



# Managers matter less than we think: how can organizations function without any middle management?

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## Abstract

Are managers necessary for organizations? Could organizations function without them? To answer, we must separate between two questions: are top managers necessary? And are middle managers necessary? I argue that larger organizations are prone to need someone to have oversight of the wholeness and to take responsibility for its design and development. Given the dedication and time commitment needed to fulfill that role, it is virtually impossible to have a larger organization without any top management. However, a large organization with top management and frontline employees—but no managerial layers in between—is already a much more realistic possibility. It typically requires having autonomous, self-managing teams empowered to make all the necessary decisions related to their own work, accompanied by certain structural solutions (often enhanced by ICT) solving key information- and coordination-related tasks that are traditionally taken care of by middle managers. Often specific coach roles also emerge. In principle, if working substitutes are found to all tasks traditionally taken care of by middle managers, an organization can be functional and successful without any managerial layers. I examine a few successful examples of such organizations, Buurtzorg and Reaktor, while also highlighting key boundary conditions for when, where, and how self-managing organizations can succeed. I conclude by distinguishing between structure and hierarchy, arguing that while self-managing organizations are characterized by high levels of decentralization, their functionality is ensured through having enough structure, thus combining low hierarchy with adequate structure to find the most functional form of organizing in a particular context.

**Keywords** Bureaucracy · Decentralization · Flat organizations · Self-governing organizations · Self-managing organizations

## Introduction

Do managers matter? While popular calls to “fire all the managers” (Hamel 2011) and “abolish hierarchy” (Robertson 2016) have challenged the necessity of managers, Foss and Klein strike back with a weighty tome arguing that “management is essential for coordinating people, resources, and tasks, especially during unprecedented disruptions” (Foss and Klein 2022, p. 13). They downplay the popular examples of non-hierarchical, self-managing companies as individual anecdotes that often are not as bossless as they claim, while arguing for the necessity of hierarchy in human organizing. This is part of an ongoing debate having gone

for a long time (see, e.g., the recent special issue, Baumann and Wu 2022). Some have argued that “leadership matters” and has a significant impact on subordinate effectiveness (Dionne et al. 2002, p. 461), while others have argued that the effect of managerial behavior on follower performance tends to be relatively small (Howell and Hall-Merenda 1999). Inspired by this exchange between the critics and defenders of managers and organizational hierarchy, in this brief essay I want to offer one way of answering this crucial question on organizational design: are managers necessary for organizations?

The first thing to note is that the question itself is ambiguous. It includes (at least) two separate questions: does an organization need *top management*? Could it survive without anyone in charge? The other question has a different focus: does an organization need *middle management*? Could it survive having just top management and employees but no managerial layers in between? I’ll answer both questions in turn.

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## Can organizations function without top management? No

As regards the first question, about the necessity of top managers, I am mainly on board with Foss and Klein's point of view. A large organization without any top management is hard to imagine. As Foss and Klein observe, many of the celebrated examples of 'bossless', self-managing organizations have had highly visible CEOs, who typically are the visionaries behind the unusual organizational model. Semco is strongly associated with Ricardo Semler, Zappos with Tony Hsieh, Buurtzorg with Jos de Blok, Valve with Gabe Newell, and W. L. Gore with Bill Gore. This point is emphasized by the fact that, at least in the cases of Semco and Zappos, the departure of the figurehead CEO has been followed by the company taking several steps back towards more traditional hierarchy.

Anecdotes aside, a fully organic organization with no top managers is prone to run into serious problems as regards strategic level decision-making. As long as all employees can gather around the same table, they could in principle function as one team with shared leadership (Döös and Wilhelmson 2021; Zhu et al. 2018). However, when the organization grows to include, let's say, more than 100 employees, the complexity and the interdependencies between various decisions grows, increasing the amount of information needed to make strategic level decisions. This typically necessitates that someone dedicates their whole time to this synthesizing task to be able to make decisions that benefit the organization as a whole, thus in essence becoming the one calling the shots. As I will argue in the later part of this article, an important part of this role is to monitor how well the current structures and practices of the organization function, addressing shortcomings and exceptional situations, and thinking how the design of the organization could be improved. Indeed, a few CEOs I have interviewed have viewed their role as that of an organizational designer, aiming to design an organization that needs as little managerial oversight as possible—but still needs someone to take responsibility for that designing. For example, the CEO of mobile game company Supercell, Ilkka Paananen, has in several interviews emphasized how his "goal is to become the least powerful CEO in the world" (Kelly 2013).

In principle, of course, the role of the CEO is just a bunch of tasks, responsibilities, and decision-making power delegated to that specific role. If all those functions could be solved in alternative ways, there would be no need for a CEO. In practice, however, the CEO tends to make exactly those decisions that are too complex and ambiguous for algorithms to make (Martela and Luoma 2021), and require too holistic understanding of

the organization to be made by those not fully dedicating themselves to monitoring the wholeness. Searching for examples of larger companies without CEOs, the publicly available examples that I found, such as the Swiss watchmaker Richemont (Wall Street Journal 2016) or the US construction company DPR (Forbes 2014), had in essence replaced the CEO with a management team. Instead of one top manager, they thus had a top management team, thus not challenging the necessity of top management as such. So based on both theoretical considerations and the lack of even anecdotal evidence, I would conclude that larger organizations need somebody who has an oversight of the wholeness, and takes responsibility that the necessary higher-level decisions get made. I would be glad to be proven wrong in the future by a bold and successful experiment, but at this point it seems that we need to conclude that *managers matter* in the sense that larger organizations need someone having an oversight over the wholeness.

## Can organizations function without any middle managers? Yes

The interim conclusion about the necessity of top management brings us to the second question: can organizations function without any middle managers? Here, the organization can have a top management team, but in between them and the individual employees and teams there are no managerial layers; the teams have no designated superior to report to. Such self-managing organizations are defined as organizations that have radically decentralized authority throughout the organization to the degree of having almost completely abolished the whole layer of middle management (Lee and Edmondson 2017; Martela 2019). Can such organizations function and be successful? This is a question I have examined quite much, having studied two organizations famous for their structure that lacks middle management:

Buurtzorg is a Dutch home care organization employing over 14,000 nurses and social care workers. Having been founded in 2006, it has experienced a rapid growth and is currently one of the largest organizations in its industry with an annual turnover of 440 million Euros. Despite a five-digit employee count, the organization has just two managers—the CEO and the internal business leader—with no managerial positions between them and the 14,000 frontline employees. The nurses are organized in teams of 12 nurses who each have high levels of autonomy to take care of the customers in their own region (Nandram 2015, 2021). The teams manage independently everything from renting an office-building to recruitment. This self-managing structure has been highly successful: in addition to rapid growth, the company has been financially successful, being able to deliver care significantly cheaper than the main competitors,

while having better health outcomes and higher customer satisfaction (Gray et al. 2015)—and while having high employee satisfaction ratings as testified by the fact that it has won several times the “Best Employer” award in the Netherlands (Beste Werkgevers 2017). The autonomous teams are supported by an ICT system that the company has built itself to give the nurses access to all the necessary information they need, and by approximately 20 coaches that have no formal authority but come in to help the teams when the teams encounter any problems they feel they are not able to deal with themselves. The organizational model is thus built around highly autonomous teams, with the rest of the organization designed to provide various forms of support so that the teams can better succeed in their work.

Reaktor, in turn, is an IT software and service company with headquarters in Helsinki, Finland, and offices in New York, Tokyo, Amsterdam, and Lissabon. It employs around 550 experts, has a 80+ M€ annual turnover, with customers ranging from Airbus and Air France to Adidas, Heineken, and Dow Jones. In addition to good financial performance as testified by double-digit growth and profit figures for most of its 20 years of its existence, the company is a highly attractive employer, having several nominations as the Best Workplace in Finland, and one nomination as the Best Workplace in Europe, in addition to ranking high on various ‘most attractive employer’ surveys in Finland. While the company has top managers and country leads, it has no middle management, with each team working autonomously with their customer, without any supervisor. Certain functions typically taken care of by middle managers are taken care of by specific roles, like a dedicated salary team negotiating the salaries with the employees, a number of coaches supporting teams and individuals in their development, and client managers selling the projects to the customers. The inter-team interaction mostly takes place on company Slack, with the company aiming to make all information, including financial information, transparently available to all employees. Similar to Buurtzorg, the organizational model is thus built around autonomous teams, without the need for any middle management.

These two organizations seem to work in practice, but does having no middle management work in theory?

Firstly, there are reasons to believe that many organizations today probably have more middle management than what would actually be needed. Strict supervisor control and command chains made more sense in the Taylorian era, when illiteracy among the employees was the rule in many workplaces. A key development in the last century has been the professionalization of the workforce, more recently accelerated by automatization replacing especially routine work requiring no specific education (Autor 2015; Frey and Osborne 2017). This means that in many organizations the frontline employees are highly educated, and typically quite

motivated and capable to perform their work independently. In such cases—doctors, researchers, IT experts are classical examples—a traditional controlling supervisor might be perceived more as a hindrance to work (cf. Grant et al. 2011). Thus, in industries where individual employees have both the motivation and skills to mainly manage their own work, there is little need for traditional command-and-control managerial intervention—and more and more of the workforce work in such industries.

Second, what could be called ‘the iron law of bureaucratization’ states that rules, regulations, and managerial positions in organizations tend to increase over time, unless actively resisted (cf. MacKenzie 1998). A colleague recently told me how she, as a top expert, had managed to work in her position for 10 years without a supervisor. The new top manager, however, felt that not having a supervisor was out of place, and recruited a new middle manager to manage the previously autonomous experts. The new manager, in need of proving themselves, started various initiatives, which resulted in significantly more red tape for the experts. “It is tempting, if the only tool you have is a hammer, to treat everything as if it were a nail”, Maslow once wrote. Similarly, managers tend to solve many problems (even non-existent ones) by increasing managers. This bloats the organization with managers beyond what would be optimal for performance.

But these are arguments for why *less* middle management might be needed. What we are interested in is whether *any* middle management is needed. As the above examples testify, managing without middle management is possible at least in certain cases. Providing a more general answer in the abstract is hard, given the wide diversity in types of organizations, employees, and interconnections between various tasks, employees, and units. Taking a functional approach to management (Burke et al. 2006; Fleishman et al. 1991; Morgeson et al. 2010), we could argue that any managerial position exists to fulfill certain functions. There are certain things that a specific manager has responsibility on, such as making certain decisions, keeping track of and transmitting certain information, executing certain tasks, and supporting, guiding, and monitoring certain employees. As regards these functions, a distinction is typically made between task-oriented and people-oriented functions (Burke et al. 2006; Yukl et al. 2002), with the former referring to roles related to task execution, such as task resourcing, decision-making, and taking responsibility and monitoring that things get done. People-oriented functions, in turn, are about taking care of the subordinates through cultivating their motivation and supporting their well-being and development. Additionally, middle managers also have a role in organizational development and acting as connectors between the top managers and employees, helping both sides to understand each other (Jaser 2021). Now the question

about the necessity of a particular manager boils down to whether all these responsibilities could be managed in other ways. Replacing the manager typically starts with empowering the frontline employees—either as individuals but more typically as teams. When the team takes full responsibility for accomplishing their own tasks—including deciding (in direct interaction with the customer) what their goals and task are—the managerial role loses most of its traditional functions.

Besides team empowerment, another increasingly common substitute for managers is provided by various ICT solutions (Dedrick et al. 2003; Zammuto et al. 2007). Many functions related to information gathering, aggregation, and distribution as well as inter-unit coordination, that used to be the task of higher-level managers, can nowadays be accomplished through various information distribution systems, data bases, programs, and algorithms. These enable types of coordination that a human equipped with paper and pencil would be incapable of. The development of communication technology and resource planning software has made possible the modern multinational conglomerates that coordinate resources around the globe (Baldwin 2019). Simultaneously these ICT solutions have also made it possible to take care of many information and coordination functions traditionally having been the responsibility of the middle managers.

Combine autonomous, motivated and empowered teams with dedicated IT solutions to help them coordinate inter-team and inter-unit dependencies, and suddenly there is quite little need for any middle managers. This combination, in my opinion, seems to be the secret behind most examples of self-managing organizations I have researched or read about—and most examples mentioned by Foss and Klein (2022). Thus, the key to replacing middle managers is deconstructing their role into a number of discrete functions, and then finding alternative solutions to each of these functions, through delegating some to the teams, through IT solutions, and through various structures and practices. In practice, instead of hierarchical organizations replacing and getting rid of middle managers, this deconstruction more typically takes place indirectly through an organization growing, deciding to not instill any middle manager roles, and instead trying to solve all the encountered problems with alternative solutions. Through combining autonomous, self-managing teams with structural solutions often involving IT, such organizations like Reaktor or Buurtzorg have been able to grow without encountering the necessity to instill new managerial positions.

However, even the best teams sometimes run into trouble. They might have serious interpersonal issues, they might need to make an investment decision beyond their scope, they might lack the expertise to make a certain larger decision. When the company is relatively small, and such situations relatively rare, the CEO can act as the spare supervisor,

having a role as ‘the manager of exceptions.’ However, beyond a certain size, that model becomes unviable as the “span of control” of top management increases beyond manageable levels (Reitzig 2022, p. 6), leading to a situation where the managers are constantly running around, putting out fires here and there. At that point, many self-managing organizations tend to adopt some sort of a coaching model. Such coaches typically have no direct coercive power over the teams but through their seniority and expertise, they can help the teams resolve issues the teams are unable to resolve by themselves. Although occupying a position in between top management and frontline employees, such coaches are not the same as middle managers, given that the teams do not report to them and they have no formal supervisory position or discretionary power over the teams.

Coming back to our question—are middle managers necessary—my answer is thus that it is possible to build large organizations without any middle managers, *if* the organization is able to find functioning substitutes for managers through team empowerment, through ICT, and through other structural solutions and practices. It is thus possible but not easy, as the challenges and the necessary solutions tend to be different in different industries. Furthermore, it is clear that self-management is easier to implement in some context, while other contexts represent challenges that are very hard to solve without managerial positions. Thus, in addition to asking *whether* having no middle managers is possible, we need to ask, *when* is it possible.

### From how to when: the boundary conditions for self-managing organizations

Foss and Klein (2022, p. 15) argue that “decentralization makes sense when its benefits outweigh the costs, as they sometimes do—but not all the time.” I could not agree more. And I see that there are situations where the benefits indeed outweigh the costs, making lack of middle management a competitive advantage in terms of decreased personnel costs, increased motivation of frontline employees, increased creativity, speed to market, or other proposed benefits (Martela 2019; Reitzig 2022). Thus, instead of the dichotomous question “should organizations move to flatter designs”, the more relevant question is “when, why, and how should they do so?” (Alexy 2022, p. 31). Accordingly, deciding under what conditions lack of middle management is most prone to lead to success requires identifying a few key boundary conditions.

First, the lack of monitoring by a dedicated supervisor means that the individuals and the teams need to be motivated enough to want to accomplish their tasks even when not actively controlled (Reitzig 2022). Relatedly, they need to have the ability to successfully lead themselves

and accomplish their tasks independently. Thus, as already noted, self-management is more prone to work in industries where the employees are both ‘willing and able’ to accomplish their tasks independently, which often entails that they are educated professionals.

Second, the degree of standardization and predictability of work output could be another boundary condition. If the output is very standardized and predictable, the processes can more easily be optimized ‘from above’, making a top-down approach more viable. If, on the other hand, each product or customer interaction is different, requiring tailor-made solutions in each case, empowering the front-line employees to be more independent can have the competitive advantage. This boundary condition is prone to be coupled with the first one, as greater need for independent decision-making and idiosyncratic problem solving by frontline employees tend to require that they are more specialized experts, which tends also to make the job more motivating. Also, as noted, automatization is increasingly replacing the more standardized work, and thus an expanding proportion of the workforce works in tasks requiring independent decision-making in non-standard situations.

Third, it has been noted that self-management is easiest to implement in industries where interdependencies between teams are low (Martela 2019). As also Foss and Klein observe, “decentralized structures tend to be most effective in particular circumstances, such as where groups and tasks can be broken down into smaller independent units” (Foss and Klein 2022, pp. 56–57). If one team working with a particular customer is able to operate without having to coordinate their actions with other teams, having a structure where each team functions as an independent cell makes sense. In industries where interdependencies are high—for example a manufacturing factory where each unit is dependent on the input of other units—there is much more need to build solutions that coordinate the work between teams and units, and ensures that they have the necessary information about each other’s situation. Such coordination could be, at least in principle, solved by ICT systems and other practices, but this requires much more careful designing compared to an organization where a need for such systems simply does not arise. Accordingly, self-managing structures are more prone to emerge in industries where the interdependencies are low.

Having identified these three boundary conditions, it is worth noting that the examples cited above, Reaktor and Buurtzorg, both exhibit conditions suitable for self-management on all three: the workforce is educated and highly motivated, each customer case is different, requiring a tailored approach and independent decision-making, and the interdependencies between teams are very low, thus making the challenge of inter-team coordination almost non-existent. Thus, their success can be partly explained by the fact that

they operate in industries where self-managing structures are most prone to succeed.

## Separating hierarchy and structure: the boss as an organizational designer

I have thus come to argue that hierarchical levels between top management and frontline employees can under certain conditions be eliminated, while keeping the organization as functional or even more functional than before. It is important to emphasize what I am not saying: I am not saying that a large organization can function without any structure. To understand this, it is crucial to make a distinction between hierarchy and structure. Hierarchy is about the concentration of power, status, and privilege, meaning that a small subset of the organizational members have much power over what the organization does and through chains of command can decide what the other organizational members should be doing (following a centralization approach to hierarchy, see Bunderson et al. 2016). Structure is about how formalized various roles, relationships, ways of working, and rules are within the company.

While classic Weberian bureaucracy is characterized by both—high levels of structure and high levels of hierarchy—the two can come to be disentangled from each other. Examining them separately, we have a  $2 \times 2$  matrix (Fig. 1), where one corner is occupied by *traditional bureaucracies*. The opposite corner is characterized by low structure and low hierarchy. This we could call *anarchy*, where nobody is above anybody else, and no rules or structures chain the individuals from acting as they wish. While this offers high levels of autonomy and freedom, as an organizing principle it fails, when the project requires the coordination of larger groups of people. Five highly motivated people might still accomplish something together without much structure but when we talk about a hundred or a thousand people—as in larger organizations—anarchy doesn’t allow the level of coordination required to enable

<b>Structure</b>	<b>High</b>	Self-management	Bureaucracy
	<b>Low</b>	Anarchy	Autocracy
		<b>Low</b>	<b>High</b>
		<b>Hierarchy</b>	

Fig. 1 A  $2 \times 2$  matrix of hierarchy and structure

people to accomplish something together. Even Burning Man, a festival renowned for anarchistic free-spiritedness and radical self-expression, had to adopt more stricter structures as it grew, to the degree of nowadays having a strict central planning where the individual camps can express themselves freely—as long as they stay in their own allotted lots, and follow the rules.

Bureaucracy and anarchy, however, are not the only options. Organizations characterized by high levels of hierarchy but low levels of structure could be called *autocracies*. Such organizations—think medieval chiefdoms, modern autocratic states, or mafia organizations—have often strict and unyielding hierarchies. However, no rules constrain those at the top from doing what they want with their subordinates or with the organizational assets, making the organizations oppressive and corrupt. One of the key success factors of bureaucracy, according to Weber (1946, 1978), was exactly that in bureaucracies even those at the top were bound by certain rules.

The fourth option, low hierarchy but high levels of structure, is where we find self-managing organizations. While they have radically decentralized power, this does not mean that they would lack structure. Wikipedia, while being highly non-hierarchical, still has very clear “structure and processes that govern its operation”, as Foss and Klein (2022, p. 35) observe. In an empirical investigation of Wikipedia’s norm network, Heaberlin and DeDeo (2016, p. 1) conclude that “most important norms and rules of how Wikipedia functions were established” at early stages of its existence, and “its normative evolution is highly conservative. The earliest users create norms that both dominate the network and persist over time. These core norms govern both content and interpersonal interactions.” Wikipedia is thus an example of an organization that was able to invent a set of structures that proved highly successful in its own area, encyclopedia generation, thus outcompeting other prominent players with more traditional structures. Different self-managing organizations all have low levels of hierarchy, but they can have looser or stricter structures. In some cases having too strict structures can even be the reason that a self-managing organization fails. Holacracy is a non-hierarchical management system involving employee ‘circles’ with highly structured meetings making the decisions. When shoemaker Zappos incorporated holacracy, it was the largest organization who had ever done so—and the experiment did not go as well as they wanted. “Holacracy made Zappos overly bureaucratic”, because of excessive meetings, Foss and Klein (2022, p. 87) argue. I agree but want to point out that it might not have been the lack of hierarchy as such that was the problem but rather the too structured and formalized management model sucking too much time and effort from other activities and from the ability to get things done.

## Conclusion

To conclude, in any organization, there are going to be things that need to be taken care of. This can be accomplished through certain individuals being responsible (and fulfilling their responsibility) for them, or alternatively one has to have certain structures, practices, or ICT systems that take care of these things. For example, coordination can be a responsibility of a certain manager, or then one has to create “systems and structures that enable coordination” (Foss and Klein 2022, p. 110). If the organization decides to go on the alternative path, seeking non-managerial solutions to many of these tasks and functions, this typically means that a significant role and responsibility for the top management becomes the task of organizational design. Somebody has to monitor the wholeness, examining what functions and what does not function in the organization—and somebody has to take the responsibility of finding the novel solutions to those tasks that currently are not properly taken care of by the organization. This requires holistic overall understanding of the organization, and thus most naturally befalls the top management. Instead of replacing the top management, the self-managing organizations thus partly transform their role: one of their main task becomes that of organizational design. Indeed, a few CEOs of such organizations I have spoken to have personally seen one of their main roles as that of a designer. And given that when the organization grows, or when something in the business environment or within the organization changes, new challenges requiring new solutions constantly arise. The designing task is thus never completed.

Accordingly, I see that the emergence of new forms of organizing will not make the role of top managers obsolete. The fate of middle management will be more dependent on circumstances: under certain circumstances, the whole middle management might disappear or the number of hierarchical layers might significantly diminish. But larger organizations will need top managers also in the future—at least in the role of organizational designers, aiming to identify the structural solutions best serving both the customers, the employees, and the business.

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## References

- Alexy O (2022) How flat can it get? From better at flatter to the promise of the decentralized, boundaryless organization. *J Organ Des* 11:31–36
- Autor DH (2015) Why are there still so many jobs? The history and future of workplace automation. *J Econ Perspect* 29(3):3–30
- Baldwin CY (2019) Setting the stage for corporate headquarters: a technological explanation for the rise of modern industrial corporations. *J Organ Des* 8(1):19. <https://doi.org/10.1186/s41469-019-0059-4>
- Baumann O, Wu B (2022) The many dimensions of research on designing flat firms. *J Organ Des* 11:1–3
- Beste Werkgevers (2017) Eerdere winnaars. <https://www.beste-werkgevers.nl/beste-werkgevers/eerdere-winnaars/>
- Bunderson JS, van der Vegt GS, Cantimur Y, Rink F (2016) Different views of hierarchy and why they matter: hierarchy as inequality or as cascading influence. *Acad Manag J* 59(4):1265–1289. <https://doi.org/10.5465/amj.2014.0601>
- Burke CS, Stagl KC, Klein C, Goodwin GF, Salas E, Halpin SM (2006) What type of leadership behaviors are functional in teams? A meta-analysis. *Leadersh Q* 17(3):288–307
- Dedrick J, Gurbaxani V, Kraemer KL (2003) Information technology and economic performance: a critical review of the empirical evidence. *ACM Comput Surv (CSUR)* 35(1):1–28
- Dionne SD, Yammarino FJ, Atwater LE, James LR (2002) Neutralizing substitutes for leadership theory: leadership effects and common-source bias. *J Appl Psychol* 87(3):454–464
- Döös M, Wilhelmson L (2021) Fifty-five years of managerial shared leadership research: a review of an empirical field. *Leadership* 17(6):715–746
- Fleishman EA, Mumford MD, Zaccaro SJ, Levin KY, Korotkin AL, Hein MB (1991) Taxonomic efforts in the description of leader behavior: a synthesis and functional interpretation. *Leadersh Q* 2(4):245–287
- Forbes (2014) One company's success story: who needs a CEO anyway? *Forbes*. <https://www.forbes.com/sites/robashgar/2014/03/14/one-companys-success-story-who-needs-a-ceo-anyway/>
- Foss NJ, Klein PG (2022) Why managers matter—the perils of the bossless company. PublicAffairs, New York
- Frey CB, Osborne MA (2017) The future of employment: how susceptible are jobs to computerisation? *Technol Forecast Soc Chang* 114:254–280
- Grant AM, Gino F, Hofmann DA (2011) Reversing the extraverted leadership advantage: the role of employee proactivity. *Acad Manag J* 54(3):528–550
- Gray BH, Sarnak DO, Burgers JS (2015) Home care by self-governing nursing teams: The Netherlands' Buurtzorg model. *Commonw Fund Pub* 1818(14):1–10
- Hamel G (2011) First, let's fire all the managers. *Harvard Bus Rev* 89:48–60
- Heaberlin B, DeDeo S (2016) The evolution of Wikipedia's norm network. *Future Internet* 8(2):14
- Howell JM, Hall-Merenda KE (1999) The ties that bind: the impact of leader-member exchange, transformational and transactional leadership, and distance on predicting follower performance. *J Appl Psychol* 84(5):680
- Jaser Z (2021) The real value of middle managers. *Harvard Business Review*. <https://hbr.org/2021/06/the-real-value-of-middle-managers>
- Kelly G (2013) Supercell's CEO reveals the culture he built to produce a £2.5 billion company in 2 years. *Wired UK*. <http://www.wired.co.uk/article/ilkka-paananen-interview>
- Lee MY, Edmondson AC (2017) Self-managing organizations: exploring the limits of less-hierarchical organizing. *Res Organ Behav* 37:35–58. <https://doi.org/10.1016/j.riob.2017.10.002>
- MacKenzie G (1998) Orbiting the giant hairball: a corporate fool's guide to surviving with grace. Viking Adult, New York
- Martela F (2019) What makes self-managing organizations novel?—Comparing how Weberian bureaucracy, Mintzberg's adhocracy, and self-organizing solve six fundamental problems of organizing. *J Organ Des* 8(23):1–23. <https://doi.org/10.1186/s41469-019-0062-9>
- Martela F, Luoma J (2021) Why AI will never replace managers. *Harvard Business Review*. <https://hbr.org/2021/09/why-ai-will-never-replace-managers>
- Morgeson FP, DeRue DS, Karam EP (2010) Leadership in teams: a functional approach to understanding leadership structures and processes. *J Manag* 36(1):5–39. <https://doi.org/10.1177/0149206309347376>
- Nandram SS (2015) Organizational innovation by integrating simplification: learning from Buurtzorg Nederland. Springer, Berlin
- Nandram SS (2021) Humane organizing in a post-COVID-19 world: learning from Buurtzorg's trust-based decentralization. *J Manage Spiritual Relig* 18(5):375–399
- Reitzig M (2022) How to get better at flatter designs: considerations for shaping and leading organizations with less hierarchy. *J Organ Des* 11(1):5–10. <https://doi.org/10.1007/s41469-022-00109-7>
- Robertson BJ (2016) Holacracy: the revolutionary management system that abolishes hierarchy. Penguin, London
- Wall Street Journal (2016) Companies manage with no CEO. *Wall Street Journal*. <https://www.wsj.com/articles/companies-manage-with-no-ceo-1481641203>
- Weber M (1946) Bureaucracy. In: Gerth HH, Mills CW (eds), *Mills CW, Gerth HH (Trans) Essays in sociology*. Oxford University Press, pp 196–244
- Weber M (1978) *Economy and society: an outline of interpretive sociology* (Roth G, Wittich C, eds; Fischeff E et al Trans.), University of California Press
- Yukl G, Gordon A, Taber T (2002) A hierarchical taxonomy of leadership behavior: integrating a half century of behavior research. *J Leadersh Organ Stud* 9(1):15–32
- Zammuto RF, Griffith TL, Majchrzak A, Dougherty DJ, Faraj S (2007) Information technology and the changing fabric of organization. *Organ Sci* 18(5):749–762. <https://doi.org/10.1287/orsc.1070.0307>
- Zhu J, Liao Z, Yam KC, Johnson RE (2018) Shared leadership: a state-of-the-art review and future research agenda. *J Organ Behav* 39(7):834–852. <https://doi.org/10.1002/job.2296>

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