Intelligent Enterprise Partners LLP

The Dawn of a New Age that Changes Everything

The Intelligent Enterprise Is Our Response

Introduction

We are entering a whole new transformative age, often referred to as the *Industrial Revolution 4.0,* which promises to be more transformative than the changes we have seen in the past 250 years.

Drivers of Transformation

Artificial Intelligence (AI) is at the forefront of this revolution. Industry luminaries like Mustafa Suleyman ('The Coming Wave') and Ray Kurzweil ('The Singularity is Near', 'The Singularity is Nearer') predict fundamental changes in three key areas: energy, robotics, and health. AI is expected to dramatically reduce the costs of solar energy and battery technologies, significantly reduce the amount of manual labour required through robotics, and transform diagnostics and treatments in health, potentially extending human life.

What does this revolution mean for your business or organisation?

Immediate Impact

These changes are imminent, expected to unfold within the next five to ten years. For businesses, this means that change will be the only constant, and business as usual will be synonymous with continuous adaptation and transformation. We paraphrase Satya Nadella, *"AI will not replace companies and economies, but companies and economies that lead with AI will replace those that do not."* The businesses that survive will be those who learn from Charles Darwin, *"It is not the most intellectual of the species that survives; it is not the strongest that survives; but the species that is able best to adapt and adjust to the changing environment in which it finds itself."*

Intelligent Enterprise Defined

An Intelligent Enterprise leverages insight, analytics, and AI to dynamically reconfigure itself in response to the expected needs of its customers, and simultaneously anticipate and respond to changes and events in the external environment. Such organisations are truly data-enabled and AI-Powered.

Historical Context: Have We Been Here Before?

Despite significant investments in digital and AI technologies, Western economies have experienced stagnant growth in productivity since the Global Financial Crisis. Nobel Laureate Economist Robert Solow noted a productivity paradox in the 1970s and 1980s, despite increased computing capacity; in 1987 he quipped, ***"You can see the computer age everywhere but in the productivity statistics."*** While the computing capacity of the U.S. increased a hundredfold in the 1970s and 1980s, labour productivity growth slowed from over 3% in the 1960s to roughly 1% in the 1980s. Productivity growth sprung into life for the next 20 years but has been largely moribund again since the Global Financial Crisis despite continued significant investment in computing power, digital and now Artificial Intelligence thus echoing his concerns.

Energy and Productivity Growth

One critical source of productivity growth is energy. The Industrial Age was driven by coal and oil, and while nuclear power promised a further step change, it has not delivered as expected due to safety concerns. The demand for sustainable energy sources and the exponential growth in computing capacity are driving the need for new energy solutions.

Can We Achieve a Step Change in Productivity and Economic Growth?

The answer is "Yes, but...". There are differing opinions on the potential of AI to drive productivity growth.

Professor Erik Brynjolfsson advocates for the productivity potential of AI, predicting double-digit gains and significant economic disruption. He has written a number of seminal books including 'The Second Machine Age', and 'Machine, Platform, Crowd' with Andrew McAfee. Brynjolfsson documented a correlation between IT investment and productivity, going back to his earliest research in 1993 at the behest of Robert Solow. His work provides evidence that the use of Information Technology is most likely to increase productivity when it is combined with complementary business processes and human capital. A subsequent article coined the term the 'Productivity J-Curve' to describe how these intangible investments might initially lead to stagnant or even lower productivity followed by a take-off. Brynjolfsson envisions double-digit gains in economic productivity, and commenting that he foresees the potential for "massive economic disruption" leading to the creation of new occupations and new companies in the coming years. In an interview for the *Financial Times* he said *"I'm optimistic the technologies will affect a large number of tasks. A big percentage of the work that is done in a modern economy is amenable to being augmented by LLMs and generative AI. The effects on those tasks have been significant – double-digit productivity gains within just a few months in some of the cases I've studied. Multiply the large percentage of affected tasks by sizeable productivity gains for each one and you get a big total economic impact.*

I'm betting that productivity growth is maybe significantly higher in the 2020s than the Congressional Budget Office is projecting. They projected 1.4 per cent average per year. I think it could be twice that — closer to 3 per cent — maybe more."

In contrast, MIT Professor Daron Acemoglu offers a more cautious view, suggesting modest productivity improvements from AI. With all the excitement around AI he recently published "The Simple Macroeconomics of AI", with the aim to review the large macroeconomic implications of new advances in AI. Acemoglu using existing estimates on exposure to AI and productivity improvements at the task level, these macro-economic effects appear nontrivial but modest — no more than a 0.66% increase in total factor productivity (TFP) over ten years; he starts from a task-based model of AI's effects, working through automation and task complementarities, and further revises this down to 0.53%. If we treat AI like other 'automation' initiatives and focus on micro-tasks then the costs could well outweigh the benefits. Generative AI is based on very expensive compute power and the danger is we throw it any potential task in the organisation. In our opinions, this will be the source of risk and failure for any companies working with the Big Strategy and Consulting firms.

The Intelligent Enterprise — Capitalising on AI

To reconcile these differing opinions, it's crucial to adopt a transformative approach to business change, leadership, and strategy. As we said at the outset for the foreseeable future "Change will be the only constant", and "Business as Usual will be Change". What that means in practice is the incremental approach to business change, leadership and strategy, which has been the norm for the past decades, are doomed to failure.

We must rethink how work is done, revisiting the 'Reengineering the Corporation' of Michael Hammer and focus on "obliterating tasks and processes" rather than merely automating them.

A Blueprint for the Intelligent Enterprise

We propose a model that is predictive by design, leveraging data, analytics, and AI to drive continuous improvement and adaptability. This approach involves significant complementary investments, including new processes, products, business models, and human capital.

## The Role of Servant Leadership

Effective servant leadership is crucial for an Intelligent Enterprise. Leaders must support and enable three key communities: customers, employees, and transformation teams. Engaging the whole organization in the change process is essential, and frameworks like Kotter's Accelerate Change provide valuable guidance.

The Intelligent Enterprise is 'Predictive by Design'

To consider a business that is truly data (and value) driven, we should consider the case of Amazon. Their business strategy was famously written on a napkin by Jeff Bezos in 2001, using the "Flywheel" concept from 'Good to Great' by Jim Collins. Bezos picked Marketing as the critical capability that he wanted Amazon to be world class at, and realised Data, Analytics and AI was key to that. Bezos created a strategy that leverages on customer experience to drive traffic to the platform and third-party sellers in a cycle of continuous improvement — improve the selections of goods, and Amazon further improves its cost structure decreasing prices, which in turn increases the spin speed of the flywheel (https://businesschronicler.com/business-strategy/amazon-flywheel-explained).

The Intelligent Enterprise model is our codified version of the Good to Great flywheel used at Amazon but now standardised so it can be deployed in almost any organisation to create a 'Predictive by Design' operating model. It is both intrinsic and extrinsic in this definition that the organisation is uniquely able to leverage data, analytics and AI to enable and sustain this capability. The use of Resource Based Theory and Dynamic Capabilities (see below) help us to identify the resources and business capabilities that will form the differentiation for the business and Kotter's Change Framework helps us to deliver the change to a business that is designed for change and can adapt continuously.

*Figure 1: Intelligent Enterprise*
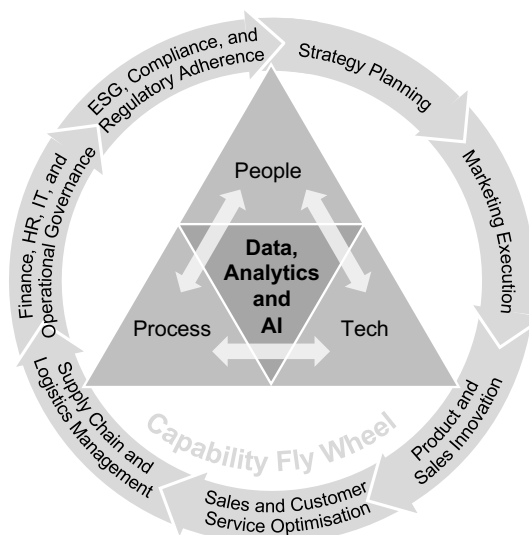
Intelligent Enterprise's Strategic Frameworks

We have investigated how organisations can deliver sustained and sustainable competitive performance using Data, and Analytics (including AI). Three business and academic frameworks have been isolated as constituents:

VRIO Model of Resource-Based Theory (1)

If a business seeks to be competitively differentiated, it cannot realistically expect to be 'world-class' at everything. Resource Based Theory helps firms to identify and focus on internal resources that are best aligned with opportunities and threats from the external environment, to identify key combinations of internal capabilities that uniquely differentiate. The VRIO framework is a strategic analysis tool designed to evaluate an organisation's resources and capabilities to discover competitive advantages. The acronym VRIO stands for four questions to ask about a resource or capability to determine its potential: **Value, Rarity, Imitability, and Organisation.** If a resource or capability is valuable, rare, costly to imitate, and the firm is organised to capture its value, it can sustain a competitive advantage.

Figure 2: VIRO Model of Resource-Based Theory
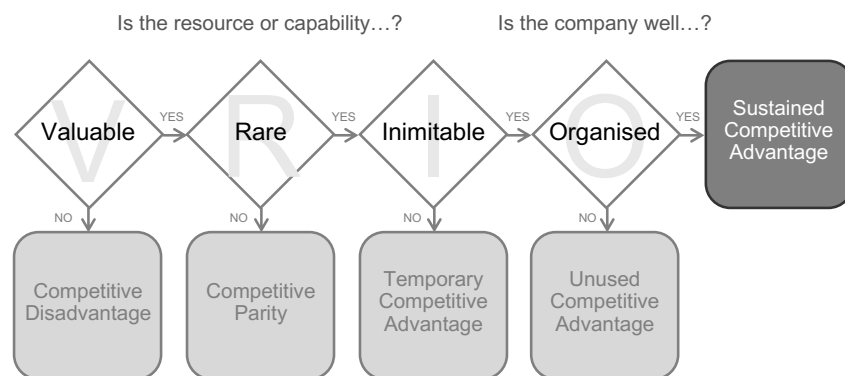
Sense, Seize, and Transform from Dynamic Capabilities (2)

Dynamic capabilities refer to a company's ability to continuously renew its competitive advantages in response to rapidly changing business environments. The VUCA (volatility, uncertainty, complexity, ambiguity) world we live within, seems to be here to stay, so being able to drive continual renewal will be critical to maintaining competitive advantage. The Dynamic capabilities framework is built around three key actions: **Sense, Seize,** and **Transform**. 'Sense' involves identifying and assessing opportunities and threats in the external environment. 'Seize' is about mobilising resources to capture value from those opportunities and mitigate threats. 'Transform' requires the firm to continuously renew and reconfigure its assets and organisational structure to maintain alignment with the changing business landscape. This approach empowers organisations to be proactive and adaptive.

Figure 3: Dynamic capabilities framework
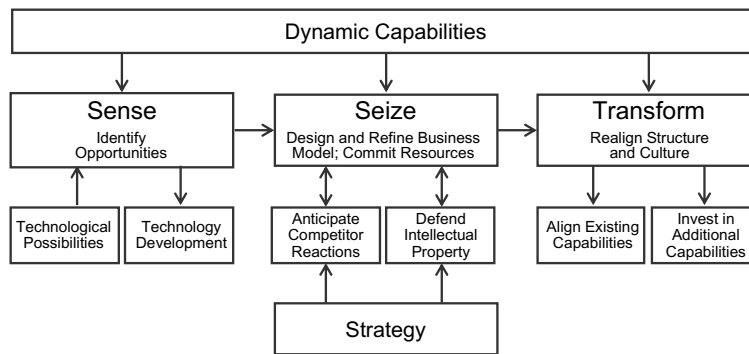
Kotter's Accelerate Change Framework (3)

Building an Intelligent Enterprise is a fundamental rearchitecting of the operating model of the business, and as we have noted the 70% Failure rate of most major change programmes is unacceptable when the business is at stake. As Kotter first highlighted this challenge in 1996, we are happy to leverage his approach and frameworks to support the Design for Change transformation.

Developed by John Kotter, over 25 years, the Accelerate Change framework provides a methodology for leading and managing change in organisations. It outlines eight steps to create a sense of urgency around the need for change, build a guiding coalition, form a strategic vision, and enlist a volunteer army to implement the vision. The process also includes enabling action by removing barriers, generating short-term wins, sustaining acceleration, and instituting change. Unlike traditional change management models, Kotter emphasizes the importance of operating with a dual system—one that operates under traditional hierarchies and another that uses a network-like structure to facilitate rapid change and innovation. This model is particularly effective in today's fast-paced, complex business environments.

Individually, these models are utilised by organisations globally to inform their strategic decision-making and adapt to internal and external pressures, ensuring sustainability and competitive positioning in the market. We bring them together to deal with the challenges and embrace the opportunities of the VUCA world and AI.

Figure 4: Kotter's Accelerate Change Framework

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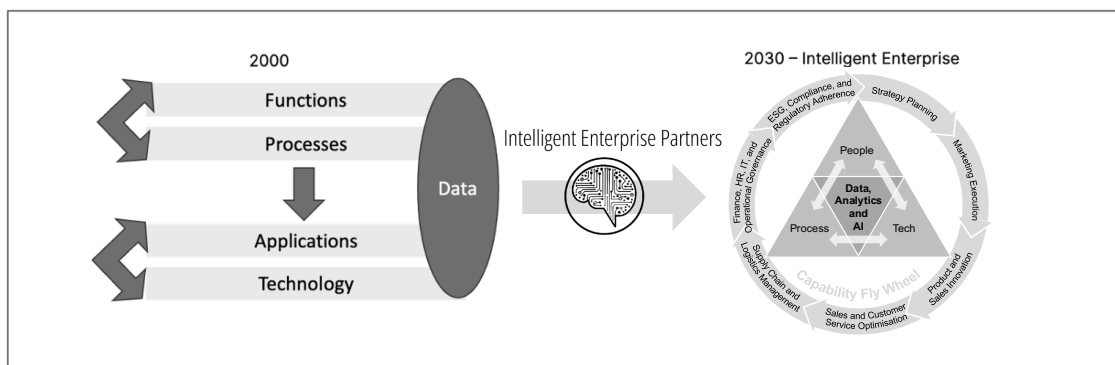# Creating the Blueprint for 'Designed for Change'

The starting point for Designed for Change, is whether your business is fit for 2000 or 2030. The 2000 model is designed around functions and processes, which then dictate the technology required to automate them. It works well in a 'Business as Usual' world where we can make incremental improvements to processes to drive cost and efficiency improvements.

The 2030 Intelligent Enterprise model is Predictive by Design — i.e. it is Designed for Change.

- Predictive by Design does not merely mean that you have sophisticated analytics for reporting and insight, but in addition that those analytics and AI drive continuous improvement in your core business processes.
- AI in the form of Machine Learning can be used to drive continuous process improvement and orchestration — over time the business logic in many enterprise systems will be 'sucked out' of the enterprise systems such as ERP and CRM, and become resident in a Data, Analytics and AI brain that will power the Intelligent Enterprise.

The Volatile, Uncertain, Complex and Ambiguous world looks to be with us for the foreseeable future. To address this the ==Intelligent Enterprise is one that can dynamically reconfigure itself in weeks and months, rather than multi-year change==. It requires a fundamental move from the traditional 'Process' centric approach to business operating model and organisational de sign. We are not driving efficiency by automating processes, rather to quote Michael Hammer, we are "obliterating processes". Using our Intelligent Enterprise model enables the opportunity of 50-80% cost savings, whilst driving 50-100% performance improvement in some functions and capabilities, not the traditional 20% savings that efficiency initiatives typically offer.

Figure 5: Is your business fit for 2000 or 2030?

2030 Intelligent Enterprise model - Predictive by Design

The driving success is that data is both an input and an output for the processes and operating model of the business. <mark>You can't dynamically reconfigure your business unless you have the capability to change processes and ways of working in a truly agile way taking weeks, not months or years.</mark>

The leading businesses, look at Input Metrics as well as Output Metrics, after all data is the fuel of the business and therefore drives the processes that operate the business. Input Metrics could include Page Views, Stock Availability, Price, Discounts, Convenience. The key for Amazon was that Input Metrics driven by working backwards from the Customer Experience were (and are) used to help Amazon drive its business forwards.

1. Better Customer Experience leads to more traffic
2. More traffic attracts more sellers seeking those buyers
3. More sellers lead to wider selection
4. Wider selection enhances customer experience, completing the circle
5. The cycle drives growth, which in turn lowers cost structure
6. Lower costs lead to lower prices, improving customer experience, and the flywheel spins faster

Pulling together the flywheel and how Data and AI, we created the 'Intelligent Enterprise, Predictive by Design' model, which enables the creation of sustained performance using Resource Based theory and Dynamic Capabilities as the essence of our approach to create a 'Designed for Change' Business and Technology architecture.

Therefore, underpinning the Intelligent Enterprise are seven habits for a highly effective Data Enabled, AI Powered organisation.

Figure 6: Seven habits for a highly effective Data Enabled, AI Powered organisation

We will not describe all the seven habits here, but as an example to be an Intelligent Enterprise, requires the most formidable Servant Leadership capabilities. When talking

about Servant leadership and the people we serve, there are three key communities that need to be supported and enabled:

1. **Customers of the organisation** You must be using Data, Analytics & AI to develop products and services that make a difference to the end customer. You must similarly be using that same Data & AI, to drive the marketing, sales and service to those same customers. Your mission is to ensure that those customers are delighted!

2. **People within your business** they are your immediate customers, and typically they are the people you must serve, to ensure the end customers are delighted. The whole concept of the Intelligent Enterprise is to ensure that the data in your business serves the people in your business to help them make better decisions, which improve service to the end customer and allow the organisation to deliver better revenues, lower costs and improved ESG outcomes. This brings to life the Resource Based Theory principle of organisationally embedded. ==To make Data, Analytics and AI a source of sustained competitive performance, means upskilling the whole business== and developing amongst other things 'citizen' data scientists as well as ownership of data amongst the whole employee population.

3. **Transformation Technology and Business team(s)**, and the job of the effective Transformation Leader is to create, grow and nurture a great team and provide them with exciting work that delivers transformational products and services for the other two populations; including the machine learning/AI that your team develop which will make an ever-increasing number of decisions on behalf of the business.

In other words, we are engaging the whole organisation in the change, which is where the Kotter Accelerate Change framework comes in. Without a clear process and principles change will fail. Even with a process and principles, when we are transforming the operating model of the business without a network of change agents who continually develop and renew the change things will fail.

Conclusion

In conclusion, the Intelligent Enterprise represents a fundamental shift in how businesses operate. By leveraging data, analytics, and AI, organisations can achieve sustained competitive performance and adaptability. The journey to becoming an Intelligent Enterprise requires embracing change as a constant and investing in the necessary complementary assets.

Call to Action

Businesses must act now to harness the transformative potential of AI. The time to invest in becoming an Intelligent Enterprise is now, to ensure long-term success and competitiveness in a rapidly changing world.

References

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2. *Brynjolfsson, Erik (1993). "The productivity paradox of information technology", Communications of the ACM. **36** (12): 66–77.*
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3. *"The Second Machine Age". May 20, 2023.*
4. *"The long wait for a productivity resurgence". Financial Times. Retrieved March 8, 2024.*