CIONET
What's next.

THE RISE OF THE DIGITAL ARTISAN

A RADICAL MANIFESTO FOR DIGITAL LEADERS

Roger Camrass
CIONET UK

Discussion Documents

May 23

> *"From reinvention to atomisation and onto the nuclear option: Why our digital future echoes the connected communities of the past – and how you can help your businesses get there"*
>
> *Roger Camrass[1]*

This three-part series of papers outlines the disruptive forces that take us from the industrial structures of the twentieth century to a post-industrial age of decentralised autonomous organisations (DAOs) and the rise of the digital artisan. The driving forces behind this radical transformation are successive waves of technologies. The first wave – known as Web 2.0 – emerged in the first two decades of the third millennium and was pushed by cloud, mobility, social media and data analytics. This first wave helped generate a new era of hyper-connectivity. A second wave is now breaking, with a more powerful set of disruptors, such as blockchain, cryptocurrencies, non-fungible tokens (NFTs), drones and sensors, virtual reality (VR), and artificial intelligence (AI). These disruptors are helping to redefine the World Wide Web (now referred to as Web 3.0) and take us beyond hyper-connectivity towards hyper-personalisation.

Who have been the winners so far?

Big Tech has benefited immeasurably from early disruptive forces. Just five digital giants – Microsoft, Amazon, Apple, Alphabet and Meta (MAAAM) – dominate the global economy, holding a 25% share of equity market value. This is due primarily to their ability to capture and monetise our personal intellectual property on a grand scale. However, their predominance might be challenged by the forces of decentralised networks and autonomous organisational structures in the coming decade. In this new economic order, we see ownership and control reverting to its rightful owners – you, me and the virtual communities we inhabit.

At the epicentre of this new order with be the principal players who we call digital artisans. Aided by intelligent robots and decentralised platforms, these artisans will be able to create new digital products and experiences, trading these using NFTs and cryptocurrencies. The advent of the metaverse, fuelled by augmented and virtual reality, will further accelerate the transition from physical to virtual goods and services. However, manufactured products will continue to exist, serving our need for 'stuff'. Manufacturing entities will be highly automated and digitally connected.

What does this shift mean for digital leaders?

At CIONET, we have been investigating and documenting the qualities of today's most successful digital leaders. This analysis will be published as a *Cookbook for Digital Success* in 2022[2]. Now, more than ever before, it is imperative that digital leaders comprehend and communicate the possible impact of disruptive forces on their organisations. Here, three actions are crucial:

1. Comprehend and test the disruptive forces that will shape the coming two decades, such as the combination of technologies that constitute Web 3.0 (for example, blockchain, crypto, NFTs, AI and VR, which show how software is still eating the world).
2. Assess the implications of disruption for your organisation, such as: 'hollowing out' more front-, middle- and back-office functions through automation; identifying new sources of competition emerging from Web 3.0; and dealing with the ever-growing war for talent.
3. Learn to survive and flourish in this new environment by redefining the mission, purpose and vision of the organisation to attract the best talent and empower creators with the necessary software tools and financial incentives.

Digital leaders must adopt a parallel approach to transformation. The immediate imperative is to modernise the existing 'factory' by introducing further automation (such as software robots and AI), flexible partnerships and agile development processes. The second imperative is to create new business models based on Web 3.0 principles, as described in a recent CIONET publication[3], that could create a new generation of DAOs that leapfrog Big Tech.

Digital leaders should also explore possibilities for transformation within their own organisations, laying the foundations for new structures and skills that might evolve into virtual villages set within the corporate enclave. This transition will require a move to open-sourced software, decentralised architectures and automation tooling.

Enabling the digital artisan

Perhaps the most intriguing aspect of Web 3.0 is the prospect of the digital artisan. Like the villages of past time, digital artisans will acquire skills to contribute digital experiences within their local communities. The rise of digital artisans might require the reassertion of guilds as centres of future educational excellence, potentially replacing universities. Artisans will take on a range of competencies within the village, such as data mining, data hoarding, web plumbing and innovation funding. Automation and decentralised networks will help artisans to scale their innovations and become the next generation of equity giants. *Welcome to the Trillenium*.

Contents

Acknowledgements

The author is grateful for the contributions of his USA associates, including Brad Power at bradfordpower.tumblr.com, Joe Weinman at joeweinman.com, and Andy Singleton at maxos.studio, all of whom collaborate through the MAXOS community.

A Radical Manifesto for Digital Leaders – Part One:
Why the corporation needed to reinvent itself in pre-2000

A radical manifesto was contained in two books published at the start of the new millennium: 'The Atomic Corporation – a rational proposal for modern times' (2001)[4], and 'Atomic – reforming the industrial landscape into the new structures of tomorrow'[5](2003) .

This trilogy of three short papers examines the confluence of disruptive forces that led to: the requirement for a new theory of the firm (Part One); the radical predictions that preceded the dotcom revolution of the past two decades (Part Two); the need for a fresh vision of the future up to 2040 (Part Three).

The rise of the corporate enterprise

For the past 100 years or so, the fastest growing economies have chosen to organise themselves into corporations as the most efficient means of production. The critical innovation of the Industrial Revolution was the creation of limited liability enterprises – today's corporations. Why? Because it helped to mobilise the flow of capital, which was the scarce resource in the late nineteenth century.

It was no accident that Andrew Carnegie, who founded the Carnegie Steel Company that later became US Steel, was closely connected with Paul Mellon, the eminent banker of his age. The growth of the banking system and the ability to fund industrial-scale projects was enabled by the development of the corporate form of organisation.

But the power of this new economic species proved almost too great. The technologies that these corporations, such as at Exxon, Ford and General Electric, developed on a mass scale created so much value and required so much capital that they acquired enormous leverage. Democratic societies had to create new instruments and institutions to curb this power, including anti-trust laws and labour movements. Despite these tactics, corporations still took on capabilities that used to belong to governments.

The underlying assumption of industrial corporate structures was that the whole was greater than the sum of the parts.

The impact of disruptive technologies

American academic Clayton Christensen[6] recognised that when a technology with truly disruptive potential first emerges, it doesn't work well. The birth of the internet in the late twentieth century heralded a new era of *hyper-connectivity* that could help to transform every aspect of business and government. But with the dotcom boom and bust in 2000, the full impact of the internet was delayed for almost two decades, just as the transistor took a comparable period to displace the thermionic valve.

Christensen concluded that successful corporations are generally managed according to short-term rules that militate against investing in new and risky technologies.

The dotcom economy – comprising hyper growth start-ups and interlocking digital platforms, bound together by their shared mastery of new network technology and an equally shared set of values about knowledge, relationships and competition – created the perfect environment for the rapid proliferation of information-based, non-capital-intensive businesses, which was the early internet niche of the late 1990s. The collapse of many such businesses in 2001 did not wipe out the new way of working, only the approach to getting such companies funded to achieve scale.

The working assumption was that connectivity and collaboration would drive power from the institutions to the individual.

Yet well into the twenty-first century, large corporations continued to hold their monopoly power through access to institutional money and the inefficiencies of the labour market, which prevented individuals from seeking new jobs. Over the past 20 years, the flowering of the internet has sponsored new opportunities for talented and entrepreneurial individuals rather than corporations.

The corporation is now in trouble

The corporations born of the nineteenth and twentieth centuries are now in trouble. There is nothing to prevent their demise given that what had previously been their advantage is becoming less and less important. In fact, their accumulation of power is becoming a kind of historical aberration, like centrally planned economies. The new technologies of *hyper-connectivity* and *hyper-personalisation* are driving economic power from the traditional institutions to new organisational entities that can benefit from these disruptive forces.

To place this shift within an economic perspective, the total value of Apple surpasses the sum of the UK's FTSE 100 Index. Just five digital leaders – Meta (formerly Facebook), Alphabet (formerly Google), Apple, Amazon and Microsoft (MAAAM) – are worth more than the entire European equity market. Digital-native firms already represent a quarter of the value of the S&P 500 and should exceed 50% by the latter part of this decade.

COVID-19 has accelerated the race towards the digital economy, compressing 20 years of development into just 18 months.

The move to hybrid working – and online access to retailers, banks, educational establishments, healthcare organisations and many more critical sections of society – has brought about a revolution in how we work and live. Few, if any, heritage corporations have been able to adapt fully to this new environment. Instead, they have been left behind by digital natives that were designed at the outset to take advantage of a hyper-connected, hyper-personalised world, fuelled by today's internet.

A radical manifesto for modern times

During the period of momentous change at the start of the twenty-first century, Martin Farncombe and I combined our extensive experiences and future insights at EY to develop a radical design for the new economy. In our book Atomic, we recognised that new digital platforms based on cloud technologies would enable start-up companies to gain global scale and scope advantage in years (or even months) rather than decades, such as the hyper-growth of Amazon and Facebook. We also foresaw the ability of small 'two-pizza teams', or 'Atoms', to create companies of unprecedented value, often exceeding tens of billions of dollars. WhatsApp, consisting of just 30 staff, was acquired by Facebook for $19 billion just three years post incorporation.

Using Gill Ringland's analogy of the 'Coral Reef and the 'Deep Blue Sea'[7], we envisaged a bi-polar economy consisting of small, volatile atoms and global utilities.

To achieve this radical design, we broke the corporation down into its constituent elements, identified the forces that determine how these elements can and will be put together in a hyper-connected context, and predicted the combinations that would survive over the coming decades. We recognised the formation of a 'chemistry of the enterprise', allowing digital entrepreneurs to develop their own new compounds, to test them, and to determine the most promising.

This networked, bottom-up perspective echoes powerful currents in today's economy, such as individual data mining and mass customisation – the emerging era of hyper-personalisation. We presented a 'periodic table' of elements that can be combined to form valuable molecules that explain the power and rising dominance of digital natives. In this process, we described an economy of the people, by the people and for the people.

In summary

The radical manifesto contained within Atomic is a powerful tool that helps us understand the power of digital insurgents and the alternative forms they are taking. It provides a guide to transforming the value locked within heritage corporations into a new form, adapted to the connected economy and able to continue adapting on its own. It illustrates a challenge that will face every corporate leader in the decades to come.

Read about Atomic and the new theory of the firm in Part Two.

Radical Manifesto for modern times – Part Two:
Atomisation and the new theory of the firm

A radical manifesto was contained in two books published at the start of the new millennium: 'The Atomic Corporation – a rational proposal for modern times' (2001)[8]; and 'Atomic – reforming the industrial landscape into the new structures of tomorrow'[9](2003) .

This trilogy of three short papers examines the confluence of disruptive forces that led to: the requirement for a new theory of the firm (Part One); the radical predictions that preceded the dotcom revolution of the past two decades (Part Two); the need for a fresh vision of the future up to 2040 (Part Three).

2001 to 2020: Two decades of economic stagnation

Around the start of the new millennium, experts wrote extensively about how corporations would need to reinvent themselves to compete effectively in the digital economy. Hagel talked about *Unbundling the Corporation* in 1999[10], and Phil Evans and Tom Wurster wrote *Blown to Bits* in 2000[11]. Both seminal documents heralded the break-up of the old order, but neither presented a convincing picture of a new digital landscape. This was the space that *Atomic* hoped to fill.

So, what has transpired over the past two decades since the publication of these texts? Despite the promise of digital technologies, accelerated by Moore's Law, the West has experienced stagnation both in productivity and equity growth amongst the corporate dinosaurs that have managed to persist. Clayton Christensen describes this effect in his book *The Innovator's Dilemma*[12], where successful corporations generally run according to short-term rules that militate against investing in new and risky technologies.

The dotcom bust in 2001 combined with the global financial crash in 2008 removed much of the trust in, or appetite for, new economic models. Risk capital to fuel start-ups was hard to find when financial institutions were gasping for oxygen.

What needed to be fixed?

Even after a decade of reengineering and downsizing during the 1990s, we continue to watch the dinosaurs dancing slowly towards extinction.

This continuation is explained by the scale and rigidity of bloated corporate structures that have lost any sense of innovation or agility. Nobel prize-winning economist Ronal Coase referred to a similar situation in the 1930s. He anticipated corporate break-ups taking place when the cost of internal transactions exceeded external ones due to the increasing layers of corporate bureaucracy needed to coordinate complex operations.

The forces sponsoring a much-needed corporate reformation began to mount as new players such as Amazon and Tesla took to the stage. These forces for change included:

- The productivity and equity value of heritage corporations have flatlined for two decades. In the UK today, the FTSE 100 still hovers close to pre-2000 levels.
- An insensitivity to customer needs, which is demonstrated by the move away from personal interactions on the high street to face-less calls centres.

- A genuine lack of product innovation, with consumer companies such as Nestlé and Unilever maintaining obsolete product portfolios.
- A reliance on inflexible outsourcing arrangements that hold business customers within a commercial straitjacket, which offers little wriggle room to adjust to external changes.

The first moments of atomic fission

Something momentous occurred in 2000. The CEO of BP received a call from his peer at Shell inviting him to join an e-procurement (or business to business) marketplace based on an internet-based information exchange. The proposed business platform offered the prospect of large cost savings through the aggregation of procurement systems across 10 oil majors. These behemoths had combined spending power of $250 billion. Just 3% savings would more than justify the cost of setting up an e-procurement market. Other sectors were following a similar course.

I was a senior partner at consultant EY at the time. EY was called in by BP's group CIO to establish the merits of a joint procurement market. Our conclusion was that, if the individual processes could be aligned, then the savings would help transform the energy sector. However, we added a separate note about equity shares in our final report. The market operator, Accenture, wanted 90% of the equity of the new e-market. We suggested that the 10 oil majors should own 90%, leaving the operator with just 10%. Our argument was that the majors should monetise their combined spend and create a powerful new IPO vehicle that would enjoy high economy multiples.

Convening 12 of the world's largest companies at Coca Cola's headquarters in Atlanta in early 2001, EY proposed that a range of e-marketplaces could be established to operate all back-office corporate functions, such as finance, human resources (HR), customer relationship management (CRM) and supply chain. The vision of the proposal was to incubate a portfolio of business platforms, each of which could exceed the equity value of the collaborators – the ISVV or Internet Services Venture Vehicle[13]. Despite the excitement that this proposal generated, barriers – such as process integration and the collapse of the NASDAQ – halted the initiative in its tracks.

Unbundling of back-office functions onto external platforms created a more fundamental question: what would be left at the centre if most of the corporate limbs are removed?

A new theory of the firm

The *Atomic* thesis first advanced in 2001 by Martin Farncombe and I envisioned a new chemistry of business. It included a periodic table consisting of small, agile atoms that would generate vast new sources of wealth, complemented by global platforms that would provide scale and scope. It mirrored the image of the 'coral reef and deep blue sea' proposed by Gill Ringland in her book *Scenario Planning*[14].

The atomic particles were divided into four mains categories:

1. Smart companies that create a constant stream of innovative products and services, such as the many biotech and FinTech start-ups that we see today.
2. Customer managers that use data to analyse and predict the specific needs of customers within different lifestyle experiences, such as travel and wellbeing.

3. Web-spinners that aggregate products and services to deliver customer experiences and whose value exceeds the sum of the constituent parts.
4. Portfolio managers that own rather than operate the tiny atoms and source venture capital to enable these companies to hyper-scale at speed.

Some of today's digital leaders such as Facebook (web-spinner), Apple and Netflix (smart companies) fit into this atomic universe. Google and Facebook have created holding companies, Alphabet and Meta, that are essentially portfolio managers.

Additional molecules are arranged into two categories that we refer to as business platforms:

1. Asset platforms, such as third-party manufacturers and global logistics companies, that provide the heavy lifting for smart companies, web-spinners and customer managers.
2. Service platforms that have been at the epicentre of the digital revolution, such as Infrastructure as a Service (AWS and Azure) and Software as a Service (HR, CRM).

It is the service platforms that are now driving the most profound changes within the global economy. In addition to transforming heritage organisations, they have become the birthplace for software-driven enterprises in virtually every sector and the experiences these businesses provide.

How accurate were our atomic predictions?

The underlying thesis in *Atomic* was that *hyper-connectivity* would be the primary catalyst for industrial atomisation. With two-thirds of the world's population (4.6 billion) now connected to the internet, this predication has been borne out over time. The launch of the iPhone by Apple in 2007 added an additional spurt to this trend.

The development of cloud platforms during the past decade has added credibility to our 'service platform' category. These cloud platforms initially provided basic connectivity and compute power, such as Amazon's AWS and Microsoft's Azure. Today, many platforms offer a full range of business services, including Microsoft 365 and Office, Salesforce and CRM, and Workday and HR. These full-range services are helping to unbundle legacy back-office systems within heritage organisations. In this arrangement, cloud is a global utility that favours large-scale capital investment and stable operating processes.

The rise of venture capital in the wake of the 2008 financial crash has stimulated the proliferation of smart, innovative companies in virtually every sector. Look, for example, at the success of Tesla in automotive. Biotech partnerships, such as Oxford University's work with AstraZeneca on the coronavirus vaccine, have demonstrated the power and influence of small, knowledge-rich companies in the pharmaceuticals sector. Small and agile has become the new operating paradigm for corporate innovation.

Overall, digital winners – such as Alibaba, Alphabet and Meta, and early-stage start-ups – are becoming the primary source of value creation in today's global economy in the east and the west. These digital winners already account for more than 25% of global equity value. This proportion could double during the current decade. Much of this value comes through digital winners' ownership of 'your data'. While this data holds future net value, it remains relatively unmonetized.

At the same time, consumers have become more influential in deciding digital winners. Online interactions of all kinds give the consumer more choice and greater knowledge in every area of social, economic and political activity. The recent move to hybrid working has brought with it the 'great resignation' that encourages millions of workers to leave large, insensitive corporations in search of more creative environments, such as digital start-ups. Global talent sourcing, enabled by hyper-connectivity, is also shifting employment patterns.

What did we not predict?

The main omission from Atomic in 2000 was the realisation that *'the winner takes all'* in a digital world. It's possible to identify the individual atoms in a company such as Amazon or Alphabet, but digital winners combine agility, innovation, scale and customer intimacy under one corporate umbrella. This ability is due to an organisational design that takes advantage of a unique combination of two-pizza teams, microservices and global platforms – and that combination allows digital winners to achieve dominance in a sector.

In Part Three of this trilogy, we examine how a second wave of technologies and organisational design might help to atomise the economic landscape further as we move towards 2040, creating entirely new scenarios.

Radical Manifesto for modern times – Part Three: **Preparing for the nuclear option**

A radical manifesto was contained in two books published at the start of the new millennium: 'The Atomic Corporation – a rational proposal for modern times (2001)'[15]; and 'Atomic – reforming the industrial landscape into the new structures of tomorrow (2003)'[16].

This trilogy of three short papers examines the confluence of disruptive forces that led to: the requirement for a new theory of the firm (Part One); the radical predictions that preceded the dotcom revolution of the past two decades (Part Two); the need for a fresh vision of the future up to 2040 (Part Three).

The story so far

In Parts One and Two of this three-part trilogy, we described the disruptive, technological forces that called for a new theory of the firm. These included the rise of cloud, social media, data analytics and mobile, all of which were supported by the birth of the internet and World Wide Web at the end of the twentieth century. Our thesis across Parts One and Two was that in a *hyper-connected* world, large and complex organisational structures were largely obsolete. In their place, we hypothesised a set of discrete organisational 'atoms' or 'Lego Bricks' that would populate the digital landscape. These atoms would be underpinned by service and asset platforms that would provide scale and scope. This atomisation gave rise to a new 'periodic table' of corporate elements that could fulfil commercial functions in the twenty-first century.

But it's now 20 years since we first advanced the atomic theory of the firm. Further technological disruption on a massive scale is expected during the next two decades. Such disruptions are likely to include blockchain, non-fungible tokens and cryptocurrencies, artificial intelligence (AI) and robotic process automation, the Internet of Things and drones, augmented and virtual reality giving rise to the Metaverse, 3D printing, quantum and edge computing, and much more. These advances are a second disruptive wave of technologies that will shape events in the coming two decades.

Next-generation Web 3.0

What is now apparent is that the World Wide Web is yet again in transition. Having originated in the early 1990s as a somewhat passive repository of content, search engines and limited e-commerce (referred to collectively as Web 1.0), the Web rapidly evolved post-2004 into an interactive platform (Web 2.0) that today provides the foundation for mobile apps, smart phones and online communities, including Facebook, WhatsApp, Twitter and Instagram. The result of this shift is that four billion people now interact daily on Web 2.0, and 10 Big Tech companies account for more than a fifth of global equity value.

Moving forward, we believe technologies such as blockchain will support the transition to a third generation of the Web, commonly referred to as Web 3.0. This generation will be a new era of decentralised architectures that could further threaten large and powerful corporations, old and new. In Web 2.0, it was possible for Big Tech to centralise data management and commercial control. In a decentralised economy, this feat might no longer be either desirable or feasible. Big Tech valuations based on their monopoly influence over 'our' personal data could be under threat. Institutions of all kinds, such as banks, might break apart within a decentralised finance (De-Fi) landscape. So, what comes next? What might be the organising principles of the Web 3.0 economy?

A new era of hyper-personalisation

In the digital economy, information about our personal lifestyles and experiences is becoming the primary source of value around which most commerce takes place. This value is encapsulated in digital assets, including information about relationships, monetisation of our personal artifacts (NFTs), and our virtual properties (such as the open-source virtual world, Decentraland). We are moving from the era of 'my physical stuff' to 'my digital experiences'. These experiences must be captured, stored, retrieved and monetised over time. It is worth reiterating the value of data. Big Tech already comprises 25% of S&P 500 value. Within the coming decade, this proportion could exceed 50%. This value creation relates directly to Big Tech's ability to monetise our personal data for the benefit of vendors.

The metaverse, which incorporates virtual reality experiences, will further accelerate the move towards the new epoch of hyper-personalisation. Fresh personal and collective experiences will emerge and generate economic value. Think, for example, of the potential for this virtual technology to create new experiences in the sex and defence industries. Events of all kinds for work and play will take place virtually. Families might even live within this virtual space, purchasing mutual properties in open spaces such as Decentraland.

When it comes to physical products, embedded software and sensors will monitor our use of personal 'stuff' across the product lifecycle, sending reports constantly to manufacturers. These suppliers will be able to upgrade their products iteratively to align with our personal contexts. As Tesla is already demonstrating in the automotive industry, upgrades will extend the value and life of physical entities, whether that's cars, white goods, homes or even smart cities.

The economics of information intimacy

We hypothesise that our intellectual property and that of the communities we interact with will be the primary source of value in Web 3.0. The big question for us today, however, is who owns and controls our intellectual property? The current answer is the Big Tech behemoths that trade our data to third parties for money. This trade in data has fuelled a boom in pop-ups across every internet site we visit. In a decentralised economy, we expect to see a radical shift of ownership. Individuals will seize their data back from the digital giants. Today, the only trustworthy parties in this respect are the banks who are barred from reselling our data –
yet we see little value in return, especially given their inability to derive useful insights from such information.

So, where will value reside in the digital economy? Here are some possible pockets of value:

- Information about our lifestyles, DNA and aspirations could become manifest in digital artifacts or NFTs (a recent family experience or plans for a future vacation).
- Commercial trading of such information within a special interest community or out to a public marketplace (like eBay but involving only digital assets or NFTs).
- Digital products or experiences that are customised to the individual, being designed specifically to suit their personal context (such as tailored cures for cancer).
- Currencies embedded in blockchains, such as Bitcoin and Ethereum, that are used as a means of value exchange.

The rise of the digital artisan

A combination of factors provides us with a unique opportunity to reform the current business landscape into the new structures of tomorrow. We believe these factors include changing millennial attitudes, loss of trust in large institutions, hybrid working and the 'great resignation', plus the technologies necessary to make change. Our proposition is that value will sit with the individual rather than Big Tech companies.

We will reassert our authority as individuals within a decentralised, Web 3.0 world that is fast-forming around us by controlling our intellectual property and associated information assets.

With the help of AI and software robotics, we envisage the rise of the digital artisan – an individual who can generate vast amounts of economic wealth, perhaps beyond billions of dollars and into trillions. We will no longer need the atomic, two-pizza teams that emerged in the era of Web 2.0. Instead, we will see such artisans performing several value-adding tasks. These might include:

- The digital producer – Creating new experiences within the metaverse and attracting influencers to promote these events.
- The digital convener – Bringing similar-minded individuals together to share their life experiences, hobbies and friendships.
- The data hoarder – Acting as a personal or community custodian for valuable data that needs to be organised and secured.

To enable these 'frontline' digital workers to flourish within the hyper-personalised and hyper-connected economy, we believe other individuals will provide the tools and platforms to support their activities:

- The data miner – Providing software tools to help individuals capture, store and assemble their own intellectual property.
- The digital tool maker – Using open-source software to generate tools that help in all aspects of data management and security.
- The web plumber – Engineering new features to enhance the web, especially in areas such as specialised sector platforms.

We believe the emergence of this scenario is probable because of advances in automation, AI, open sourcing and decentralised platforms. It's also important to note the possibility that digital artisans could live together in collective communes that will resemble villages.

Birth of the digital village

Many city centre high-rise offices are already being turned into collective living and working spaces. With the advent of hybrid working, we can expect an acceleration of these trends, especially as 80% of the world's population continues to live in just 500 cities. These communal dwellings, as with the socio-economic organisation of the eighteenth century, will take on the characteristics of a traditional village with virtual high streets and meeting areas. These physical domains might be twinned with virtual reality spaces, such as Decentraland and Second Life, to enrich social interaction and community activity.

The prospect is for a gradual blurring between physical and virtual reality where information is the common currency. This is also the case for the movement of physical goods, where supply chains are twinned with digital systems comprised of blockchains.

What are the implications for today's corporations?

Digital leaders, such as CIOs and CTOs, would be unwise to dismiss Web 3.0 and blockchain. You will need to pay close attention to developments here as they could disrupt business models during the next 10 years. New organisational forms will emerge that could undermine your franchise. The potential for change must be shared across the C-suite and incorporated into business plans. Scenario planning is a valuable tool for assessing disruptions, especially during periods of uncertainty.

You should continue to modernise your organisations to improve efficiencies, as well as to increase agility and innovation potential. Just as software-as-a-service offerings are helping to hollow out corporate bureaucracies within the back office, new Web 3.0 services, such as smart contracts and workplace automation technologies, could trim corporate administration. But even this adoption of emerging technology will only help to perpetuate corporate survival for a few more years.

It is reasonable to assume that large scale production of physical goods will continue well into the future, although 3D printing could localise much of this process to cities and gated communities (the digital village). However, digital technologies, such as blockchains, sensors and drones, will be required to increase the flexibility and agility of physical supply chains to meet the demand from online consumers for higher availability.

In parallel, corporates will need to divert their scarce funds and skills into seeding and hyper-scaling new business models that are designed to suit the Web 3.0 environment. This shift will require mastery of new software-related techniques, including blockchain, NFTs, AI and robotics.

To paraphrase the words of Marc Andreesen, Software is (still) eating the World.

What are the implications for digital leaders?

As we see in the *CIONET Cookbook – recipes for digital success*[17], leaders must adapt to new economic paradigms such as atomisation. Successful leaders today recognise that the future will be different, but its form is still unclear. These leaders change their organisations by overseeing agile teams of digital and line-of-business employees to deliver solutions in weeks and months rather than years.

Of even greater importance is the need for a credible vision from digital leaders that can excite staff with a sense of purpose and a feeling of belonging. The war for digital talent has never been more intense. The churn of talent has never had a more draining impact on organisations. The great resignation and new prospects for digital artisans could accelerate the rush of talent out of legacy organisations, just as it did at the start of the dotcom boom.

Perhaps the smartest lesson for a digital leader today is to maintain their network of talented staff, many of whom will become the productive hubs of the nuclear landscape. Organisational boundaries will blur. Power will reside within communities of talented artisans rather than within defensible corporate borders.

[1] Roger Camrass is Research Director for CIONET International, a global community of over 10,000 digital leaders. See www.rogercamrass.com for recent blogs and publications

[2] CIONET Cookbook for Digital Success, sponsored by RedHat and Intel and to be published in January 2022

[3] Closing the Innovation Gap – A 'C' suite imperative, published by CIONET UK and the Savannah Group in 2020

[4] Atomic Corporation: a rational proposal for modern time, published by Capstone in 2001. Roger Camrass and Martin Farncombe with forward by Chris Meyer

[5] Atomic: reforming the business landscape into the new structures of tomorrow, published by Capstone-Wiley in 2003. Roger Camrass and Martin Farncombe, with foreword by Chris Meyer

[6] The innovator's dilemma: when new technologies cause great companies to fail. Authored by Clayton Christensen and published by Harvard University Press in 1997

[7] Scenario planning: managing for the future. Gill Ringland and forwarded by Peter Schwartz. Published by J Wiley in 2006

[8] Atomic Corporation: a rational proposal for modern time published by Capstone in 2001. Roger Camrass and Martin Farncombe, with foreword by Chris Meyer

[9] Atomic: reforming the business landscape into the new structures of tomorrow published by Capstone-Wiley in 2003. Roger Camrass and Martin Farncombe, with foreword by Chris Meyer

[10] Unbundling the Corporation published in the Harvard Business Review, March 1999. John Hagel III and Mark Singer

[11] Blown to Bits: how the new economics of information transforms strategy, published by the Boston Consulting Group in 2000. Authors, Phil Evans and Tom Wurster

[12] The innovator's dilemma: when new technologies cause great companies to fail. Authored by Clayton Christensen and published by Harvard University Press in 1997

[13] The Internet Services Venture Vehicle was a position paper published by Roger Camrass, senior partner at EY responsible for e-commerce, in 2001. It can be downloaded at www.rogercamrass.com/publications/

[14] Scenario planning: managing for the future. Gill Ringland and foreword by Peter Schwartz. Published by J Wiley in 2006

[15] Atomic Corporation: a rational proposal for modern time published by Capstone in 2001. Roger Camrass and Martin Farncombe, with foreword by Chris Meyer

[16] Atomic: reforming the business landscape into the new structures of tomorrow published by Capstone-Wiley in 2003. Roger Camrass and Martin Farncombe, with foreword by Chris Meyer

[17] CIONET Cookbook – sponsored by RedHat and Intel and due for publication in January 2022

Roger Camrass
Lead researcher

A pioneer of today's Internet as an ARPA research fellow at MIT in the seventies, Roger has spent over forty five years helping corporations harness the power of new technologies such as cloud, mobile communications, e-commerce, voice recognition and satellite. He was a partner at EY responsible for e-commerce during the dot.com boom. He is a graduate of Cambridge University and MIT, and a visiting professor at the University of Surrey.

See rogercamrass.com