2. The fundamentals of organizational design

Organizations are a central element in the social landscape of our lives. There are many types of organizations fulfilling highly diverse functions. The diversity of organizational forms is astonishing, according to some scholars (Hannan & Freeman, 1977). Others claim that, on the contrary, because of the presence of pressures for isomorphism, organizations tend to be relatively similar (DiMaggio & Powell, 1983). It is possible though that organizations are both very similar (they share several recognizable attributes) and very different (they try to design and use these attributes differently to reach different goals and achieve competitive advantage). In other words, organizations share similarities and emerge in a limited number of configurations (Miller, 1990) but at the same time they are also unique: each organization is singular and specific.

In a different perspective, while each organization may be unique some core “good management” practices are universal in dealing with probable contingencies that can arise, meaning that the absence of these tends to be problematic (Scur et al., 2021). Contingencies count and the nature of the organization of work influences design choices for dealing with these contingencies. When this work is highly interdependent, uncertain and time sensitive, relational designs are more important than when tasks are more independent, routine and less time sensitive. Relational designs are based on ongoing mutual adjustment rather than formal attributions, creating a system of organization systems (Bolton et al., 2021; Gittell & Douglass, 2012). The challenge is compounded by conflicting expectations. Consider the role of competing demands:

While a relational ethics might promise dialogue, reciprocity and unqualified generosity, its practice is never so straightforward as real leaders are always faced with contradictory ideals and multiple competing agendas and demands. (Badham & Rhodes, 2018, p. 1)

Organizations thus face a design paradox: organizations need to be able to differentiate themselves from others but at the same time they must be recognizably legitimate: too much difference can be as problematic as excessive similarity. Thus, organizations should be designed to reach a degree of optimal distinctiveness (Zhao et al., 2017). How they do this is of the utmost
The fundamentals of organizational design

importance as the way organizations design themselves critically affects their functioning, effectiveness and readiness for change. The way managers design their organizations and put this design into practice defines the essence of membership as, for example, highly structured or loose, as well as significant others’ experience of the organization that designs these relations, such as employees, customers and stakeholders (Ghoshal & Bartlett, 1998).

In contemporary organizations there has been a shift from what was customarily highly centralized and formally rule bounded bureaucracy governed by imperative command to a more acentric design, one characterizing “post-bureaucratic” organizations (Adler & Borys, 1996; Barry & Rerup, 2006). The change occurred as “limitations of the managerial hierarch have become increasingly apparent” (Lee & Edmondson, 2017, p. 36). Relatively less-hierarchical designs have been explored. These include self-organizing and self-managing organizations (Stacey, 2011), de-structured organizations (Mabey, Salaman & Storey, 2001) as well as boundaryless organizations (Ashkenas et al., 2015). These forms are evident in many architecture and design firms, software developers, advertising firms, and so on, where a classical machine model that relies on complex systems of well-defined rules and hierarchy (Ashmos et al., 2002) is no longer thought applicable. Such firms are “centered on the primacy of creativity and innovation” and the “creative instinct is venerated as the source of the innovation” (Martin, 2009a).

Though such organizations have changed towards adopting loosely coupled and autonomous designs, that does not mean that they are devoid of an element of bureaucracy and hierarchy, albeit in different forms (Brown et al., 2010; Weick, 1976). Similarly, Hodgson (2004) argues that a legacy of bureaucratic control pervades even creativity-intensive firms called post-bureaucracies. In such firms, although the organizing differs and deviates from the classic managerial hierarchy, a manager-subordinate authority relationship is often retained (Lee and Edmondson, 2017), something that explains aspects of the contradictory and hybrid nature of their design (Josserand, Teo & Clegg, 2006, p. 54).

Organizations are characterized by counteracting forces of order and chaos (Brown & Eisenhardt, 1997), the former pushing towards stability whereas the latter is a source of instability (Thietart & Forgues, 1995). A design that is predominantly flexible and low on hierarchy that is designed to accommodate creativity will be one that is prone to chaos (Davis, Eisenhardt & Bingham, 2009) that will not become systematized as the organization will “wax and wane with individual intuitive leaders” (Martin, 2009a, p. 6). By the same token, a hierarchical design that is rigid, primarily oriented to control and stability, runs the risk of stagnation (Davis, Eisenhardt & Bingham, 2009) and structures organizations to operate much as they have done in the past (Martin, 2009a). Hence, a balance between structure and flexibility is called for (Kamoche & Cunha, 2001). James Thompson labelled the challenge of balancing the paradox of
administration, which involves “shooting at a moving target of co-alignment”, being flexible and at the same time trying progressively to eliminate or absorb uncertainty (Thompson, 1967, pp. 148ff.) and this paradox remains a relevant research topic today, appearing in themes such as ambidexterity, paradox, plurality and hybridity, to mention but a few (see Denis, Lamothe & Langley, 2001; Lewis, 2000; O’Reilly & Tushman, 2013).

For Greenwood and Miller (2010), design should constitute the core concern of organization theory. In this book we will discuss different types of organizational design and their fit with changing times. We see the intersection of design and change as throwing up paradoxes because fit implies not only the search for congruence/coherence; it also accepts that tensions are an inevitable product of process and complexity (Farjoun & Fiss, 2021). The imperative to regain fit signifies that there is tension being produced by the fit of current design with current contexts; otherwise, there would be no issue. Such is the paradox of design: it only become salient when it is not working smoothly.

A paradox refers to contradictions between interdependent forces that cannot be solved because they persist over time (Schad et al., 2016). Paradox theory has a long history in many disciplinary domains (Bednarek et al., 2021) and has recently gained prominence as a lens through which to understand organizations’ tensions arising from balancing a variety of goals, stakeholders and responsibilities. Organizations are crosscut by tensions, not as anomalies or unwanted aberrations (Farjoun & Fiss, 2021) that can be ironed out, so much as inherent and constitutive features (Putnam, Fairhurst & Banghart, 2016). Tensions may be contested, they can be embraced, or they might be ignored. Where they are neither contested as anomalies nor ignored as irrelevancies the creation of organizations characterized by paradoxical thinking is possible (Smith, Lewis & Tushman, 2016). Paradoxical thinking can lead to paradox-accommodating designs such as ambidextrous structures (Andriopoulos & Lewis, 2009) that can help organizations cope with competing goals.

It is very difficult to know what the appropriate balance is between desired tensions such as exploration and exploitation (March, 1991), stability and change (Farjoun, 2010), freedom and control (Kamoche & Cunha, 2001), quality and safety (Love et al., 2021), as these are complex processes, so rich in contradictions that they do not easily amount to what Marques and Mintzberg (2015, p. 8) qualify as “win-win wonderlands”. Designing hierarchy that is kept to a minimum does not mean hierarchy is absent. First, eliminating hierarchy, even when viewed as desirable, is easier said than done. There is a sentimental, cultural as well as economic attachment to being a boss, not to mention self-interest. Suggesting a diminution in the power of hierarchy is culturally suspicious for many managers who have struggled hard to gain ascendancy. For instance, a CEO asked Margaret Heffernan “Are you a com-
The fundamentals of organizational design

munist?” after she endorsed flatter organizational structures (in Heffernan, 2017, p. 8). Hierarchy often proves necessary for practical and symbolic reasons. Second, the absence of hierarchy can lead to disorganization (Cooper, 1986) while third, organizing without hierarchy requires an infrastructure of accountability (Cunha, Rego & Clegg, 2011, p. 500) which is hard to build and even harder to maintain. Thus, the search for balance is aggravated by the fact that organizations have a multiplicity of goals that are also competing and ambiguous (Badham, 2021; see also Highlight 2.1). As Starbuck and Nystrom (1981, p. 5) summarize:

Designers perceive quite diverse realities. They also disagree with each other about what ought to be. There are those who advocate making organizations more rational, more playful, more efficient, more humane, more useful for societies, more profitable for owners, more satisfying for members, more stable, more flexible, more proactive, more adaptive, more democratic, more obedient to top managers, and so on … and on.

Inappropriate choices can produce undesirable results. In one practical case, as the Financial Times (2021a, p. 16) reported about Danone’s choice of a social orientation over one oriented to shareholder value:

Pivoting too soon faces its own risks. Earlier this year, investors forced out the chief executive of Danone, saying that a focus on social responsibility eclipsed the drive for profits.

HIGHLIGHT 2.1  BALANCING GOALS AS A BALANCING ACT

In his book on financial frauds, Lying for Money (2021), Dan Davies, an author with experience as a financial regulator, discusses the difficulties of articulating distinctive goals, namely, costs, quality and customer satisfaction. The Economist (2019, p. 50) summarized the challenge as follows: “focus too narrowly on cost and the quality of goods may suffer; concentrate on quality and costs will rise. Try to ensure both and the business may become so obsessed with its own production processes that it ignores customer needs.”

Seen from a paradoxical perspective, good management is an exercise in dynamic balancing, not 50/50 types of balance, so much as a creative and ongoing attempt to maintain commitment to opposite polarities in process. The incapacity to maintain balance may lead to perceptions of the undermining of
an organization’s mission, such as when medical care is rendered secondary to financial concerns (Hartzband & Groopman, 2014). Yet, financial concerns do matter, which means that managerial life, not only for clinicians and medical administrators, would be much easier if paradoxes did not exist. Exist they do, however.

As Starbuck and Nystrom (1981) observed, the design of organizations is rich in paradox because organizations need to preserve different capabilities to keep opposite demands active. Tensions arise between existing design and emerging designs because competitive landscapes are constantly transformed by new technologies and new risks, new social demands, even new viruses, creating new business models in response (Ahlstrom et al., 2020; Bettis & Hitt, 1995). Sometimes the risks and technologies, the demands and viruses, coincide in major transformational ways. Take, for instance, COVID-19 and digital meeting technology, such as Zoom. Organizations that have used the latter to deal with the former have discovered, by accident, new designs for organization that do not require the centralizations of functions in an office and co-presence of people. Social, organizational, epidemiological and digital relations are all transforming simultaneously.

There are also paradoxes of the ideational sphere. All organizations articulate and materialize ideologies in their design. In parallel with the need to be instrumentally efficient, organizations are increasingly faced with new themes, such as sustainability, a humanistic ideology cast wide enough to encompass the preservation of species and their habitat, demanding that managers address competing demands simultaneously, including corporate, environmental and social wellbeing goals (Hahn et al., 2014). Organizations need to manage a duality of instrumental and humanistic ideologies (Petriglieri & Peshkam, 2021). The former will tend to stress productivity, the latter wellbeing. Working from home may well serve both ends for people without children to home school. There is no productive trade-off between being at work while being at home for those that assume care responsibilities, for children, the ill or the elderly. Paradoxes between being a caring parent and being a digital worker can generate conflict and ambiguity about how time is spent. Nonetheless, paradoxes, when properly handled, can contribute to creating organizational uniqueness and vitality, perhaps by organizations recognizing that the day will be punctuated by demands other than those of the office; hence, making temporal allowances for a working day that splits between home and office work.

The pandemic has been a win for organizational sustainability; greatly reduced commuter traffic, subways and buses almost empty of congestion. When not everyone is heading for the city centre to work similar hours in similar offices, organizational design of necessity changes. Almost all organizational design in the past has been laced with implicit spatial assumptions about the concentration of people in buildings. Historically, as these reached
The fundamentals of organizational design

ever higher in the sky and spread more across the land, consuming space, a whole lifestyle predicated on the office and its design was created that governed flows from the suburbs to the city, imposing a common rhythm of dressing for work, commuting to work, being at work, working in similar organizations, lunching in or from similar fast food service stops, before joining the exhausting commute at the end of the day.

Corporate contenders populate these offices, suited up for the day’s struggles, their performance “mathematically measured” such that each contender “becomes a little cog in the machine, and, aware of this”, they have “one preoccupation … to become a bigger cog” (Weber, 1956, p. 127). The essence of the design is hierarchy with the essential motivation being movement, cog by cog, through its interstices in an upward progression, mastering its mathematical and other measurements. To talk of the office speaks of a specific design, a specific kind of organization, with a particular architecture of social relations inside the architecture of corporate castles in the sky. By contrast, a distributed digital workspace is a more sustainable workspace as well as one that is more humane from the viewpoint of those that enjoy working from home. It is also one that is no less gendered, as many mothers of school age children would attest. While the design of organizations has changed markedly because of the coincidence of risk and technologies, the social relations of gender, redesigned in many workplaces, now exist in an organizationally ungovernable space of the domestic sphere.

Prior to the pandemic and the shift to working from home, the designs of organizations seemed to be moving in the following directions:

• Flatter organizations, with less hierarchical layers and higher delegation of authority (Rajan & Wulf, 2006), as exemplified by Haier’s “pancake flat” structure (Hamel & Birkinshaw, 2021). Lee and Edmondson (2017) also indicated the less hierarchical design found in organizations such as Oticon, Zappos, Morning Start and GitHub. Although such organizations all epitomize flatter design, there are also radical cases where design changed radically to fully self-managing (Lee & Edmondson, 2017) such as Valve (Puranam & Håkonsson, 2015).
• Vertical integration (à la Ford) giving way to horizontal intermediation (à la Toyota).
• “Power-with”, that is, non-coercive and jointly developed, becoming favoured over “power-over”, hierarchically mandated (Morlacchi, 2021).
• Temporary forms, such as projects, becoming increasingly adopted (Clegg, Skyttermoen & Vaagaasar, 2021).
• Culture becomes a prominent, sometimes even transparent, control mechanism (Cunha, 2002).
• Power (hierarchical, top down) as a source of authority is being replaced by authority that is not only a matter of the power of office but also is personal and distributed, premised on creativity and innovation of contributions (Joullié et al., 2020).

• Agility and responsiveness are increasingly important organizational attributes, which implies that organizations need simultaneously to express planning and improvisation capabilities (Shankar, Muller & Druin, 2020). In some cases, though, agile is little more than an empty word as organizations claim to be agile but maintain command and control practices (Dunning, 2018).

• The need to plan and improvise, to explore and exploit, to protect stability while engaging in change, invites organizations to adopt a paradoxical stance (Berti et al., 2021).

• The existence of one solid, identifiable organizational boundary between the focal organization and the rest of the world fades away, leaving room for the emergence of multiple, blurred, porous organizational boundaries in which relations of various kinds (e.g., as outsourced staff, temporary workers, crowd contributors, interns and volunteers) connect with organization employees (Giustiniano, Griffith & Majchrzack, 2019).

To discuss these ideas the book is structured as indicated in Table 2.1. We present the key concepts as well as specific paradoxical challenges on the topic of the chapter.

Before you engage with the main design types discussed in the book’s pages, it is important to consider that the types are not isolated from one another: they compose a continuum much as do the images in Escher’s Day and Night. For example, even though the idea of platform capitalism is associated with the fourth industrial revolution and its iconic firms (Amazon, Google, Microsoft), its roots can be found in the Toyota production system (see Steinberg, 2021 and the discussion in Chapters 2 and 3). For this reason, epochal paradigms (du Gay, 2003) should be used with a critical mind, as “epochs” overlap. Instead, we favour a “continuist lineage” (Steinberg, 2021). Types mix and mingle; typification is merely a frozen moment of possibilities, possibilities coexisting, emerging and dying. Leading through context rather than control appears as a major change in the adoption of less hierarchical designs; if in the “real world” other possibilities do not die as the new emerges, in the interregnum, as Gramsci (1971) suggested, diverse forms, combinations and hybrids take shape.
### Table 2.1 The roadmap for the book

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<td>In this chapter we engage with the idea of less hierarchical organizations. Many organizations, as they evolve, are diminishing in hierarchy. As organizations become less hierarchical, they need to devise new ways of structuring work and control.</td>
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<td>In this chapter we discuss how complex “elaborateness” of organizational design creates more fluidity, as organizational structures are only partially defined at the top and that some elements are kept undefined, to allow more bottom-up contributions and to accelerate response capacity and a higher pace of innovation. In a liquid world, careers, teams and organizations changed, giving way to novel career paths, teaming and project-based organizations.</td>
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Chapter 6
The agile organization: the fall of the traditional pillars (part II: task design and allocation)

In this chapter we consider the emergence of the agile organization, organizations abandoning traditional elements, such as task design and allocation. Agile organizations use new technologies to discover new ways of reaching their customers. More than a strictly technological theme, “agile” implies a significant exercise of reimagining organizational design.

Main topics discussed:
- From executors to co-designers
- Purpose-driven jobs
- Concertative control
- Co-leadership
- Customer-centrism
- Paradoxical challenges: meaningful and autonomous work coexisting with microtasks and the gig economy

Chapter 7
Final reflections: patterns, principles and practices

In this final chapter we consider forces that might influence the future of organizational design. These are illustrative. We also look backwards and forwards to discuss patterns, principles and practices. We encourage our readers to add their own topics.

Main topics discussed:
- New trends
- Sustainable Development Goals
- Space for business
- B-corps
- Crowd-based organizing
- Patterns
- Principles
- Practices
- Design
WHY DESIGN MATTERS?

As an introduction, it can be said that “organization design matters just as much as any other kind of design … ugly organization design produces bad management” (Clegg et al., 2011, p. 520). Design shapes the way organizations work and confronts managers with important choices, for example, increasing process and control or facilitating creativity; flexibility or routine; order or chaos; efficiency or effectiveness, and so on. As Netflix’s Reed Hastings put it regarding Pure Software, a company he created, “We had become increasingly efficient and decreasingly creative” (Hastings & Meyer, 2020, p. xix). Strategy defines where and how organizations decide to compete, but their strategic execution will be guided, to a great extent, by the way the organization is designed, as will be discussed in Chapter 3. Design defines what matters most, the way an organization works, who decides what and when.

Design as a Source of Competitive Advantage

Organizational design may be a source of competitive advantage as it stabilizes how organizations direct multiple resources, including collective attention and intelligence, material resources, as well as technologies and ideas, to develop the products or services offered. In cases where these resources are not well directed, the organization’s efforts will be wasted. For example, directing too much attention and resources to convergent goal-oriented activities can be lethal in the long term, as many cases of failure of giant firms attest. It is easy for an organization to become increasingly efficient and decreasingly innovative: think of Blockbuster – great at renting videos globally but hopeless at seeing the switch to digital and streaming. Spreading firm resources too thin is equally as problematic as being fixated on one goal defining the business. Such a situation is illustrated in the case of start-ups whose excessive creativity is not matched by a capacity to gain the scale and efficiency necessary to create viable businesses. Design centred only on either efficiency or creativity is a recipe for disaster. Falling too much to the extreme (Burton et al., 2017; Foss, 2003) poses a problem, even for creativity-intensive firms. When an organization leans too much on organic structures, it runs the risk of creating chaos with little sense of direction. For example, Brown and Eisenhardt (1997) showed the ineffectiveness of a predominantly organic design. In organic structures too many degrees of freedom lead to chaos because such organizations lack internal complexity and have few internal connections (Stacey, 2011). Hence, the utmost flexibility of organic structure cannot be a panacea, regardless of environmental dynamics and the peculiarity of an organization’s needs.
Focusing on the invention of business at the cost of administering a business or on originality at the cost of mastery is a common error (Martin, 2009a). Designing too much prescriptive structure assumes that organizational members are essentially “simple people” (Cunha & Rego, 2010), best managed by control by rules. Such a design option, popular in the early 20th century, characterized by too much structure (Davis, Eisenhardt & Bingham, 2009) and a lack of flexibility, was the epitome of scientific management (Taylor, 1911). Designed for a largely immigrant workforce and one only newly introduced to industrial production and unlikely to be fluent in English, making the jobs as simple to understand as possible made some sense. “In the last two decades of the 19th century, the U.S. was shifting – uneasily – from a loosely connected world of small towns, small businesses, and agriculture, to an industrialized network of cities, factories, and large companies linked by rail” (Kiechel, 2012, p. 64).

Organizational members were expected to be obediently trained to-do-as-told. Burns and Stalker (1961) describe this as mechanistic design in which member’s functions, together with the methods, responsibilities and the delegated power appropriate to them, are well defined. In the mechanistic design, individuals are told what to do, how to do it, what not to do, what is expected of them, and what they can eschew as the responsibility of others. Adler and Borys (1996) call such organizational archetype coercive bureaucracy in which firm boundaries are set for members. By contrast, we suggest, optimal design is somewhere in between, a paradoxical mix of flexibility and stability (Gaim et al., 2018).

Design can become a source of competitive advantage if it fosters sets of dynamic capabilities that can strive to adjust an organization’s unique competencies to cope with relentlessly shifting, progressively hypercompetitive environments (D’Aveni, 2010). Organizational environments never stop changing. Organizations need to improve not only existing competencies for exploiting what they know they are doing and know how to do but they also need to develop new competencies. With these they can explore changing environments and future possibilities as means and goals of organizing. Again, think of the pandemic and the rapid shift that this prompted during lockdowns to working from home, using Zoom and other technologies. The capacity to engage simultaneously in exploration of new ways of delivering old forms of exploitation requires paradox management competences. Too much of one or a focus on either to the detriment of the other sets a deadly direction; death by exploitation of opportunities that are known too well or death by innovations that do not gain acceptance. The two approaches are opposites.

Given the importance of being organized and being able to respond with agility, several authors warn that design is becoming a strategic factor (Roberts & Eisenhardt, 2003). In this perspective strategy and design converge.
Departing from the tradition of Austrian economics, Eisenhardt and Roberts argue that in highly competitive markets, more than defending turf, organizations need to sense and seize opportunities. For this to happen they need to rely on agile designs:

Pushing these ideas a step further, an Austrian orientation (perhaps uniquely) implies the confluence of strategy and organization. Indeed, in turbulent settings the organization itself may be the strategy. (Roberts & Eisenhardt, 2003, p. 345)

In the Austrian view, the market is represented as a process in perpetual motion, with a propensity to disequilibrium, composed of organizations that constantly introduce streams of innovation to surprise competitors. Managers follow a logic of opportunity by relying on flexible designs that favour fast moves, rather than strict routines. Routines increase efficiency and reliability but at the cost of organizational inflexibility and the inability to respond swiftly to new opportunities. Flexible designs, however, bring other dangers, such as lack of coordination and potential for strategic drift.

In different words, the traditional logic of planning must be supplemented by a logic of agile adaptation and improvisation (Abrantes, Cunha & Miner, 2022), which expresses what Pablo Isla, the CEO of Inditex, qualified as a “capacity to react from moment to moment” (Dombey, 2021, p. 17). Being able to improvise in the face of threats and opportunities may thus be a critical factor for organizational adaptation to fast-changing environments and crisis situations. Strategic dynamics rarely conform to an organization’s intentions or plans (Tsoukas, 1993), which recommend that organizations should plan and be prepared for improvisation. For example, the successful response of the Taiwanese government to the first wave of the COVID-19 pandemic was a combination of preparation and improvisation (Wang, Ng & Brook, 2020). Plans and preparation without responding to cues amount to nothing more than wasted effort; improvisation without rules and preparation is like “shooting from the hip” (Furr, Eisenhardt & Bingham, 2020), brave but potentially ineffective at precise targeting.

Improvisation refers not only to reparative moves in the operational realm (Cunha & Clegg, 2019) but also to the capacity to reposition the organization strategically through deliberate but unplanned moves, to respond swiftly to unimagined threats (Giustiniano et al., 2020). Given the pace of change in many sectors, the capacity to move fast in scoping and realizing new opportunities becomes central. Rigid designs, in this context, may become a source of disadvantage but designs that offer insufficient flexible-routine consistency may be a source of problems.
Design as a Reflection of Socioeconomic Conditions

As Barley and Kunda (1992) have explained, design is also a reflection of social and economic conditions. In their study of the evolution of theories of organization the authors concluded that different economic circumstances tend to give primacy to different philosophical approaches to design. In times of economic bonanza, the functional side tends to prevail where it is control of the core technologies that deliver profits. As the implications of the leading technologies gain shape (and are copied effectively and often more cheaply elsewhere), returns to these strictly technical rational approaches diminish. When this happens, the emphasis shifts to sociotechnical interventions to wring out more returns from the previous wave of technical rationality though sociotechnical redesign of work to gain more from the technology in use (Trist & Bamforth, 1951). Design is not a strictly technical issue but one that is always sociotechnical. Seen thus, design is a social process, deeply embedded in the circumstances in which it is created. For this reason, readers should keep in mind that all discussions of design always need to be contextualized.

A design that might do wonders in one context may be inadequate in another. In more hierarchical and authoritarian cultures, flatter and more distributed forms of organization may not work as well as in more social democratic contexts; in less individualistic cultures, the family, rather than just the employee, may have to be considered as a core stakeholder (Cunha, Fortes et al., 2019). In summary, there is no such a thing as a one-best organizational design; design solutions depend on context, a central element of the contingency approach to designing, which typically stresses factors such as organizations’ environments, technologies and size (Clegg, Pitsis & Mount, 2021).

DRIVERS OF CHANGE IN ORGANIZATIONAL DESIGNS

Change is the natural state. The world is constantly changing (Tsoukas & Chia, 2002) and all things in it; some perceptibly, others less so. No organization stands still if only because their environments are changing. Even historically long-standing organizations such as churches, political parties and orchestras need to match environmental change with constant adaptation. Adaptive effort is hard as it involves multiple dimensions. On the one hand, a hyper-agentic view of organizations (Sarta, Durand & Vergne, 2021) sometimes assumes, albeit implicitly, that managers have the power to adapt their organizations to their environments if they want to and are competent enough. The hyper-agentic view is problematic for several reasons: (1) stakeholder and governance issues constrain the decision latitude of executives; (2) even when companies have knowledge and resources (such as Polaroid’s patents on
digital imaging; e.g., Tripsas & Gavetti, 2000) they may fail to adapt because of internal belief systems or the traps of previous success (Miller, 1992; Vuori & Huy, 2016); additionally (3) change needs to be integrated within an existing organization system, the success of doing which is never guaranteed, when inertial forces are often too powerful to be defeated. System integration can be a powerful inertial force; moreover, changing while maintaining existing relationships can be extremely difficult (Neumann et al., 2019).

Creating designs that redesign themselves is of fundamental importance. Firms need to gain and regain fit, not in irregular moments of changes as occasional structural readjustments but as a dynamic process. Rather than a stable quality, change is dependent on the organization as well as the nature of the environment, including social, competitive and institutional facets. Robust institutional settings make the rules of the game that businesses are engaged in clear and enforced with winning and losing competitive and reasonably transparent activities. In weak institutional environments (Peprah et al., 2021), corruption and cronyism are more likely to prevail and kleptocracy, oligarchy and the favouring of specific organizational interests on other than wholly rational criteria are also more likely to prevail. Organizational decisions incorporate political dimensions and political dimensions inculcate organizational decisions, such as channelling major funding decisions to marginal seats without accountability shortly before a government goes to the polls (Ng, 2021). Design thus mixes technical, social, organizational, economic, cultural, philosophical and political facets.

We next turn to two major sources of change in organizational designs: changes in culture and society and changes in technology. We explain how design coevolves with changes in these domains (e.g., Birkinshaw, Gudka & D’Amato, 2021), showing that design, rather than being a strictly technical domain, is intricately tied to social factors, as noted above.

Changes in Society

Throughout the 20th century, urban families became smaller and more democratic, children became better educated, women gained new roles in family, work and society, creating a progressive interpenetration of the domains of work and family (Cunha, Hernández-Liñares et al., 2022). Technological innovations, such as oral contraception, allowed women to make decisions regarding maternity and to manage their careers in independent ways. These changes altered work and organizational domains, superseding the times of the organizational men, those men in the grey flannel suits (Whyte, 1956; Wilson, 1956).

By the 1960s, protests in the US against the Vietnam war redefined the relations of consent between citizens and the state. Young Americans were
no longer prepared to be drafted to die in some ultimately pointless war in a faraway land. Cultural change was dramatically present, in draft dodging, drug taking, as well as cultural expressions of self and sexuality that loosened many past strictures. Demography was important in these changes. As the post-war generation of boomers reached maturity, they gained a sense of generational identity that for many was fiercely critical of the perceived complacency and existential meaninglessness of their parents’ generation. Adversarial relations with formal authority in general, not just the draft but also with institutions, including the ways in which work, organizations and capitalism were organized, irrupted. In Europe these were exemplified by the May 1968 protests in France (Willener, 1970). Protests sometimes resulted in open violence:

From Berkeley to Berlin, from Paris to Rome, students were struggling against mass consumerism, the commercialization of human relationships, the commodification of sexuality. The capitalist system was blamed for creating disparities in the world between centres and peripheries. (Boldizzoni, 2020, p.115)

The outcomes of these changes persist still, including the emergence of new ways of understanding relationships between power and authority. Authority was no longer to be accepted a-critically as something bestowed by office, incumbency or rank. The hierarchical structures of capitalism, founded on master and servant relations, were increasingly taken as anachronistic and oppressive (Boldizzoni, 2020). As the shock waves of the movements of the 1960s gave way to the spread of social alternatives grounded in hippiedom, we can see the relation to today’s philosophies, especially the increasing emphasis on people doing their own thing, which has heightened individualism and anti-hierarchical sentiments – even in business – where it encourages entrepreneurship rather than corporativism. The corporates took note, albeit slowly; for example, the considerations of Cristina Campos, from Novartis (Portugal) regarding hierarchy are relevant and representative:

At Novartis we are conducting a major transformation, internationally: a transition to an un-boss, more informal culture, flat and transparent. (Mateus, 2019, p. 14)

Similar sentiment is shared by a renowned Norwegian architectural and design firm where work is collaborative and informal, based on flat structure. Such design is reflected in their organization chart where there is no hierarchy but rather a weave of collaborating organizational members.
Comparing his current employer (Snøhetta) with another more traditional employer (Rafael Viñoly), an interior architect, in one of our studies, told us:

Rafael Viñoly, he has done a lot of international architecture offices, he is from Argentina and is well known in New York. The firm, Rafael Viñoly, it is his firm and his name. Even when you open up the website, you see his hand drawing. It is all him, there is a strong hierarchy in his office. Here, the organization is flat, contributions are welcomed by everyone. Over in New York, even though you can walk up to a colleague and suggest something, it is a very structured and corporate architectural practice. (Interior Architect, Snøhetta)

Changes result from demographic generational differences (Myers & Sadaghiani, 2010; see also Highlight 2.2) altering consumption habits (Bardhi & Eckhardt, 2017) and influencing societal expectations around topics such as climate change (Club of Rome, 2019; Williams, Heucher & Whiteman, 2021), diversity and inclusion (Williams & Bauer, 1994) as well as digital transformation (Rigby, Elk & Berez, 2021). The latter increasingly creates a plethora of digital “bubbles” in which like-minded interpretations of the world form, unconstrained by the legislations of science or other authorities (Bauman, 1987). As Maccoby (2007) observed, a “social interactive” rather than more bureaucratic social character accentuated free agency instead of loyalty as an adequate cultural orientation and individual mindset for our age.

HIGHLIGHT 2.2 FOR PRACTICE: ORGANIZATIONS Navigating Through Generations

Generational differences make a difference regarding how one sees the world. To make better sense of the world through the lens of your organization’s future customers you may consider the relevance of reverse mentoring: find a teenage mentor and learn from them. Ask:

- How do you and your peers view technology?
- What are the latest technological fashions?
- What do they think about your favourite company?
- How do they imagine the future of your business: is it seen as indispensable or irrelevant; old-fashioned or innovative?

Reverse mentoring may help to understand how your business might be – to use today’s words – disrupted. Find a group or groups of internal agents to let you know how your company might be rendered irrelevant or stronger.
To make sense of changes, organizations may also scrutinize the peripheries of their attention, discerning subtle changes at the micro level, using a direct sensitivity rather than indirect, second-hand data (Cunha & Chia, 2007). Cultivating good boundary-spanning competencies (see glossary), scrutinizing the periphery, being close to customers, may help to design organizations as a process of adaptation.

Being aware of cultural shifts and trends can also play a similar role. The arts represent the scale and scope of changes taking place economically and culturally. Any given value basis for an economy is always a cultural achievement because it is dependent on being culturally legitimated (Land & Śliwa, 2009). Reports from the front line of ongoing changes can be found in cultural works that have addressed problems of contemporary society. In the 20th century, for instance, notable reports included Charlie Chaplin’s (1936) critique of the dehumanizing effects of industrialized capitalism in *Modern Times*; Fritz Lange’s (1927) critique of urban anomie and oppression in *Metropolis* (Halper & Muzzio, 2011), J.R.R. Tolkien’s (1954) pastoral elegy against the forces of darkness and the disruption of nature in *Lord of the Rings* (Urick, 2014); George Orwell’s (1949) warning against the abuses of authority, language and surveillance through a panoptical ordering of society in *Nineteen Eighty-Four* (see Adelstein & Clegg, 2016 on the “doublethink” language of ethical codes such as Microsoft’s, with references to “constructive self-criticism” and “continual self-improvement”); Franz Kafka’s (2000) depiction of labyrinths of bureaucracy in *The Trial* (Warner, 2007), or Robert Musil’s (2015) prefiguring of the emptiness of the eloquent men from marketing that have never subjected themselves to an idea with staying power, outlined in *The Man Without Qualities* (Loacker, 2021).

**Changes in Technology**

Changes in technology propel organizational changes. In designing organizations, technological changes have effects on elements such as complexity, centralization and formalization. Complexity denotes the number of activities or subsystems within the organization which include vertical (number of levels in the hierarchy), horizontal (number of job titles and departments) and spatial (number of geographical locations) (Daft, 1988). Centralization is the degree to which coordination or control are managed by core personnel to whom others report. Differing technologies give rise to different preferences in terms of the degree to which power is concentrated – or dispersed (Burton & Obel, 2004). Formalization denotes the degree to which the organization specifies a set of rules or codes to govern how work is done (Burton & Obel, 2004).

To situate these technological evolutions in historical perspective, in the next section we revisit the four industrial revolutions, as they had a fundamen-
tal impact on the way organizations are designed. While the precise historical sequencing and overlap of these revolutions is a matter of interpretation, that technology has evolved with consequently major changes in other domains of life, the way we live and the way we work, is widely shared. One point is certain: technologies revolutionize our lives. Some aspects are positive such as longer life expectancy in most Organisation for Economic Co-operation and Development (OECD) countries, while others are less positive, including increasing breaches of a more balanced relation with nature as humans pollute the planet – particularly the more affluent these humans are, on a per capita basis.

As a rule, existing technologies afford possibilities that organizations use to obtain higher levels of efficiency or effectiveness. Technologies coevolve, including the technology of management, qualified by Hamel and Birkinshaw (2021) as “the technology of human accomplishment”, which evolves with other technologies and coevolves with these. Once new technologies are invented their affordances will be up for creative use, with many technologies being used to reinvent organizations, as we next discuss.

THE ROLE OF TECHNOLOGY: FOUR TECHNOLOGICAL REVOLUTIONS

The world of work has been shaped by successive waves of technological change and revolution. A technological revolution has been defined as interrelated breakthrough technologies that compose a system of systems, a meta-system (Perez, 2010). Some authors consider there have been four such notable waves (but there are alternative classifications, as discussed in Highlight 2.3). Here is a summary of the first three: in the 18th century, new inventions such as the steam engine propelled a first industrial revolution. In the 19th and early 20th centuries, electrification, telegraphy, the combustion engine and the methods of mass production took the process of industrialization to a new level, ushering in modern globalization, suburbanization and commoditization as goods poured out of the new industrial economy. In the 1980s, the personal computer and the Internet initiated the third revolution, whose consequences are obvious by now. Table 2.2 summarizes some key ideas associated with each moment in the evolution of technology and their revolutionary effects.

First Industrial Revolution

The industrial revolution occurred in the United Kingdom, beginning in the late 18th century. For Perez (2010), Manchester was the cradle and symbol of the age of steam as much as Silicon Valley functioned as the centre of
Table 2.2  Four industrial revolutions

<table>
<thead>
<tr>
<th>Era</th>
<th>First revolution</th>
<th>Second revolution</th>
<th>Third revolution</th>
<th>Fourth revolution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1765 to late 19th century</td>
<td>Late 19th century to early 20th century or 1870–1914</td>
<td>Starting in 1969</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Main technologies</td>
<td>Steam engine, mechanization</td>
<td>Electrification</td>
<td>Computers, electronics</td>
<td>Artificial intelligence, Internet of Things, big data</td>
</tr>
<tr>
<td>Implications for work and organization</td>
<td>Replacement of agriculture by industry as prevalent sector</td>
<td>Standardization and industrialization</td>
<td>Information intensity, virtualization of work, dominance of the service economy</td>
<td>Digital transformation and adoption of “agility”</td>
</tr>
</tbody>
</table>

The microelectronics revolution. However, one should not ignore that on the other side of the Pennines, cities and towns such as Leeds, Bradford, Halifax and Huddersfield could equally lay claim. East of the Pennines, wool was king; west of the Pennines, it was cotton. Cotton was globally integrated into the world economy through slave modes of production in plantations in the Americas. These plantations were made possible because of the global trade in black bodies stolen and sold from Africa. In addition, the East India Company and later the colonial state were to systematically sabotage and inhibit competition from the Indian subcontinent, often using unscrupulous and inhumane practices.

The industrial revolution consisted of the application of new forms of energy to productive processes. Initially water was dominant, channelled into canals for trade routes and powering the early textile manufactories in which labour was becoming concentrated. After Boulton and Watts developed the steam engine in 1786, a new source of power was available. The use of steam allowed the mechanization and centralization of production, creating a role for the surveillance of “hands” in the many factories that emerged, replacing the putting out system of merchant capitalism, premised on distributed domestic weaving which the merchants coordinated, with the manufactory as a place in which production was concentrated (Marglin, 1974). Initially these factories, as they came to be called, had been situated by fast running streams that powered water wheels for energy. Steam power rapidly superseded the water wheel, which allowed much greater liberty in the location of industry.

The design of firms changed with the times. With industrialization, as Simon (1965) put it, an increasing programming of more and more sophisticated work
activities could occur. Every activity is unprogrammed the first time it is done but with repetition it tends to stabilize around a set of standard procedures. The outcome was the rise of new, capital-intensive forms of production, as well as the constitution of vertical hierarchies in which the hands were controlled by panoptical supervision. Work was long and arduous, began early in life in childhood and was fundamentally unregulated by effective legislation. The fate of all who lacked property and had to sell their labour power to survive (Marx, 1976) was to create value for the capitalist while diminishing the value of lives lived in dark satanic mills and the substandard properties thrown up to house them (Engels, 1983). For the factory owners, the capitalists, productivity increased with the creation of the factory but so did alienation from a life that was often brutal, poor, nasty and short for the men, women and children labouring within. For these unfortunate souls “work was a form of violence, 15 hours a day, six days a week” (Coelho, 2019, p. 16).

These hard times were at the origin of important literary works. As Boldizzoni (2020, p. 22) observed:

In Victorian Britain, social criticism was most often carried out by literary writers, who were divided by ideology but united by a common uneasiness with the times. One does not have to wait until Charles Dickens (for who could deny that *Hard Times* is a novel about capitalism?).

**Second Industrial Revolution**

Between the mid-19th century and the early 20th century, a new wave of change took place with modern forms of transportation, including the railroad. The invention of electricity towards the end of the century was a major innovation: work was no longer confined to the daylight hours but could be illuminated at any time. Major transformations in transportation and communication networks in the 19th century through steam powering the railways made possible the dominance of increasingly large and vertical integrated firms. The combination of innovations in transport and the electrification of factories generated mass production on a 24-hour cycle. Design wise, the visible hand of the hierarchy was gaining space over the invisible hand of the market (Chandler, 1977). The visible hand was especially evident to the hands inside the factories, tending and working on machines.

Production increased massively and prices decreased significantly. Taylorism, as the application of “scientific management” is sometimes known eponymously after its founder (Taylor, 1911), became the form of work organization, par excellence. Scientific management allowed significant efficiency gains as well as the explosion of mass production. The process innovated significant human burdens, such as the transformation and intensification of
work into highly routinized manual labour under the direction of mental labour that planned both the design of work and its pay and enacted its supervision (Braverman, 1974). Taylorism brought important changes, including the first emergence of modern management with its focus on time, process and efficiency. In line with the zeitgeist, fascination with science and engineering, stimulating the pursuit of a management science, re-emphasized the beauty of the mechanical, in Guillén’s words (1997). In time, the Taylor system was modified to the moving production line introduced by Henry Ford in 1913 in his Detroit factory based on the abattoirs of Chicago (Clegg, Courpasson & Phillips, 2006), a combination of ideas that spread globally after the First World War.

In the same decades in which Taylorism was conceived and gained momentum, in the Old Continent the French Henri Fayol, a mining engineer, executive and later director of a mining firm, developed a “general theory of business administration” (Fayol, 1918), that is often referred to as Fayolism. Although contemporary, Fayolism and Taylorism were conceived independently, with the two leading authors still considered by some as two of the most prominent founders of management theory and methods.

While Taylor derived the principles of “scientific management” by starting from a focus on task execution and design, Fayol adopted a different perspective: the whole organization. Having that as focus, thanks to his experience in mines, he identified five main activities that any (industrial) organization should control: technical, commercial, financial, security, accounting and managerial activities. The novelty was the qualification of “managerial activities” in terms of planning, organizing, commanding, coordinating, controlling, forecasting. While Taylor associated control with the idea of (physical) supervision and time management, Fayol’s control function – as derived from the French contrôler – was based on the idea that managers should receive feedback about the process that they were charged with, so as to have the chance to investigate deviations and make necessary adjustments where needed (for the equivalence between management and control in Fayolism, see Chapter 3).

Although conceived in two different sectors and continents, the principles of management distilled by Taylor and Fayol have a great deal in common despite the former’s focus on the shopfloor and the latter’s focus on the whole organization. The division of work and specialization of workers (both in technical and managerial activities), discipline and obedience as the main mechanisms for enforcing hierarchy, hierarchy considered as a scalar chain of power, with subordination of the individual interest to the general interest characterizing both. Nonetheless, differently from Taylor, Fayol defended organizations having a “unity of command” while Taylor exposed workers to several forms of control (and therefore different “controllers”); Fayol allowed some space for individual initiative (i.e., the origination of novel plans) while Taylor did
not: he believed that workers had no need to think as the system of scientific management had already done their thinking for them. Fayol emphasized *esprit de corps* as a source of team cohesiveness and harmony, while Taylor saw collective social relations as a potential source of “systematic soldiering”.

**Third Industrial Revolution**

A new wave of economic restructuring was initiated in the 1950s, propelled by new developments in fields such as electronics, information and communication technologies and the computer. As Vallas and Schor (2020, p. 274) summarize, from a situation in the post-war period when computers were rare, massive and hugely expensive machines, this trend involved “the advent of the minicomputer in the 1970s, the popularity of the personal computer in the 1980s, and the spread of the internet in the 1990s and thereafter”.

The computer was the key device in this third industrial revolution. It became a critical tool for the programming of work, especially mental work, supporting the rapid growth of the discipline of operations research, leading to the reprogramming of several tasks, such as the organization of work on the assembly line or the management of stock in the warehouse or decisions on inventory levels. Herbert Simon assumed that, in principle, any decision process could be programmed, including the unprogrammed decisions of managers (Simon, 1960). The Internet, created in 1983, significantly contributed to propelling this wave of innovation, although only slowly in its initial inception, largely as a tool for scientific communication between university-based researchers (Zittrain, 2007). After the Internet became more widely developed with the advent of the world wide web in 1989, its impact on organizations was to be enormous, as summarized by Csaszar and Steinberger (2021): concepts derived from artificial intelligence and the notion of organization theory as a science of the artificial increasingly pervaded the field, namely, via the work of Herbert Simon and James March (e.g., March & Simon, 1958 [1993]; Simon, 1969).

Computers changed the way we live and work, something that became evident for those who shifted into a largely digital mode during the COVID-19 pandemic. Computers created new automation possibilities and became omnipresent in the workplace and in everyday life with the advent of the portable personal computer in the early 1980s. Humans increasingly dedicated themselves to knowledge and creative work, which rendered processes such as everyday creativity increasingly central (Villanova & Cunha, 2021). In some cases, factory workers became knowledge workers, as in the case of Toyota (Osono, Shimizu & Takeuchi, 2008).
Fourth Industrial Revolution

According to McAfee and Brynjolfsson (2015), the fourth revolution is doing for human brainpower what the previous revolutions have done for muscle power. The fourth revolution, which is rapidly progressing, blurs the frontiers between the physical, digital and biological worlds. It is founded upon digitalization, a general-purpose technology affecting “every aspect of business and society” (Autio, Mudambi & Yoo, 2021, p. 3). The process has been unfolding for decades but began with the introduction of the integrated circuit, in the late 1960s, with which speed and processing power doubled roughly every 18 months to two years (the so-called “Moore’s law”, after Moore’s 1965 intuition). Brynjolfsson and McAfee (2014) argue that the inflection points of Moore’s law took place around 2006. Since then, the world of business has been transformed, a process that COVID-19 accelerated. The fourth revolution is founded upon four technologies (Lanzolla et al., 2020):

- Efficiency technologies (“cloud”)
- Connectivity technologies (5G and IoT – the Internet of Things)
- Disintermediation of trust technologies (Blockchain)
- Automation technologies (big data and artificial intelligence).

Schwab (2016) noted that the passage from the third to the fourth revolution was founded upon transitions made possible by digitalization and the production of innovations based on combinations of technologies. The speed and breadth of these processes are so significant that they have been qualified as revolutionary and “creatively destructive”, to use Schumpeter’s (1950) term. The Schumpeterian potential is best illustrated by the emergence of platform economy companies, such as Uber and Airbnb, which significantly altered the competitive landscape (Vallas & Schor, 2020) of their respective industries. Platforms do not simply favour the emergence of new behemoths: they often play “back-office roles” for micro-enterprises that would not be viable otherwise (Luo et al., 2018). These new forms have combined algorithms, crowdsourcing and reputational information (i.e., ratings) to refashion the way markets operate.

Digitalization led to multiple innovations. People and robots are increasingly co-situated side by side in organizations big and small, in mature or emerging economic sectors. Mesa Ceramics, from northern Portugal, took benefit from digital printing to differentiate itself from low-cost producers from other parts of the world (Pinto, 2020). Adidas is switching the production of some models from low-cost Asian locations, adopting instead 3D printing in Germany (The Economist, 2017). These technologies increase process flexibility and allow departures from traditional economies of scale. With 3D technologies it is
possible to manufacture small scale with high efficiency. Amazon operates some warehouses almost entirely with robots (Bagdasarov, Martin & Buckley, 2020), epitomizing the fourth industrial revolution company through its three extraordinary businesses: its ecommerce platform, cloud computing division and marketplace for other sellers (Thornhill, 2021a).

As usually happens, technological transitions bring opportunities and threats (see Highlight 2.3). The digital revolution is creating a new class, the “coding elite” (Burrell & Fourcade, 2021): a group of tech CEOs, software developers, investors and computer science academics leading transformations. A bifurcation is evident, however. Nowhere is the emergence of this elite more visible than in Silicon Valley. While firms such as Amazon are immediately associated with high-tech exploitation of ideas such as their use of algorithms to push products to consumers, they are equally as well known for industrial practices vis-à-vis their warehouse labourers that, while deploying high tech, seem barely to have moved much at all past traditional forms of exploitation (Englert, Woodcock & Cant, 2020). Rather than a proletariat, these workers are a “cybertariat” (Huws, 2014), a new peripheral workforce that is largely informal and marginalized, epitomized by the gig economy.

HIGHLIGHT 2.3  MAKING SENSE OF TECHNOLOGICAL REVOLUTIONS: DIFFERENT PERSPECTIVES

I  K cycles

A different conceptualization of technological change follows Kondratieff cycles or “K cycles”: (1) steam (1780–1830), (2) trains (1831–80), (3) electrification (1881–1930), (4) automobile (1931–70), (5) IT (1971–2010) and (6) green industries (since 2011). The cycles are called long waves as each cycle has an accelerating phase followed by a decelerating phase of innovation. Overall, the cycles last about 50 years on average, with 25 years upswing and 25 years downswing, over about five or six decades before it gives way to a new cycle. In this reasoning, the current era would correspond to a sixth industrial revolution. More important than debating the right number of cycles is, for the present discussion, the observation of change dynamics and their impact.

II  Technological revolutions

Bodrozic and Adler consider that a sequence of technological revolutions led to the development of new management models. First, there was water-
The fundamentals of organizational design

power and the iron revolution, followed by steam power and railways, then steel and electric power. Starting from the 1880s, the automobile and oil conquered the world to be followed by computers and telecommunications. These technologies sustained the creation of new business models. The implication is simple: managers that do not pay due attention to cycles of technological evolution do so at the peril of being stuck in the past in a present without much future.


FINAL REMARKS

The representation of organizations as solid, stable entities is giving rise to their view as processes (Pettigrew, 1997; Tsoukas & Chia, 2002), sequences of activities that are fluid and liquid (Clegg & Baumeler, 2010; Clegg & Cunha, 2019). The great organizations of the past enhanced their institutional quality, among other reasons, because of their solid appearance, epitomized by prestigious buildings (Siebert, Wilson & Hamilton, 2017). The buildings defined the organization: the classical Art Deco of the Hoover Building in London and the pinnacle of the Chrysler Building in New York being examples. The COVID-19 pandemic saw organizations experimenting with people working from home. Thinking back to Hedberg, Nystrom and Starbuck (1976), perhaps the pandemic has created the world that they imagined, one in which designers should help organizational members to erect “tents” rather than “palaces”, meaning that their role consists in facilitating self-organizing in a changing world. Whole swathes of the world knowledge economy are camping out now.

Such a change in perspective is not purely conceptual but has several important implications for practice. As will be discussed in the following chapters, changes in organizations’ designs, not only the architecture of their buildings, have been profound. As a result, organization designers are confronted with important challenges in the way they conduct their work as their designs are constantly tried and tested by ever-changing contexts and events. In the next chapter we discuss the relationship between design and change.