
A Study of AI Use Cases in Employee Onboarding

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Abstract

We are amidst the AI revolution. Over the past few years, HR has experimented and embedded AI use cases in various HR processes to drive enhanced efficiencies, decision making, personalization, employee experiences and productivity outcomes. One of such HR processes is Employee Onboarding. Between the milestones of employee receiving an offer letter and the employee joining the organization, lies a critical process of onboarding the employee. AI is transforming the employee onboarding process into meaningful transactions and conversations that are driven by intelligence. From welcoming the new joiner, to the documentation, to orientation programs, to mentors, to the clarification of roles and responsibilities onboarding processes can drive candidate delight and improve day 1 productivity. This paper aims to study the uses cases of AI enabled Onboarding process by considering four onboarding sub - processes namely Pre – Boarding, Orientation, Training and Integration¹ across the AI classification provided by PWC namely Assisted Intelligence, Augmented Intelligence and Autonomous Intelligence.

Keywords: *Artificial Intelligence, Employee Onboarding, Employee Experience, Organization Socialization*

Introduction

Organizations for long have been challenged by the leakage happening between offer acceptance and actual joining of the candidate. Monster.com reports 30 percent of external new hires turn over within the first two years of employment. Retention statistics from other organizations, including the Society for Human Resources Management (SHRM), show that turnover can be as much as 50 percent in the first 18 months of employment². According to Indeed reports, "employee ghosting" after accepting a job offer is a prevalent issue, with a significant percentage of job seekers reported to have ghosted a potential employer after receiving a job offer, meaning they accepted the position and then never showed up for their first day of work without any communication."³ As per Abraham Maslow, renowned psychologist, creator of Maslow's hierarchy of needs, "candidates desire to feel belonging, be creative, and even find life's purpose through work." The most common reason for candidate dropout is inauthentic or misrepresented facts, unclear job descriptions, criteria or expectation mismatch in terms of salary, benefits, work hours, location and job title, an overwhelming interview process and paper work, lack of communication, delayed decision-making, a negative Candidate experience and better counter offers from the competition⁴. An effective

¹ <https://www.personio.com/hr-lexicon/onboarding/>

² <https://mcgpartners.com/your-employees-are-different-why-arent-your-onboarding-plans/>

³ <https://www.indeed.com/insights/indeeds-ghosting-in-hiring-report>

⁴ <https://hyreo.com/reasons-for-offer-dropout/>

onboarding program is crucial for any organization to prevent ghosting. Employees who experience a well-structured onboarding program are 69% more likely to remain with that organization (Scott et al., 2022).

According to the SHRM, “Onboarding is the process by which new hires get acclimatized to all aspects of their jobs rapidly and easily, and learn the KSA and behaviours required to function effectively within an organization.” This includes familiarizing them with the organization culture, work environment, policies, procedures and the job responsibilities. The Onboarding process typically starts from job offer is acceptance and continues until the employee smoothly transition into their role. Employee onboarding integrates a new employee with a company and its culture, as well as getting a new hire the tools and information needed to become a productive member of the team⁵. Employee onboarding is a pivotal stage that significantly influences new hires' integration, engagement, and long-term success within an organization. Traditional onboarding methods, characterized by repetitive paperwork and generic orientation programs, often fall short of creating an engaging and tailored experience for new hires. Inefficient onboarding process causes nearly one in three of newly hired employees leave the company before the end of their first year, resulting in a negative impact on organizational productivity, workforce stability, and performance⁶. AI has the potential to address these challenges by automating administrative tasks, providing personalized

onboarding journeys, and delivering real-time insights. (Sasi & Parasa, 2022).

In a world that is revolutionized by technology and exploding with data, it is now more about “the Experience” rather than just the “Outcome”. Businesses are leveraging advances in AI technologies to deliver an enhanced experience to their stakeholders. As per AI Now 2017 Report “While the concept of artificial intelligence has existed for over sixty years, real-world applications have only accelerated in the last decade due to three concurrent developments: better algorithms, increases in networked computing power and the tech industry’s ability to capture and store massive amounts of data.” John McCarthy in 1965 began research on AI with the hypothesis that each aspect of learning and intelligence can be described in so much detail such that it can be replicated by a machine. Today, AI exists in form of digital assistants, chatbots, and machine learning. These AI technologies can Understand, Reason, Learn and Interact. Just as businesses discovered the power of AI to drive exceptional Customer Experience, HR has begun piloting AI to automate processes and transform Employee Experience. With a global multi-generation, connected and mobile work force the challenge for HR is even greater as organizations need to align with the experience they deliver to their employees. This requires HR to transform from “process support” to an “experience architect” by focussing on employee experience. AI applications are being leveraged in Talent Acquisition and Employee Engagement, however human intervention will be required for the optimal usage

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<https://www.shrm.org/content/dam/en/shrm/topics-tools/news/technology/NewEmployeeOnboardingGuide.pdf>

⁶ <http://docplayer.net/7390719-Saratoga-and-global-best-practicesbest-practices-for-retaining-new-employees-new-approaches-toeffective-onboarding-introduction-1.html>

and functioning of AI applications (Pandey* & Khaskel, 2019).

Problem Statement

On one hand while AI has rapidly advanced at an unprecedented scale there is immense potential to further leverage AI in the enhancing the employee experience during Onboarding. This study will enable structure the use cases of the employee onboarding process that can leverage AI.

Objective

To study the use cases in Employee Onboarding process that can leverage AI

Literature Review

Understanding Onboarding

The term "onboarding" originated in the 1990s. Originally, it referred to a training process for upper management and executives to prepare them for their new roles, while subordinates only received an employee orientation. Eventually, onboarding transformed to be a process to acclimate all employees into a new role or organization (Bell & Administrator, 2021). Onboarding was introduced in terms of organizational socialization for newcomers, insiders and outsiders in literature by (Maanen & Schein, 1977). According to Bauer and Erdogan, "Organizational socialization, or onboarding, is a process through which new employees move from being organizational outsiders to becoming organizational insiders." Onboarding refers to the process that helps new employees learn the knowledge, skills, and behaviours they need to succeed in their new organizations (Bauer & Erdogan, 2011). The process of new employees joining and integrating into an organization is referred to as onboarding (Gregory et al., 2022). Onboarding involves introduction of a newcomer into their job role and providing them with an understanding of the company's values,

goals, policies, processes and organizational culture (Bauer & Erdogan, 2014; Caldwell & Peters, 2018). The onboarding term refers to several central activities of the recruitment process at the beginning of the employment relationship, such as interviewing job seekers, making decisions and communicating results, training on the job (OTJ training), and orienting a new employee to a new job position and company. The onboarding term involves all of these and many other processes that aim to prepare newcomers for their new roles, supporting them through the adaptation period, and familiarizing them with a company. Onboarding basically includes the procedures and guidelines that organizations implement to ensure that new employees are introduced successfully into their roles, teams and organizations.

Impact of Onboarding

New hire onboarding is a process that has serious consequences for both talent acquisition and talent management. Onboarding has a significant impact on employee satisfaction and employee commitment as during this period newcomers build an emotional connection with the organization's brand (Bauer & Erdogan, 2011). Due to the high Costs Per Hire, there is a need for new employees to be fully functional and engaged at the earliest along with the need to communicate performance indicators and share best practices (Graybill et al., 2013). Beginning of a new job can be a challenging experience, as it involves the new joiner to adapt, feel comfortable and learn the way the organization functions in a new environment (Carlos & Muralles, 2022). Organizations have specific practices to facilitate the introduction of the new employee to the structure and culture of the working environment. The new joiner's organizational commitment is influenced by perceived job satisfaction, fairness in the workplace and opportunities for professional

development. An effective onboarding programs can positively influence organizational commitment by providing a positive initial experience for new employees (Pinco et al., 2024). Successful onboarding results in accelerated productivity of new employees by reducing the time to contribute to the organization and hence, employee engagement and productivity are the ultimate purposes of onboarding programs. According to SHRM, “An effective onboarding plan offers an ideal opportunity to boost employee engagement by, for example, fostering a supportive relationship between new hires and management, reinforcing the company's commitment to helping employees' professional growth and proving that management recognizes the employees' talent⁷.” Without the proper design and implementation, the onboarding process can be stressful and negatively impact the employee experience, and ultimately, employee and organization outcomes(Scott et al., 2022). Having an established process of onboarding is essential for organizations striving to succeed in changing markets, as it brings numerous benefits for both: the employer and employee (Mitrofanova, 2023).

AI and Employee Onboarding

AI is the most transformative and disruptive technology in our era. Satya Nadella quotes “The rate of diffusion of this next generation of AI is unlike anything we've seen, but even more remarkable is the sense of empowerment it has already unlocked in every corner of the world.”. Josh Bersin states “After 45 years of research, computer scientists have developed systems that can talk to us, classify photos, and create images, as well as analyse, modify, and author video and audio content. As with any new technology, there's a massive

amount of hype, confusion, trepidation, and even fear, around the expanded access and usage of AI.” In 1956 at the famous Dartmouth Summer Workshop, John McCarthy, Marvin Minsky, Nathaniel Rochester, and Claude Shannon defined the project of creating AI in terms of “making a machine behave in ways that would be called intelligent if a human were so behaving”(McCarthy, 1955) . As per Hofman, “AI applications can overtake certain functions inspired by humans' cognitive abilities, including perceiving, feature extraction and identification, reasoning, predicting, decision-making, generating, and acting (Hofmann, 2020).” More recently, AI, apart from being technologically advanced in terms of hardware and software, is also autonomous, learns through data and is inscrutable(Berente et al., 2021). As per Brynjolfsson & McAfee, “The use of AI applications is expected to increase significantly in the coming years and will shape new work processes and practices.”⁸ , Specifically for Employee Onboarding, Meyer von Wolff suggested using chatbots to answer newcomers' questions, personalizing training and automate appointments with coworkers(von Wolff & Hobert, 2020). AI can identify employees with similar interests, an AI-based conversational agent that can improve access to relevant onboarding documents, or an organizational knowledge graph that can help newcomers to find responsible or persons of authority for their queries.

Methodology

For the purposes of the study, the following Onboarding Processes will be taken into consideration:

1. Pre – Boarding

⁷ <https://www.shrm.org/mena/topics-tools/topics/onboarding>

⁸ <https://hbr.org/2017/07/the-business-of-artificial-intelligence>

2. Orientation
3. Training
4. Integration

To study the above processes from an AI perspective we will utilize the classification of AI use cases provided by PWC which is as follows(Ghosh & Mitra, 2017):

1. Assisted Intelligence - Improves what people and organizations are already doing
2. Augmented intelligence – Enables people and organizations to do things they could not otherwise do
3. Autonomous intelligence – Establishes machines that act on their own

Secondary data has been collected from various published and publicly available material on the internet and is used for the articulation of this paper.

Findings

The Employee Onboarding process can be depicted as follows:



Preboarding

Pre-boarding includes the organization's preparation for the arrival of the new employee, ensuring that they feel welcomed before day 1 of their joining. This process includes sending welcome emails, completing requisite documentation, setting up internal systems and IT, and preparing the workplace. This process is crucial for making the prospective new joiner feel valued and excited about joining the organization. Conversational Agents are in the forerun to respond to queries raised by new joiner throughout the onboarding process (Majumder & Mondal, 2021). AI enables creation of

new joiner skill profile based on interactions with the new joiner during the conversations(Ritz et al., 2023) .

AI Use Cases in Preboarding

Completion of Formalities		
Assisted Intelligence	Augmented Intelligence	Autonomous Intelligence
Automated Emails, Reminders and Notification for Documentation.	Custom / personalized Emails, Reminders and Notification for completion of Documentation based on Profile.	Completion of Documentation with the help of a Virtual Onboarding Assistant and digital signature software
Providing Orientation information		
Assisted Intelligence	Augmented Intelligence	Autonomous Intelligence
Automated Emails, Reminders and Notification on reporting location.	Send Google Map location.	Send Google Map with nearby amenities based on candidate attributes.
Managing Collaborators (Mentors, HR, Admin, Security, Third Party Vendor, IT)		
Assisted Intelligence	Augmented Intelligence	Autonomous Intelligence
Automated Emails, Reminders and	Assisted selection of Collaborators.	Auto assignment of collaborators based on

Notification to manually selected collaborators.		multiple criteria such as availability, competency, feedback scores, common areas of interest of candidate and Collaborators.
Providing a Plan of Action		
Assisted Intelligence	Augmented Intelligence	Autonomous Intelligence
Automated calendar invites with To Do Lists and Meeting invites.	Booking for calendar invites for candidates and all collaborators.	Auto generation of a 30 – 60 – 90 days planner with detailed tasks lists and calendar booking involving all collaborators.
Communication Roles and Responsibilities		
Assisted Intelligence	Augmented Intelligence	Autonomous Intelligence
Automated email communication about the roles and responsibilities to the candidate, peers and manager.	Communication about the roles and responsibilities, real business scenario cases studies, day in life collateral to be shared	Conversational capturing and validation of acceptance/resentment sentiments about roles and responsibilities, on application of

	with candidate.	real time business scenarios or day in life.
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Orientation

The Orientation process includes welcoming the new employee, offering a tour of the workplace, introducing colleagues, and conducting training sessions.

AI Use Cases in Orientation

Welcoming New Joiners		
Assisted Intelligence	Augmented Intelligence	Autonomous Intelligence
Automated Welcome Message on Day 1	Personalized Welcome message in multiple / preferred languages + Auto generation of Welcome Kit	Personalized Welcome message in multiple / preferred languages along with images and videos or life events or colleagues + Welcome Kit with Virtual Office Tour
Introduction to Colleagues		
Assisted Intelligence	Augmented Intelligence	Autonomous Intelligence
AI driven Colleagues Search Engine	AI driven Colleagues Search Engine with	AI driven Colleagues Search Engine with Collaboration

	Collaboration	with Recommendations
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Training

Training during the onboarding includes training specific to the role, about the business, company, corporate strategy, work culture, expectation setting, SOP and compliance, health and safety. Intelligent recommender systems can select re-& upskilling courses or suitable learning material for the newcomer based on his/her skills and help to close skill gaps (Bauman & Tuzhilin, 2018). Office buddies and mentors play a key role in this phase, ensuring the new employee understands their responsibilities and expectations. AI enables less biased matchmaking of new joiners with office buddies or mentors (Dellermann et al., 2019).

AI Use Cases in Training

Assigning Orientation Training		
Assisted Intelligence	Augmented Intelligence	Autonomous Intelligence
Automated assignment of learning courses based on candidate profile.	Auto assign learning content with personalized curriculum, learning paths and AI driven learning content to candidates.	Virtual Learning Assistant and Query Solver
Assigning Office Buddy and Mentor		
Assisted Intelligence	Augmented Intelligence	Autonomous Intelligence
Auto assign Office Buddy and Mentor	Auto assign Office Buddy and Mentor	Office Buddy and Mentor task and

depending upon new joiner's department	taking into consideration common personality traits, interests, competencies along with work attributes	engagement Manager
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Integration

Over the Onboarding process, continuous engagement, support and development are essential to assist the new employee fully integrate into the organisation and contribute effectively. Integration involves regular check-ins, feedback sessions, and performance reviews.

AI Use Cases in Integration

New Joiner Feedback		
Assisted Intelligence	Augmented Intelligence	Autonomous Intelligence
Employee event triggered Conversations to capture feedback.	Conversation Analysis based on new joiner survey, social media interactions and peer feedback.	Conversation Analysis with Recommended Actions and Follow Ups.

Some Examples of AI driven onboarding solutions are as follows:

- IBM Watson Talent provides new hires with chatbots that answer common questions, offer training recommendations

and help them acclimate to the company culture.

- Unilever's Onboarding "U-First" guides new hires through the onboarding process, providing information regarding the company, policies and procedures while collecting feedback from new employees, helping Unilever continuously improve its onboarding process.
- Deloitte has developed a Digital Integrated Onboarding Experience (D-ICE) platform that leverages AI and analytics. D-ICE provides personalized onboarding experiences to new employees by analysing their skills, preferences, and roles. It recommends training modules, connects new hires with mentors, and uses AI-driven analytics to track the success of onboarding efforts.

Conclusion:

AI is transforming the employee onboarding process with advances in technology representing a paradigm shift in the way organizations welcome and integrate new employees. AI is being used for automating the processes, delivering personalized experiences and content, and driving enhanced engagement leading to accelerated integration, improved productivity, and a positive employee experience. AI automates repetitive activities like documentation and data entry. It also analyses an individual's data to understand learning styles, skills and needs, and deliver personalized learning experiences tailored to each individual's skills, skill-gaps and pace of learning. With interactive and engaging AI driven virtual agents, new joiners feel more connected to the company. AI driven onboarding solutions provide real-time insights into onboarding process, enabling HR to proactively address concerns and challenges. AI in Employee Onboarding process ultimately accelerates the

employee integration process, enhances engagement and increases job satisfaction ensuring that employees feel valued and well-prepared for their roles.

Bibliography

- Bauer, T. N., & Erdogan, B. (2011). Organizational socialization: The effective onboarding of new employees. In *APA handbook of industrial and organizational psychology, Vol 3: Maintaining, expanding, and contracting the organization*. (pp. 51–64). American Psychological Association. <https://doi.org/10.1037/12171-002>
- Bauer, T. N., & Erdogan, B. (2014). Delineating and Reviewing the Role of Newcomer Capital in Organizational Socialization. *Annual Review of Organizational Psychology and Organizational Behavior*, 1(1), 439–457. <https://doi.org/10.1146/annurev-orgpsych-031413-091251>
- Bauman, K., & Tuzhilin, A. (2018). Recommending Remedial Learning Materials to Students by Filling Their Knowledge Gaps. *MIS Quarterly*, 42(1), 313–332. <https://doi.org/10.25300/MISQ/2018/13770>
- Bell, T., & Administrator, C. (2021). Onboarding: Improving Employer and Employee Relations Onboarding: Improving Employer and Employee Relations Onboarding: Improving Employer and Employee Relations. In *Certified Public Manager® Applied Research* (Vol. 2). <https://scholarworks.sfasu.edu/cpmar>
- Berente, N., Gu, B., Recker, J., & Santhanam, R. (2021). *SPECIAL ISSUE: MANAGING AI MANAGING ARTIFICIAL INTELLIGENCE 1. MIS Quarterly Vol. 45 No. 3 pp. 1433-1450 / September 2021*. <https://doi.org/10.25300/MISQ/2021/16274>
- Caldwell, C., & Peters, R. (2018). New employee onboarding – psychological contracts and ethical perspectives. *Journal of Management Development*, 37(1), 27–39. <https://doi.org/10.1108/JMD-10-2016-0202>

- Carlos, A. R., & Muralles, D. C. (2022). Onboarding in the age of COVID-19. *IFLA Journal*, 48(1), 33–40. <https://doi.org/10.1177/03400352211035413>
- Dellermann, D., Ebel, P., Söllner, M., & Leimeister, J. M. (2019). Hybrid Intelligence. *Business & Information Systems Engineering*, 61(5), 637–643. <https://doi.org/10.1007/s12599-019-00595-2>
- Ghosh, S., & Mitra, I. (2017). *Artificial Intelligence and Robotics – 2017 Leveraging artificial intelligence and robotics for sustainable growth*.
- Graybill, J. O., Taesil Hudson Carpenter, M., Offord, J., Piorun, M., & Shaffer, G. (2013). Employee onboarding: identification of best practices in ACRL libraries. *Library Management*, 34(3), 200–218. <https://doi.org/10.1108/01435121311310897>
- Gregory, P., Strode, D. E., Sharp, H., & Barroca, L. (2022). An onboarding model for integrating newcomers into agile project teams. *Information and Software Technology*, 143, 106792. <https://doi.org/10.1016/j.infsof.2021.106792>
- Hofmann, P., J. J., P. D., & U. N. (2020). Developing Purposeful AI Use Cases - A Structured Method and Its Application in Project Management. *15th International Conference on Wirtschaftsinformatik*.
- Maanen, J. Van, & Schein, E. H. (1977). *Toward a Theory of Organizational Socialization*.
- Majumder, S., & Mondal, A. (2021). Are chatbots really useful for human resource management? *International Journal of Speech Technology*, 24(4), 969–977. <https://doi.org/10.1007/s10772-021-09834-y>
- McCarthy, J., M. M. L., R. N., & S. C. E. (1955). *A Proposal for the Dartmouth Summer Research Project on Artificial Intelligence*.
- Mitrofanova, E. (2023). *Value in Onboarding: Designing the New Employee Onboarding Procedure for Hybrid Working Environment*.
- Pandey*, S., & Khaskel, P. (2019). Application of AI in Human Resource Management and Gen Y's Reaction. *International Journal of Recent Technology and Engineering (IJRTE)*, 8(4), 10325–10331. <https://doi.org/10.35940/ijrte.D4585.118419>
- Pinco, O., Salanta, I. I., Beleiu, I. N., & Crisan, E. L. (2024). The onboarding process: a review. *Vilakshan - XIMB Journal of Management*. <https://doi.org/10.1108/xjm-01-2024-0008>
- Ritz, E., Donisi, F., Elshan, E., & Rietsche, R. (2023). *Artificial Socialization? How Artificial Intelligence Applications Can Shape A New Era of Employee Onboarding Practices*.
- Sasi, M., & Parasa, K. (2022). IMPACT OF AI ON EMPLOYEE ONBOARDING IN HR TRANSFORMATION. *International Journal of Core Engineering & Management*, 7.
- Scott, C. P. R., Dieguez, T. A., Deepak, P., Gu, S., & Wildman, J. L. (2022). Onboarding during COVID-19. *Organizational Dynamics*, 51(2), 100828. <https://doi.org/10.1016/j.orgdyn.2021.100828>
- von Wolff, R. M., & Hobert, S. (2020). Chatbots at Digital Workplaces – A Grounded-Theory Approach for Surveying Application Areas and Objectives. *Pacific Asia Journal of the Association for Information Systems*, 12, 63–103. <https://doi.org/10.17705/1thci.12203>