

# Matching government surplus property with interested buyers

*Customized emails reduced no-bids and increased overall revenue on [gsaauctions.gov](https://gsaauctions.gov)*

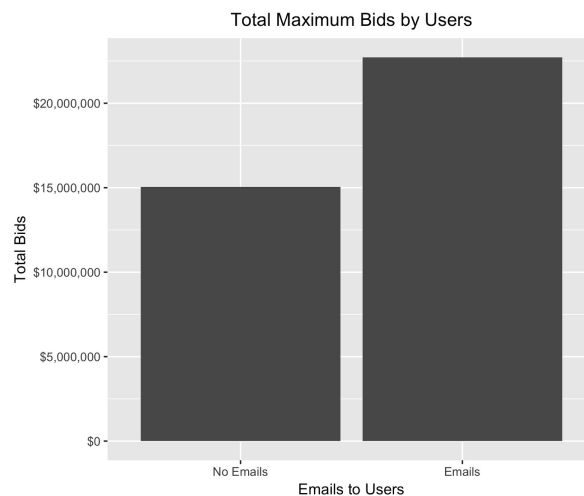
**Agency Objective** Reduce the number of items on GSA Auctions that receive no bids.

**Background** The General Services Administration (GSA) provides services to other government agencies, including assistance with the disposition of surplus property. One of the mechanisms used to sell agency surplus to the public is an online auction platform known as GSA Auctions. Some items placed on GSA Auctions receive many bids; other items end a timed auction with no bids. When an item receives no bids, it must be disposed of in some other way, adding costs to the surplus disposition process.

**Program Change** In order to decrease the number of items ending their auction with no bids, GSA designed an outreach strategy that included an alert email to registered users of GSA Auctions who had purchased items in the past and an algorithm matching potentially interested buyers to items for sale. The algorithm ran each morning, selecting auctions ending that day but had not yet received any bids. For those auctions, potential buyers were found from the roster of registered users who had purchased similar items in the past. The emails would notify potential buyers that an item of potential interest was available and that the current price was low or zero.

**Evaluation Methods** To evaluate the effectiveness of this method of outreach, half

of the potential buyers of a given no-bid auction lot were randomly assigned to be sent notification emails (the treatment group) and the other half of the potential buyers (the control group) were not sent emails.<sup>1</sup> All bids for the items in that lot were recorded. OES compared the maximum bid made by each emailed user for each lot to the maximum bids made by the control group in that lot to assess the effect of the new program. This experimental approach to learning about the effectiveness of emails on bidding began on Sept 21, 2015. The data analyzed here come from the Sept 21, 2015 to October 3, 2017 period.



<sup>1</sup> There was a limit on the number of emails registered users could receive. So for instance, if User A received an email yesterday because they popped up in the algorithm, then they were taken out of the experimental population for the next day although they could have received another email at another time over the next months.



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**Results** The figure shows that the treatment group maximum bid amount was about \$7,670,000 more in total than the control group during this period (in which the experiment sent approximately 800,000 emails to approximately 37,000 users across 7120 lots).<sup>2</sup> Within lot, the treatment group paid more, on average than the control group 98% of the time. OES estimated the effect of the emails on participation in the targeted auction (i.e. bidding more than zero) to be .08 percentage points (approximately .05 % of the control group bid and about .13 % of the treatment group bid) ( 95% CI [.06,.09],  $p < .001$ ). The effect of the program on maximum bid amount was about \$20 on average but this difference was not precisely estimated given the huge number of zeros and the few extremely large bids: the maximum bids ranged from \$0 to \$2.6 million, 50% of the non-zero bids were between about \$10 and \$500 with only 10% more than \$11,000 (95% CI [-17,67],  $p=.3$ ). Although this research design had little information available for statistical tests of the average or even total differences, we can definitely reject the null hypothesis that the treatment group bid the same amount as the control group if we compare the rank of the treatment group bids

to the rank of the control bids within lot ( $p < .001$ ).

**Conclusion** The GSA Auction experiment increased participation (by more than double) in the auction system for items that tend to receive no bids (thereby generating cost to Federal government to further dispose of the items) and even increased the amount bid on any given lot as well, potentially because of notifying interested buyers that an auction would soon be closing.

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<sup>2</sup> Neither the difference in mean maximum bid amounts nor the difference in total maximum bid amounts was statistically distinguishable from zero even though the differences were substantively large.

