Reconstructing the workplace
The digital-ready organization
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Contents

A new digital way of working 2
Unbundling the workplace 3
Thinking beyond the obvious 5
Our thinking needs to catch up with our technology 8
During the global pandemic, when many of us were prevented from working in our usual offices for an extended period of time, we undertook what was commonly framed as a shift from working in the office to working from home. But though this change in location created logistical challenges, the fact that we were working in a different place was not the most transformational shift. The truly important thing is not that we worked from our homes, but that we adopted a wholly digital way of working. We swapped pencil and paper, drawing boards and blueprints, and in-person meetings and get-togethers for equivalent digital tools, moving the work from the physical world to the digital one. And in doing so, we discovered that when work lives in digital space, when workers are working digitally rather than working physically, where the worker is located matters much less than how the work is done.¹

What the pandemic really showed us is that digital technology can and should change how we think about, and use, the workplace. Instead of giving workers access to equipment, information, and co-workers by warehousing them in the same location, working digitally frees workers to access equipment, information, and co-workers from anywhere, decoupling work and workers from physical space. Because physical location is no longer the constraint that it once was, we now have whole new possibilities for combining digital and physical space to capitalize on the strengths of each—giving us the power to reach our business goals, and even imagine new ones, in new and better ways.

There’s a caveat, though: To seize this opportunity, we need to change our thinking. We need to stop thinking about the workplace solely in terms of a physical location, and start thinking of it as a virtual place where a team gathers when working digitally, teams that solve the problems that collectively make up the pursuit of an organization’s goals. The realization that we have this opportunity might be just the insight we’re looking for to make work most effective in the digital age.

**FIGURE 1**

**Defining our terms: Concepts we need to think differently about the workplace**

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>The digital workplace</td>
<td>The digital overlay that enables the physical work experience (typically in an office), including smart building technology, digital user interfaces (apps, portals), data collection, predictive technology.</td>
</tr>
<tr>
<td>Working digitally</td>
<td>Work that is agnostic of physical space or place, as it is done digitally (rather than physically) and so adheres to different rules and norms.</td>
</tr>
<tr>
<td>The virtual office</td>
<td>A “digital” place to work: the technologies (tools and media) that allow people to work individually and as a team anywhere, anytime, anyhow.</td>
</tr>
</tbody>
</table>
Unbundling the workplace

The physical workplace is not a single monolithic place. Activity-based working recognizes that people perform different activities throughout their day. A typical office building accommodates this by having different places designed for different uses: conference rooms for collaboration, private offices for quiet contemplation, lounges and kitchens for social interaction, and so on.

The digitization of work enables us to “unbundle” the workplace and put it back together in more effective ways. In unbundling the workplace, we break apart the various places that comprise the physical workplace, understand the purpose that each place serves, and then find alternative ways to realize each one. Rather than assume that a meeting will take place in a meeting room in the same office as the workers’ desks, the meeting can be moved to an online collaboration platform enabling the participants to be anywhere. Or, if face-to-face interaction is required, the meeting can take place at a café or co-working space convenient to the workers, with notes and diagrams captured in the same digital platform.

Workers organize themselves around the work that needs to be done, rather than the requirement to work in a particular place.

Though almost all physical workplaces today already include digital technology, they fall short of enabling the workers to work digitally in the above sense. Most people and organizations have used technology to “lift and shift” traditional workflows, using new tools but doing things the same old way. A “lift and shift” approach enables firms to streamline existing workflows, but it prevents them from discovering new workflows that optimize creativity, innovation, or even job quality. It’s the difference between using email and word processor to develop and review a report, emailing the electronic document from person to person for each to contribute and comment individually, and posting the document to a shared workspace so that everyone can contribute and comment simultaneously.

When working digitally, the distance to our colleagues or to the resources we need to do our job is better measured in software terms—Are we using the same communication and productivity tools? Are the tools we’re all using compatible?—rather than in kilometers or miles. It is also much easier to leverage social knowledge—“I know something as I know someone who can help me”—as physical distance does not prevent us from tapping into the collective expertise and experience of our co-workers.

Digital technology also enables bringing what has traditionally been seen as field work into the office. For instance, sending workers to a mine to operate bucket-line dredges, earth movers, or crushers solves the problem of making the machinery work. But so does creating a digital twin: that allows people to drive the bucket-line dredges, earth movers, and crushers remotely—from the comfort of their home or office—not only making the machinery work, but yielding further benefits such as improved work/life balance for workers, increasing worker safety, or extending the mine’s reach into areas and environments inaccessible to humans. It also creates the opportunity to integrate these field workers into office teams and workflows, eroding the distinction between field and office work and enabling new approaches to organizing work.
Why is unbundling the workplace especially advantageous now? It’s because many of the problems created by contemporary ways of working no longer find their best solutions through warehousing workers and work in the same building or site. In fact, many features of how work is done today make the physical co-location of people and resources not the enabler it once was, but a barrier.

Firms are increasingly operating as dynamic networks rather than static hierarchies, with workers spending more time working on and moving between projects than in well-defined operational roles. Work in a modern organization is analogous to a peloton, where a diverse collection of teams are simultaneously competing and working in concert in pursuit of a shared goal. This is as true for executive teams, who spend the majority of their time away from their shared head office, as for teams of workers on projects, who must collaborate with other teams, suppliers, and partners. When these teams are in far-flung locations, as often happens, bringing them physically together to collaborate is not practical.

Our workforces are also no longer monolithic, all employees of a single firm. Firms have responded to an increasingly complex workplace by packaging up internal tasks and passing them to partners and suppliers. Eighty-seven percent of organizations now consider external workers as part of their workforce. They are building workforce ecosystems that extend workforce planning, talent acquisition, performance management, and compensation policies to these external contributors. Again, physically collocating all of these contributors is impractical, if not impossible.

Digital technology helps us solve these problems. Working digitally, workers can participate in more than one team at a time, with digital tools acting as a bridge between teams when needed. Each team has its own digital work environment, its own network of digitally mediated relationships supported by a particular set of tools. But digitally switching from one team to another is easier and cheaper than going from one physical workplace to another, whether next door or halfway around the world.

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Workers can also use digital technology to attend more meetings in the same amount of time because they aren’t moving from room to room, building to building, or even country to country in between. A potential result is an increase in productivity, though it also raises the risk of burnout due to the strain of enduring back-to-back-to-back meetings and the elimination of in-person social interaction.

Further, digital technology enables new approaches to collaboration. The development of groupware in the ’90s integrated messaging, data analysis, and document production in a single digital platform, streamlining workflows. Similar contemporary tools and platforms enable real-time collaboration and the integration of artificial intelligence (AI) tools and techniques.

Of course, some things are more easily accomplished in a physical workplace than solely through digital tools. Many have pointed out, for instance, that working remotely reduces the incidence of serendipitous encounters and makes forming social connections more difficult. Developing the sense of psychological safety within a team likely requires in-person interaction to develop and maintain personal relationships and team camaraderie. Trade-offs, therefore, are inevitable. This is why the best solution often combines the digital and the physical, taking advantage of the benefits of each, and deliberately choosing which trade-offs to make.
The question then is: What guiding principle should we use when organizing how we work digitally? What will the digitization of work allow us to optimize for instead of minimizing physical distance?

Often the best answers, the factors that shape how we approach organizing work, are not the most obvious. A useful analogy is the electrification of factories. Early factories, prior to electrification, brought technologies, materials, and workers to a single (physical) workplace to simplify logistics. These factories’ floor plans were designed to optimize the distribution of mechanical power, which, at the time, relied on complex and fragile belt-and-pulley networks to distribute power from a large central steam engine. Power-hungry machines crowded close to the steam engine, while machines with lesser demands were further away.

The advent of electric power saw many factories swap their dirty and noisy steam engine for electric ones, drawing clean, modern, and cheaper power from a nearby generating station. But the real advantage of electricity didn’t dawn on factory owners until some 30 years later: that it is easier to transmit electrical power than mechanical power. Once this was understood, the belt-and-pulley systems were replaced with electric cables, and the large electric engine driving the belt-and-pulley network was swapped for smaller engines attached to each machine. This made it possible for machines to be placed anywhere within the factory, which in turn permitted owners to reconsider how a factory should best be organized. Factory floor plans were reconfigured to optimize for workflow rather than mechanical power distribution, simplifying handoffs between tasks. This new approach to the workplace led to a 20–30% jump in productivity and kick-started process improvement efforts that provided ongoing incremental benefits that are cumulatively even larger than that initial step change.

But it took a generation or more for manufacturers to realize that electrification’s greatest benefit was to simplify power distribution, not the more obvious benefits of cleanliness, quiet, and lower power costs. Similarly, some of digital working’s benefits are obvious. But what are the less obvious, more fundamental benefits through which digital technology can productively reorganize the workplace?
Thinking in terms of problems, rather than places, helps us answer this question. The focus of work in a modern organization is increasingly the cross-functional team, a team that draws members from a range of firms within the broader workforce ecosystem. These teams are formed to address problems: launching a new product, optimizing a process, analyzing market trends, understanding customers and their needs, and so on.

Rather than grouping workers by location, warehousing them in an office, we might group them by the problem they’re working to solve. These teams work via digital tools and platforms, using physical places—the office, for instance—as necessary, but they are no longer defined by those places. Rather, they are defined by the teams to which they contribute, the shared digital spaces they inhabit while working together.

To illustrate this approach, we can consider a network of autonomous buses that make up part of a larger public transport network. The latest generation of autonomous vehicles are impressive, but they stop short of being fully autonomous. A more tractable problem is to focus on particular routes and to provide a driver for those situations where autonomous vehicles cannot cope on their own. This enables us to concentrate road mapping and maintenance efforts to make it easier for the buses, as they travel on well-defined routes. We can also provide drivers who will step in when the buses are unable to cope, or for incidents such as accidents or passenger complaints that require a human presence. The problem at hand is therefore how best to deploy both people and technology to achieve these goals. It’s a situation where we can use digital technology to both reconfigure the workplace and reconstruct the jobs within it.

In the past, we would have gathered similar jobs in particular places—drivers in the buses, the people monitoring and managing the network in an operations room, planning in the head office, and mechanics at a depot. This approach groups workers by the type of work they do rather than the problem that they’re working on, because grouping them by their type of work gives them access to the physical resources they all rely on. Digital technology now makes this unnecessary. We can construct a workplace digitally, around a problem or issue that needs to be managed, and pull in the workers and resources required in virtual space. Physically, places will still have a role—after all, workers still need to be somewhere when they are working—but this is because those places bring specific benefits, such as helping workers to get to know each other (and so develop the sense of psychological safety required to be productive), or providing the nuances of face-to-face interaction for a particularly sensitive discussion.

We can construct a workplace digitally, around a problem or issue that needs to be managed, and pull in the workers and resources required in virtual space.

Our first step in reconstructing the workplace is to consider what challenges the virtual workplace must address rather than defining it by the shared resources it will store. The next step would be to acknowledge that while some work needs to be done somewhere, other work can be done anywhere. Somewhere work, in our bus example, would include attending to an accident, as a person must be physically present to resolve the issue. In contrast, driving a bus remotely, stepping in when the autonomous bus doesn’t know what to do, is anywhere work.
This line of thinking could lead us to create a digital team for each bus route (or group of geographically related routes) that is responsible for operating all of the route’s buses. Mobile drivers use scooters to skip between buses, dealing with issues that require a physical presence. Remote drivers can step in virtually to steer a bus that loses its way. An operations manager maintains an overview of the route and the busses on it, identifying problems and disruptions and coordinating the team’s response. They might also liaise with teams managing other overlapping routes, or even work across multiple routes themselves. Finally, a lead mechanic virtually manages the operation of the buses, dealing with mechanical problems, dispatching repair teams when needed, and coordinating with the maintenance department for scheduled and unscheduled maintenance.

The scooter-riding bus drivers are obviously somewhere jobs, as they need to be on the streets where the buses are. The operations manager and lead mechanic, in contrast, are anywhere jobs. As long as they can work digitally, they could work from home, an office, a depot, or even a suitable co-working space, depending on worker and employer preference. The remote drivers might be somewhere or anywhere jobs, depending on the technology they require to work digitally. Weekly team meetings might be held in-person once a month, to enable team members to get to know each other socially and in turn smooth the working relationship. These meetings might be held at an office or co-working space convenient to the bus route, to which team members are required to find their own way.

The point here is that in unbundling the workplace, the needs of the work and the workers determine how physical space is used, rather than the physical space determining how the work is organized.
Our thinking needs to catch up with our technology

Progress is a history of punctuated equilibrium rather than a steady and gradual advance. Long periods of incremental change are interrupted by sudden and unexpected developments that set us on a new path. With electrification of factories it took a generation or more to realize that electrical power enabled factory floors to be optimized for workflow efficiency instead of mechanical power distribution. The technology came first; the thinking lagged behind.

The virtual office is another such discontinuous technology, but its use to date has largely been to support old ways of working instead of to design something new and better. Recognizing digital's ability to unbundle the workplace is a realization that is long overdue.

We shouldn’t assume, for example, that staff unhappy with working from home must return to the office. A co-working space convenient to their home might provide the work environment they need, along with a shorter commute. Or we might use space as a service, where a physical space can be digitally skinned (integrated into a team’s virtual office) for the short period of time that the team needs to use it.

Empowering workers to work from a suitable and convenient location rather than requiring them to work from a particular office has the potential to promote a better work/life balance as well as being a more equitable approach. Firms have put significant effort into ensuring that all staff are considered for a position, regardless of their background or demographic factors. However, many positions, particularly high-status positions, can require them to relocate or adopt punishing travel schedules. An otherwise eminently suitable candidate might be caring for an elderly parent, or have responsibilities outside work, that prevent them from relocating or traveling extensively. Working digitally might allow them to travel less frequently to accommodate in-person meetings where required, while working remotely the rest of the time.
It’s also possible that firms are compromising by hiring the worker willing to commit to relocating or who can accommodate travelling extensively, rather than hiring the best candidate for the job. Relaxing the requirement to work (and therefore, live) in a particular location will enable firms to draw from a broader talent pool and pull in more diverse perspectives, creating more creative and productive teams that produce better outcomes.

A more distributed workforce means less emissions due to reduction in travel and commuting, and a smaller real estate footprint with lower construction and operational emissions.

Working digitally can also deliver sustainability benefits. A more distributed workforce means less emissions due to reduction in travel and commuting, and a smaller real estate footprint with lower construction and operational emissions.

There are some fears the shift from physical to digital work, removing the need for the worker to be physically present, will result in mass telemigration as workers beam into their jobs from their homes all around the planet. But while this may be true from some jobs, it’s unlikely that all, or even most, jobs can be done this way. It’s important to understand when an in-person presence is required, and when it isn’t. Job descriptions and employment will also need to be updated, distinguishing between somewhere and anywhere work, with guidelines on how to determine where somewhere work should be done. Our public transport example, for instance, might see the firm nominating a particular location (or geographic area) for the monthly in-person team meeting.

Again, the best solutions are likely to be a combination of the digital and the physical. Firms can take an ecosystem approach to managing the places when its workers work—a place ecosystem to match the workforce ecosystem—that combines owned facilities with those maintained by suppliers and partners as well as those preferred by workers.

And finally, we need to consider the opportunity to find new and better ways of working, new approaches to organizing workers. Teams can be formed to directly address the problems confronting a firm, spanning organizational silos and locations as needed to provide the team with the diverse expertise and experience it needs.
Endnotes

1. This is one of the main conclusions of a survey conducted by Centre for the Edge and Griffith Business School. The results of that survey were reported in Peter Evans-Greenwood, Rosemary Stockdale, and Tim Patston, The digital-ready workplace: Supercharging digital teams in the future of work, Deloitte Insights, May 27, 2021.

2. Erik Veldhoen coined the term “activity-based working” in his 1994 book The Demise of the Office, an approach that provides workers with a variety of work settings, each designed to support different workplace activities and tasks. The activity-based analysis approach that activity-based working is derived from was first mentioned by American architect Robert Luchetti from the late 1970s.

3. A high-quality job, or good job, is a job that, without undue intensity or stress, makes the most of workers’ natural attributes and abilities; where the work provides the worker with motivation, novelty, diversity, autonomy, and work/life balance; and where workers are duly compensated and consider the employment contract fair. See: Joseph E Stiglitz, Amartya Sen, and Jean-Paul Fitoussi, Report by the Commission on the Measurement of Economic Performance and Social Progress, Stiglitz-Sen-Fitoussi Commission, 2010.

4. However, working digitally can make it harder to build relationships with our co-workers so that we are comfortable asking for help (and revealing that we cannot solve a problem on our own), while it’s also difficult to know who to build relationships with as most people only meet in planned discussions and meet less people outside of the team they are working with.

5. This might be stretching the term “digital twin” as commonly used, as digital twins are typically considered an analytic tool. Our point here is that they can also be seen as a tool for digitizing otherwise physical work, work other than office work, to bring it into the shared digital workspace.


9. Shifting from steam (coal) to electricity could save a firm 20–60% on their power generation costs, direct savings, but these savings were dwarfed by those obtained from reorganizing production, indirect savings due to a 20–30% productivity improvement, while using the same floorspace, workers, machinery, and tooling. See: Warren D. Devine, “From shafts to wires: Historical perspective on electrification,” The Journal of Economic History 43, no. 2 (2009): pp. 347–72.

10. This public transport example was first used in Reconstructing jobs. The story here, about reconstructing the workplace, is complimentary to the reconstructing jobs (with AI) story in that earlier report. See: Peter Evans-Greenwood, Allan Marshall, and Matthew Ambrose, Reconstructing jobs: Creating good jobs in the age of artificial intelligence, Deloitte Insights, July 18, 2018.

11. Something similar is the current practice in Singapore’s train network—trains are driverless but a human is present to deal with any issues that arise.


13. This punctuated equilibrium dynamic was explored by the Deloitte Centre for the Edge in Your next future, where we distinguished between simply disruption and complex disruption, where simple disruption is due to a disruptor (a disruptive technology), while complex disruption is due to a confluence of technologies and trends that change how we approach a problem. This is complimentary to the microinnovation vs macroinnovation

14. Along with a few other tweaks, but primarily the separate condenser.

15. Prior to this the engines were so inefficient that they needed to be right next to their source of fuel for them to be economically viable.


17. Maintenance field workers went through a similar transition in the 80s and 90s, as remote access to work-management software enabled them to start from home rather than the depot.
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