Dynamic Information Aggregation with Biased Experts

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Extended Abstract: The paper studies the repeated interaction between a central information aggregation agency and a set of (heterogenous) strategic experts.

The central agency is assumed to be able to commit to a dynamic mechanism with which it aggregates the information received by the experts. Its objective is to issue a report each period that maximizes a measure of accuracy and satisfies a monetary budget constraint. The central agency is allowed to make monetary transfers in order to give experts incentives to report truthfully.

Each period the experts decide whether or not to acquire information about the current state of the world. They then decide whether and what to report about their signal. Their objective is to maximize a payoff function that depends on the monetary payments made by the central agency net of the costs of acquiring information plus a function of the content of the report issued by the central agency.

Both the central agency and the experts are assumed to maximize discounted payoffs.

The paper starts by characterizing necessary budgets for implementing truthful revelations in the one-shot games. Then it studies the dynamic trade-offs between inducing accurate reporting and the cost of doing so. This involves keeping track of the reputations of the individual experts. Finally, the paper characterizes mechanisms for issuing reports that maximize accuracy given the monetary budget constraints.

The paper concludes with an application to the media by discussing how media markets might be organized (or funded) in order to induce high level of accuracy in reporting given a limited budget.