

INTEGRATING NEWCOMERS: EFFECTIVE MODELS FOR ORGANIZATIONAL ADOPTION

ABSTRACT

This study utilizes a comparative study to explore and contrast various models for newcomer integration within organizational contexts. By conducting a systematic literature review, the research identifies key components, outcomes, and challenges associated with each model. Through a detailed analysis of models such as the Developers Joining Model, Onion Model, Identity Socialization Model, Four C's Model, and Traditional Onboarding Process, the study evaluates their performance across critical factors including onboarding plans, mentorship, feedback, cultural fit, flexibility, and role clarity.

The findings reveal distinct strengths and limitations for each model, highlighting their varied effectiveness in promoting employee engagement and retention. The Identity Socialization Model and Four C's Model, for instance, excel in fostering long-term engagement, while the Traditional Model supports initial integration but may limit personal identity expression. The study also addresses potential drawbacks, such as resource intensity or context-specificity, proposing mitigation strategies like phased implementation and role development.

Ultimately, this research provides actionable insights for organizations aiming to enhance their newcomer integration strategies, offering practical recommendations tailored to diverse organizational needs.

KEYWORDS

On-boarding, Integration, Newcomers, models.

1. INTRODUCTION

Welcoming and integrating newcomers is a critical challenge for organizations seeking to maintain a cohesive and productive workforce. Strategies that address the needs of both the newcomer and the organization can ease this transition and facilitate a smooth assimilation process. Newcomers often feel overwhelmed as they navigate unfamiliar environments and expectations [1]. To mitigate this, organizations can provide early job challenges, flexible scheduling, and timely feedback to help newcomers adapt. Inclusive leadership that fosters a sense of belonging and value among diverse employees has also been shown to positively impact the organizational socialization of newcomers [2]. Additionally, organizations can assist by forming psychological contracts with integrity, ensuring multiple sources of social support, and managing the expectations of new hires [1].

Software organizations consider the adoption of software solutions may evolve around how these solutions have been evaluated in terms of practical settings [3]. Example, in case of adopting a structured on-boarding model the evaluation of the solution will be through structured training, tutorial, and documentations, on the other hand, the evaluation of effectiveness of a social on-boarding model observing collaborations, and sharing experiences among newcomers. On the newcomer side, realistic job previews, preparing for "reality shock," and actively seeking out social connections can

facilitate a successful transition. By addressing the needs of both parties, organizations can set newcomers up for long-term satisfaction, commitment, and retention [2].

Understanding and optimizing newcomer integration is critical for organizational success. Effective models not only enhance the immediate adaptation of new hires but also contribute to long-term organizational health by fostering a positive work environment, increasing employee engagement, and reducing turnover. This study aims to provide valuable insights into the comparative effectiveness of different integration models and offer practical recommendations for organizations seeking to improve their onboarding processes.

By addressing the research questions mentioned below, this paper will contribute to a deeper understanding of how organizations can effectively adopt and adapt integration models to enhance the experiences of their newcomers, ultimately leading to a more engaged and committed workforce.

Q1. What are the key factors to consider when comparing different models for adopting newcomers in an organization?

Q2. How do these models differ in terms of their effectiveness in promoting employee engagement and retention?

Q3. What are each model's potential drawbacks and limitations, and how can they be mitigated or addressed?

2. BACKGROUND OF MODELS

Onboarding models are important to enhance the newcomer's onboarding process, this section aimed to identify the most relevant onboarding models for software engineering organizations.

The traditional process:

The first few days on a new job is usually centered on introducing newcomers to their new environment and to the company's culture. When newcomers fill the human resources forms, they are introduced to the special characteristics of the organization. They learn about the organization's founders, structure and hierarchy, vision and goals along with the reason that will make them proud to be included. The main goals in the earliest period is to show newcomers how things are done around the organization and to make them feel significant and proud to be accepted.

At many organizations, onboarding process usually have a common structure: it starts by indoctrinating newcomers into the organizational culture. As a normal procedure, human resource workers start educating newcomers about how to build and retain expertise along with showing them the importance of committing to the organization's values from the very beginning. This procedure helps newcomers conform and adapt to the organization faster, making the project leaders have a control over what to expect from the newcomers. It is expected though for the traditional onboarding process to have some cons and weaknesses, some of these weaknesses are depleting newcomers from their identity and unique perspective in order to make them adopt the organization's own identity, which in turn creates tension and may be psychologically upsetting the newcomer[4]. In conclusion, any socialization practices that cause the newcomers to act against their true selves might not be sustainably effective because they do not consider all the emotional well being and work satisfaction [5]. Figure (1) shows the traditional onboarding process.

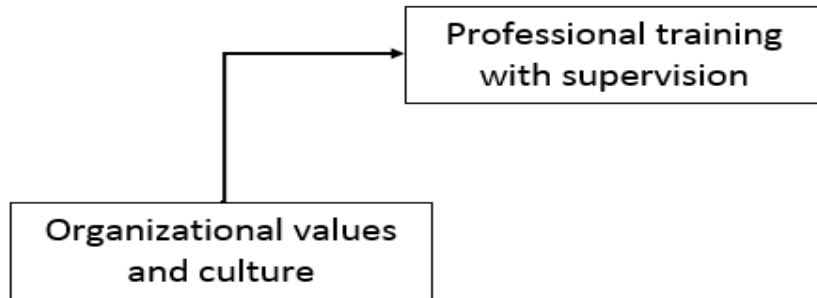


Figure (1) shows the traditional on-boarding process.

The personal identity socialization model:

The personal identity socialization approach is an onboarding approach, which was developed around 2013. The approach claims to have a positive long-lasting effects for both companies and employees. It involves around encouraging and supporting newcomers to show and share their strengths and unique perspectives from the beginning, along with supporting them in doing what they do best, to accomplish this on a practical level for the organizations, they must follow a plan consisting of a four principles [6][7].

1 break-out the usual traditional employment trap, which is considered to be the most difficult step for the managers to take, managers usually tend to force employees into completing their assigned tasks as a traditional manager mind-set without taking in consideration that employees may have a desire to show their authentic identity [8]. Organizations are advised to make the work become a situation to which people want to bring more of themselves [9].

2 help newcomers know their strengths, before giving newcomers specific jobs it's best to encourage them to identify with their strengths. One way to achieve this is to make them answer specific questions such as "what leads to your best performance at work?" or "is there any specific events or moments that helped you give your best? ".

3 facilitate introduction for the newcomers, when introducing newcomers to other organizational members, it is best to construct those introductions so that the newcomers can construct their social identity around their authentic strengths.

4 ask newcomers how they can apply their strengths to the new job, this allows newcomers to frame their new job as an opportunity to use their personal strengths. When newcomers are encouraged to use their signature strengths they respond positively to the employment relationship, which leads to greater employee retention [5]. Figure (2) shows the personal identity socialization model.

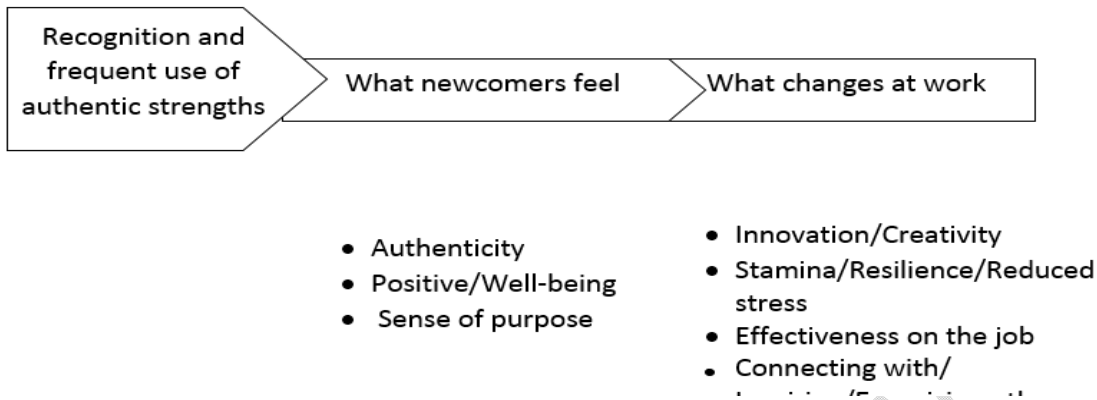


Figure (2) the personal identity socialization model adapted from [5]

The multilevel model (the four c's):

The four c's has four distinct levels, which are:

Compliance, which is the lowest level. Compliance is about teaching employees the basic organizational aspects and regulations, along with any legal polices and rules.

Clarification, usually clarification refers to ensuring that the newcomer understands their job and what to be expected from them.

Culture, culture includes introducing the newcomer to the organizational norms whether it was formal or informal.

Connection, is the level where interpersonal relationships must be established in order to establish and enrich the informational networks.

Each organization leverage a degree of the previous four levels, making them fall into one of the three coming levels:

Level 1, the passive onboarding experience

Neither culture nor connection is addressed in this level, compliance is formally covered with some firms may choose to give some basic role clarification. The passive on-boarding can be seen as functional but still is very unsystematic [10].

Level 2, the high potential onboarding experience

The high potential onboarding experience is full filled when compliance and clarification are completely covered along with using some connection and culture mechanisms. Establishing the complete process in a systematic is considered a tough job.

Level 3, the proactive onboarding experience

If the four levels are addressed, you are in the proactive onboarding experience. Which means that the firm is establishing a systematically organizing onboarding with a strategic human resource management approach [11] [12]. Figure (3) shows the four c's has four distinct levels.

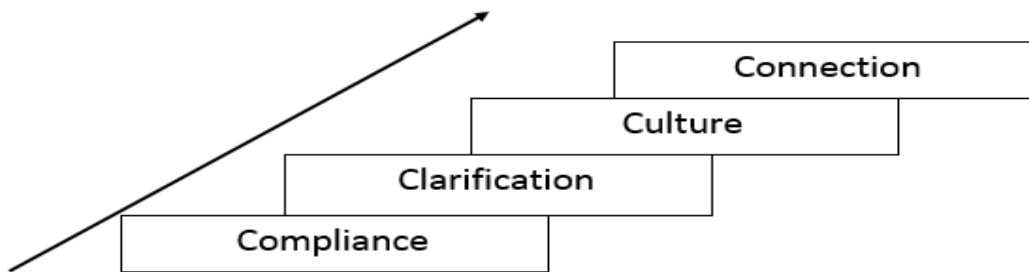


Figure (3) the four c's model. Adapted from [12].

The Developers joining model:

This onboarding model is designed to highlight the forces and the stages that influence the joining process of a developer to an OSS project. An outsider represents someone who hasn't been involved yet into the project and can be considered as a potential contributor. A newcomer represents someone who is trying to place their first contribution to the project. A contributor represents someone that engage in accomplishing some of the tasks within the project but can not be considered as a permanent contributor. A member represents someone who is considered to be a formal developer/contributor. The forces represented in the model are:

- Motivation:

The motivation force represents the urge to drive newcomers to participate to the project and to maintain their continuous contributions. According to Lakhani and Wolf [13] who studied the motivations of individuals to contribute to OSS projects, the main motivations for developers to contribute continuously are the beneficial factors like career advancements and better jobs along with the exciting joy of learning new skills.

- Attractiveness:

The attractiveness force represents the efforts organizations put to adopt contributions from newcomers. Santos et al. [14] tested a theoretical cause-effect model with data from more than 4000 projects for attractiveness as a main structure for OSS projects and found that the project conditions and characteristics play an influential role in attractiveness.

- Hindering factors:

The hindering factors are the obstacles that may push newcomers away from contributing to the project. These obstacles can delay newcomers contribution or even make them give up contributing. In Midha et al. [15] study of the impact of code cognitive complexity, found that an increase in cognitive complexity causes a decrease in contributions from newcomers.

- Retention:

Retention forces represents the characteristics and efficiency an organization offers to support newcomer's onboarding experience and to keep them contributing to the project. According to Schilling et al. [16] developers with abilities that are underused in the project and developers with a

higher academic education do not remain considerably long in the organization [17]. Adopted figure (4) shows the stages and forces of the developers joining process.

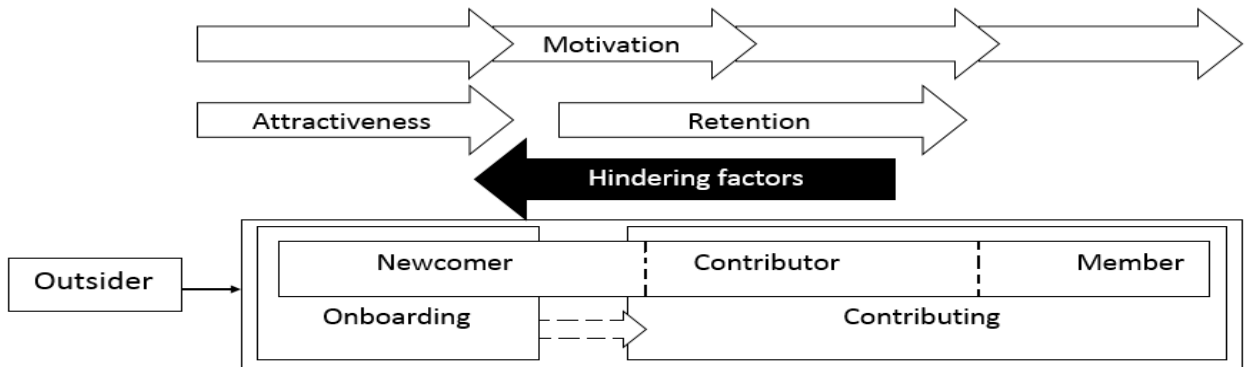


Figure (4) the stages and forces of the developers joining process. Adapted from [17].

The onion model:

The onion model is a conceptual model designed to describe the relationship of different levels layered from a passive user to a project leader. According to Nakakoji et al. A member can have one of the following roles:

- Passive user, the passive user is only limited to using the system as a commercial user.
- Reader, a reader is considered to be active user of the system, readers try to understand how the system works by reading the source code.
- Bug reporters, bug reporters do not fix or alter any bugs, they search and report the bugs within the system.
- Bug fixers, bug fixers job is to fix any reported bugs.
- Peripheral developers, Peripheral developers do not participate continuously to the system, they occasionally participate in system functions or features.
- Active developers, the active developers participate continuously to the system and their contributions is considered to be of high importance.
- Core members, the core members are anyone who has been involved in the project in a relatively very long time or from the beginning of the project, core members also called maintainers.
- Project leader, the project leader is the person responsible for the direction and vision of the whole project, they also maybe the one who started the project.

Not all of the previously mentioned roles exist in all OSS communities [18]. Figure (5) shows the general structure of an OSS community presented by an onion model.

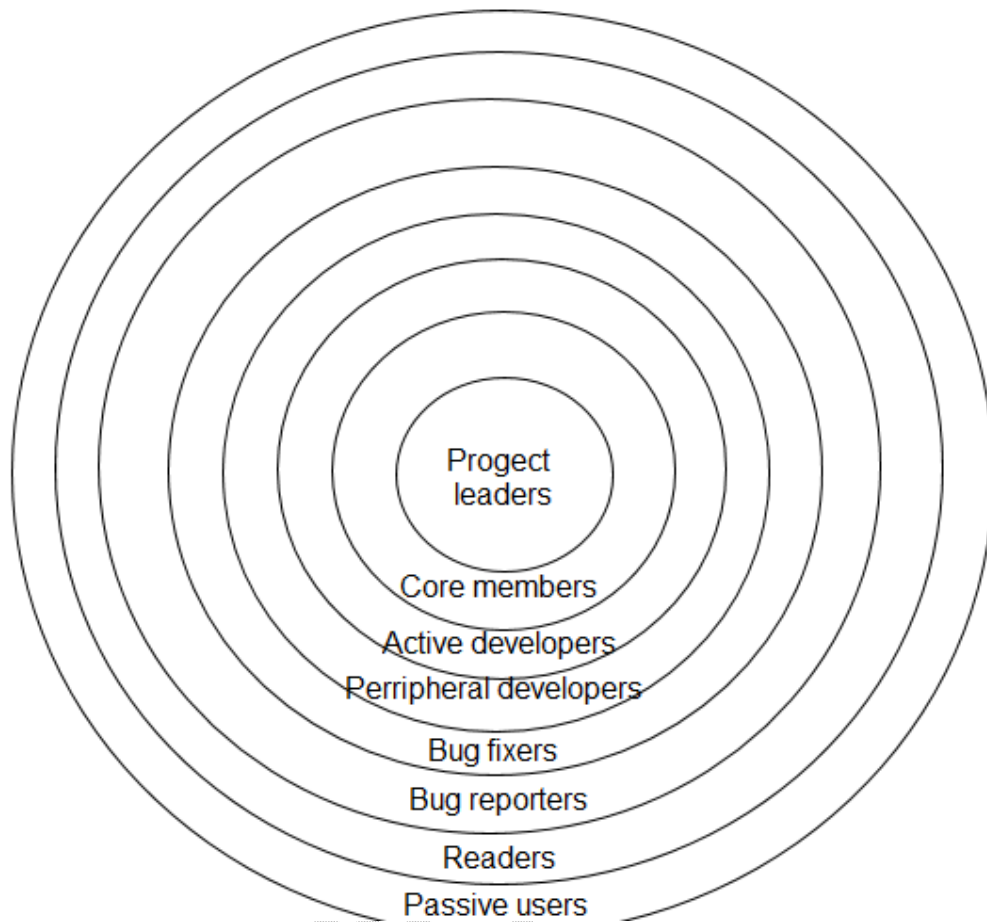


Figure (5) the general structure of an OSS community presented by an onion model. Adapted from [19].

3. RESEARCH METHODOLOGY

This study employs a comparative case study methodology to analyze and contrast different models for newcomer integration. This approach is chosen due to its ability to provide in-depth insights into each model's application and effectiveness within organizational settings.

Data Collection Methods

Literature Review:

- **Objective:** To identify and synthesize existing knowledge on newcomer integration models and their effectiveness.
- **Process:** Conduct a systematic review of academic articles, industry reports, and case studies related to newcomer integration. Focus on models' components, outcomes, and documented challenges.

This comparative study aims to provide valuable insights into effective models for newcomer integration by systematically analyzing and contrasting different approaches. The findings will contribute to the understanding of best practices and offer practical recommendations for organizations seeking to enhance their newcomer integration processes.

4. COMPARISON OF NEWCOMER ADOPTION MODELS

4.1. The key factors that need to be considered when comparing different models for adopting newcomers in an organization:

The task of choosing the right model for the purpose of newcomers' integration, usually involves considering many factors. Newcomers reshape the industries by bringing new business models in different scenarios [5]. Understanding how newcomers can interpret their tasks, professional identity, and forming relationships in communication situations is very important [13]. Research shows that newcomers should use their colleagues as role models to develop their own investigative style and get the necessary knowledge [14]. The personal characteristics such as expectations, experience, and self-confidence, affects how newcomers use role models in organizational socialization processes [15]. Therefore, when selecting the best newcomer model it is important to consider their ability to innovate, adapt to the market, seek information, manage their emotions, and finally, how to learn from their experienced colleagues to increase their chances of success in a completely new environment. Table (I) demonstrates the performance of each model across different key factors.

Table (I) the performance of each model across different key factors.

Key factor	The Developer joining model	The onion model	The Personal Identity socialization model	The four c's model	The traditional process
On-boarding plan	High	Medium	Medium	Low	Medium
Mentorship and support	High	Medium	High	Medium	Medium
Feedback and communications	High	Medium	High	Low	Medium
Cultural Fit	High	High	High	Medium	High
flexibility	High	Medium	High	Medium	low
Training and development	High	Medium	High	low	Medium
Social integration	High	Medium	High	Medium	Medium

Performance metrics	High	Medium	Medium	Low	Medium
Gradual and layered approach	Low	High	High	Low	Medium
Adaptability	Medium	Medium	High	Medium	Low
Role clarity	Low	Medium	Medium	High	Medium
Work-life balance	Low	Medium	High	Medium	Medium

The previous table provides a comparative analysis of the five on-boarding models across twelve different key factors considered to be crucial for the on-boarding of newcomers. As noticed, the developers joining model, and the personal socialization model, both excels in most of the key factors, making them the best choice for most of the organizations, rating high at mentorship and support, feedback and communication, cultural fit, flexibility, training and development, and social integration. Except it is best for the organization to choose the developers joining model if quick integration to the team is needed, or the personal identity socialization model, if a gradual integration is what they're looking for. Organizations must select the personal identity socialization model, if adaptability and work-life balance is a major focus, or the developers joining model, if performance metrics and a structured on-boarding process is required. The onion model, with moderate ratings in most of the key factors, making it suitable only for organizations that seek gradual integration to allow newcomers adapt over time, or when organizations values deep cultural understanding. The four c's model, and the traditional process, both excelled only in one key factor for each, coming last, making them not a suitable decision for the organizations to choose, with the four c's model, only excels in role clarity, and the traditional process, only supports the cultural fit.

4.2.The differences between models in terms of their effectiveness in promoting employee engagement and retention?

The effectiveness of the on-boarding models can significantly differ based on their approach to the mentioned key factors. Organizations should select their suitable on-boarding model based on their goals, workforce needs, etc. in order to maximize their engagement and retention. The personal socialization model, and the developers joining mode, both promote the high adoption of engagement and retention, it is best for organizations to select the developers joining model with specific context like open-source. The four c's model, moderate in promoting engagement and retention, it depends on implementation, if managed properly it can give higher promotion. The traditional on-boarding process, generally promotes low engagement and retention, mainly due to identity suppression. The onion model, cannot give a determined or rounded answer on its effectiveness, it depends on the role involvement, higher engagement and retention for an actively involved role, lower engagement and retention for passive roles.

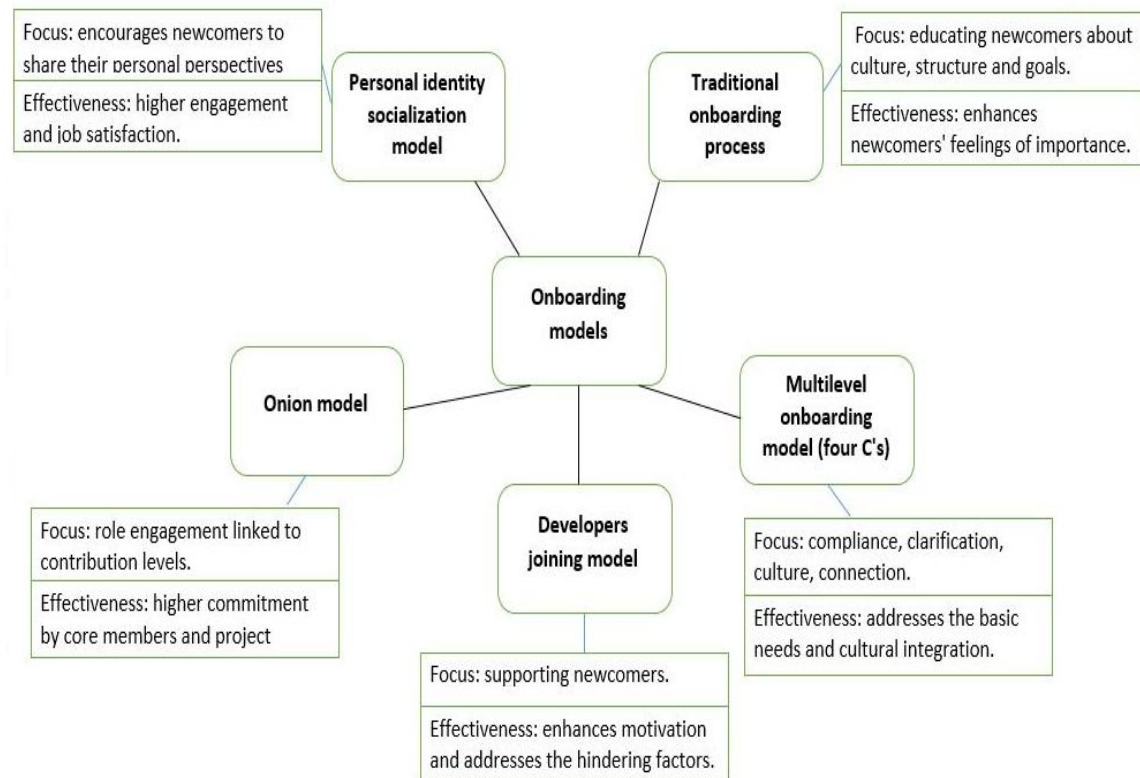


Figure (6) hierarchal graph of the effectiveness of different onboarding models.

4.3.The potential drawbacks and limitations of models

1. The traditional Onboarding Process:

- Drawbacks:
 - Identity Suppression: The focus on conforming to organizational norms and values may lead to suppression of newcomers' personal identity, potentially leading to dissatisfaction and reduced engagement [4] [5].
- Mitigation:
 - Incorporate Flexibility: Integrate the aspects and elements of the personal identity socialization model to allow newcomers to express their individuality while still aligning with organizational values.

2. The personal identity socialization model:

- Drawbacks:
 - Implementation Challenges: managers may struggle to move away from the old traditional practices and fully support newcomers' personal strengths [5].
- Mitigation:

- Training and Support: provide appropriate training for managers to help them understand and implement the principles of this model effectively. Try to adopt a culture that values personal strengths and individuality [10] [12].

3. The multilevel model (the four C's):

- Drawbacks:
 - Resource intensive: implementing a comprehensive on-boarding process requires significant resources and coordination.
- Mitigation:
 - Phased implementation: start with foundational levels (compliance and clarification) and gradually integrate culture and connection aspects. This phased approach can make the process more manageable [11].

4. The developers joining model:

- Drawbacks:
 - Context-Specific: the model is tailored for open-source projects and may not be applicable to other types of organizations.
- Mitigation:
 - Adaptation: adapt the model's principles to suit different organizational contexts, focusing on motivation and support mechanisms relevant to the specific environment [17].

5. The onion model:

- Drawbacks:
 - Role-Based Variability: The model's effectiveness varies by role, with lower engagement and retention for less involved roles.
- Mitigation:
 - Role Development: create pathways for passive users and lower-level contributors to advance to more involved roles, thereby increasing engagement and retention opportunities [18].

Table (II) the potential drawbacks and limitations of the models, and their mitigation strategies.

Model	Drawbacks	Mitigation
The traditional onboarding process	Identity suppression: the focus on conformity may suppress newcomer's personal identity, and reduce in engagement.	Incorporate flexibility: introduce personal identity elements, allowing newcomers to express their individuality selves while aligning with the organizational values.

The personal identity socialization model	implementation challenges: managers may struggle to fully support individual strengths.	training and support: train managers to implement the model, and adopt a culture that values personal strengths and individuality.
The multilevel model (the four c's)	Resource intensive: requires significant resources and coordination to implement comprehensively.	Phased implementation: start with basic levels (compliance and clarification), and gradually incorporate cultural and connection aspects for smoother rollout.
The developers joining model	Context-specific: primarily suited for open-source projects, limiting broader applicability.	Adaptation: structure the model's principles to different organizations focusing on motivation and relevant support mechanisms.
The onion model	Role-based variability: engagement and retention effectiveness vary by role involvement level.	Role development: provide opportunities for passive users to take on more engaged roles increasing retention and engagement.

5. RESULTS AND DISCUSSION

The first research question Q1 established at the beginning refers to what are the key factors to consider when comparing different models for adopting newcomers in an organization.

Table (I) summarizes the performance of each model across different key factors and their impact on engagement and retention of new employees. Analyzing the table with key factors consideration revealed the following:

- Onboarding plan: the developers joining model excelled in this area, proving that organizations that seek enhancing newcomers' initial experience should prioritize a strong onboarding strategy.
- Mentorship and support: the identity socialization model and the developers joining model provided high levels of support, which will increase confidence and professional growth.
- Feedback and communication: the developers joining model and the identity socialization model both stand out proving that continuous feedback and open communication is crucial for newcomers to understand their roles and what is expected from them.
- Cultural fit: the onion model, the identity socialization model, and the developers joining model all highly suggested that adapting to the organization culture is crucial for the long-term success.
- Flexibility and adaptability: the identity socialization model and the developers joining model both scored high in flexibility, indicating its effectiveness in organizational settings, while the identity socialization model scored high in adaptability showing the importance for newcomers to adjust to changing environments.
- Training and development: the developers joining model and the identity socialization model offers robust training plans, continuous training shows how it is crucial for skill development.

- Social integration: the identity socialization model and the developers joining model scores high in promoting social integration, which proved to enhance team collaboration.
- Performance metrics: the developers joining model leads in this area, showing how important it is for newcomers to understand how their success is measured.
- Gradual layered approach: the onion model and the identity socialization model both scored high, indicating that emphasizing newcomers to their new roles incrementally can increase their confidence and support personalized learning experience.
- Role clarity: the four c's model excels in promoting role clarity, role clarity benefit in reducing ambiguity and enhance job satisfaction.
- Work life balance: the identity socialization model provides strong support for this area, which can increase the employee's satisfaction.

The next raised question Q2 was about How do the discussed models differ in terms of their effectiveness in promoting employee engagement and retention was answered based on investigations and study of previous research, the findings confirmed the fact that different models suggest different approaches which contribute in providing unique outcomes to newcomers retention and engagement. The comparative effectiveness of the onboarding models shows the impact on the engagement and retention of newcomers as following:

- The Developers joining model: this model is characterized to have a strong onboarding plan, mentorship that focuses on communication between team members, with continues feedback. In addition to promoting training the newcomers, social integration, and flexibility. The focus on motivating and supporting newcomers is what enhances the process of retention by addressing the hindering factors on early stages.
- The onion model: this model provides a layered approach to provide a clear understanding of employee's involvement. It connects the engagement and retention of each employees with their roles and level of involvement. As the employee progresses from a passive user to a leader, they increase their commitment. This model showed effectiveness in cultural fit, which is important for long term retention.
- The identity socialization model: this model is known for its ability to integrate the personal perspectives of the employees in the workplace, encouraging newcomers to share their ideas gave this model the benefit of adopting belonging and appreciation from the community. This engagement results in higher satisfaction and better retention, making this model a better suit for organizations that aim to acquire committed workforce.
- The four c's model: this model provides a comprehensive framework addresses the basic needs along with cultural integration. This approach supports long-term retention by making sure that newcomers clearly understand their roles and what is expected from them aligned to feeling connected to the organization.
- The traditional onboarding model: this model focuses on educating newcomers about the organization's structure, culture, and goals. This model diminishes the engagement by suppressing personal identity which may be ineffective for the long-term retention, but it plays a critical role for the initial retention by making the newcomer feel valued and important.

The third question Q3 investigated on what are each model's potential drawbacks and limitations, and how can they be mitigated or addressed.

The Answer to this question is in table (II) that summarizes the potential drawbacks and limitations of the models, along with their mitigation strategies and it revealed the following:

- The traditional onboarding process: the significant limitation of this model is identity suppression, which may lead newcomers into feeling that their personal identity is undervalued which may cause employees to feel unsatisfied with their job and eventually reduce the engagement among them. The mitigation strategy for organizations to follow is to incorporate flexibility to their onboarding plans.
- The personal identity socialization model: the limitation for the personal identity socialization model is about the implementation challenges that the organization may have difficulties to

apply, managers tend to go back to their traditional practices rather than supporting newcomers' unique perspectives. The mitigation strategy appropriate to overcome this limitation is to invest in training managers to support newcomers to understand the importance of personal strengths and individuality.

- The four c's model: in order to implement the four c's onboarding model, this approach requires a significant resources and coordination, which may be difficult for some organizations to adopt. The mitigation strategy to overcome this is to adopt a phased implementation approach to make the onboarding process more manageable.
- The developers joining model: this model is built for open-source projects, which may limit its applicability to other organizational types. The mitigation strategy for organizations is to adapt the models into fitting different contexts in order to meet diverse organizational needs.
- The onion model: this models' effectiveness depend on role involvement level, which may result in low engagement and retention for the employees in low involvement roles. The mitigation strategy to overcome this is for organizations to focus more on role development by creating clear pathways for passive users to engage more.

6. CONCLUSION

This study has provided a comprehensive analysis of various newcomer integration models, emphasizing their strengths, limitations, and potential for adaptation in different organizational contexts. By comparing models such as the Developers Joining Model, the Onion Model, the Identity Socialization Model, the Four C's Model, and the Traditional Onboarding Process, it is evident that each offers unique approaches to enhancing newcomer engagement and retention. Key findings reveal that models emphasizing mentorship, continuous feedback, social integration, and role clarity, such as the Identity Socialization Model and the Developers Joining Model, tend to excel in fostering long-term employee engagement and retention. Conversely, while the Traditional Onboarding Process supports initial retention through cultural education, its long-term effectiveness is limited by its potential to suppress personal identity.

Additionally, each model presents challenges, from resource intensiveness in the Four C's Model to context-specific applicability in the Developers Joining Model. Mitigation strategies, such as phased implementation and managerial training, can address these limitations, enabling organizations to tailor models to their unique needs. In terms of future work, further investigation can be conducted through surveys with core members and real newcomers in software engineering organizations to confirm the findings of this paper.

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