



The Coming Convergence: Adopting A People-first Approach As We Build The World Of Tomorrow

Introduction

The future of global systems and human interactions is being reshaped by a convergence of accelerating advancements in technology, energy production, and connectivity. This year has seen an explosion of discussion in the business community about the imminent impacts of technologies like IoT, Digital Twins, Web3, and especially AI, on automation, efficiency, sustainability, innovation, quality, transparency, and risk management etc.



Focusing on the individual, practical, and immediate application of these technologies is critical for business leaders looking to maintain or advance their competitive advantages. However, as technological innovation continues to accelerate, leaders should also consider the increasing *possibility* of a not-to-distant future where the synergistic, compounding effects of these advancements could revolutionize the entirety of global systems and human interactions.

As business leaders rush to complete the puzzle that is the future world, they should be careful to continually glance at the picture on the box, and not focus solely on just their individual piece. If not, the convergence of an unprecedented array of simultaneous and game-changing technological advancements, which will certainly bring about dramatic changes to entire global systems, may also change who or what is running them. The following is an optimistic yet realistic overview of what may be coming, along with some thoughts on how leaders can future-proof their organizations while, in the process, help to secure humanity's enduring role as the collective authors of our own destinies:



The Coming Convergence

A lot of us have heard the story. Energy and communications infrastructure advancements are and will continue to power and enable increased connectivity of the physical world. This unprecedented connectivity will make vast quantities of data available to be processed and analyzed by ever-more-powerful computers and acted upon by increasingly intelligent and autonomous machines. The outcome will be a globally connected set of autonomously optimized systems that promise levels of efficiency, innovation, security, and resilience once reserved for science fiction.

Widely available sources of sustainable, reliable, and affordable energy will continue to be the lifeblood of our digital future. Advances in energy production, distribution, and storage seem to be

on pace to ensure that the increased energy requirements of an ever-expanding global technology footprint are met with efficiency and sustainability.

Continual improvements in solar, battery, and other technologies are expanding the number of things that can be powered on and connected to the internet. 5G has arrived, and 6G is on the way. Increasingly, these technologies will be made available globally by interconnected networks of satellites delivering fast and reliable connectivity and bandwidth to every corner of the world.

5G and 6G connected IoT devices, and perhaps soon IoNT (Internet of Nano Things), are poised to provide unprecedented volumes of data at levels of granularity that will allow us to digitally monitor and describe virtually limitless aspects of human activity and interest, from the cells in our bodies to global supply chains, transportation systems, healthcare ecosystems, economies, and financial markets. This coming level of data availability and granularity means the possibility of enabling a comprehensive, interconnected, real-time data set of almost *anything in the entire physical world*.

Processing the oncoming deluge of data generated by the mass proliferation of IoT and IoNT devices will require computational capabilities far beyond what classical computing offers. Enter Quantum Computing. Quantum computing promises the ability to process and analyze these vast datasets in real time, unlocking the potential to simulate and understand complex systems in ways that are currently infeasible. Although quantum computing still faces some engineering challenges, many experts predict that practical applications may be close on the horizon.

Data from ubiquitous IoT inputs and other sources is already being processed and analyzed by ever more capable GenAI tools. Sooner rather than later, AGI, supported by the massive computational power of Quantum Computers and the simulation capability of Digital Twins, will enable the real-time autonomous optimization of the most vital and complex systems in a virtual environment.

AGI will then leverage these resources to make decisions, predict outcomes, and optimize systems in the real world with speed, accuracy, and intelligence unmatched by human capabilities. This includes real-time, autonomous, and infinitely granular adjustments in global economic, supply chain, healthcare, transportation, and energy production & distribution systems, to name some of the more obvious ones.

Many real-world decisions necessitate a transaction of some form. The decentralization principles of Web3 will provide the architecture for secure, transparent, and efficient transactions and interactions. This supports a shift towards a more decentralized and resilient global economy underpinned by blockchain technologies and smart contracts, further enabling automated actions by autonomous non-human entities.

All of these advancements ultimately stand to transform the quality of our lives in unprecedented ways but also represent some real challenges that need to be considered as we work collectively to build out, implement, and integrate these systems at scale.



Building a Future With Us In It

With the coming technological convergence, the landscape of business and society at large stands on the cusp of unparalleled transformation. This transformation promises immense benefits,

including enhanced efficiency, sustainability, and the ability to solve previously intractable problems. However, it also introduces risks and raises essential questions, including questions as fundamental as the future role of humans in an increasingly automated world. As we navigate this evolution, it's critical to view technology as an enabler of human potential, not a replacement, while meticulously planning the process and technology frameworks needed to support this transition. If humans are to remain at the helm of our world, here's how these considerations play out across different leadership roles:

- **CEOs: Balancing Innovation with Human Centricity**

CEOs must lead with a vision of technology as a catalyst for empowering people. The balance between embracing rapid technological adoption and ensuring that these advancements augment human work activities rather than replace them is delicate. CEOs should champion strategies that leverage technology to create new opportunities for their workforce, encouraging a culture where technology and human ingenuity coexist symbiotically. The key challenge is navigating the competing objectives of adopting new technologies to stay ahead while managing the inherent risks of rapid change.

- **CIOs: Architecting Flexible, Human-Centric Systems**

CIOs have the task of designing IT infrastructures that are robust yet flexible enough to integrate new technologies as they emerge. The focus should be on systems that enhance human decision-making and creativity, with AI and automation tools designed to augment rather than supplant human roles. CIOs need to ensure that the technology framework supports continuous learning and adaptation, enabling the workforce to transition smoothly into new ways of working.

- **CFOs: Investing in People and Technology Equally**

CFOs face the financial balancing act of allocating resources between cutting-edge technology investments and workforce development. Investing in the upskilling and reskilling of the workforce is as crucial as funding technological advancements. CFOs should advocate for financial strategies that support the long-term development of human capital, recognizing that the most significant long-term returns come from empowering people to leverage new technologies effectively.

- **COOs: Streamlining Operations with Human Insight**

The role of the COO in this transition is to ensure that operational processes are redesigned to benefit from technological efficiencies while preserving the value of human insight, intuition, and experience when delegating decision-making authority. This involves creating workflows where AI and automated systems handle routine tasks, freeing humans to focus on complex, creative, and strategic activities. COOs must oversee the integration of technology into operations in a way that complements and enhances human efficiency and effectiveness.

- **CHROs: Shaping the Workforce of the Future**

CHROs are at the forefront of transforming the workforce to thrive in this new era. This transformation includes identifying the skills and abilities that will be most valuable in the

future, such as creativity, critical thinking, empathy, and the ability to work seamlessly with AI and digital tools. CHROs must develop and implement comprehensive workforce planning and development programs that focus on lifelong learning, adaptability, and the ethical use of technology to secure the unique and irreplaceable value of human characteristics in a world increasingly run by machines.

Conclusion

The workforce of the future will need to excel in areas that AI and machines cannot easily replicate, such as emotional intelligence and interpersonal communication. Skills in ethical decision-making, digital literacy, and the ability to collaborate effectively with automated systems will also become increasingly important. Organizations should prioritize these skills in their recruitment, training, and development strategies.

Establishing robust process and technology frameworks is essential for supporting the integration of new technologies and the development of the workforce. This includes creating agile, adaptable business processes and investing in technology platforms that can evolve as needs change.

Leaders must navigate the tension between the cautious, risk-averse approach to technology adoption and the imperative to innovate swiftly to avoid being left behind. This requires a strategic approach to risk management, where the potential benefits of new technologies are balanced against the need for due diligence and ethical considerations.

As we stand at the brink of a technological renaissance, the emphasis must be on harnessing technology as an enabler of human potential, not as a substitute. By focusing on the development of human-centric technology frameworks and investing in the skills and abilities that will define the future workforce, leaders can ensure their organizations survive and thrive in the new digital landscape.

Learn more about how DLM Professional can help your organization navigate the monumental convergence of technologies that's unfolding:

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Written by: Justin Barker
Managing Director Consulting Services and Strategic Growth
DLM Professional Recruiting and Consulting Services
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