and daily practices.

To illustrate the sequential steps of the research process, from case selection to data collection, analysis, interpretation, and validation, we developed a methodological flowchart, which is presented in Figure 2. This figure provides a visual overview of the study's structure, emphasizing the iterative movement between empirical data and theoretical frameworks (TPACK and ANT).

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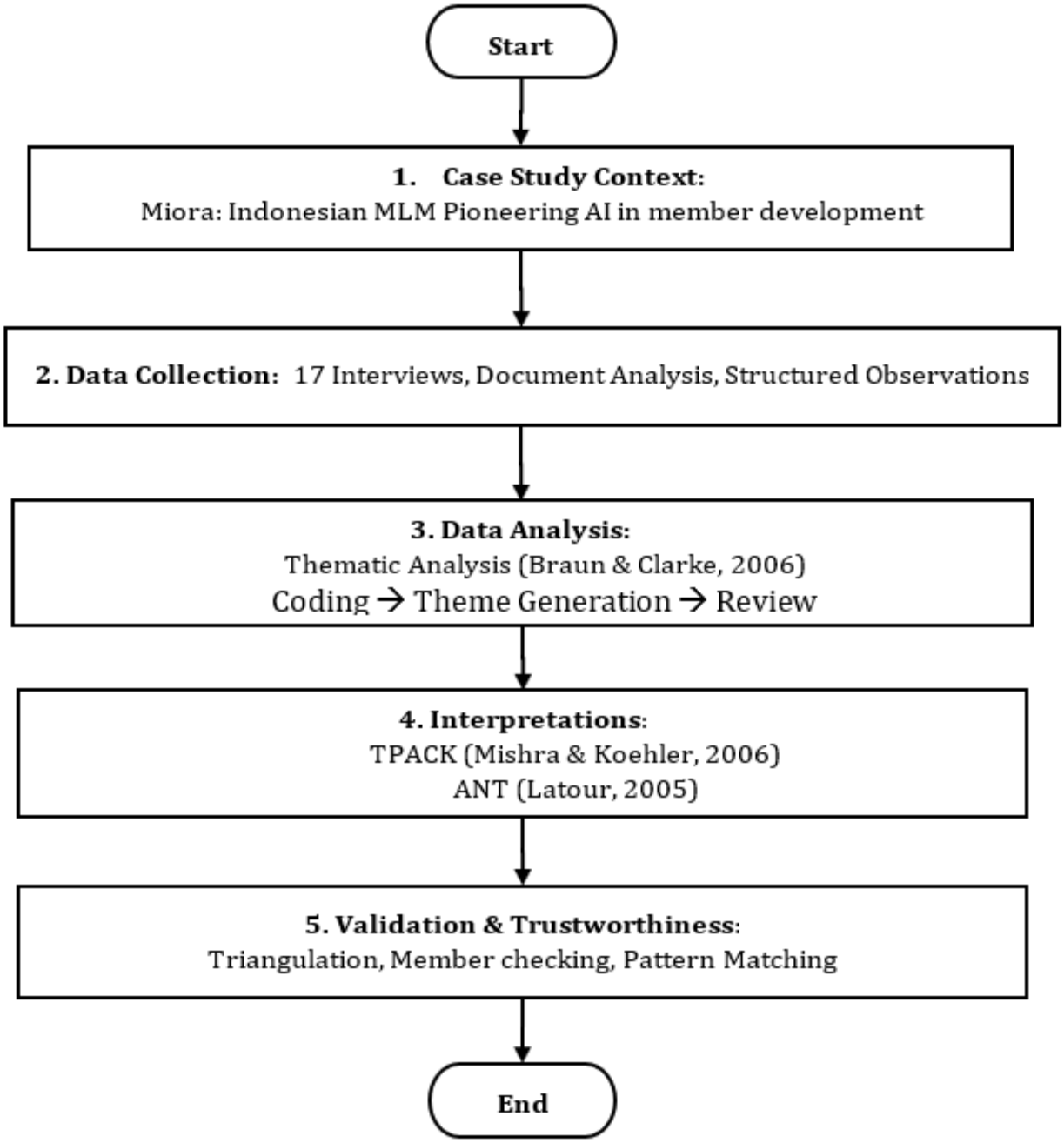

Figure 2.
Research Methodology Flowchart for AI-Enabled Member Development Case Study.
Source: Braun and Clarke [29], Mishra and Koehler [11], and Latour [14].

3.2. Case Study Context

Miora is an MLM enterprise headquartered in Indonesia. It specializes in health and wellness products and fosters entrepreneurship through network-building. Since 2024, the company has accelerated digital transformation initiatives, culminating in the 2025 launch of an AI-based program that integrates ChatGPT and Meta AI into member training, coaching, and mentoring. This initiative

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represents one of the first systematic attempts within the Indonesian MLM sector to embed generative AI into TCMD processes, making it an appropriate and timely context for investigation.

As an organization with thousands of members spread across Indonesia, Miora faces typical MLM challenges: geographically dispersed teams, diverse member backgrounds, and inconsistent duplication practices. Adopting AI tools was positioned as a strategic response to these challenges, aiming to enhance scalability, standardization, and personalized support. Studying Miora, therefore, provides both contextual relevance and broader implications for MLM organizations navigating digital transformation.

3.3. Data Collection Methods

Data were collected through semi-structured interviews, document analysis, and participatory observation. A purposive sample of 15–20 participants was selected, consisting of team leaders, active members, and key management personnel directly involved in initiating, planning, and implementing the AI-based member development project. This sampling strategy aligns with qualitative research standards for relevance and depth [26]. Snowball sampling was also employed to identify additional informants engaged in informal or undocumented mentorship and training roles. The sample size aligns with established guidelines for achieving data saturation in qualitative studies [30, 31].

Three primary methods of data collection were employed: semi-structured interviews, organizational document analysis, and structured observations. Data were collected between May and July 2025, covering 17 semi-structured interviews, 10 structured observations, and internal organizational documents. First, seventeen semi-structured interviews were conducted with leaders, members, and management staff. The interviews focused on experiences with AI-supported training, coaching, mentoring, duplication, perceptions of adoption challenges, and reflections on leadership and learning role changes. Each interview lasted between 45 to 90 minutes and was audio-recorded with participant consent. Second, internal organizational documents, including AI-based training modules, standard operating procedures (SOPs), and digital strategy plans, were analyzed to understand the formal integration of AI into developmental processes. Third, ten structured observations of training sessions, WhatsApp/Telegram group activities, and Zoom-based mentoring were conducted over three months, generating detailed field notes that captured real-time interactions between members, leaders, and AI tools. This multi-source approach enhanced the richness of the dataset and enabled triangulation across different forms of evidence.

For transparency and replicability, the research instruments (semi-structured interview guide, structured observation sheet, and document analysis checklist) are provided in Appendices A to C.

3.4. Data Analysis Procedures

Data were analyzed using thematic analysis following the six-phase model of Braun and Clarke [29]: (1) familiarization with the data, (2) generating initial codes, (3) searching for themes, (4) reviewing themes, (5) defining and naming themes, and (6) producing the final report. Both inductive and deductive coding were applied. Inductive coding allowed themes to emerge from the raw data, while deductive mapping aligned findings with the constructs of TPACK and ANT frameworks.

Analytical triangulation was employed by comparing results across interviews, documents, and observations to support rigor. AI-assisted analysis (using ChatGPT prompts) was applied selectively to cross-validate emerging codes and patterns, although the researchers conducted the final interpretation to ensure contextual accuracy and theoretical alignment. Pattern matching Sinkovics [32], was used to compare empirical themes with theoretical expectations, strengthening the explanatory power of findings.

Coding and theme development were carried out manually by the researcher, with analytical support from AI-assisted prompts generated via ChatGPT. This AI integration was utilized to explore consistency among themes, assist in identifying emerging patterns, and facilitate cross-validation across

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different data sources. The iterative refinement of themes was conducted in alignment with the study's dual theoretical frameworks: TPACK and ANT.

The thematic analysis adopted a hybrid approach that combined inductive coding, allowing for the emergence of themes directly from the data, with deductive mapping informed by the constructs embedded within TPACK and ANT. This dual approach is particularly suitable for case study research that investigates emerging practices within evolving organizational settings [33].

Rather than employing conventional *Computer-Assisted Qualitative Data Analysis Software* (CAQDAS) such as NVivo, this study utilized ChatGPT as an AI-supported analytical assistant. Transcripts and documents were analyzed in segmented batches, wherein ChatGPT facilitated the identification of codes, the generation of summary patterns, and the comparative analysis of themes across cases. Final thematic interpretations were reviewed and validated by the researcher to ensure coherence with both the theoretical framework and the empirical data.

3.5. Trustworthiness and Ethical Considerations

Four criteria were addressed to ensure the study's trustworthiness: credibility, dependability, confirmability, and transferability [34]. Credibility was enhanced through data triangulation, member checking, and prolonged engagement with the field. Dependability was supported by maintaining detailed research process documentation, while confirmability was achieved through reflexive memos and peer debriefing. Transferability was ensured by presenting thick descriptions of the case context and research processes, allowing readers to determine the applicability of the findings to other settings. Data triangulation was conducted across interviews, documents, and observations [28]. Investigator reflexivity and methodical transparency were employed to strengthen dependability and confirmability [35]. Outputs generated by ChatGPT were critically reviewed and cross-validated with raw transcripts to ensure analytical rigor and mitigate overreliance on AI assistance.

Member checking was employed to validate interpretive accuracy, enabling participants to review and confirm the themes derived from their contributions. Detailed documentation of the research process, from data collection through analysis, was maintained to ensure transparency and auditability. Informed consent was obtained from all participants, and confidentiality was safeguarded through pseudonymization and secure data handling protocols.

4. Results and Discussion

This section presents triangulated findings from the case study on AI-supported member development in Miora, based on three data sources: interview transcripts (17 participants), internal documents (8 categories), and 10 structured observation memos. The analysis is organized into five key themes that emerged through thematic coding, with each theme supported by multi-source evidence and interpreted through the dual lenses of the TPACK framework and ANT.

4.1. AI-Enabled Scalable Training

The findings indicate that generative AI tools such as ChatGPT and Meta AI have significantly enhanced the accessibility and scalability of training within Miora's MLM ecosystem. Members and leaders reported that AI-enabled training materials were more structured, readily available, and adaptable to different learning needs. The 24/7 accessibility of AI allowed even remote members to engage with training content independently, reducing dependence on face-to-face sessions and accelerating onboarding cycles. Internal documents and observations corroborated these experiences, showing that AI-generated modules and standardized content were widely used in WhatsApp groups and Zoom sessions to ensure team alignment.

From a TPACK perspective, this finding demonstrates how technological knowledge (TK) and content knowledge (CK) intersect to produce consistent and replicable training outputs. ANT further enriches this analysis by conceptualizing AI as a non-human actor that reconfigures the trainer–member relationship, decentralizes authority, and creates new patterns of interaction. The study thus reinforces

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earlier claims that digital transformation can expand reach in MLM [36] while advancing the conversation by showing how AI specifically functions as an autonomous learning facilitator.

4.1.1. Evidence from Interviews

"I think this is very helpful because I previously did not understand, but now I'm starting to understand. I'm not fully there yet, but I'm learning more thanks to AI." (MB01)

"What I use now, because I have already studied it, I open it every night. With this AI, whatever I do not understand, I just ask there. Then we are guided and directed on how to do things in the PT Tangguh Maju Terus business… With this AI, it is really helpful." (LD02)

"I just ask according to the topic, and AI immediately answers. That answer can be forwarded directly to my members, so they quickly understand the material… With AI, the material is ready in 5 minutes, faster, more structured, and accurate for our needs. It's extremely helpful." (LD04)

"Very helpful. AI is very practical and not long-winded. Members just need to read. Literacy is crucial now. If you are not used to reading and learning, it will be difficult." (LD10)

"I feel more confident. I'm no longer confused because now there's a replacement for Google. If I have any questions related to Miora, I just ask AI." (MB11)

Previously, training and explanations were always conducted face-to-face, one-on-one. After adopting AI, many of these tasks can now be handled by AI, making training content more relevant, up-to-date, and accessible at any time for members, even those in remote regions. *(MG12)*

Drawing on insights from members, leaders, and management, the interviews consistently show that AI-powered tools have significantly transformed training within the Miora network. Members and leaders report increased ease, speed, and autonomy in accessing and understanding training materials, often describing a shift toward more self-directed and confident learning.

Management perspectives further highlight that the adoption of AI was a strategic move to make training content more relevant, up-to-date, and universally accessible, even for members in remote areas. Altogether, the interview evidence underscores that AI integration has made training not only more efficient and inclusive but also more scalable, empowering a broader range of participants to master essential knowledge at their own pace.

4.1.2. Evidence from Documents

DOC-3: AI-Based Training Modules – Includes 20 structured training modules generated with AI assistance, accessible via Miora AI on Telegram and WhatsApp.

DOC-4: User Guide for ChatGPT/Meta AI – Offers members step-by-step instructions to use AI for generating session plans and training content.

DOC-6: SOP for AI Integration – Specifies workflows for integrating AI in training, from content generation to delivery.

4.1.3. Evidence from Observations

OBS-2 (21 May – Zoom Training Material Creation): The training team collaboratively used ChatGPT to generate headline ideas and content flow.

OBS-6 (18 June – Weekly Zoom Training): Participants actively engaged with AI responses and adopted them as reference notes.

OBS-10 (1–5 July – WhatsApp Group): New members independently used Miora AI for training without relying on uplines.

4.1.4. Theoretical Interpretation

TPACK Perspective: This theme illustrates the integration of Technological Knowledge (TK) and Content Knowledge (CK), where AI facilitates structured, repeatable, and personalized content delivery. ANT Perspective: AI functions as a non-human actor reshaping the traditional trainer–member relationship, decentralizing training access, and enabling autonomous learning.

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Pattern matching revealed a strong convergence between the empirical evidence and the TPACK framework, as the integration of AI enabled structured, scalable, and accessible training practices—precisely as the theory anticipates [32].

4.2. AI-Augmented Mentoring and Coaching

This theme addresses how AI technologies, such as ChatGPT and Meta AI, enhance personalized mentoring and coaching within Miora. AI is not only a repository of information but also an interactive support system, enabling members to receive feedback, motivation, and tailored learning experiences. These tools allow both mentors and mentees to engage in simulated role-plays, receive constructive suggestions, and develop action plans, extending the reach of mentorship beyond conventional limitations.

Beyond training, AI has also played a critical role in augmenting mentoring and coaching practices. Interview data highlight how members use AI as a "sparring partner" for presentations, a goal-setting assistant, and a source of motivational feedback. This enabled members to practice continuously without relying solely on their uplines, enhancing confidence and self-sufficiency. At the same time, leaders emphasized that AI allowed them to shift their focus from repetitive guidance to higher-order roles such as motivation, emotional support, and cultural leadership.

This theme illustrates blending technological knowledge (TK) and pedagogical knowledge (PK) within the TPACK framework. While AI facilitated the delivery of personalized feedback, human mentors continued to provide relational depth, empathy, and contextual wisdom. From an ANT perspective, AI acted as a non-human mentor that altered feedback loops and expanded the scope of mentoring networks. The results partially converge with prior studies on AI in education [1, 3], but this study extends these insights to entrepreneurial learning by highlighting how AI democratizes access to mentoring while redefining the boundaries of leadership authority.

4.2.1. Evidence from Interviews

"I use ChatGPT as a sparring partner before presenting to my team. It gives me feedback, and as a result, I feel more confident." *(LD05)*

"If I have questions but feel embarrassed to ask my leader, I can consult Miora AI first. Sometimes I even practice my pitch with AI, then check it with my coach afterward. *(MB07)*

AI helps me plan my weekly goals. I just type in my targets, and it breaks down the steps or reminds me to follow up. *(LD06)*

With AI, I no longer need to wait for someone to guide me step by step. I can get instant feedback and motivation, even late at night. *(MB13)*

"I feel much more independent and confident in helping my team because now I can check my explanations with AI first before sharing them with others." *(MB16)*

AI is designed to be involved in all areas of member development, training, coaching, and mentoring. Now, members can receive guidance not only from their leaders but also directly from AI, particularly when they need support outside of scheduled sessions. *(MG15)*

The interview evidence, drawing from members, leaders, and management, demonstrates that AI has become an integral part of the mentoring and coaching process within Miora. Members and leaders describe gaining greater independence, confidence, and access to immediate feedback through AI-supported guidance and practice opportunities. Management perspectives confirm that AI was intentionally designed to extend and complement traditional mentoring, ensuring that support is available to members beyond scheduled sessions or geographical limitations. Altogether, these insights indicate that AI is not only supplementing but also strengthening and democratizing mentoring and coaching, fostering a more proactive and resilient learning culture across the network.

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4.2.2. Evidence from Documents

DOC-3: AI-Based Training Modules – Several modules include role-play scripts and Q&A prompts specifically designed for coaching and mentoring simulations.

DOC-4: User Guide for ChatGPT/Meta AI – Guides members to use AI for scenario practice, presentation review, and self-assessment.

DOC-5: Log of Digital Interactions – Records numerous mentoring exchanges and feedback sessions between members and AI in both Telegram and WhatsApp groups.

4.2.3. Evidence from Observations

OBS-3 (26 May – Group Telegram Q&A): Member used Miora AI to ask for motivational advice and received context-specific encouragement.

OBS-4 (11 June – Weekly Zoom Training): Trainers demonstrated how to use AI for self-evaluation and feedback during the session, with members trying out role-play responses.

OBS-9 (30 June – Telegram Group Activity): Members practiced questions and presentations using AI before consulting with uplines, fostering independence and self-correction.

4.2.4. Theoretical Interpretation

TPACK Perspective: This theme demonstrates the combination of Technological Knowledge (TK) and Pedagogical Knowledge (PK), where AI acts as both a facilitator and a coach, enhancing the effectiveness and personalization of mentoring. ANT Perspective: AI takes on the role of a non-human mentor, altering traditional feedback loops and empowering members to engage more actively and confidently in coaching practices. The network of mentoring becomes more distributed, dynamic, and accessible.

Pattern matching indicates partial convergence with TPACK and ANT. While AI effectively facilitated mentoring and feedback as predicted, divergence emerged where members continued to rely on human mentors for deep emotional support and nuanced guidance [32].

4.3. Structured Duplication through AI

This theme highlights how AI enables the consistent duplication of best practices, scripts, and onboarding routines across the Miora network. Through automation and standardized content, AI ensures that proven strategies, presentations, and behaviors can be easily shared, adapted, and adopted by both new and experienced members, supporting the core MLM principle of duplication.

Duplication is a cornerstone of MLM success, and findings reveal that AI has become a powerful enabler of consistent replication. Leaders and members consistently reported that AI-generated scripts, standardized onboarding materials, and automated guidance reduced the need for repetitive explanations. Observations of WhatsApp groups confirmed that even new members could quickly adopt AI-prepared scripts, thereby accelerating the duplication process and reducing dependence on leaders.

In theoretical terms, duplication exemplifies the intersection of pedagogical content knowledge (PCK) and technology within the TPACK framework, where AI ensures consistent transmission of knowledge across a distributed network. ANT offers a complementary lens by showing how AI stabilizes and spreads best practices across heterogeneous teams as a mobile and replicable actor. This finding validates prior literature that emphasizes the importance of systematized duplication in MLM [7] but also advances the field by demonstrating how AI automates and institutionalizes duplication in previously unachievable ways with conventional digital tools.

4.3.1. Evidence from Interviews

AI makes the duplication process much faster. Once I introduce WhatsApp AI to my members, they can immediately learn on their own and even share it with their family or team. Duplication becomes much easier because they no longer have to wait for me. (LD17)

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"I used to repeat the same explanations repeatedly. Now, with AI, I simply direct members to the system or forward a ready-made script. This saves me a significant amount of time and ensures that everyone receives the same message." (LD02)

Now we have AI-generated scripts for inviting prospects. Even new members can use the templates, and they really work. (LD10)

"With Miora AI, my team can all access the same training materials. Everyone is on the same page, and the onboarding process is much quicker." (MB11)

AI helps me transfer my knowledge to my members more quickly. It makes duplication in the field much easier. (MB16)

One of the main objectives of integrating AI was to help leaders duplicate themselves more quickly and effectively. With AI, members can learn independently, and the process of building new leaders can scale faster across the entire network. *(MG15)*

The interview evidence from both the field and management repeatedly highlights how AI has fundamentally streamlined and accelerated the duplication process across the Miora network. Leaders and members report that standardized scripts, ready-to-use materials, and automated guidance provided by AI have made it much easier for everyone, regardless of experience level, to replicate successful practices. Management further emphasizes that AI integration was strategically designed to help leaders duplicate themselves more efficiently and scale up team-building efforts. As a result, duplication has become faster, more consistent, and less dependent on direct leader involvement. The collective interview data underscore that AI now serves as a powerful equalizer, enabling both new and veteran members to confidently participate in and drive the network's core activities.

4.3.2. Evidence from Documents

DOC-3: AI-Based Training Modules – Modules and scripts are designed for easy duplication and distribution among all members.

DOC-5: Log of Digital Interactions – Shows regular use of standard scripts and materials by various teams.

DOC-6: SOP for AI Integration – Details standard operating procedures for using AI-generated content to ensure consistency in onboarding and training.

4.3.3. Evidence from Observations

OBS-10 (1–5 July – WhatsApp Group): New members and leaders independently access and use standardized AI-generated training materials and scripts.

OBS-2 (21 May – Zoom Training Material Creation): Shared templates and outlines generated via ChatGPT are adopted across multiple training sessions.

OBS-6 (18 June – Weekly Zoom): Participants utilize AI-produced checklists and pitch scripts during simulated presentations.

4.3.4. Theoretical Interpretation

TPACK Perspective: Demonstrates the extension of Pedagogical Content Knowledge (PCK) through technology, making onboarding and training processes more systematic and replicable. ANT Perspective: AI functions as a mobile, non-human actor that stabilizes and spreads best practices, ensuring consistency in the network's learning and recruitment activities.

Pattern matching demonstrates clear convergence with both TPACK and ANT, as the adoption of standardized, AI-generated materials led to more consistent duplication and distributed agency across the network, fulfilling theoretical expectations [32].

4.4. Engagement, Trust, and Tensions in AI Adoption

This theme explores how members and leaders perceive, engage with, or resist the use of AI tools in the member development process. While many experience increased motivation, confidence, and trust in

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the system, others express concerns about misunderstandings, over-reliance, or the lack of a personal touch compared to traditional mentoring.

While many participants reported increased confidence, motivation, and independence when using AI, the study also uncovered persistent tensions in adoption. Some older members expressed hesitation due to limited digital literacy, while others raised concerns about over-reliance on AI and the perceived lack of human touch. Document evidence further highlighted repeated member requests for clarification and ongoing digital literacy challenges. Observations of home-sharing events also showed that technical barriers, such as difficulties in using Telegram, remained a source of resistance.

These findings underscore the importance of contextual readiness and cultural adaptation in technology adoption. Within TPACK, this tension reflects uneven levels of technological knowledge (TK) across members, which limits the uniformity of benefits. ANT highlights how trust is renegotiated between human and non-human actors, with some members reluctant to delegate authority to AI. This aligns with previous studies warning that digital adoption is shaped by technological affordances, organizational readiness, and trust [4, 10]. This study's contribution is revealing that successful AI adoption in MLM requires ongoing human–AI co-guidance strategies that address digital literacy gaps while maintaining relational trust.

4.4.1. Evidence from Interviews

"For those who are already comfortable with technology, using AI feels natural and exciting. However, for some members, especially older ones, it still feels intimidating, and they are not confident to use it by themselves." (LD03)

Some people are still afraid of trying AI because they think it's complicated or they won't understand the language. But after some practice, they start to see it's actually very helpful. (LD06)

Honestly, when I first tried Miora AI, I felt a bit awkward, like, would it really answer my question? But after a few times, I realized it could help me whenever I needed, even when the leader was not available. (MB08)

"I feel more motivated because Miora AI always responds and sometimes reminds me to keep learning." (MB11)

"The main challenge is the mindset of our members. Many are still not used to using digital tools or trusting AI's answers, but we have seen that as they try it out, most become more confident and enthusiastic. The key is ongoing support and building a culture of digital learning." (MG12)

Taken together, the interviews reveal a nuanced landscape of engagement with AI among Miora members and leaders. While many participants describe increased motivation, confidence, and autonomy as they become more familiar with AI, others highlight persistent barriers related to digital literacy, mindset, and initial skepticism. Management perspectives further emphasize that successful adoption depends not only on technological accessibility but also on sustained support and cultural adaptation. Overall, the interview evidence suggests that while AI has fostered greater trust and engagement for many, ongoing efforts are needed to address tensions and ensure that all members can benefit from digital transformation.

4.4.2. Evidence from Documents

DOC-5: Log of Digital Interactions – Contains member feedback about positive experiences, but also documents repeated questions and requests for clarification.

DOC-8: Digital Strategy Plan – Identifies the need for ongoing training and support to improve digital literacy and user confidence in AI tools.

DOC-7: Communication Materials – Campaigns and articles encourage trust in AI while acknowledging the continuing importance of human mentors.

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4.4.3. Evidence from Observations

OBS-6 (18 June – Weekly Zoom Training): Members expressed excitement and gratitude for Miora AI, noting it was "very helpful" and "inspiring."

OBS-9 (30 June – Telegram Group): Members shifted from asking uplines to using AI, demonstrating growing trust in technology.

OBS-8 (14 May – Home-sharing): Some members struggled with technical barriers (Telegram setup), highlighting ongoing adaptation challenges.

4.4.4. Theoretical Interpretation

TPACK Perspective: Engagement and resistance reflect varying levels of Technological Knowledge (TK) and readiness within the community, indicating the importance of ongoing digital capacity-building. ANT Perspective: The adoption of AI introduces negotiation and adaptation within the actor network, trust is redistributed between human and non-human agents, and tensions may arise as roles and dependencies shift.

Pattern matching revealed both convergence and divergence: while digitally adept members engaged with AI as anticipated, some participants exhibited resistance and digital literacy gaps, indicating a divergence from the frameworks' assumptions of universal adaptation [32].

4.5. Actor Dynamics in Human–AI Collaboration

This theme explores the shifting relationships and negotiation of roles between human participants and AI systems within Miora's member development processes. Guided by the Actor-Network Theory (ANT), the analysis reveals that the integration of AI tools has not only augmented human capabilities but also redefined the network of actors involved in TCMD.

A recurring theme across the findings is the reconfiguration of roles between leaders, members, and AI. Members increasingly used AI for technical or routine questions before consulting human mentors, while leaders shifted toward roles as motivators, relationship-builders, and strategic facilitators. Observations confirmed that leaders encouraged members to "test out" ideas with AI first and then bring more complex or emotional concerns to human discussions.

From an ANT perspective, this dynamic exemplifies the redistribution of agency in socio-technical networks. AI is no longer a passive tool but a co-actor that reshapes authority structures and creates hybrid mentoring practices. Human actors retain their centrality in areas requiring emotional nuance and ethical judgment, but much of the informational burden is delegated to AI. TPACK reinforces this interpretation by showing how pedagogical strategies and content delivery are increasingly mediated by AI, enabling leaders to focus on higher-value functions. This insight adds nuance to earlier studies of AI in learning [2] by highlighting how human–AI collaboration can evolve into a complementary partnership rather than a replacement dynamic.

4.5.1. Evidence from Interviews

"Now, instead of waiting for an upline or mentor, members often consult Miora AI first, and only reach out to humans when they need more emotional support or complex answers. This changes how we interact and who is seen as an authority." *(LD03)*

"I used to be the main source of answers for my team. With AI, I am now more of a motivator or troubleshooter, while the technical or informational questions often go directly to the system." *(LD06)*

"AI has become a partner for leaders, taking over routine guidance and allowing us to focus on building relationships and culture. It is a new kind of collaboration between people and technology." *(MG15)*

"Sometimes I notice members are more willing to 'test out' their questions on AI because they don't feel embarrassed, and then only come to me for reassurance or when they want to discuss feelings." *(MB11)*

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The interviews collectively illustrate that the adoption of AI has led to a noticeable shift in the dynamics of mentoring and collaboration within the Miora network. Members, leaders, and management alike observe that AI is no longer seen as a mere technical tool but as a genuine collaborator, capable of handling routine queries, offering feedback, and providing immediate support. This has enabled human actors to concentrate on relationship-building, emotional support, and strategic problem-solving, while delegating repetitive or technical questions to AI. Importantly, these changes are not without challenges: some participants note a need for new skills in blending AI with human guidance and for building trust in this hybrid system. Overall, the interview evidence suggests that the integration of AI has fostered a more distributed, responsive, and adaptive mentoring ecosystem, reshaping not just what is possible but also how people and technology learn and work together.

4.5.2. Evidence from Documents

DOC-5: Log of Digital Interactions: Shows a pattern where members frequently engage with AI first before consulting human mentors, indicating a shift in support-seeking behavior.

DOC-6: SOP for AI Integration: Describes AI as a co-actor in training and mentoring, outlining processes for both human and AI intervention at various stages.

4.5.3. Evidence from Observations

OBS-9 (30 June – Telegram Group): Members use AI for practice and clarification before presenting or reporting to leaders.

OBS-4 (11 June – Weekly Zoom): Leaders coach members on how to combine AI assistance with personal judgment and team discussions, reflecting a blended human–AI mentoring culture.

4.5.4. Theoretical Interpretation

ANT Perspective: The data illustrate how AI, as a non-human actor, has been fully enrolled into the mentoring network, altering power relations and patterns of authority. Human actors (members, leaders, management) have begun to negotiate and delegate tasks such as basic training, information retrieval, and self-assessment to AI, while reserving emotional support and complex problem-solving for themselves. This distributed agency is reshaping the boundaries of mentorship, with the AI emerging as a key, trusted collaborator rather than merely a passive tool. As members' and leaders' roles evolve, the actor-network becomes more dynamic, adaptable, and capable of scaling support across the organization.

Pattern matching found general convergence with ANT's predictions of shifting roles and distributed agency, though some divergence remained as members prioritized human mentors for complex or affective needs [32].

In summary, the integration of AI within Miora's member development has been validated through a robust triangulation of interviews, documents, and observations. Table 1 below illustrates how each theme is supported by evidence from all three data sources, underscoring the credibility and consistency of the findings.

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Table 1.
Triangulation of Evidence for Key Themes in AI-Supported Member Development

Theme	Representative Interview Quote & Source	Document Evidence	Observation Evidence
AI-Enabled Scalable Training	"AI made me understand faster." (MB01)	DOC-3: AI-Based Training Modules	OBS-2: Zoom Training Material Creation
AI-Augmented Mentoring & Coaching	"I use ChatGPT as a sparring partner for practice." (LD05)	DOC-4: User Guide for ChatGPT/Meta AI (Miora AI)	OBS-4: Weekly Zoom Role-play
Structured Duplication through AI	"Duplication is much easier; there is no need to wait for me." (LD17)	DOC-6: SOP for AI Integration	OBS-10: WhatsApp On-boarding
Engagement, Trust & Tensions in AI Adoption	"Some older members feel intimidated by AI." (LD03)	DOC-5: Member Feedback Log	OBS-8: Home-sharing (Tech Barrier)
Actor Dynamics in Human–AI Collaboration	"With AI, I am now more of a motivator, while technical questions go directly to the system." (LD06)	DOC-6: SOP for AI Collaboration	OBS-9: Telegram Group (Hybrid Support)

Table 1 highlights how each theme is robustly supported by evidence from interviews, documents, and observations. This triangulation strengthens the credibility of the findings and demonstrates that the impact of AI on member development in Miora is consistent and well-substantiated across multiple data sources.

4.6. Cross-Theme Synthesis and Theoretical Implications

Taken together, the findings indicate that AI reshapes MLM member development in three interrelated ways: (i) scalability and accessibility of training, (ii) personalization and democratization of mentoring, and (iii) standardization and acceleration of duplication. These contributions validate the relevance of TPACK for understanding instructional design in informal entrepreneurial learning, while extending its applicability beyond formal education contexts. At the same time, ANT provides a critical lens for analyzing how non-human actors redistribute power, trust, and authority in MLM ecosystems.

By combining TPACK and ANT, this study demonstrates that AI is both a pedagogical enabler and an organizational actor. This dual role underscores the need for integrative frameworks when analyzing digital transformation in entrepreneurship and learning. While earlier studies have primarily examined AI as a tool for formal education or customer engagement, this research positions AI as a transformative force in internal capability-building within MLM.

4.7. Practical Implications

For practitioners, the findings suggest several actionable strategies. First, AI tools should be systematically embedded into onboarding and duplication processes to ensure consistency and scalability. Second, organizations must invest in digital literacy training to bridge adoption gaps and mitigate resistance. Third, leaders should redefine their roles as motivators, cultural facilitators, and ethical anchors, complementing AI's technical guidance. Finally, clear human–AI co-guidance protocols should be developed to delineate when AI provides sufficient support and when human intervention is necessary.

These strategies resonate with calls in the broader literature for balancing standardization and personalization in technology-mediated learning [2, 3]. In MLM contexts, they offer a roadmap for leveraging AI not as a replacement for human mentoring but as a partner in building scalable and inclusive entrepreneurship.

4.8. Key Insights and Theoretical Contributions

This study reveals that the implementation of AI-supported tools such as ChatGPT and Meta AI has fundamentally transformed member development processes in Miora. The findings indicate that AI

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facilitates more personalized and accessible learning, expands the mentoring capacity of leaders, and accelerates duplication across the network. The research demonstrates that these outcomes are not solely the result of technological affordances but also depend on their alignment with human guidance, organizational culture, and clear pedagogical intent. Importantly, the integration of both the TPACK framework and ANT in this analysis validates their usefulness for understanding digital transformation in informal, entrepreneurial learning ecosystems.

The application of TPACK provides a structured lens for evaluating how technology, pedagogy, and content intersect to support member development. ANT further reveals how the inclusion of AI as a non-human actor reconfigures relational dynamics, distributes agency, and reshapes mentoring roles within the organization. These theoretical insights contribute to the emerging scholarship on AI adoption in informal learning and community-based entrepreneurship.

These findings align with prior studies showing AI's role in enhancing personalization and learner autonomy [2, 37] but extend this evidence into the MLM context of informal learning. Unlike formal education, MLM development hinges on duplication and network dynamics, where AI reshapes leader–member roles from content delivery to facilitation. By combining TPACK and ANT, this study shows how AI functions both as a learning tool and as an actor within socio-technical networks, offering a novel lens to understand technology's impact on entrepreneurial learning ecosystems.

4.9. Practical Strategies for Optimizing AI Integration

Building on the thematic findings, several actionable strategies are recommended for optimizing the use of AI in member development within MLM and similar ecosystems:

- Balance Standardization and Personalization: While AI is effective in generating standardized training and onboarding content, leaders should be encouraged to tailor these materials to suit different experience levels and local contexts.
- Design structured mentoring frameworks: AI integration is most effective when embedded within clear mentoring pathways, including progress milestones, reflection prompts, and role-specific learning tracks.
- Build AI literacy among leaders: Leadership development should include modules on prompting, evaluating, and refining AI outputs, ensuring that leaders use AI to support—not replace—judgment and authenticity.
- Establish Human–AI Co-Guidance Protocols: Clear guidelines should be established to define when human intervention is required, especially for emotional, ethical, or complex mentoring scenarios.
- Implement feedback and iteration loops: Regular collection and analysis of feedback from members and mentors should be institutionalized to assess AI's effectiveness and inform iterative improvements.
- Foster a culture of innovation and ethics: Ongoing dialogue about ethical AI use, bias mitigation, and data security is essential to sustain trust and encourage responsible adoption.

4.10. Limitations and Directions for Future Research

This study is limited by its single-case design, focusing on one MLM organization in Indonesia and an early-stage phase of AI adoption. As such, the findings are context-specific and may not capture variations in organizational culture, technological maturity, or regional dynamics. Future research should examine AI-supported member development across multiple MLM and entrepreneurial settings to assess transferability and conduct longitudinal studies to track how adoption evolves over time. Further inquiry is also needed into the ethical, emotional, and relational dimensions of human–AI collaboration in mentoring, as well as how frameworks such as TPACK and ANT can be adapted to analyze other informal and community-based learning environments.

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5. Conclusion

Integrating generative AI into MLM member development represents a transformative step for scholarship and practice. AI addresses long-standing challenges in MLM ecosystems by enhancing scalability, personalization, and duplication. More importantly, AI redefines leadership roles and relational dynamics, shifting the balance of authority between human and non-human actors.

Theoretically, this study extends TPACK and ANT into a novel domain, demonstrating that AI functions as a pedagogical enabler and an organizational actor. Practically, it offers a roadmap for MLM leaders and policymakers to embed AI in mentoring systems responsibly and inclusively. As entrepreneurial ecosystems confront the challenges of digital transformation, the insights from this study underscore the importance of hybrid human–AI collaboration in shaping the future of informal business education.

Transparency:

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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Appendix A
Semi-Structured Interview Guide

Purpose
To explore in depth the perceptions, experiences, and roles of artificial intelligence (AI) technologies (ChatGPT & Meta AI) in member development at Miora, particularly in mentoring and duplication processes. The interview questions are adapted for different categories of informants: management, leaders/coaches, and active members.

Informant Profile

- Name/Initial/Code: ……..
- Category:
  ☐ Management
  ☐ Leader / Coach
  ☐ Member
- Position/Rank (for Management or Leader): ……
- Length of Membership in Miora: ……
- Number of Downline Members (if any): ……..
- Interview Date: ……
- Interview Medium (offline/Zoom/chat, etc.): ……..
- Interviewer's Name: ……..
- Special Notes: ……

I. Questions for Management

A. Implementation Process

1. What were the strategic reasons behind integrating AI (e.g., ChatGPT and Meta AI) into Miora's member development programs?
2. How was AI designed to strengthen training, coaching, mentoring, and duplication processes?
3. In practice, which human roles have been supported, simplified, or partially replaced by AI in member development?

B. Effectiveness of Use

4. To what extent has AI contributed to member development? Has it influenced decision-making, team interactions, or mentoring practices?
5. How does management evaluate the success of AI implementation both quantitatively (performance indicators) and qualitatively (member experiences)?
6. How has management adapted training strategies or content when assisted by AI such as ChatGPT or Meta AI?

C. Challenges and Opportunities

7. What are the main challenges in implementing AI, technically or in user adoption?
8. How have trainers, leaders, or members responded to AI in member development (e.g., resistance, concern, or enthusiasm)?

D. Optimization Strategies

9. What strategies have been employed to optimize the use of AI for greater effectiveness and replicability?
10. What lessons learned, best practices, or key insights can be drawn from AI implementation so far?
11. How do you envision the role of AI in supporting Miora's digital transformation and long-term member development mission?

II. Questions for Leaders / Coaches

A. Implementation Process

1. What stages of member development do you usually conduct as a leader/coach?
2. At which stages is AI (ChatGPT, Meta AI) most helpful? Could you share concrete examples?
3. How do you see AI supporting duplication and helping members become more independent?

B. Effectiveness of Use

4. To what extent has AI improved the efficiency and consistency of your training, coaching, and mentoring?
5. Do you believe AI effectively conveys training content and Miora's values? How do you assess the quality of AI-generated content?
6. Which features of ChatGPT or Meta AI are most useful for your leadership activities, and why?
7. What adjustments have you made to training materials or delivery when assisted by AI? (TPACK perspective)

C. Challenges and Opportunities

8. What difficulties have you encountered in using AI, whether technical (access, accuracy) or team adaptation?
9. Are there aspects of mentoring that you think AI cannot adequately support (e.g., emotional or personal situations)?
10. How have members or fellow leaders responded to AI in member development? (ANT perspective)

D. Optimization Strategies

11. What strategies would you suggest to maximize AI's usefulness in mentoring and duplication?
12. How should AI be developed further to serve as a genuine partner for leaders in member development?

III. Questions for Members

A. Implementation Process

1. Have you used AI (ChatGPT or Meta AI) during training, coaching, or mentoring in Miora? In what context?
2. Have you tried helping or guiding other members with AI support? Please describe your experience.
3. How do you perceive the role of AI in your own development so far?

B. Effectiveness of Use

4. To what extent has AI helped you understand training materials, participate in coaching, or follow mentoring?
5. What is the most significant benefit you have experienced from using AI in your learning and development?

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6. Do you feel more confident or prepared to mentor others after receiving AI guidance?
7. How do you evaluate the clarity and relevance of AI-generated content?
8. Have you adapted your learning style to better match AI's responses? (TPACK perspective)

C. Challenges and Opportunities

9. What challenges have you faced when using AI (technical issues, language, personal adaptation)?
10. How do you feel about AI in the mentoring process—helpful, confusing, or uncomfortable? (ANT perspective)

D. Optimization Strategies

11. What improvements could make AI more user-friendly and beneficial for all members?
12. If given the chance, what suggestions would you offer to ensure AI accelerates your growth and that of other members?

Notes:

- The interviews are semi-structured.
- All sessions are recorded (audio/video) with consent.
- Data will be analyzed using thematic analysis, guided by TPACK and ANT frameworks.

Appendix B

Structured Observation Results – Case Study on AI Implementation in Miora's Member Development

Purpose of Observation

To document and directly analyze member development activities in Miora, both online and offline, involving the use of AI technologies (ChatGPT and Meta AI). The observation was conducted to understand context, social interactions, patterns of AI use, and human involvement in training, coaching, and mentoring processes.

A. Observation Identity

- Date: see Section B
- Time: varies – see Section B
- Location (offline or online platform): see Section B
- Activities Observed: see Section B
- Observer's Name: Manuntun Sitinjak

B. Observation Focus, Indicators, and Findings Table

No	Observation Focus	Indicators	Date	Activities Observed	Notes / Findings
1	AI Usage (OBS-1)	Presence and use of ChatGPT or Meta AI (directly or via support systems)	20 May 2025	Ceremonial Launching at Miora Office & via Zoom	Introduction of Miora AI, integrated with the Telegram application
2	Member Development Activity (OBS-2)	Type of activity (training, coaching, mentoring)	21 May 2025	Zoom: Training Material Development Team	Training on developing materials assisted by ChatGPT
3	Role of AI in Interaction (OBS-3)	AI is used to answer questions, assign tasks, provide motivation, etc.	26 May 2025	Miora AI Telegram Group	Mr. Adenan asked Miora AI in Telegram about the benefits of Miora Propolis; AI explained clearly.
4	Role of	The extent to which	11	Weekly Training	The trainer explained training materials,

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	Leader/Coach (OBS-4)	the coach remains active while AI is used.	June 2025	via Zoom	shared experiences, and motivated participants during weekly sessions.
5	Communication Patterns (OBS-5)	Two-way communication between participants–AI, or coach–participants–AI.	11–12 June 2025	Daily conversations in Miora AI Telegram (ChatGPT)	Seven members engaged in more than ten Q&A sessions
6	Participants' Response (OBS-6)	Enthusiasm, engagement, and comprehension when AI is used	18 June 2025	Weekly Training via Zoom	Participants were very enthusiastic and stated that Miora AI (ChatGPT with Telegram) was excellent and very helpful (e.g., Mr. Leo – West Kalimantan, Mrs. Albine – Sibolga, Mrs. Hemi – West Kalimantan, Mr. Samuel – Palembang, Mr. Timotius – Bogor).
7	Content/Values (OBS-7)	Alignment of content with Miora's values, vision, and mission	25 June 2025	Weekly Training via Zoom	Questions on motivation and Miora Propolis were answered precisely and accurately by Miora AI (ChatGPT).
8	Technical Barriers (OBS-8)	Issues such as network problems, AI delays/errors, and comprehension difficulties.	14 May 2025	Home-sharing and offline training in Pontianak	Members had difficulties installing Telegram due to recycled phone numbers already registered with previous owners.
9	Participants' Adaptation (OBS-9)	How participants adapt to AI usage	30 June 2025	Miora AI Telegram Group	Members asked about product functions, training materials, and testimonials questions previously directed to uplines.
10	Duplication Potential (OBS-10)	Whether the activity can be replicated by other members using AI	1–5 July 2025	Miora AI WhatsApp Group	Leaders and even new members directly asked Miora AI and immediately received the answers they needed.

C. Observer's General Notes

The overall impression from these observations shows that Miora AI's involvement in member development produced a very positive impact. Learning sessions became more dynamic, participants were enthusiastic, and interaction increased both between participants and AI and between participants and trainers. Social dynamics showed a shift in communication patterns; members began asking questions directly to AI, not only to their uplines, reflecting adaptation and growing trust in this supporting technology.

From the observer's reflection, the use of AI (Miora AI combined with Meta AI) holds strong potential to enrich training, coaching, and mentoring. Fast, accurate answers aligned with Miora's values made the AI widely accepted. Moreover, it is easily replicable even by new members, and in the future, it has strong potential to support prospecting and customer service. Duplication potential is high and beneficial to sustaining broad and balanced team growth.

Notes:

- Observations were conducted without disrupting the natural flow of activities.
- The results complement the interview and document data in triangulation.

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Appendix C

Document Analysis Checklist Results – Case Study on AI Implementation in Miora's Member Development

Purpose of the Checklist

This checklist is used to help the researcher assess the completeness, relevance, and consistency of documents related to the implementation of AI (ChatGPT & Meta AI) in Miora's member development processes, including training, coaching, and mentoring.

Categories of Documents Analyzed

- AI-based training modules
- User guides for ChatGPT/Meta AI
- Digital interaction logs (e.g., Telegram, WhatsApp, Zoom)
- AI-based mentoring SOPs
- Communication and internal campaign materials (posters, videos, broadcasts)
- Digitalization strategy documents for member development

Document Analysis Checklist Table

No	Document Category	Assessment Aspect	Evaluation Indicators	Document Name	Document Date	Observation Notes
1	Company Strategic Plan (DOC-1)	Policy support for AI-based development	Document includes strategic direction for digital transformation, mentioning AI (ChatGPT & Meta AI) integration in HR and network development.	Strategic Plan of PT Tangguh Maju Terus	15 Jan 2025	Referenced in PT Tangguh Maju Terus Strategic Plan Ver1 REV1 and Miora AI Implementation Project Plan Revision.
2	AI Implementation Plan (DOC-2)	Concrete steps for AI-based development	The document describes implementation stages, timeline, monitoring system, and AI roles in training, coaching, and mentoring.	Miora AI Implementation Project Plan	28 Mar 2025	Detailed in Miora AI Implementation Project Plan Revision, showing roadmap, responsibilities, and digital transformation targets.
3	AI-based Training Modules (DOC-3)	Content alignment with AI-based development	Modules include AI use in training/mentoring and practical examples.	Training Modules (20 modules), familiarized with AI Assistant (API)	20 May 2025	Twenty modules have already been developed using AI, accessible via Miora AI on Telegram and WhatsApp. Exercises can also be AI-assisted. (Target: 30 modules based on the syllabus, also developed with AI support)
4	ChatGPT/Meta AI User Guide (DOC-4)	Completeness and clarity	The guide explains features, workflow, purposes, and benefits for members.	AI User Guide	1 Jun 2025	Guide explains Telegram & WhatsApp usage steps with simulation examples
5	Digital Interaction Logs (DOC-5)	Activities and interaction intensity	Existence of educational logs, Q&A sessions, and mentoring feedback	Miora AI WhatsApp Group / Miora AI Telegram Group	12 Apr to 6Jul 2025 (WA)	Telegram logs: 12 Apr – 6 Jul 2025; WhatsApp logs: 1–6 Jul 2025
6	AI-based	Consisten	SOP systematically	SOP:	16 May	SOP-OPR-DT-08 explains

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	Mentoring SOP (DOC-6)	cy and integration of AI	outlines AI's role in training, coaching, and mentoring.	Integration of AI in Mentoring	2025	development stages, implementation, and documentation.
7	Communication & Campaign Materials (DOC-7)	Message consistency and alignment with AI-based development	Content introduces, educates, and motivates AI usage in a development context.	Miora AI Launching (YouTube: tmtmiora); Weekly Training (Zoom & YouTube); Daily Articles	20 May; 4, 11, 18, 25 Jun 2025; 21 May – Jun (5/week)	Includes Miora AI launch on YouTube, Zoom training videos, and daily motivational articles shared through WhatsApp groups and direct messages by top management.
8	Digitalization Strategy for Development (DOC-8)	Support for digital transformation	Document includes sustainable AI usage strategies oriented toward duplication.	TMT 2025 Business Plan; Miora AI Project Plan; PT TMT Strategic Plan	15 Jan; 28 Mar; 15 Jan 2025	Documents show resource allocation: special staff recruitment, equipment provision (computers), OpenAI subscription, and hosting for Miora AI.

Additional Notes:

- The assessment used a descriptive observation scale.
- Documents were collected from internal archives, digital platforms, or direct requests to Miora's management/leaders.
- This checklist is complemented with narrative findings and interpretation in the research report.
- All referenced documents are stored digitally and are securely accessible on both desktop and mobile platforms. Public content, including video documentation, is uploaded to the official YouTube channel: *tmtmiora*.
- The checklist is part of a source triangulation strategy to strengthen the validity of research results. The analyzed documents are used to confirm and complement findings from interviews and observations, especially in exploring AI implementation and optimization strategies in Miora's member development.

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