Lessons for and from Digital Workplace Transformation in Times of Crisis

The Covid-19 pandemic greatly accelerated the digital transformation of workplaces. This article describes how three companies responded to the pandemic by successfully transforming their workplaces from purely physical to predominantly digital. It also identifies four transformation phases and respective management practices that enabled them to gradually align their digital tools, cultural assets and physical office spaces. A roadmap, derived from these three cases, suggests management actions for preparing workplace-related responses to future crises and designing workplaces in the post-Covid-19 era.[1]

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Digital Workplace Transformation Is Not Just About Supporting Home Offices

Crisis events such as cyberattacks, natural disasters, geopolitical unrest and terrorism are among executives' worst nightmares: they lie outside of their control, are unforeseeable and could pose a major threat to the company's performance.[2] The COVID-19 pandemic proved once again that no company is immune to such a crisis, which in this case turned out to be "the largest global experiment in telecommuting in human history."[3] The need to maintain business operations while protecting employees and complying with government regulations forced CIOs to make the implementation of digital workplaces their top priority.[4]

Though many companies at the start of the pandemic already had some technical infrastructure in place to support remote working,[5] the biggest challenges were efficiently connecting the now distributed workplaces and meeting employees' sudden need for flexibility in working hours.[6] During the pandemic, working at home 9-to-5 was incompatible with

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1 Michelle L Kaarst- Brown and Hope Koch are the accepting senior editors for this article.

2 See, for example, Junglas, I. and Ives, B. "Recovering IT in a Disaster: Lessons from Hurricane Katrina." *MIS Quarterly Executive* (6:1), March 2007, pp. 39-51.

3 Papanikolaou, D. and Schmidt, L. D. W. "Working Remotely and the Supply-Side Impact of COVID-19," National Bureau of Economic Research, Working Paper No. w27330, 2020, p. 4.

4 In April 2020, Satya Nadella, the CEO of Microsoft, said "We've seen two years' worth of digital transformation in two months. From remote teamwork and learning to sales and customer service, to critical cloud infrastructure and security—we are working alongside customers every day to help them adapt and stay open for business in a world of remote everything." For more information, see, Spataro, J. 2 *Years of Digital Transformation in 2 Months*, Microsoft blog, April 30, 2020, available at https://tinyurl.com/ypfjz94e.

5 See, for example, Wade, M. and Shan, J. "COVID-19 Has Accelerated Digital Transformation, but May Have Made It Harder Not Easier," *MIS Quarterly Executive* (19:3), September 2020, pp. 213-220.

6 For an overview of developments, see *The Next Great Disruption Is Hybrid Work—Are We Ready?* 2021 Work Trend Index: Annual Report, Microsoft, March 22, 2021, available at https://tinyurl.com/4dwsdjm2.

employees' obligations to take care of vulnerable friends and family members or look after and homeschool children. Another difficulty for many was finding a suitable place to work undisturbed at home during the day. CIOs had to rapidly come to grips with digitally transforming workplaces in a way that maximizes flexibility in terms of working hours and locations and preparing for future crisis events.

This issue will remain a key concern for CIOs even after the pandemic[7] because of the continuing demand for more flexibility in the workplace to better balance work and personal commitments.[8] This article sheds light on the digital workplace transformation process by reporting the experiences of three companies that transitioned to full remote work in response to the pandemic. Based on the insights from these three case studies, this article:

- Identifies four phases of digital workplace transformation and the transitional forces that determine the continuous alignment of the business's digital toolsets cultural "artifacts" (referred to in this article as cultural assets)[9] and physical spaces
- Identifies managerial practices to overcome obstacles and continuously drive forward digital workplace transformation
- Provides actionable recommendations for organizations currently preparing for future crises or envisioning their workplace design for the post-COVID-19 era.

The main insight gained from this study is that workplace transformation can only be successfully completed if the digital toolset, organizational culture and physical spaces are properly aligned to support the increasing need for asynchronous workflows.

Case Studies of Transitioning from a Physical to a Digital Workplace Logic

After the start of the pandemic in March 2020, I closely monitored a total of nine companies[10] from around the globe to find out what measures they were taking to sustain their operations during the global health crisis, paying particular attention to how they adjusted their workplaces. (The research methodology is described in the Appendix.) As data collection progressed, it became increasingly evident that the most interesting and novel insights could be derived from what scholars refer to as "extreme"[11] case studies. Three of the companies studied fall into this category because they have excelled in managing the completion of their entire workplace transformation. These three companies have successfully implemented the organizational changes in "physical, cultural and digital arrangements that simplify working life in complex, dynamic and often unstructured work environments,"[12] as they transitioned from purely physical to predominantly digital ways of working. This article therefore focuses on describing and analyzing the workplace transformation experiences of these three companies, which are summarized in Table 1.

Vestro and Dalamaza were both founded in the 1990s, while Akon was established in the early 1970s. Before the pandemic, their organizational structures were rather traditional, with clear hierarchies between upper, middle and lower management. Both Dalamaza and Akon appointed a CIO to centralize the digital transformation of their business models and processes, while Vestro aimed to enable the heads of the different departments to drive digitization in their units. Prior to the first lockdown in March 2020, all three companies were still in the process of digitally transforming parts of their value offerings and business operations, but none

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7 Ibid.

8 See, for example, Sarkar, S., Sarker, S., Xiao X. and Ahuja, M. "Managing Employees' Use of Mobile Technologies to Minimize Work-Life Balance Impacts," *MIS Quarterly Executive* (11:4), December 2012, pp. 143-157.

9 According to Schein, E.H. *Organizational Culture and Leadership*, Jossey-Bass, 2010, organizational culture is multifaceted and consists of artifacts, values and beliefs. Cultural artifacts are, in effect, tangible assets (e.g., architecture, language, dress code, office layout, behaviors etc.). Values and beliefs, however, are difficult to observe and therefore hard for outsiders to grasp, which is why this article focuses on tangible cultural assets.

10 The collaboration with the companies was established independently of the pandemic as part of an ongoing research project on obstacles to and prospects for digital transformation.

11 See, for example, Yin, R. "Case Study Research: Design and Methods," 5th edition, Sage Publications, 2013.

12 Dery, K., Sebastian, I. M. and van der Meulen, N. "The Digital Workplace Is Key to Digital Innovation," *MIS Quarterly Executive* (16:2), June 2017, p. 136.

Table 1: Overview of Workplace Transformation Case Studies

Company Pseudonym[13]	Region	Type of Business	Founded	No. of Employees	Annual Revenue, 2021
"Akon"	Northern Europe	Configuration of furniture	~ 1970	~ 250	~ $100 million
"Vestro"	Germany	Asset management	~ 1990	~ 201 - 500	~ $90 million
"Dalamaza"	U.S.	Lifestyle nutrition	~ 1990	~ 200 - 250	~ $150 million

had initiated the digital transformation of their workplaces.[13]

Instead, they all adhered to a *physical workplace logic*—i.e., employees worked predominantly at assigned desks in an office building and at fixed hours. This workplace logic facilitates synchronous workflows and continuous face-to-face interaction. Vestro required employees to be present in the office between 10 a.m. and 3 p.m., with the option of working from home before and after that time (which was adopted by around 15% of employees). However, working from home was restricted to writing and answering emails; all internal meetings had to be held in the office, in accordance with corporate meeting policies.

Core working hours were less clearly defined at Akon and Dalamaza, but remote working was the exception and had to be requested from the relevant department head. Their IT and HR executives explained that all their employees had traditionally carried out their work from the headquarters office. In their view, because digital workplace transformation did not directly contribute to the creation and distribution of their value offerings, they did not consider it necessary, or urgent, to change the status quo. In addition, they felt that management control of their employees would be best achieved through everybody's daily presence in the office. Thus, before the pandemic, none of the three companies had planned to establish a *digital workplace logic*

that would provide employees with flexibility in time and location by enabling asynchronous workflows.

The empirical data and findings from the research on how these three companies made the transition from a physical to a digital workplace logic in response to the constraints imposed by the pandemic are presented below. The transformation process followed by each company comprised four distinct phases—*Inertia, Experimental Repatterning, Leveraging Causation Planning and Calibration*. After describing these phases, the forces and managerial practices that prompted and supported the companies in overcoming their initial inertia and driving forward the transformation are identified.

Four Phases of Digital Workplace Transformation

None of the three companies took strategic steps to digitally transform their workplaces before the pandemic, so they had no choice but to experiment with the available software and hardware to find the best possible workplace arrangement that would allow all employees to work remotely. The experimentation with available resources to determine which of several different digital workplace designs is feasible is characteristic of a specific type of business planning that is referred to in academia as "effectuation," which is defined as, "approaches [that] take a set of means as given and focus on selecting between possible effects

that can be created with that set of means."[14] An effectuation approach is particularly prevalent in start-up contexts, where access to resources determines the choice of strategic objectives to be implemented in the long term.

The various challenges the companies encountered in their digital workplace transformation led them to make gradual adjustments to their physical office spaces, cultural assets and digital toolsets. Over time, these adjustments brought about a situation where they could be more proactive in strategically shaping the transformation in line with long-term objectives—a form of business planning referred to as "causation." By definition, "causation processes take a particular effect as given and focus on selecting between means to create that effect."[15] With causation planning, organizations first determine which strategies they want to implement and then acquire the necessary resources accordingly.

After two years, all three companies reached a balance between testing new workplace arrangements and strategically establishing proven ones. The four phases of their digital workplace transformations were:

- **Phase 1: Inertia.** This phase started in March 2020 at the onset of the pandemic and lasted for between three and six months; it involved the temporary transfer of physical workplace logic to digital working environments without any adjustments
- **Phase 2: Experimental Repatterning.** This phase started in the third or fourth quarter of 2020 and ended in the third quarter of 2021; it involved experiments with digital, physical and cultural arrangements to overcome inertia and obtain consent for the gradual transition to a digital workplace logic
- **Phase 3: Leveraging Causation Planning.** Phase 3 ran from the third or fourth quarter of 2021 to the second quarter of 2022; it involved developing and implementing a long-term strategy for the optimal alignment of various

workplace arrangements to enable and support asynchronous workflows
- **Phase 4: Calibration.** During the final phase of the digital workplace transformation process (which, at the time of writing, was ongoing), the companies balance long-term planning with experimenting with novel digital tools and cultural assets and redesigning physical spaces

Figure 1 provides an overview of the four phases, the identified management practices and the transition forces that required the companies to continuously align their digital, cultural and physical workplace arrangements to progress their digital workplace transformation journeys. The four phases, and the impacts on the companies' digital toolsets, cultural assets and physical spaces, are now described in detail.

Phase 1: Inertia

In the first phase following the lockdown announcement in March 2020, none of the three companies had initiated comprehensive measures that would have prepared them for a longer-term digital transformation of their workplaces. Instead, their senior executives wanted to preserve what they saw as the proven physical workplace logic by replicating virtually the physical office environment and familiar working practices. This meant that digital workplace arrangements were designed to maintain the existing synchronous workflows through fixed working hours and face-to-face interactions in virtual meetings with video and email as the primary tools for communication and information sharing.

> *"Our traditions have led us to believe that our employees need a fixed workplace and a fixed desk within four walls. So, when we had to switch everything over to digital working, we simply transferred the familiar setup to the internet in the best possible way."*[16] Head of HR, Vestro

The resulting inertia from adhering to the logic of the physical workplace, rather than seeing the

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14   For more information, see Sarasvathy, S, D. "Causation and Effectuation: Toward a Theoretical Shift from Economic Inevitability to Entrepreneurial Contingency," *Academy of Management Review* (26:2), April 2001, p. 245.

15   Schein, E. H. op. cit., 2010.

16   For better readability, linguistic imperfections have been removed from the quotations without changing their meaning.

Figure 1: Four Phases of Transitioning from a Physical to a Digital Workplace Logic
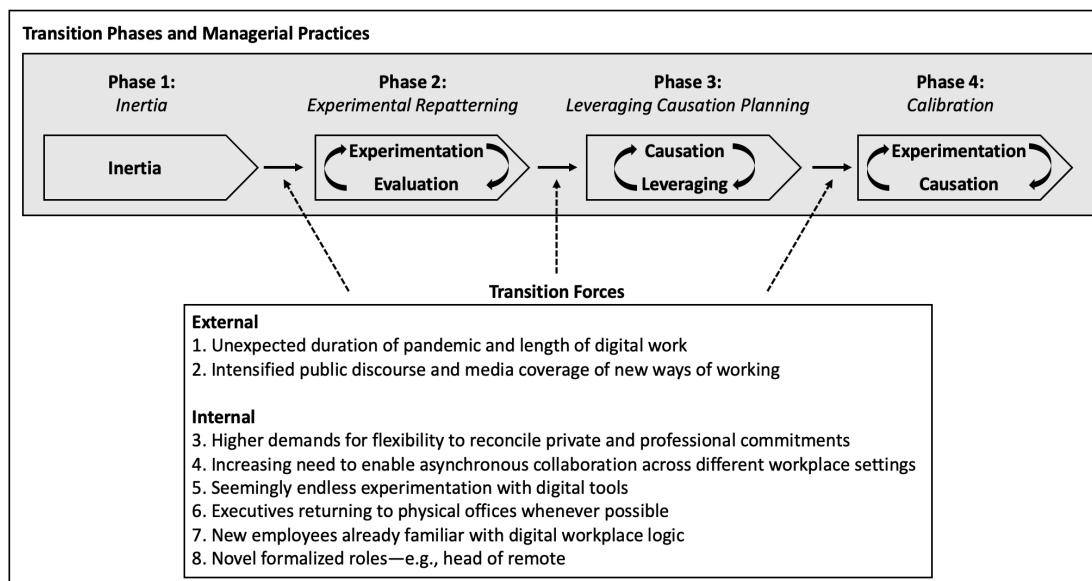
pandemic as a starting point for digital workplace transformation, had two interrelated causes:

1. The companies initially thought that the pandemic was temporary and would last for only a few weeks, after which all workplace arrangements could "return to normal"

2. They did not perceive the transformation of workplaces as directly contributing to daily business operations and was therefore not a priority.

As a result, few adjustments were made to the existing workplace arrangements. The few changes made were primarily aimed at temporarily enabling working in a digital environment.

Phase 1: digital toolset impact. The digital tools[17] that the companies already had in use did not change in this initial phase. All three already had licenses for cloud computing, productivity and collaboration tools, such as Google Workspace and Microsoft 365 Business, which allowed their employees to communicate via email, chat or video and to coordinate appointments. In addition, Vestro and Akon had

separate intranet solutions for accessing, storing and sharing data. The only novelty in the first three months of Phase 1 was the obvious use of shadow IT—defined as "hardware, software, or services built, introduced and/or used for the job without explicit approval or even knowledge of the organization."[18] Digital tools, such as Zoom, Slack, WhatsApp and Signal, Skype and Dropbox, were used by most employees. Some felt limited by the functionalities of the official tools, while others were uncomfortable with the new technologies, such as videoconferencing tools, which they had never used in a professional context before. They therefore preferred tools they already knew from their private use. Because the companies expected that the pandemic would last for only a few weeks, executives initially tolerated the use of shadow IT, despite data protection and privacy concerns.

> *"We didn't put a lot of thought into our technological workplace setup when the pandemic broke out. We already had office packages that covered everything we thought we would need. And we knew that some employees would customize their*

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17   The descriptions of the digital tools in use refer only to those used in the workplace and thus enable daily work and collaboration between employees, teams and departments.

18   Haag, S. and Eckhard, A. "Shadow IT," *Business & Information Systems Engineering* (59:6), December 2017, p. 469.

software to meet their own needs. That was fine with us, at that time." CEO, Akon

Phase 1: cultural assets impact. In the Inertia phase, no noticeable adjustments were made to the cultural assets in any of the three companies. The values of collaboration that were communicated internally and externally remained the same as before the pandemic. The language used in electronic meetings, emails and other communication channels (if used at all) and the attire remained rather formal (at least as far as the clothing seen in the video was concerned). Akon and Dalamaza sent flowers to their employees on their birthdays, a ritual that existed before the pandemic. Only Vestro introduced a new culture-related practice: four weeks after the first lockdown the company sent care packages containing pasta, sauces, children's books and some other items to all its employees. Vestro also introduced weekly 30-minute "stand-ups," which all employees were required to attend to learn about the company's current handling of the pandemic. Executives at Akon and Dalamaza shared this information via email.

> *"We've always taken care of our employees and instituted rituals to express our appreciation for their work. We never had quantifiable measures but I'm pretty sure we always knew what was needed to create a comfortable work environment. Many employees have been with us for years; we had no concerns that they would suddenly leave, especially with all the uncertainty. Culturally, we just kept what we already had."* CEO, Vestro

Phase 1: physical space impact. During Phase 1, all three companies maintained their physical offices and required all their employees to work from there as far as regulatory constraints allowed this. The executives believed that regular personal contact in the office was essential to maintaining commitment, work motivation and loyalty.

Phase 2: Experimental Repatterning

In the second Experimental Repatterning phase, executives increasingly recognized that shifting the physical workplace logic to a digital environment could not effectively sustain business operations for many more additional months. As the dynamics of the pandemic required the companies to find quick solutions under time pressure and with limited expertise in strategically redesigning workplaces, Phase 2 of digital workplace transformation was characterized by a period of trial and error. The change processes that were then initiated were anything but straightforward, especially because they were repeatedly slowed down by employee resistance to a new workplace logic. This resistance required IT and HR leaders to invest considerable efforts into "repatterning" their employees' habits and expectations in workplace design—i.e., "learning how to 'let go' and ad adopt new behaviors."[19]

This was a gradual process that greatly benefited from the active involvement of employees, who could either experiment with different digital tools (Vestro) to set up their workplaces or make suggestions to their IT department for novel tools (Akon and Dalamaza). The testing of digital tools was accompanied by some adjustments to the physical office space that increasingly allowed for hybrid team collaboration, with some employees working in the office and others from home. Cultural assets remained largely unchanged.

Phase 2: digital toolset impact. At Vestro, the IT department had considerable difficulties in overcoming inertia and adapting the digital toolset to the new workplace requirements. IT leaders struggled to move away from the status quo and to understand the novel remote workplace requirements. To overcome this inertia, the company's senior executive team decided to drive changes in workplace arrangements from the "bottom up" by closely involving employees who had already set up their digital workplaces according to their needs. This strategic approach was very unconventional for Vestro, but it enabled employees to experiment with different digital tools, which were assessed by the IT department in terms of meeting data protection and privacy requirements.

As a result of this initiative, each Vestro employee and team set up numerous siloed solutions, which allowed them to access relevant

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19 See, for example, Gormann, L. "Conscious Repatterning of Human Behavior," *The American Journal of Nursing* (75:10), October 1975, pp. 1752-1793.

documents, communicate with each other, share information and conduct (creative) meetings. In an official email, the CEO communicated that the overall goal of this initiative was to ensure that employees received the best possible workplace design that truly met their needs under the unprecedented pandemic conditions.

"We had to recognize that the IT department had difficulties accepting the new reality and developing novel visions for our workplaces. Quick solutions were not to be expected here, so we let our employees decide about the digital setup of their workplaces." CEO, Vestro

At Dalamaza and Akon, the CIOs were responsible for workplace changes and initiated them "top-down." As at Vestro, they also had to deal with considerable levels of resistance at all hierarchical levels. One of the main reasons for the resistance was that many employees considered traditional means of communication, such as landline phones and shared Excel files with contact details and availability times for each colleague, to be sufficient for maintaining business operations.

"Our CIO did a brilliant job. Workplace transformation was not a priority for him before, but he had a good overview of the digital tools available. It was just hard to motivate our staff. Employees thought it was fine to have a landline, videoconference and the good old spreadsheets to track who was available, when and where." CEO, Akon

The pool of digital tools identified as potentially beneficial to enabling remote working were evaluated against employee requirements for the digital and distributed workplace environment, as well as against data regulations and other tools widely used in the industry. Each tool that passed the initial screening was tested in different departments over a four-week period and subsequently discussed, modified or exchanged for another. Dalamaza and Akon respectively tested a total of 36 and 28 tools that enabled—among other things—access to all kinds of data (regardless of location), asynchronous collaboration and transparent project management (see Table 2). The approved

tools were rolled out company-wide, and regular meetings were held with all employees to share insights and best practices for their most efficient use. All employees were encouraged to constantly keep their eyes open for new IT developments.

Phase 2: cultural assets impact. As in Phase 1 (Inertia), the cultural assets hardly changed. Executives at all three companies tried to lead by example and showed their commitment by returning to the office whenever possible. However, this led to the emergence of a split within the companies. All staff who returned to the office followed the physical workplace logic with lots of face-to-face interactions, including sharing news over lunch or at the coffee machine, while employees at home felt increasingly disconnected. Overall, the impression was that physical presence was valued more highly and that information was distributed asymmetrically. Akon's and Dalamaza's IT departments captured the resulting tensions and translated them into requirements for digital tools, but the companies made no cultural adjustments. This led to uncertainties among employees:

"In the past, it was always clear when someone was open to a short conversation. Open door meant "come in," closed door meant "do not disturb." But now? How can I be sure that someone is available and won't be bothered if I call them? I often sit at home and think for hours about a problem that could be solved quickly with the help of my colleagues." Employee, Dalamaza

Phase 2: physical space impact. Physical office spaces still played an important role during Phase 2 because employees at all three companies were required to work in the office whenever possible. Nevertheless, policies for remote working became increasingly more flexible. During the winter of 2020/21, Vestro decided to allow all meetings to be held independent of participants' locations. This decision was made because only half of the staff had returned to the office on a regular basis, while others were still struggling with balancing childcare and work or felt uncomfortable in large gatherings of people.

To enable hybrid meetings, all three companies redesigned some of their conference rooms. The responsible meeting coordinators experimented with the available smartboards, laptops and phones to create the best possible hybrid meeting

Table 2: Overview of Some of the Digital Tools Tested for Workplace Transformation

Remote Workplace Requirements (Identified at Akon and Dalamaza)	Examples of Tested Digital Tools (Listed in alphabetical order)
Basic Communication (email, video, chat etc.)	• Around (video calls) • Google Workspace (all types of communication) • Jamm (chat and video calls) • Jitsi (video calls) • Microsoft 365 Business (all types of communication) • Slack (chat) • Whereby (video calls) • Yac (voice communication) • Zoom (video calls) • 8x8 (all types of communication)
Asynchronous Collaboration (e.g., staying up to date without having to participate in every meeting, knowing who is working on what until when, efficient task allocation, smooth interaction even with asynchronous working hours) **Information Transparency** (all employees always have the same level of information, regardless of location)	• Almanac (wiki application) • Clickup (project management and communication) • Confluence (wiki application) • Echo (voice messaging) • Notion (project management) • Trello (project management) • Twist (asynchronous communication)
Social Interaction (replacing, e.g., joint lunches, spontaneous meetings at the coffee machine, company events etc.)	• Sococo (remote meeting environments visualized as physical office) • Teemyco (remote meeting environments visualized as physical office)
Flexible Meeting Environments (easily accessible and useful for different purposes—e.g., hybrid meetings, creative workshops, smaller events etc.)	• CoScreen (collaborative screen sharing) • Hopin (events) • Miro (whiteboard platform) • Mural (whiteboard platform) • Remote HQ (flexible screen sharing) • HeySummit (events) • Zoom (events)

environment, but the relevant software and hardware were not installed until the summer of 2020 (Dalamaza, Vestro) or the winter of 2020 (Akon). All three companies found the Experimental Repatterning phase challenging and there were frequent discussions about the appropriateness of hybrid meetings; not all meeting participants were comfortable with not always being able to follow or contribute to the meeting due to technical issues.

Phase 3: Leveraging Causation Planning

The trigger for Phase 3 in all three companies was an emotionally heated meeting in which designated employee representatives expressed their displeasure about the current situation to senior management. The longer the pandemic lasted, the more they felt trapped in a situation of provisional workplace arrangements that followed neither a physical nor a digital workplace logic.

"We knew that our employees were not happy with the situation, but we still thought

that one day the pandemic would be over and we could return to our old normality. After a very emotional meeting, it became clear that we needed more structure and more decisions ... a workplace that would work for us [in the long term], not one that merely kept us going until the situation was over." CEO, Akon

The growing employee dissatisfaction forced the management of all three companies to move on from the Experimental Repatterning phase. Though each company followed a causation planning approach, they adopted slightly different strategies for the long-term redesign of their workplaces. Dalamaza's CIO, CEO and various heads of department began redesigning the workplace from the ground up by formulating long-term goals that would guide the strategic actions. These were:

- Implementing a workplace design that allows employees to work remotely as if they were in the office
- Achieving smooth collaboration among teams across and within units, regardless of location
- Developing a communication and information infrastructure that makes the company's goals and current state of business operations transparent to employees, regardless of their location.

The actions derived from these goals equally affected digital tools, cultural assets and physical spaces.

Akon's goals were similar, but it took the company much longer to reach agreement because senior managers were not uniformly convinced that such "drastic" measures were necessary, as they expected the pandemic to be over soon. Vestro decided that decisions about digital tools would continue to be made by heads of department but the management hoped that adaptations in physical office spaces and cultural assets would reunite the company.

Phase 3: digital toolset impact. Akon was the first of the three companies to set a specific deadline for making a final decision on the digital toolset required to establish properly functioning digital workplaces. After announcing the deadline, executives allowed a three-month period for a final evaluation of the most promising digital tools identified during the previous Experimental Repatterning phase. The deadline was met, but the trial state was continued for several more months, as negotiations with technology vendors and company-wide rollouts took time. This period was supported by an external service provider that ensured the tools were properly implemented.

Similarly, Dalamaza pushed for an imminent end to the trial phase and hired a technology consulting firm to conduct the rollout of the chosen digital toolset. Vestro had many more difficulties because it was not clear who would take responsibility for the technical adjustments. In addition, it became increasingly unclear which digital tools were already in use because no one felt responsible for keeping track of them. The company eventually decided to hire a CIO, who was able to make considerable progress, but some major adjustments to the digital toolset were still being made at the time when this article was written (June 2022).

To achieve the greatest possible flexibility for employees, all three companies agreed that the digital toolset had to enable and support asynchronous workflows. The most far-reaching initiative in this area was that each company introduced a wiki application[20] that facilitated the comprehensive documentation of all relevant information, including the content of formal and informal conversations, to make them accessible to all employees. In particular, the tagging and commenting wiki features were extensively used, which gradually fostered interactions within and across units.

Additionally, project management tools in all three companies were no longer accessible only to managers; all employees could now view projects, track their own and others' progress and define new work packages. Over time, this led to greater independence for employees. Another important adaptation was the introduction of various communication channels (video and audio) to enable effortless information exchange. Instead of sending emails, Dalamaza and Akon employees increasingly used digital tools that enabled the recording of short video or voice messages. These typically contained updates

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20   Wiki software is collaborative software that runs a ''wiki,'' which allows the users to create and collaboratively edit pages or entries via a web browser.

on their work and were intended to keep other team members informed of project progress and potential challenges. The files were linked in the wiki application and were thus available to everybody, rather than just to a predefined list of email recipients.

Phase 3: cultural assets impact. It became increasingly apparent that the digital toolsets described above would only support a digital workplace logic if fundamental cultural changes were made. Phase 3 of the digital workplace transformation was therefore the first in which the three companies (consciously and unconsciously) made profound adjustments to their cultural assets. The overarching goal—with slight variations across the three companies—was to create a culture that is centered around remote working. Even so, the culture should still create a sense of belonging and foster engagement, loyalty and enjoyment of work.

To this end, the first fundamental adjustment that had to be made was to achieve maximum transparency in business planning, project work, team setups etc. This required all employees and executives to prioritize the documentation of all formal and informal meetings, project management, overarching company objectives and strategic approaches. Previously, this type of information had been shared asymmetrically across hierarchical levels and many executives now feared that their positions would become obsolete. To date, however, the hierarchical management structure in all three companies has not been adapted, even though individual employees now act much more autonomously within the new workplace logic.

Another measure taken to achieve greater transparency was the introduction of weekly or biweekly virtual "stand-up" meetings with all employees, at which the latest developments in the company are presented. The meetings are not mandatory but are very well attended; they are also recorded to make them accessible to those unable to attend. This type of meeting did not exist in any of the three companies before the start of the pandemic.

To eliminate any uncertainties about the proper form of communication via the new chat and video tools, both Akon and Dalamaza engaged a communication coach. The coaches held several workshops with representatives from all

departments to jointly define norms for language and work attire that are explicitly deemed appropriate for the various communication channels. The outcomes were discussed with senior management and published on the wiki. The workshops also invited feedback on indirect communication, such as the frequency of managers' presence in the offices.

The conclusions drawn from the workshop feedback showed that the establishment of a new type of workplace logic can only be achieved if managers act as role models. This led to some drastic measures: Dalamaza and Akon banned executives from the office for two and four weeks, respectively. This measure turned out to be very effective because the executives put themselves in the shoes of their employees and hence gained a better understanding of the struggles and opportunities created by the digital workplace logic.

Phase 3: physical space impact. To fully embrace a digital workplace logic, the physical office spaces had to be changed in line with cultural adaptations and the overall goal of the companies. Akon intends to become a fully remote company by the end of 2023; it has already terminated the lease of two floors of its office building and plans to terminate the leases for the remaining offices by the end of 2023 at the latest. As of summer 2022, the company was negotiating with a major co-working space provider with locations around the world to allow employees to work from these spaces whenever they feel the need to work from an office. Teams at Akon can also rent larger rooms for face-to-face meetings.

Similarly, Vestro and Dalamaza reduced their physical office space by about half but, unlike Akon, both companies plan to create a hybrid workplace arrangement. This will entail a fundamental redesign of their physical office spaces, which will serve primarily as spaces for business meetings and events with external partners, co-working, workshops and conferences. Both companies are considering the possibility of leasing the space to other companies with similar workplace concepts. These changes will inevitably lead to discussions about the identity of the companies, which is the next open question that needs to be addressed

to further align the business with the new digital workplace logic.

> *"It feels like our office is losing face. I've worked here almost all my life, and now we're looking for other companies that would share the office space with us, and they'll probably want their logos and branding here, too. Whew! I always felt that our customers needed to know where to find us, and that was right here at [name of street]. This is ridiculous because customers can find us online, but still ... we are losing our identity, and I'm not sure yet how to get used to it. But we're always trying to chase the next innovation; now it's up to us to live the innovation too and reinvent ourselves, right?"* CEO, Akon

Phase 4: Calibration

The fourth Calibration phase, characterized by striking a balance between experimentation and long-term planning, began in mid-2022 and is ongoing. As a result of a relatively rapid transition from physical to predominantly digital workplaces, the three companies have to constantly evaluate and adjust the design of their now-digital workplaces.

Vestro's CIO has introduced a quarterly assessment of the company's digital toolset to determine whether the tools continue to align with the workplace needs of the various departments. By fall 2022, the company aims to have a clearly defined workflow that will make it possible to identify weaknesses in the technical setup of its workplaces and systematically search for and experiment with suitable tools to address any shortcomings.

In contrast, neither Dalamaza nor Akon have defined an explicit strategy for assessing whether the current technological setup of their workplaces needs to be revised. At Akon, new tools continue to be unofficially introduced into the company as shadow IT. During the last summer break, for example, one department implemented digital secretarial software that allows designated employees to forward incoming customer calls remotely to relevant colleagues. The software's use has been adopted by several other units without official approval, and executives are currently discussing

appropriate strategies for how best to manage such shadow IT within the company.

As the companies are progressing to Phase 4, it is becoming increasingly apparent that they need to make adjustments to their cultural assets and physical spaces in parallel. By late summer 2022, a relatively large group of 15 Vestro employees had begun to meet regularly (two or three days per week) in the newly renovated office, which now serves as a co-working and event space. The meetings created some internal tensions, however, when employees working remotely felt that they were no longer being involved in decision-making and were not receiving all of the information that they needed to comprehend the decisions made. HR executives are currently addressing this issue by running workshops designed to promote the advantages of the hybrid workplace cultural assets, especially transparency through the constant documentation of all formal and informal meetings using the newly introduced wiki application.

Overall, the three companies are seeing benefits from the digital workplace logic. Akon and Vestro have reported a significant increase in applications from potential recruits in different parts of the world and are currently considering adopting English as their office language. Staff turnover has decreased in all three companies, although this could also be interpreted as a byproduct of the uncertain labor market resulting from the pandemic.

Moreover, internal surveys show that employees are increasingly satisfied with the new digital workplace logic. Dalamaza and Akon report that there has been no significant variation in their innovation performance and employee productivity. When asked for a final statement about the digital workplace transformation, the CEO of Dalamaza said:

> *"I can clearly see the advantages: the employees are happy; we were finally able to recruit again because we are no longer restricted by regional boundaries and we survived the pandemic without any major losses. But I also see that we still have a long road ahead of us. The conventional wisdom is that remote working is the key to innovation and improved performance. So far, I can't confirm that. I guess we'll have*

to see what further adjustments we need to make to realize the full potential of this new situation."

Forces Driving the Transition to Digital Workplaces

The continuous transition from a physical to a digital workplace logic throughout the four phases described above was driven by various transition forces that urged executives to continuously align their companies' digital toolsets, cultural assets and physical spaces. (These forces are numbered 1 to 8 in the lower part of Figure 1.) The two external forces (1 and 2)—the unexpected duration of the pandemic, and the intensified public discourse about new forms of work—have had a considerable impact on employees' attitudes toward alternative workplace logics:

"Suddenly, social media was full of posts about how the pandemic proved that more flexible forms of work are feasible and also newspapers featured many articles on how this form of work is much more compatible with family and all the other forms of daily commitments we have. This drastically changed the internal discussion as we had proof that remote working was not just an illusion, but actually a form of working that was being implemented by many companies. This meant that our management had to justify why we must be present in the office five days a week when we could also work from home, at least for those who prefer this form of work." Employee, Akon

Moreover, many employees had to reconcile work and childcare (Force 3), especially due to the often short-notice closures of schools and daycare centers. Hence, they needed more flexible working arrangements, for example shifting working hours to early mornings or evenings. Maintaining synchronized workflows (Force 4) therefore became increasingly difficult as not all employees were available and responsive at the same time: "Our designers were suddenly working at night and we had to understand what they were doing without being able to talk to them directly" (Employee, Vestro).

To solve this and similar issues, the three case study companies involved all employees in experimenting with different digital tools and setups for remote working, which helped to gradually accustom them to the new workplace logic. However, the list of potential digital tools to facilitate remote work seemed endless and Vestro's workforce remained in a state of constant discussion about what could be improved. Over time, employees at Akon and Dalamaza questioned the usefulness of constantly experimenting with new digital tools without making a final decision about what the digital workplace design should eventually look like (Force 5). They even argued that executives did not want to come to a conclusion because they still hoped the pandemic would soon end. The longer the situation went on, the louder the call became for a definitive, reliable digital toolset that would adequately support collaboration between distributed workplaces.

In addition, not all employees felt equally valued and integrated because physical presence seemed to be more valued than digital presence. There were three different reasons for this perception. First, most executives were working from the company offices whenever possible (Force 6):

"I had the idea to lead by example and returned to the office from day one. I wanted to show my team that I am reliable and that nothing can stop me from doing my job. And it was so easy to just do what I was used to doing, where I was used to doing it. I can tell you now that telling everyone, 'It's perfectly fine if you want to work remotely, but don't expect me to share all the information twice' doesn't work. I talked and discussed with the people around me in the office, but I didn't always care if or how the team members at home were kept in the loop." Head of Marketing, Dalamaza

In fact, all three companies did allow their employees to participate in meetings virtually, but for a long time the technical equipment was nowhere near capable of supporting the smooth running of hybrid meetings, which was the second reason that remote workers were feeling undervalued:

"My manager was always in the office, while I worked from home. Have you ever tried to brainstorm ideas or discuss problems when you have three kids yelling "mommy" every two seconds while the connection to follow the meeting is really bad? There were times when I was pretty sure I would either lose my mind or my job." Employee, Vestro

The third reason was that information shared informally was often not accessible to employees working remotely, as illustrated by a project at Dalamaza that had to be terminated suddenly due to the insolvency of the client. This led to a major restructuring of the team, as employees were reassigned to other projects. Because this all happened at very short notice, most of the information about reassignments was simply passed on in a series of informal meetings among employees in the office. However, those working at home had little information about why they were being assigned to a different project and dealing with new customers, leading to confusion and frustration. An employee at Akon reported similar experiences:

"I felt like a second-class employee. I took my supervisor seriously and started working from my parents' home, which meant I only came to the office once or twice a month. Every visit was overwhelming, and I didn't get to work because I had so many things to catch up on, so much information that you only heard about when you were in the office. It was a really difficult time, as my team members became more and more frustrated in the face of this information imbalance." Employee, Akon

Nevertheless, the change from a physical to a digital workplace logic increased the attractiveness of the companies as a place to work. All three are increasingly receiving more applications from talent around the world. Hiring employees who are already familiar with the digital workplace logic (Force 7) leads to a constant stream of new ideas on how to further adjust the workplace design. As they continue to progress through the fourth Calibration phase, the companies must decide on how to deal with novel ideas and implement a monitoring strategy that allows them to assess the extent to

which digital workplace tools, cultural assets and physical spaces are aligned and might benefit from further adjustments. Dalamaza and Akon are also considering whether to create a "head of remote" working position (Force 8) that would take over the main responsibility for these monitoring and adjustment processes.

Transition Roadmap and Recommended Management Actions

The overarching message that emerged from the three case studies described above is that digital workplace transition passes through four phases and, under crisis conditions such as the Covid-19 pandemic, can be realized within a relatively brief period. Each phase requires different managerial practices to provide digital tools not only for working remotely but also for aligning cultural assets and physical spaces with the new working logic. The digital workplace transformations achieved by the three case companies are "extreme" examples because they went from fixed working hours in physical offices to maximum flexibility in terms of the time and location of work activities within two years. However, recent reports on future trends in work[21] have shown that most companies are now seeking less-extreme transformations involving the establishment of hybrid workplaces that combine elements of both physical and digital workplace logics.

Based on an analysis of the three case study companies, Figure 2 provides a roadmap that will enable executives to navigate digital workplace transformation along the continuum from physical to digital. It includes an overview of the four transition phases and checklists for ensuring that all relevant workplace arrangements are considered, aligned and comprehensively transformed.

In addition to the roadmap, I have derived the following three recommendations to help CIOs and HR leaders formulate their digital workplace strategies so they are ready to respond to the next unexpected crisis. These recommendations are also relevant for navigating the transition from a

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21   See, for example, 9 Future of Work Trends Post COVID-19, Gartner, June 12, 2022, available at https://tinyurl.com/263x5pz4.

Figure 2: Roadmap for Digital Workplace Transformation

		Phase 1	Phase 2	Phase 3	Phase 4
Management Practices		**Assessing Status Quo** ▷		**Leveraging Causation Planning** ▷	
			Experimental Repatterning ▷		**Calibration (Causation and Effectuation)** ▷
Work-place Arrange-ments	**Digital Tools**	• Assessing current technological setup (official and unofficial) of the workplace and its efficiency in terms of: a) remote work and; b) asynchronous workflows • Identifying units that are capable of truly understanding workflows and translate them into requirements for digital tools • (Re)defining data protection and privacy regulations	• Identifying core requirements that digital tools need to fulfil to enable: a) remote work; and b) asynchronous workflows • Identifying appropriate digital tools that meet requirements and comply with data protection and privacy regulations • Implementing a testing strategy for each tool that defines: a) the overall objective of the test; b) the underlying hypothesis; c) the available time; and d) evaluation	• Implementing a digital toolset that enables smooth, cross-device documentation of all information and conversations to achieve symmetric information sharing • Introducing digital tools that enable the effortless exchange of information (voice and video) as alternatives to email • Setting a fixed deadline for creating a professional digital workplace design	• Implementing a monitoring strategy that enables regular reconciliation of existing digital tools with workplace requirements, especially when new projects are started or new employees join • Initiating (membership in) networks with companies that follow a similar workplace logic in order to share experiences and best practices
	Cultural Assets	• Assessing key features and underlying value of the organizational culture • Evaluating what employees value about the company in general and their workplace in particular • Identifying potential sources of resistance to embrace a new workplace logic	• Implementing measures that address identified concerns by allowing employees to temporarily try new workplace arrangements • Involving all affected employees in discussions of experiences and how to resolve potential pitfalls • Arranging joint workshops that enable all employees to collaboratively envision a culture that supports and values flexible workplace arrangements	• Embedding documentation and transparency in the company's DNA • Engaging coaches to support the definition of explicit and implicit communication measures across the digital tools • Running regular events to keep all employees informed of the latest developments (e.g., stand-ups) and create a sense of belonging (e.g., annual retreats)	• Implementing a monitoring strategy that provides insights on employees' satisfaction, commitment and loyalty • Organizing regular events (e.g., summer camps, "workation" retreats, conferences etc.) to enable all staff to physically come together • Considering hiring a head of remote work who will ensure cultural unity and alignment of the various workplace arrangements
	Physical Spaces	• Assessing activities for which the physical office space is considered essential • Assessing reasons for preferring to work in the office vs. remotely • Differentiating between core benefits of the physical office that need to be retained and the more nostalgic features	• Determining the type of meetings to be held virtually on a trial basis • Adapting work-from-home policies and establishing explicit home office days (which will be gradually extended • Ensuring that executives act as role models by working outside the office as often as possible	• Deciding whether to design a remote of hybrid workplace, and setting specific deadlines for completing the design • Planning for primary use and corresponding design of workspaces	• Weighing the need for office space owned by the company against alternatives (e.g., offering day passes to co-working spaces, sharing with other companies, using office space for multiple purposes such as events, galleries etc.)
Workplace Logic		**Physical Workplace Logic**		**Digital Workplace Logic**	

physical to digital workplace logic in the absence of a crisis.

Recommendation 1: Develop a Crisis Response Plan for Orchestrating Digital, Cultural and Physical Workplace Arrangements

A 2019 survey by PricewaterhouseCoopers[22] revealed that 95% of executives worldwide believed that their company would soon be affected by a crisis event. However, when the COVID-19 pandemic broke out in 2020, only one in three companies had a reliable crisis response plan in place to manage the workplace implications of the pandemic. The findings reported in this article show that the lack of a strategic plan for transitioning from physical to digital workplaces initially leads to inertia, followed by a series of reactions that can best be described as trial and error.

A comprehensive workplace transformation that goes beyond merely keeping business operations running until the crisis ends requires a strategic plan that defines the alignment of all three components that form a workplace: 1) digital tools that efficiently connect distributed workplaces; 2) the organization's culture that defines the core values of the chosen hybrid or fully digital workplace design; and 3) the use of physical spaces, with clearly defined rules on who is expected to work in them and when. For example, when companies acquire the digital tools to establish hybrid workplaces and create corporate policies for remote work, it does little good if executives do not lead by example and continue to use the physical office as their primary workplace. Similarly, the cases have shown that, although the adoption of hybrid meetings reinforces the optional use of physical offices, such meetings are effective only if the digital infrastructure enables everyone to participate smoothly regardless of their location and if norms of communication for those types of meetings are clearly defined.

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22 *Crisis Preparedness as the Next Competitive Advantage: Learning from 4,500 Crises*, PwC's Global Crisis Survey 2019, available at https://tinyurl.com/3xz6cxfk.

Recommendation 2: Encourage Experimentation with Shadow IT

When a crisis occurs, companies often have no choice but to make the most of the digital toolsets already in place or readily available on the market. During the COVID-19 pandemic, many organizations had to tolerate the use of shadow IT such as Dropbox, WhatsApp and Google Workspace, especially in the early stages of their digital workplace transformations. In preparation for the next crisis, executives should ensure their companies have robust data confidentiality and integrity compliance policies in place. For example, they should clearly define what kind of information and documents can and cannot be temporarily shared via service providers in support of remote work but have not been officially approved by the IT department.

The lessons from the three cases described in this article show that to overcome inertia and resistance to change, it can be useful to employ the "effectuation" approach for planning future workplaces based on available digital tools. With this approach, teams and units can temporarily experiment with different digital toolsets (i.e., officially approved and shadow IT) until the most suitable combination of systems that best support collaboration between hybrid or fully remote workplaces is identified. The timescale for such experimentation should be clearly defined and it should be viewed only as a temporary fix to overcoming the many delays caused by outdated corporate norms and policies that often considerably slow down the digital transformation of workplaces.[23] Added to that, executives should ensure that the units entrusted with managing the transition are open to abandoning the status quo and able to turn visions of new digital workplace requirements into reality.

Recommendation 3: Counteract the Formation of Two Tiers of Employees

The greatest challenge in all three case companies was the unconscious formation of two tiers of employees—those working in the office and those working remotely—caused by remote and physical office working not always being on an equal footing. The analysis of the case companies identified three countermeasures to prevent information asymmetries and provide employees with the same knowledge regardless of their location and time zone:

1. Schedule regular, fixed meetings in which all important information is exchanged, recording the meetings and making the files available to all employees via, for example, an internal wiki application. This ensures that employees working remotely can access the information and do not feel disconnected. The wiki software can also help to document the essence of formal and informal conversations, including the sharing of news over lunch or at the coffee machine, to ensure the transparent flow of information among all employees, whether they work in the office or elsewhere.

2. Engage external service providers such as coaches and IT consultancies to help define and communicate the cultural assets of hybrid workplaces and support the strategic rollout of the necessary digital toolset. For example, the appropriate language and work attire for the different digital communication channels need to be defined, as well as what information is shared, how and at what frequency. There should also be clear rules on how often employees are expected to work from the office and the purpose of their physical presence (e.g., fostering a sense of belongingness).

3. Ensure that executives lead by example and clearly state that physical presence and remote work are equally valued, which can be achieved only if the executives themselves use the hybrid or digital workplaces as they were designed. That is, they need to show their employees that "the future of work" is not an empty phrase but an actual concern of the company.

Concluding Comments

Insights from three companies that completed the digital transformation of their workplaces in response to the COVID-19 pandemic offer executives a roadmap for the transformation process and provide specific recommendations for preparing for future crises. The roadmap

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23   See, for example, Dery, K., Sebastian, I. M. and van der Meulen, N., op. cit., June 2017.

includes an overview of the four transition phases and the forces that require companies to comprehensively align their digital, cultural and physical workplace arrangements to allow the transformation to proceed. This process is anything but straightforward, but responding to an unpredictable and uncontrollable crisis requires CIOs and HR leaders to overcome the various obstacles that stand in the way of enabling remote work and meaningfully connecting distributed workplaces under time pressure and resource constraints. Many of the findings from this research are also relevant for leaders who want to manage the equally challenging and exciting transition along the continuum from physical to digital workplace logic in the absence of a crisis.

Appendix: Research Methodology

Data collection and analysis in the three case study companies followed an exploratory case study design and related guidelines to ensure a rigorous approach.[24] I closely followed these companies over a two-year period (February 2020-June 2022) during which they granted me access to all meetings relevant to gaining a comprehensive understanding of their workplace transformations. The field notes I took during 68 meetings across all hierarchical levels were triangulated[25] with documents that provided further insights into workplace design considerations (e.g., meeting notes, notes on consultations with software vendors, internal surveys, explicit workplace design prescriptions etc.). To complement the insights gained, I conducted a total of 128 interviews with executives and employees at various stages of the workplace transformation process. The overall goal of the interviews was to capture the obstacles encountered and the solutions to overcoming them, and the general attitude toward change processes at all hierarchical levels.

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24 See, for example, Eisenhardt, K. M. and Graebner, M. E. "Theory Building from Cases: Opportunities and Challenges," *Academy of Management Journal* (50:1), 2007, pp. 25-32.

25 Triangulation refers to the validation of data and derived findings through cross-verification from multiple sources.