



## Managing adaptive performance in teams: Guiding principles and behavioral markers for measurement

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### ABSTRACT

Various types of organizations must manage rapidly changing operational contexts. To respond to these demands, organizations are relying more heavily on team-based work arrangements. Effectively managing such performance requires a systematic, broad approach to measuring team effectiveness that is comprehensive and sound, yet unobtrusive. One aspect of teamwork that is critical to success in these types of environments is adaptation. Teams must be able to react quickly and accurately to the changing environment. To effectively manage adaptive team performance in such contexts, there is a need to better understand team adaptation as well as to generate better team performance measurement systems. To this end, a review and synthesis of the empirical, theoretical, and methodological literatures concerning team adaptation, performance, and measurement is conducted to develop theoretically-based principles to guide development of effective team adaptation measurement systems as well as to inform future research. We propose six guiding principles that capture core features of team adaptation and serve as an aid in the development of team performance measurement systems. These principles are rooted in recent theoretical work on team adaptation and are presented at a level of abstraction suitable for generalization across performance measurement contexts and purposes. Behavioral markers describing processes associated with each principle and example measurement strategies are presented to illustrate development of specific measurement tools and metrics, based on the principles. The principles and behavioral markers presented can guide development of measurement systems to assess, train, and improve team adaptation, a core capacity of effective organizations. Future research needs to expand upon the principles advanced here to provide theoretically grounded and methodologically rigorous tools to help performance management professionals develop adaptive team capacities.

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Nearly four decades ago, [Terreberry \(1968\)](#) argued that adaptability would become crucially important to organizational success due to externally-induced organizational change and those organizations successful at adapting would be most effective in the marketplace. This forecast could not have been more prescient. Organizations increasingly rely on teams to manage the complexity of modern work. This continuing shift from organizing units of work around individuals to teams is being driven, in part, by factors such as the rate of change in task demands and the pervasive nature of change in business environments ([Kozlowski, Gully, Nason, & Smith, 1999](#)). Additionally, the same factors spurring creation of team-based organizations impose demands on teams, once formed, to rapidly and continuously adapt their performance processes.

To address this emerging need, the available theoretical and empirical literature on team adaptation has increased significantly in recent years (e.g., [Burke, Stagl, Salas, Pierce, & Kendall, 2006](#); [Chen, Thomas, & Wallace, 2005](#); [Deshon, Kozlowski, Schmidt,](#)

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Milner, & Wiechmann, 2004; Entin & Serfaty, 1999; Kozlowski et al., 1999; Lepine, 2003, 2005). Throughout the scientific literature, researchers describe team adaptation as a complex phenomenon, one comprising multiple inputs, interaction processes, and emergent states that results in event-driven changes in team properties and processes, enabling higher levels of effectiveness in complex environments.

Managing the adaptive performance of teams is, therefore, of great practical concern to organizations as well as a fertile ground for scientific investigation. However, much of the relevant scientific literature has yet to be integrated into the processes by which organizations manage performance. This article addresses this gap by providing an initial synthesis of theory and methods from the science of teams. This effort is intended to provide guidance on measuring and managing adaptive team performance and organizing future research.

Specifically, this article addresses three primary goals. First, the theoretical drivers of team adaptation are reviewed and summarized in an extended framework of processes and emergent states. This framework outlines the content a team adaptation measurement system should capture. Second, six guiding principles for measuring team adaptation are presented. These principles are rooted in the theoretical review as well as the team performance measurement literature. Third, example measurement strategies based upon each guiding principle are presented to illustrate the process of implementing the principles presented in this article. Before addressing these goals, the need for including the measurement of team adaptation in performance management systems is discussed.

## 1. The need for measuring team adaptation in team performance measurement systems

In a 'matrixed organization' where project teams are formed to address specific and unique client needs from pools of personnel with different types of expertise, the effectiveness of a team is in large part a function of the quality of the inputs to this process such as the characteristics of the individuals selected for the team (Bell, 2007). An extensive body of work is available to guide organizations in managing the performance of the individuals in this scenario. However, team interaction processes as a whole also contribute greatly to the effectiveness of outcomes (LePine, Piccolo, Jackson, Mathieu, & Saul, 2008; DeChurch & Haas, 2008). Consequently, a comprehensive approach to performance management in situations such as the one described above must represent aspects of both the individual and the collective. Sole focus on one level at the expense of the other can lead to performance decrements (e.g., DeShon et al., 2004) and maladaptive performance such as social loafing or lack of focus on collective goals.

Aguinis (2009) outlined six purposes of a performance management system: strategic, administrative, communication, developmental, organizational maintenance, and documentation. In the context of adaptive team performance, the strategic (i.e., linking goals across levels), communication (i.e., providing personnel with information on their level of performance), and developmental (i.e., providing feedback to drive coaching) are the most salient goals of a performance management system. Measurement underlies the capacity to *systematically* manage performance and meet each of these goals. However, performance management research and practice has not widely incorporated the concepts or methods of measuring team adaptation. The remainder of this article presents the state of the science of team adaptation and its measurement to both inform practice and guide future research into this growing research and application domain.

## 2. Theoretical drivers

In this section, a review of the theoretical basis of team adaptation and related concepts is provided in order to outline the content of a team adaptation measurement system. Theories of team adaptation serve as the primary theoretical driver of the principles offered in this article; however, the general scientific literature on team performance processes, and team learning are reviewed as well. Each of these key theoretical drivers is discussed briefly below. Subsequently, an expanded conceptual framework of team adaptation based on these three areas is presented.

### 2.1. Team adaptation

There are several models of team adaptation and related phenomenon in the literature (e.g., DeShon et al., 2004; Kozlowski et al., 1999). Most recently, a cross-level mixed determinants model was developed by Burke et al. (2006). Integrating several perspectives from the organizational, behavioral, and cognitive sciences, this multidisciplinary, multilevel and multiphase model provides an account of the processes involved in team adaptation. Burke et al. (2006) propose that the *process* of adaptive team performance, defined as "an emergent phenomenon which compiles over time from the unfolding of a recursive cycle... to functionally change current cognitive or behavioral goal directed action" (p.1192), is an antecedent to the *outcome* of team adaptation. Team adaptation is conceptualized as "a change in team performance, in response to a salient cue or cue stream that leads to a functional outcome for the entire team" (p.1190). To reach this outcome, the team engages in a cycle of adaptive team performance which, as shown in Fig. 1, consists of four process-oriented phases: (1) situation assessment, (2) plan formulation, (3) plan execution, and (4) team learning. In situation assessment, the team gathers and interprets information. This information is used to create a course of action in plan formulation, which is then set in motion during plan execution. Once the plan has been executed, the team reflects on past events and learns from their experiences. These processes lead to corresponding emergent cognitive and affective states (i.e. shared mental models, team situational awareness, psychological safety) which function as both

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