The literature on teamwork has mainly focused on observational studies that facilitates the understanding of teamwork dynamics based on team composition and how these affect individuals and team performance. However, the translation of findings in these studies to operation research strategies for workforce management application has been limited. Specifically, studies that address workforce allocation when is applied a teamwork-based strategy implementation in organizations has received little attention in literature, while the consideration of team dynamics from both perspectives, gains and losses, simultaneously is still a gap in the literature of operation research for the study and development of workforce management plans. The goal of this dissertation is to reduce this gap, addressing the design of workforce management plans that considers the implementation of a teamwork strategy accounting for the gains and losses that arise from team dynamics. This work presents the exploration of the team formation process from the perspective of team size for learning-productivity environments. Workforce heterogeneity is considered through the modeling of individuals’ productivity as function of individual learning parameters. Team dynamics are incorporated in an individual productivity model by including learning by knowledge transfer, which accounts for the benefits in individual productivity that can be gain though the interaction of workers within the team, and by including process loss, which accounts for the losses in individual productivity that arise from demand in coordination, conflicts, motivation losses and communication challenges that arise in teams. The methodology used in the study centers on the use of simulation and explicit mathematical representations based on models in the literature. This dissertation 1) explores the jointly effects of human and organizational factors on system performance and their relevance to the worker-cell assignment problem, which demonstrates the value of considering these factors as part of the workforce planning process in a cellular manufacturing setting; 2) investigate the joint effects of knowledge transfer and the process loss on team performance resulting from the incorporation of additional workers into the work team and its implication on the optimal team size when considering different type of task structures; and 3) explores the team formation problem with the aim of characterizing optimal team size in a multiple work-team setting.