

When computer programmers dabble in economics: Buying prepaid lunch vouchers

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Several years ago, the Microsoft cafeterias phased out their prepaid lunch voucher system. Under the new system, you “load up” your security badge with money (either by paying cash at any register or by having the amount deducted from your paycheck) and then swipe your badge at card readers installed at each register. But in the old days, the system operated manually.

Under the old system, you paid \$25 cash for a voucher which, when folded in half, was about the size of a business card. On the card were boxes with various denominations (\$1, 25¢, 10¢, 5¢), and when you bought something with your voucher card, the person at the register used a pen to X out the various boxes to void them. For example, if you bought something for \$3.50, the person at the register would cross off three \$1 boxes and two 25¢ boxes. (And since I know people will ask even though it’s totally irrelevant to the story: Yes, there were provisions for “making change”, for example, if you had four 25¢ boxes remaining and you bought something for 90¢, but they were rarely needed.)

Yes, this system was easily hacked, but nobody did. Partly because the fact that it was so easy to hack removed the challenge, but mostly because we try not to hire dishonest people.

When you bought one of these voucher cards, you receive \$27 in credit for your \$25 prepayment. The security badge payment system doesn’t have this “cash bonus” feature, and when the cafeteria people announced that voucher card system was being phased out, one of my colleagues sat down and, making various assumptions on the time value of money, how much money a typical lunch cost, and possibly even the current price of energy on the spot market for all I know, calculated the optimum number of voucher cards to purchase in order to maximize the benefit from the cash bonus.

As I recall, the calculations determined that seventeen voucher cards was the optimum.

[Raymond is currently away; this message was pre-recorded.]

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