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Do You Have a Room for Us in Your IT? An Economic Analysis of Shared IT Services and Implications for IT Industries

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Abstract

We are witnessing an interesting and unique phenomenon in enterprise information technology (IT) adoption and management in public sector organizations: shared IT services. Instead of implementing separate IT services, governments come together to pool their IT resources into a single IT service. In this study, we develop a game theoretic model to analyze governments' decisions to share IT services and understand how the introduction of shared services transforms the strategic interactions between governments and vendors. We study three common regimes used in the adoption of shared IT services: (1) a cost-sharing regime where costs are split proportionally, (2) a profit-center regime where one government charges a surplus-maximization price to the another, and (3) a coordination regime where governments coordinate their decisions to maximize aggregate surplus. Our analyses generate several intriguing findings. First, although charging a surplus-maximizing price seems to be a lucrative option, we find that a government does not always benefit by acting as a profit center. Second, the cost-sharing regime does not always incentivize the shared service adoption despite being often viewed as a fairer and more convenient arrangement. Third, we find that there can be significant under-utilization of shared services in the absence of proper coordination, in a sense that the governments may choose not to share their IT services even if doing so would increase their aggregate surplus. Finally, even though coordination promotes the adoption of shared IT services, it can sometimes be inefficient from a social welfare perspective because the increase in government surplus can be outweighed by the decrease in vendor profit. We also present a range of extensions to our model to show that our main take-aways carry over when some model assumptions are relaxed.

Keywords: Shared IT service, outsourcing, governments, economies of scale, social welfare, game theory