Free-riding leads to too few evaluations. Beyond this, evaluations will be provided by an unrepresentative group—those who most enjoy the evaluation process. Hence, their evaluations may be misleading. Free-riding implies neither sloth nor conscious self-interested calculation; it can arise innocently. For instance, a newsgroup reader with the flu may not evaluate messages for several days. Upon return, that reader should find a set of the best messages as selected by other readers, and none of the worst. Such an experience would probably diminish the reader’s zeal to evaluate.

Figure 1 shows payoffs for Example 1. There are two potential readers for a particular message that is equally likely to be either “good” or “bad.” A single evaluation is assumed to completely identify the value of the message. Table (b) is derived by calculating expected outcomes from section (a). For example, assume B reads. If A also reads immediately, her payoff is 10 if the message is good and -12 if it is bad, implying -1 on average. If A waits, she will read only if the message is good, yielding an expected payoff of 5.

In Example 1, it would be optimal for one person to read immediately and the other to wait, giving a total payoff of 4. Unfortunately, reader B gains by waiting no matter what reader A does, and vice versa. Thus, neither player reads immediately, although the social benefits (that is, benefits to the other player) of an evaluation by either person (+5 on average) outweigh its cost (-1 on average). No one will read a message unless it offers a positive expected personal payoff, and many useful messages will never be read. (Moreover, if effort in evaluations can be chosen when a message is read, it will be insufficient.) Analogously, any John Grisham novel sells well, regardless of initial reviews, but excellent novels by
lesser-known authors rarely become bestsellers. In Example 2, reader B gains more than reader A from a good message, but suffers more from a bad one. The social optimum has A read immediately and B wait, giving a total payoff of 19. In effect, A acts as the king’s taster: if the low-value taster does not get sick, the king can safely eat. Left to herself, however, A will refuse to screen the message for B (a payoff of -1), choosing to wait. In the Nash equilibrium, B reads immediately and A waits, giving a total payoff of only 15. Thus, an imperfect ordering of evaluators occurs even though the quantity of readings is optimal.

Some solutions
In theory, private bargaining could yield the optimal level and order of evaluations in these examples, but it would be unmanageable with many potential readers. Three centralized mechanisms for improving the provision of evaluations include:

Subscription services: Some readers would pay a regular fee to receive the evaluations of individuals who act as professional evaluators. Like wine experts, these evaluators would have an incentive to become skilled at identifying good and bad messages in order to maintain their base of readers.

Transactions-based compensation: This system pays cash (or electronic chits) to those who provide early evaluations. Those who evaluate the most messages would reap a surplus. Those who evaluate least would have to work harder to receive a surplus. Those who evaluate the most messages would be expected to provide a certain number of early evaluations to maintain membership in good standing. If the information produced by the group is substantially useful, then each individual will be motivated to cooperate. This system provides incentives without explicit payments, but may waste resources if low-quality evaluators, like poor suburban cooks, make costly efforts that yield little value. The system might also run into difficulty if there is no clear agreement on the tradeoff between easy and difficult evaluations.

Collaborative filtering may require centralized coordination to ensure the process produces sufficient and informative evaluations. Technology has radically reduced the time and effort necessary to record one’s evaluation, but this does not eliminate the cost of reading bad messages. Without some formal or implicit market system to compensate evaluators, too few evaluations will be produced.

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