Running to stand still

The link between digital IQ and workplace culture

[insight]
people | places | technology

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Running to stand still

The link between digital IQ and workplace culture

One of the most talked about solutions to the UK's seemingly intractable productivity deficit is the application of new technology. And as we begin to address the first challenges and opportunities presented by the Fourth Industrial Revolution, it grows more apparent each day that this is not merely a macro-economic issue, but something that affects us at an organisation and personal level too.

Consequently, one of the most important attributes that must be developed to thrive in this new era is digital IQ. (This paper will largely use this term, but you may also see it referred to as DQ.) And the most important thing to understand about the current digital IQ of many organisations and individuals is that they need to focus on developing it.

Recent reports from both Gartner and PwC which track changes in digital IQ have agreed that there are disconnects between the objectives and statements firms make about the subject and their ability to keep up with the opportunities available to them, if not push ahead of their competitors.

This is a problem because as our lives become more hyperconnected, it's digital intelligence that will become critical to individual and organisational success and wider social wellbeing.

One of the reasons for this is that too many firms are trying to develop their digital IQ in ways that see them failing to keep up. As the most recent PwC digital IQ report concludes: "Enterprises aren't so much falling behind as struggling to keep up with accelerating standards. And looking ahead, it is clear most are not ready for what comes next—and after that—as technologies continue to combine and advance, and new ways of doing business go from inception to disruption seemingly overnight."

So it's increasingly clear that the old ways of harnessing technological change are no longer enough to keep pace and we must find new ways. This is a challenge for every sector and every part of society, but this White Paper will address just that of the workplace sector. We feel it is a perfect example of the digital IQ challenge because the workplace itself is subject to so much disruption as it adapts to a new phase in which it becomes not merely physical but digital and cultural too.

I hope you enjoy reading it

Anthony Brown

BW Workplace Experts

What is digital IQ and why is it important?

According to the DQ Institute, which focuses on education, digital intelligence is "the sum of social, emotional and cognitive abilities that enable individuals to face the challenges and adapt to the demands of digital life". It claims that the demands of digital life increase not so much due to the devices that we use as tools, but to the platforms, applications and experiences that these tools provide access to.

PwC defines it slightly differently because of its focus on business as: "a measurement of an organisation's ability to harness technology in pursuit of its goals".

However it is defined, nobody disagrees about the importance of digital IQ in the modern world. Yet, according to PwC's 2017 Global Digital IQ Survey, most companies have seen stasis or a decline in their digital IQ over the last decade. It is a finding backed up by tech researchers Gartner who in their most recent change tracking report found that it had stalled for most of the 2,200 organisations it monitors.

What is apparent is that in most cases, this inertia isn't for lack of will and the resources that organisations commit to their digital journey. Most are fully aware that they are not keeping pace with technological change. According to the PwC study, just 52 per cent of businesses would rate their Digital IQ as strong in 2017; which is down from 67 per cent reported in the previous survey in 2016.

This is a concern because the potential benefits to organisations and the economy are so great. Research by Oxford Economics and Virgin Media Business (2016) claimed the UK economy could receive a £92 billion boost if firms fully develop their digital potential.

The need to develop digital intelligence has a special resonance in an office context because we are witnessing a great convergence of the digital and physical workplace. People now routinely work and interact in both kinds of space as the old barriers of time and place that once defined and delineated so much of our working lives have been massively eroded or disappeared.

As a consequence, we can no longer talk about the development of greater digital IQ without also addressing the need for more intelligent offices and working cultures. Indeed, we would argue that the two go hand in hand and one cannot be maximised without a strategy that looks at how one is influenced by the other. This integrated strategy for the digital and physical workplace is a theme we will return to in detail later in this paper, especially with regard to how we design offices that function not just alongside technology, but like technology.

> **"The need to develop digital IQ has a special resonance because we are witnessing a great convergence of the digital and physical workplace"**

The core challenges (and solutions)

The complexity, unpredictability and relentless pace of technological change makes it incredibly difficult to keep pace with change. They may be taking steps forward, but the rapidly moving ground means they can find they are running to stay in

"Tomorrow's enterprise will win or lose on the basis of the experience they provide their end users and their own employees and partners"

the same place, in exactly the same way as the Red Queen in Through the Looking Glass.

A recent study from Infosys identified how challenging this can be in practice. When asked about what the biggest barriers to digital transformation will be in 2019, the percentage of respondents citing the 'inability to experiment quickly' was 22 percent and 'insufficient budget' was 30 percent. However, 'legacy systems' was at 41 percent – making it the single biggest barrier predicted for 2019. Lack of change management capabilities and relevant skills are also seen as key hurdles in 2019.

The most important step companies can make to raise their digital IQ is to ensure that there is a close alignment between business and digital strategy. Investments should fit with organisational objectives regardless of how cutting edge they may or may not be. If a technology is not driving an organisation in a clear way towards a strategic goal, it should be considered a lower priority.

This in turn will mean that IT leaders should work increasingly closely with the organisation's leaders to assess the alignment of digital initiatives with wider business goals, identify gaps and lags and also assess the levels of investment in various technologies. The PwC and Gartner trends reports both conclude that although firms could potentially invest more, they are still prepared to invest substantially so this is not the main drag on the development of digital IQ.

The organisation should look outwards to see what lessons it can learn from others and build relationships that allow them to share knowledge and resources, including from organisations from other sectors and those that use models based on learning and the sharing of ideas.

Crucially, it is essential to focus on human experiences. This is where IT managers must shift their focus away from

the straightforward adoption of new technology to a greater consideration of what the technology delivers.

"The lens of human desirability is what makes the difference. It reshapes process and drives functional innovation to elevate experience. Tomorrow's enterprise will win or lose on the basis of the experience they provide their end users and their own employees and partners."

The human experience

Individuals too need to be aware of the threats and opportunities presented by new technology and their own responsibility to develop digital intelligence. According to a recent report from SAP and Qualtrics, people are not convinced that their jobs will be significantly disrupted by the next generation of technology, in spite of the regular warnings about the potentially massive displacement of jobs as a result of the Fourth Industrial Revolution.

The SAP report, first presented at Davos, suggests that a majority of people do not think the technology puts their own role in any kind of danger. It claims that most people are optimistic or blasé about the impact of new technology. Most think that there are major parts of their roles that cannot be automated. Around four in five respondents believe that only a human could perform most or all of the tasks associated with their job.

It goes without saying that if these attitudes are as commonplace as suggested, then this too can restrict the development of digital IQ.

There is also a commonly held but potentially counter-productive idea that the employment of 'digital natives' can introduce the know-how and intelligence the organisation needs

What can be done?

1. Develop a broad digital IQ strategy
2. Link the strategy directly to other organisational strategies
3. Develop buy in and awareness at every level of the organisation
4. Focus on the human experience and not just the tech itself
5. Continue to invest
6. Continue to measure
7. Engage everybody

to overcome the challenges associated with the introduction of new technology.

There is some truth in this as a recent report from Dell suggests. However, it is likely not to be sufficient for the typical workplace with up to five generations working alongside each other. The development of company-wide digital IQ can't simply be left to Gen Z.

Instead, according to the study "businesses must help workers find common ground as they push to create a digital-first culture. Cross-functional teams with complementary skillsets can encourage knowledge exchange and a fresh approach to problem-solving. Internships, rotation programs and other early-career development opportunities can help young professionals gain experience and develop soft skills on the job. And reverse mentorship programs can enhance technical competencies throughout an organisation, with Gen Z leading the way."

Whatever their generation, people must become more aware of both the threats and opportunities associated with technology and develop the intelligence needed to work with it in new ways. This will be just as difficult for them as organisations and for some of the same reasons, not least that persistent accelerating and non-linear change is the new normal. This will not be about adapting to smaller and more powerful technology, but disruptive digital forces that impinge on every aspect of the world.

When it comes to preparing for this unpredictable, volatile future, digital intelligence will be the key. The current lack of digital IQ at a personal level is already hampering the ability of organisations to meet their objectives according to a study by Capgemini and LinkedIn. It found that a deficiency in both 'hard' and 'soft' digital skills inside organisations appear to be

damaging the confidence of staff to work digitally.

This issue needs to be addressed, because according to the Accenture Technology Vision 2019 annual report, organisations may already be entering a new "post-digital" era, in which success will be based increasingly on their ability to master a set of new technologies that can 'deliver personalised realities and experiences for customers, employees and business partners'.

According to the report, nearly four in five (79 percent) of the more than 6,600 business and IT executives worldwide that Accenture surveyed for the report believe that digital technologies, specifically social, mobile, analytics and cloud, have already moved beyond 'adoption silos' to become part of the core technology they use. What manifests at the individual level will have a transformative effect on the organisation and its stakeholders.

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The office becomes an app

For some time, at least thirty years, we've been aware of a blurring of the boundaries between the office and work that takes place outside of it. This is an inevitable consequence of the miniaturisation of technology and the ready availability of the Internet and an increase in communication tools.

Although challenging, this was at least fairly predictable. Up till now, technology has largely developed in linear ways. Its major driver since Gordon Moore produced his eponymous law in 1965 has been miniaturisation.

If we can expect computing power to double every 18 months, as Moore predicted, we at least have a degree of certainty about technological disruption. What is now apparent is that non-linear technological disruption and the digitisation of work mean we have to look at the workplace in new ways.
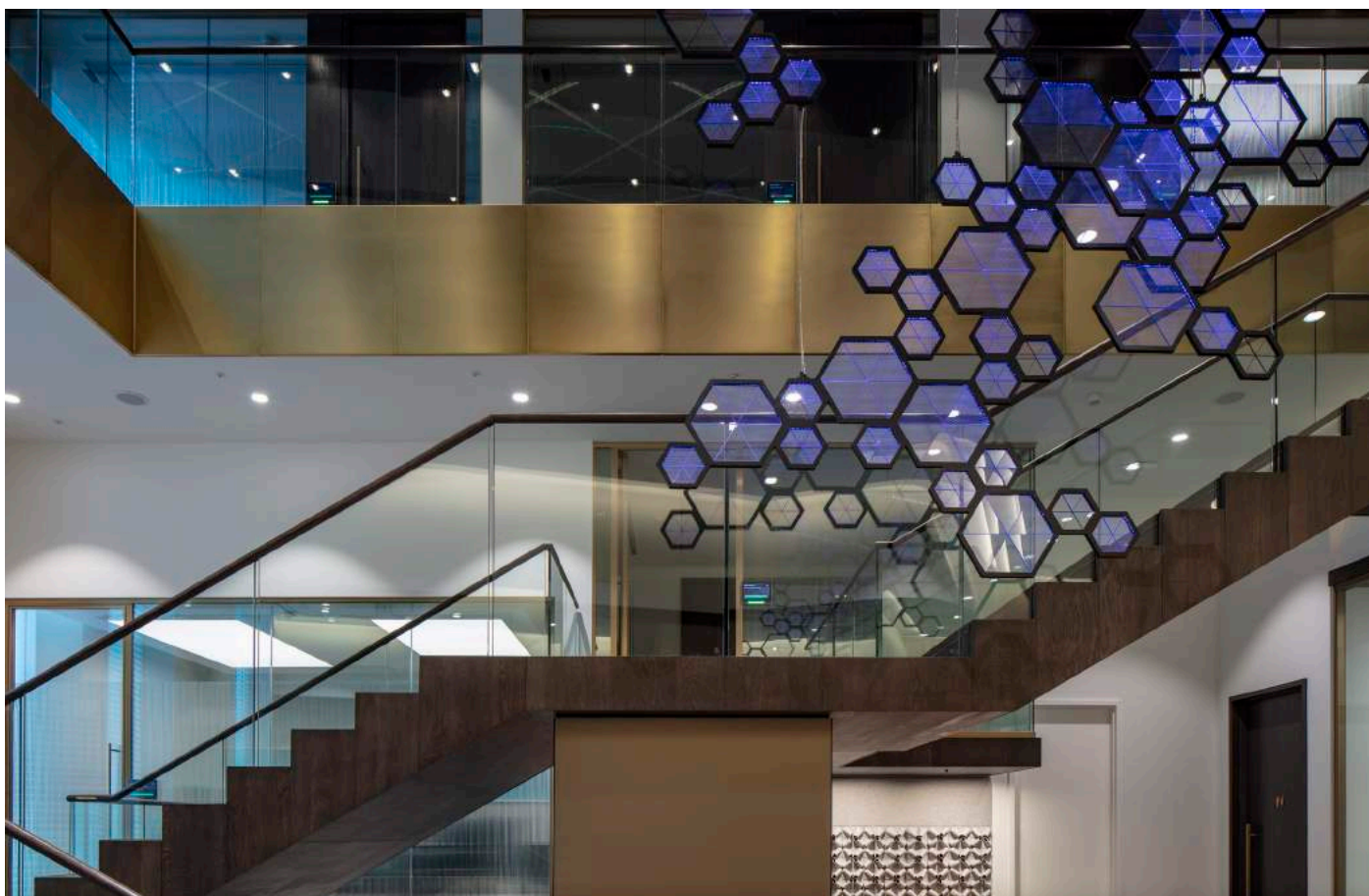
Just as Moore's Law has been succeeded by a more complex conception of technological disruption, so too must we give up on the assumption that the future of work will be underpinned by an extrapolation of what ha happened in the past.

The old models of organisations with their hierarchies, silos and traditional strategies won't be enough and neither will the offices they once inhabited. This process has already begun as offices become centres for networking, information exchange and learning. The most obvious manifestation of this is the phenomenon of activity based or agile working, which offers a personal experience of work that has more in common with a suite of apps than it does an office defined by status and job role. It is about sharing space and knowledge, co-creation and co-evolution. It relies on and fosters digital intelligence as well as the interplay of collaboration in physical space.

The challenges facing organisations are now so complex and interrelated that they cannot be solved by individuals working in one function. They can only be solved by groups of digitally enabled experts working together in cohesive ecosystems.

So, the office will need to accommodate a mix of occupants including both office-based and itinerant employees, freelancers, suppliers, clients, legislators and so on. Little or no distinction is made between insiders and outsiders who will all be empowered by building systems and apps on their devices to use space in new ways, book rooms, order services and share information. Technology will even empower them to work together in digital space for those with distant and overseas colleagues.

Teams will form to meet specific challenges in fluid structures that must be mirrored by both the physical and digital spaces they use. The digital infrastructure they need will interact with physical space in new ways. The proliferation of maker spaces, incubators and labs testifies to the role of the office as an app.

In turn, the physical office now depends on strong support functions such as real estate, facilities management, IT and HR, who share the same goals and values and do not work in silos as they once did, frequently offering disconnected services to people. In many organisations the once distinct disciplines are coalescing into a new discipline and the proliferation of job roles such as workplace management and workplace experience management.

The source of competitive advantage

In the past, companies could gain competitive advantage by hoarding knowledge, including that locked up in the heads and abilities of employees. But in a digital economy, competitive advantage also derives from the ability to connect to knowledge. The better people within the organisation are at exchanging data, strategic intent, networks, intellectual property and tools, the better they are at identifying and seizing new opportunities. In the digital economy, both who you know and what you know matter more than ever before.

This principle has been one of the driving forces behind the rise of coworking, which has now extended beyond its original business model of providing spaces for start ups and freelancers to come together. Now it is attracting the interest of corporate occupiers who are increasingly using it as part of a core and flex real estate strategy. The idea of core and flex is when a business occupies both long-term office space (the "core") and flexible space such as serviced offices and coworking space (the "flex"). For example, a company may want to have a traditional office for its headquarters but also use coworking spaces as satellite offices for specialised teams or to manage changes in headcount or organisational structure.

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Such fluid structures also depend on how well the office can bind the strands of culture and digital workplaces together. Research from Ingram Micro Cloud and Microsoft suggests that organisations without the right digital infrastructure in place to support flexible working risk their long-term survival as firms adopt less rigid structures of time and place. In a white paper titled The Modern Workplace, the firms claim that 60 per cent of under-35s place greater value on the ability to work in flexible ways. The report suggests that while under 35's are at ease using cloud-based collaborative, file hosting and sharing tools to do their jobs, many employers still fail to provide this digital infrastructure.

There is also a parallel degree of frustration with the way that physical space can restrict the use of technology and constrain collaboration and creativity. Research by Microsoft Surface found that 83 per cent of workers are asked to be creative at least daily or weekly, despite the fact that 41 per cent name uninspiring workplaces as a major creative inhibitor, and 28 percent cite a lack of appropriate spaces to focus and think alone.

The need for a greater choice of work styles is matched by the demand for space and technology to come together to form a new and integrated experience for users.

This combination of diverse work styles requires a whole new set of spaces and technologies to be truly effective, including the digital workplace. Until now, space and technology have often been planned and developed by different teams with unaligned objectives. But this approach has often led to a disconnect in how the two interact, and the behaviour they stimulate amongst employees constraining collaboration, creativity and the development of digital IQ.

Instead, organisations need to create a better-balanced work ecosystem, incorporating technology that is both mobile and integrated into the physical environment, and offering spaces designed for various forms of individual and group work.

They must also empower people to work in the ways they choose. In large part this will be marked by a cultural shift and the creation of physical spaces that offer those choice, but it will also involve technological empowerment, for example with systems that allow people to identify the kinds of spaces they need, the colleagues with whom they should work, the services and technology they require and allow them to book it all through an app, remotely.

In turn this generates the kind of data that workplace managers and designers need to identify the kinds of spaces and services they need to provide and make appropriate changes and create new opportunities.

The impact on real estate and construction

Digital intelligence is even finding its way into the bricks and mortar of the building as property and construction firms apply new technology at every stage of the development process. Although too many tenders are still communicated on paper, delivery can be a different matter. Spatial modelling and Building Information Modelling (BIM) are two of the most talked about technologies that are making buildings genuinely 'smart' in the way they digitise their functionality and are now crucial for projects.

Many new buildings are integrating intelligent technology such as building automation and making extensive use of Internet of Things enabled systems and smart security and fire safety systems. Some are even 3D printed while others are taking advantage of new materials such as aerogels (pictured above), which are so game changing and amazing we couldn't possibly do justice to them in this content.

Such technology has the potential to be game changing not only for specific buildings and their occupiers but society too. According to a White Paper on 'Megatrends: Smart Building Technology' from BSRIA that predicts that often unseen changes in building technology will have a huge impact on construction and building services; from the way buildings are constructed to how they are managed and interact with occupants.

The commercial property sector too is integrating technology into its business model and the very fabric of its buildings. According to a global study by Altus Group of 400 CRE executives, their firms are automating processes or applying AI and machine learning in the following ways:

· 41 per cent are using automation for performance analysis

· 39 per cent for scenario and sensitivity analysis

· 36 per cent for budgeting and forecasting

· 19 per cent are using AI and machine learning for scenario and sensitivity analysis

· 16 per cent are using AI and machine learning for

accounting and property management

Coworking and changing attitudes to space use

In the 1970s, the pioneer of modern facilities management thinking Frank Duffy first introduced the world to his ideas about the physical and temporal layers of the building – in his terminology the 'shell, services, scenery and sets' which describes the interplay of building layers and their timescales.

Aerogels and construction

According to Buro Happold, aerogels are "synthetic low-density materials with unique physical properties. They are formed by removing the liquid from a gel under special drying conditions, bypassing the shrinkage and cracking experienced during ambient evaporation. This creates a solid three-dimensional nanoporous structure containing 80-99% air."

Aerogel is chiefly used as an insulator, with better thermal insulation capacity than conventional alternatives. Due to their high porosity, aerogels exhibit the lowest thermal conductivity of any solid material, whilst being transparent to light and solar radiation.

However, due to relatively higher prices, their adoption has previously been largely restricted to applications in the oil and gas industry and aerospace. Now, the advent of more cost-efficient aerogel manufacturing techniques means they have now emerged as a better alternative in many applications including building cladding and insulation. A recent study from the University of Bath found that aerogel cladding and insulation has a payback period of under two years and is significantly more effective than other forms of environmental retrofit.

"We are witnessing a new conception of the office that serves a population of workers but is not based on the allocation of a determined amount of space"

Put simply, an office consists of layers which function on different timelines, ranging from the site itself which has a life cycle measured in centuries, through to the building (decades), interior fit out (years), hardware (months), to people and their needs, apps and devices (minutes, hours, days). The ability to resolve the tensions that exist between these layers is perhaps the most important facet of effective office design and management.

But the equation is changing. The growth of flexible working, activity-based working, coworking and other workplace trends has ushered in a new era in which has less need for the old linearity that links the number, role and status of people employed by an organisation with the amount of space they need.

We are witnessing the widespread application of a new conception of the office that serves a population of workers but is not based on the allocation of a determined amount of space based on their numbers. And if the space they use behaves on a similar timescale to an app or an individual, one element of the tension dissipates.

This is the need that has allowed coworking to flourish in the way it has in such a short space of time. The activity based working model of office design shares many of the characteristics of coworking offices, including the way it allows people to move through space in response to their changing needs.

It is also one of the reasons why the coworking phenomenon continues to spread. As many of the ideas that define it are more widely embraced, so its influence is felt in offices of all types beyond its original core markets.

This already includes larger organisations who increasingly use coworking facilities alongside their core office space to deal with business change and create more flexible, intelligent and attractive working cultures, closely aligned to their digital strategies.

Conclusion

In his book The Wealth of Humans, the economist Ryan Avent writes:

"We have all found our working lives altered by [the digital revolution]. Older workers might recall a time when factory work was still good work, easy to find, even for those without much education. Or they might remember a time when offices were jammed with clerical staff hammering at their typewriters and shuffling piles of paper around. But the pace of change is such that even the youngest members of the labour force can remember a different world.

Services such as Uber and Airbnb, virtually unknown at the beginning of this decade, are fundamentally transforming industries that employ millions of people. Products such as Slack, a chat service designed to make it easier for colleagues to collaborate, are altering communication within workplaces, and clever bots that can email your contacts or order you lunch participate in the conversation just like human colleagues."

What this means in practice is that people will no longer be using technology so much as integrating with it. This may sound daunting but the process has already begun. Just look at how smartphones have become an integral part of our daily lives. We are seeeing the similar immersion of other parts of our lives in technolgical innovation. In many ways, we are already cyborgs and so we now must develop the digital intelligence to go with it.

About BW

BW is a London based fit out and refurbishment expert. It works with occupiers, asset managers and consultants to deliver workplaces with a personal touch.

In collaboration with clients and consultants, it continually strives to create a process that is shaped not only by outcomes, but also by the journey.

With 17 years in the game, it is still as passionate today about making a difference as it was at the beginning.

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