

Dynamic Communication Mechanism Design*

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January 29, 2018

Abstract

This paper considers dynamic resource allocation processes, called dynamic communication mechanisms, with a quasi-linear single-value environment and complete information. The mechanism designer gradually identifies the state of the world through a sequence of binary questions and monetary transfer is determined on a “pay-as-bid” basis. We characterize the condition for truth-telling being an ex post equilibrium in a communication process. In a single-object allocation problem, the English auction is the unique dynamic communication mechanism satisfying efficiency and ex post incentive compatibility. In an indivisible public goods problem, there is no efficient mechanism but only unanimous acceptance rules are ex post incentive compatible. When sincere reporting is not an ex post equilibrium, an allocation rule is implemented in a subgame perfect Nash equilibrium if it satisfies the strong monotonicity. In particular, the efficient allocation rule is implemented regardless of details of a communication process.

Keywords: dynamic communication mechanism, English auction, binary question, monotone price, unanimous acceptance

JEL codes: D44, D82

*First draft: January 12, 2016. This paper was formerly entitled “Iterative Revelation Mechanisms.”

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