

CENTRAL BANK OF EGYPT
Egyptian Banking Institute



البنك المركزي المصري
المعهد المصرفي المصري



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Human Centered AI

Current Trend



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What is Human Centered AI?

Banking and Finance are one of the many areas that artificial intelligence (AI) is revolutionizing. Global banking AI investment was \$12.4 billion in 2020; by 2025, that amount is anticipated to come to \$20.6 billion. By 2030, the worldwide AI banking market is anticipated to grow to a value of \$64 billion. According to Allied Market Research, the global AI in banking market is expected to reach \$64 billion by 2030.

However, when it comes to Banking, people want their human and ethical values to be considered, they prefer fair and impartial interactions and systems that comprehend and respond to their behavior, they also want their ethical and human values to be taken into consideration. Therefore, a thorough understanding of human behavior, emotions, and goals should be incorporated into the development of technology, business procedures, processes, and services.

As a result, **human centered AI (HCAI) is an approach called for amid the swift transition to AI.** Human-centered AI is an approach to artificial intelligence that prioritizes the needs, values, and well-being of humans. It focuses on designing AI systems that are transparent, ethical, and aligned with human goals, ensuring technology serves as a collaborative tool rather than replacing human input.

In other words, HCAI is the continuous machine learning (ML) process that AI algorithms use to understand humans and their responses to specific situations. The AI system automatically updates as it learns from humans and thus becomes a more 'intelligent system' that interacts with and assists humans in ways that are easier and more effective for humans to use. Such a learning mechanism reduces the gaps between humans and machines substantially.

The approach is specifically important in digital banking.

Principles and importance of Human centered AI approach

Principles:

Human-centric AI incorporates values such as openness, intelligibility, non-discrimination and humans-centrism.

Hence the Principles of Human Centered AI are as follows:

- **Transparency** allowing users to be aware of information in their use.
- **The use of explain ability** allows banks and other financial institutions to explain that an AI reaches a specific conclusion building a confidence in automatic systems.
- **Accuracy** means that AI models do not have any prejudice against some group of users which may have a negative impact on them or the overall population.

Implementation of Human Centered AI

- **Ethics**, HCAI views that protecting customers should be a higher priority than promoting something good.

Importance:

So human centered AI (HCAI) applications help the banks enhance customer loyalty whilst at the same time building an ethical image in a highly competitive digital world. As AI continues to evolve, integrating human-centric AI principles into its development will be critical in ensuring that technology serves the greater good and benefits all of society.

Additionally, the main benefit of moving toward HCAI is that it facilitates human-AI interaction in ways that are aware of their emotional components and needs in order for the AI system to react in a way that is human-like. At the same time, each human interaction with the AI system helps it learn new things.

Now is the time for banks to take proactive measures to understand customer needs by embracing HCAI design with AI capabilities. This can be achieved by **collaborating with the right IT vendors**, to stay competitive and to retain and expand their customer bases in the rapidly growing financial services market.

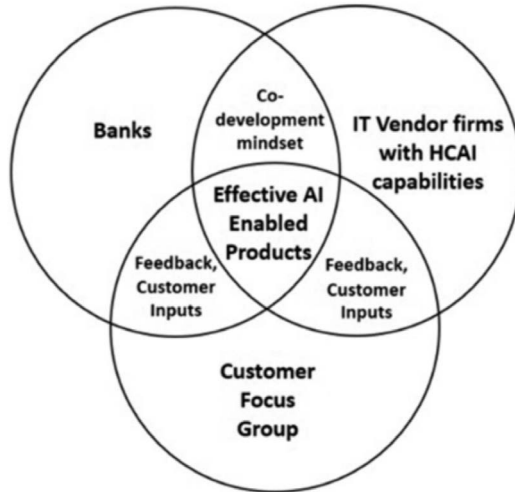
To design a full-fledged HCAI system that can interact with humans and understand their needs, the system must be built with the **'Theory of Mind'**, which is an essential intellectual ability that broadly covers our potential to read others' thought patterns such as feelings, passions and knowledge

In implementation, important points are to be considered:

- **Transparency** and explain ability are critical as user's decisions must inform how, why, and when decisions are made.
- **Technical description** of banking services has to be delivered in simple ways.
- **The account access** must also be provided with improved protection to localize the users' claims that banks are protective of their data and to strike a balance with privacy concerns.
- Banks have now to pay more attention to **personalization** so that new services address various user's needs while at the same time being properly protective of user data.

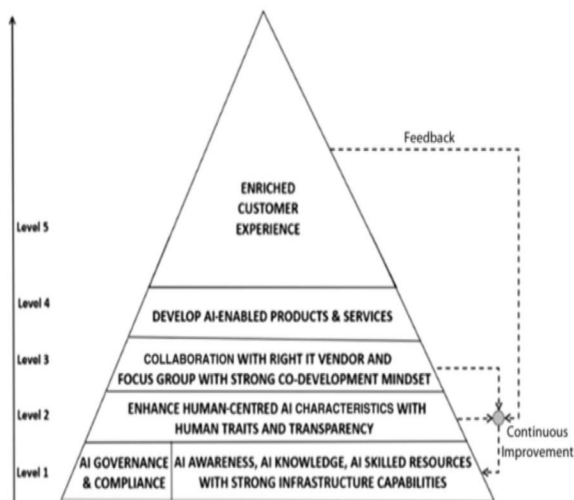
Implementation of Human Centered AI

Figure 1: Co- development mindset for effective HCAI enabled products



Another important aspect of banking success is strategic alliances. A strategic partnership is an engagement between organizations that includes the co-development of services, products and technologies. The main dimensions of collaboration related to successful strategic alliances are integrating thoughts and information from various sources, aiding and addressing problems proactively.

Figure 2: Pyramid bottom-up model for a better customer experience



So, the important components (human emotions, human minds, co-development mindset and AI transparency) are organized into the pyramid shown in Figure 2

If these critically important points are addressed, trust deficiencies and other problems that plague the banking industry can be overcome, and the relationships between banks and customers can be made much more lasting. Even banks can build on that, by surprising their customer's by showing what was learnt by AI from their experience, or even predict customer's goals, ambitions and challenges and make the most of the data given by customers to deliver banking services with human touch.

| Challenges

Facing challenges of implementation, a human-centered AI system, must be capable of:

- **Understanding human characteristics** and making decisions like humans. However, understanding and predicting human behavior is a complicated process, as data might not be sufficient in capturing all the human behaviors. So, the AI system must integrate the essential underlying knowledge of ethics
- **Implementing robust cybersecurity measures** and compliance frameworks is imperative when dealing with vast amounts of data. It also adds complexity and cost to the AI integration process.
- **Building robust data systems and driving predictions from it.** The power of AI capabilities, however, cannot be fully leveraged until the correct business data is processed. Most of the banking clients of banking software and FinTechs are reluctant to share their unstructured data collected from various banking channels with their IT vendors. This could be due to the banks' regulatory policies, data privacy, compliance and governance policies. In addition, banks have trouble extracting every available business insight because they cannot share all unstructured data with their preferred IT vendors. Therefore, banks must come forward with new compliances and policies in terms of sharing and mining data with their IT partners.

| Examples

Globally, humanized experiencers in digital banking have reported positive results from AI, some examples are:

- ING Bank in Europe adapted the use of AI-based financial advisors to give cost-friendly advice making users confident with their selections.
- DBS Bank of Singapore, which applies AI technology for fraud detection and real time alerts also improves transparency & security measures.

- JPMorgan Chase in the US applies explainable AI making credit decisions; its application is bias-free and transparent about its decision-making.
- Bank of America's virtual assistant, Erica, demonstrates care and inquiry to its users.

Illustrative Videos

What is human-centered AI and why do you need it?

<https://www.youtube.com/watch?v=s09qS0uNt60>

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Headquarters – Nasr City
22 A, Dr. Anwar El Mofty St., Tiba 2000
P.O.Box: 8164 Nasr City, Cairo, Egypt

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