



Digital transformation: Sustaining success in a new business era

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Foreword and contents

While many IT leaders have long planned for digital transformation, there's no denying that the pandemic has been a catalyst for rapid change. Research shows digital offerings leapfrogged seven years of progress in a matter of months, with 80% of executives agreeing customer interactions are now digital in nature¹.

However, staying competitive in a new business world requires much more than digitisation alone. True digital transformation is needed, forcing people to step back, reconsider everything they do, and fundamentally change how they do business.

This eBook explores the strategic importance of digital transformation. We'll highlight its impact with real life use cases, discuss the biggest areas of application focus, and debate what the future holds – with key insights from some of the industry's top specialists.

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Contributors

This eBook has been contributed to by four industry experts in IT and emerging technologies.



Rob May

Rob May is the founder and Managing Director of ramsac, with a team of 95 consultants working with him (and an alliance partnership with PwC) to deliver Cybersecurity and strategic IT services/support. He is an award-winning speaker, delivering keynotes internationally and he runs CEO and Director Cybersecurity workshops for numerous business leadership organisations in Europe. He is a current and very relevant expert and is the UK Ambassador for Cybersecurity for the Institute of Directors. Rob is also on the Advisory Board of The Cyber Resilience Centre for the Southeast, working with industry, academia, and law enforcement. He is a Fellow at The IoD, at St George's College and at BSDC.



Rafael Bloom

Rafael has spent his career within senior Technology Product, Marketing Communications and Business Development roles. His advisory practice focuses on the new organisational, product and communications challenges of technological and regulatory changes. This highly diverse work involves subject matter expertise on information governance and compliance by design, data privacy and emerging technologies such as AdTech, Mobile & 5G, AI and Machine Learning.



Roland Broch

Roland can look back on 30 years of experience in the media and internet industry. He has been working for eco - the association of the internet industry since 2008, where he sees his main focus in the area of digital infrastructures, especially in the data center ecosystem. In addition, he is responsible for an audit product that specialises in the physical availability requirements of data center infrastructures. As part of his activities, he also coordinates the creation of studies and whitepapers. Roland has an extensive network to the most important stakeholders and players in the German data center, ISP and Carrier markets as well as the affiliated segments.



Jens Erik Thorndahl

Jens is the CEO of Danish Cloud Community, the Danish industry organisation for cloud and hosting providers. As a leading representative of the industry, he is participating in the most related matters on a governmental level and in multiple international fora. This work includes cybersecurity, data ethics, climate, competition, compliance, GDPR and other relevant matters for the industry. He is at the same time, chairman of the board in several companies within the industry.

Digital transformation: The drivers, impact, and importance



When we talk about digital transformation, we often talk about digitisation, along with new and emerging technologies. It's true that each are interconnected and, to some extent, interdependent. But what's the difference, and does it really matter? To understand the importance of digital transformation and the drivers behind it, it's important to firstly understand the context.

In many cases, digital offerings aren't possible without digital transformation initiatives. True transformation goes beyond digitisation and the use of emerging technology simply to drive efficiencies. It leads to vastly different modes of deployment, depending on what vertical you operate in. And it involves the integration of new technology into all areas of an organisation, fundamentally changing the way you operate and deliver customer value. It also requires cultural change, a shift to an ethos that's more experimental, being comfortable with failure, and willing to challenge the status quo.



Digital Transformation takes on the role of both a new accelerator and a new facilitator... This is less about the further development of technology. Rather, the business models are fundamentally changed. - **Roland Broch**



Those who had digital strategies have of course accelerated them, but most of "the digital strategies" have been converted to "digital action plans".

- **Jens Erik Thorndahl**



In terms of drivers, many agree that the pandemic has served as a catalyst for digital transformation. Whilst it's true that organisations have accelerated initiatives to meet new remote working and customer demand, many had started transforming well before the pandemic. In fact, many of the technologies that make our current working life easier now, such as Zoom and Microsoft Teams, were already being used at the beginning of the pandemic.

Digital transformation: The drivers, impact, and importance



However, what Covid has done is increased the speed and the acceptance of these technologies. It can also be argued that the pandemic has acted as a catalyst for making budget available, where perhaps it would not have been before.

The pandemic is also the cause for new ways of working. Organisations are realising the many benefits of remote and hybrid working and, as a result, are increasingly accepting this as a new standard. This then comes full circle back to digital transformation – which is made possible by a forward-thinking culture and the ability for employees to work more flexibly, efficiently, and productively.



Certainly, if in 2018 I had tried to convince a CEO or CFO to deploy significant capital to take every employee away from their desks and make them and every business process work from home, I doubt I would have even got in the room. Yet this precise set of needs became top priority very quickly. - **Rafael Bloom**



The significant thing for many was it forced naysayers to accept that people could work differently, be as productive whilst not being micromanaged and deliver value in a flexible working week. The impact of this is that technology projects that have sat in the 'too difficult to do' column for a long time have now been (or are being) actioned.

- **Rob May**



Central to many digital transformation projects is the need to support collaboration, as we settle into a new world of work. With 51% of employers² in favour of the hybrid work model, there is huge demand for platforms that securely connect disparate employees. But rather than being the actual goal of transformation, the mass implementation of communication and collaboration tools is just one part of the overall journey.

Beyond driving communication and collaboration, digital transformation is being used to prepare for the adoption of new technologies, such as Artificial Intelligence (AI) and Automation. Both can help streamline business processes, providing both efficiency and productivity gains which can have a profound impact across the business. Very quickly these technologies have moved from cool and experimental to essential, and their application can now be found in all sectors from cybersecurity, digital health, financial services, accounting and law.

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I can recall the nightmare that working on a collaborative document would present only a few years ago. Different iterations of a document would come into existence as people worked on it, leading to edited sections creeping back to their previous forms, accidental deletion of others' edits, and the document owner eventually having to connect several inconsistent versions amid much wailing and gnashing of teeth. - **Rafael Bloom**

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Video and collaboration tools enable companies to use their new freedom to work on transforming their business models. - **Roland Broch**

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Another area is operational continuity. Imagine the gap between a company with a long-term digital strategy, and one with nothing in place, perhaps even using paper for various processes. Something as fundamental as validating an identity document or moving a contract from the physical to the virtual world, could present quite a curveball to an unprepared organisation. Whereas a business with a defined digital strategy can spend less time and resource managing commonplace business processes, and instead re-focus on real value-adding tasks.

Although digital transformation can pave the way for emerging technologies, data-intensive applications like AI need powerful computing to turn data into insights. Rich datasets and rapid access to new data for operations are required, which can easily run to multiple petabytes. To manage and instantly access large volumes of data, the right storage is essential and something that Kingston specialises in. From [server SSD](#) and [memory products](#) that directly support the global demand to store, to traditional databases and Big Data infrastructures, regardless of your project scope we can deliver the speed and capacity to support your business objectives and deliver a successful outcome.

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Many have now realised that the effort to achieve that status is a worthwhile endeavour and taken on board the need to have a digital strategy and to communicate that as value added to the enterprise. - **Rafael Bloom**

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It's clear to see the potential impact of digital transformation, but how does this translate to real life scenarios?

To date, digital transformation has been most visible in areas that have already been digitised, such as e-commerce, food and beverages, and increasingly in the industrial sectors. Consulting-intensive services such as the financial sector are also currently in transition, as is the private sector when it comes to smart home automation.

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A brewery had 90% export sales (28 countries), 8% sales to local restaurants and 2% web shop sales. The export sales and the local sales stopped on the 13th of March 2020 and 2% sales were left. With two channels out only digital sales was a possibility. Through the use of social media combined with a direct sales channel was built very, very fast, and substituted the sales for export and local. The beers were distributed globally where possible, through a pure digital interface with the customers.

- Jens Erik Thorndahl

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We are also seeing digital transformation used to not only help businesses meet ever-evolving customer needs, but to react and respond with greater agility and flexibility. Take pay-per-part models for example, that offer metal processing companies completely new and disruptive production options. A machine manufacturer typically supplies the customer with the components and software required for production. In this model, a financial service provider acts as a business enabler, allowing the company to finance the machine and thus bear the investment risk.

A modern production process can be tailored to customer requirements within the framework of the model. The performance promise includes access to a fully automated production machine, a storage system, production know-how and the necessary service parts. As an alternative to traditional machine purchases, the pay-per-part model can also provide manufacturing capacities without major upfront investments. In this way, production can be made much more flexible and react more dynamically to changes in the market environment.

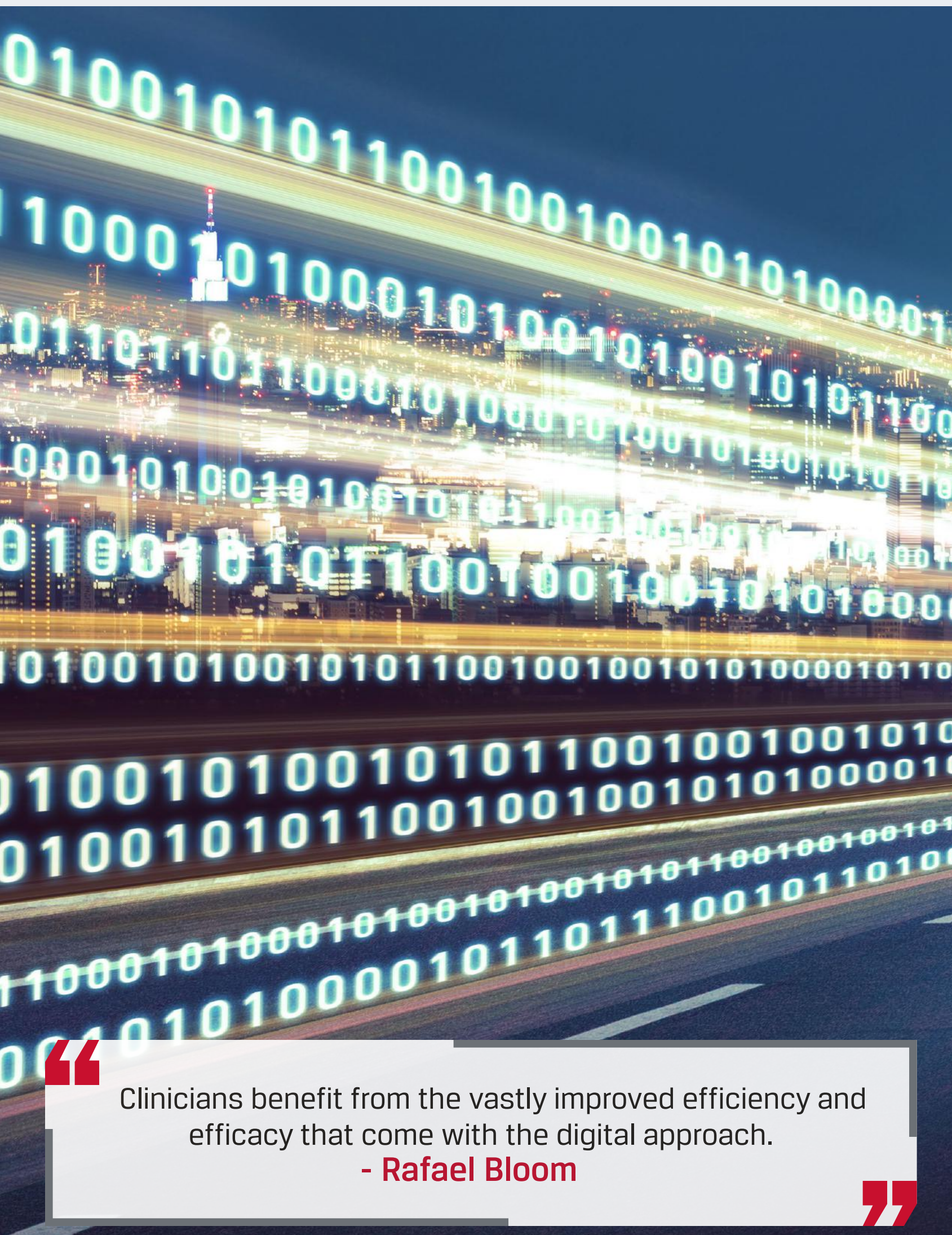
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We are only at the beginning of a far-reaching and revolutionary transformation of the entire economy.

- Roland Broch

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Even something as simple as being able to stream television content from multiple providers has had an impact on our everyday lives, particularly during lockdown. While these rapid advancements have inevitably set us up for numerous challenges, they have also changed the way the world works and at the same time, solved a number of inefficiencies in the process.

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Netflix are a perfect example of digital transformation; their entire business model was subscription-based DVD rental and they abandoned that in favour of the streaming model we're now all so familiar with. - **Rob May**

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Life sciences and healthcare is another area we're seeing benefit from digital advancements. Let's take diagnostic imaging as an example. High-resolution digital imaging and the subsequent application of artificial intelligence have together made for a more distributed model. Scans can now be securely sent anywhere in the country for analysis, reducing the need for patients, practitioners, and the images themselves to travel as far. While IoT powered wearables are dramatically changing the face of healthcare, from improving the experience of cancer patients to facilitating rich data capture in clinical trials. In fact, it's predicated that by 2025, 70% of clinical trials will incorporate sensors³.

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But also, consider the ludicrous pace of change: barely 15 years ago, we didn't use phones to pay for things with a mere tap or finger-swipe, we didn't do video calling, we bought separate Satellite Navigation devices, and Alexa was a girl's name. - **Rafael Bloom**

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Clinicians benefit from the vastly improved efficiency and efficacy that come with the digital approach.

- **Rafael Bloom**

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Just as important as the ability to create external display points is having the right technology to support this. Users are expecting more from their devices than ever before and while developers are focussed on rolling out new and exciting features for wearables, those features must not compromise basic functionality. In other words, expanded or accurate monitoring must also come with improved processing and memory.

This is also an imperative requirement when considering the advent of Industry 4.0. The power and value of Industry 4.0 lies in information flows: an ongoing cycle where data informs from one process to the next. This gives organisations the ability to integrate digital information from multiple different sources and drive the physical act of doing business. By incorporating the use of many technologies, this continuous loop has the potential to transform organisations, operations, and the workforce.

However, the ability to create new insights and revolutionise business means increasing information flow – which requires adequate storage capabilities.

This is where Kingston can help. From empowering healthcare providers to supporting smart city initiatives, our range of [embedded memory products](#) can be used to simplify interface design and speed up time to market - and ultimately help your organisation meet its innovation goals. Our [eMMC](#) and [ePOP](#) solutions, for example, offer low power consumption and a tiny footprint, perfect for space constrained IoT devices. We also support customers worldwide with [industrial-grade microSD cards](#) made for extreme conditions, which are increasingly being adopted across many industrial and embedded applications.





The Netflix use case may seem trivial when thinking about real world problems solved by digital transformation. But it is already apparent that the big drivers of data growth such as video-on-demand, and latency-critical applications like AI-based traffic management will play a significantly greater role in the future.

Managing data on this level, however, requires a decentralised approach to processing and storage infrastructure, particularly with the exponential growth we're experiencing. In 2020, 64.2ZB of data was created or replicated. By 2025 this is predicted to experience a compound annual growth rate (CAGR) of 23%⁴. We now have 10 billion active connected IoT devices⁵ and that is predicted to exceed 25 billion by 2030⁶, bolstered by the rise in 5G. The demand for storage is therefore ever increasing both in the cloud, data centres, and at the edge. Simply put, there are more of us, creating more data, sharing more data and retaining more data as a result.

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The facilitators for this trend, which we call edge computing, are scalable storage infrastructures and broadband networks based on fibre and 5G.

- **Roland Broch**

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The growth in data volumes is well documented and yes, Digital Transformation is one of the key drivers. This is not just because of the organic growth in the digitally enabled population, but because of the exponential growth fuelled by such diverse factors such as the record-keeping and audit trails required by the new wave of data-focused regulations, the growth in file sizes, the need for data replication for operational continuity. - **Rafael Bloom**

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At Kingston we've been developing solutions to support emerging technologies. We believe 5G will play an integral role in the proliferation of [IoT and the move towards a more connected world](#). Our memory and storage solutions are built to handle the necessary speed and volume required for these extraordinary developments – such as the use of real-time data analytics that provide near instant results. More importantly, we've been supporting our customers by offering a trusted pair of hands, helping them find solutions aligned with their business goals within the relevance of their digital transformation projects.

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If we proceed in a positive direction, I feel confident enough to predict that 5G will be the next thing that changes the way we interact with tech. This is mostly because of the removal of the delay in communications (or "latency") by comparison with previous generations. Distributed real-time communications – especially machine-to-machine communications – will further enable digital services and allow for a new wave of distributed digital services. - **Rafael Bloom**

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Due to the forced acceptance of technology, over the past two years, both the speed and intensity of transformation have significantly increased. Use cases across all industries have demonstrated the endless opportunities and tangible results of true transformation. But how can digital transformation projects continue to add value, and once the "normal" returns, will the focus on such projects fall away?

We are in the middle of a transformative phase, one spurred on by the impact of the pandemic, which makes it difficult to make confident predictions. But while the future remains uncertain, the ability to pivot, adapt, and respond with greater agility than ever before will be key to survival.

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I think it is very unlikely that we will revert to pre-2019 digital levels after the pandemic. The digital transformation is an ongoing process that started long before 2019. It's like entropy. The mean value increases continuously. Even if there should be short-term deviations downwards locally.

- **Roland Broch**

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I'm hopeful that the art of the possible is now easier to understand and embrace. 'New normal' is a world that has been transformed to new ways of working and if businesses don't react to that their longevity will be challenged. - **Rob May**

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Further, it is likely that the old "normal" may never return. We have completely embedded new ways of working and living, and are experiencing a myriad of benefits, making it difficult to imagine ever going back to old ways. For example, remote employees report being satisfied with their jobs, and are 35% to 40% more productive than their in-office counterparts⁷. This in turn is having a direct impact on how business leaders are prioritising spend. The focus is now on how to continue responding to customer demand, drive efficiencies, and maintain a happy, healthy workforce.

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Moreover, that hypothetical CEO who would never have entertained the notion of spending much on this stuff will now have seen that successful digital transformation creates efficiencies, delivers valuable business insights and potentially leads to the development of new lines of revenue. - **Rafael Bloom**

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So, for those organisations embarking on digital transformation projects, how do you ensure the outcome is one that adds real business value. Both now and in the long run?

From an employee perspective, engagement is crucial. Digital transformation has become one of the biggest business priorities in recent years, with \$2.3 trillion predicted to be spent by 2023 – more than half of all IT spending⁸. However, many organisations tend to focus on the technology and overlook the human aspect of transformation.

The reality is that the success or failure of a project is hugely impacted by on whether or not employees are on board with the process. Digital-based alliances should therefore be forged across the entire organisation, with open dialogue starting from the top and involving every level of employee.

“ The outset of digital transformation in an organisation requires an open mind and a lot of 'What if' questions, don't assume that it's senior staff that have the answers either (often they're stuck in a rut). - **Rob May** ”

“ I immediately think of 'Think different', the name of a campaign by a large computer manufacturer at the beginning of our millennium. My advice to all newcomers to digital transformation would be: Do not orient yourself to the status quo and what is feasible. Think beyond that! - **Roland Broch** ”

Understanding the risk areas is critical to identifying and dealing with everything your organisation may be exposed to in a digital environment. By planning for outcomes such as strategic, cost, and operational impact, you can better mitigate risk and build a business case that well justifies the investment. Being unafraid to question the norm is another important factor. The ability to do so encourages fresh thinking and intellectual risk-taking, helping to build a culture that fosters an innovative and an experimental mindset.

“ Firstly, get an executive sponsor to make sure that the organisation has no doubt as to the direction of travel. Secondly, have a plan, and make sure that plan is in line with the overall strategy of the organisation. Then, communicate as much as possible with the key beneficiaries and stakeholders, as well as those who appear not to be fully engaged. Thirdly, be prepared to change the plan according to the facts that you uncover along the way! - **Rafael Bloom** ”



Digital transformation across industries is an important enabler for innovation, bringing unmatched opportunities and capabilities for growth and value creation. Rapid adoption of agile operating models, better use of AI and machine learning, and the reshaping of customer and employee interaction are just some of the potential outcomes that can drive long-term business value - and help you sustain competitive edge.

That said, planning, innovative thinking, and the right support is required to resolve the challenges posed by digital transformation, along with the right products to meet your business goals.

Whether you need enterprise SSDs that will best support your transformation project, or help optimising your server performance with memory, Kingston can help ensure you choose the right products for your needs. Our specialised team of configuration experts are on hand to be with you every step of your transformation journey. Offering a highly personalised service, we are committed to delivering products that support your digital transformation priorities and enable you to keep pace at the unprecedented speed at which the world is changing.

1. Consultancy UK - <https://www.consultancy.uk/news/26372/covid-19-has-accelerated-digital-transformation-by-seven-years>
2. Apollo Technical - <https://www.apollotechnical.com/hybrid-working-statistics/>
3. Thrive Wearables - <https://www.thrivewearables.com/improving-clinical-trials-through-wearable-tech/>
4. IDC - <https://www.idc.com/getdoc.jsp?containerId=prUS47560321>
5. Wired <https://www.wired.com/insights/2014/12/enterprises-billions-of-devices-internet/>
6. Statista - <https://www.statista.com/statistics/1183457/iot-connected-devices-worldwide/>
7. Flexjobs - <https://www.flexjobs.com/blog/post/remote-work-statistics/>
8. IT Portal - <https://www.itproportal.com/features/using-employee-engagement-to-power-digital-transformation/>

A photograph of a server room with rows of server racks, overlaid with a blue-tinted digital grid and data flow lines.

About Kingston

With 32 years of experience, Kingston has the knowledge, agility and longevity to enable both data centers and enterprises to respond to the challenges and opportunities presented by the emergence of 5G, IoT and edge computing.