A firm hires an agent (e.g., store manager) to undertake both operational and marketing activities for a product. Marketing activities boost demand, but for demand to translate into sales, operational effort is required to maintain adequate inventory. When demand exceeds available inventory, neither the firm nor the agent can observe unmet demand, a phenomenon known as “demand censoring.” The firm designs a compensation plan to induce the agent to put appropriate effort into both marketing and operations. We formulate this incentive-design problem using a moral hazard principal-agent framework with a multitasking agent subject to a censored signal. We develop a novel bang-bang control approach, with a general optimality structure applicable to a broad class of incentive-design problems. Using this approach, we characterize the optimal compensation plan as consisting of a base salary and a bonus paid to the agent under one of the following two conditions: (i) all inventory above a predetermined threshold is sold, or (ii) the sales quantity meets a downward-sloping inventory-dependent target. This structure implies non-monotonicity such that given the same sales outcome, the agent can be less likely to receive the bonus for achieving a better inventory outcome. Furthermore, we find that inventory and demand outcomes can act as either complements or substitutes in the compensation plan, where they become substitutes when inventory is sufficiently large. Finally, we rule out the optimality of rudimentary compensation plans that generalize the logic of binary payment schemes from the single-tasking literature, revealing additional subtleties in the multitasking setting.

(Copies of the paper are available in the AOIS Department offices)