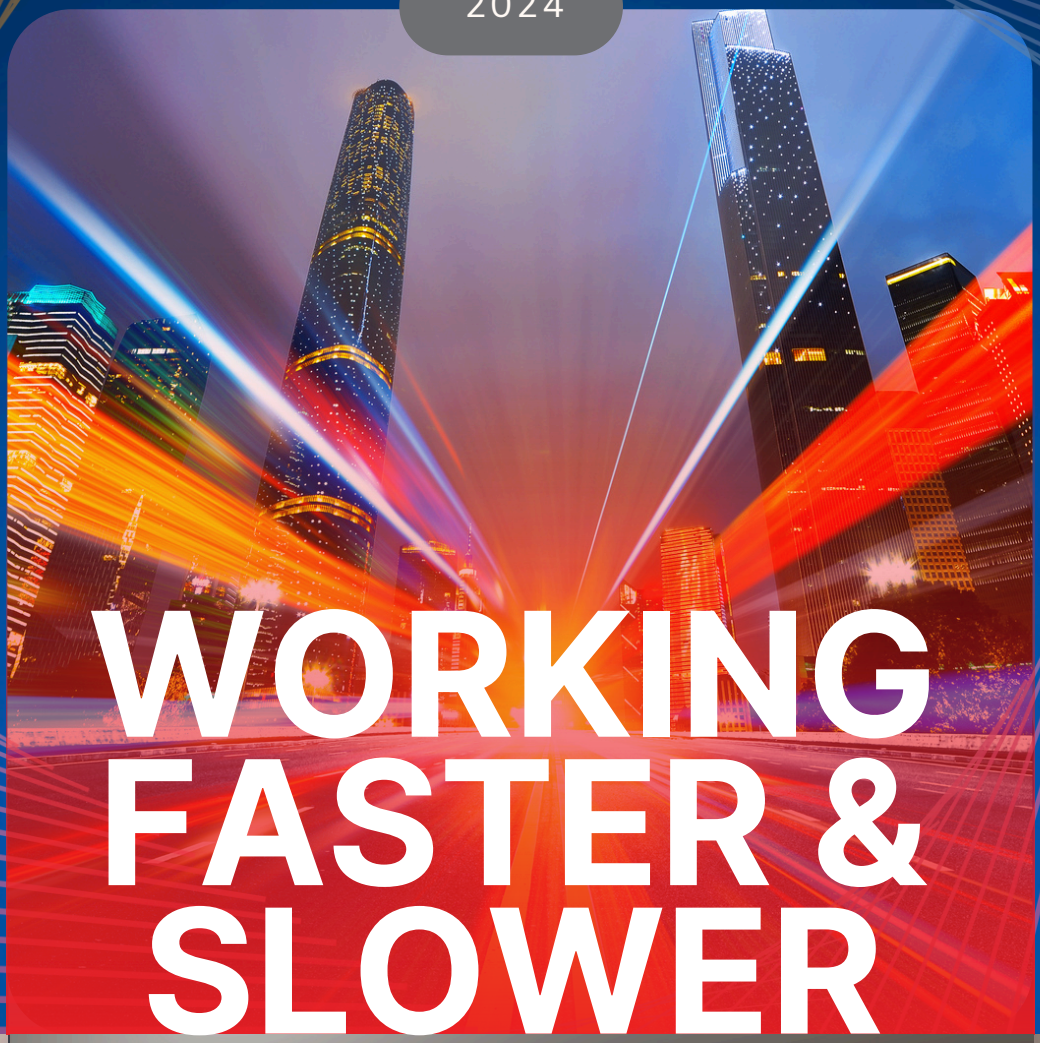
LOGICAL DESIGN SOLUTIONS

2024



WORKING FASTER & SLOWER

Machines speed up so humans can slow down

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INTRODUCTION

As we focus on automating everything possible in enterprise work, it is critical that we do not miss the revolutionary period in which we find ourselves. At the heart of any automation or AI strategy must be a bold agenda to reimagine and redefine HUMAN WORK, while redesigning outdated organizational models to progress from the Industrial Age to the Human-Digital Age. As business leaders, our legacy must not be a testament to how much we automated work, but how well we grasped the opportunity to humanize it.

- Mimi Brooks

In his book entitled **'Thinking Fast and Slow,'** Nobel Prize winner Daniel Kahneman tells us that *"Intelligence is not only the ability to reason; it is also the ability to find relevant material in memory and to deploy attention when needed."* Monitoring the appropriateness of your demeanor in a particular social situation is an example of uniquely human behavior that is beyond the capacity of even the most sophisticated machine.

Yet as we shall see, it is the potent combination of 'slow' human intelligence combined with impossibly fast-moving machine logic that is changing business as we know it.

INTRODUCTION

Former world champion Garry Kasparov recently introduced a form of ‘centaur’ chess where a human and a machine compete as a unified team. His goal is to elevate the level of play by combining slower-moving and deliberate human creativity with a machine that can perform as many calculations in a single second as an individual might achieve over the course of many lifetimes. This concept is comparable to the new pace of business - the combination of faster machines and slower human workers, both working productively at the same time, yet operating in a cognitive accord.

Today, we are seeing the early signs of humans and computers collaborating to realize entirely new value in products, services, and experiences that in combination are far greater than the sum of their parts. **This shift towards the use of frontier technology to enhance worker capabilities is not about adopting the latest tools - it’s the beginning of a permanent companionship where machines occupy a different mental plane than humans.** Over time, we’ll see our artificially intelligent partners requiring fewer specific instructions about how to achieve their assigned goals. Instead, they will make recommendations that will bear the stamp of an alternative, non-human, form of learning and logical evaluation. This is a wholly new concept of knowledge that is the unique result of the emerging partnership between humans and machines.

As AI and the Industrial Internet of Things become more pervasive, the role of human workers will adapt to various AI-enabled use cases, reflecting philosophical, ethical, social, as well as practical considerations. In each, new work design will determine when to constrain AI, when to partner with it, and when to defer to it. While each path chosen may appear to be of little consequence, collectively these decisions will be magnified relative to whether their outcomes produce net stable or unreliable results.

In the aggregate – and AI's paradoxical promise and concern – is that it transcends human perception and timescales, reorganizes the physical and social world, and brings previously unattainable results within sight. Models to predict and mitigate natural disasters, deeper knowledge of mathematics, and a fuller understanding of the universe and the reality in which it resides, start to look within our collaborative cognitive reach.

In this article, we'll explore how fast-acting computerized timescales that leverage digital assets (both original and newly synthesized data and content) along with supervised, unsupervised, and reinforcement learnings, combine with slower-acting human knowledge and learning to spawn a new operating model that alters the human relationship with work as we know it, with logical reasoning, and with reality itself.

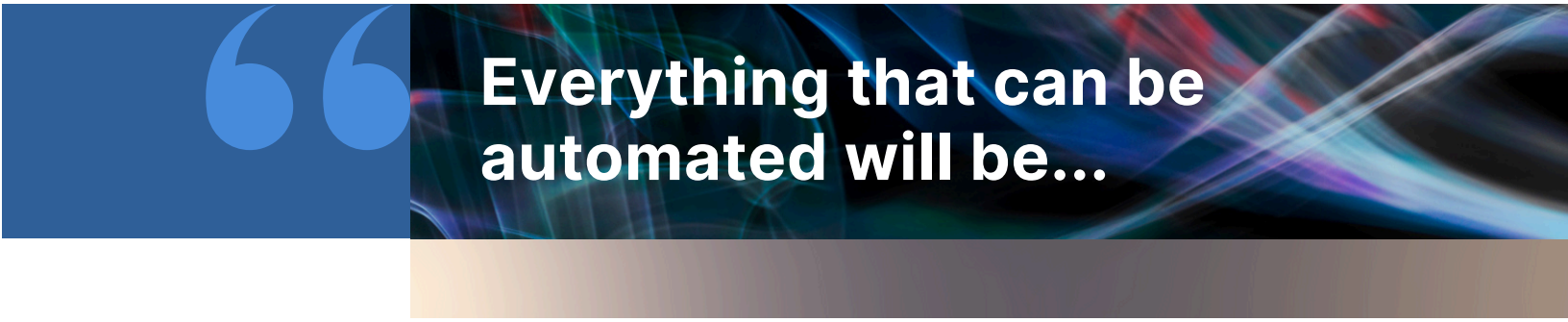
MACHINES WORKING FASTER

- Aligning to digital progression
- Developing use cases
- Expecting the unexpected
- Managing productivity expectations

PART 1

01

Machines Working Faster



> **Everything that can be automated will be...**

The acceleration of machine speeds is already having profound and far-reaching impacts in the areas of computational power, data processing, communication networks, automation, healthcare, scientific research, and consumer technology. This trend is reflected by a surge in the marketplace valuations of companies leading the AI revolution, as investors explore their potential for explosive growth. Coupled with the prospect of precision healthcare, renewable energy storage, smart grids, digital twins, solar desalination, and many other innovations, frontier technology is not only consolidating its position as a commercial and economic game-changer but also demonstrating its potential to combat some of humanity's most pressing problems.

Two decades ago, software engineering expert Watts S. Humphreys argued that every organization, regardless of industry, product, or service, was becoming a technology company. This is truer than ever today, as frontier technologies are providing fuel for new growth models based on their potential for upsurges in productivity and ground-breaking innovations. Virtually every firm mired in earlier industrial age practices and technologies risks being disrupted by competitors deploying ever more powerful digital capabilities.

For business leaders, adapting and decision-making at the speed of digital is a new challenge. Here are a few ideas to help adjust to this new pace:

- Aligning to digital's combinatorial and exponential progression
- Developing Use Cases with keen insights into organizational and people readiness
- Expecting the unexpected – digital technologies are emergent
- Managing productivity expectations, and avoiding hype and costly missteps.

SIDEBAR

Artificial Intelligence (AI) encompasses several types of learning methods, each with unique characteristics and applications. The primary types of learning in AI are:

1. Supervised Learning

- In supervised learning, the model is trained on a labeled dataset, which means that each training example is paired with an output label.
- ***Application:*** *Classification (e.g., spam detection), Regression (e.g., predicting house prices), Object Recognition.*

2. Unsupervised Learning

- The model is trained on data without labels. The goal is to find hidden patterns or intrinsic structures in the input data.
- ***Application:*** *Clustering (e.g., customer segmentation), Dimensionality Reduction (e.g., Principal Component Analysis), Anomaly Detection.*

3. Semi-Supervised Learning

- This method uses a combination of a small amount of labeled data and a large amount of unlabeled data. It bridges the gap between supervised and unsupervised learning.
- ***Application:*** *When labeling data is expensive or time-consuming, and unlabeled data is abundant*

02

Aligning to digital's combinatorial and exponential progression

Frontier tech's movement towards new value creation is largely driven by linear-defying speed of progression, compounded by the convergence of technologies (such as drones interacting with IoT) and the network effect of learning at scale, that in combination enable innovations to interact even faster with the business world and accelerate the ongoing 4th Industrial Revolution.

The creation of synthetic data is significantly accelerating digital advancements, development, and deployment. Here, generative AI models train on real work data samples first, and once the algorithms learn the patterns, correlations, and statistical properties of the sample data, the generator can create statistically identical, synthetic data. This solves issues of data scarcity, quality, privacy, and testing. It also enables more robust, scalable, and innovative solutions. This acceleration has the potential to impact various sectors, from healthcare and finance to autonomous systems and beyond, driving developments in AI technology and its applications.

The "time travel" or chronological compression attribute of the digital revolution has also produced truly new phenomena (not just simply more powerful or efficient versions of things past), that were previously beyond our human conception or perception.

Knowing these important attributes of digital, leaders can be both strategic and forward-looking by envisioning and planning for multiple futures using flexible approaches based on optionality. Failing fast, learning quickly on multiple timescales, and maintaining momentum are all "working at pace" capabilities and strategies where leaders embrace uncertainty and find opportunities to profit amid the turbulence of today's business environment.

The primary types of learning in AI (continued):

4. Reinforcement Learning

- In reinforcement learning, an agent learns to make decisions by performing actions in an environment to maximize some notion of cumulative reward.
- ***Application:*** *Game playing (e.g., AlphaGo), Robotics, Autonomous Vehicles.*

5. Self-Supervised Learning

- A type of unsupervised learning where the data provides the supervision. The model predicts part of the input from other parts of the input.
- ***Application:*** *Natural Language Processing (e.g., BERT, GPT), Computer Vision (e.g., image inpainting).*

03

Developing Use Cases with keen insights into organizational and people readiness

The primary types of learning in AI (continued):

6. Transfer Learning

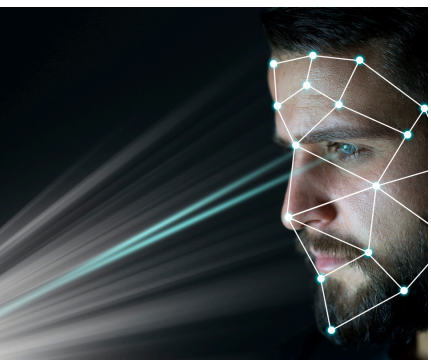
- Transfer learning involves taking a pre-trained model on one task and adapting it to perform another related task.

- ***Application:*** *Pre-trained models for image recognition (e.g., using a model trained on ImageNet for a different image classification task), NLP (e.g., using a pre-trained language model for sentiment analysis).*

7. Multi-Task Learning

- A model is trained to perform multiple tasks simultaneously, sharing representations among related tasks.

- ***Application:*** *Simultaneous translation and transcription, multi-object detection in images.*



For business participants and their partnerships with internal IT, it may be helpful to distinguish between the foundational capabilities needed to support digital at scale - typically within the realm of IT - from the prioritization of business use cases for its application. Use cases provide the critical context needed to move from a discussion of data, content, process, and transactions to envisioning the future operating model "in action", with new human and machine knowledge paradigms and organizational capabilities. Use cases are particularly important for augmented human-machine work as they define new work design, including expanding relationships, exchanges and flows, dependencies, and boundaries. These also provide the basis for considering organizational readiness and impact on people-process-policies, even culture, and risk. It's important not to miss the subtlety here – augmented work design is an opportunity for reimagining work, not just automating it. This requires transformational thinking by business leaders, who need to build for exponential growth and anticipate the impact of change on people while remaining focused on organizational purpose. These are the critical business decisions required to maximize the value of digital in new ways of working, and an important foundation of the business-IT relationship.

Asking the right questions here requires a minimal viable appreciation of digital's capabilities and its potential impact:

- Which tasks fit where on the spectrum of fully automated vs human-led (and AI-enhanced) processes, workflow, and decisioning?
- How can the organization ensure seamless, end-to-end human-AI collaboration?
- What will humans need to know about machine logic to collaborate?
- Are there ethical issues that require consideration? Issues that challenge our values, commitments, and/or purpose as an organization?
- What are the implications of various models on workforce planning and development?

03

Developing Use Cases with keen insights into organizational and people readiness (Continued)

By addressing questions such as these, business leaders bring the critical context, insights, and prioritizations for integrating digital into the organization and creating the “glue” between a “shiny objects” view of technology, and the clarity of the to-be business roadmap and operating model. Additionally, businesses must own and advocate for the priority of organizational and people readiness including policy, communications and change, and governance.

The primary types of learning in AI (continued):

6. Transfer Learning

- Transfer learning involves taking a pre-trained model on one task and adapting it to perform another related task.

- ***Application:*** *Pre-trained models for image recognition (e.g., using a model trained on ImageNet for a different image classification task), NLP (e.g., using a pre-trained language model for sentiment analysis).*

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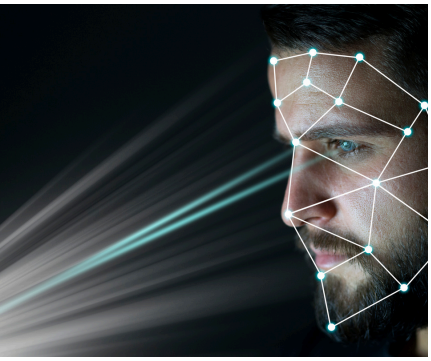


03

Expect the unexpected – digital technologies are emergent

The primary types of learning in AI (continued):

8. **Few-Shot Learning**
- The model is trained to perform tasks with very few examples, often leveraging prior knowledge from other tasks.

- ***Application:*** *Image classification with limited data, language translation for low-resource languages.*

Source: Adapted from ChatGPT v 4

Digital's dynamism and capacity for unexpected actions distinguish it from prior technologies in several significant ways. Traditional deployments typically follow predefined rules and procedures, whereas digital/AI systems, especially those employing machine learning and deep learning, exhibit more complex and adaptive behaviors, such as the ability to improve their performance over time without explicit reprogramming, or making instantaneous decisions based on patterns and insights derived from data.

Unlike traditional technologies, AI can also exhibit unexpected behaviors, especially in complex systems or when dealing with incomplete or evolving datasets, or even develop new strategies or solutions that were not explicitly programmed. AI's capacity for autonomy (e.g., operating self-driving cars) and making unilateral decisions based on data analysis, pattern recognition, and probabilistic reasoning without explicit human intervention, raises the opportunity for ground-breaking discovery, even while posing questions regarding control, accountability, and bias.

Managing productivity expectations, and avoiding hype and costly missteps

Faster, less people-intensive technologies set high bars of expectation for significant work productivity gains, often with headcount reductions. Success in these transformational strategies, though, requires governance and oversight in risk management, organizational design, methodology, and program management - more so than in product/tech selection.
Here are some typical shortcomings:

1. Hype and Marketing, including exaggerated claims (by vendors) or misinterpreting/not understanding technology claims (by internal staff) about the immediate benefits and capabilities of new technologies, leading to inflated expectations.

2. Underestimating the complexity, effort, training and/or adaptation needed for seamless integration and interoperability.

3. Over-engineering business complexity by not distinguishing between necessary and needed intricacy vs seizing the opportunity to simplify, reduce, or eliminate organizational clutter.

4. Undervaluing the significance of current state technical debt relative to future state innovation.

5. Launch of new technology at scale or globally, with **insufficient pilot/testing,** and/or pilots don't accurately reflect the complexities of real-world use cases.

04

Managing productivity expectations, and avoiding hype and costly missteps (continued)

Typical shortcomings (continued):

6. Organizational readiness is ignored or underestimated, overlooking the "system" holistically and missing supporting infrastructure, related systems rationalization, and/or not redesigning policy and processes sufficiently to realize desired results.

7. Underestimating costs/challenges and **failing to account for total cost of ownership** including migration, integration, governance, and sustainability.

8. Unrealistic timelines that are either missed or, more critically, met but with post-launch fundamental flaws, serious experience problems, and/or overall instability.

9. Underestimating data/content (and related processes) evolution and their migration challenges.

10. Overestimating early productivity gains, resulting in premature staff reductions and/or overwhelming existing staff with more work than anticipated.

These are fundamental issues, and as organizations accelerate this relationship journey with frontier technologies, the evolution of work will necessarily take shape over time. It's best to think we're in the early phases of a relationship with cognitive machines that is both unpredictable and fraught with hidden challenges while balancing a desire to envision the future while delivering on the core business today.

In Summary

Everything that can be automated will be...

In summary, the increasing speed and efficiency of machines are multifaceted, with implications across several domains. Already, we are witnessing escalating productivity gains coupled with operating cost reductions in industries such as manufacturing, logistics, and services. Vast amounts of data are being analyzed at hitherto inconceivable velocity, aiding in scientific research and discovery. Complex problems that were previously considered intractable, such as detailed climate modeling, genomic sequencing, and advanced materials science, are now well within the domain of frontier technologies.

That said, business leaders have the parallel challenge of becoming digital and AI savvy – moving at the pace of digital transformation – while also building a new, connected, inspired, learning, and adapting organization ready for the future of work.

1750-1870 **First Industrial Revolution:** Steam and mechanical production

1871-1945 **Second Industrial Revolution:** Mass production, assembly lines, electricity

1945-2007 **Third Industrial Revolution:** PCs, Internet, IT systems, Computing

2008 - Present **Fourth Industrial Revolution:** Cybertechnology connecting our biological, physical, and environmental systems

The Fourth Industrial Revolution defines our moment by the new ways people create value

Frontier Technologies of the 4IR are individually exponentially-accelerating technologies. They are also now combinatorial, meaning they become convergent exponentials, with the capacity to totally disrupt products, services and markets along with the structures that support them

- Artificial Intelligence & Machine Learning
- Internet of Things (IoT)
- Quantum Computing
- Edge Computing
- Robotics & Automation
- Material Science & Nanotechnology
- Advanced Biotechnology
- Additive Manufacturing & 3D Printing
- Augmented reality (AR) & Virtual reality (VR)
- Blockchain
- Autonomous Vehicles

HUMANS WORKING SLOWER

- Cultivating a learning mindset
- Creating connected organizations
- Thinking relational intelligence
- Living with abundance

PART 2

Humans Working Slower

Whether we consider AI a tool, a collaborator, or a displacer, it will alter our experience as reasoning humans and permanently change our relationship with reality. The evolution of frontier systems performing tasks once considered exclusive to humans is prompting a reevaluation of our cognitive capabilities, self-worth, and the purpose of our working lives. These paradigm-shifting forces are leading to a reinvention of work with more human-centric processes across the entire value chain, as even the question of what human work should look like is under scrutiny today, forcing organizations to explore new operating models with redesigned business practices and processes.

As machines speed up, humans slow down to reflect, reason, clarify intent, assess risk, and regulate. Human work becomes more intentional, more relational, and more thoughtful by design. The demand for social and emotional skills and leadership in the workplace rises as a new form of human capital. As machines increase production and propose potentially viable alternatives, human creativity will contextualize, probe, evaluate, and drive innovation in ways algorithms cannot, highlighting the unique value of human skills in complementing technological innovations. The powerful combination of empathy and emotional intelligence sets humans apart from machines in the workplace. While technology can augment and enhance worker capabilities, it cannot replicate the nuanced understanding and human learnings that are an inherent part of every human interaction - and will shape the human role in AI.

SIDEBAR

Human knowledge methods in an AI-capable organization can be broadly categorized into various domains:

1. Domain Expertise

- Human expertise in specific fields provides valuable insights and annotated data to train AI models.
- ***Application:*** *Medical diagnoses, financial analysis, engineering simulations.*

2. Annotated Data Creation

- Manual labeling of datasets by humans, which is essential for supervised learning.
- ***Application:*** *Image labeling for object recognition, text annotation for sentiment analysis.*

3. Knowledge Engineering

- The process of creating rules and ontologies that AI systems can use to make decisions.
- ***Application:*** *Expert systems, knowledge graphs.*

01

For business leaders, humanizing the future of work and anticipating its challenges, pace, and new value proposition requires:

- **Cultivating a Learning Mindset** as a reliable organizational capability
- Creating organizations **optimized for Connectedness**
- **Thinking of Relational Intelligence** as the applied idea of organizational EQ
- **Living with Abundance**

Cultivating a Learning Mindset as a reliable organizational capability

Foundational to digital transformation is the idea that new organizations will learn on multiple timescales as a reliable capability, just as early digital disruptors (now giants) have demonstrated. As we discussed earlier, machine learning will be exponential, combinatorial, and emergent, while human learning will be collaborative, experimental, and agile. Accelerating performance in new value creation will require organizations to do both well – automating everything that can and should be automated while recognizing the differentiating, enduring value of everything that cannot or should not be automated, aligned to our purpose and values.

To elaborate a bit more on the human learning ideas relative to pace and performance:

- **Collaborative** as in the behavior of connected people, operating in broad, flat, and open business ecosystems, sharing and vetting new ideas, challenging the status quo, and leveraging cultural diversity in solutions innovation.

- **Experimental** as in learning faster than one's competitors by taking risks, providing space for failing fast and learning from mistakes, and being creative and entrepreneurial.

- **Agile** as a way of working where uncertainty means the second step isn't known until the first step is taken. In this action, teams are tuned to spot opportunities and threats and to adapt and pivot at a pace that affords continual (and largely forward) momentum.

Human knowledge methods (continued):

4. **Human-in-the-Loop (HITL)**
   - Combining human intelligence and machine learning to iteratively improve models.
   - ***Application:*** *Active learning, interactive AI systems, and iterative training.*

5. **Data Augmentation Techniques**
   - Using human ingenuity to develop techniques that increase the diversity of data available for training without the need for new data collection.
   - ***Application:*** *Synthetic data generation, noise injection in images, paraphrasing text.*

6. **Crowdsourcing**
   - Leveraging the collective intelligence of large groups of people to perform tasks that machines find difficult.
   - ***Application:*** *Amazon Mechanical Turk for data labeling, reCAPTCHA for text digitization.*

02

Creating organizations optimized for Connectedness

Before we adopted the term “business ecosystems” at LDS, we referred to the emerging and different structures of modern organizations as new business ecologies. Ecosystems or ecologies, both describe the flatter, porous walled, interdependent, and peer-to-peer nature of the new organizational system in the broad context of stakeholder capitalism. Here, business constituents represent a wide group of internal and external stakeholders -- customers, employees, shareholders, citizens, communities, society at large, co-creators, influencers, and policymakers. No surprise, then, connectedness is the way these ecosystems and ecologies move information, workflow, and ideas, and the interactions and exchanges therein are based on aligned purpose, shared value, and the byproducts of their exchanges and how they benefit all partners (such as the byproduct of shared learnings, for example).

It is apparent that these structures are not hierarchies - knowledge and work flow horizontally; leadership is enabling and empowering behind the team; and people are the epicenter of intelligent operating models, not cogs in a wheel of repetitive work. Cross-functional teams are the new “unit” of work, and these team structures are connected to each other and, separately, to constituents and other teams outside of the organization, in a “constellation” of relationships. The nature of these relationships in flatter, more empowered work structures are democratic, trusted, “give-and-get” exchanges. If we can architect our organizations to better support these interactions, we will go a long way in creating a systemic structure that truly represents our new ways of working and collaborating.

Human knowledge methods (continued):

7. Transfer of Tacit Knowledge

- Transferring the unspoken, intuitive, and experience-based knowledge that experts have to AI systems.
- ***Application:*** *Crafting features based on expert intuition, designing heuristics for problem-solving.*

8. Scenario Planning and Simulation

- Using human insights to create realistic scenarios and simulations for training reinforcement learning agents.
- ***Application:*** *Autonomous driving simulations, strategic game-playing.*

9. Ethical and Bias Mitigation Oversight

- Human intervention to ensure that AI systems are fair, ethical, and unbiased.
- ***Application:*** *Bias detection in hiring algorithms, ensuring fairness in predictive policing.*

03

Thinking of Relational Intelligence as the applied idea of organizational EQ

Raising the emotional intelligence (EQ) of business leaders and managers to accelerate organizational performance is a critical transformation underway in connected organizations. Here, the goal is to develop the leader's awareness and capability to remove or reframe patterns that impede creativity, fluidity, or hamper diverse contributions to solutioning and innovating. Instead of EQ, though, "relational intelligence" might be the better description of the emotional quotient needed in our new organizational systems. Relationships are themselves systems of interdependent parts. Given old work paradigms and norms, it is not surprising that people can be stuck in work relationship patterns that are insufficient or counter-intuitive to new relational dynamics.

Essential relationship skills such as self-awareness, empathy, active listening, conflict resolution, ability to build trust, persistent curiosity, a "one size doesn't fit all" philosophy of people management, and a willingness to reframe power dynamics are all components of the increasingly important "alternative resume," human-only skills needed to build exceptional teams and experiences. Leadership coaching can raise awareness and provide strategies for building these skills and reducing interference in organizational performance. By advancing relationship flexibility in leaders, creating awareness of cognitive distortions and confirmation bias, and offering alternatives to fundamental attribution errors where situational vs characterological attribution can be quite damaging to productive relationships, we see the "connecting leader" model emerge just in time to lead our transforming organizations. Right behind it, within sight, is the unfolding opportunity to humanize work with a premium value assessed on human time.

Human knowledge methods (continued):

10. Algorithm Design and Tuning

- The expertise of human researchers in developing, selecting, and fine-tuning algorithms.
- ***Application:*** *Designing neural network architectures, hyperparameter tuning.*

11. Interpretability and Explainability

- Human methods for making AI decisions understandable and transparent.
- ***Application:*** *Developing explainable AI models, creating visualization tools for model outputs.*

12. Collaboration Tools and Platforms

- Platforms that enable collaboration between humans and AI systems for improved learning and decision-making.
- ***Application:*** *Collaborative filtering in recommendation systems, interactive data analysis platforms.*

Source: Adapted from ChatGPT v 4

> **Technological innovation is a resource-liberating mechanism. It can make the once scarce the now abundant.**
>
> — PETER H. DIAMANDIS, THE FUTURE IS BETTER THAN YOU THINK

04

Living with Abundance

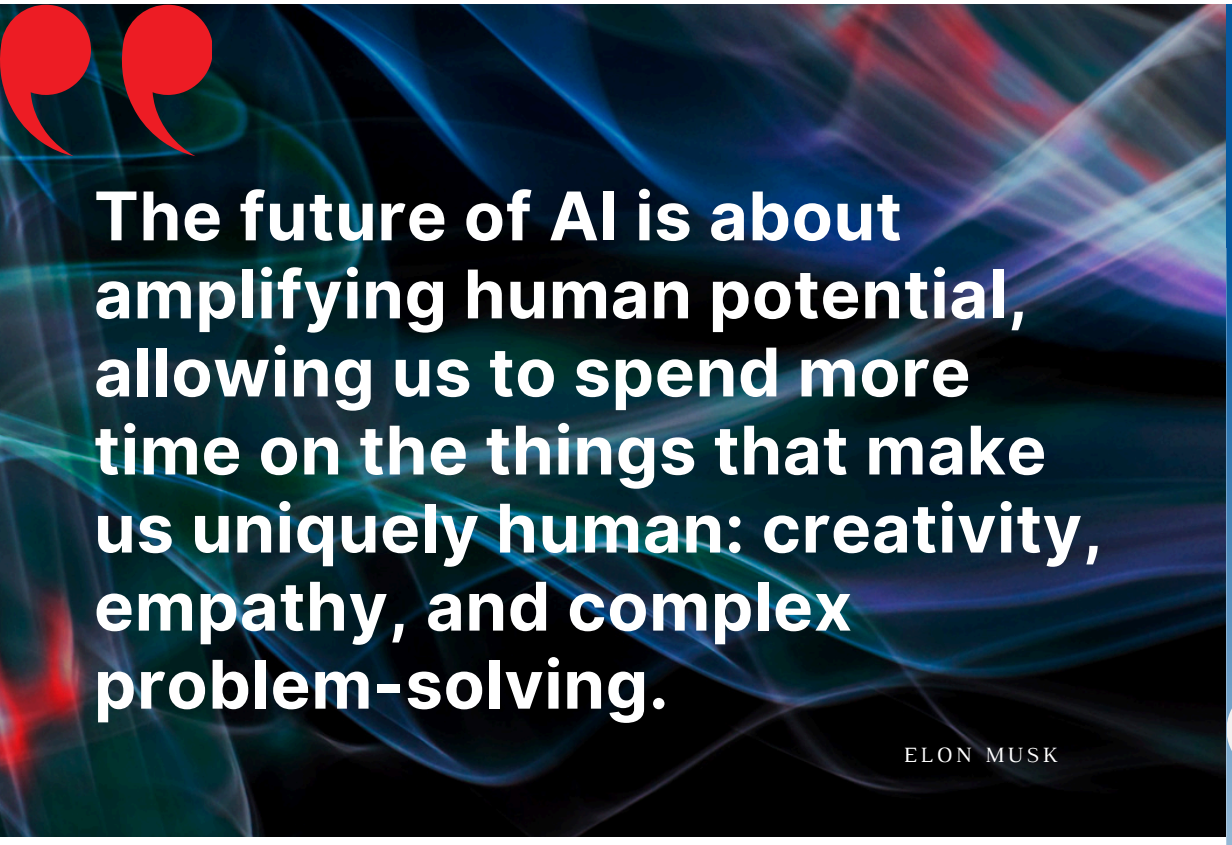
Almost a hundred years ago, at the onset of the Great Depression, John Maynard Keynes delivered a talk on “Economic Possibilities for our Grandchildren,” where he predicted what the year 2030 could look like if science and technology - along with compound interest -delivered sufficient material abundance such that “the economic problem” would not prove to be what he referred to as “the permanent problem of the human race.” Deprived of its traditional purpose, he suggested, humans would face the “real…permanent problem – how to use…freedom from pressing economic cares….to live wisely and agreeably and well.”

While the future remains uncertain, it is likely that converging, exponential technologies will dramatically change the world around us and redefine human work as we know it within the next decade. As Peter Diamandis’ book title suggests, the age of ‘Abundance,’ where resources are more accessible and scarcity is mitigated through innovation, is now close enough that an optimistic and proactive mindset should enable organizations to anticipate the possibilities and take action to create and shape it, rather than being apprehensive about it.

As technology meets most of our routine and analytic work needs, individuals will have the freedom to pursue creative and innovative endeavors and to engage in artistic, scientific, and technological pursuits that lead to further breakthroughs and advancements. Lifelong learning and education will become more accessible and democratized, enabling people to learn new skills, explore new fields, and expand their base of knowledge throughout their lives.

We are already seeing the early signs of technology evolving humanity, and humans navigating abundance. We should anticipate a faster-than-expected progression and begin now to connect the dots toward a promising future of human work that improves the likelihood of good outcomes and avoids regrettable setbacks. As Keynes was quoted as saying a century ago, “It is better to be roughly right than precisely wrong.”

Conclusion



> **The future of AI is about amplifying human potential, allowing us to spend more time on the things that make us uniquely human: creativity, empathy, and complex problem-solving.**
>
> ELON MUSK

Achieving digital's full potential depends largely on leaders' willingness to lead and learn differently, to shift from command and control to helping individuals and teams bring their best, healthy, human selves to work. This will make it possible to navigate the risks and seize a massive opportunity to reinvent work, reshape the workforce, and prepare people, responsibly. Those who advocate continuous deep learning, along with human-centric change management in the reinvention of work, will reshape the workforce and promote greater resilience, particularly among those who feel threatened by imminent change.

Organizations must strive to frame an end-to-end business strategy by understanding the capacity that new technology can free up and the consequential impact on worker role composition and skill requirements. A logical first step is to size the current human workforce and skill needs to assess the potential future talent gap, ideally based on strategically identified use cases. This exercise will provide crucial pointers as to where to redeploy freed worker capacity to more value-added tasks.

Conclusion (continued)

To maintain pace with this rapidly changing business landscape, organizations must abandon traditional hierarchical business models and instead adopt a multi-channel workforce strategy that leverages a mix of traditional and alternative workers to shape new operating models that recognize the different needs and specific attributes of different human worker types. By breaking down silos and making data accessible to all employees, leading companies are fostering transparency and building trust among their workforces. As the marketplace value of human labor to perform highly complex, customized, and unpredictable tasks rises, companies must constantly reevaluate the mix of human and machine talent at all levels against the organization's productivity, competitiveness, and positioning.

Identifying, attracting, and recruiting future AI and generative AI experts in a competitive marketplace is also critical during this transformative phase, as well as directing senior managers to explore the workforce implications of automation technologies and preparing non-technical resources to adapt to a radically changing skills environment.

We only need to recall the lesson learned from our first phase of digitalization to know that technology isn't the secret sauce – people are. With limited experienced business and IT resources, a complex, poorly integrated business-digital ecosystem, and a tendency to chase proverbial "shiny objects" without an adequate best fit for an integrated business model and people considerations, the current state often brings forward a set of entirely new hard-scape and soft-scape challenges.

Leaders who hesitate to tear the bandage off today's outdated organizational model are basically straddling two business worlds. One enables the industrial age model of repetitive work at scale and manufactured stability. The other is fit for the future based on continual innovation by augmented people doing superhuman work. New value creation in today's marketplace is made possible only when businesses can operate and elicit decisions using multiple human-machine timescales.

Conclusion (continued)

To compete in this fourth industrial age, companies must become places of inspiration and collaboration. Emotional intelligence has emerged as the differentiating factor between human beings and frontier technology. Leaders must harness the full potential of AI while ensuring a positive and human-centric future of leadership through the promotion of self-awareness, empathy, and the maintenance of open communication.

While decision-makers need to be acutely aware of and prepared for how these types of frontier technologies are reshaping the workplace, they also need to optimize the cognitive bandwidth of their people. Ultimately, a focus on humans, not technology, will give business leaders the ability to acquire the right talent, develop the correct skills, and keep employees engaged and feeling accountable for their work and how they impact the success of the organization.

Even from the early days of digital transformation, hard experience shows it was people who were the foundation of virtually every successful instantiation of enterprise technology. Today, we are seeing leadership adoption of a digital intelligence mindset that places human workers front and center and consistently pays rich dividends. This mindset is creating the augmented worker that is mandatory for newly architected organizations built less for their ability to simply withstand adversity and more for their appetite to break entirely new ground. Companies will prioritize the vision not of a digital superpower, but of a super-resilient organization able to stay in the game - the infinite game - through both investment in new technology and people-powered capacity to innovate. In so doing, human talent will be kept mentally, emotionally, and physically adroit. This is table stakes to future success.

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Logical Design Solutions (LDS) is a digital strategy and design consultancy for global enterprises.

We create experiences that transform business and help people work successfully in the new digital organization. Clients come to LDS because of our reputation for intellectual rigor, our foundation in visionary experience strategy, and our commitment to enabling digital transformation inside the enterprise.

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