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## *CEO Working Paper Series*

Workplace Fatigue is a Systems Problem

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No society can provide its members with a high quality of life unless it has effective organizations.

Edward Lawler III

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## Workplace Fatigue is a Systems Problem

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### Abstract

Workplace fatigue is traditionally treated almost exclusively as an individual issue, and it certainly is the case that individual differences lead some individuals to experience fatigue and, ultimately, to burn out more than others. Yet not enough attention has been paid to factors arising from work design and organization strategy. This paper addresses that deficit by taking a systems view of fatigue, including diagnostics around job design and organization design. The conclusion is that much greater attention needs to be paid to organizational factors beyond the individual's control that promote fatigue. Since organizational factors cause at least part of the problem, solutions must incorporate organizational strategy and work design.

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## Workplace Fatigue Is a Systems Problem

Why are people tired at work? Many of the other contributions to this special issue of *Consulting Psychology Journal* address this issue at the individual level. In contrast, I take a different approach, focusing on the work-design and organizational factors that contribute to fatigue.

I do so because too many of the diagnoses and solutions that traditionally have been proposed for addressing fatigue focus almost exclusively on the individual. Yet no one is an island, and no job exists in a vacuum. The design of a job, and the demands it puts on the incumbent, can only be fully understood by looking at the organizational and business contexts.

Why does this matter? Consider the following common description of how work is evolving: In a society where technology has become ubiquitous, where we carry smartphones with us 24/7, our employers have the ideal means to ensure we're "always on" (Deal, 2013). For previous generations it was possible to turn off when not at work, or to choose to not answer the home phone and delay responding when contacted outside of regular work hours. Now that we are inseparable from our smartphones, that no longer is possible. Even worse, we are bombarded by e-mails and texts that either demand immediate response or pile up, increasing how hard we have to work when we eventually turn "on" again.

There are many organizational contributors to the challenges of dealing with not being able to turn off work at will: unsupportive managers; oppressive norms about responding quickly to work communications, including in the middle of the night; unreasonable demands for face time; insufficient coordination with teammates to schedule time off (Perlow, 2012); and more. Yet including these factors still leaves an incomplete picture. Even if we could eliminate them

all, there is an entirely separate set of factors that emanate from the organizational strategy and the work design. Failure to address them will inevitably lead to suboptimal solutions.

The neglected factors that most need to be addressed tie the job into the system in which it is embedded: organizational pressures to increase profitability; complex work design at the job and team levels requiring coordination across time zones and continents; multidimensional matrix reporting relationships and networks spanning coworkers, bosses, teams, functions, and business units. Profit pressures create greater workloads for everyone. Complex work design is a problem because more and more roles today sit at the nodes of key information flows. The people in those roles must spend inordinate amounts of time and energy working on critical decisions that cannot easily be handed off.

Although this picture may seem bleak, recognizing the organizational-system contributors offers the prospect of solutions that could make meaningful progress in reducing workplace fatigue. The solutions are never as simple the advice to “just unplug for the evening” and are harder to implement, often requiring coordination across multiple parts of the organization and buy-in from senior leadership. Yet when the buy-in and alignment can be achieved, the likelihood of the impact and durability of those organizational solutions is increased.

This article is structured as follows. I start with the external factors that create the pull toward overloaded jobs, including the relentless pressure from investors to grow profits. The profit pressure is important because “getting more done with less” (i.e. increasing margins by reducing costs and increasing job responsibilities and the volume of work) has been a core tenet of business strategy from the onset of reengineering in the early 1990s (Hammer & Champy, 2006) and even earlier. Most companies stretch people and resources as far as possible,

increasing spending or headcount only once they are close to or past the breaking point. It's not that senior leaders are sadistic and want to break employees' backs. Rather, their decisions are rational responses to the incentives and pressure they themselves operate under.

I next turn to job design and the job characteristics model (JCM; Hackman & Lawler, 1971). The JCM ties motivation and effort to the job design: Jobs that are more intrinsically or extrinsically motivating provide the right mix of what the individual is looking for, usually eliciting greater effort and productivity. Matching well the person to the job demands is ideal, yet it also creates the potential for abuse: The more the person is capable of accomplishing, the greater the temptation for the organization to stretch the job demands too far, causing fatigue. Understanding job structure is the foundational step to understanding fatigue drivers. My review of factors arising from the job design includes high-performance work design and team design.

Following that I discuss the contributions of organization design and network demands to fatigue. The basic organizational challenges of designing work with the right balance of differentiation versus integration creates the foundation for fatigue because integration best happens within a role. This can create a big burden when the role sits at the nexus of critical organizational processes, requiring a large amount of time that cannot necessarily be handed off or delegated down to relieve the workload. Similar challenges arise from roles that require an extensive amount of interaction across the networks that conduct the work processes in the organization; those interactions are exacerbated when work is distributed globally or is organized within a complex matrix-organization design.

I then suggest possible solutions arising from the various potential contributors to fatigue at work, and I conclude by emphasizing that a holistic approach to the issue is essential to finding the best solutions.

## **The Focus of Fatigue**

The notion of fatigue in the research literature comes most directly from the exhaustion dimension of the original Maslach Burnout Inventory (Maslach & Jackson, 1981; Schaufeli & Enzmann, 1998; Schaufeli et al., 2009). Fatigue is also related to the notion of job strain or stress that arises when job demands are too high (Karasek, 1979; Luchman & Gonzalez-Morales, 2013; Parker & Sprigg, 1999).

The more recent research on burnout and engagement makes a distinction between the negative effects of job demands and the coexisting positive effects of job resources (Nahrgang et al., 2011; Schaufeli & Bakker, 2004; Schaufeli et al., 2009). This distinction helps inform the approach I take in this article: Some aspects of a job's design can be demotivating because they are stressors or produce increased strain (the job demands), while other aspects of the job design can be energizing and intrinsically motivating (the job resources).

There are multiple ways job design can promote fatigue: (a) Work can be uninteresting or boring; (b) the number of tasks can be too numerous for the allotted time; (c) the variety of tasks can be too broad to be completed because of switching costs when moving between tasks; or (d) task complexity can be too difficult—the person literally cannot do the work. Doing work that is extremely tedious, repetitive and not mentally challenging can be fatiguing if people lose interest in the work, increasing the chance of errors. Although that type of fatigue arises from the job design, I do not focus on it because it has already been addressed extensively in the literature and in practice by the application of job enrichment (see discussion below). My focus instead is on fatigue arising from the other three potential job-design sources.

<Insert Figure 1 around here>

Figure 1 shows the various factors that promote fatigue that I address here, along with factors that can mitigate or moderate fatigue. Each is discussed below.

### **Increasing Job Demands: The Constant Pressure to Do More with Less**

Ever since the days of Frederick Taylor (1923), organizations have looked to use scientific methods to optimize work design. Under Taylor's scientific-management approach, jobs are designed to optimize productivity, by taking large complex products and breaking them down into component tasks that are well matched with the available labor pools. To a great extent Taylor's approach is just as applicable today as it was almost a century ago, and it forms the foundation of how most organizations do job design.

Though the general principles of scientific management are widely used today, the nature of the competitive issues companies face has changed. At the time of Taylor's work, a main challenge facing companies was determining how to produce complex products on a manufacturing line with labor that did not have high levels of education (high-school graduates or dropouts). Over time the focus evolved to incorporate elements of high-involvement work practices (Lawler, 1991); I will say more about this in my discussion of high-performance work design.

Simultaneous with the increase of high-involvement work practices in recent decades, there has been constant pressure on companies to meet targets for increases in quarterly revenue and margins. This started with the dismantling of corporate conglomerates in the 1970s and continued with reengineering, cost cutting, and a focus on corporate core competencies, and it persists today in other guises. As a consequence of this pressure, the share of corporate profits going to shareholders instead of labor is at record highs (International Labour Organization, 2015; Mishel et al., 2012).

The objectives of cost containment and higher margins are often accomplished in the short term by (a) increasing the volume of tasks per employee while keeping compensation the same, (b) lowering compensation while maintaining job responsibilities, or (c) both. Regardless of the path taken, the outcome is the same in each case: greater job demands for the level of compensation.

If most of the incumbents in a role are demotivated to perform at that higher level of job demands, the result can be greater fatigue. If everyone experiences the same level of fatigue and lowers their effort, the solution would be clear: Lower the job demands for all. The problem is that there almost always is a subset of people who want to perform at the higher level of job demands to increase their opportunities for rewards and promotion. These people set the performance standards that others must respond to. Couple that with the ever-present pressure to increase margins and profits, and fatigue can soon follow for those who view the job demands as demotivating.

The literature has long recognized that individual differences can lead people to respond to job demands in different ways. Individual differences in growth-needs strength (Hackman & Lawler, 1971) or in specific competencies (McClelland, 1973; Spencer & Spencer, 1993) mean that some people will view a given job as more interesting, rewarding, and motivating, thus having a smaller chance of being fatigued at work. More generally, “job resources play an *intrinsic* motivational role because they foster employees’ growth, learning, and development, or they play an *extrinsic* motivational role because they are instrumental in achieving work goals, or both (Bakker & Demerouti, 2007)” —cited in Bakker et al. (2010, p. 4). Job resources often vary from one person to the next because of differences in supervisor behavior and organizational support, leading to differences in experienced fatigue and other negative outcomes (Seltzer &



Numerof, 1988; van Woerkom et al., 2016). Moreover, differences in how people experience the different aspects of a job produce variations in the tendency toward fatigue (Lilius, 2012). In a similar vein, differences in perceived fairness can moderate the negative impact of job demands on performance (Janssen, 2001).

In organizations where revenue and profits are growing, the increased volume of tasks is often accomplished by expanding headcount slower than the growth in revenue, thereby increasing margins. When an organization must downsize, layoffs that are too deep often leave the organization understaffed for the same reason. This increases overload as well as the danger of burnout (Cordes & Dougherty, 1993; Gaines & Jermier, 1983; Mishra & Spreitzer, 1998; Moore, 2000).

### **Job Design and Fatigue**

Job design, job characteristics, and goal setting are foundational elements of theories of motivation and productivity (Gallagher & Einhorn, 1976; Hackman & Lawler, 1971; Latham, 2007; Maxwell, 2008; Parker & Wall, 1998; Porter & Lawler, 1968; Vroom, 1964). A key tenet of recent decades' work on job design and motivation is that if a job is made more interesting and fulfilling to perform, people will be more motivated to do the work and thus, presumably, will be more productive. In order for a job to be motivating, it must "allow a worker to feel personally responsible for a meaningful portion of [the] work," "provide outcomes which are intrinsically meaningful or otherwise experienced as worthwhile," and "provide feedback about what is accomplished" (Hackman & Lawler, 1971, pp. 263-264).

The interest in job design as a way to increase motivation and productivity arose from an assessment that narrow, uninteresting jobs were not enough to elicit employees' discretionary effort and ensure high-quality work output. Two approaches were tried to alleviate the issues: job

enlargement and job enrichment (Chung & Ross, 1977; Norton, et al., 1979; Patten, 1977).

Under job enlargement, the number and variety of tasks performed on the job are increased but without necessarily making the nature of the work itself more interesting. Under job enrichment, the direct focus is on making the work more interesting, which is typically achieved by increasing the complexity of the tasks performed. For example, consider the following description of automobile production job-design decisions:

In some areas Volvo and Saab-Scania are using a team-production method, in which auto and truck components are assembled by semi-autonomous groups of four to seven workers each. At times they can decide in what order to tackle their tasks and even who their foreman will be . . . . The automakers are also rotating some assembly-line workers to different jobs. An employee may attach seat headrests one day, bore holes in the seat framework the next, connect back supports and lift seat cushions onto conveyor belts on subsequent days. At Volvo some female assembly workers even spend one day every two weeks doing office jobs. (Gallagher & Einhorn, 1976, p. 359)

Job enrichment is embodied in the semi-autonomous teams, where the team members must closely rely on each other to complete their work and the team has some autonomy to make decision to improve work processes. Job enlargement, in contrast, is embodied in the second design, where people spend all day doing one repetitive task and then switch to other, daylong repetitive tasks on subsequent days. The female employees' jobs are enlarged in a different way when they rotate into entirely unrelated clerical work.

Job enrichment as a potential source of fatigue is more challenging to deal with than job enlargement. Job enlargement for all intents and purposes is not much different than expanding

the workload in a simple “additive” way. By additive, I mean that more tasks can be added, or the number of times a specific task must be done can be increased, and that the additional work is not interdependent with the work that was already on the person’s plate to perform. So in the example of the auto plant above, job enlargement can happen by adding in tasks that are different but not performed on the same day; performance on the tasks on Monday is not interdependent with performance on the tasks in subsequent days, except to the extent that fatigue experienced on one day could negatively impact productivity on the next day and potentially further days beyond. Yet fatigue like this is easily addressed from a job-design perspective by lowering the number of times a task must be performed in a day or lowering the variety of tasks to be performed overall (in the course of, say, a week).

The more interesting and challenging situation is when fatigue is created in an enriched job where the tasks to be performed are more likely to be interdependent and thus much harder to lessen through redistributing the work to other roles. According to Hackman and Lawler’s (1971) job characteristics model (JCM), true engagement with the work happens when there is the right alignment of enriched job-design elements (the job characteristics) plus the orientation of the individual toward the work. So, for example, it is not enough for a job to have more interesting and complex tasks. In addition, the people in the role also need to have an orientation toward wanting to learn and grow, otherwise they will not be motivated to do so.

The practical implication of the JCM is that jobs can be made more interesting, more intrinsically motivating, through the right combination of job design and matching the right people to the role. So enriching a role could initially have an impact of *decreasing* boredom and the fatigue associated with overly repetitive tasks, thereby increasing productivity. It also creates the illusion that tasks can be increased in complexity without also increasing the likelihood of

fatigue. It is that illusion that can cause organizations to overreach with enriched job design and push the boundaries of what is physically and mentally possible too far.

Abundant provision or availability of job resources can help to counteract the negative consequences of job demands (Schaufeli & Bakker, 2004; Schaufeli et al., 2009; Nahrgang et al., 2011). Viewed this way, the potential negative impacts of increased complexity can be initially mitigated by providing expanded job resources or by filling the roles with people who have a better fit with the job because of greater growth-needs strength (Hackman & Lawler, 1971)

Job fit can contribute to fatigue when there is poor alignment between the job design and the individual. If some people do not have the requisite skills to do the work effectively, satisfactory performance may require putting in extraordinary hours of work, causing fatigue. If they don't have the right temperament or personality traits, performing routine job tasks can be more draining than for others who are better matched to the job. For example, an extroverted sales person who has to interact with the public constantly at work should experience less fatigue than an introvert for whom such interactions are more difficult and non-energizing. Such people are less intrinsically motivated by the job characteristics. The same applies to executive positions as well, not just frontline, independent-contributor roles.

Even if people have the competencies and personality traits to do a job successfully, if they are not well matched in terms of the work they prefer to do, that also creates problems. For example, highly enriched jobs can require greater concentration, time spent on decision making, and more. In Hackman and Lawler's framework, someone with high growth-needs strength should fit well with an enriched job, thus experiencing less fatigue in a given period of time. Someone with low growth-needs strength, in contrast, should have a much harder time completing the tasks in the allotted time, leading to stress, overload, and fatigue.

**High-performance work design.** High-performance work design is related to enriched jobs but is not the same, and it can be applied at either the job level (Levenson, 2015, 2016) or the team level (Appelbaum & Batt, 1994; Blasi & Kruse, 2006; Cappelli & Neumark, 2001; Cooke, 1994; Devaro, 2008; Ichniowski et al., 1997), including managerial roles. Under high-performance job design, a role has greater autonomy/decision making, less supervisor oversight, greater competencies for independent decision making, and, usually, greater compensation to reward the higher productivity.

The expectation for high performance does not necessarily require greater effort, and it does not necessarily induce fatigue—if all the parts of the job are aligned properly by the right job design (Blumberg & Pringle, 1982). Yet if the parts are not aligned, then the logic behind the high-performance design can be violated, leading to a mismatch between job demands and individual capability. The result is wasted effort and potential fatigue. These alignment issues exist not just at the job level but also the team or group level (Wageman, 1995).

The basic problem with high-performance work design is that even when implemented properly, there is a strong temptation for leaders to cut back on compensation to boost margins while expecting (hoping) that performance remains high. This may be the case for initial savings on compensation, if the cuts are not very deep at first. But over time small savings on compensation can accumulate to the point where there are significant gaps between the target compensation that should be paid to a role or team versus the actual compensation—another example of the “do more with less” mentality creating overwork, stress, and potential fatigue.

**Team design.** Team design and dynamics have been the subject of focused study for years, and with good reason: The immediate team in which the role is embedded defines most of the important work the person must integrate and coordinate with (Curphy & Hogan, 2012; Hu &

Liden, 2011; Katzenbach & Smith, 1993; LaFasto & Larson, 2001). Moreover, the person's team usually defines the majority of day-to-day tasks and integration and can thus be a source of the individual's fatigue.

The team's scope of work and overall workload are the place to start. By definition, what the team has to produce almost always is too time-consuming and complex for individual team members to accomplish efficiently on their own. Effective team functioning means that all team members must do their jobs correctly in every aspect, coordinating and collaborating appropriately with each other. Perfection is impossible to achieve, so the nature of teamwork itself creates inefficiencies. Thus, challenges of team integration, coordination, and workload can all directly contribute to complexity, overwork, and fatigue at the role level.

Key markers for whether a team is effectively working well together include team-level alignment and integration, shared understanding about the team's goals and how to accomplish them, trust among the team members, and so on. One suggestion by Perlow (2012) to improve alignment in cases of heavy workloads is improved coordination among the team members so that each person can take turns having blocks of down time when they do not need to respond to the team's demands. Yet solutions like that do not address the underlying source of overload in many cases: how the team was assembled and resourced.

Unplugging for an evening does not do anything to address foundational issues of the overall workload and complexity of the team's work. What's more, in situations where team members are not following through on their responsibilities, individuals may feel compelled to compensate for their teammates' lack of contribution by working more than is reasonable. Their actions to compensate can arise from a sense of conscientiousness or from a desire to succeed

and be rewarded by the organization. Whatever the motivation, the net effect is the same: potential fatigue and burnout.

### **Organization Design and Network Demands**

Except for the issue of team design, the literature on job design focuses on aspects of the work as experienced by the individual and deemphasizes how the individual must interact with others to get the job done. That focus is similar to the way issues of fatigue are usually addressed: from the perspective of how the individual reacts to the job. Addressing only the volume, variety, and complexity of tasks tends to obscure the importance of how the job must coordinate and integrate with other roles and parts of the organization. In order to devise effective solutions to overcoming fatigue on the job, any analysis of fatigue that ignores the coordination and integration demands the individual faces runs the risk of overlooking key elements of the work design that need to be considered.

Differentiation and integration of jobs tasks are foundational aspects of organization design (Lawrence & Lorsch, 1967). Differentiation is required to reap the economic fruits of specialization (Smith, 1776), and integration brings the differentiated parts back together in a coherent whole (Galbraith, 1977).

When looking across the organization for potential sources of fatigue arising from the organization design, integration points should be a primary target. A major source of overload and fatigue for many people is the overwhelming amount of interactions that must take place to integrate one's work with others. Looking at the situation from a work-design perspective, I think the key question is, "What types of interactions and integration are a core part of the job and cannot be easily separated out and given to someone else, and which ones can be?" Taking

that perspective is important to determine which interactions, if any, can be made secondary priority, the first necessary step to determining how the work design might be adjusted.

Integration can happen at either a role level or a team level. There are many different types of jobs where integration happens at the role level. General managers responsible for overseeing different parts of the organization play an integration role; so do the managers who supervise cross-functional teams. Integration can also take place below the manager level, in any role where an individual is responsible for combining the output from people playing different roles. At a team level, integration occurs whenever people must come together collectively to combine their outputs into a complete piece of work.

The mechanics of how integration occurs are important for understanding the potential sources of fatigue. Meetings are a primary integration vehicle. Whether conducted in person, virtually, or in combination (some people in person, others connecting virtually), meetings provide a real-time, synchronous method for effective integration. Virtual synchronous meetings can be held using telephone, video conference, real-time chat conversations/instant messaging, and webcast. Other methods for integration are asynchronous and include e-mail and texting.

From a complexity and overload perspective, the more time and energy that is needed for integration, the harder it is to complete the work and the greater the potential for fatigue. This is one of the key issues surfaced by the literature on social networks in organizations (Balkundi & Harrison, 2006; Burt, 1997; Dess and Shaw, 2001; Leana & Van Buren, 1999; Nahapiet & Ghoshal, 1998; Reagans & Zuckerman, 2001; Siebert et al., 2001; Tsai & Ghoshal, 1998). A key insight of the literature is that each role can be classified based on whether it is a critical node of information flow between other people in the organization or whether it is less critical because there are many other people in similar roles. In the former case it is harder to delegate or recruit



others to step in and relieve some of the burden of integrating across different parts of the organization; in the latter case it's much easier to reduce that person's communication and integration workload, at least in principle.

In addition to whether the role is a more or less critical node for information flow, the number of branches on a social-network tree to which the person is connected also determines the extent of potential overload and fatigue. The more branches, the larger the number of people the person must interact with on a regular basis to get the work done. More branches mean more meetings, e-mails, phone calls, and so on.

Taking these two perspectives together, we have a twofold way of understanding a person's role relative to the social network in which it's embedded: Is it more of an isolated, independent contributor role that doesn't have to interact a lot with other parts of the organization? Or is it more of an integrator role, one that fills holes in the social network of the organization, so information must flow through it for work to be done effectively?

Culture plays a part in defining the organization's social networks and how hard someone must work to connect to others both to get work done and to advance in his or her career. The more inclusive a culture is, the larger the number of network interactions one needs to maintain in order to succeed. Similarly, a low-trust culture also expands network interactions, though in an unhealthy way: People are excessively copied on e-mails or included in too many meetings for political reasons. Any analysis of the sources of fatigue must take into account potential contributors such as these.

The economic realities of where the company does business globally creates additional integration issues. Operating across multiple continents and time zones makes integration harder for anyone who must coordinate his or her work with the remote locations. Operating across very

different cultures is part of the challenge of coordinating with other locations but with a unique contribution: The difficulty of any interaction is made more difficult. For example, someone from the United States who must interact with people from the United Kingdom and some parts of Europe faces continent and time zone differences but not major language differences because English is a common language. In contrast, working with people in the non-English speaking majority of the rest of Europe or Asia creates added network complexity, requiring greater effort and the potential for fatigue.

Another aspect of global operations is differences in the economic systems of national economies. Compare, for example, the advanced industrialized economies of the U.S, Canada, Western Europe, East Asia, and Australia with the less developed economies of India, Indonesia, sub-Saharan Africa, and many countries in Latin America. Differences in the quality of infrastructure, economic regulations, and the rule of law create additional complexity and integration challenges. For example, the type of go-to-market sales and distribution system used by consumer-products companies is usually quite different in the advanced industrialized economies compared to the less developed economies.

The final aspect of organizational design that ties many of the previous pieces together is the matrix-organization design (Galbraith, 2009). Even the most basic, two-dimensional, matrix forces people to develop and maintain a wide array of time-consuming relationships in order to get their work done. The greater the dimensions of the organizational matrix, the greater the complexity of daily work, with direct negative consequences for fatigue as well.

### **From Diagnosis to Solutions**

When it comes to designing solutions to address workplace fatigue, the issues that arise from the job design, organization design, and organizational strategy all need to be considered as

potential for creating fatigue. To design the right solutions to address fatigue, the first step is properly diagnosing the sources of potential fatigue. This section summarizes the various sources addressed in the article along with paths to identifying potential solutions.

### **Fatigue Induced by the Volume, Variety, and Complexity of Job Tasks**

Job enlargement involves an increase in the volume, variety, or both of tasks the person must perform. By construction, job enlargement means adding tasks that are easily separable from the original set of tasks assigned to the role. For that reason, it is relatively easy to address fatigue induced by job enlargement by dividing up the work and apportioning it to other people or roles, without having a negative impact on overall productivity (the time taken to complete each task).

For fatigue induced by task complexity, or job enrichment, there usually is much more of a real trade-off between productivity and fatigue. Job enrichment usually is used precisely because overall productivity is higher when additional tasks are added that make the job more complex to perform, because doing so reduces the time needed for task integration (due to interdependence among the tasks). Yet if it turns out that adding more tasks causes fatigue to rise too much, then the potential benefits from the added job complexity may be diminished or even totally reversed. Rather than break up the tasks and distribute them across people, the solution in the case of job enlargement, the work processes may need to be redesigned or the number of people working in the role(s) may need to be increased.

In the case of job enrichment, a solution that preserves productivity while lowering the overall workload and potential fatigue lies in creating more of a team-based approach. Consider the traditional manufacturing line job. Job enrichment via self-managing work teams can provide an effective solution by taking the tasks used to create a complete part of the production (such as

an entire engine, or instrument panel, or motherboard, or chemical compound) and making a team of people collectively responsible for managing the production. The collective responsibility and decision making replicates the task interdependence needed to achieve the productivity benefits of job enrichment; and having a multi-person team responsible for doing the work enables the workload of any one person to be maintained at a level that should not overly induce fatigue.

### **The Pressure to Do More with Less**

The pressure to do more with less is usually caused by cutting staff deeper than is advisable when downsizing or by failing to add staff quickly enough when sales and the total volume of work grow. It also can be caused by keeping compensation too low while job demands are ratcheted upward.

For a solution, look for overwork caused by unrealistic productivity demands for the role. Is compensation set too low to attract and retain people who can do the work at the expected productivity levels? If so, the answer usually is to spend more money by adding additional people or by increasing compensation, or both. Doing so would reverse the perceived profitability gains created by the initial decision to limit spending. Yet if the negative impacts of fatigue are high enough, any short-term increase in profitability will be substantially eroded by increased fatigue in the longer term.

### **High-performance Work Design**

The fatigue that can be created by high-performance work design usually arises from a lack of job resources or from poor job fit. High-performance job design is best suited for people who have the capability to be performing at a higher level without experiencing fatigue. If fatigue unexpectedly occurs, the first best approach is to look for ways to increase job resources

to see if that increases motivation and ability to perform in the role. Examples can include better skill utilization, autonomy/decision making, colleague support, mentoring, career development, and performance feedback.

If an increase in job resources does not lessen fatigue, the problem may lie in job fit. Searching for people who are better suited for the high productivity demands is one initial approach to try. If that doesn't work, then the solution usually means having to invest in increased compensation. Doing so should enable the attraction and retention of people capable of performing the role's duties without experiencing undue fatigue.

### **Network Demands, Meeting Overload, and Global Work**

Network demands and meeting overload are examples where the volume, variety, or complexity of job tasks are too great but are specifically related to interactions with other people in the organization. In many cases, overload is often created innocuously by perceived needs to be involved in many different business processes or by a cultural tendency to over-include people in communications and meetings who are not critical for the decision-making processes. However, in other cases it is inherent in the way work is spread out across the continent or globe and cannot necessarily be avoided.

The viable solutions in this case may require work redesign, including prioritizing task demands based on criticality for business performance. Evaluate whether the responsibility for interacting with certain nodes in the network and for attending specific meetings can be shifted to other roles. This is similar to reducing the volume and variety of job tasks in the job-enlargement case described above. If this approach is not viable, then the solution may require redesigning work processes or increase staffing and taking more of a team-based approach, like the solution discussed above when dealing with job complexity.

Solutions to fatigue arising from global work and coordination across continents are harder to find. If a role—independent contributor or manager/leader—requires communication and coordination with people in time zones as disperse as the Americas (North or South), Europe, and Asia or Australia, easy solutions are never found because of the need for synchronous communication with team members and stakeholders in each location. When there are team members in at least three geographies separated by time zones with at least a 6-hour difference, it is virtually impossible to avoid communication and work outside of “normal” working hours.

The most effective solution is usually to redesign the work to reduce the number of continents across which coordination must happen. Yet customer or production requirements may not allow that simplification. One solution that may work in these cases is to take more of a team-based approach to designing the work and addressing fatigue (see the discussion that immediately follows).

### **Team Effectiveness**

Focusing on team (or function or business-unit) effectiveness as a unique aspect of the work design is important because there are solutions that can be applied that are often easily missed when looking only at fatigue one person or role at a time. The team-level/group-level issues typically are manifested as pressures and potential overload for the individuals who are part of the team/group, and in that way may look no different than other causes of fatigue arising from the work design. Yet because the sources are rooted in group dynamics and structure, the solutions must address much more systematic issues than in other cases.

The solution starts with evaluating the team for problems with integration, shared understanding, or trust. Not enough integration among the team members and leaders (and other

stakeholders) can lead to overwork and fatigue because insufficient time is spent ensuring that the handoff of tasks between people happens effectively. A lack of shared understanding about the team's goals and how to accomplish them can lead to people working at cross-purposes, greatly increasing inefficiencies and the time needed for each person to do his or her work. Similarly, insufficient trust can lead people to take on too many tasks that optimally should be shared or off-loaded onto other team members. Regardless of the source of team ineffectiveness, the time spent bringing the relevant people together to improve integration, shared understanding, and trust should reap the benefit of improved work processes that can reduce the total time any one person must spend working on the team's tasks.

In the case of highly geographically distributed global work, individuals who sit at the nexus of work that must be integrated run a great risk for overload and fatigue. One potential solution is to broaden the way the work is organized to take more of a team-based approach. This would entail expanding the number of people in the role or redesigning the role to remove some of the tasks that do not require global integration.

A basic form of this solution is to provide administrative support to free up the individual from doing a lot of clerical tasks, leaving on their plate the responsibility for the complex integration of global information and decision making. A more complicated solution would bring in an additional person to help with information processing and decision making. Doing so would increase the need for coordination and integration among the two people; previously there was only one person doing the integration. However, if the gain in reduced fatigue is large enough, the inherent coordination inefficiencies can be worth the benefit.

### **Conclusion**

The potential sources of fatigue arising from the job design and organizational structure

are many. With globally dispersed work it may be impossible to turn off in certain roles except for a very limited number of hours. It may be hard or even impossible to schedule some meetings at a time that occurs in normal working hours for everyone participating across the globe. The relentless pressure for higher margins and profits has the potential to set up a team or role for failure because of too little support and compensation, and so on.

Traditional approaches to alleviating fatigue have focused on the issue as an individual-level problem arising from excessive job demands or limited job resources. A more comprehensive and effective diagnostic requires taking a holistic, systems view of the potential sources of fatigue. This means prioritizing solutions based on how well they address both the idiosyncratic and systemic causes of fatigue. Following that approach should lead to more robust and durable solutions to the challenges of fatigue at work.



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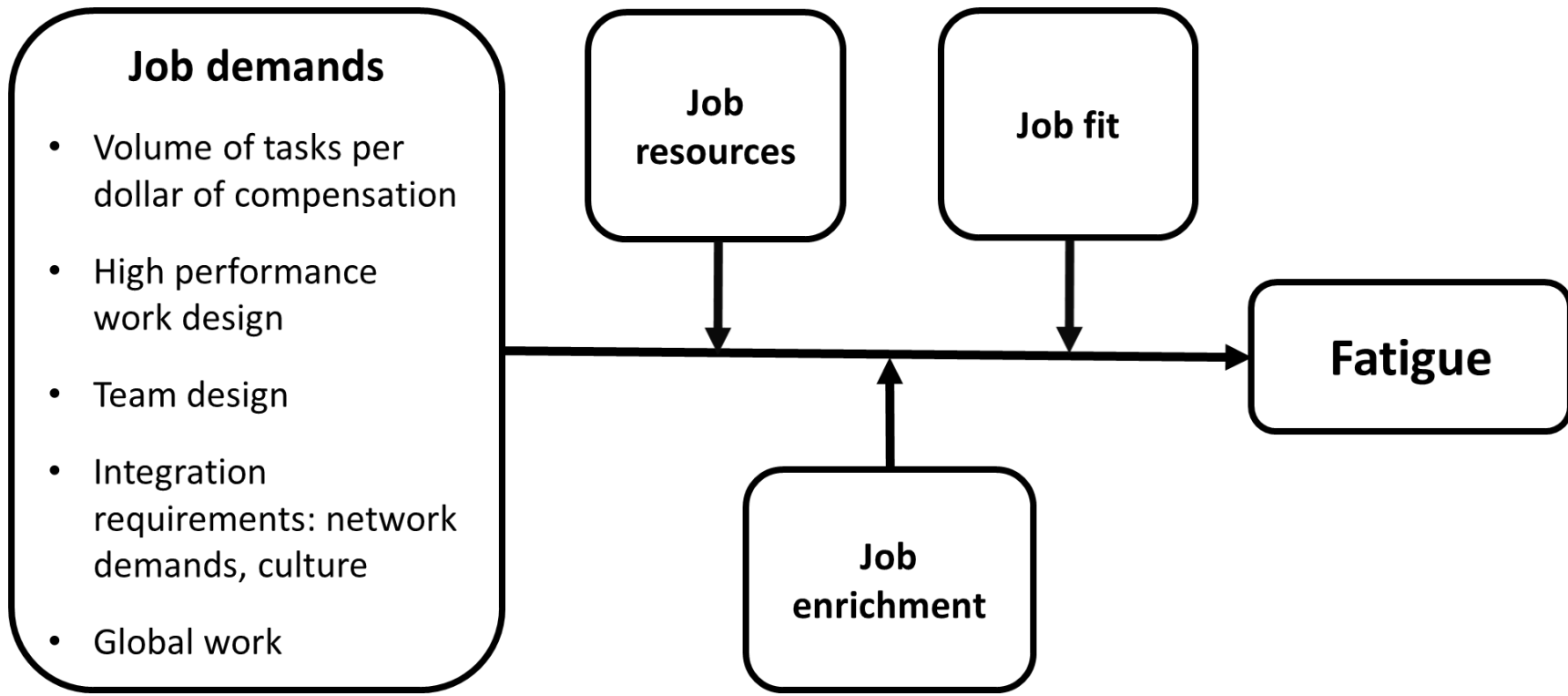


Figure 1: The job factors that create and mitigate fatigue