The digital assets opportunity in MENA

Building a better working world

The term

"digital assets"

refers to a collection of seven different types of financial instruments that are typically addressed and settled digitally using distributed ledger technologies (DLT), such as blockchain. DLT uses complex cryptographic computations, enabling computations, enabling immediate and irreversible transactions, thereby removing settlement risks associated with more traditional financial instruments.

Cryptocurrencies such as Bitcoin and Ethereum are the most known type of digital assets, associated with a high degree of volatility and several well-publicized controversies (e.g., as in the case of the FTX and Binance exchanges). More recently, they have undergone a renaissance of sorts, with the US Securities and Exchange Commission (SEC) authorizing the issuance of exchange traded funds (ETF) linked to cryptocurrencies. In MENA, regulatory attitudes toward cryptocurrencies vary, but individual trading in these volatile assets remains widespread, facilitated by platforms such as Coinbase and Binance.

Other types of digital assets, such as tokenized assets and digital currencies, are more likely to have a bigger impact on economies and financial services by transforming the way firms recommend investments and payments. Global financial institutions have focused on digitally native securities and tokenized assets, which includes tokenized bank deposits, as well as physical assets such as real estate or commodities. The Dubai Virtual Assets Regulatory Authority (VARA) has a well-defined framework for regulating such digital assets, and several international firms are exploring issuing bonds backed by tokenized assets under these regulations, e.g., with the HSBC Orion platform to tokenize Sterling bonds and the Euroclear Digital Securities Issuance platform. Banks across MENA are also exploring Shariah-compliant Islamic finance versions of tokenized assets and securities.

Non-fungible tokens (NFT) are another class of digital assets relevant for ultra-high net worth (UHNW) clients at MENA banks and asset managers, but with potentially lucrative mass-market applications, such as unifying disparate loyalty programs for consumers.

EY research suggests that digital assets represent a US$1.3t market globally, with even the relatively small tokenized assets forays from global banks so far driving US$3b in value. According to the World Economic Forum, tokenization can add US$230b annually to MENA GDP.

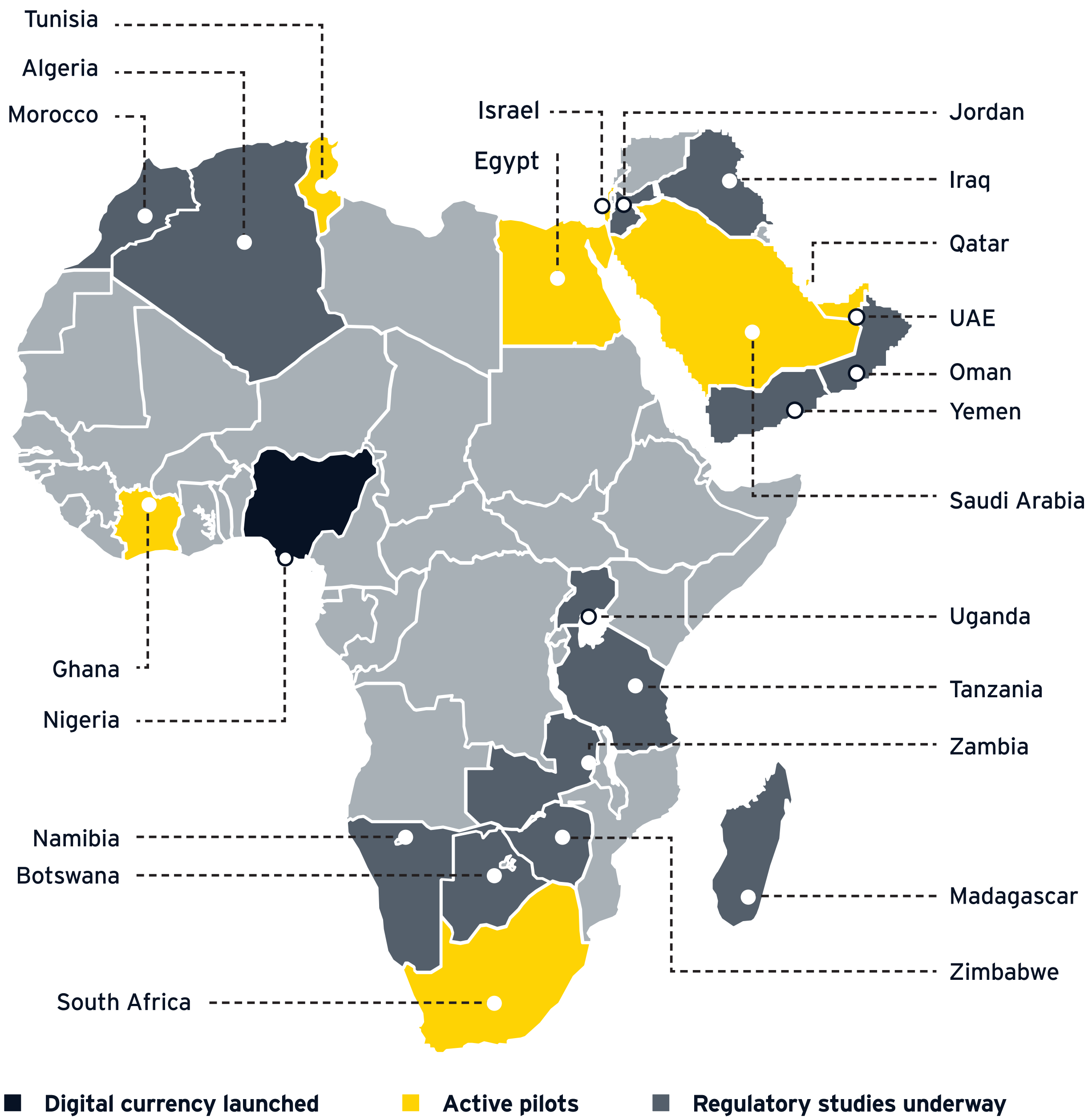
Figure 1: Seven different types of digital assets

Cryptocurrencies	Stablecoins	CBDC	Tokenized assets	Digital native securities	Non-fungible tokens (NFT)	Other blockchain
Native	**Fiat-backed**	**Retail CBDC**	**Tokenized deposits**	**Digital native securities**	**NFT art**	**KYC/digital IDV**
Bitcoin Ethereum	USD Coin (USDC)	eNaira	Onyx	Allied Irish Banks	First 5000 days	
Governance	**Crypto-backed**	**Wholesale CBDC**	**Tokenized securities**		**Metaverse**	**Treasury, cash management**
Maker (MKR)	Dai	E-CNY	Blockchain Capital		Decentraland	
Utility	**Commodities-backed**		**Tokenized real world assets**		**Loyalty and branding**	**Insurance claims, fraud**
Basic Attention Token	Tether Gold		RealT		Nike Cryptokicks	
	Algo-backed		**Examples of global banks dealing with tokenized assets**			
	Ampleforth (AMPL)		J.P. Morgan UBS HSBC Citibank Goldman Sachs Societe Generale			

Opportunities for MENA financial institutions

Stablecoins and Central Bank Digital Currency (CBDC) represent another US$240b market globally. Many regulators across the Middle East and Africa (MEA) are focused on CBDC, with active pilots in the UAE, Qatar, KSA, Israel, Egypt, Ghana and South Africa, and a live development in Nigeria called eNaira. Across MENA, regulators are exploring CBDC to drive innovation in payments, reduce the high cost of payments for merchants (interchange costs in MENA remain one of the highest in the world), make cross-border payments more affordable, and increase the transparency and traceability of payments. Beyond the more affluent Gulf Cooperation Council (GCC), other MENA regulators are also keen to improve financial inclusion, e.g., with offline CBDC payments in rural areas with patchy mobile connectivity, as well as increase accountability and traceability of social welfare payments. Central banks also have an incentive to reduce risks from the emergence of new forms of private money; CDBC protect the role of national currency, while also improving the availability and usability of central bank money.

Figure 2: National regulators across several MEA countries exploring CBDC

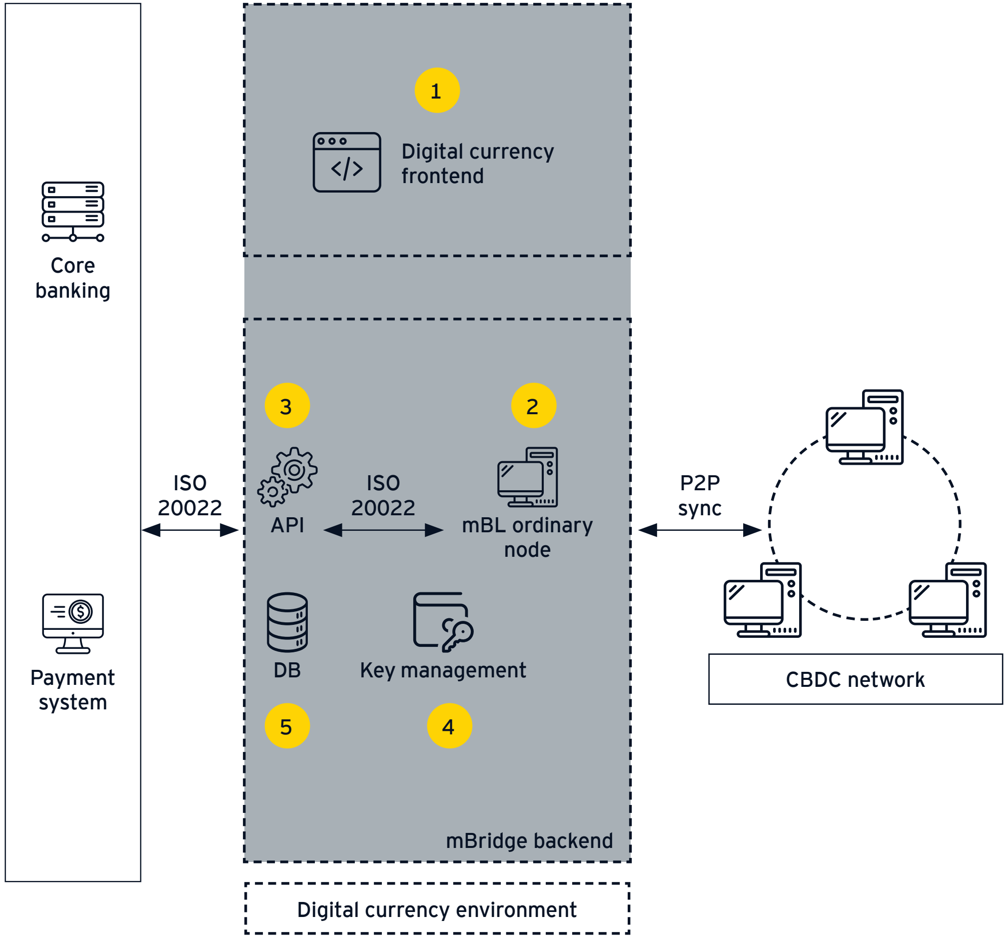


While CBDCs resolve the inherent volatility of cryptocurrencies with a fixed peg to a fiat currency, commercial banks are still unclear on the impact on their deposit base and increased volatility in times of crisis, for instance, if consumers rush to convert their holdings into the CBDC guaranteed by the central bank. CBDCs are typically also designed to be non-interest bearing, and most commercial banks are still thinking through their business cases for supporting digital currencies.

In contrast, mobile money operators such as MTN Group in Africa are moving ahead with plans to support CBDC as a natural extension to their mobile money offerings; in particular, it assists new transaction fee-based revenue opportunities by extending mobile money to more remote rural customers, and increasing the immediacy of cross-border remittances.

Figure 3: Potential reference integration architecture for CBDC pilots

Architecture



How we can help with the transition

Planning and comms

- Identify stakeholders and involve them early in the project.
- Collaborate on project planning.
- Test planning and tracking (UAT/MVP).
- Support for legal review of agreements with counterparties and platforms.
- Transfer of knowledge in digital assets.

Operational readiness

- Advise during business, technology and security sign-offs.
- Expedite technical readiness using checklists.

Process analysis and integration

- Analyze current business processes relevant for all three pillars of the UAE Digital Dirham program.
- Investigate and plan integrations of issuance, redemption and transfer APIs into systems (core banking, FX, transaction reporting, etc.).
- Compile list of requirements for adapters.
- Include adapters in high-level IT infrastructure.
- Include adapters in developing roadmap.

Training and testing

- Training and testing on mBridge and domestic networks.
- Run private walk-through sessions.
- Address and distribute tailored training materials.
- Live support during testing phases incl. UAT and MVP.
- Direct access to upskill staff on CBDC technologies.

Payment processors have historically provided outsource processing services for traditional card and online payments to banks, as well as FinTech, online marketplaces and mobile money operators. The opportunity now exists to provide similar white-label CBDC processing services, with a packaged CBDC wallet-as-a-service proposition providing highly secure, scalable CBDC wallet infrastructure for both banks and mobile money operators to provision custodial or non-custodial wallets for end-customers. It would enable banks to provision and manage wallets using simple application programming interface (API) and integrate wallets into their own app, to provide a better end-user experience. This packaged proposition could offer a gateway to different types of CBDC wallets, e.g., Single Key, Multi Sig and MPC wallets.

Figure 4: Initial perspectives on value, feasibility of digital assets use cases in MENA

		Revenue potential	Cost of implementation	Time to profit	Implementation feasibility
1	**Retail, wholesale CBDC**	High	Medium	Short Two to five years	Medium[2]
2	**Asset tokenization:** tokens (e.g., real estate) rights to physical assets on blockchain using tokens	High	Medium	Medium Two to five years	Medium[2]
3	**Custody:** the process of storing crypto, NFTs and other digital assets safely and securely	Medium	Medium	Medium Two to five years	High[1]
4	**Trading:** allowing investors to buy, sell and hold cryptocurrencies with improved security and insurance	Medium	Medium	Medium Two to five years	High[1]
5	**Stablecoin issuance:** pegged to fiat currencies	Medium	Medium	Medium Two to five years	Medium[2]
6	**Trade finance:** tokenized invoices, allowing investors to purchase and trade them, providing capital to businesses	High	Medium	Medium Two to five years	High[1]
7	**Syndicated loans:** easier access financing, improved fractional ownership, liquidity, transferable ownership	High	Medium	Medium Two to five years	Medium[2]

[1] Building blocks exist, are tested and can be lifted and shifted
[2] Building blocks exist but need additional work

At the global EY organization, we have developed an initial perspective on the potential value and feasibility of several digital assets use cases beyond CBDC, for financial institutions across MENA, based on discussions with several banks and payment processors across the region, and drawing upon the experiences elsewhere, e.g., with the Regulated Liability Network (RLN) in the UK.

Figure 5: Opportunity for payments processors to offer packaged CBDC processing and wallet propositions

Digital currency payments and value-added-services (VAS) ecosystem

Clients

- Merchants
- Financial institutions
- FinTech
- Mobile money operators
- Governments

White Label CBDC Processing Platform

- **Client experience:** Onboarding, API self-service, assisted support
- **Product catalogue:** Consumer payments, B2B VAS for merchants/telcos/marketplaces/FinTech
- **API library** for rapid product integration and configuration
- **Partner VAS services**

Capability partners

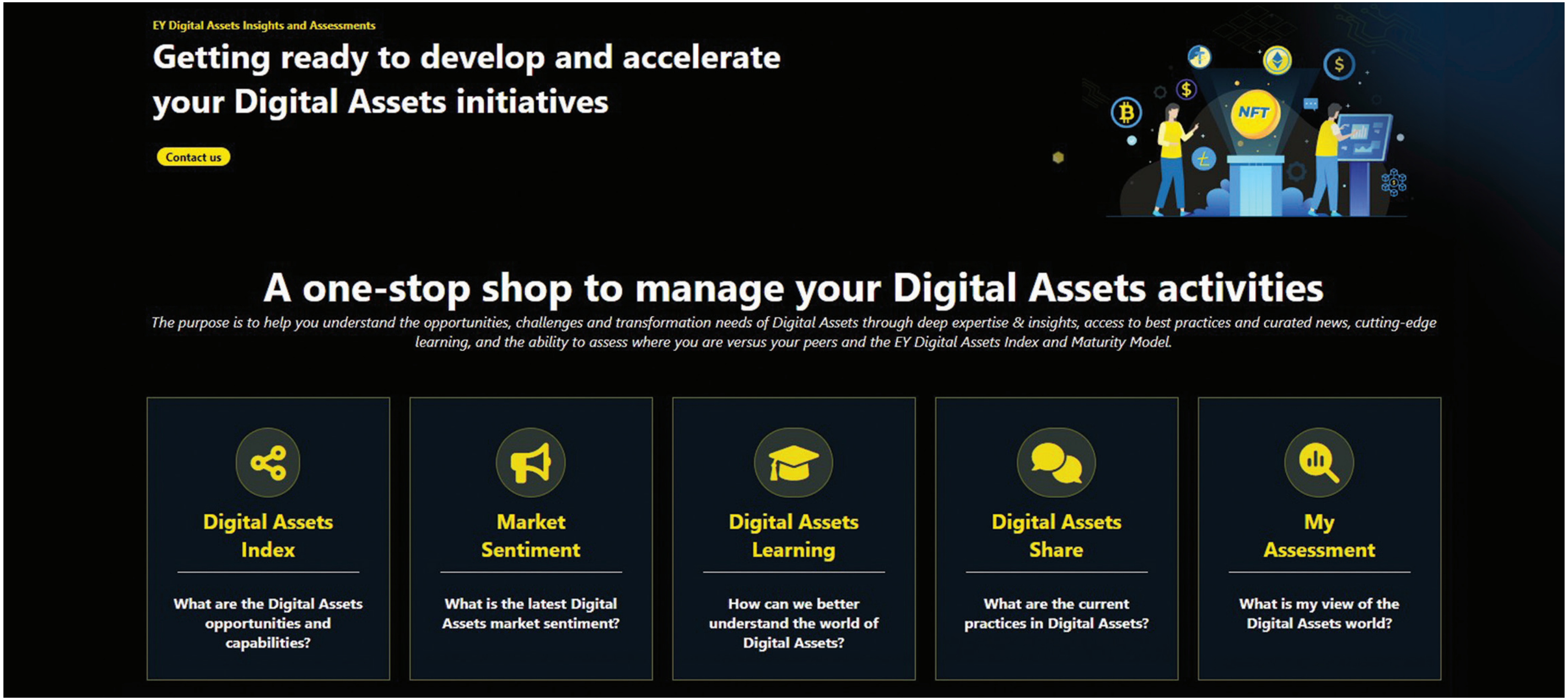
- Global and domestic schemes
- CBDC technology providers, e.g., R3, Fireblocks, Hyperledger Besu
- Other payment tech companies

Source: EY analysis

To start exploring the opportunity from these use cases, it is essential for MENA financial institutions to identify a common understanding of CBDC and digital assets across their stakeholders with targeted education and alignment programs. The global EY organization can assist with the EY Digital Assets, Insights and Analytics (DAIA) platform. This platform is currently used by 15 of the world's largest financial institutions. Its functions include tracking the development of digital assets across markets, understanding global and per-asset class market sentiment for digital assets, defining and exploring new use cases, assessing risks and controls across the value chain and examining the impact of digital assets on technology and process infrastructure. It also helps in gaining a detailed understanding of the regulatory and legal framework for digital assets, training staff and management on different aspects of digital assets, and adapting financial models and risk appetite frameworks appropriately.

The next priority should be to address functional knowledge within each financial institution on different aspects of digital assets across product management, finance, risk, operations and technology functions. Most financial institutions underestimate the potential impact of CBDC and digital assets on their technology landscape. Our research finds that enhancements to several existing core platforms are likely to be required (e.g., to advice CBDC as an additional financial instrument in bank ledgers), in addition to several new systems that would need to be integrated, for instance, CBDC key management solutions.

Figure 6: EY Digital Assets, Insights and Analytics (DAIA) platform



As banks start on this journey, they are exploring setting up Digital Assets Labs as a focus for integrating, broadening and deepening such functional experience into one place, while also setting up clear governance for digital assets product roadmaps and commercialization.

Finally, a digital assets lab would also provide the initial technology assets and sandboxes required for bank stakeholders to tangibly explore CBDC and digital assets use cases, e.g., using the EY tokenization platform, and the Starlight platform for managing privacy and security issues. The EY global organization has been at the forefront of digital assets industry collaboration, for example, with the CBDC Tracker initiative, as well as through collaboration with technology providers through which we can enable clients to rapidly set up and operationalize Digital Assets Lab infrastructures.

Digital assets represent one of the most far-reaching opportunities for innovation in financial services, with the potential to upend identified regulatory and commercial models. Established financial institutions, in particular, need to take action to assess both the commercial opportunities from digital assets and CBDC, and to assess the threat posed by a potentially disruptive change. Banks should embark on this journey with five key steps:

1. **Define your digital assets operating model:** Options to build digital asset capability, either through an internal dedicated team, or a standalone entity focused on digital asset offerings.
2. **Identify promising product opportunities:** Address and review the digital asset products catalogue based on the alignment with overall bank objectives and estimate the additional value for the firm. Design and bring to market the products that are most aligned with your business strategy and value proposition (e.g., Sharia compliant digital assets products for Islamic financial institutions).
3. **Assess the case for investment:** Assess market dynamics and assess potential impact (e.g., potential upside, decrease in operational cost).
4. **Identify gaps in execution capabilities:** Examine practical aspects of the approaches and capabilities required to recommend a target state in line with industry due practices.
5. **Bring executives, staff and clients along on the journey:** Align stakeholders and assess demand from clients. Actively drive client understanding of products, services and approaches.

The immediate starting point should be targeted education and alignment sessions with both senior executives and functional leaders within the Bank, as well as with key clients, to identify a common understanding of digital assets and their implications for different areas.

The global EY organization assists in designing and providing leading class learning programs for executives and functional leaders at financial institutions. As EY organization has developed a bespoke approach, provided through engaging face-to-face learning events, with optional activation sessions designed to drive the right outcomes for your senior and board level executives. We can outline specific technical learning in line with the agreed topics to develop the pathway further. This includes:

- **Case studies and challenges:** Leaders will be asked to work with real life problem situations to drive the objectives of each of the workshops and to make the learning impactful and personally relevant.
- **Continuous learning:** Leaders can engage with other training collateral and resources, identify a small forum to connect with each other through a learning hub, test ideas and collaborate.
- **Access to EY subject matter resources:** Leaders will have access to the most up-to-date and thought-provoking insights through the group of regional and global subject matter experts (SMEs) in each area.

This level of alignment and education is critical, given the potential for a significant transformation of a bank's strategy, risk and operations. The global EY organization offers multidisciplinary capabilities and services to support you through the different stages of this journey. These include distinctive capabilities in digital assets strategy, change management, regulation, legal matters, risk management, control and technology.

Figure 7: Banks will need to integrate CBDC and digital assets into existing technology landscapes

Customer channels

Website	Mobile & internet banking	Phone banking & IVR	RM banking	Corporate banking portal	ATM, CDM, SSM	Government services

Products & common services

Digital onboarding, eKYC	CRM	Cards	CBDC wallets, key mgmt.
ID & V, Decisioning	Pricing	Payment hub	

Retail banking

Mobile wallets	Wealth/PFM
Remittance	Loyalty/ lifestyle

Trade finance	Cash mgmt.
Working capital, SCF	FX

Orchestration & analytics

Workflows	Dashboards	Ecosystems
Customer master	Analytics	Customer operations

API & integration

API gateway	Open banking	Legacy ESB	Digital assets API hub
Event microservices	Events hub	Secure file transfer	

Data platform

Data lake	Data marts	Data validation	ODS
Data warehouse	Data streaming	ETL	MDM

UAE payments

AANI	RTGS
Network	Magnati
ACH	CHECKS
SWIFT	Etc.

Lean core banking

Accounts management	Islamic product acct.	Audit, supervision, role restrictions	Smart contracts
CASA product management	Loan booking, processing	Posting processing	CBDC custody
Fees & charges	Journal/sub-ledger		CBDC journal sub-ledger

Enterprise platforms

Financial reporting	Regulatory compliance	General ledger	Market risk & ALM	E-invoicing	HR
Management reporting	Document management	Limits & collateral	Credit risk	AML, sanctions	Procurement

Payments schemes

VISA	Mastercard
JCB	Union Pay
AMEX	Diners
Discover	RuPay

Infrastructure & security

New components for CBDC/digital assets

Enhancements to existing systems

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