

## Designed to evolve: digital transformation the Infosys way

Brian Leavy

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When Nandan Nilekani, Co-founder and Chairman of Infosys, stepped back from the global consulting and IT company to take a senior post in the Indian national government, he envisioned and led the ground breaking Aadhaar initiative to provide a digital identity to more than 1.2 billion Indian citizens. Aadhaar, the world's largest biometric ID system, reached a billion members in just six years – much sooner than the 46 years predicted by the experts. This was because Aadhaar was “designed to evolve” from the start, combining innovation and efficiency at speed and scale.

When Nilekani returned to Infosys in 2017, he found that company to be operationally efficient but needing rejuvenation for the digital age. He thought, why not apply the Aadhaar learnings on transformation to complex global enterprises that need to reinvent themselves to operate like digital natives? And why not start at Infosys to refine and then demonstrate the model to the market? This insight has resulted in the development of the Infosys Live Enterprise model – a digitally enabled, human-centric, designed-to-evolve model of the modern enterprise based on the principles of adaptive, living systems. Jeff Kavanaugh and Rafee Tarafdar describe the inner workings of this model in their new book *The Live Enterprise: Create a Continuously Evolving and Learning Organization*.<sup>[1]</sup>

Kavanaugh is Vice President and Global Head of Infosys Knowledge Institute, the research and thought leadership arm of Infosys, and an adjunct professor at the Jindal School of Management, University of Texas, Dallas. Tarafdar is Senior Vice President and Chief Technology Officer of the Strategic Technology Group at Infosys, where he builds architecture, technology and programming capabilities and go-to-market solutions and platforms for Infosys and its clients. Kavanaugh's interviewer, Brian Leavy, is Emeritus Professor of Strategy at Dublin City University Business School ([brian.leavy@dcu.ie](mailto:brian.leavy@dcu.ie)) and a *Strategy & Leadership* contributing editor



Jeff Kavanaugh, Infosys Knowledge Systems

**Strategy & Leadership:** How and why did you decide to reinvent the company along “live enterprise” lines and what were the overall goals and questions driving the Infosys approach to its own digital transformation?

**Jeff Kavanaugh:** The initial inspiration came from Nandan Nilekani's experience leading the very successful Aadhaar initiative in India, which led us to create the idea of the Live Enterprise as a "designed to evolve" strategy and execution mode and to apply it to ourselves at Infosys first. As we undertook this transformation journey, we stayed focused on the fundamental question: How can large complex enterprises behave like startups with nonlinear moves while maintaining resilience? We streamlined and automated operations so our people could focus on customers, their teams and invest in their own learning. We built digital platforms to scale good ideas, with feedback loops to continually evolve. Once we demonstrated the model in action we began to replicate it with our clients and share it with the market.

The Live Enterprise model is based on practical experience and validated by demonstrated success. Live Enterprise provided Infosys enterprise resilience during the COVID-19 pandemic, moving 240,000 workers from office to remote work in a matter of days. Our client value scores increased to the highest levels ever, employee experience scores also increased to their highest marks, and Infosys market valuation more than doubled over the 2017-2020 period.

**S&L:** Can you give us an overview of your live enterprise operating model and the strategic objectives guiding its ongoing evolution?

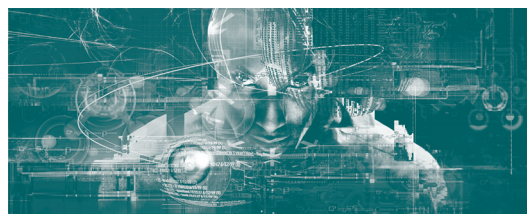
**Kavanaugh:** Most incumbent global enterprises were born in the pre-cloud era with legacy processes, operating models and infrastructure, and now they have to compete with digital natives that are much more agile and responsive. The idea behind the Live Enterprise is to enable mature companies to transform into a business with digital native agility, with many small teams innovating while leveraging shared digital infrastructure, in an environment of continuous evolution and learning.

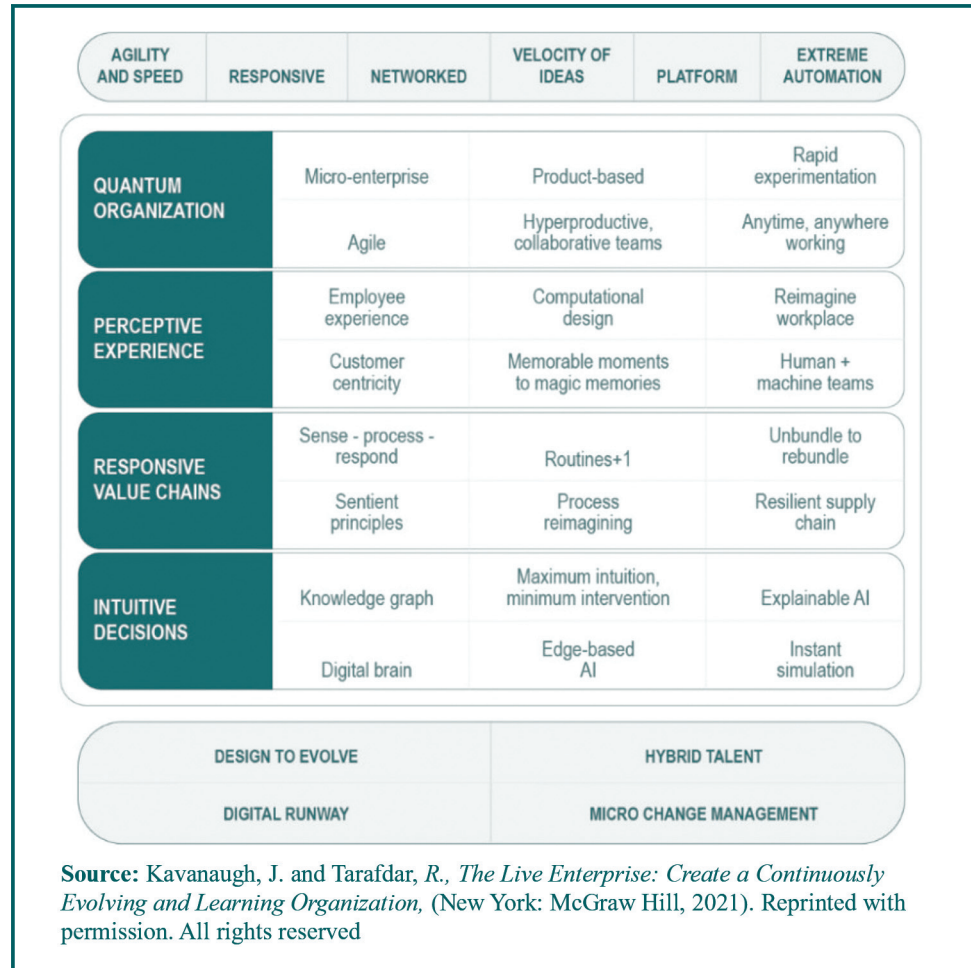
To seek nonlinear change, we dismantled old operating models rather than trying to supplement them. We took a page from the Agile playbook and focused on guiding principles over rigid structures, and we started with six strategic objectives:

- The agility of a startup.
- Responsive to customer needs.
- A networked, connected and sentient ecosystem.
- Velocity of ideas and innovations.
- Competitive advantage through platforms and shared digital infrastructure.
- Extreme automation in everything the enterprise does, with mobile-first and AI-first solutions.

These objectives are designed to work in concert to accomplish four outcomes:

- **Quantum organization:** An agile organization structure that drives collaboration, innovation, strategic alignment and new culture across distributed interconnected teams.
- **Perceptive experiences:** Respond quickly, yet thoughtfully and scientifically, to opportunities to create valuable new employee and customer experiences.
- **Responsive value chains:** Repurpose, reimagine and reengineer the value chain to see what is missing, or can be improved or eliminated.
- **Intuitive decisions:** Automate systems and activate intelligence so that routine decisions and responses can be acted on with



**Figure 1.2** The Live Enterprise Model

maximum human intuition and minimum human intervention, allowing people to focus on higher order analysis and decisions not suitable for machines.

These outcomes are made possible by four capabilities: hybrid talent, a design-to-evolve mindset, a digital runway and a “micro is the new mega” approach to transformational change (see Figure 1.2 – “The Live Enterprise Model”).

To be resilient, companies need to continuously evolve and learn, much like nature. We developed Live Enterprise foundational components based on proven operational principles and influenced by nature’s genius – outward elegance and simplicity, supported by integrated complexity and resilience.

### *The live enterprise model – designed for four main outcomes*

**S&L:** The first of the main outcomes the live enterprise sets out to achieve is an agile-at-scale “quantum organization.” What are its key characteristics and how does it differ most from more traditional forms of organizational structure and design?

**Kavanaugh:** Too many large incumbent companies have tried yet failed to become more agile like startups, despite the adoption of digital transformation, lean start-up and design

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thinking methodologies. Many of the creativity and innovation tools associated with these valuable frameworks tend to fall short when faced with the reality of systems integration and scale considerations. As a result, digital transformations, as traditionally pursued tend to hit a ceiling where diminishing returns set in prematurely. Quantum organizations, however, provide tools for rapid experimentation through the digital runway, innovation at the edges by distributed micro-teams and extreme automation at scale for repeatable processes and functions. They are designed to deliver incremental value every few weeks to advance organization performance and culture.

We call it a “quantum” organization because like a multistate particle in physics, such an agile-at-scale organization must be capable of successfully managing many initiatives simultaneously in multiple changing states.

Quantum organizations promote interactions in three ways: user to user, user to platform and platform to platform. This bottom-up approach ultimately leads to a compounding effect and delivers more value than more traditional top-down methods. Quantum organizations look beyond the organization chart to build and nurture communities, and they create specific assets of knowledge, playbooks, learning and platforms to drive adoption and continuous enrichment. Quantum organizations strengthen culture through smaller, hyper-productive and cross-functional Agile teams as their “special forces.” This increases innovation velocity and embeds collaboration into the fabric of every business process.

The digital runway is the shared technology infrastructure – think platforms and ready-to-integrate application programming interfaces (APIs). This enables product-based teams to use an existing platform to re-bundle and build solutions specific to a market, country or region and at speed and scale. Cross-functional platforms lead to the creation of additional niche platforms, fostering a vibrant and evolving partner and client ecosystem.

**S&L:** The second main outcome the live enterprise seeks is “perceptive experience.” What does this mean and what advantage does it offer?

**Kavanaugh:** Perceptive experience allows decisions to be made at the edge, not unilaterally from a central function. Perceptive experiences are developed using computational design, a quantified approach based on three principles: design adaptable, design inclusive and design measurable. Computational design keeps the focus on human users rather than personas by interpreting, codifying and measuring the behavior of a diverse group of real users in real time at a detailed level. Products are designed using data from real users, identifying correlations between psychometric data and telemetry data. This enhanced model helps to take innovation in customer experience to another level.

**S&L:** The live enterprise raises the employee experience (EX) to equal priority with the customer experience (CX). Why is this so central to your new model and how can companies go about reimagining the workplace in order to make it much more employee-centric?

**Kavanaugh:** While there are plenty of definitions for employee experience (EX), the key is to have employees at the center of an enterprise. Indeed, we define EX as organizations and

their employees collaborating to create personalized, motivating experiences across work, workforce and workplace to improve performance and alignment to purpose.

EX was traditionally overshadowed by customer experience (CX), but organizations now understand employees are their greatest asset, and their experience drives success for the organization overall. User centricity is just as important to design an engaging employee experience as for customer experience.

Rapidly evolving circumstances require that organizations create employee-centered business environments. Infosys EX and research indicates employee-centricity improves operational metrics, builds resilience through longer employee tenure and develops stronger collaboration and reputation networks.

**S&L:** The third major outcome the living enterprise model seeks is the creation of a “responsive value chain.” You highlight five “sentient” principles that can help organizations take their “sense-process-respond” capability to another level. How does this work in practice?

**Kavanaugh:** Responsive value chains provide stability directly and also through beneficial secondary and tertiary effects. Business sentience is awareness with perception, and sentience drives value through five principles:

- **Proximity to source.** Users provided with all the information and insights required for them to make decisions at the interaction point where they need to be made.
- **Zero latency.** The response following input, without delay, via the minimal number of steps and approvals required to complete the interaction.
- **Instant simulation.** The ability to not only conduct traditional what-if analysis, but also explore alternatives and simulate to make the correct decision at the point it needs to be made.
- **Micro-feedback.** User feedback gathered in the workflow. At the end of each user interaction, ask a simple question to understand their overall experience for this interaction.
- **Guided practice.** A well-defined user pathway to complete a specific task or activity, which gets codified into the interaction flow itself. This is essential to develop new routines and drive behavior change.

These principles guide systems and activate intelligence so that routine decisions and responses can be acted upon with maximum human intuition and minimum human intervention.

**S&L:** You also offer a “sentient analysis framework” to help reimagine processes. How should organizations choose which processes to prioritize and what are the main steps involved?

**Kavanaugh:** The Live Enterprise sentient analysis framework provides a structure for process analysis, “busting,” deconstruction and reimaging. Organizations should reimagine or reengineer processes in five steps:

- **Unbundle.** Deconstruct the entire business process and user interactions into user journeys and routines, with process metrics at each routine level.

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- **Analyze routines.** Analyze the routines to determine which should be eliminated, changed or created to drive change in the behavior.
- **Disintermediate.** Eliminate steps and routines that increase latency, add no value or adversely impact experience. Remove process intermediaries.
- **Apply sentence.** Consistently apply sentient principles to the user journeys and interactions so that sentence is designed into the entire reimaged process.
- **Re-bundle.** Use shared digital infrastructure to accelerate benefits by re-bundling newly defined interactions and routines.
- **Re-imagine.** Enable a business process to be more responsive and intuitive.

The sentient analysis framework unbundles business process into loosely coupled foundational services. For real adoption to occur, however, employees must develop habits based on beliefs that align to the new process and enterprise overall and believe the new routine is designed for their benefit.

**S&L:** The fourth main outcome of the Live Enterprise model seeks is the development of system-wide “intuition.” The concepts of the “knowledge graph” and the “digital brain” are key to this outcome. How do these two concepts work in practice and how do they interrelate in the creation of the intuitive enterprise at Infosys?

**Kavanaugh:** Success is measured through products created, services rendered and impact on individuals, organizations and society. The distinct aspect of the Live Enterprise model is the frequent evolution and learning that keeps these outputs and impacts fresh and relevant to major stakeholders.

This evolution and learning occur through the knowledge graph and digital brain. The knowledge graph links all data spanning employees, customers, partners, networks and devices, plus the interactions in between. This large set of previously isolated islands of information are connected and indexed, allowing enterprises to make data-driven decisions, plus sense, process and adapt to changing business stimuli.

Every company needs a digital brain — a nexus for continuous, automated learning. Digital brains manage the collective knowledge and state of the enterprise ecosystem, learn from each interaction and drive value exchange in each of these interactions. Every interaction can become a value-additive exercise that allows employees to accelerate creativity and innovation and increase their focus on their customer.

In sum, once the organization develops the ability to make decisions in an automated manner and has real-time visibility to everything in each of these ways, it becomes “alive.”

### *The capabilities driving live enterprise outcomes*

**S&L:** The effectiveness of the live enterprise model in realizing the desired outcomes also depends on four main capabilities. The first is “hybrid talent.” Why is a “hybrid talent” model

so essential to the live enterprise, and how can an organization build and nourish such a model?

**Kavanaugh:** Modern organizations are adapting to a profound shift from full-time employees to also embrace part-time employees, the gig economy and extreme automation. This combination of hybrid talent is much like a natural ecosystem that's evolving, symbiotic and sentient.

The productivity boost will come from the optimized allocation of work. Full-time workers will focus on innovation and problem-finding, including diagnosis and high-empathy tasks. Machines will do routine work, solve problems and find solutions with efficiency. Gig economy workers will address peak demand and offer specialized skills. This combination of employees + machines + gig economy provides staffing scale and flexibility. Depending on the nature of the work, the mix of hybrid talent will evolve over time.

With the advance of remote working, the future workplace will have hybrid teams that are multi-locational, reflect diversity in education and backgrounds and span full-time and temporary workers. Leaders will build a better talent base through reskilling and upskilling, prioritizing work, improving job quality and taking a fresh approach to education and its linkage to jobs.

**S&L:** The second main capability is a “design to evolve” digital proficiency, and you provide a multi-layered “live enterprise reference architecture” as a blueprint. How does this work in practice?

**Kavanaugh:** India's Aadhaar digital ID initiative reached a billion people in just six years because it was designed to evolve from the start. In transforming to such “designed to evolve” system, we do not recommend a big bang approach for traditional, mainframe-centric, enterprises because of the risk and complexity involved. Rather, we recommend an evolutionary approach to modernizing company core systems via an Accelerate, Renew and Transform (ART) approach:

- **Accelerate.** Accelerate modernization for enterprises having a small mainframe or AS/400 footprint, where the applications and data can be migrated and re-hosted on the cloud.
- **Renew.** Revitalize existing mainframe applications by provisioning existing functionality as APIs, adopting mainstream engineering practices like DevSecOps and reducing technical debt for core business services.
- **Transform.** Transform and reengineer the existing mainframe applications using an incremental approach and migrate to industry platforms or develop using open-source and micro-services-based architecture on the cloud.

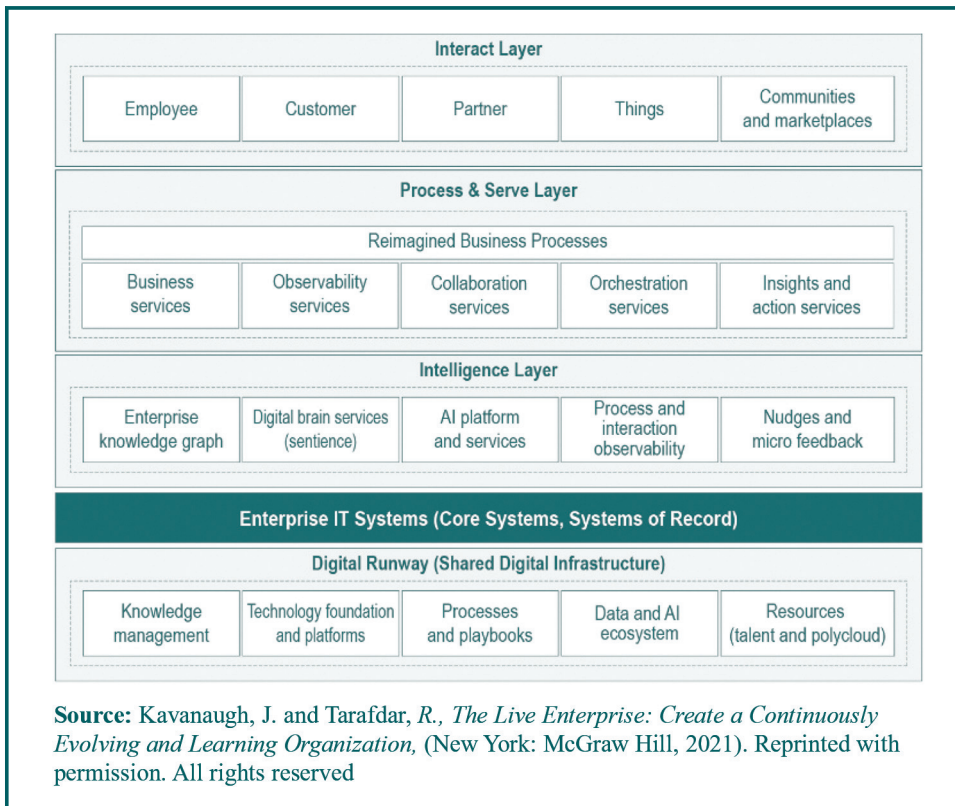
The ART approach creates architecture that is unified, but not uniform.

The primary aim is that core systems be simplified and modernized to provide data and APIs to reimagine the experience and business processes. These capabilities are provided in the Live Enterprise model through the Interact, Process & Serve and Intelligence layers. This minimizes impact on the core systems, yet still provides the ability to sense, process

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**Figure 7.2** Live Enterprise Reference Architecture



and respond using open-source and cloud-based architecture (see Figure 7.2 “Live Enterprise Reference Architecture”).

**S&L:** The third main capability is the “digital runway.” What is its main purpose and how is it composed and structured?

**Kavanaugh:** We call shared digital infrastructure a “digital runway,” and it increases velocity to develop new ideas and innovations and to rapidly take them to market. The digital runway has five components:

- Knowledge management.
- Technology services and platforms.
- Processes and playbooks.
- Data and AI ecosystems.
- Resources (talent and cloud).

Shared digital infrastructure provides a set of platform services that are used to deliver perceptive experiences, responsive value chains and intuitive decision-making capabilities.

**S&L:** The fourth main capability you call “micro is the new mega.” How does this “non-traditional” approach to change and transformation operate, and why is it foundational to the live enterprise model?

**Kavanaugh:** Micro is the new mega because the Live Enterprise model uses frequent micro-change releases at scale in short sprints. It is the strategy of deconstructing complex and



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large initiatives into micro projects with tight goals and objectives. Over time rapid-sprint micro-change management drives significant changes in routines, behavior and culture. It delivers small, irreversible change by addressing specific aspects of larger problems with small, hyper-productive, Agile teams working on these small releases to evolve and take concepts to market. The cumulative effect of these many small changes compounds quickly to transformational change.<sup>[2]</sup>

### *Some overarching implications for company leaders*

**S&L:** Finally, for CEOs and their C-suite colleagues, what are the two or three overarching messages that you would like them to take away from your book?

**Kavanaugh:** Three main messages are:

- The Live Enterprise operating model is a combination of many small, innovative entrepreneurial teams and the scaled power of shared digital infrastructure; it's designed to evolve, all in a culture of lifelong learning.
- “Micro is the new mega,” where big change can be accomplished through a series of small nudges that build momentum and change behavior.
- Employee experience (EX) is as important as customer experience (CX) in the live enterprise; view your workforce as a hybrid talent value driver composed of employee plus gig worker plus machine.

The focus for leaders is still employees, customers and the value proposition. What the Live Enterprise model aims to do is make full use of digital technology and innovation while keeping customers, employees and societal interests top of mind.

### **Notes**

1. Kavanaugh, J. and Tarafdar, R. (2021). *The Live Enterprise: Create a Continuously Evolving and Learning Organization*, New York: McGraw Hill.
2. The authors' *Harvard Business Review* article “Break Down Change Management into Small Steps,” May 3, 2021, <https://hbr.org/2021/05/break-down-change-management-into-small-steps>

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