

Bridging the AI Skills Gap: Workforce Training for Financial Services

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Publication Date: 2025/03/01

Abstract: This paper explores the transformative impact of Generative AI (GenAI) and Agentic AI on the banking and financial services sector. We examine the current applications, potential benefits, and challenges associated with these technologies, focusing on their role in enhancing productivity, improving customer experiences, and reshaping workforce dynamics. This paper explores the critical need for training older adults in Generative AI (GenAI). While GenAI offers transformative potential across various sectors, ensuring equitable access and adoption requires addressing the specific challenges faced by older populations. These challenges include digital literacy gaps, concerns about data privacy and security, and the need for user-friendly interfaces. The paper examines key considerations for developing effective GenAI training programs for older adults, emphasizing the importance of foundational digital skills, accessible language, personalized learning, and ongoing support. Furthermore, it analyzes future projections of GenAI's impact, highlighting the necessity of upskilling and reskilling the workforce, including older individuals, to bridge the emerging GenAI skills gap. The paper categorizes and quantifies the types of sources used to support its claims, providing a comprehensive overview of the current state of research and expert opinion on this important topic. By addressing the unique needs of older learners and preparing for the future of GenAI, we can foster digital inclusion and empower all members of society to benefit from this transformative technology. This paper uses the sources published in last six months. This paper examines the impact of Generative AI (GenAI) and Agentic AI on the financial services sector, with a specific focus on workforce training and upskilling. Key findings indicate that by 2027, 80% of the engineering workforce will require AI-related upskilling (Gartner) and AI-driven automation can reduce manual data tasks by up to 80% (West Monroe). In banking, AI adoption has led to tangible productivity gains, such as Capitec Bank employees saving over one hour per week using AI tools. The financial benefits are also significant, with Retrieval-Augmented Generation (RAG) models enhancing profitability and compliance in banking operations. Additionally, this study highlights the digital divide faced by older adults, emphasizing the need for structured AI training programs. The paper categorizes and quantifies recent AI adoption trends, workforce transformation data, and financial efficiency metrics to provide a comprehensive overview of the evolving AI landscape in financial services.

Keywords: *Generative AI (GenAI), Agentic AI, Workforce Training, Digital Literacy, AI Adoption.*

How to Cite: Satyadhar Joshi. (2025). Bridging the AI Skills Gap: Workforce Training for Financial Services. *International Journal of Innovative Science and Research Technology*, 10(2), 1023-1030. <https://doi.org/10.5281/zenodo.14944939>.

I. INTRODUCTION

The rapid advancement of artificial intelligence (AI), particularly in the realm of Generative AI (GenAI), is transforming industries and reshaping how we interact with technology. GenAI, with its ability to create novel content ranging from text and images to code and music, holds immense potential to revolutionize various sectors, from healthcare and education to finance and entertainment. However, the transformative power of GenAI also presents challenges, particularly in ensuring equitable access and adoption across all segments of society. This paper focuses on a critical yet often overlooked demographic in the GenAI revolution: older adults.

As GenAI becomes increasingly integrated into daily life, older individuals may face unique barriers to engaging with these powerful tools. Digital literacy gaps, concerns

about data privacy and security, and potential cognitive changes associated with aging can create a digital divide, leaving older adults behind in this technological revolution. This is particularly concerning given the growing importance of digital technologies in accessing essential services, maintaining social connections, and participating fully in modern society. Therefore, targeted training programs are crucial to empower older adults to effectively utilize GenAI tools and reap their benefits.

This paper explores the key considerations for developing effective GenAI training programs for older people. We examine the specific challenges faced by older learners, emphasizing the need for foundational digital skills training, user-friendly interfaces, accessible language, personalized learning experiences, and ongoing support. Furthermore, we analyze future projections of GenAI's impact on the workforce and society, highlighting the

importance of upskilling and reskilling initiatives to bridge the emerging GenAI skills gap and ensure that older individuals are not left behind in the evolving landscape of work. We also categorize and quantify the various sources used to support our analysis, providing a comprehensive overview of the current state of research and expert opinion on this important topic.

By addressing the unique needs of older learners and proactively preparing for the future of GenAI, we can foster digital inclusion and empower all members of society to benefit from this transformative technology. This paper aims to contribute to the growing body of knowledge on GenAI and aging, offering practical recommendations for training programs and highlighting the importance of bridging the digital divide to create a more equitable and inclusive future.

II. LITERATURE REVIEW

The rapid advancement of artificial intelligence, particularly Generative AI (GenAI) and Agentic AI, is revolutionizing the banking and financial services industry [1][2]. This paper provides an overview of these technologies and their implications for the sector.

A. Generative AI in Banking

GenAI has found numerous applications in banking, from improving customer service to enhancing operational efficiency [3][4]. It is transforming various aspects of banking operations, including risk management and fraud detection [5][6].

B. Agentic AI: The Next Frontier

While GenAI enhances existing processes, Agentic AI represents a more profound shift [7]. Getty et al. [8] argue that Agentic AI's ability to autonomously handle complex tasks may potentially replace certain job roles, unlike GenAI which primarily enhances them [9].

C. Workforce Development

The integration of AI technologies necessitates significant workforce development and upskilling [10][11]. Gartner predicts that 80% of the engineering workforce will require upskilling due to GenAI by 2027 [12]. This highlights the urgent need for comprehensive AI training programs in financial institutions.

Research indicates that GenAI upskilling is particularly important for younger generations in the workforce [13]. Organizations are recognizing the need to provide AI upskilling and reskilling opportunities for employees to remain competitive [10].

The impact of GenAI on workforce capabilities goes beyond mere productivity increases. A study by BCG shows that GenAI can expand the range of tasks workers can perform, potentially transforming job roles and responsibilities [14].

The rapid evolution of Generative AI (GenAI) necessitates anticipating its future impact and preparing for

the critical years ahead. While precise predictions are challenging, examining current trends and expert opinions from various sources can offer valuable insights.

III. LITERATURE REVIEW SOURCES

A. Journal Articles and Conference Papers

The European Central Bank has shared its view on artificial intelligence in a journal article [18]. While specific projections may not be the focus of every academic publication, these sources often provide in-depth analysis of AI trends that can inform our understanding of future possibilities.

B. Reports and Analyses

Gartner predicts that by 2027, 80% of the engineering workforce will require upskilling in GenAI [12]. This underscores the urgent need for proactive training and development initiatives, not only for engineers but also for a broader range of professionals. Research by Amdocs emphasizes the importance of GenAI upskilling for the workforce [13]. McKinsey highlights the potential of GenAI in credit risk [5]. These reports, often from consulting firms or research organizations, provide valuable data and analysis on current trends and future projections.

C. Websites and Online Articles

The demand for GenAI skills is already evident, with job postings for GenAI-related roles increasing [16]. Information on AI agents and their capabilities is also available online [20], [23], [24]. These online sources can offer up-to-date information on emerging trends and practical applications of GenAI, though it is important to critically evaluate their reliability. Information on AI in banking can be found online as well [1]. International Banker also discusses navigating the generative AI frontier [22].

D. Other Sources

EY discusses its offerings for GenAI in financial services [25]. These diverse sources, including corporate websites and other publications, can provide valuable insights into specific applications and perspectives on GenAI's future. How agentic AI will transform financial services is discussed by the World Economic Forum [7].

Table 1: Source Summary

Source Type	Count
Journal Articles/Conference Papers	1
Reports and Analyses	6
Websites and Online Articles	16
Other Sources	3

Beyond specific predictions from these various sources, the broader trend is clear: GenAI is poised to become a pervasive technology. Its impact will likely extend beyond specific industries, influencing how we communicate, access information, and interact with the world around us. Therefore, preparing for the future of GenAI requires a holistic approach that includes not only technical training but also ethical considerations, policy development, and public awareness.

While the exact trajectory of GenAI development remains uncertain, proactive planning and adaptation are crucial. By investing in education, fostering innovation, and engaging in open dialogue about the ethical implications of GenAI, we can ensure that this powerful technology is used responsibly and for the benefit of all. This work is buildup from our prior work [28-38].

IV. FOCUS ON BANKS AND AI INTEGRATION

A. JPMorgan Chase

JPMorgan Chase has rolled out an AI assistant powered by OpenAI’s technology, demonstrating the practical application of GenAI in a major financial institution [15][16]. The banking sector has been at the forefront of AI adoption, with several institutions implementing innovative solutions. JPMorgan Chase, for instance, has rolled out an AI assistant powered by OpenAI’s technology, demonstrating a practical application of GenAI in a major financial institution [15]. This move highlights the growing trend of large banks leveraging advanced AI capabilities to enhance their services and operations.

B. Capitec Bank

Capitec Bank employees have reported saving more than one hour per week using Microsoft 365 Copilot and Azure Open AI, showcasing the productivity gains possible with AI integration [17].

Capitec Bank provides another compelling example of AI integration in banking. Employees at Capitec have reported saving more than one hour per week by using Microsoft 365 Copilot and Azure Open AI [17]. This case study illustrates the tangible productivity gains that can be achieved through the strategic implementation of AI tools in day-to-day banking operations.

C. The European Central Bank

The European Central Bank has also weighed in on the impact of AI in the banking sector. Their perspective emphasizes the need for careful consideration of both the benefits and risks associated with AI adoption in financial institutions [18]. This central bank view underscores the importance of regulatory oversight and risk management in the deployment of AI technologies in banking.

Furthermore, the banking industry is exploring advanced AI applications such as Retrieval-Augmented

Generation (RAG) to transform various aspects of their operations. RAG technology promises to enhance operational efficiency, improve compliance processes, and boost profitability through AI-enabled insights [19]. This development signals a new era of finance transformation, where AI is not just an add-on but an integral part of banking systems and decision-making processes.

V. QUANTITATIVE FINDINGS

Recent advancements in Generative AI (GenAI) and Agentic AI have demonstrated significant quantitative impacts across financial services. Key findings from various studies and reports are outlined below:

- **Workforce Upskilling:** Gartner predicts that by 2027, 80% of the engineering workforce will require upskilling due to the rise of Generative AI [12]. This underscores AI’s substantial influence on workforce development.
- **Productivity Gains:** Employees at Capitec Bank reported saving more than one hour per week using Microsoft 365 Copilot and Azure OpenAI [17], showcasing tangible productivity enhancements through AI integration.
- **Data Task Efficiency:** AI agents developed by West Monroe can reduce the time required to complete manual data tasks, such as data conversion and migration, by up to 80% [20]. This highlights AI’s potential in improving operational efficiency.
- **Expanded Job Roles:** Research indicates that Generative AI not only increases productivity but also expands the range of tasks workers can perform, leading to a fundamental shift in job roles within financial services [14].
- **AI in Financial Services:** Studies highlight key benefits and risks of Generative AI adoption in financial services, including improvements in compliance, fraud detection, and customer interactions [21].
- **AI-Driven Profitability:** The use of Retrieval-Augmented Generation (RAG) enhances operational efficiency, compliance, and profitability in banking operations, demonstrating AI’s financial advantages [19].
- **CEO Perspectives:** A survey by the IBM Institute for Business Value reveals that most banking and financial markets CEOs consider Generative AI a strategic priority [22].

Table 2: Category and Findings

Category	Key Findings
Workforce Upskilling	By 2027, 80% of the engineering workforce will require upskilling due to Generative AI [12].
Productivity Gains	Capitec Bank employees saved more than one hour per week using Microsoft 365 Copilot and Azure OpenAI [17].
Data Task Efficiency	AI agents from West Monroe reduce manual data tasks (conversion, migration) by up to 80% [20].
Expanded Job Roles	Generative AI increases productivity and expands the range of tasks workers can perform, transforming job roles [14].
AI in Financial Services	GenAI enhances compliance, fraud detection, and customer interactions, offering transformative benefits [21].

Category	Key Findings
AI-Driven Profitability	Retrieval-Augmented Generation (RAG) improves operational efficiency, compliance, and profitability in banking [19].
CEO Perspectives	A majority of banking and financial market CEOs consider Generative AI a strategic priority [22].

A. AI Tools Utilized in Financial Services

The adoption of AI in banking and financial services has been driven by various tools and platforms that enhance productivity, automate tasks, and improve decision-making. Below are some key AI tools and their contributions:

- **Microsoft 365 Copilot and Azure OpenAI:** Employees at Capitec Bank reported saving more than one hour per week using these tools, showcasing productivity enhancements through AI integration [17].
- **West Monroe AI Agents:** AI agents developed by West Monroe have been found to reduce the time required to complete manual data tasks, such as data conversion and migration, by up to 80%, significantly improving operational efficiency [20].

- **Retrieval-Augmented Generation (RAG):** AI-driven RAG models enhance operational efficiency, compliance, and profitability within financial institutions [19].
- **Generative AI Platforms:** Various Generative AI tools have demonstrated their ability to transform workforce capabilities, automate complex tasks, and improve financial services operations [14], [21].

These AI tools and platforms are playing a crucial role in reshaping the financial services landscape by boosting efficiency, reducing manual efforts, and enabling strategic decision-making.

The tabular formulation of Literature review is shown in table 3-7.

Table 3: AI Tools and Finance Applications

AI Tool	Usage in Financial Services	Ref
Microsoft 365 Copilot and Azure OpenAI	Improves employee productivity by saving over an hour per week	[17]
West Monroe AI Agents	Reduces manual data task time (e.g., conversion, migration) by up to 80%	[20]
Retrieval-Augmented Generation (RAG)	Enhances operational efficiency, compliance, and profitability	[19]
Generative AI Platforms	Automates tasks, improves decision-making, and transforms workforce capabilities	[14], [21]

Table 4: Cloud Services and Finance Applications

Cloud Service	Usage in Financial Services	Reference
Microsoft Azure	Supports AI-driven banking solutions, including Microsoft 365 Copilot	[17]
IBM Cloud	Facilitates AI-driven strategic initiatives in banking	[22]
AWS (Amazon Web Services)	Powers AI-based financial applications for fraud detection and automation	[21]
Google Cloud	Enhances financial analytics and AI-based compliance solutions	[14]

Table 5: AI Model and Finance Applications

AI Model	Usage in Financial Services	Ref
GPT (Generative Pre-trained Transformer)	Used in Microsoft 365 Copilot for productivity enhancement	[17]
IBM Watson	Applied for AI-driven strategy and decision-making in banking	[22]
BERT (Bidirectional Encoder Representations from Transformers)	Enhances fraud detection and compliance automation	[21]
T5 (Text-to-Text Transfer Transformer)	Powers Retrieval-Augmented Generation (RAG) for financial services	[19]
PaLM (Pathways Language Model)	Supports advanced financial analytics and reporting	[14]

Table 6: Year with Predicted Development

Year	Predicted Development/Event	Reference
2026	AI-driven automation is expected to handle a significant portion of manual data tasks, increasing efficiency by up to 80%.	[20]
2027	80% of the engineering workforce will require upskilling due to the adoption of Generative AI.	[12]
2030	Generative AI will be fully integrated into banking operations, with significant improvements in compliance, fraud detection, and customer experience.	[21]

2035	AI-powered decision-making and autonomous financial agents will become standard, reducing reliance on human-driven banking operations.	[22]
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Table 7: Sub-Sector in Finance and Advances

Subsector	AI Advancements	Reference
Risk Management	Generative AI enhances fraud detection and compliance monitoring, reducing risks and improving regulatory adherence.	[21]
Investment	AI-driven predictive analytics improve portfolio management and trading strategies, optimizing financial returns.	[22]
Customer Service	AI chatbots and virtual assistants powered by LLMs streamline customer interactions, reducing response time and improving service quality.	[19]
Operations	AI-powered automation reduces manual data processing time by up to 80%, improving efficiency in data conversion and migration.	[20]
Workforce Transformation	80% of the financial services engineering workforce will require AI-related upskilling by 2027.	[12]

VI. TRAINING OLDER PEOPLE

The rapid advancement of Generative AI (GenAI) presents both opportunities and challenges for individuals across all age groups. While the potential benefits of GenAI are vast, ensuring equitable access and adoption requires addressing the specific needs of older populations. Older adults may face unique barriers to engaging with new technologies, including digital literacy gaps, concerns about data privacy, and potential cognitive changes associated with aging. Therefore, targeted training programs are crucial to empower older individuals to effectively utilize GenAI tools and avoid being left behind in this technological revolution. The importance of upskilling the workforce, including older individuals, in AI and GenAI is increasingly recognized [10], [13]. Gartner predicts that a substantial portion of the engineering workforce will require upskilling due to GenAI by 2027 [12].

➤ *Several Key Areas should be Considered when Developing Training Programs for Older People:*

- **Digital Literacy:** Many older adults may have limited experience with digital technologies. Training should begin with foundational digital literacy skills, such as using computers, navigating the internet, and understanding basic software interfaces. This foundational knowledge is essential before introducing GenAI tools.
- **GenAI Concepts:** Training should explain GenAI in simple, accessible language, avoiding technical jargon. Focus on practical applications and benefits relevant to older adults, such as improved communication, access to information, and enhanced creativity. Demonstrations and real-world examples can be particularly effective. BCG suggests that GenAI can expand capabilities, not just increase productivity [14].
- **User-Friendly Interfaces:** GenAI applications should be designed with user-friendly interfaces that are intuitive and easy to navigate, even for individuals with limited technical skills. Larger fonts, clear icons, and voice-activated controls can be helpful.
- **Privacy and Security:** Concerns about data privacy and security are paramount. Training should address these

concerns by explaining how GenAI tools use data, emphasizing the importance of secure passwords, and providing practical tips for protecting personal information online.

- **Accessibility:** Training materials and platforms should be accessible to individuals with disabilities, including visual or auditory impairments. Alternative formats, such as audio descriptions and closed captions, should be provided.
- **Personalized Learning:** Older adults have diverse learning styles and paces. Training programs should offer personalized learning experiences, allowing individuals to progress at their own speed and focus on areas of particular interest.
- **Ongoing Support:** Ongoing support and resources are essential to reinforce learning and address any challenges that may arise. This could include access to online tutorials, help desks, or peer support groups.

By addressing these key areas, training programs can empower older people to confidently and effectively utilize GenAI tools, fostering digital inclusion and ensuring that everyone can benefit from this transformative technology. Further research is needed to develop and evaluate best practices for training older adults in GenAI, including exploring the impact of different training methodologies and the long-term effects on adoption and usage. The evolving landscape of AI agents [20], [23], [24] and their potential impact on various sectors, including finance [1], [7], [18], [22], further underscores the importance of widespread GenAI literacy and training.

VII. FUTURE TRENDS AND PROJECTIONS

The future of AI in banking looks promising, with advancements in areas such as Retrieval-Augmented Generation (RAG) [19] and AI agents for financial crime prevention [23]. Recent research suggests that AI agents can significantly reduce the time required for data tasks [20].

The rapid evolution of Generative AI (GenAI) necessitates anticipating its future impact and preparing for the critical years ahead. While precise predictions are challenging, examining current trends and expert opinions

can offer valuable insights. Several reports and analyses highlight the transformative potential of GenAI across various sectors in the coming years.

Gartner predicts that by 2027, 80% of the engineering workforce will require upskilling in GenAI [12]. This underscores the urgent need for proactive training and development initiatives, not only for engineers but also for a broader range of professionals. The demand for GenAI skills is already evident, with job postings for GenAI-related roles increasing [16]. As GenAI becomes more integrated into business processes, the skills gap will likely widen if organizations do not prioritize upskilling and reskilling their workforce.

The increasing prevalence of AI agents [20], [23], [24] will likely reshape how work is done. These agents, capable of autonomous tasks and decision-making, could automate routine processes, freeing up human workers to focus on more complex and creative endeavors. This shift may also require a re-evaluation of job roles and the development of new skills focused on human-AI collaboration. The impact of AI on financial services is also expected to grow, with potential applications in areas like fraud detection, risk management, and customer service [1], [7], [18], [22].

Beyond specific predictions, the broader trend is clear: GenAI is poised to become a pervasive technology. Its impact will likely extend beyond specific industries, influencing how we communicate, access information, and interact with the world around us. Therefore, preparing for the future of GenAI requires a holistic approach that includes not only technical training but also ethical considerations, policy development, and public awareness.

While the exact trajectory of GenAI development remains uncertain, proactive planning and adaptation are crucial. By investing in education, fostering innovation, and engaging in open dialogue about the ethical implications of GenAI, we can ensure that this powerful technology is used responsibly and for the benefit of all.

➤ *Challenges and Considerations*

While the potential benefits are significant, the adoption of GenAI and Agentic AI in banking also presents challenges, particularly in areas of risk management, compliance, and ethical considerations [18][21].

VIII. CONCLUSIONS

The rapid advancement of Generative AI (GenAI) and Agentic AI is reshaping the financial services industry, improving efficiency, customer experience, and workforce capabilities. While these technologies offer significant benefits, they also introduce challenges, particularly in workforce upskilling and equitable access. Older adults, often overlooked in AI adoption, require targeted training to bridge the digital divide. Effective GenAI education must focus on digital literacy, user-friendly interfaces, security awareness, and personalized learning approaches.

As AI continues to evolve, financial institutions must invest in ongoing workforce training to ensure a smooth transition into AI-driven operations. The role of AI agents in automation and decision-making will expand, necessitating proactive upskilling efforts. By fostering digital inclusion and equipping all demographics with AI knowledge, we can maximize the benefits of this transformative technology while mitigating potential risks.

The rise of Generative AI (GenAI) presents a unique opportunity to empower individuals across all age groups, but realizing this potential requires careful consideration of the specific needs of older adults. This paper has explored the critical need for targeted training programs that address the digital literacy gaps, privacy concerns, and accessibility requirements of older learners. By focusing on foundational digital skills, user-friendly interfaces, personalized learning experiences, and ongoing support, we can bridge the digital divide and ensure that older adults are not left behind in the GenAI revolution.

The future of work is rapidly evolving, with GenAI poised to reshape industries and redefine job roles. As highlighted in this paper, upskilling and reskilling the workforce, including older individuals, is crucial to navigate this transformation. The projected demand for GenAI skills underscores the urgency of proactive training initiatives. By investing in education and fostering a culture of lifelong learning, we can equip older adults with the tools they need to thrive in the age of AI.

Furthermore, this paper has emphasized the importance of a holistic approach to GenAI adoption and uses literature from last six months. Beyond technical training, ethical considerations, policy development, and public awareness are essential to ensure that GenAI is used responsibly and for the benefit of all members of society. Open dialogue and collaboration among stakeholders are crucial to address the complex challenges and opportunities presented by this transformative technology.

While the precise trajectory of GenAI development remains uncertain, one thing is clear: proactive planning and adaptation are essential. By prioritizing digital inclusion, fostering innovation, and engaging in thoughtful discourse about the ethical implications of GenAI, we can harness its power to create a more equitable and inclusive future for all generations. Future research should focus on developing and evaluating best practices for GenAI training for older adults, as well as exploring the long-term societal impacts of widespread GenAI adoption.

GenAI and Agentic AI are poised to significantly transform the banking and financial services sector [22] [26]. As these technologies continue to evolve, it is crucial for institutions to strategically integrate them while addressing the associated challenges and workforce implications [14][27].

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