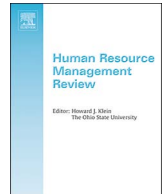




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## Human Resource Management Review

journal homepage: [www.elsevier.com/locate/hrmr](http://www.elsevier.com/locate/hrmr)

# A conceptual framework for leveraging team composition decisions to build human capital

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## ARTICLE INFO

### Keywords:

Team composition  
Team effectiveness  
Team staffing  
Dynamic composition  
Human resource management (HRM)  
Strategic HRM  
Human capital resource

## ABSTRACT

Twenty-first century organizations often rely on teams to enact their strategy and to enhance their flexibility in interacting with their external environment over time. Team composition, or the configuration of team member attributes, can influence team effectiveness and is an important consideration in the management of teams. To date, however, there is limited guidance on how seemingly smaller team composition decisions can contribute to organizational effectiveness and competitive advantage. We draw on strategic human resource management (HRM), HRM, and industrial and organizational psychology literatures to develop a conceptual framework for strategic team composition decisions. We describe how organizations use teams to enact their strategy (i.e., fit), and use adaptive teams and networks of teams to achieve fit in a dynamic environment (i.e., flexibility). Using the concepts of fit and flexibility, we develop four guiding principles for strategic team composition decisions.

## 1. Introduction

Twenty-first century organizations heavily rely upon teams and collaborative work structures to meet the demands of a dynamic and hyper-competitive environment. Given that teams are ubiquitous, the effective management of teams continues to be of interest to researchers and practitioners alike (Mathieu, Maynard, Rapp, & Gilson, 2008). Team composition, or the configuration of team member attributes, is an enabling condition of effective teamwork and a powerful means of affecting team performance (Bell, 2007; Hackman, 1987; Wageman, Hackman, & Lehman, 2005).

A wide body of literature, with a long history, indicates that aggregated and specific configurations of team member attributes are related to valuable team outcomes (Cattell, 1951; Haythorn, 1953). For example, team composition is empirically linked to shared cognition (Fisher, Bell, Dierdorff, & Belohlav, 2012), information sharing (Randall, Resick, & DeChurch, 2011), performance (Bell, 2007), and innovation (Richter, Hirst, Van Knippenberg, & Baer, 2012). While team experts acknowledge the importance of team composition and urge practitioners to consider team composition when making staffing decisions, there is limited understanding of how to translate team composition research into selection and placement decisions (Mohammed, Ferzandi, & Hamilton, 2010; Zaccaro & DiRosa, 2012).

Because of this science-practice gap, researchers have begun to explicitly connect team composition theory to team staffing. As examples, Mathieu, Tannenbaum, Donsbach, and Alliger (2014) forwarded a review and integration of team composition models that outlined how individual- and team-based composition models combine to predict team effectiveness. In a second paper, these authors

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<http://dx.doi.org/10.1016/j.hrmr.2017.06.003>

Received 24 August 2016; Received in revised form 9 June 2017; Accepted 12 June 2017

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described the team composition decisions practitioners are likely to encounter and questions to consider when composing teams (Mathieu, Tannenbaum, Donsbach, & Alliger, 2013). Bell and Brown (2015) summarized six steps and key questions to consider when selecting for and composing cohesive teams. In their chapter, they begin to link team composition research with the human capital literature (e.g., Ployhart & Moliterno, 2011).

Despite this progress, there is still much to learn about how team composition theory and research can practically inform the management of teams in 21st century organizations. Consistent with criticisms of the broader literature, there is a disconnect between micro-level research, such as that focused on team composition, and macro-level human resource management (HRM) literature (Hausknecht & Wright, 2012; Wright & Boswell, 2002). As a result, there is a lack of clarity regarding how team composition decisions can contribute to an organization's effectiveness and competitive advantage. This obscurity often limits the extent to which team-based considerations are included in the staffing process. Second, team composition can seem complex and includes a number of possible decisions, attributes, and configurations of team member attributes to consider. This complexity creates a lack of clarity regarding how to leverage the extant literature in team composition decisions. Finally, 21st century organizations are required to meet the demands of their dynamic environments, and seek strategic flexibility to do so (Chang, Gong, Way, Jai, 2013; Sanchez, 1995). As organizations utilize teams to meet changing environmental demands, team composition has become more dynamic with membership that is fluid and less bounded (Tannenbaum, Mathieu, Salas, & Cohen, 2012). To date, much of the team composition research has focused on bounded teams with membership that is intact (or assumed to be intact) over time. There is a lack of clarity regarding how organizations can best leverage teams that are relatively intact and teams with dynamic composition to meet the changing demands of their environment.

Given the above, the purpose of our article is to advance team composition theory by explaining how to leverage team composition decisions to enhance organizational effectiveness and competitive advantage. We integrate the ideas of team composition, human capital resources, organizational strategy, and competitive advantage, and present a conceptual framework for strategic team composition decisions. Our framework makes several important contributions. First, we explicitly link team composition decisions to the development of strategic human capital resources, and ultimately competitive advantage. This bridges macro and micro perspectives to make more apparent the potential value of team-based considerations during the staffing process, and allows practitioners to be strategic in how they approach micro-level team composition decisions. Second, we use a top-down approach guided by competitive advantage to identify key outcomes of interest, as well as between- and within-team staffing priorities. This helps narrow the potential team composition considerations to the key configurations of team-member attributes in teams, and networks of teams, that are most likely important for competitive advantage. Third, we explain how team composition decisions integrate with the larger human resource system. This sheds light on additional opportunities, beyond staffing, for organizations to use team composition information in the development of human capital resources. Fourth, we bring a greater understanding of a contemporary issue facing teamwork—dynamic composition—by explaining the strategic use of relatively intact teams and teams with dynamic composition to enhance flexibility (Tannenbaum et al., 2012).

We structure our article as follows. First, we briefly orient the reader to team composition research. Second, we position human capital resources as a source of competitive advantage, and teams as a means for organizing those resources to enact an organization's strategy and provide flexibility over time. We rely on the concepts of fit and flexibility to explain how HRM processes, such as team composition decisions, can help to translate individual-level knowledge, skills, abilities, and other characteristics (KSAOs) into a strategic advantage (Wright & Snell, 1998). Third, we overview a conceptual framework that links team composition decisions to competitive advantage. Finally, we forward four guiding principles to guide strategic team composition decisions, and describe how to leverage the extant team composition literature in those decisions.

## 2. Background

### 2.1. Team composition

Team composition is a potentially powerful point of leverage for organizations to influence team effectiveness (Bell, 2007; Bell, Villado, Lukasiak, Belau, & Briggs, 2011). Team composition is important for team design to the extent that configurations on specific variables predict organizationally desired outcomes (Bell, Brown, Abben, & Outland, 2015). Knowledge of how team composition relates to team and organizational effectiveness can inform the successful management of human resources. For example, teams can be staffed with members who move the team toward a configuration that increases the likelihood a team will meet its objective. When constraints (e.g., availability of preferred team members) do not allow for team composition information to be used in staffing, knowledge of how a team's composition influences team effectiveness can be used to design other organizational interventions (e.g., inform training priorities; Bell & Outland, 2017).

In practice, staffing teams can seem complex. There are several staffing situations practitioners may encounter (e.g., selecting a new member for an existing team, forming a new team), as well as a host of team member attributes (e.g., agreeableness, general mental ability, cognitive styles), team configurations (e.g., uniformly high, diversity), and outcomes (e.g., shared mental models, innovation) from which to choose. Recent team composition research has sought to bridge the science-practice gap.

Using interviews with subject matter experts (SMEs), Mathieu et al. (2013) identified six types of composition decisions based on the state of the team in question (e.g., existing, new) and their complexity in terms of the number of team members and teams involved. Table 1 summarizes these decisions. Decisions that involve multiple teams require the strategic prioritization of resources across teams. Decisions that include replacing one or more team members require consideration of how the potential team member fits with the team, the characteristics of the team members who are leaving (if any), and the receptivity of the team to new team

**Table 1**  
Team Composition Decisions described in Mathieu et al. (2013).

Team composition decision	Focus	Number of teams involved
<b>New team formation</b>		
Single team formation	Composing a team with the optimal combination of all team members	One
Multiple team formation	Composing multiple teams with the optimal combination of all team members	Multiple
Reconfiguration	Composing multiple teams by reassigning or assigning multiple team members	Multiple
<b>Existing teams</b>		
Single team member replacement	Replacing a single team member to a single team	One
Multiple team member replacement	Replacing multiple team members to a single team	One
New member distribution	Appointing multiple new team members to multiple teams	Multiple

members (Rink, Kane, Ellemers, & Van der Vegt, 2013). Each of these team composition decisions involves the identification of specific KSAOs and configurations of KSAOs that predict valued outcomes.

In a review and conceptual framework, Mathieu et al. (2014) summarized the different perspectives on team composition as individual- and team-based models, and provided an algorithm for how these models combine to affect team effectiveness. Individual-based models focus on what it means to be a “good worker” in terms of traditional person-job fit (i.e., position-specific KSAOs), or in terms of working within a team-based environment (i.e., position specific KSAOs plus the addition of generic teamwork competencies). Organizations often default to individual-based models in practice for team staffing: they seek to compose teams with technically competent team members who are good “team players.” While these considerations are important, individual-based models are incomplete in accounting for how team composition relates to team effectiveness as they place little emphasis on the interdependent nature of the team environment (Mathieu et al., 2014).

As task interdependence increases, it is important to consider the compatibility of team members. Team-based composition models take the specific configuration of team members into account and include relative contribution models and team profile models (Mathieu et al., 2014). Relative contribution models are used when some team members' KSAOs, compared to other members', are expected to disproportionately influence team effectiveness. As an example, the strategic core is a subset of team members who encounter more of the team's challenges, have greater exposure to tasks, and are more central to a team's workflow (Humphrey, Morgeson, & Mannor, 2009). The KSAOs of a team's strategic core may have a stronger relationship with team effectiveness as compared to the KSAOs of more peripheral members, particularly when core and periphery members have low task interdependence (Humphrey et al., 2009). For more interdependent teams, the profile of the team as a unit may increase in importance. Team profile models account for the team-level configuration of team members' KSAOs with each member's KSAOs weighted equally in a team-level summary index (e.g., an index of central tendency).

Both individual- and team-based composition models are important for predicting team performance, and can be incorporated formally or informally into selection and placement decisions. For example, Mathieu et al. (2013) and Bell and Brown (2015) detail a number of questions that practitioners can ask to better incorporate individual- and team-based composition information into the selection and placement process. More formally, algorithms can be used to estimate compatibility (Bell, Brown, Outland, & Abben, 2015; Mathieu et al., 2014), and can be integrated into human resource decision support systems (e.g., Malinowski, Weitzel, & Keim, 2008). When this approach is used, a talent inventory of team members' or potential team members' KSAOs is created. Then, algorithms are applied that estimate team compatibility. Different compatibility estimates can be computed such as the compatibility of a new team member or team members within an existing team, or the compatibility of a newly formed team or teams, out of a pool of potential teammates. Compatibility information can be used to identify teammates and inform the selection and placement of team members. It can also be used to identify the unique needs of a formed team; this information can be leveraged with other human resource activities (e.g., development, compensation).

Whether compatibility is formally or informally considered, there are a number of potential KSAOs and configurations of KSAOs that can affect team effectiveness. Often, it will be most beneficial to identify a small set of key compositional considerations needed for success in the performance environment, but not overly complicate the process by searching for an endless set of contingencies likely to have diminishing returns (Hackman, 2012). Careful analysis of the context and an understanding of the theoretical link between individual differences and the identified outcomes can help guide the process (Bell, Brown, Aben et al., 2015; Bell, Brown, Outland et al., 2015; Bell & Brown, 2015; Bell, Fisher, Brown, & Mann, 2016). In our current research, we focus primarily on the link between team composition and an organization's context by describing how teams are used to organize human capital resources, and the role of team composition decisions in shaping these human capital resources. Next, we provide a brief background on context followed by an introduction to human capital resources.

## 2.2. The fundamental role of context

Context shapes human behavior (Lewin, 1951; Mischel, 1977), and is defined as “situational opportunities and constraints that affect the occurrence and meaning of organizational behavior as well as the functional relationship between variables” (Johns, 2006, p. 386). Context is particularly meaningful in understanding how team member attributes translate into team member behaviors, team processes, and team effectiveness. For example, situational strength can change the nature of individual differences and performance relationships by providing cues about the desirability of behavior (Meyer, Dalal, & Hermida, 2010). Further, while

situational strength is a general pressure on behavior, trait activation theory suggests specific features of the context can activate, constrain, or amplify the relationship between individual differences, such as agreeableness, and outcomes (Tett & Burnett, 2003).

Acknowledging the fundamental importance of context, Bell et al. (2016) described an approach for conducting actionable research with teams, which also has implications for how team composition decisions can contribute to human capital. Specifically, while the aforementioned approach predominantly focuses on extreme teams, the authors highlight that the approach is suitable for studying teams in general. Similar to extreme teams, HRM decisions are heavily grounded in context and benefit from a top-down approach to identifying key issues. Bell et al. (2016) suggest that description and analysis of the omnibus context can provide an overall sense of the performance environment. This allows a researcher or practitioner to determine specific criteria used to represent team effectiveness; for example, an organization's value creating strategy can be used to identify outcomes most relevant to competitive advantage (Wright, McMahan, & McWilliams, 1994). The omnibus context can be used to identify operational constraints and considerations (e.g., a reward system that only considers individual contributions) that will affect potential solutions. Effective HRM systems have practices such as selection, training, and performance management that work together to affect the skills, motivation, and opportunities afforded to employees, and ultimately organizational outcomes (Jiang, Lepak, Hu, & Baer, 2012). Following description and analysis of the omnibus context, systematic description and identification of features of the discrete context, including task, social, physical, and temporal context, is conducted (Bell et al., 2016; Johns, 2006). Ultimately, the description of the discrete context (e.g., gender diversity of the industry, geographic dispersion requiring virtual interaction, high task interdependence) is used to identify the specific factors, characteristics, and phenomena, including aspects of team composition, most likely to influence team effectiveness in the particular circumstance. This approach allows for both a top-down and bottom-up approach to identifying key composition issues in teams. In this article, we focus on a specific aspect of the omnibus context of business firms—the organization's strategy. We next describe the interplay of the organization's strategy, human capital resources, and teams.

### 2.3. Human capital resources

In business firms, the context within which teams operate is fundamentally driven by the organization's strategy for creating a sustained competitive advantage. The focus on competitive advantage is because firms, if not all organizations, compete for inputs, customers, and revenues that cover the costs of their chosen route of surviving (Rumelt, Schendel, & Teece, 1994). Strategic choices are central to surviving in a competitive environment, including the selection of goals, products and services to offer, and the configuration of policies that will position the firm well to survive (Rumelt et al., 1994).

Effective management of an organization's resources and capabilities, such as their human capital resources, contribute to an organization's ability to meet their objectives and gain competitive advantage (Crook, Todd, Combs, Woehr, & Ketchen, 2011; Sirmon, Hitt, & Ireland, 2007). Human capital resources are capabilities based on individual KSAOs that are usable and meaningful to the pursuit of the organization's goals (Ployhart, Nyberg, Reilly, & Maltarich, 2014). As an example, a workforce with a strong service orientation may contribute to an organization's human capital resources in an organization that has strong customer service as one of its goals (Hogan, Hogan, & Busch, 1984).

When work is organized around teams, team-level human capital, or the combination of KSAOs available for the team's purposes, is of interest (Ployhart, Nyberg, Reilly & Maltarich, 2014). As an example, an organization may use teams to provide seamless 24-hour customer service, which requires both strong service orientation and KSAOs needed for team members to coordinate effectively with one another. In this way, team human capital closely resembles team composition. Historically, team composition has focused on relatively enduring member attributes such as personality, ability, values, functional background and demographics. The human capital literature includes more malleable KSAOs, such as skills that can be developed by the organization. Further, with team composition research, the focus is usually on team-level outcomes such as team processes or team performance. The contribution of team composition to organizational-level performance is inferred by maximizing the effectiveness of teams within the organization. Within the human capital resource literature, the focus is generally on organizational-level outcomes and competitive advantage.

Human capital resources become strategic when they provide a competitive advantage; for example, when customer service in the aforementioned example differentiates an organization from its competitors (Ployhart et al., 2014). The Resource Based View (RBV) is a dominant theory that helps explain how internal resources of the firm, such as human capital resources, can create competitive advantage (Barney, 1991; Barney, 1995; Wright & McMahan, 1992). Human capital resources can contribute to an organization's competitive advantage when they are rare across competitors. The advantage becomes a sustained competitive advantage when other firms are unable to duplicate the benefits of the value creating strategy (Barney, 1991; Barney, 1997). For human capital resources to hold the potential for a sustained competitive advantage, they must be valuable, rare among the organization's current and potential competition, imperfectly imitable, and non-substitutable (Barney, 1991; see Wright et al., 1994 for a detailed discussion).

Organizations increasingly utilize teams and networks of teams to enable their human capital to contribute to a sustained competitive advantage. Human capital resources create value when they can exploit opportunities (e.g., new trends in the external environment, changes in technology) and mitigate threats (e.g., pressure from competitors, old technology) in the organization's environment (Barney, 1991). Teams can create more innovative products, provide 24-h customer service, and can capitalize on the expertise of individuals from across the world to utilize a global supply chain. Further, human capital resources need to be able to add value in a changing competitive environment (Chang, Gong, Way, & Jia, 2013). Teams can facilitate an organization's flexibility by enhancing the ability to detect and adapt to environmental changes. For example, teams create a flatter organizational structure in which members are empowered to make decisions and respond to changes in the environment more rapidly (Grant, 1996).

Resources and capabilities that are socially complex, such as team-based organizational structures, are particularly difficult to imitate (Argote & Ingram, 2000; Barney, 1991; Grant, 1996; Ployhart & Moliterno, 2011). Teams represent subnetworks of knowledge

sharing within an organization. Subnetworks involving people are more likely to be compatible with other internal subnetworks, rather than with external subnetworks, decreasing their imitability (Argote & Ingram, 2000). In addition to knowledge transfer, team members engage in and develop beneficial affective, behavioral, and cognitive states to translate individual-level KSAOs into a valuable unit-level resource (Ployhart & Moliterno, 2011). Effective coordination is particularly important in teams with high task interdependence (LePine, Piccolo, Jackson, Mathieu, & Saul, 2008). The importance of coordination allows even seemingly context generic KSAOs (e.g., being a technically competent physician), that are not inherently rare across competitors, to become a strategic human capital resource (Ployhart & Moliterno, 2011).

As an example, a hospital may differentiate itself from competitors by providing world-class emergency care. Members of an emergency room (ER) team must effectively coordinate, communicate, and have a shared understanding of the team's work to care for patients well (Westli, Johnsen, Eid, Rasten & Brattebø, 2010; Xiao, Hunter, Mackenzie, Jefferies, & Horst, 1996). If a technically competent ER physician takes a position in a new hospital, it is not necessarily the case that the ER team at the new hospital will be as effective as the team at the physician's last hospital. Several other factors such as the KSAOs of the other team members, the ability for the team to effectively integrate specialists' knowledge, as well as other policies and processes that support teamwork will contribute to the extent to which individual KSAOs become a valuable unit-level resource and ultimately contribute to competitive advantage (e.g., Campbell, Saxton, & Banerjee, 2014; Crocker & Eckardt, 2014; Grant, 1996).

#### 2.4. Effective management of human capital resources

While human capital resources that are rare and immobile have the potential of sustained competitive advantage, effective management allows human capital resources to realize this potential. We rely on the concepts of fit and flexibility, as described in the strategic HRM literature, to describe how HRM processes can help KSAOs develop into a strategic advantage (Wright & Snell, 1998).

Fit requires consideration of vertical and horizontal fit. Vertical fit is the extent to which HRM activities and strategic management processes are aligned (Schuler & Jackson, 1987). HRM activities must elicit and reinforce the organizational competencies and required role behaviors central to the organization's strategy (Lado & Wilson, 1994). For example, organizations that derive competitive advantage through innovation may look to teams for successful breakthroughs.

It is not necessary for the entire workforce of an organization to be high performing for an organization to achieve and sustain a competitive advantage (Delery & Shaw, 2001). Successful organizations have distinctive competencies that set them apart from their competition (e.g., exceptional service; Prahalad & Hamel, 1990). A subset of employees, called the strategic core, may most directly relate to that competency (Cappelli & Crocker-Heffer, 1996; Delery & Shaw, 2001). Consequently, strategic management of the workforce that maximizes the performance of the strategic core can more directly contribute to competitive advantage (Delery & Shaw, 2001). Similarly, some teams may more directly contribute to an organization's core competency than others. For example, if an organization expects to retain its clients and grow because of exceptional service, then client service teams are central to the organization's core competency.

Horizontal fit refers to congruence between different human resource processes (Baird & Meshoulam, 1988; Wright & McMahan, 1992). Effective HRM systems have activities such as selection, training, and performance management that work together to affect the skills, motivation, and opportunities afforded to employees and ultimately organizational outcomes (Jiang et al., 2012). Single best practices, such as effective team staffing, must be combined into a universally superior human resource system to develop a sustained competitive advantage (Delery & Shaw, 2001; Uhl-Bien, Graen, & Scandura, 2000). In team management, team composition decisions represent one point of leverage and opportunity to influence human capital within a larger system. Decisions that combine with other actions to build resources and capabilities into strategic advantage are theorized to be particularly difficult to replicate, and thus, are more likely to contribute to a sustained competitive advantage (Barney, 1995).

In addition to fit, 21st century teams must often adapt their strategy to a changing environment. Flexibility is focused on whether human resources have the skills and behavioral repertoires that allow for the pursuit of alternative strategies, and whether the organization can maximize them (Wright & Snell, 1998). Flexibility is derived through resource flexibility and coordination flexibility (Sanchez, 1995). Resource flexibility is the extent to which a resource can be applied to a larger range of alternative uses, the costs of switching the resource from one use to another, and the time required to switch the resource (Sanchez, 1995). Coordination flexibility refers to the ability to resynthesize, reconfigure, or redeploy resources quickly and effectively (Sanchez, 1995). Individuals and teams that are able to adapt quickly to a broader range of circumstances contribute to resource flexibility. Networks of teams that an organization can quickly resynthesize, reconfigure, and adapt to their environment provide coordination flexibility. We discuss these strategies next.

Organizations can enhance their flexibility by selecting individuals who are flexible or adaptable (e.g., Hausknecht & Wright, 2012). The extent to which an organization employs people with diverse skill sets who are able to put skills to use in a short time is related to organization-level financial performance (Bhattacharya, Gibson, & Doty, 2005). Individual differences, such as personality traits, as well as an individual's motivation and self-regulation, are related to adaptive performance (Jundt, Shoss & Huang, 2015). For example, higher levels of emotional stability and the ambition facet of extraversion are related to adaptive performance (Huang, Ryan, Zabel, & Palmer, 2014). When work is organized around teams, organizations can derive flexibility to meet the demands of the external environment by enhancing the adaptive capabilities of intact teams, or by creating adaptive systems that can reconfigure teams to meet the demands of the external environment.

First, organizations can increase their flexibility by enhancing the adaptive capacities within an intact team that can help the team to meet the evolving demands of their changing environment. Adaptive team performance occurs when a team uses its resources to adjust goal-directed actions or structures to meet expected and unexpected demands (Burke, Stagl, Salas, Pierce, & Kendall, 2006).



Adaptive teams rely on a repertoire of networks, which develop over time via a compilation process (Kozlowski, Gully, Nason, & Smith, 1999). As noted by Kozlowski et al. (1999), “[k]nowledge, skills, and performance are not static; they build developmentally with experience: what teams know, how they learn it, and the performance of which they are capable changes over time” (p. 241). The compilation process for teams is a continuous set of phases: team formation, task compilation, role compilation, and team compilation (Kozlowski et al., 1999). During team compilation, a team refines their normative team networks as they address routine tasks, but also explores alternative configurations that allow it to meet the demands of novel situations. Teams that have created a repertoire of configurations can enhance an organization's flexibility to achieve its objectives in a changing environment.

Beyond adaptive capacities within a team, flexibility can occur at the system-level with the ability to resynthesize, reconfigure, or redeploy resources quickly and effectively through coordination flexibility (Chang et al., 2013; Sanchez, 1995; Wright & Snell, 1998). Human resource systems with coordination flexibility encourage employees to assume new responsibilities as the situation requires and in response to external changes. Temporary organizations, often linked to project management teams, are an example of coordination flexibility. Temporary organizations are demarcated by being task-focused, time-bound, organized around teams, and can transition from the current work to the detailed end state (Lundin & Söderholm, 1995). Similar to this, organizations, in general, increasingly rely on more fluid team-based work structures utilizing dynamic composition for coordination flexibility.

Indeed, 21st century organizations often rely on teams that have dynamic composition in that they are more fluid in terms of membership change and boundaries (Tannenbaum et al., 2012). Membership change is commonplace, as individual team members join and leave teams due to turnover, but also because of reassignment by the organization. Boundaries are also more fluid. Individuals may be members of multiple teams such as multiple project teams, or a primary department team as well as other teams that require their expertise to which they are brought in temporarily (O’Leary, Mortensen, & Woolley, 2011). Teams may include a core group of team members but then draw on a wider range of experts to meet their objectives. In essence, the organization becomes a dynamic network of teams.

The fluidity of team membership and boundaries has led researchers to advocate for a more dynamic approach to studying organizational teams by focusing on networks and relational aspects of teamwork (e.g., Humphrey & Aime, 2014; Tröster, Mehra & van Knippenberg, 2014). With this approach, teams are conceptualized as “assemblies of interdependent relations and activities organizing shifting sets or subsets of participants...” (Humphrey & Aime, 2014, p. 450). This reconceptualization of teams is particularly useful for understanding team composition when organizations rely on the reconfiguration of teams as a means of enhancing coordination flexibility.

## 2.5. Background summary

In sum, practitioners face several team composition decisions as they manage teams. These decisions must consider both individual KSAOs and the configuration of KSAOs in the team. In practice, many possible combinations of KSAOs can contribute to team effectiveness. Careful analysis of the context and an understanding of the theoretical links through which individual team member attributes relate to valuable outcomes can help to guide the process. Fundamental to an organization's context is an organization's strategy for creating competitive advantage. Organizations use teams to enact their strategy (i.e., fit), and use adaptive teams and networks of teams to achieve fit in a dynamic environment (i.e., flexibility). We next present a framework for strategic team composition decisions.

## 3. Conceptual framework

### 3.1. Framework overview

Fig. 1 depicts a framework for strategic team composition decisions. We provide an overview of the framework. Then, we describe the implications for team composition decisions over time and provide guiding principles for strategic team composition decisions.

Organizations exist to create value. Value creation begins with the development of an organization's mission, most often represented via the mission statement. The mission statement defines the organization's purpose, which distinguishes it from other organizations (Cochran, David, & Gibson, 2008). The organization's mission is used to define the organizational goals. Analysis of the external environment and internal resources are used to identify strengths, weaknesses opportunities and threats (SWOT), and determine how the organization will enact its strategy and gain competitive advantage (Ansoff, 1984; Valentin, 2001; Wright & Snell, 1998). The role of HRM is to gather information about the organization's environment, as well as strategy implementation (Baird & Meshoulam, 1988; Wright & Snell, 1998). For organizations that use team-based work structures, strategy is translated into team goals.

Identified team goals serve as the initiating event that leads to the formation of one or more teams. Our use of team goals refers to the broad and overarching objective(s) of the team that is aligned with the organization's strategy. Specific goals of how to achieve the team's broader objective(s) could be determined by management, but more likely will be developed by the team itself. Teams are formed that allow the organization to better capitalize on opportunities or mitigate threats from the environment. Whether one team or multiple teams are formed is dependent on the number and complexity of the goals, and the extent to which diverse, specialized skill sets are needed to meet the objectives. Tradeoffs between knowledge specialization of individuals or teams and the need to integrate the specialized knowledge should be considered in the creation of team-based organizational structures (Grant, 1996).

If multiple teams are needed, these teams may exist as part of a loosely coupled or tightly coupled network depending on the level

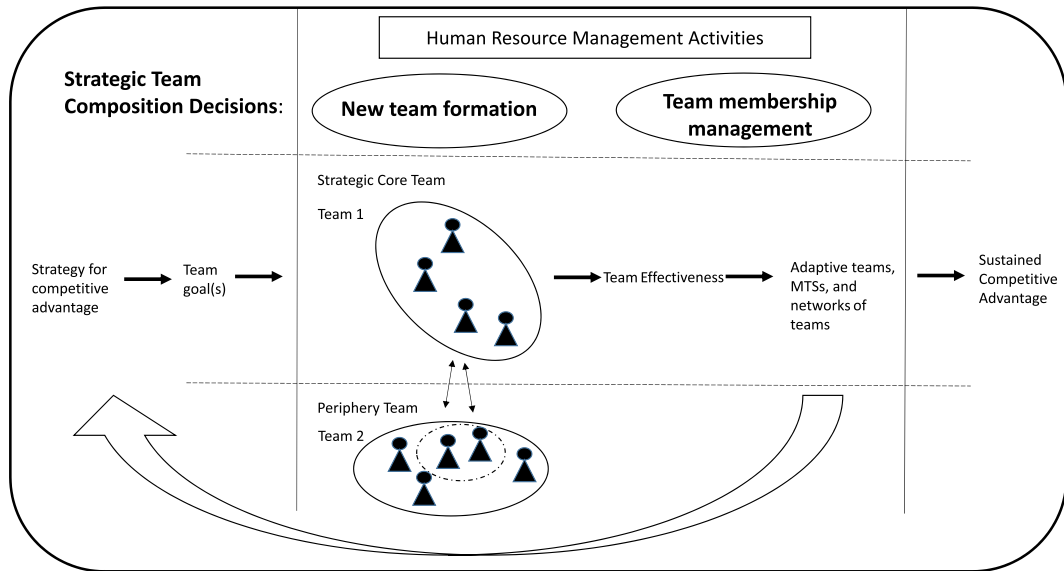


Fig. 1. Conceptual framework for strategic team composition decisions. Team composition decisions appear in the ovals and are bolded. Dotted lines represent vertical fit, or alignment between team composition decisions and the organization's mission and strategy for competitive advantage. Solid lines represent horizontal fit, or the fit between team composition decisions and the other HRM activities. MTS = Multi-team system.

of interdependence and coordination demands needed to achieve the cooperative goal. Tightly coupled teams are referred to as multi-team systems (MTS; Marks, DeChurch, Mathieu, Panzer, & Alonso, 2005). In other cases, specific teams may be able to meet their objectives by drawing on the organization's resources without a high level of interdependence and coordination between teams. These teams form a loosely coupled network. It is critical that team goals, MTS goals, and organizational goals are aligned. Goals direct effort, and goals that are compatible at multiple levels facilitate goal attainment at the higher levels (e.g., team, MTS, organization; Rico, Hinsz, Burke, & Salas, 2016; Seijts & Latham, 2000).

New team formation affords an opportunity for a strategic team composition decision. Team composition decisions should facilitate the extent to which the teams and networks of teams (whether loosely coupled or tightly coupled) can contribute to the organization's strategic human capital resources, and ultimately, competitive advantage. This is done via alignment between team composition decisions and the organization's mission and strategy for competitive advantage, called vertical fit. Vertical fit is indicated in Fig. 1 by the dotted horizontal lines. Alignment is used to prioritize team effectiveness criteria, which subsequently helps to identify the team configurations of KSAOs that are likely to be most important. It should be noted that composition considerations at the team-level and the MTS-level are not necessarily the same. MTS composition should facilitate obtaining the overarching MTS goals and enable teams to integrate their efforts across teams that contribute to the MTS (Millikin, Horn, & Manz, 2010).

Second, not all teams will contribute equally to competitive advantage. We draw a distinction between strategic core teams and periphery teams to account for team-level contributions to a competitive advantage. In Fig. 1, Team 1 is a strategic core team. Strategic core teams are teams that are closely aligned with the organization's strategy, and that provide a capability that allows the organization to differentiate itself from its competitors. An example of a strategic core team would be a product development team at a pharmaceutical company that values innovation. Team 2 is a periphery team. Periphery teams are teams that contribute to the organization's mission, but are not central to an organization's strategy, and do not directly contribute a core competency. An example would be an accounting team at a pharmaceutical company. Although the team may not directly provide a core competency, it supports the company's mission. It is important for periphery teams to embrace the values of the organization and understand their role in the strategic process. For example, if the pharmaceutical company competes through innovation, the accounting team would prioritize budget management that helps to enable, rather than hinder, innovative initiatives.

The notion of the strategic core also extends to the within-team level. Strategic core team roles are defined elsewhere with a focus on team members' roles within team task execution (Humphrey et al., 2009). This bottom-up approach should be complemented by a top-down consideration of the contribution of the strategic core team roles to organizational core competencies. Specifically, the effective composition of team roles more central to the organizations' core competencies become a priority. Fig. 1 indicates the within-team strategic core with a dashed circle. In this case, the accounting team (Team 2) has two members who are part of the within-team strategic core, but they are not closely aligned with the organization's strategy and do not directly contribute to a defining capability of the organization. As within-team and between team interdependency increases, the distinction between the core and periphery decreases in importance.

Finally, team composition decisions should be aligned with other human resource activities (e.g., training, compensation) that support human capital resources contributing to a sustained competitive advantage (Delery & Shaw, 2001; Uhl-Bien et al., 2000). In Fig. 1, the horizontal fit, or congruence between different HRM activities, is denoted with the solid vertical lines. During team formation, the extent to which other aspects of the human resource system supports the success of the desired configuration should be

considered. Further, team composition information of a formed team can be used to identify the unique needs of the team and to better support the teams through other human resource activities.

Because most organizations will operate in a dynamic environment, flexibility is important in achieving fit over time (Wright & Snell, 1998). The objective of team composition decisions related to team membership management is to enable strategic fit over time and promote organizational flexibility in order to achieve dynamic fit. In Fig. 1, the potential for teams to contribute to fit across time is denoted with a feedback loop where the adaptive teams, MTSSs, and networks of teams become an internal strength (or weakness) of the organization that can be used to exploit external opportunities or guard against threats. In other words, adaptive team, MTSSs, or networks of teams can contribute to the strategic human capital resources, and ultimately help the organization achieve a sustained competitive advantage. The feedback loop in Fig. 1 could originate with team effectiveness for organizations that operate within a stable and predictable environment. The nature of team membership management decisions (e.g., single team member replacement, reconfiguration) are influenced by whether the organization intends to derive resource flexibility from adaptive teams, or coordination flexibility from reconfiguring teams to meet newly identified team goals aligned with competitive advantage.

### 3.2. Strategic team composition decisions

Next we integrate team composition research with the framework and propose four guiding principles for strategic team composition decisions. First, two concepts associated with vertical alignment can be used to identify the specific team member attributes and configurations that are likely to be most relevant for competitive advantage: identification of key organizational outcomes and the strategic core. The notion of strategic core teams can also be used to guide between-team priorities and between-person priorities in the team composition decision process. Second, horizontal alignment can be used to identify constraints to composing teams, and determine how team composition intersects with training or other human resource activities (e.g., reward systems). Third, stakeholders can consider where they will primarily derive flexibility: via relatively intact teams that are adaptable or via networks of teams that are adaptable. If flexibility is derived via the team-level, then team-specific considerations, such as characteristics of the leavers, stayer, and team receptivity, may be important. If flexibility is derived from the system-level via reconfiguration, team composition decisions may focus on the ability to develop processes such as swift trust, and the roles within the larger network. Each of these will be discussed in turn next.

#### 3.2.1. Vertical fit informs the prioritization of team outcomes, which help identifies key team composition considerations

Vertical fit can be used to prioritize team outcomes. This prioritization helps identify team member KSAOs and configurations that are important. Human capital resources become strategic when they are aligned with the organization's mission and provide competitive advantage in markets (i.e., vertical fit; Wright & Snell, 1998). The alignment of team and organizational goals can help to achieve this fit. Alignment is important because an underlying assumption in the team composition literature is that teams that are composed to meet their objectives (i.e., have good team performance) contribute to organizational effectiveness. While team performance will be important if team goals are aligned with organizational goals, other outcomes will also be important if they contribute to the core competencies of the firm or competitive advantage. For example, if an organization derives an operational advantage via service quality, then teams can be composed to increase service quality.

Strategic HRM focuses on three categories of organizational outcomes: human resource outcomes, operational outcomes, and financial outcomes (Dyer & Reeves, 1995; Jiang, Lepak, Hu, & Baer, 2012). As described by Jiang et al. (2012), human resource outcomes include skills and abilities, employee attitudes, behaviors, and turnover. Operational outcomes relate to the goals of an organization's operations: productivity, product quality, quality of service, and innovation are examples. Finally, financial outcomes are those that reflect the economic goals of the organizations; examples include sales growth, return on assets, and return on invested capital. The particulars of which criteria are important for an organization within each category will depend on the organization's strategy for competitive advantage.

The identification of team outcomes that are consistent with the organization's goals and strategy for competitive advantage provides initial insights on which team composition variables and combinations are likely to be most important for the context. For example, team composition is related to human resource outcomes (e.g., turnover; Nishii & Mayer, 2009), operational outcomes (e.g., innovation; Bantel & Jackson, 1989; Mitchell & Boyle, 2015), and financial outcomes (e.g., sales; Eisenhardt & Schoonhoven, 1990). The extensive team composition literature can be sufficiently narrowed once team outcomes of interest are identified. Further, team composition that relates to outcomes other than team performance can become important.

**Guiding principle 1.** Strategic team composition decisions maximize team effectiveness outcomes that are linked to the core competencies of the organization and to competitive advantage.

#### 3.2.2. Vertical fit informs between-team and within-team composition priorities

In addition to prioritizing outcomes, vertical fit can inform between-team and within-team priorities when team composition decisions include multiple teams or multiple team members. First, the notion of strategic core teams and periphery teams can be used to identify teams that are most likely to contribute to competitive advantage. Strategic core teams can be prioritized during team composition decisions, and team members can be strategically arrayed across the teams so that the highest priority teams are most likely to benefit from synergistic effects of being a well-composed team. For example, research which composed teams based on general mental ability observed non-additive (e.g., synergistic) effects on team performance when high ability team members were



paired together rather than paired with low ability members (Day et al., 2005). Low ability team members benefited little from being paired with a high ability teammate. In this example, a strategic core team would be prioritized in terms of staffing it with members uniformly high on general mental ability, whether that be through reassignment of a team member from a periphery team, or when arraying new hires across teams. The illustration is made with team member cognitive ability, however, depending on the outcomes of interest, different team composition variables may be of interest. The team profile of strategic core teams should be considered to capitalize on any synergistic effects of team composition.

Second, in addition to informing between-team priorities, the notion of the strategic core can be used to prioritize positions within teams (Humphrey et al., 2009). The strategic core may inform configurations that are most important, as well as positions that may need to be prioritized in the placement of new members. For example, team composition algorithms can account for strategic core roles with relative contribution models (Mathieu et al., 2014), and the composition of members in strategic core roles can be maximized. Member change from core roles can have a larger impact on team performance than non-core roles (Delery & Shaw, 2001; Summers, Humphrey, & Ferris, 2012). When member change is in a strategic core role, the relative general mental ability of the newcomer to the leaver may be important for predicting how well a team coordinates after the change. Teams with newcomers high in general mental ability are better able to coordinate after the change (Summers et al., 2012). Key positions within teams should be prioritized in terms of facilitating compatibility through team composition.

Consideration of a strategic core and periphery distinction is incomplete without acknowledging the role of interdependence. Specifically, a high degree of interdependence between the strategic core and periphery should increase the utility of the periphery for organizational effectiveness (Delery & Shaw, 2001). This interdependence can occur between teams (i.e., within the larger system) or within team. Further, while periphery teams that are interdependent with teams in the strategic core may increase the relative importance of the team, it can also increase the need for effective management of boundaries between teams (Hoegl & Weinkauff, 2005).

**Guiding principle 2.** Strategic team composition decisions prioritize maximizing the capabilities of the strategic core teams and roles over periphery teams and roles. This prioritization is less important under conditions of high interdependence.

### 3.2.3. Horizontal fit and the alignment of team composition decisions with HRM activities

Consistent with horizontal fit, team composition decisions that are aligned with other HRM activities are most likely to contribute to the competitive advantage. First, team composition decisions must be considered in relation to other parts of the staffing process. As an example, if intact teams are used, an organization may be able to effectively recruit and hire a full team from another organization (cluster hiring; Munyon, Summers, & Ferris, 2011). Cluster hiring can mitigate some of the performance decrements individuals may have when joining a new team and organization (Campbell et al., 2014). While cluster hiring can be a substantial cost to an organization, it may be appropriate for strategic core teams expected to remain relatively intact. On the other hand, if team structures are frequently reconfigured, it may be more important to develop the larger talent pool from which teams may be formed, and recruit new employees that add to the breadth of resources available. Beyond knowledge and skills, the talent pool will need individuals who can effectively operate within a network of teams. For example, highly educated individuals who are low in neuroticism are more likely to have high centrality in advice and friendship networks. Value similarity predicts advice and friendship network centrality (Klein, Lim, Saltz, & Mayer, 2004).

Second, team composition and reward systems should be aligned to facilitate sustained competitive advantage. Strategic core teams could be rewarded for meeting their objectives, and periphery teams could be rewarded for actions aligned with the organization's values, or when they facilitate the effectiveness of strategic core teams. Rewards may be tailored to the specific composition of the team. For example, teams with members high on extraversion and agreeableness perform best with cooperative rewards structures (Beersma et al., 2003), and gender diverse teams perform better when the reward structure supports a superordinate identity rather than one that aligns team members across gender subgroups (Homan et al., 2008). If reconfiguration is the dominant strategy for flexibility, rewarding teams to increase efficiency reorganization may be important. As an example, teams may be rewarded for efficiently and successfully completing a project, but team members may also be rewarded for adapting to new teams across time, and developing transportable organizational-relevant competencies or teamwork skills.

Likewise, training needs may be identified by considering whether an organization intends to primarily meet their objectives via reconfiguring work-based team structures, or by developing the adaptive capabilities for intact teams. If intact teams are utilized, then training the team together may develop transactive memory systems (TMS) and lead to performance benefits (Liang, Moreland, & Argote, 1995). Further, methods such as perturbation training, where team interactions are constrained to provide new coordination experiences when learning a task, can be used to train teams to be adaptive (Gorman, Cooke, & Amazeen, 2010). The composition of the team informs training needs. For example, teams with high national diversity and less positive diversity beliefs had increased creative performance after diversity training (Homan, Buengeler, Eckhoff, van Ginkel, & Voelpel, 2015). On the other hand, if flexibility is derived through reconfiguring networks of teams, training that focuses on the development of generic teamwork skills or role clarity may be most important. High self-monitors are more likely to occupy boundary spanning positions, but this can also result in role conflict (Mehra & Schenkel, 2008). The point is that team composition decisions must be made in light of, and ultimately inform, other human resource activities.

**Guiding principle 3.** Strategic team composition decisions must be complementary to, and integrated with, other human resource activities.

### 3.2.4. Flexibility via building adaptive teams or building fluid, reorganizing networks of teams, and the implications for team composition decisions

Organizations can achieve flexibility by building adaptive teams or by building more fluid, reorganizing networks of teams; these have implications for strategic team composition decisions. If flexibility is primarily derived from creating adaptable teams, then the teams can be composed to enhance their ability to navigate the team compilation and performance phases and become adaptive teams. Issues related to membership change, compatibility within a specific team, and composing teams to have adaptive capacities are particularly important. If flexibility is primarily derived from the reorganization of networks of teams, then issues related to the use of temporary teams, such as the development of swift trust, are of primary concern.

Flexibility derived from intact teams requires that teams effectively navigate the compilation process and become adaptive teams (Kozlowski et al., 1999). Certain aspects of team composition may be more important at different stages of the team's development. For example, team mean preference for teamwork and concern were positively related to initial team performance, while reliance was negatively related to initial team performance in a sample of teams engaged in a top management team simulation (Dierdorff, Bell, & Belohlav, 2011). For end-state performance, team mean and variability on the facet of team goal priority was most predictive. Additionally, the effect of demographic diversity on team performance weakens over time (Harrison, Price, & Bell, 1998). Team composition can affect the team compilation process, and also the adaptive capacity that intact teams develop over time.

Indeed, certain configurations of team members are more adaptable than others. For example, teams composed of members high on both cognitive ability and conscientiousness are more adaptive than teams high on either cognitive ability or conscientiousness alone (LePine, 1998). Team openness to experience and agreeableness also relate positively to adaptation (Lim, 2004). Further, teams with difficult goals, and composed of members with a high learning goal orientation, are most likely to adapt when confronted with novel tasks. The difficulty of team goals and team members' goal orientation predicts interpersonal, transition, and action processes, which all relate to team adaptability capabilities (LePine, 2005).

When intact teams are used, team member compatibility within a specific team is important. The flexibility derived through team compilation and the emergence of adaptive performance relies on the relationships and role interactions unique to the team. This social complexity creates a situation where human capital is more difficult to imitate, and therefore more likely to contribute to strategic advantage. However, member change can also be more disruptive. Several different literatures (e.g., collective turnover, member change, context-emergent turnover theory, newcomer adaptation) address the effects of membership change on team functioning (e.g., Ancona, Bresman, & Kaeufer, 2002; Chen, 2005; Hausknecht & Trevor, 2011; Nyberg & Ployhart, 2013). Membership changes and the changes to the team's composition can have profound effects on team processes, emergent states, and performance. For example, when experiencing membership changes, members may rely on previous TMSs, resulting in negative performance effects (Lewis, Belliveau, Herndon & Keller, 2007).

Related to team composition, the extant literature has identified characteristics of both leavers and stayers that can influence a team's receptivity to changes in membership. For example, newcomers who are less socially distinct (i.e., more demographically similar to existing members), more assertive, and high on task expertise are often more positively received within teams (Arrow & McGrath, 1993; Chen & Klimoski, 2003; Hansen & Levine, 2009; Phillips, Liljenquist & Neale, 2008). The resistance of newcomers may limit newcomer adaptation, or newcomer performance change, which emerges from individual team members' fit with the new work environment (Chan & Schmitt, 2000; Chen, 2005). Further, team receptivity, the extent to which teams are open to newcomers (Rink et al., 2013), is a necessary condition for flexibility derived from adaptive teams.

As an alternative to developing adaptable intact teams, organizations may derive flexibility by building fluid, reorganizing networks of teams. As previously discussed, to remain responsive to changing market demands, firms often rely on human resource strategies such as coordination flexibility that involve the assignment of new responsibilities to existing employees (Chang et al., 2013). In the context of teams, this may include the reassignment of members to new teams based on task or project demands (Mathieu et al., 2013).

As an example, many consulting firms compose project teams based on client demands and member expertise. Once projects are completed, teams are reconfigured with members assigned to new teams as new projects begin. The ability to make such reconfigurations allows the organization to remain flexible to market and client needs thereby supporting its fit with the changing external environment (Wright & Snell, 1998).

These flexible systems parallel temporary systems (or temporary organizations, see Burke and Morley (2016) for a recent review). Temporary systems do not trivialize the need for teamwork. However, the nature of teamwork may change. For instance, temporary teams may rely on swift trust more than team states that take time to develop. Trust in temporary teams is related to better communication quality within the team, which relates positively to performance (Bjørnstad, Fostervold, & Post, 2013). Swift trust, or other dynamics important for teams that are frequently reconfigured, may implicate different team composition considerations. To build swift trust, individuals may rely on surface-level variables and import information from other circumstances. For example, team members may rely on roles, categories (e.g., profession, gender), history with the person, or reputation in the development of swift trust (Meyerson, Weick, & Kramer, 1996). One approach to managing this dynamic composition is to clearly define roles so that individuals who take on particular roles are interchangeable, to some degree. For example, medical teams rely on extensive training and role clarity to deal with frequently changing membership. Even so, medical teams composed of members more familiar with one another can have better performance (Xu, Carty, Orgill, Lipsitz, & Duclos, 2013).

Organizational systems designed to derive flexibility through the reconfiguration of teams may require a network approach to understanding collaboration. The notion is that while the projects themselves may be temporary, the relational ties between employees and organizations may survive those projects (Manning & Sydow, 2011). With a network approach, collaboration is developed through an awareness of expertise, accessibility, and competence-based trust (Cross, Ehrlich, Dawson, & Helferich, 2008), all of

which can be affected by previous interactions within a network. Familiarity between individuals, and an individuals' position or fit with a position within the network, may become important team composition considerations. For example, project-based entrepreneurs were more successful when they had high degrees of network centrality and when teams included a mix of old-timers and newcomers (Ferriani, Cattani, & Baden-Fuller, 2009).

The ability to make such reconfigurations allows the organization to remain flexible to market and client needs thereby supporting its fit with the changing external environment (Wright & Snell, 1998). At the same time, competitive advantage may be more difficult to achieve to the extent that team members become interchangeable and human capital resources are easy to replicate by competitors. A more flexible talent pool, as well as efficiencies in being able to reconfigure the system or help newly formed teams coordinate, may contribute to an organization's competitive advantage. Well-designed decision support systems can help create efficiencies in the reconfiguration and development of teams. A talent inventory can be kept by an organization that quickly allows for new team members to be identified in terms of availability, KSAOs, the history of working together or other markers of familiarity or relations, and compatibility. Feedback based on the decision support system algorithm can be provided to teams to help them quickly understand the best ways for working with one another. For example, if a team has temporal diversity, a team and its leadership could be made aware of those team member differences, and use strong temporal leadership to help bridge the differences (Mohammed & Nadkarni, 2011). Teams composed of members low on conscientiousness may benefit from a team charter (Courtright, McCormick, Mistry, & Wang, 2017). In sum, organizations can achieve flexibility by building adaptive teams or by building more fluid, reorganizing networks.

**Guiding principle 4.** Strategic team composition decisions should allow for flexibility and maximize an organization's ability to pursue alternative strategies. Team composition decisions can maximize strategic flexibility by enhancing the adaptive capabilities of intact teams, or the ability to reconfigure networks of teams, to meet the demands of the external environment.

#### 4. Directions for future research and boundary conditions of the framework

In this section, we propose areas for future research. Many opportunities exist for future research on the influence of specific KSAOs on team outcomes, particularly outcomes other than team performance such as human resource outcomes, operational outcomes, and financial outcomes. We maintain our focus, however, at the macro-level by making research recommendations related to team composition decisions and competitive advantage. First, we forwarded a few ideas here that need to be tested empirically. We suggested that team composition decisions should consider vertical fit to prioritize the outcomes that team composition should maximize. The balanced scorecard method (Kaplan & Norton, 1992) to team performance management could be used to ensure teams are composed and assessed based on their contribution to the competitive advantage of the organization (Mathieu et al., 2013). A comparison of units that compose teams using the balanced scorecard method and those that do not could provide insights into the efficacy of this guideline. Likewise, team composition algorithms can be developed with consideration of vertical fit. Vertical fit can be used to identify the outcomes of the predictive algorithm, and to guide the weighting for teams or team members to the outcome. The importance of these rules, as well as the effectiveness of such algorithms, can be tested with real and simulated data.

A second area for future research is the examination of team composition from a network position perspective. A network and relational approach is useful for understanding where an individual is embedded in the larger system of teams, particularly when boundaries are more fluid. For organizations that derive flexibility through the reorganization of teams, team composition decisions may focus on the individual's role within the network (e.g., boundary spanning) and relations with others, rather than the compatibility of members within a well-defined team, yet this area is understudied. A network and relational approach to team composition considers members' positions and relationships within the overall network, as opposed to within a single team. This conceptualization is similar to research exploring the influence of KSAOs on network relations (e.g., Klein et al., 2004; Troster et al., 2014). Future research should build on this evidence to consider the aggregate effects of network composition and resulting network structures on system-level outcomes and human capital emergence. In other words, this approach to composition acknowledges the boundaryless nature of teams by taking an open systems perspective of team composition to predict organization-level outcomes. Rather than informing team staffing decisions based on a team member's KSAOs standing within a single teams, future research can inform team staffing to move the system toward a configuration that increases its likelihood to gain competitive advantage. This is akin to calls for future research exploring the influence of historical interactions resulting from the reconfiguration of teams on network outcomes (Tannenbaum et al., 2012).

Third, future research should explore flexibility derived from the system as opposed to the team, and the environmental circumstances within which these approaches are likely to create competitive advantage. At the system level, flexibility can be achieved by strategically reconfiguring teams to ensure coordination flexibility—a process encouraging the development of a generic behavioral repertoire within teams (Chang et al., 2013). Flexibility driven from the system occurs in response to changing environmental demands, representing a top-down approach to securing competitive advantage. At the team-level, flexibility can be achieved through the team compilation process, which results in the development of adaptive performance and team-specific skills (Kozlowski et al., 1999). Similarly, team-level flexibility (i.e., bottom-up) emerges to allow teams to be responsive to changing or novel demands. However, the different mechanisms underlying the paths to flexibility, in both cases, present a fruitful area for future research. Future research should explore the contribution of team-related resource flexibility and coordination flexibility to competitive advantage. Research into the comparative responsiveness of flexibility derived from intact teams or reconfigurable networks is needed, as well as the potential for an organization to use these varying approaches to team composition decisions for competitive advantage. Specifically, understanding how quickly teams move through the compilation process to develop dynamic capabilities could provide some

understanding of the efficiency of team-derived flexibility in comparison to that derived from the system. Further, understanding the extent to which flexibility derived from reconfigurable networks, as compared to adaptable teams, can be imitated by competitors could also bring insights into the benefits of flexibility derived from flexible teams versus flexible networks.

Finally, we note two boundary conditions to our model. First, our framework has competitive advantage as a goal. Team outcomes should be aligned with organizational goals, however, some organizations (e.g., government agencies) may be less focused on competitive advantage. Even so, to some degree almost all organizations from different sectors (e.g., non-profit, government agencies, for-profit businesses) compete for resources, and as such, many components of our framework will still apply in these circumstances. Second, our model examined team composition decisions from the perspective of the organization. Teams may also form for other reasons. For example, individuals may self-assemble into project teams to complete difficult projects (Zhu, Huang, & Contractor, 2013). Especially for self-assembling teams, team formation is heavily influenced by individual's motivations. The effectiveness of self-assembling teams will need to consider additional motivations for team formation in addition to the ideas outlined here.

## 5. Conclusions

Twenty-first century organizations operate in dynamic and hyper-competitive environments, and use teams as a means of organizing human resources to interact with that environment. Team composition decisions are complex, and effective team composition is fundamentally shaped by the context within which the teams operate. Central to understanding the effectiveness of team composition decisions is the extent to which these decisions help an organization to enact its strategy (i.e., fit) and facilitate the ability of human capital resources to adapt to future iterations of strategy (i.e., flexibility). We suggest four principles using the notions of fit and flexibility. Strategic composition decisions should: (1) maximize team effectiveness outcomes that are linked to competitive advantage and the core competencies of the organization; (2) maximize the capabilities of the strategic core teams and strategic core roles, as compared to periphery teams and roles, except under conditions of high task interdependence; (3) be complementary and integrated with other human resource activities; and (4) allow for flexibility and maximize an organization's ability to pursue alternative strategies. Team composition decisions can maximize strategic flexibility by enhancing the adaptive capabilities of intact teams, or the ability to reconfigure networks of teams, to meet the demands of the external environment. We provide this framework and principles as a starting point to help researchers and practitioners to think more deeply about how micro-level team composition decisions can contribute to an organization's competitive advantage.

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