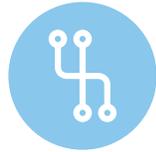


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**Bank of 2030: The digital future  
of securities exchange operations**

# Top takeaways



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Global securities and futures exchanges have heavily invested and continue to invest in technologies to support high-frequency trading, colocation venues, and direct market access for trading partners. However, digital improvements to nontrading operations are lagging.



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Exchanges that automate nontrading operations as part of a larger digital transformation may gain significant benefits, including increased efficiency, reduced operational footprint, and support for future growth.

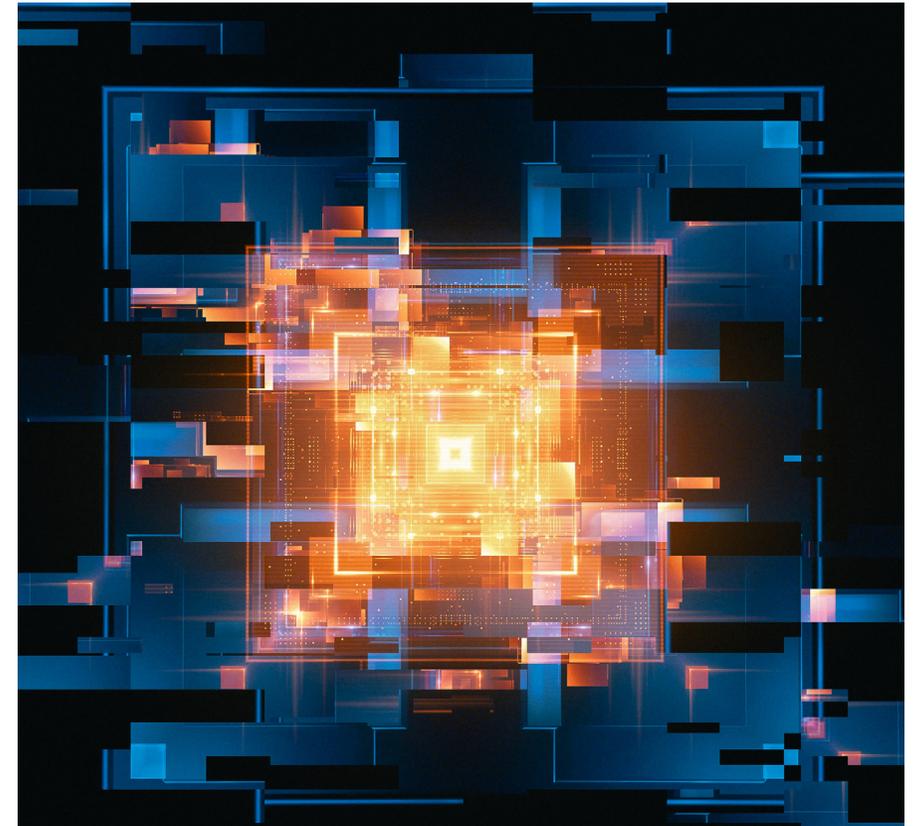


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The exchange of the future will be characterized by new revenue streams, streamlined operations, and a symbiotic network of ecosystem partners made possible by emerging digital shifts.

Today there are over 130 global securities exchanges that are trading equities, options, exchange-traded funds (ETFs), futures, swaps, and derivatives for cash, energy, and commodities. All are operating in an industry being reshaped by business challenges, strategic choices, and the possibilities that emerging technologies offer. Current drivers include:

- **Revenue pressures** from regulatory mandates and restrictions (for example, fee transparency for market data services, connectivity) and a squeeze on traditional exchange users due to the knock-on effect of quantitative easing; also, **tightening margins** from increased competition (easy access to new exchanges and products) and lower switching costs driven by technology advancements
- Exacerbating **legacy operational inefficiencies** and technology debt as older and traditional exchanges face stiffer competition from new, nimble exchanges
- **Heightened regulatory activity** globally, with particular focus on transparency, oversight, and robust operational controls and risk management processes; scrutiny of operational resilience and risk spanning surveillance, recovery, and ability to handle stressed markets
- Constant and evolving **cybersecurity** threats, requiring laser focus on protecting data and technology ecosystems
- Significant **consolidation of exchanges** emanating from technological, legal, and competitive changes and the need to expand into new markets, products, and service offerings
- An evolving **digital ecosystem** incorporating blockchain, big data analytics, cloud, artificial intelligence, cognitive, and other emerging technologies



As securities and futures exchanges pursue better margins and improved shareholder value, we are seeing evidence of investments in technologies to support high-frequency trading, colocation venues, and direct market access for trading partners. Not keeping pace are digital improvements to exchanges’ nontrading operations (figure 1); many functions remain dependent on spreadsheets, manually intensive operations, and a limited control environment.

Exchanges that automate these nontrading operations as part of a larger digital transformation may gain significant benefits, including increased efficiency for traditional trading activities, a reduced operational footprint, and support for future growth via alternative mechanisms for revenue generation and an enhanced customer experience.

**Figure 1. Securities exchange nontrading operations**



# Journey to digital transformation

Over the past few years, some global exchanges have embarked on digital transformation journeys to reshape their business models, redefine and refresh the customer experience, support new product and service offerings, and strengthen regulatory compliance. Among key focus areas for technology enablement:

- **Reduce manual operations.** Automate processes through digital interventions across member onboarding, payments, and listings.
- **Provide data on demand.** Develop models that provide data and information to help clients make efficient trading decisions and better manage capital.
- **Reduce latency for various services.** Minimize turnaround time for high-volume activities, including risk and regulatory reporting.
- **Launch digital products and services.** Reduce time to market for blockchain, chatbots, and other offerings.
- **Access global exchanges.** Partner to provide additional benefits for companies, such as dual listing and increased investor reach.
- **Enhance market surveillance.** Better identify market manipulation, fraud, and compliance issues with minimal manual intervention.

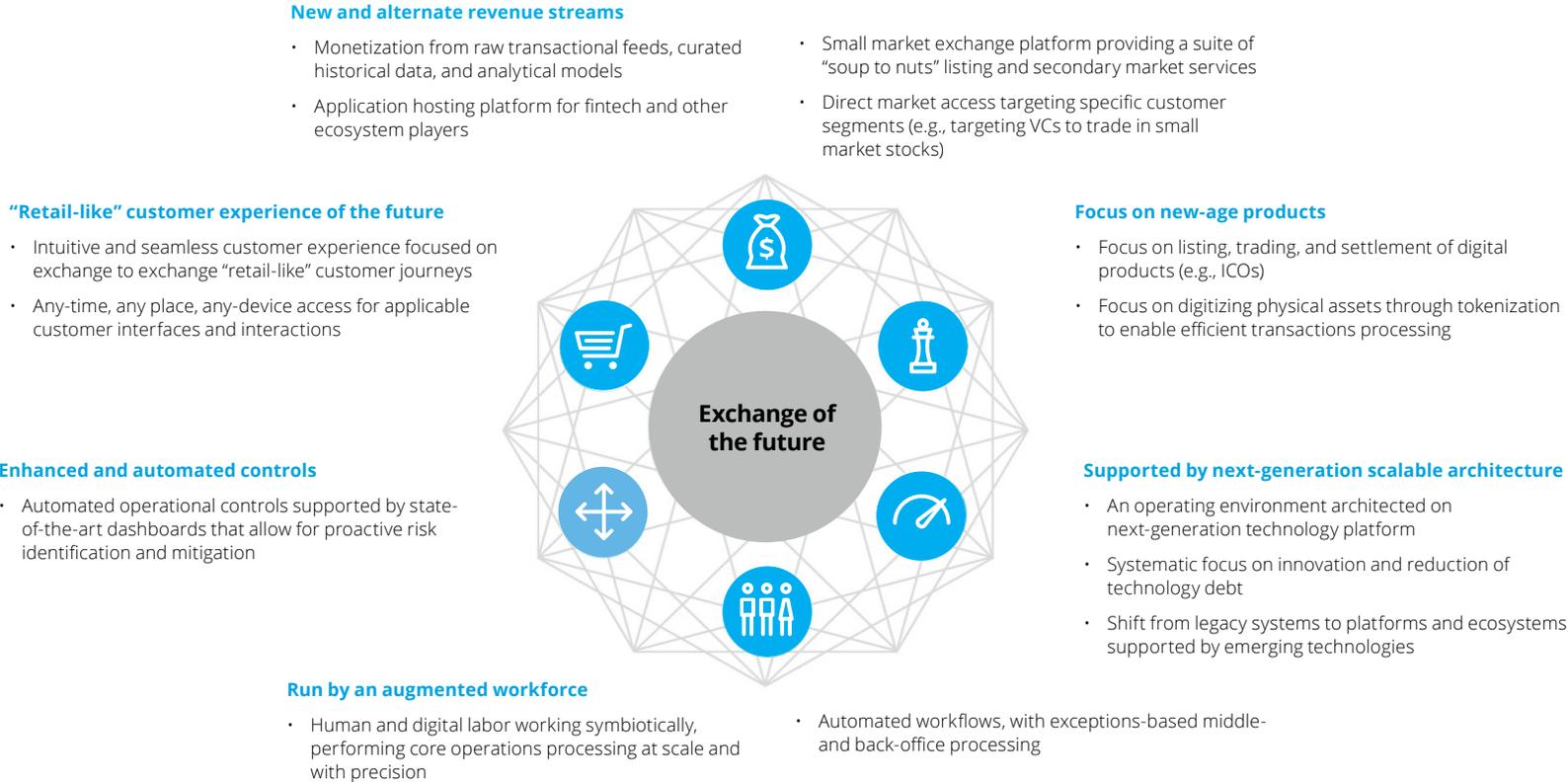
Transformation is being enabled by a portfolio of emerging technologies that address current front- and back-end challenges while also making exchanges “future-ready” (figure 2).

**Figure 2. Emerging technologies enable digital transformation**

Reimagined	Open APIs	Big data and analytics	Robotic process automation	Artificial intelligence and cognitive	Distributed ledgers	Cloud services
<ul style="list-style-type: none"> <li>• Reimagined, state-of-the-art user experience for end customers, members, and employees</li> <li>• Any-time, any-place, any-device access to key customer end-user touchpoints</li> </ul> 	<ul style="list-style-type: none"> <li>• Modular architecture and reusable components at UX, domain, and system levels</li> <li>• Seamless, yet controlled integration with exchange's core systems</li> <li>• Critical component to enable a “marketplace” of “plug-and-play” services</li> </ul> 	<ul style="list-style-type: none"> <li>• Enhanced insights (trading patterns, audit trail, market behavior, etc.)</li> <li>• Improved compliance through surveillance and fraud analytics</li> <li>• New revenue stream enabled by data monetization opportunities</li> </ul> 	<ul style="list-style-type: none"> <li>• Increased operational productivity; ability to deploy staff on value-added activities</li> <li>• Improved customer service enabled by increased processing accuracy and faster response times</li> </ul> 	<ul style="list-style-type: none"> <li>• Improved customer experience supported by digital virtual agents</li> <li>• Predictive operational risk controls</li> <li>• Increased resiliency through predictive maintenance of IT systems</li> </ul> 	<ul style="list-style-type: none"> <li>• Enable reduction of information asymmetry and greater compliance</li> <li>• Enable transparency, trust, and increased operational efficiency across the network</li> </ul> 	<ul style="list-style-type: none"> <li>• Reduced CapEx</li> <li>• Flexible consumption models</li> <li>• Unprecedented access to innovation and decreased time to market</li> </ul> 

The securities exchange of the future will be characterized by new revenue streams, more efficient operations, and a symbiotic network of ecosystem partners made possible by emerging digital shifts (figure 3).

Figure 3. Securities exchanges of the future



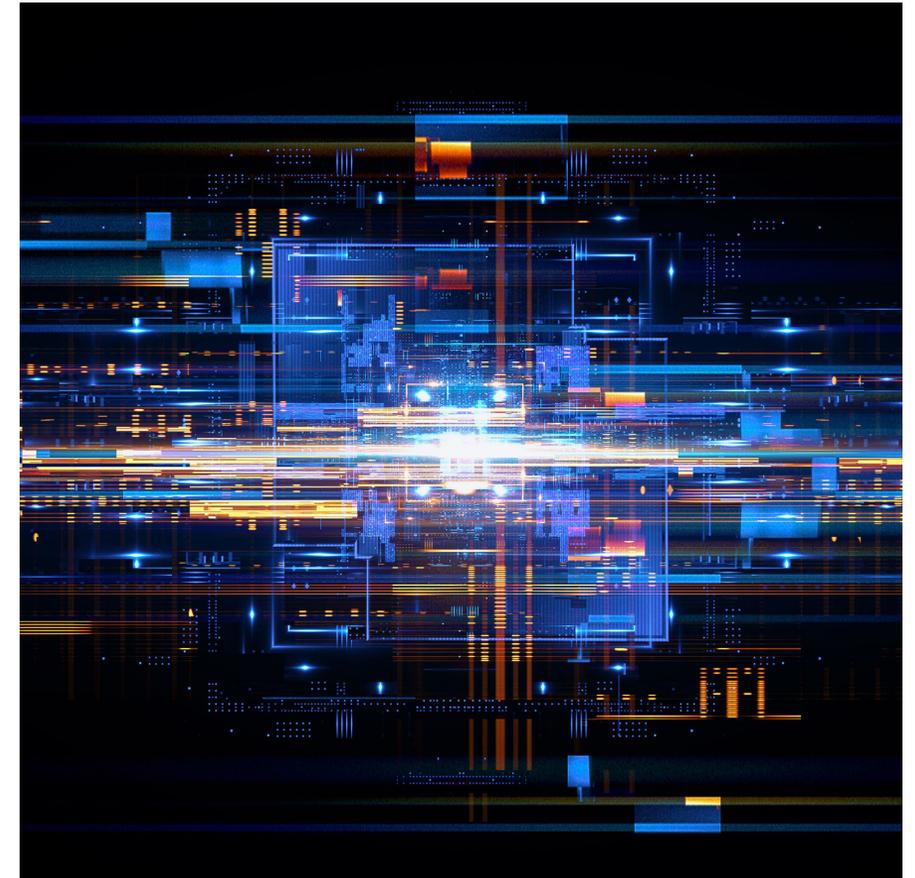
In this future-state model, exchange operators should be well-equipped to engage in numerous initiatives to enhance revenue generation and streamline operations. Potential application areas include IPO listing and continued-listing compliance; securities lending and borrowing (SLB); data monetization; small market “storefronts;” complete value-chain coverage for small and mid-sized enterprise (SME) institutions; open API-enabled platforms; shared Know Your Customer (KYC) compliance; market surveillance; and continuous model validation for clearing and margin.

While the journey to digital transformation will not be easy, exchanges risk being displaced should they not move forward. An important initial step is to answer questions that will guide overall strategy and prioritize functions for modernization.

- Which strengths and capabilities do we have today? Which are core or unique and should be retained? Which do we need to build and/or buy to enable a next-generation exchange?

- How do we eliminate friction points to improve our customer experience—make it more seamless, personal, and intuitive?
- How can we reduce barriers to transacting?
- How can we simplify internal and external processes?
- With whom should we partner to mutualize costs or improve revenues?

Thriving exchanges of the future likely will be characterized by their understanding and adoption of innovative solutions and enabling technologies that are designed to attract a broader ecosystem of players and provide them with access to more data for decision-making and the ability to access markets seamlessly.



# Contacts

**David Myers**

Market Infrastructure leader  
Deloitte United Kingdom  
[damyers@deloitte.co.uk](mailto:damyers@deloitte.co.uk)

**Robert (Bob) Walley**

Market Infrastructure leader  
Deloitte United States  
[rwalley@deloitte.com](mailto:rwalley@deloitte.com)



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