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MANAGING THE RISK OF NEGATIVE EFFECTS OF HIGH PERFORMANCE WORK PRACTICES

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Introduction

High performance work practices (HPWPs), sometimes referred to as high involvement (Wood, 1999) or high commitment practices (Wood & de Menezes, 1998), are those human resource (HR) activities adopted by an organization with the expectation of enhancing performance (Huselid, 1995). The majority of research that examines the impact of HPWPs finds that they are positively associated with many important employee and organizational benefits. However, a small but growing research area has recently discovered that HPWPs might also be linked to negative employee outcomes, such as increased anxiety and job dissatisfaction (Wood, Van Veldhoven, Croon, & de Menezes, 2012). The risk that HPWPs will fail to work and/or will result in negative consequences is the main focus of this chapter. We start by providing a brief overview of the positive and negative effects of HPWPs discussed in the literature. Next, we discuss two quality and risk management tools used extensively in engineering and manufacturing and demonstrate how they can be integrated with human resource management (HRM) to assist in managing HR system risk.

Historically, human resources have not been viewed as strategically important to organizations, but rather as a cost to be minimized (Snell, Youndt, & Wright, 1996). However, this perception has gradually shifted due to significant changes in the marketplace. As globalization and technological intensity have increased, organizations have found themselves unable to rely solely on traditional forms of competition such as protected markets, access to capital, and superior technology (Wilkinson, Redman, Snell, & Bacon, 2009). In this new economic environment, organizations must turn their attention to capabilities like organizational learning, adaptation, and innovation in order to remain competitive (Wilkinson et al., 2009). People, and the management of people, are undoubtedly at the heart

of these important organizational capabilities, which is why the field of HRM has become one of increasing interest to researchers and managers alike.

In the mid-1990s, this growing attention on how organizations can gain a competitive advantage through their workforce with HRM opened the path to a new stream of research, known as strategic HRM (SHRM). SHRM seeks to understand how, when, and why HRM activities impact firm performance. SHRM does this by studying individual HPWPs as well as bundles of HPWPs, called high performance work systems (HPWSs), in which practices are grouped together such that their effectiveness is reinforced by other practices included in the bundle (Posthuma, Campion, Masimova, & Campion, 2013; Snell et al., 1996; Toh, Morgeson, & Campion, 2008; Wright & McMahan, 1992).

Three perspectives have emerged in SHRM research—universalistic, contingency, and configurational (Delery & Doty, 1996; McMahan, Virick, & Wright, 1999). The universalistic perspective argues that there are individual HR practices that are considered “best practice” and that, when these are adopted, organizational performance will be positively impacted in all contexts. For example, good recruitment and selection practices are generally viewed as always being effective (e.g., Terpstra & Rozell, 1993). The contingency perspective argues that the impact of HPWPs on organizational performance depends on the fit between individual HR practices and the organizational context. This type of fit is known as external, or vertical, fit. Firm strategy is the contingency explored most often in the literature. For example, Jackson, Schuler, and Rivero (1989) found that firms pursuing a strategy of innovation tend to adopt HPWPs consistent with job security in order to encourage employees to take risks and to focus on long-term results. Other contingencies examined in the literature include industry characteristics, technology (the process of transforming inputs to outputs), and organizational structure. Finally, the configurational perspective holds that the impact of HPWPs on organizational outcomes depends on the alignment *between* practices, also known as internal, or horizontal, fit (Delery, 1998; Ichniowski, Kochan, Levine, Olson, & Strauss, 1996; MacDuffie, 1995). Researchers using this approach examine combinations, or bundles, of HPWPs, often referred to as HPWSs. A mixture of HPWSs have been found in the literature, with the number of bundles ranging anywhere from two to five. For instance, Arthur (1994) found two HR bundles representing organizations that invest very little in HR and those that invest highly: cost minimizers and commitment maximizers. Toh et al. (2008) identified five HR bundles, adopted by organizations, based on their HR goal: cost minimizers, contingent motivators, competitive motivators, resource makers, and commitment maximizers. The configurational approach can be used in combination with either the universalistic or contingency perspective. In the universalistic configurational approach, certain HR bundles are shown to be “best practice” across contexts. For instance, Batt (2002) found that high involvement work systems are associated with lower quit rates and higher sales. In a contingent configurational approach, the benefits of HPWSs

are thought to depend on contextual factors (Lepak, Liao, Chung, & Harden, 2006). For example, Lepak and Snell (2002) find support for the contingent configurational approach by showing that HPWSs vary by type of employee. In their study of 148 firms, the authors identify four HPWSs (commitment, productivity, compliance, and collaborative based) and show that each aligns to a different type of employment mode (knowledge based, job based, contract, and alliance/partnership). Using these three perspectives, researchers have examined the impact of HPWPs on myriad individual, group, and organizational outcomes.

The purpose of this chapter is, first, to present a brief overview of the extensive body of research linking HPWPs to many important employee and organizational benefits. This overview provides a point of comparison to understand our second purpose. The second, and main, purpose of this chapter is to focus on a much smaller but growing body of research that examines the negative effects that HPWPs can have on (a) employees and (b) other HPWPs adopted simultaneously. The dilemma presented by these opposing views of HPWPs is then discussed in more detail. The final sections of this chapter are used to propose a systematic method to assist in identifying, analyzing, and mitigating the risk that HPWPs will fail to work as expected. This is accomplished by integrating HRM with two quality and risk management tools already used extensively in other disciplines.

Positive Effects of High Performance Work Practices

Since the inception of SHRM in the mid-1990s, considerable progress has been made linking HPWPs to important organizational benefits, for both external and internal stakeholders (Jackson, Schuler, & Jiang, 2014). Studies have found associations between HPWPs and financial indicators, like profit growth, revenue, return on assets, return on equity, and Tobin's Q, as well as improved sales and market value (Combs, Liu, Hall, & Ketchen, 2006; Delery & Doty, 1996; Guthrie, 2001; Huselid, 1995; Jackson et al., 2014; Wright, Gardner, Moynihan, & Allen, 2005). HPWPs have also been linked to nonfinancial indicators, important to customers, like improved product quality and innovation (MacDuffie, 1995; Patel, Messersmith, & Lepak, 2012; Wright et al., 2005) and greater customer service and satisfaction (Chuang & Liao, 2010; Liao, Toya, Lepak, & Hong, 2009).

In order to better understand the mechanisms through which HPWPs influence external performance measures, researchers have begun to examine their influence inside the organization. Most mediator studies have been conducted at the individual level of analysis, exploring how HPWPs influence organizational outcomes through a series of intermediate steps. Often these studies incorporate the ability, motivation, opportunity (AMO) framework, arguing that HPWSs increase employees' knowledge, skills, and abilities (KSAs), and provide them with the motivation and opportunity to use those KSAs, in the form of

discretionary behaviors, to the benefit of the organization (Combs et al., 2006). HPWPs such as broad and selective recruiting, and competitive compensation and benefits, bring employees with valuable KSAs into the organization (Combs et al., 2006; Hoque, 1999). Once inside the organization, these KSAs are further developed through job rotation, job analysis, and training (Combs et al., 2006; Hoque, 1999; Russell, Terborg, & Powers, 1985). HPWPs like incentive pay, performance appraisals, and internal promotion opportunities align employees' interests with those of the organization, thereby motivating employees to use their KSAs to benefit the organization (Delery & Shaw, 2001; Huselid, 1995). Finally, job enlargement, participative decision-making, and self-managed teams present the opportunities for them to do so (Bailey, 1993; Delery & Shaw, 2001; Huselid, 1995; Pfeffer, 1998).

Research along these lines has linked HPWPs to several important attitude and behavior outcomes in employees, including reduced turnover (Batt, 2002; Guthrie, 2001; Huang, 1997; Shaw, Delery, Jenkins, & Gupta, 1998; Sun, Aryee, & Law, 2007), increased job satisfaction (Guest, 1999; Hoque, 1999), commitment (Tsui, Pearce, Porter, & Tripoli, 1997), motivation, creativity, discretionary effort, organizational citizenship behavior, and trust in management (Macky & Boxall, 2007; Whitener, 2001; for review see Combs et al., 2006; Jiang, Lepak, Hu, & Baer, 2012). Collectively, these employee attitudes and behaviors provide one way of explaining the relationship between HPWPs and organizational performance (Jiang, Takeuchi, & Lepak, 2013).

From a macro-perspective, researchers have examined organizational-level mechanisms that help explain the HPWP–organizational performance relationship. The majority of these studies incorporate Barney's (1991) resource-based view (RBV) of the firm, arguing that HPWPs transform individual employees' KSAs into organizational capabilities (Jackson et al., 2014), including greater flexibility (Beltrán-Martín, Roca-Puig, Escrig-Tena, & Bou-Llugar, 2008; Schuler, 1986), improved organizational learning (Snell et al., 1996), and organizational ambidexterity (Patel et al., 2012). Drawing on social exchange theory, other researchers have begun examining the climate and social structures that HPWPs help create within an organization, resulting in improved communication and cooperation between employees and ultimately greater effectiveness (e.g., Bowen & Ostroff, 2004; Evans & Davis, 2005).

Negative Effects of High Performance Work Practices

As just reviewed, the vast majority of research on HPWPs suggests a positive relationship with individual and organizational performance. However, these positive accounts of HPWPs are written mostly from the point of view of managers (Harley, Allen, & Sargent, 2007). Although employees are essential to the link between HPWPs and organizational outcomes, mainstream research rarely studies HPWPs from an employee perspective. The few studies that do, focus

only on positive employee experiences, such as job satisfaction, commitment, and trust for management (for a review see Combs et al., 2006; Jiang et al., 2012). Those critical of mainstream HRM research argue that these positive employee attitudes are only studied because of their importance to the managers' agenda (i.e., organizational performance), and not as a way to more fully understand how HPWPs impact employees. In response to these critiques, researchers have begun to examine HPWPs from the perspective of employees and their experience of work (Harley et al., 2007). This body of research focuses on employee well-being and disputes the assumption that HPWPs are as beneficial to employees as they are to organizations (Ramsay, Scholarios, & Harley, 2000). Also questioned is the mainstream notion that HPWPs are a "high road" approach to employee management and that HPWPs are employee centered and empowering (Ramsay et al., 2000). Findings reveal that HPWPs can have negative effects on employees, including increased job strain (Ramsay et al., 2000) and anxiety (Wood et al., 2012).

Theories in this research stream are based in critical traditions. For instance, Ramsay et al. (2000) use the labor process (LP) perspective to form an alternative view of HPWPs. Essentially, LP argues that, in a capitalistic society, the trend is for managers continuously to find ways to maximize labor input (Ramsay et al., 2000). This is typically accomplished by driving employees to work harder and/or longer (Ramsay et al., 2000). The LP argument states that the work intensification, insecurity, and stress that employees feel as a result of HPWPs far outweigh any benefits they might enjoy (Harley, 1999; Ramsay et al., 2000). In 2012, Wood et al. found that high involvement practices were associated with increased employee anxiety and job dissatisfaction. They explain this relationship using the management-by-stress perspective, which, similar to LP theory, also centers on work intensification. Job-home spillover is another negative employee outcome examined in this literature (White, Hill, McGovern, Mills, & Smeaton, 2003).

Further, studies have shown that the level of HPWP implementation pursued by an organization can have an impact on employees. In 2001, Godard argued against the universalistic perspective, suggesting that, while low to moderate increases in HPWPs resulted in positive outcomes for employees, increased implementation led to greater stress levels. Evidence also suggests that employee support for HPWPs tends to diminish over time, possibly in proportion to the initial expectations (Bruno & Jordan, 2002).

The political economy approach has been used to explain the limited findings of the high performance paradigm supported in much of mainstream research. The political economy approach views the employment relationship as one of subordination and conflict of interest (Godard, 2004). When individuals join an organization, they subject themselves to the authority of the employer. The employee's status is of a (human) resource, used to assist in meeting the goals of the employer. Employees' interests are secondary to the interests of the employer, and, if these interests conflict, the employer is free to make decisions that violate

the “psychological contract” entered into at the time of hire, which includes items like fairness, cooperation, and delivery on promises (Godard, 2004). Proponents of this political economy perspective argue that, due to its subordinating structure, the employment relationship is always vulnerable to trust and equity concerns, which makes high levels of employee commitment harder to achieve than assumed in mainstream research (Godard, 2004). Researchers adopting the political economy approach argue that this may explain why the benefits from HPWPs seem to diminish at high levels of adoption and over time.

The success of HPWPs is also determined by how they are grouped together into HPWSs. When used simultaneously, individual practices can complement and enhance the effectiveness of one another (Delery & Doty, 1996; Dyer & Reeves, 1995; MacDuffie, 1995; Youndt, Snell, Dean, & Lepak, 1996). However, when grouped inappropriately, it is also possible for individual practices to reduce the overall effectiveness of an HR system (Becker, Huselid, Pickus, & Spratt, 1997). Countless combinations of HR practices exist that will lead to the same organizational outcome (Doty & Delery, 1997). For instance, two recruitment and selection techniques might both result in the hiring of equally skilled employees. In this case, adopting them at the same time would be a waste of financial resources (Delery, 1998; Ichniowski et al., 1996). Certain HR practices might also be ineffective unless paired with other complementary HR practices (Delery, 1998). For example, implementing rigorous selection techniques, with the goal of hiring top talent, might only have the desired effect when used together with practices that increase the number of applicants, like broad recruiting techniques and competitive pay and benefits (Delery, 1998; Shaw et al., 1998). Finally, certain practices might form a “deadly combination” when implemented simultaneously, actually reducing the effectiveness of each other and thus the HR system as a whole (Becker et al., 1997). An example might be when self-managed teams are combined with individual incentive pay. More research is needed to better understand the effect that individual practices have on one another and ultimately how this issue of horizontal fit impacts organizational performance.

The Dilemma

With greater pressure from global competition, along with the ever-increasing pace of technology, organizations have much riding on their ability to manage employees. Companies often look to HPWPs for help. However, after a brief review of the literature, we see that HR managers might face a dilemma regarding HPWPs. On the one hand, HPWPs have been shown to improve organizational performance on several important measures, across many industries, and in various countries. On the other hand, HPWPs sometimes fail to work. First, recent research shows that improved performance through HPWPs might come at a negative cost to employees’ well-being and to their experience of work. Some might argue that, whether employees are truly satisfied and committed to

an organization or whether they are just complying, organizational performance is the ultimate determinant of HR program success, not how employees feel. However, this type of short-sightedness fails to take into account that economies and financial markets change. So, while compliant employees might perform as efficiently as committed employees today, under improved market conditions, they are more likely than committed employees to search for new opportunities (Cushen & Thompson, 2012; Thompson, 2011). Second, HPWPs often interact with each other in ways that complicate the effect of the overall HR system on organizational outcomes. Some practices are substitutes for one another, so using them together can be a waste of organizational resources. Even more concerning for the effectiveness of an HR system is when practices that work against each other are used simultaneously.

The selection and adoption of HPWPs is a large undertaking for organizations, often requiring significant financial and human resources to design, schedule, and implement. With so much at stake, and no guarantee of how employees will respond to HPWPs, what are managers to do? We recommend risk management of HR systems. Risk management is the process of identifying and analyzing events that could lead to negative outcomes and then implementing methods to reduce and manage those risks (Olsson, 2007; PMI, 2013; Santos & Cabral, 2008).

Our proposed model is shown in Figure 2.1. Our independent variable includes all nine categories of HPWPs that appear in Posthuma et al.'s (2013) taxonomy. Organizations implement HPWPs with the expectation of reaping the positive consequences discussed in mainstream research, such as improved

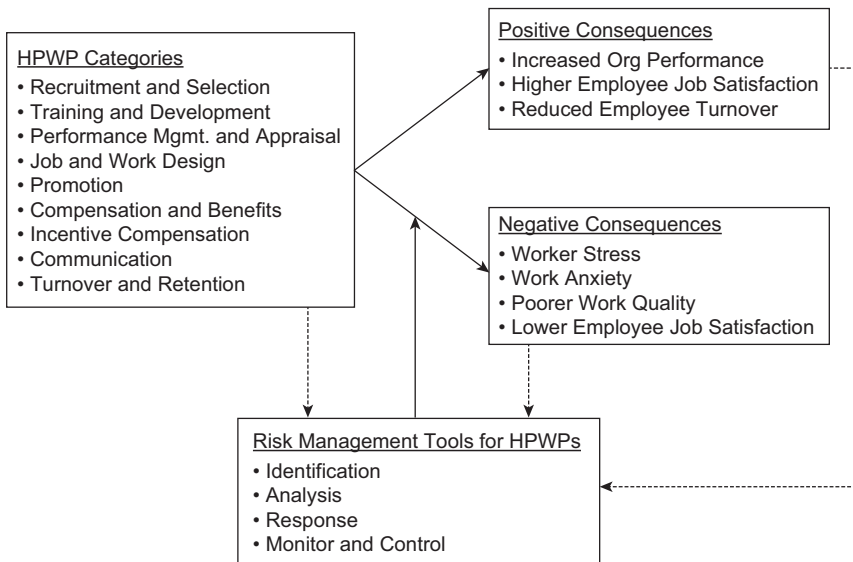


FIGURE 2.1 A model for managing the risks of the negative side effect of HPWPs.

organizational performance, greater employee satisfaction, and lower turnover. However, as our brief summary highlighted, HPWPs are not always successful. They have been shown to have negative consequences, such as an increased level of worker stress and anxiety and a reduction in work quality and job satisfaction. We have also discussed how important it is to understand how practices interact, or fit together, in an HR system. [Figure 2.1](#) visually depicts the dilemma by showing that HPWPs can result in both positive and negative consequences. Further, it proposes that the risk management tools developed later in the chapter can reduce the likelihood of negative outcomes by aiding managers in identifying, analyzing, and managing HR program risk. As we will show, these risk management tools are specific to the organization and to the HR system being evaluated. Further, the tools, along with their effectiveness, are continuously improved based on input from the HR system and its outcomes.

In the following section, we review two quality and risk management approaches that are used extensively in engineering and manufacturing. Each tool is then applied to the HR context to develop systematic and straightforward methods that can help HR managers understand and mitigate the risk of HPWPs failing to work as expected.

Risk Management

The Project Management Institute (PMI) lists six processes of risk management in their Project Management Body of Knowledge (PMBOK): risk management planning, risk identification, qualitative risk analysis, quantitative risk analysis, risk response planning, and risk monitoring and control (PMI, 2013). Risk management planning is the process of deciding how risk management will be handled. This step includes establishing roles and responsibilities, setting a budget and timeline, determining risk categories, and how risk will be tracked. In the context of HPWPs, risk identification is the process of seeking information about the potential downsides and negative effects of implementing HPWPs. Risk analysis is the process of evaluating the identified risks to better understand their nature, their likelihood of occurrence, and the severity of losses should they occur. Risk response planning refers to the process of developing actions that increase the ability to detect risks and/or mitigate the probability or consequences of those risks. Finally, risk monitoring and control is the process of designing actions that prevent anticipated risks and of continuously evaluating outcomes against desired objectives (PMI, 2013).

While it is helpful to think of risk management in terms of these processes, we are not aware of any systematic method available in the HRM literature that aids in managing the risk of HR systems. The objective of this section is to develop such a method. We use the “process approach” emphasized by Total Quality Management (TQM) as our foundation. The process approach manages quality in an organizational system by identifying individual activities as well

as interrelations between activities or processes. This approach allows visibility into how a failure or change in one activity influences the results of another (Bertolini, Braglia, & Carmignani, 2006). Although the term “process” might not immediately come to mind when thinking of HPWPs or an HR system, the success of HPWPs is dependent on their implementation, which is ultimately a series of activities, or a process. The method we propose draws on two well-known tools used for risk and quality management: the House of Quality (HoQ) and Failure Mode and Effect Analysis (FMEA). In the sections that follow, we discuss each tool in general and then provide an example of how it can be applied to an HR system.

The House of Quality (HoQ)

The House of Quality (HoQ) is a tool used as part of a management approach called quality function deployment (QFD). QFD focuses on designing products and services to meet customers’ wants and needs. In order to do this, QFD promotes the cross-functional planning and coordination of activities within an organization (Hauser & Clausing, 1988). The HoQ tool enables this planning and communication across different groups. First created at Mitsubishi in 1972, and further developed by Toyota and its suppliers, the HoQ has been successfully used in various manufacturing and service industries (Hauser & Clausing, 1988).

The HoQ works by converting qualitative customer needs and wants into quantitative criteria that organizations can use to meet those needs (Hauser & Clausing, 1988). This allows organizations to learn from customers’ experiences and to incorporate the “voice of the customer” into decisions that directly impact design, manufacturing, and marketing. A HoQ analysis can consist of multiple levels, with each successive level getting closer to the level that impacts design decisions. Each level in the analysis is depicted by a separate “house,” as will be demonstrated in the following example.

Each “house” is set up similarly. The rows represent needs or wants and are often referred to as “whats” because they describe *what* the customer wants. The columns represent the requirements needed to meet the customers’ wants. The items in the columns are often called “hows” because they describe *how* the needs/wants will be met. The body of the house is used to indicate the relationship that each row has with each column. This information provides system designers with an understanding of whether and how each system requirement, or characteristic, impacts each customer want. It is important to know these relationships when deciding whether to add or change a system characteristic. The “roof” of the house indicates the direction and strength of the interaction between each of the characteristics listed in the columns. The information in this section of the house is very useful in determining trade-offs when designing a system. A change that improves one feature may have a negative impact

on another. The roof of the HoQ allows system designers to understand those interactions ahead of time. Where applicable, the “basement” of the HoQ gives quantitative targets for the characteristics listed in the columns. Additional information may also be added to the basement, such as past customer complaints or ratings, the difficulty of making a change, and/or the cost of making a change. Finally, the right-hand side of the HoQ can be used to list competitive market research. In our example, we will not be discussing the competitive portion of the tool, but in general, this section allows organizations to evaluate how their products/services compare with those of their competitors for each of the customer wants listed in the rows.

In the following section, we use an example to explore how the HoQ can be used to aid in the planning and risk management of HR systems. For this application, we will be modifying aspects of the traditional HoQ. To avoid confusion, we will use the term HRHoQ to refer to the tool developed in this chapter.

Applying the House of Quality to HRM

The fundamental difference between the traditional HoQ and the HRHoQ occurs in the first step. In the traditional HoQ, the first step consists of gathering phrases from customers on what they want or expect from the product or service in question. However, the focus of the HRHoQ is not a product or service produced, but rather the HR system adopted by the organization. For this reason, the organization is essentially the customer. The HR system must be developed to meet the needs of the organization. Therefore, the first step in building the HRHoQ includes determining the needs and wants of HR—that is, the HR policy of the organization. A company’s HR policy is a statement, or statements, used to communicate how HR will direct its efforts in order to support the organization’s strategy (Posthuma et al., 2013).

For our example, we use a typical technology firm, which employs a strategy of innovation. This company’s HR policy is to “promote a creative work environment.” This is what the company wants from HR and is thus entered into the row of the HRHoQ, shown in [Figure 2.2](#). In the columns, we list the characteristics needed to meet the HR policy. In our example, we refer to these “hows” as workforce competencies. Relationships between the HR policy and each of the workforce competencies are entered into the body of the house. Similarly, interrelations between each of the workforce competencies are provided in the “roof.” Interactions can range from very negative (--) to very positive (++) . Where applicable, quantitative measurements of workforce competencies are entered in the “basement.” For example, we include the number of new patents as a measure of idea generation and the number of new products to market as a measure of idea implementation. While these measures are typically thought of as strategic goals, the HRHoQ allows visibility into the impact that HR has on such important organizational performance indicators. This first house allows

| | | Column # | | | |
|-------|--|-----------------------|---------------------|--------------------------|--------------------------|
| | | 1 | 2 | 3 | 4 |
| | Direction of Improvement Maximize (+), Minimize (-), or Target (x) | + | + | + | + |
| Row # | System Characteristics ("Hows") | Information gathering | Information sharing | Idea generation | Idea implementation |
| | Customer Wants ("Whats") | | | | |
| 1 | Promote a creative work environment | + | + | ++ | + |
| | Target or Limit value | | | 10 new design patents/yr | 2 new products to mkt/yr |

FIGURE 2.2 First level of HRHoQ analysis: HR policy and supporting workforce competencies.

HR managers to determine which workforce competencies are needed for their particular organizational strategy.

Building the second house starts by taking the workforce competencies, or “hows,” from the first house and listing them in the rows, as “whats,” in the second house (Figure 2.3). The columns in the second house are now used to describe how these competencies will be achieved, which we refer to in this example as HR goals. Relationships between workforce competencies and HR goals are then listed in the body of the house. Interactions between each of the different HR goals are shown in the roof of the house, and objective measures of HR goals, where they exist, are given in the basement. For instance, average employee tenure can be used as an indicator of employee commitment. This second house in our HRHoQ analysis describes the HR goals that must be met in order to create the workforce competencies that are important to the organization’s success.

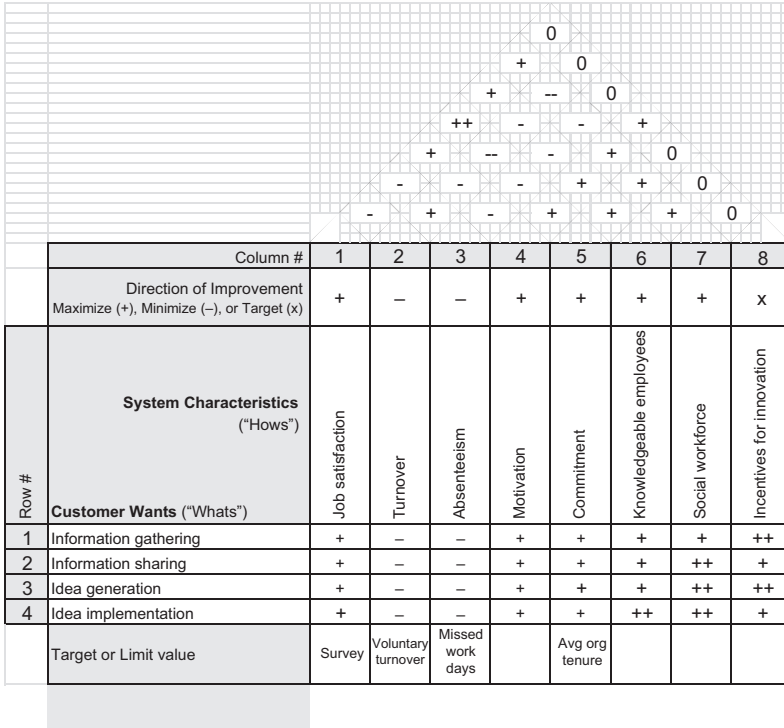


FIGURE 2.3 Second level of HRHoQ analysis: Workforce competencies and supporting HR goals.

Repeating the same procedure once again, the HR goals listed in our second house become the rows of our third house. The columns are now used to describe how the organization plans to meet these HR goals, that is, with HR practices. The body of the house shows how each HR practice affects each HR goal. The roof of the house shows the interaction between each of the HR practices, and again the basement lists any objective measures that can be used to gauge the success of individual HR practices. For instance, a measure of training and development might be the average training hours per employee. To gauge how successful this organization is in promoting their employees, a ratio of internal management promotions to external management hires might be used and compared year over year. This third house in our analysis shows which HR practices are important to meeting our HR goals.

Creating the HRHoQ is a team effort that requires time. However, from this brief exercise, it is evident that the HRHoQ provides a systematic approach that allows for multilevel planning and monitoring of an HR system that aligns with organizational strategy. It helps determine which HR goals each of our practices

supports, understand the interactions between HR practices, and quantitatively evaluate important HR goals, all while supporting the organizational strategy. The HRHoQ also enables communication and comparison between groups, departments, and subsidiaries. This could lead to valuable insights regarding the impact that culture, geographic location, job function, and so on have on the success of certain HPWPs.

Building on the strengths of the HRHoQ to design and monitor a strategically aligned HR system, we now introduce a second technique, known as the Failure Mode and Effect Analysis. FMEA is a systematic technique used to identify and prevent problems before they appear.

Failure Mode and Effect Analysis (FMEA)

When FMEA was originally developed in the 1960s, its focus was on safety in the aerospace industry (Mikulak, McDermott, & Beauregard, 2011; Sankar & Prabhu, 2001; Santos & Cabral, 2008). In 1996, the use of FMEA was broadened beyond the safety realm when automotive manufacturers required their suppliers to maintain design and process FMEAs as part of their QS-9000 quality standards (Mikulak et al., 2011). Since then, FMEA has been adopted by many other industries, including oil and gas, construction, and food (Abdelgawad & Fayek, 2010; Bertolini, Bevilacqua, & Massini, 2006). Its format is easy to use, and it is a good complement to the PMBOK risk management process (Carbone & Tippett, 2004). Recent derivatives of the FMEA have been developed by researchers for use in managing risk in several contexts, including projects, complex management processes, and even outsourcing decisions (Bertolini et al., 2006; Carbone & Tippett, 2004; Welborn, 2007). Using the classic FMEA as a foundation, we derive a tool that can be used to identify and manage the risk in an HR system. We call this tool the HRFMEA.

The FMEA is a structured tool used extensively in manufacturing to identify and prevent potential failures in products or processes (Santos & Cabral, 2008). There are two types of FMEAs. Design FMEAs (DFMEAs) are used to identify and prevent problems arising in the design of a product that might result in safety issues, malfunctions, or shortened product life (Mikulak et al., 2011). Process FMEAs (PFMEAs) are meant to expose issues related to manufacturing a product. The HRFMEA, developed later in this chapter, is a hybrid of these two FMEAs. This is because, in HR systems, problems can arise due to the design of the practices themselves or because of the process by which the practices are carried out.

Applying Failure Mode and Effect Analysis to HRM

In developing an HRFMEA, we follow a similar method to the one outlined in Bertolini et al. (2006). This method requires two steps. The first step is a

breakdown of all the practices/activities that make up the system. The second is identifying and analyzing potential failure modes for each practice/activity.

Bertolini et al. (2006) examine complex management systems and therefore base their breakdown on a functional map of the organizational structure. However, we are examining an HR system; therefore, our breakdown is based on the HPWPs adopted by the organization. Continuing with our example, we will use the HPWP categories listed in the columns of the third house in our HRHoQ analysis (Figure 2.4) as the basis for our breakdown. Each HPWP category is then broken down into its key characteristics. Key characteristics can be thought of as the factors considered important to the success of the HPWP category in question. Next, each specific practice/activity that is adopted by the organization to support the HPWP category is listed. Finally, each individual practice/activity is assigned to those who influence its outcome.

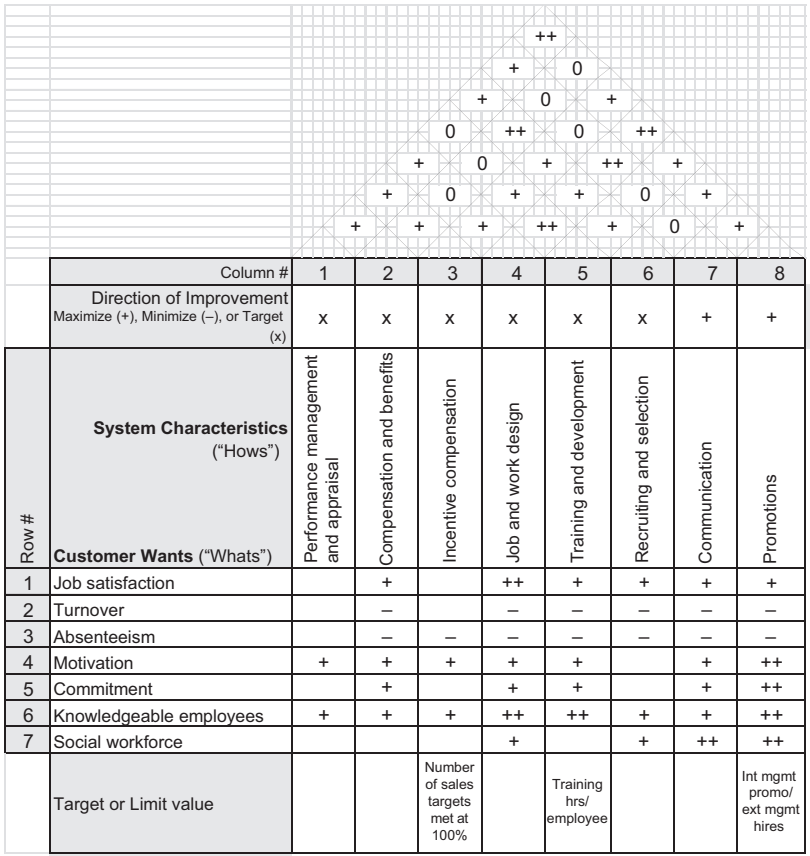


FIGURE 2.4 Third level of HRHoQ analysis: HR goals and supporting HR practices.

| ID | HPWP | ID | Key Characteristic | ID | Practice/Activity | Employee | Manager | Group | Org |
|----|--------------------------------------|-----|--------------------|-------|--|----------|---------|-------|-----|
| 1 | Performance management and appraisal | 1.1 | Developmental | 1.1.1 | Appraisals for development/potential | x | x | | x |
| | | | | 1.1.2 | Frequent performance appraisal meetings | | x | | x |
| | | | | 1.1.3 | Written performance plan with defined objectives | | x | | x |
| | | 1.2 | Strategic | 1.2.1 | Appraisal based on strategic or team goals | x | x | x | |
| | | | | 1.3.1 | Appraisal based on objective results/behaviors | | x | | |
| | | | | 1.3.2 | Employees involved in setting appraisal objectives | x | x | | |
| | | 1.3 | Fair | 1.3.3 | Multisource feedback and peer appraisal | | | x | x |

FIGURE 2.5 Breakdown of performance management and appraisal into activities.

Figure 2.5 shows this breakdown for the HPWP category “performance management and appraisal” (PMA). The three key characteristics shown for PMA in our example are developmental, strategic, and fair. In the HRM literature, each of these PMA characteristics has been tied to positive employee perceptions and behaviors (DeNisi, 2011; DeNisi & Smith, 2014). The next step is to list the specific practices and/or activities adopted to support the key characteristics. In our example, the activity “appraisals for development/potential” is adopted to support the key characteristic “developmental,” which was previously determined as important to the success of PMAs in this organization. The last step in the breakdown is specifying responsible parties for each practice/activity. This is an important step, which can be helpful when anticipating potential failures for each activity or potential causes for failures, as we will need to do when developing the HRFMEA in the next section. In our example, responsibility for the activity “frequent performance appraisal meetings” is assigned to the organization as well as to the manager. In order for this activity to be successful, the organization must define what is meant by frequent, while each manager must carry out the specified requirement. This process of breaking down each category of HPWPs into key characteristics, practices/activities, and responsible parties not only provides a better understanding of how each practice is related to other similar practices, but it also provides the detail necessary for risk identification and analysis, to which we now turn our attention.

Using the HPWP breakdown just developed, we now employ a standard FMEA template to determine potential failure modes for each practice/activity listed. Because of the familiarity and simplicity of the FMEA tool, we have kept the definitions and format as similar to the original as possible (Figure 2.6). The team responsible for developing the HRFMEA should be familiar with the HR system and have available the HRHoQ and the HPWP breakdown to refer to throughout the HRFMEA creation process.

First, each practice/activity in our breakdown is listed in the “activity” column of the HRFMEA. Next, team members must brainstorm all the ways a failure of each practice/activity could present itself. Each of these observed failures is listed in the column “failure mode.” For many activities, there are several potential

| ID | Activity | ID | Potential failure mode | Potential effects of failure | SEV | Potential Causes | PROB | Current Controls | DET | RPN | Recommended Actions (only need if RPN > x) | Responsibility & Target Completion Date | Action Taken | New RPN | | | |
|-------|--|---------|--|---|-----|--|------|---|-----|-----|--|---|--------------|---------|--|--|--|
| 1.1.1 | Appraisals for development/potential | 1.1.1.1 | High performing employees are not promoted | Low job satisfaction | 5 | Low perceived organizational support | 3 | Yearly job satisfaction survey, including perceptions of development opportunities | 3 | 81 | | | | | | | |
| | | | | Low organizational commitment | 5 | | | | | | | | | | | | |
| | | | | Turnover | 9 | | | | | | | | | | | | |
| | | | Low motivation to improve performance | 6 | | | | All employees provide performance feedback for manager | | | | | | | | | |
| 1.1.2 | Frequent performance appraisal meetings | 1.1.2.1 | Employee disagrees with PA | Poor relationship with manager | | Lack of ongoing performance feedback | | Informal bi-weekly meetings held with employees to monitor progress toward goals and discuss any constraints to performance | | | | | | | | | |
| | | | | Low employee morale | | | | | | | | | | | | | |
| 1.1.3 | Written performance plan with defined objectives | 1.1.3.1 | Employee does not agree with objectives | Employee overly stressed | | Unachievable objectives | | Objectives based on prior performance and take into account contextual factors that could impact objective measures (account size, economy, etc.) | | | | | | | | | |
| | | | | Employee anxious at work | | | | | | | | | | | | | |
| | | | | Strained relationship with manager | | | | | | | | | | | | | |
| | | 1.1.3.2 | Employee feels objectives are unfair | Low employee morale | | Objectives not developed with input from employees | | Employees involved in setting objectives and performance plan | | | | | | | | | |
| | | | Low commitment | | | | | | | | | | | | | | |
| 1.2.1 | Appraisal based on strategic or team goals | 1.2.1.1 | Employee efforts not aligned with organizational goals | Employee not engaged in organizational success | | Organizational and team goals not communicated effectively | | Organizational goals cascaded from TMT two months prior to due date for PA | | | | | | | | | |
| | | | | Employee's discretionary efforts not used to benefit the organization | | | | | | | | | | | | | |
| | | | | Low organizational commitment | | | | | | | | | | | | | |
| | | 1.2.1.2 | Employee efforts not aligned with team efforts | High absenteeism | | Low interaction with team members | | Each employee's goals include an objective measure of team interaction | | | | | | | | | |
| | | | Turnover | | | | | | | | | | | | | | |

| | | | | | | | | | |
|-------|--|---------|---|---|--|---|--|--|--|
| 1.3.1 | Appraisal based on objective results/ behaviors | 1.3.1.1 | Results do not accurately represent employee performance | Strained relationship with manager | Measures do not take into account additional work input or constraints | Informal bi-weekly meetings held with employees to monitor progress toward goals and discuss any constraints to performance | | | |
| | | | Employee engages in deviant workplace behavior | Low job satisfaction | Results can be modified or adjusted | Yearly job satisfaction survey | | | |
| 1.3.2 | Employees involved in setting appraisal objectives | 1.3.2.1 | Inequality in employee effort and rewards | Low employee motivation | Inconsistent objectives set for employees in similar roles | Measures of results/behavior are automatically calculated | | | |
| | | | Variance in performance has no impact on PA or employee rewards | Low job satisfaction | Group level performance objectives distributed evenly among employees | Objectives based on tasks where applicable | | | |
| 1.3.3 | Multisource feedback and peer appraisal | 1.3.3.1 | Sources of critiques are identified | Strained coworker relationships | Employee feels upset/defensive | Create a culture of feedback and continuous improvement | | | |
| | | | Feedback given is counter-productive | Reduced group performance and information sharing | Both positive and negative reviews are given | Only constructive and relevant peer reviews are presented to employee | | | |
| | | 1.3.3.2 | | Low employee morale | Feedback is critical and not | For negative feedback, suggestions must be presented (classes, examples, etc.) | | | |
| | | | | Low employee motivation | | | | | |

FIGURE 2.6 Example of HRFMEA for performance management appraisal.

failure modes that may occur. For these activities, it is recommended that the HRFMEA team group the failure modes into categories. A common method of doing this is to write each failure mode on a sticky note and form groups of failures on a wall. Once this is complete, enter the failure modes into the FMEA. Third, the team must determine the “potential effects,” or consequences, of each failure mode. Each potential effect is assigned a severity code that indicates how serious the particular consequence would be. The severity code might be based on past experience with similar consequences, or it could be an estimate made by knowledgeable team members. Fourth, “potential causes,” or reasons for each failure mode, are listed, along with their probability of occurrence. Next, where applicable, “current controls” for each failure are listed. Current controls include the methods that are in place to detect when a failure occurs or to control the causes and/or consequences of the failure (Abdelgawad & Fayek, 2010; Mikulak et al., 2011). The capability of each control is indicated with a detection score.

Before rating severity, occurrence, and detection, the team must create clear descriptions of each scale so that all members have the same understanding during the ranking process. Once the scales are determined, they should be used for all future HRFMEAs completed in the organization. This allows for comparison across groups, departments, and locations. Finally, the three values, each ranging from 1 to 10, are multiplied to determine the risk priority number(s) (RPN) for each failure mode. For failure modes where there are more than one effect, cause, or control, typically the worst-case values are used to calculate the RPN (Abdelgawad & Fayek, 2010; Bowles & Peláez, 1995). The RPN is then used to prioritize failure modes and determine where to focus efforts. For instance, the team could decide to work on all failure modes with an RPN above a certain threshold. A rule of thumb often used is 125 (Ayyub, 2014). However, this threshold is subjective and must be decided by those familiar with the organization (Ayyub, 2014). Once the failure modes are prioritized, the team can take action to reduce high RPNs. An RPN can be improved by either increasing the capability of controls and/or mitigating the risk posed by a failure mode. Mitigating the risk of a failure mode can be accomplished by reducing its severity and/or occurrence (Segismundo & Miguel, 2008).

Figure 2.6 shows an example HRFMEA for the HR category PMA. First, we list each of the activities the organization currently employs to support the PMA category. To understand the steps in creating an HRFMEA, let's take a closer look at the first activity listed in Figure 2.6: “1.1.1 appraisals for development/potential.” After a brainstorming session, the team determines all the ways that a failure of this activity could manifest. Our HRFMEA shows one potential failure mode for this activity: high performing employees are not promoted. If this failure occurs, it could lead to many potential consequences, including low job satisfaction, low organizational commitment, job search, turnover, and low motivation to improve performance. Each of these potential effects is given an individual severity score, from 1–10, with 1 being the lowest severity and 10

being the most severe consequence. The reason, or potential cause, listed for these consequences is that high performers who are not provided an opportunity to advance their career will not feel supported by the organization. This potential cause is given a probability score from 1–10, with 1 indicating that it is very unlikely to occur and 10 meaning that it is a very frequent occurrence.

Finally, two current controls are listed for this particular failure mode. The first is a yearly job satisfaction survey given to employees, including questions regarding perceptions of development opportunities. The second control listed is the requirement for every employee to have a yearly career development plan and discussion with his or her manager. This development plan includes clear requirements and timing. These two controls currently help drive the use of appraisals for developmental purposes, as well as monitor employees' perceptions regarding development opportunities available to them. Each control is ranked for its ability to detect a failure. A score of 1 indicates a very high ability to detect or effect a failure, whereas a 10 indicates that the control does very little to detect or effect a failure in this activity. To calculate RPN, the highest values for severity, probability, and detection for the given failure mode are multiplied together. This will give the worst-case RPN.

In our example, we multiply the severity score for turnover (9), by the probability score (3), by the detection score for the yearly survey (3) to arrive at the RPN for this failure mode (81). Once the RPNs for all other failure modes have been calculated, the team will prioritize the failure modes. For those with the highest RPNs, recommended actions can be planned and entered into the right-hand side of the HRFMEA. In items with extremely high RPN, recommended actions can be taken immediately to lower the RPN, reducing the risk for that HR activity. However, recommended actions can also be planned ahead of time for implementation only in the event that a failure occurs. The HRFMEA is not only a technique that helps identify, analyze, and control potential risks, but it also helps focus attention on the most critical risks to the HR system.

Summary

The literature has shown that HPWPs can improve employee attitudes, raise motivation, and result in higher levels of organizational performance. However, the positive effects of HPWPs can be offset by negative consequences such as greater work stress, lower quality output, and increased absenteeism. HR systems also can fall short of their intended effects if the individual HR practices that make up the system do not “fit” together coherently. In this chapter, we integrated two quality and risk management tools with HRM to develop a systematic and thorough approach to managing HR system risk.

The HRHoQ is a rational multilevel analysis of the links that connect HR systems to organizational strategy. Its systematic approach allows managers to design and monitor an HR system that supports the competitive strategy of the

organization. The HRHoQ does this by specifying the impact that individual practices have on HR goals as well as how each practice interacts with the other practices in the system. Further, the HRHoQ enables communication and comparison of HR system objectives and outcomes between groups, departments, and subsidiaries. This could lead to important insights regarding the impact that factors like culture, geographic location, and job function, among others, have on the success of certain HPWPs. The interactive view provided by the HRHoQ not only increases the ability of HR managers to design and monitor an HR system that supports an organization's strategy, but it also allows for the discovery of strategic opportunities for HR that otherwise might not be visible.

The HRFMEA allows for the identification and prevention of potential failures in the HR system. The in-depth review of each HR activity individually enables a more thorough identification of the risks present in the HR system. Further, the systematic tracing of each potential failure by its causes and effects allows patterns to emerge and highlights the importance of controls. The ranking of potential failures focuses team efforts toward addressing the issues that present the highest risk to the system. Overall, the comprehensive yet detailed view into HR system risk presented by the HRFMEA allows for continuous monitoring and improvement of the HR system, as well as early detection and quick recovery when risks do occur. The HRFMEA also improves future decision-making by incorporating risk analysis.

Implementing the HRHoQ and HRFMEA requires time and effort. However, as our brief examples demonstrate, together these tools provide a straightforward method that has the potential to improve HR system design, monitoring, and risk management. The comprehensive yet detailed view of the HR system that results from the use of these quality and risk management tools has the potential to lead to further insights that will ultimately benefit both employees and organizations.

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