

## Nick's Corner



### Six Trends Shaping the Future of Enterprise Technology (Precis)

These developments will help companies operate in new ways, build resilience, create new efficiencies, and deliver on their unique propositions.

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**At a Glance:** The benefits of investing in technology are measurable, but many executive teams are unsure which developments are most worthy of exploration.

- Bain's research identified six trends at various levels of maturity that are changing how enterprises use technology to deliver.
- Some of these trends arise from the broad decentralization of data and decomposition of applications. Others are rooted in the pervasive automation of agility, the expansion and virtualization of digital touchpoints, and the blossoming of AI capabilities.
- As these trends mature, the technology stack may evolve from closed, centralized platforms to more open ecosystems of services. **The key battlegrounds will shift from core product and enterprise resources management systems to customer-centric digital experience and intelligent engagement ecosystems.**

Changes in enterprise technology lie at the root of major shifts in the economy and in the ways that companies do business, across every industry. The shift to the cloud and software-as-a-service model dramatically reduces the costs of implementing new features and entire businesses. New technology is deployed more quickly thanks to the adoption of microservices and application programming interfaces (APIs), and artificial intelligence is managing a broadening swath of business decisions. The ability to harvest and analyse large sets of data is giving companies a better understanding of their customers, helping to identify opportunities to improve products and services. Adopting and embedding these technologies at scale across the core of their businesses has allowed technology-savvy leaders to generate greater shareholder returns than their less-savvy peers. Tech-savvy companies in banking and consumer products are outperforming peers that invest less in technology.

Customers are pulling companies toward this technology-driven edge, since many now prefer using digital platforms to dealing with real people. Consider the financial services sector, where players operating on modern technology stacks can serve, on average, three times more customers per employee.

Despite the undeniable value of investing in technology, boards and executive teams are finding it hard to make the right technology choices, including which architecture to build on, which operating model and talent to invest in, and how much to spend on technology to be the leader in their industry. Since enterprise technology is in a constant state of flux, those decisions are not easy. As soon as one technology matures, investors and the media are excited about the next. No sooner has cloud computing become mainstream than questions arise about new trends and buzzwords such as web3, the metaverse, hyperautomation, and quantum computing. Six rising trends that promise to change the way enterprises will work and focused on the trends that are reshaping the way we think about enterprise technology now, and which are likely to have a material impact on the way that enterprises operate and serve their customers in the next few years and those that with the ability to deliver differentiated propositions, operate in new ways, build resilience, and create efficiencies.

**Interaction explosion:** Businesses and consumers will rely on a wider range of devices to communicate and get things done. Many companies have bet their future on a "mobile-first" mode of interacting with customers and partners, but few are prepared for the next wave of evolution, in which being good at mobile will no longer be enough. Business will increasingly need to adopt an agent-to-agent strategy, or an omnimodel strategy that performs well whether an interaction starts with a person or from an autonomous device.

One of the most important aspects of this trend will be the ability of machines to interact with one another—and not just in the preprogrammed ways that we have become accustomed to, but in more contextual and creative ways, making decisions in real time based on many parameters. Conversational AI will underpin many human-to-digital interactions, with virtual agents increasingly able to manage interactions, looping in people only where necessary. Naturally, this will entail much richer interface models that can manage and process input from mobiles, tablets, cameras, wearables, car systems, voice interaction, and a wide range of sensors, and bring the

full power of real-time analytics, AI, and machine learning to turn vast quantities of unstructured information into value.

**Connected intelligence:** Artificial intelligence agents will be embedded in every customer episode and business process, connecting information, both structured and unstructured, about customers and events, all to better personalize services or optimize the use of enterprise resources. These **hyperpersonalized experiences** will reflect the capability not just to understand a customer based on who they are, but also to serve them better by understanding the context of the moment: where they are, how they feel, what they are trying to accomplish. Intelligent agents will also be used across complex enterprise manufacturing, supply, and distribution chains. Many factories, power plants, and offshore platforms are managed more efficiently with the aid of **digital twins**, models that connect data from thousands of agents and operate under the same virtual parameters experienced by their real-world counterpart. This allows engineers to anticipate pressures and events that could impact performance, and to take pre-emptive measures.

**Distributed meaning:** If the first wave of analytics was all about developing the capabilities to draw valuable insights from enterprise data, the next wave will be about **enabling access to more data beyond company walls**, powered by a layer of intelligence that facilitates end-to-end transactions and informs companies what data is available, how it's being used, and what it can tell you about customers or suppliers.

The exponential rise in the use of digital assets, whose ownership is secured through decentralized, cryptographic algorithms such as **blockchain**, will rapidly move key systems of record outside the enterprise's proprietary control. This trend and its various uses such as nonfungible tokens (NFTs), decentralized autonomous organizations (DAOs), and cryptocurrencies are increasingly referred to as web3. At the same time, the emergence of open data ecosystems, some driven by consumer- and data-rights initiatives, will externalize core enterprise data and make combining external and internal data sources not only easier but mandatory. For most companies, **the goal is to gain a deeper and more comprehensive understanding of customers, supply chains, and other environments** in which the enterprise is only a part. Increasingly, gaining a competitive edge will depend on having the technology to access critical data elements, make sense of them, use it operationally, and control their use in time to inform the right business decisions or deliver the right customer experience. New data fabric and data **mesh technologies support on-the-fly creation of operational and analytical meaning without having to first centralize and structure data in an enterprise data lake**. As data ecosystems evolve, enterprises will become comfortable with not only deriving but also sharing valuable insights across enterprise boundaries without violating proprietary principles or privacy rights. Privacy-enhancing computation and other crypto-based controlled data exchange technologies make it possible to enhance, match, and aggregate the data of individual consumers without identifying personally identifiable information nor having to give any individual company full access to the sensitive data stored by others.

**Limitless modularity:** Organizations will move beyond their current methods of software development, and increasingly they will compose apps from readily available software components. Already, more than 54 million active projects on GitHub, the world's largest code repository, are publicly available to developers, and by some estimates, more than 75% of the code in the average software application comes from these open source software libraries. Increasingly, this open source code will become available as cloud-native components, designed around industry standards for data and available through standard interfaces. Cloud hyperscalers are accelerating this standardization by providing access to a limitless supply of standard functions and components for enterprise applications. As developers can now integrate and operate each component independently from each other, enterprise applications are becoming truly modular. This decoupling at enterprise scale is breaking the nexus of lengthy regression testing cycles and unleashing the ability of the enterprise to change multiple technology elements in parallel. As these components run in "serverless" environments, in which **software is no longer tied to specific technology infrastructure, they can scale massively and seamlessly**.

Just as users have grown more comfortable shifting workloads to the cloud over the past few years, they will become more comfortable placing loads on multiple cloud platforms at once. Chief information officers say they would prefer to run loads on multiple clouds, but today many find themselves being drawn into a single or at least one dominant cloud provider. That's likely to change as customers continue to demand access to multiple cloud platforms. All this modularity will let companies run their commodity workloads, rented at low costs, while investing to differentiate the business applications that can deliver a competitive advantage.

**Cybersecurity arms race:** When considering cyberattacks, one thing is certain: **Companies will be attacked more often and in ways they never thought possible.** As

attackers become more advanced, companies will need to match them with defensive capabilities that are more robust, resilient, and able to withstand and recover from attacks. Given the ever-increasing innovation and virulence of attacks, organizations cannot achieve the necessary robustness and resilience just by using tools to protect against known and specific attack vectors. The more sustainable approach requires rethinking the zones of protections and the behaviours of key actors within. Human reactions, such as following a malicious link, remain the keys to most breaches.

**The war against cybercrime will be played at multiple levels and through a portfolio of tools**, approaches, and skilled resources. A security-conscious culture and secure access service edge (SASE), a cloud-based technology based on digital identity, will combine increasingly sophisticated controls to protect data traffic at the point of entry and beyond the boundaries of the enterprise. User access will become dynamic, altering identification method and access rights to keep service levels and risks in balance. Zero-trust architectures, where every person, device, piece of code, or transaction is assumed to be a bad actor until authorized, will become standard. Artificial intelligence will play a larger role in recognizing abnormal patterns of behaviour among users, data, and code, flagging those, and determining the best resolution course of action.

This escalation **will lead to a continuous increase in spending on cybersecurity**, which is expected to grow by about 15% annually over the next three years.

**Perpetual motion:** Agile processes continue to be adopted more broadly across organizations—not just in code and product development, but by business functions as well, such as distribution, product management, operations, and general and administrative functions. This broader adoption pattern will see traditionally technology-centric methods such as DevOps become the norm across business life cycles. New disciplines will emerge in which business product owners adopt Agile terminology, becoming more like engineers. Automation and business-driven coding will accelerate technology life cycles, allowing organizations to do more with less, faster.

**Are you open to acceleration?** Together with the continued scaling of established trends such as cloud, microservices, and APIs, these six trends will have profound effects on what enterprises can do with technology and what technology will do to enterprises. These trends will force enterprises to open to more possibilities available at a faster pace. Enterprise technology will move from closed, centralized platforms to more open, federated, and streaming ecosystems of services. The key battlegrounds will shift from core product and enterprise resources management systems to customer-centric digital experience and intelligent engagement ecosystems. Digital experience and engagement become the new core of an open enterprise architecture.

Leaders will increasingly engineer their businesses to take advantage of these new technology possibilities. At full potential, these technology trends can drive efficiencies—potentially automating business operations for 40% to 50% lower costs, driving faster paths to market; potentially halving their time to market, driving new growth opportunities; potentially growing core business 10% faster, driving boosted customer engagement; potentially having a 20-point advantage in NPS, driving better use of capital; and potentially delivering 3% to 4% greater return on capital. When we consider the sum of these improvements, the potential for growth in total shareholder returns could be as much as 7% to 10% annually—effectively doubling returns over seven years.

**But the path to leadership through the right technology decisions won't be easy.** Most notably, these trends in enterprise technology will challenge executives around four key business decisions.

- **Are we embracing the possibilities of technology?** The balance of power is shifting toward organizations that understand and exploit these technology trends. For most, this will require raising the organization's technology consciousness beyond their technology function. Are enterprise strategies exploiting the full potential of their technologies?
- **What are the right spending levels?** Taking full advantage of these technology trends will shift the mix of enterprise spending toward greater and more persistent spending on technology, blurring the lines between run (opex) and change (capex). For every organization, executives should consider, what is the Goldilocks level of spending and the right funding mechanism to derive value from it?
- **How do we prepare for deeper complexity?** These trends offer and require more: more means of engagement, more technology components to choose from, more data to make sense of, and more resources to direct toward resilience. Overall, complexity of technology decisions will only grow, and technology skills will need

to evolve to take advantage of new technologies. Are enterprise technologists equipped to deal with these complexities?

- **Can we adapt to an accelerating pace?** These trends are driving a relentless acceleration of change and push toward agility. What capabilities and operating model—such as transformation capabilities, culture, way of working, governance, or even innovation engines—are adapted or adaptable to this upcoming acceleration?

## Client Services

The objective of the test window is to ensure that your day-to-day operational processes and interface using FinSwitch are working as per normal. We urge all clients to actively participate in the testing. FinSwitch will ask all clients to complete a declaration once they have completed their testing.

Training material is available on the current live FinSwitch application under the "Communications" tab. These presentations can be referenced prior to testing as a refresher. These include:

- Interface Demo (8 episodes available)
- Feature Access Introduction
- Feature Access Detail
- Fund Linking

### Chain Testing

- Testing is scheduled for a month, and is due to start during **June 2023**. Confirmed dates will be advised closer to the time, once FinSwitch has completed its own real time parallel run.
- Clients will have the ability to test all functionality available on the frontend and web services.
- Frontend and web services testing credentials i.e., URL & passwords for the test site will be distributed closer to the time.

The test site will incorporate all the changes required for go live, which are:

- ISO standards (currency codes)
- TER file template change (include "Status" column)
- FTP and Free Format Files will be discontinued
- Correct Fund Categorisation – all funds must be categorised correctly i.e., the fund type must be marked as ETF, Hedge, FoF, etc. The chain fund type validation is very strict and trades may fail if funds are incorrectly categorised
- Capitalisation – All codes must be in upper case, if not files will fail
- CSV requirement (must be comma delimited) – clients that upload .csv must see that the file is comma delimited and not tab delimited
- AA header name change – "ASISA Fund Code" column header must be "Fund Code"
- Restricted Funds – Client Services must be contacted should you wish to remove the restriction on a fund for a specific company

### Chain Go Live

Go live will follow shortly after the testing period and is scheduled to take place during **July 2023**.

### Best Wishes

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