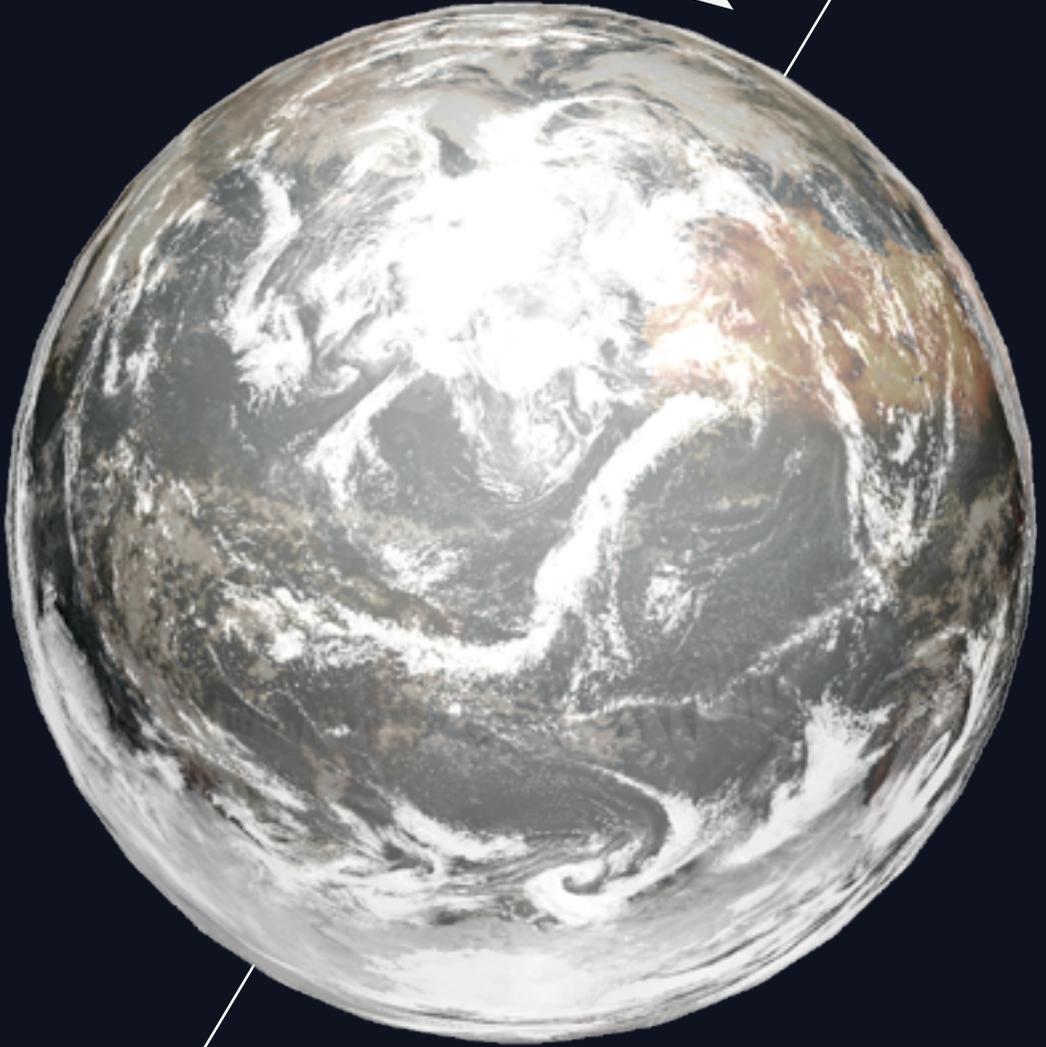


*Work*



*Place*



# *Refactoring Work Futures*

A  
FORESIGHT REPORT ON  
WORK AND PLACE

*Work/Place: Refactoring Work Futures* is the result of a collaboration between Lane, a workplace experience platform, and From Later, an interdisciplinary foresight studio. We'd like to thank all the conversations, individuals, and organizations whose ideas are represented in the following report.



PROJECT TEAM

Clinton Robinson, Initiator  
Kofi Gyekye, Initiator  
Valdis Silins, Research Lead  
Robert Bolton, Project Lead  
Emily Woudenberg, Design  
Udit Vira, Researcher  
Macy Siu, Researcher

Work and place are intimately entwined – *where* and *how* we work *shapes what work we do*. This has only become more apparent during the pandemic, as organizations shifted to remote work when and where possible. It has revealed how necessary digital infrastructure is for managing increasingly distributed organizations. As we create new models for organizing work, we'll have to think about not just the technologies involved, but of changing social needs, economic opportunities, and purposeful possibilities. The following report is not a predictive exercise, but it does anticipate future possibilities; nor is it a roadmap, although it does reveal things that could emerge. More than anything, it's a starting point for further discussions.

CLINTON ROBINSON AND KOFI GYEKYE,  
Co-founders of Lane



LANE

## CLINTON ROBINSON

Chief Executive  
Officer

"This is an initiative to seriously interrogate the futures of how and where we work. It's about taking the time to challenge our assumptions and imagine new possibilities, so we can be more considered about where we're heading."



LANE

## KOFI GYEKYE

Chief Product  
Officer

"We're creating a framework and shared language for talking about what's changing today and how those changes might unfold. As we think about the long-term futures of work environments, people have to be our number one priority."

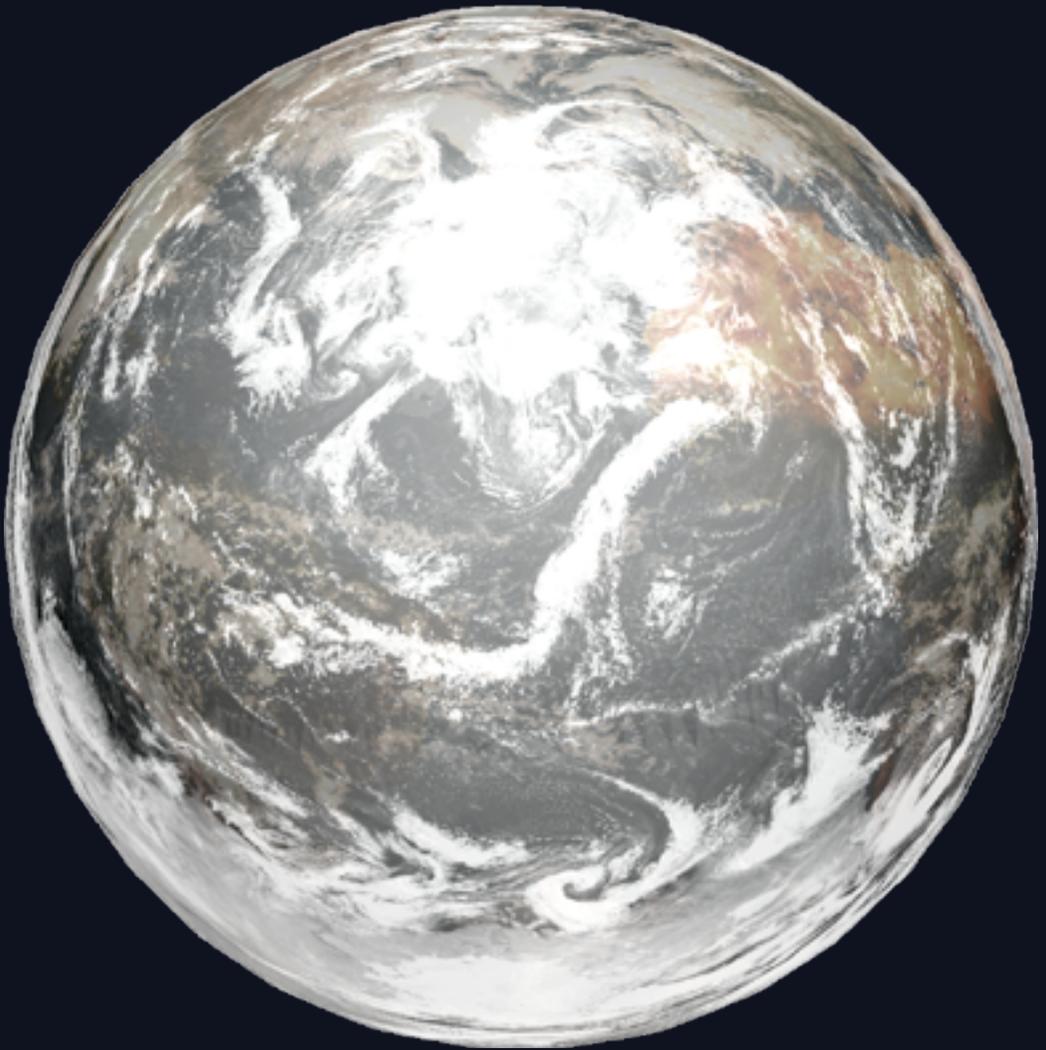
A Global Laboratory	08
→New Geographies of Competition	11
→Organizing Creates Organization	13
Future Themes	15
→Temporal Agency	17
→Organizational Memory	24
→Continuous Sensing	31
→Autonomous Economies	38
→Platform Conviviality	45
→Atmospheres of Care	52
Conclusion	60

1

INTRODUCTION

# A GLOBAL LABORATORY

*A planetary experiment in  
remote work*



Over the last decade, discussions on the 'future of work' have dominated the landscape. Driven by a perceived automation of work, new organizational forms and technological affordances, heightened dynamics of global competition, and a pressing need for meaning and purpose in the workplace, the future of work has spawned a cottage industry of perspectives across news media, industry, and academia.

But the COVID-19 pandemic has forced one vector – remote work – inescapably to the fore. Whether it was desired or not, remote-first is now the default for many kinds of communicational, cognitive, and immaterial tasks. Work has become less bound by physical location, and more distributed across time and space. It is as though the pandemic were running an experiment in distributed organizations – testing and revealing what works and what doesn't in managing organizations that no longer meet in the same locations daily.

At the same time, many kinds of work continue to be done in person and exposed to higher risks, even as protocols are implemented and improved. These tasks affect different groups, including women, minorities, and economically disadvantaged groups, in different ways. Designing the landscape of tomorrow's labour will require a range of hybrid remote and in-person solutions, iteratively co-created. Different situations will call for the emergence of different solutions.

As we look ahead to a world beyond this pandemic, what new *practices, rituals, tools, platforms, protocols, organizational forms, and environments* will shape our work futures?

# NEW GEOGRAPHIES OF COMPETITION

## Will remote work change the shape of cities and global flows?

The future of this remote experiment is full of uncertainty. In particular, for its impact on the shape of urbanization and globalization to come.

Cities, long hotbeds of innovation and creativity, where density creates outsized returns to scale,<sup>[1]</sup> are suddenly at risk of losing their allure. Why bother having offices in expensive urban locations when going remote can achieve similar results? The evidence of whether this can be sustained in the long run is not in. While some organizations plan to go fully remote, others are predicting a hybrid approach that will minimize but not eliminate in-person requirements.<sup>[2]</sup>

Historically, cities have depended on aggregating dense labour markets in an urban core, surrounded by increasingly dispersed residential areas limited by their commute times.<sup>[3]</sup> But going remote upends this model – eliminating commute times, and making labor available anywhere. The result could be a range of new post-urban experiments<sup>[4]</sup> – from clusters of remote work vacation towns, to pedestrianized downtowns, to dispersed satellite offices and flexible on-demand spaces.

But remote work also has implications on globalization. While concerns over the resilience of supply chains has led to calls for relocating production, it's not just goods but the movement of people that could change. If labour is no longer limited by geography but aggregated on global platforms, then, in principle, the world's best talent is available anywhere – and equally, its lowest-paid. This split could accelerate if not just telepresence (technologies that enable communication across distances) but telerobotics (technologies that enable physical action across distances) become commonplace.<sup>[5]</sup>

The remote experiment is truly unprecedented. Long term trends have deepened while short term fads have proliferated. How exactly globalization and urbanization will be affected by the pandemic in the long-term remains to be seen, but the possibilities are wide.

[1]

Geoffrey West, *Scale: The Universal Laws of Growth, Innovation, Sustainability, and the Pace of Life in Organisms, Cities, Economies, and Companies* (2018), <https://www.penguinrandomhouse.com/books/314049/scale-by-geoffrey-west/>

[2]

Christopher Stanton, Zoe Cullen, and Michael Luca, “How Much Will Remote Work Continue After the Pandemic?” (2020), <https://hbswk.hbs.edu/item/how-much-will-remote-work-continue-after-the-pandemic>

[3]

Alain Bertraud, *Order Without Design: How Markets Shape Cities* (2018), <https://mitpress.mit.edu/books/order-without-design>

[4]

Valentina Romei and John Burn-Murdoch, “From peak city to ghost town: the urban centres hit hardest by Covid-19.” (2020), <https://www.ft.com/content/d5b45d-ba-14dc-443b-8a8c-e9e9bbc3fb9a>

[5]

Richard Baldwin, *The Great Convergence: Information Technology and the New Globalization* (2016), <https://www.hup.harvard.edu/catalog.php?isbn=9780674660489>

# ORGANIZING CREATES ORGANIZATION

How does stability emerge, cohere, and maintain itself over time?

Whether they were ready to go remote or not, organizations are remembering that it *takes work* to create the conditions *for work* to happen. Organizations, which organize how work happens, are being reminded that what holds them together is more than just sharing a location.

Organizations are acts of organizing – ways of aligning resources, people, technologies, skills, projects, and tasks. But this takes more than just formal documentation like organizational charts, reporting structures, strategic plans, roadmaps, assets, and legal obligations to shareholders and stakeholders. It's also the tacit forms of knowing<sup>[1]</sup> that take place constantly: the conversations, tones of voice, collaborative modes, expectations, cues of trust and belonging, collective activities, rituals, and ways of working.

All of these features are necessary for an organization to emerge. And all of them are being reorganized by the challenge of going remote. How culture emerges in organizations will have to be adapted to a hybrid digital/physical age. Much of this organizing work will require coordinating between new tools, platforms, practices, and places – attending to the ongoing refactoring of work/place experience among employees, enabling more seamless interfacing between the digital and the physical realities of the new world of working.

[1]

Michael Polanyi, *The Tacit Dimension* (1966),  
[https://press.uchicago.edu/ucp/books/  
book/chicago/T/bo6035368.html](https://press.uchicago.edu/ucp/books/book/chicago/T/bo6035368.html)

2

# FUTURE

*The following themes describe ongoing shifts in the organization of work – a landscape of changing affordances, opportunities, and tensions to be navigated.*

# THEMES

01  
TEMPORAL  
AGENCY  
P-16

02  
ORGANIZATIONAL  
MEMORY  
P-16

03  
CONTINUOUS  
SENSING  
P-16

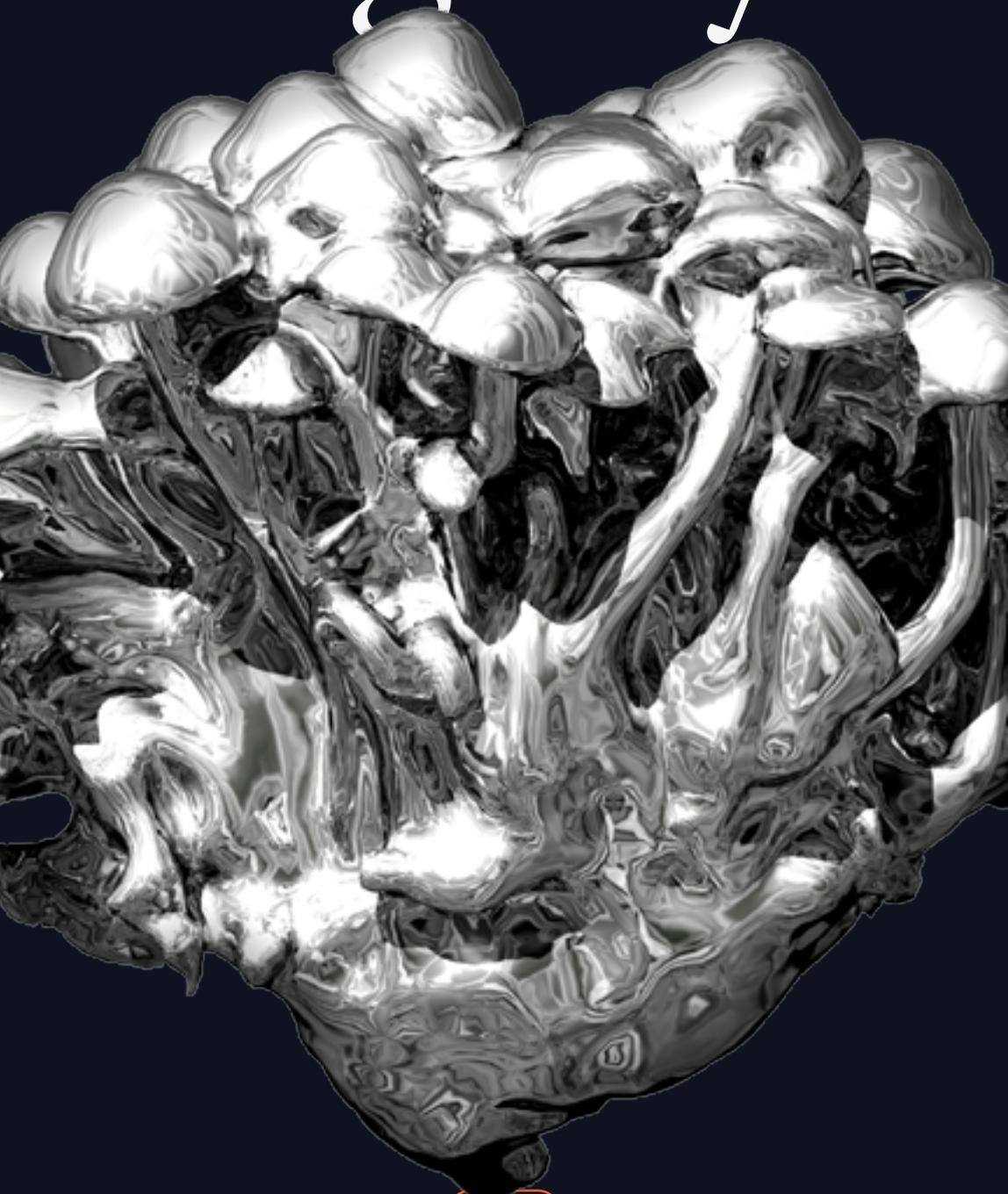
04  
AUTONOMOUS  
ECONOMIES  
P-16

05  
PLATFORM  
CONVIVIALITY  
P-16

06  
ATMOSPHERES  
OF CARE  
P-16

FUTURE THEMES

# Temporal Agency



# TEMPORAL AGENCY

## New ways of plotting time and timing

### FROM FIXED TO FLEXIBLE

Temporal agency is about individuals and organizations learning how to actively shape their time, rather than taking it for granted. Freed from the rituals of commuting, coffee, the 9–5, the rhythms of shared space, the casual collisions, activities, and after-hours conversations of offices, time itself is open to design. For individuals, it's about how to structure the rhythms of their days – to seize new kinds of opportunities to structure time aligned to internal speeds without being ground down by meetings and 24/7 pressures. For organizations, temporal agency is about managing physically distant employees and coordinating their increasingly asynchronous schedules. For example, some platforms are setting 'commute rituals'<sup>[1]</sup> on their apps to enable remote transitions between work and home, while others are using religious practices to inspire ritual design for individuals.<sup>[2]</sup>

Even before the pandemic, the temporalities of the work day and the ability to collaborate across distances were being reshaped by the effects of 'software eating the world.'<sup>[3]</sup> Cloud servers, smartphones, email and messaging, VoIP and video conferencing helped create a bleed between work and non-work hours. Many experienced a crisis of busyness from the always-on pressures of work, including expectations for collaboration that sociologist Judy Wajcman labeled less a crisis of 'having time' and more of 'finding timing.'<sup>[4]</sup> But the use of

Software has rearranged organizational rhythms, enabling new ways of coordinating across scales, cycles, and tempos. *Time itself is subject to design.*

software changed organizational temporalities in other ways as well – refactoring work itself. Agile approaches pioneered in software development, where tasks are completed in parallel rather than sequentially, are increasingly applied to other kinds of work. Expectations are for products and services to be iterated and launched continuously, fundamentally changing how organizations organize work.<sup>[5]</sup>

As individuals and organizations adapt to the remote and agile dynamics reshaping work, they'll also have to coordinate physical interactions with digital possibilities. Near-term possibilities involve reformatting offices for flexible occupancy – managing the flows of people in and out of buildings, readjusting layouts for distancing, providing more leased, on-demand, and flex solutions.

Longer-term possibilities involve coordinating new relations between time, place, and organization. For instance, during the pandemic, companies took the opportunity to rethink the role of meetings – holding optional drop-in hours, hosting asynchronous sessions on platforms like Discord or Slack, or limiting them entirely to fifteen minutes while shortening the workday to five hours without losing productivity.<sup>[6]</sup> In Germany, meanwhile, entire cities are being run according to the chrono rhythms of their inhabitants, rather than synching to a clock.<sup>[7]</sup> These examples point to ways of working shaped by experiments in shaping individual and organizational times according a range of new rhythms, values, and expectations.

# IMPLICATIONS FOR ORGANIZATIONS

---

1

---

Entrust individuals to structure their own time and design personal rituals that enable entry/exit to different work states, while also being aware that such flexibility could become a burden on employees without the proper organizational support.

---

2

---

Reduce friction in organizational timing by procuring tools that coordinate scheduling seamlessly across digital and physical environments.

---

3

---

Refactor work holistically by developing sustained, continuous, parallel processes that allow individuals to operate at different speeds.

---

4

---

Experiment with new organizational temporalities, such as limiting off-hour emails or reconfiguring the workday.

# SPECULATIVE IMAGINATION

---

1

---

Imagine an organization structured around time scales rather than products and geographies. What would concern the department of nanosecond changes (e.g., real time awareness of changing sentiments)? What would a department of longer term horizons consider (e.g., impact on future generations)?

---

2

---

What if the work week was scheduled according to each individual's unique chronobiology? Imagine a "chrono-organization" that adapts its timetables to suit the circadian and metabolic rhythms of its members.

---

3

---

How might time tracking evolve into something richer than just logging hours, billing, and productivity? Could a system that accounts for the qualitative dimensions of time – how a particular hour, day, or week feels – create different ways of valuing time?

## TEMPORAL AGENCY

[1]

Sean Gallagher, "The Internet is full of business cats: Dealing with the breakdown of the work/home divide." (2020), <https://arstechnica.com/information-technology/2020/10/future-of-collaboration-02/>

[2]

Nellie Bowles, "God Is Dead. So Is the Office. These People Want to Save Both." (2020), <https://www.nytimes.com/2020/08/28/business/remote-work-spiritual-consultants.html>

[3]

Marc Andreessen, "Why Software is Eating the World" (2011), <https://a16z.com/2011/08/20/why-software-is-eating-the-world/>

[4]

Judy Wajcman, *Pressed for Time: The Acceleration of Life in Digital Capitalism* (2014), <https://press.uchicago.edu/ucp/books/book/chicago/P/bo19085612.html>

[5]

Eric Ries, *The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses* (2011), <http://theleanstartup.com/book>

[6]

Alex Soojung-Kim Pang, "It's time to end 9-5 office hours." (2020), <https://www.theguardian.com/commentis-free/2020/mar/10/five-hour-workday-shorter-book>

[7]

Linda Geddes, "Why we should be watching the sun, not the clock" (2019), <https://www.theguardian.com/news/2019/jan/11/watching-the-sun-not-the-clock-sleep-body-clocks-daylight-saving-time>

FUTURE THEMES

# Organizational Memory



# ORGANIZATIONAL MEMORY

## Linking shared pasts to emerging futures

FROM PHYSICALLY TO DIGITALLY MEDIATED

Workplaces are the shared contexts in which teams operate. But even more than that, they determine how organizations remember, think, and act. Space isn't just a neutral platform on top of which work happens, but is the medium by which individual activities cohere as an organization. As the spatial experience that binds together organizations is reformatted by remote work, new tools, practices, and platforms will supplement the functional roles of space and the ways shared memories are accessed, decisions made, and actions undertaken. To take only the most banal example, the loss of 'water cooler' talk during the pandemic has pushed some organizations to think about how to engineer serendipity for remote work.<sup>[1]</sup>

One can draw a parallel between organizations and insights from recent cognitive theories. Enactivism points to the relationship between an organism and its environment as the key to understanding cognition.<sup>[2]</sup> The organism, its brain, and its environment are not separate but linked together in a continuous process. The environment is itself a factor in how things come to think, rather than the brain alone. Similarly, space plays a critical role in shaping how organizations come to think and act collectively – in the location of documents and systems of filing, in the layout and uses of space, in the design and vibe of a room, in the thousands of events sedimented over time. The past is

The loss of water cooler talk during the pandemic has pushed some organizations to think about how to *engineer serendipity* for remote work.

embodied in space and animated by ongoing practices that access it, enabling organizations to act.

As teams go remote and hybrid, there is a need to organize new forms of external memory and shared contexts. For some, the solutions are virtual environments like VR, which create skeuomorphic copies of the office<sup>[3]</sup>. But non-3D tools can also assume the functions of shared space. Individuals are already using knowledge management tools like Roam Research<sup>[4]</sup>, Notion<sup>[5]</sup>, and Jupyter<sup>[6]</sup> to document their work, leaving their research and projects open the way documents might once have been scattered across a desk, visible to anyone. This is what Andy Matuschak calls “working with the garage door up”<sup>[7]</sup> – enabling co-presence without physical or temporal presence.

Platforms for co-presence enable an organization’s living present – the ways in which past, present, and future collide. Every organization experiences its past and future together in an ongoing, open, living present<sup>[8]</sup> that has to be shared in order to be active. While many of these choices and contexts are embodied in physical environments, they’ll increasingly have to be mediated through digital means, tools, and platforms.

# IMPLICATIONS FOR ORGANIZATIONS

---

1

---

Enable an organization's 'living present' through archival platforms where the past (e.g. artifacts, conversations, interactions) can be accessed to help make decisions about the future.

---

2

---

Search for alternative ways to engineer serendipity and other tacit exchanges to compensate for the loss of casual encounters from decreased physical co-presence.

---

3

---

Link together physical spaces and assets with digital layers of organizational memory that can be shared across diverse locations.

# SPECULATIVE IMAGINATION

---

1

---

Imagine an organizational ‘wayback machine’ able to retrieve snippets of conversation, ideas dropped in meetings, references passed over in emails – the entire history of tacit exchanges in an organization – organized in dynamic ways (by theme, tone, frequency, proximity, etc.)

---

2

---

How might we use digital systems to design ongoing, open, contributory R&D platforms that break from current IP models and organizational boundaries? If our organizational memory were open to outsiders, could participation be incentivized through alternative models of compensation (like paid support, patronage, prizes and bounties)?

---

3

---

Imagine toolboxes and kits for calibrating the relation between one’s set (i.e. mindset, such as emotions and expectations) and setting (the physical environment) – to enable new modes of concentration, creativity, endurance, collaboration etc.

## ORGANIZATIONAL MEMORY

[1]

Kendall Square, “Engineering Serendipity During a Global Pandemic” (2020), <https://kendallsquare.org/engineering-serendipity/>

[2]

John Stewart, Olivier Gapenne and Ezequiel A. Di Paolo, Eds., *Enaction: Toward a New Paradigm for Cognitive Science* (2010), <https://mitpress.mit.edu/books/enaction>

[3]

Lucas Matney, “Facebook debuts Infinite Office, a virtual reality office space” (2020), <https://techcrunch.com/2020/09/16/facebook-debuts-infinite-office-a-virtual-reality-office-space/>

[4]

Village Global’s Venture Stories, “Creating Tools For Networked Thought with Conor White-Sullivan of Roam Research” (2020), <https://podcasts.apple.com/us/podcast/creating-tools-for-networked-thought-conor-white-sullivan/id1316769266?i=1000472900301>

[5]

Inc. Founders Project with Alexa von Tobel “How to Craft a Viral Product, with Ivan Zhao of Notion” (2019), <https://www.inc.com/alexa-von-tobel/notion-ivan-zhao-founder-turned-passion-software-profitable-business-1-million-users.html>

[6]

Jeffrey M. Perkel, “Why Jupyter is data scientists’ computational notebook of choice” (2018), <https://www.nature.com/articles/d41586-018-07196-1>

[7]

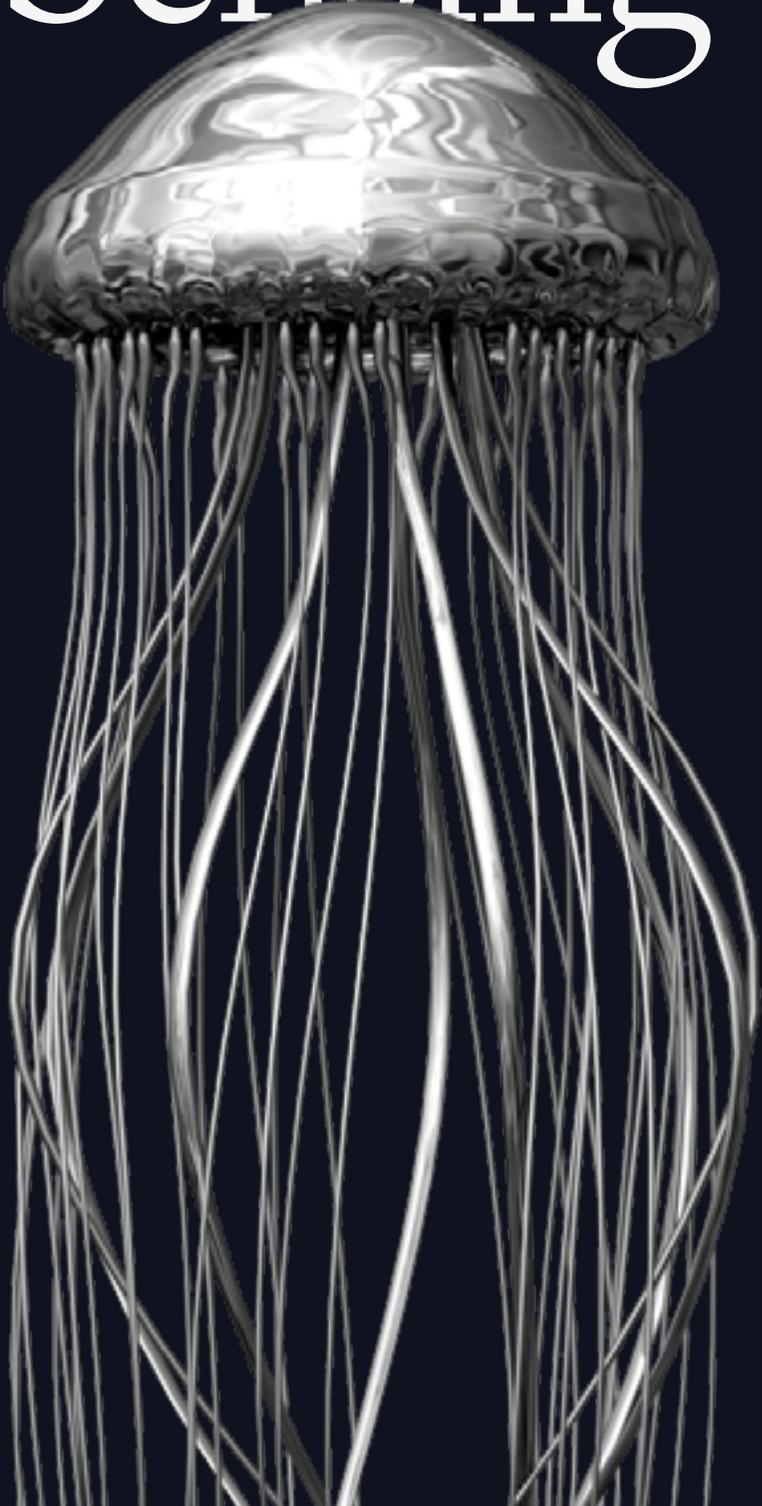
Andy Matuschak, “Work with the garage door up” (2020), [https://notes.andymatuschak.org/Work\\_with\\_the\\_garage\\_door\\_up](https://notes.andymatuschak.org/Work_with_the_garage_door_up)

[8]

Tor Hernes, *A Process Theory of Organization* (2014), <https://global.oup.com/academic/product/a-process-theory-of-organization-9780199695089>

FUTURE THEMES

# Continuous Sensing



# CONTINUOUS SENSING

## Creating the conditions for self-organizing systems

FROM PERIODIC TO AUTOPOETIC

One of the most defining features of the early 21st century is the growth of sensing devices in our environment. The smartphone alone, with its slew of accelerometers, gyroscopes, magnetometers, microphones, lights sensors, and depth sensors like lidar, is the most rapidly adopted technology to have ever existed, with an estimated 3.5 billion devices in use in 2020.<sup>[1]</sup> Beyond smartphones there are satellites, car sensors, pollution sensors, weather sensors, CCTV and traffic monitoring, smart home devices with microphones and cameras, and more.

On their own, any one of these devices produces a trivial amount of information – the temperature in a single location, the search terms of a single user. But brought together in aggregate, and used as training data to construct models, creates something entirely different: emergent forms of intelligence. In the field of artificial intelligence, swarm research looks into how aggregating multiple, individually limited agents produces intelligence at a collective level. For instance, Amazon's warehouse robotics system is composed of hundreds of mobile drive units each drifting closer to their anticipated packing station.<sup>[2]</sup> Rather than fixed locations accessed by individuals, the warehouse becomes a self-organizing system – an autopoietic whole exhibiting intelligence as an aggregate of its individual units.

Imagine enabling a building to *sense itself* and *adapt over time*, rather than fixing its functions and uses at the outset.

Similarly, Tesla's self-driving system is composed of a network of individual cars each continuously sensing their environments.<sup>[3]</sup> Events sensed from any particular car can be instantly shared across the network, improving the models instantly. Or Google's translation services, which can update their models overnight and improve their services. It's by continuously sensing the environment and sharing that information that these systems can exhibit signs of self-organization. This is precisely what supplementing the physical world with a digital sensing layer enables: continuously improving services.

Buildings too, can continuously sense themselves, and, linked together as an internet of buildings, improve on metrics like occupancy and utilization, energy efficiency, and revenue. Companies like Humanyze go even further by capturing sociometric data in the workplace with smart ID badges worn by employees, including conversations and tones that were previously tacit, in order to uncover patterns about what work works best.<sup>[4]</sup> But deploying machine sensing without understanding how it interacts with the social fabric of workplaces raises genuine concerns around workplace surveillance. This requires working together to gain the actual trust of employees, such as by developing open protocols, using federated systems that limit data sharing,<sup>[5]</sup> and soliciting the active involvement of those affected. Deploying socio-technical systems is always as much a question of how to configure, organize, and deploy systems socially, as it is of harnessing new technological possibilities.

# IMPLICATIONS FOR ORGANIZATIONS

---

1

---

Explore what systems could benefit from more continuous sensing/monitoring that feedback processes to improve over time.

---

2

---

Architect environments that invite inhabitants to adapt and improve them over time rather than deploying systems with rigid, inflexible functions.

---

3

---

Find balance between the desire to capture everything and capturing what's needed. This will reduce bulk data overload, which can reduce meaning by hiding the signal in the noise, generating low-value or spurious correlations.

---

4

---

Establish social protocols and processes to involve those affected by sensing systems, addressing genuine concerns over workplace surveillance.

# SPECULATIVE IMAGINATION

---

1

---

Imagine a building able to sense itself – its required maintenance and repairs, its occupancy and utilization, and even its inhabitants' behaviours, incentivizing them to change their behaviour for the sake of the building; under what circumstances would this not feel dystopian?

---

2

---

Imagine an employee council for testing, piloting, accepting, and helping deploy new workplace technologies. If technology decisions were made by those who will use the tools, what would that change about the workplace?

---

3

---

What might a building look like, if it was designed to be navigated by autonomous systems rather than people? How might cities be remade to become more legible to machine vision, robotics, and non-human wayfinding (h/t Benjamin Bratton)?

[1]

Statista, “Number of smartphone users from 2016 to 2021” (2020), <https://www.statista.com/statistics/330695/number-of-smartphone-users-worldwide/>

[2]

Jesse Lecavalier, “Human Exclusion Zones: Logistics and New Machine Landscapes” (2019), <https://onlinelibrary.wiley.com/doi/10.1002/ad.2388>

[3]

John Markoff, “Tesla and Google Take Different Roads to Self-Driving Car” (2016), <https://www.nytimes.com/2016/07/05/business/tesla-and-google-take-different-roads-to-self-driving-car.html>

[4]

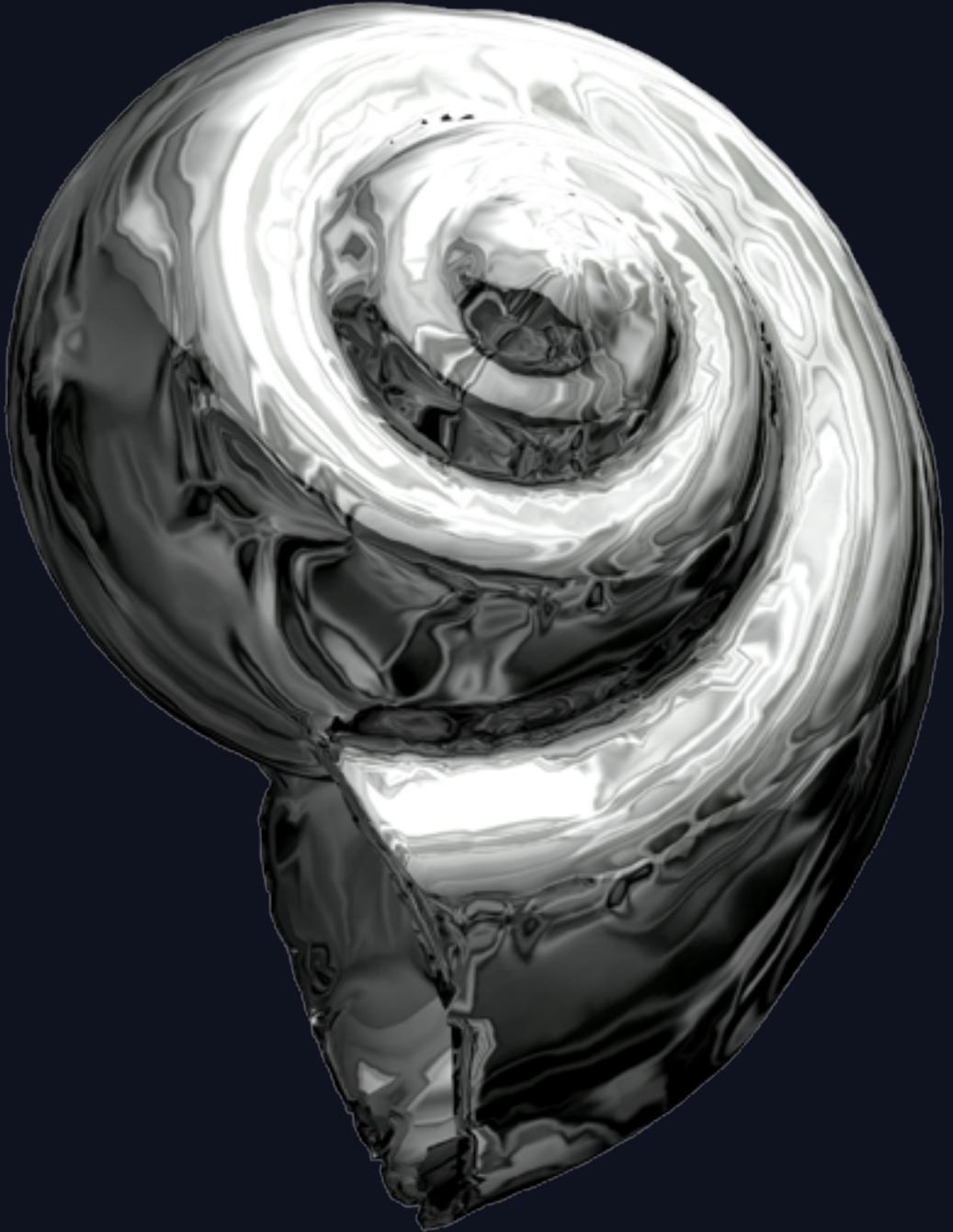
MIT Technology Review, “Technology for workplaces that work: Humanyze’s Ben Waber” (2019), <https://www.technologyreview.com/2019/01/24/137732/technology-for-workplaces-that-work-humanyzes-ben-waber/>

[5]

Brendan McMahan and Daniel Ramage, “Federated Learning: Collaborative Machine Learning without Centralized Training Data” (2017), <https://ai.googleblog.com/2017/04/federated-learning-collaborative.html>

FUTURE THEMES

# Autonomous Economies



# AUTONOMOUS ECONOMIES

## Increasing collective capacity

### FROM AUTOMATION TO AUTONOMY

Often, automation is framed as an issue of replacing human labour and tasks with machines. But its biggest impact is transforming not only how work is organized but *what work is possible*. While many current industry uses of automation and machine learning,<sup>[1]</sup> such as robotic process automation (RPA), simply replace repetitive tasks done by hand with automated processes done by software, the longer-term uses of automation foretell a world of work remade by machinic processes rather than just replaced. This means not just doing *more* with less, but doing fundamentally *different things*.

But the fear of being replaced by machines is perennial, and emerges alongside the first proto-computers of the early 1800s. The computer pioneer Charles Babbage, for instance, envisioned a future of mental work ‘reformatted by machinery’ in the 1830s just as physical work had been transformed by factories.<sup>[2]</sup> Fear of automation returned again in the 1950s, with the first office computers creating widespread fears of a post-war ‘cybernation’ of the office.<sup>[3]</sup> And yet again it’s with us today, as the success of neural nets and deep learning models make even complex cognitive tasks seem at risk of being replaced – despite every previous wave of automation producing as many net new jobs and industries as replacing past ones.<sup>[4]</sup>

Automation continued to be made visible during the COVID-19 pandemic as supply lines, manned by humans, became vulnerable to

The longer-term uses of automation foretell a world of work *remade by machinic processes* rather than just replaced. What forms of *post-human imagination* might emerge?

disruption to lockdowns and travel limits. This extends automation discourse beyond the manufacturing and office work sectors in which it's typically discussed, and focuses, critically, on the automated logistics zones that Liam Young calls our 'machine landscapes' – the container ships, unmanned ports, data centres, robotic cleaners, and industrialized agriculture moving goods around the planet.<sup>[5]</sup>

What links this logistical planetary mesh are machine-driven communications – from the creation of images never seen by humans,<sup>[6]</sup> to contracts without human intermediaries.<sup>[7]</sup> As they interface with humans, these systems create new human-machine morphologies – from zones where humans are entirely excluded, like dark factories without lights, to systems of human-machine collaboration, which remind us of mythical centaurs.<sup>[8]</sup> In cities, this invisible logistical infrastructure is becoming more visible through the rise of 'ghost kitchens' and parking lots reconfigured as automated parks for last-mile services like food preparation, medical services, and equipment rental.<sup>[9]</sup>

But instead of probing automation as though it were the inevitable replacement of existing human tasks, we could ask what new forms of autonomy it enables. As design theorist Benjamin Bratton has pointed out, ecological systems like the human body are themselves already nested layers of automation – breathing, digesting, and blinking are all done without conscious deliberation or awareness.<sup>[10]</sup> Automation doesn't reduce the field of choice, but increases it. Organized in the right ways, it's a precondition for autonomy, not a reduction of it. We have to ask how automation gets organized, and what autonomies it enables – not whether it will lead to a utopian or dystopian world without work.

# IMPLICATIONS FOR ORGANIZATIONS

---

1

---

Increasing prevalence of automated processes – including robotics, logistical units, transactions, auctions, contracts, and communications – will lead to a range of human-machine work morphologies, requiring the design of new practices and tools.

---

2

---

If automation is less a question of replacing human labour and more of determining new functions for the enterprise – how can automated processes be organized in ways that enable new kinds of organizational goals and values, rather than efficiency?

---

3

---

Ongoing fears and concerns about automation legitimately raise questions around who benefits and how those transitions occur, such as who bears the costs of reskilling a displaced workforce or how that surplus is distributed.

# SPECULATIVE IMAGINATION

---

1

---

Imagine an automated B2B (building to building) communications network able to coordinate and autonomously contract repairs and maintenance across buildings, dynamically reassign or trade occupancy across its network, and share layouts or services tested in other buildings.

---

2

---

What if the externalized costs of carbon were seamlessly available as a factor to weigh in on every business decision? Imagine an automated carbon accounting system. How would it change the ways resources are allocated?

---

3

---

How might an upskilling system be designed for worker autonomy so that when individuals have mastered a domain, they're provided with new opportunities for growth and exploration, rather than locked into the same task?

## AUTONOMOUS ECONOMIES

[1]

Nathan Benaich and Ian Hogarth, “State of AI Report” (2020), <https://www.stateof.ai/>

[2] Philip Mirowski, *Machine Dreams: Economics Becomes a Cyborg Science* (2001),

<https://www.cambridge.org/core/books/machine-dreams/0B80A0FFDCB0BFBD-2B77698E8F9A0618/>

[3]

Thomas Rid, *Rise of the Machines: A Cybernetic History* (2016),

<https://wnorton.com/books/Rise-of-the-Machines/>

[4]

Andrew McAfee and Erik Brynjolfs-son, *Machine, Platform, Crowd: Harnessing Our Digital Future* (2017),

<https://wnorton.com/books/Machine-Platform-Crowd/>

[5]

Liam Young, Ed., *Machine Landscapes: Architectures of the Post Anthropocene* (2019),

<https://www.wiley.com/en-us/Machine+Landscapes:+Architectures+of+the+Post+Anthropocene-p-9781119453017/>

[6]

Trevor Paglen, “Invisible Images (Your Pictures Are Looking at You)” (2016),

<https://thenewinquiry.com/invisible-images-your-pictures-are-looking-at-you/>

[7]

Exponential View with Azeem Azhar, “The Autonomous Economy: W. Brian Arthur” (2019),

<https://hbr.org/podcast/2019/06/the-autonomous-economy>

[8]

Nicky Case, “How To Become A Centaur” (2018),

<https://jods.mitpress.mit.edu/pub/issue3-case/release/6>

[9]

Anna Wiener, “Our Ghost Kitchen Future” (2020),

<https://www.newyorker.com/news/letter-from-silicon-valley/our-ghost-kitchen-future>

[10]

Benjamin Bratton, *The Terraforming* (2019),

<https://store.strelka.com/en/items/100>

FUTURE THEMES

# Platform Conviviality



# PLATFORM CONVIVIALITY

## Infrastructure and tools for scaling mutualism

FROM INDIVIDUALISM TO INTIMATE COLLABORATION

New infrastructures are empowering teams and grassroots groups to rapidly build trust and improve collaboration. These infrastructures include novel governance processes, ownership models, financial instruments, and accounting systems, many of which are made possible through new communication apps, digital payment rails, smart contracts, and non-fungible tokens.<sup>[1]</sup> When combined, these tools lower transaction costs and increase trust, providing a convivial means for people to come together, organize, produce, and distribute their work with ease.

These team-based possibilities are an evolution of the limits of the gig economy as it intersects with demands for new, more social possibilities. Those limits are etched into the history of the gig economy, which can be traced back to the office outsourcing and temping of the 1950s.<sup>[2]</sup> Gig work accelerated with the end of the conglomerate model of the corporation in the 1970s, and again with IT and service offshoring in the 90s and 2000s. But rather than enable worker autonomy, gig work has been dominated by large outsourcing firms that dictated worker conditions. In the 2010s, innovations in tech enabled the creation of efficient multi-sided markets<sup>[3]</sup> like Airbnb, Uber, and Upwork, which both extended and upended the existing temp model.

Throughout the 2010s, online platforms made gig work ubiquitous yet isolating. Will giving users, workers, and contributors *a greater stake in these platforms* change this?

While these innovations created new freedoms and flexibilities to work when and where desired, and unlocked new revenue streams from contractors' underutilized assets, they also increased the pressure on individuals to compete against one another, and heightened a sense of economic uncertainty or precarity. It is against this backdrop that new models of platform conviviality are emerging, which not only enable teams to quickly get off the ground, but enable new user, contributor, and stakeholder-ownership models.

In cultural production, examples of fan-centered communities are appearing on platforms like Substack, Patreon, Discord, and Twitch. These are sometimes lumped together as the passion economy<sup>[4]</sup> – a means of disintermediating media structures and providing producers with tools for direct fan support. Some push these trends further, and using new token mechanisms, see a future of user investment dubbed the ownership economy<sup>[5]</sup>. Early experiments with contributory-ownership models include cryptoraving in Europe, where participation over time creates ownership, ensuring those creating the culture benefit as its long-term stewards.<sup>[6]</sup>

In software development, open-source projects have long used a commons-based peer production model, relying on the voluntary contributions of a core group of maintainers. However these communities have struggled to find economic sustainability, and are similarly eyeing ways to maintain a commons model for distribution while economically rewarding creators and maintainers through paid support, patronage, and bounties. As Nadia Eghbal has pointed out, it's necessary to maintain some kind of boundary around a core group of maintainers, to not tax their limited attention by making everything entirely public.<sup>[7]</sup>

In all of these instances, it's a matter of working interdependently instead of independently,<sup>[8]</sup> of exposing users and stakeholders to the upside of an enterprise.<sup>[9]</sup> As these nascent community dynamics intersect with ownership models enabled by cryptographic protocols and multi-sided platforms, they'll create a range of organizational experiments where the users of a product or service participate in the guidance and success of a given venture, collectively.

# IMPLICATIONS FOR ORGANIZATIONS

---

## 1

---

Infrastructure that lowers transaction costs for searching, matching, contracting, creating, and distributing is making it easier for organizations to pull on-demand services, but social dynamics are pushing away from one-time interactions towards ongoing collaborations.

---

## 2

---

Technology enabling digital scarcity is introducing new ways of participating in and owning elements of a venture, exposing users to the upside of a project and unlocking speculative capital to wider uses.

---

## 3

---

Alternative forms of P2P exchange, many of them pioneered in the cultural sector using decentralized ledgers and tokens (including qualitative exchanges), could become more common with other kinds of goods and services.

# SPECULATIVE IMAGINATION

---

1

---

Imagine occupations like a P2P designer whose responsibility is to facilitate team emergence and cohesion. What exchanges happen within teams (e.g., ideas, care, labour)? How might auctions, contracts, and token systems change peer relationships? What relationships are better served by less transactional means?

---

2

---

Imagine a decentralized autonomous brand (h/t Other Internet) that adaptively positions itself by automatically weighing the decisions of its stakeholders – including members, employees, users, consumers, and partners. How would this change our view of organizational vibe?

---

3

---

How could dynamic spatial ownership models turn the users of a building into its stakeholders? How might their input be leveraged to create a better use of space? What might the stewardship of a building look like?

## PLATFORM CONVIVIALITY

- [1] Jay Springett, “Verticals of One” (2020), <https://www.thejaymo.net/2020/10/28/verticals-of-one/>
- [2] Louis Hyman, *Temp: How American Work, American Business, and the American Dream Became Temporary* (2018), <https://www.penguinrandomhouse.com/books/554240/temp-by-louis-hyman/>
- [3] Andrei Haigu, “Strategic Decisions for Multisided Platforms” (2013), <https://sloanreview.mit.edu/article/strategic-decisions-for-multisided-platforms/>
- [4] Li Jin, “The Passion Economy and the Future of Work” (2019), <https://a16z.com/2019/10/08/passion-economy/>
- [5] Jesse Walden, “The Ownership Economy: Crypto & The Next Frontier of Consumer Software” (2020), <https://variant.fund/the-ownership-economy-crypto-and-consumer-software/>
- [6] Maisa Imamović, “Cryptorave: an interview with Omsk Social Club + !Mediengruppe Bitnik” (2019), <https://networkcultures.org/money-lab/2019/11/11/cryptorave-an-interview-with-omsk-social-club-mediengruppe-bitnik-by-maisa-imamovic/>
- [7] Nadia Eghbal, *Working in Public: The Making and Maintenance of Open Source Software* (2020), <https://press.stripe.com/#working-in-public>
- [8] Matt Dryhurst, “Building an interdependent music scene” (2020), <https://crackmagazine.net/article/lists/mat-dryhurst-interdependent-music/>
- [9] Sam Hart, Toby Shorin, and Laura Lotti, “Squad Wealth” (2020), <https://otherinter.net/squad-wealth/>

FUTURE THEMES

# Atmospheres *of* Care

# ATMOSPHERES OF CARE

## Collective efforts to solve problems

### FROM PRODUCTIVITY TO PURPOSEFUL ACTIVITY

What are the wider aims of business – its psychological, social, and ecological roles? What is the function of work? What are all of these machines of increasing productivity *for*? The usual answers – profit, growth, affluence – have, on their own, been subject to renewed questioning. It has not always been obvious, for instance, that businesses should optimize along a single metric. In the case of public companies a single minded focus on shareholder value dates only from discussions about the role of the corporation in the 1970s.<sup>[1]</sup>

Roger Martin, former Dean of the Rotman School of Management, points out that this kind of approach can produce perverse incentives and induce fragility in a system.<sup>[2]</sup> A system is less likely to be able to withstand unexpected (but inevitable) shocks by aiming to only increase, say, efficiency. The response to COVID-19 demonstrated this. Social systems like healthcare were pushed to the limits of their ability to deal with shocks, lacking slack in their systems. Efficiency had meant reducing labour, excess capacity, and underutilized assets. Organizations with more resilient models, like the self-managed nursing teams of the Buurtzorg model in Netherlands, fared differently.<sup>[3]</sup> As Martin points out, top-performing organizations choose multiple targets – often ones that purposefully contradict each other.

Resilient  
organizations  
balance *multiple*  
*targets* and iteratively  
*reframe their*  
*purpose*, rather than  
optimizing for a  
single function.

But resilience alone doesn't provide a purpose. Wider considerations are at play. Consider the root words for enterprise: *entre-prise*, something *taken together*. Businesses are collective undertakings. They are efforts to solve problems by organizing resources. Colin Mayer, a professor at the Saïd Business School at Oxford, frames the function of business as profiting from solving human, social, or natural problems, rather than profiting by producing them.<sup>[4]</sup> To put problem-solving rather than profit-generation at the center of a business' mission makes a difference in how we think about what they do, because it means constantly reframing what the solution to a problem is. At its extreme, that could mean pivoting into an entirely new industry. And it also means always accounting for the production of wider externalities, as to not profit by leaving additional problems for others.

A purpose is not wishful thinking – it's a concrete problem. And this sense of an actually existing problem has to trickle down from vision statements into the living experience of the working. One of the biggest hurdles to this in large organizations is individuals feeling a sense of privatized purpose. Like the organizations they work for, they're in it to generate profit for themselves, rather than to solve a problem together.

For Melissa Gregg, a research director at Intel, we need to shift from a focus on individual productivity toward one of *mindful labour*<sup>[5]</sup> – ways of working attentive to the needs of others.

Loomio, for instance, a cooperative that makes collaborative decision making software, assigns stewards rather than bosses, who employees can mutually look to for advice, personal development, and conflict resolution.<sup>[6]</sup> Gregg points out that when we emphasize individual productivity, we're often just outsourcing 'low value' labour to others. Work that maintains relationships is undervalued, while work that produces growth, even at the cost of others, is championed. But other atmospheres are possible – ones more resilient, effective at solving problems, and attentive to the needs of all involved.

# IMPLICATIONS FOR ORGANIZATIONS

---

## 1

---

Pursuit of singular metrics can reduce resilience by optimizing systems towards states that aren't able to respond to unexpected changes. Metrics need to be balanced against each other, and viewed with an eye to their interactions over time.

---

## 2

---

The purpose of business is to solve real world problems by efficiently organizing resources towards those ends. This means that as solutions are pursued over time, the focus of the business could shift as it redefines the underlying causes of the problem.

---

## 3

---

Productivity without purpose produces workplace atmospheres that undervalue critical functions sustaining the long-term viability of organizations.

# SPECULATIVE IMAGINATION

---

1

---

Imagine an organization where budget is allocated through distributed means, like quadratic funding, that lets everyone in an organization have a voice. Or imagine if budgets were allocated by a group of employees selected by lottery and rotated regularly. How would these dynamics differ?

---

2

---

Imagine employee benefits for collective care rather than self-care, such as a right to communal ritual and retreat (h/t Melissa Gregg) – e.g. a right to play and explore as groups, or to be assessed for your relational role rather than individual performance.

---

3

---

What if higher education were organized by problem areas like aging, or climate-proofing the built environment – how might collaborations between universities and industry change? Could this catalyze other ways of organizing business toward problems?

---

4

---

As part of the Sunflower protest movement in Taiwan, senior parliamentary leaders were assigned reverse mentors from the tech-savvy, youthful movement. What would it mean for businesses to adopt similar approaches?

## ATMOSPHERES OF CARE

[1]

Michael Jensen and William H. Meckling, "Theory of the firm: Managerial behavior, agency costs and ownership structure" (1976), <https://www.sciencedirect.com/science/article/pii/0304405X7690026X>

[2]

Roger Martin, *When More Is Not Better: Overcoming America's Obsession with Economic Efficiency* (2020), <https://hbsp.harvard.edu/product/10410-HBK-ENG>

[3]

Kelli Stajduhar, "COVID-19 shows support for home care overdue" (2020), <https://www.thespec.com/opinion/contributors/2020/07/16/covid-19-shows-support-for-home-care-overdue.html>

[4]

Colin Mayer, *Prosperity: Better Business Makes the Greater Good* (2018), <https://global.oup.com/academic/product/prosperity-9780198824008/>

[5]

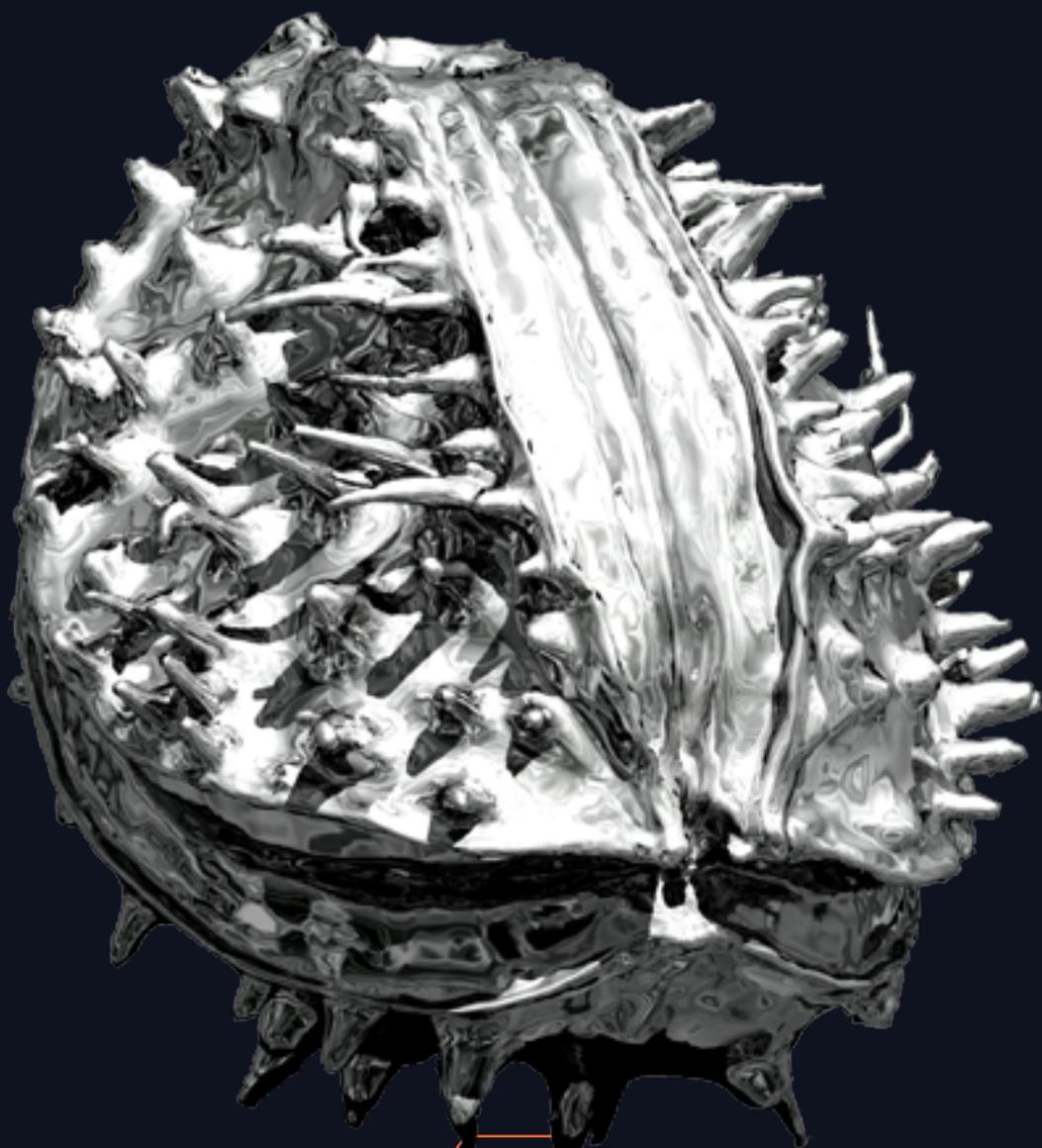
Melissa Gregg, *Counterproductive: Time Management in the Knowledge Economy* (2018), <https://www.dukeupress.edu/counterproductive>

[6]

Loomio Cooperative Handbook (2020), [https://loomio.coop/looking\\_after\\_people/stewarding](https://loomio.coop/looking_after_people/stewarding)

3

# Conclusion



The themes in this report articulate emerging work/place possibilities that point to both new opportunities and tensions to be navigated. In the ongoing refactoring of relations between work and place, new ways of organizing *where* and *how* we work will also change *what* we work on. This report highlighted six ways those relations are changing, catalyzed by the remote experiment of a year in lockdown. The future is open, undetermined but conditioned by the signals of the past and present.

Acting on the future requires actualizing past and present possibilities in the face of uncertainty. There is always a margin of creativity determining the future. It is created by our choices, rather than something that just happens. This report is a launching point for thinking about those possibilities. It is an exploration into the futures of work and place, to be realized both pragmatically and speculatively. It is just one stop in a continuous process of changing our ways of working – and the ways we can shape it, by understanding what is afforded by our changing landscape.

To learn more about how Lane is exploring present and future possibilities, email us at *info@joinlane.com* or visit our website, *www.joinlane.com*



FROM LATER

[www.fromlater.com](http://www.fromlater.com)  
[mail@fromlater.com](mailto:mail@fromlater.com)

LANE

[www.joinlane.com](http://www.joinlane.com)  
[info@joinlane.com](mailto:info@joinlane.com)

From Later is a foresight studio.  
We monitor and make sense of  
change, developing clear-sighted  
and judicious futures perspectives.