Summary of Findings for Non-academic Audience from the Paper "Imperfect Competition in Online Auctions" by A. Maslov and J. A. Schwartz.

E-commerce has substantially transformed ordinary retail markets. It also influenced the evolution of selling mechanisms and their contextual applications. Sealed-bid auctions were prevalent before the advent of the Internet, but have lost their popularity due to a drastic improvement in the communication technologies and reduction of search costs for buyers.

One of the important attributes of e-commerce is the ease of trading. Preg TJ[(e)-4 (m)-3.3 (a)-3.9 (y b)10.4 (e)-3
hoosing among several selling mechanisms is a complex task by itself, which is further exacerbated
y the complexity of buyers' behavior when faced with a choice to buy the same item from different
echanisms. eBay is an ostensible example of such market. There are four different options to list an
em on eBay: posted price, second-price ascending auction, auction with a buy-it-now price and best
ffer, which is effectively a sealed-bid first-price auction.

he model developed in this paper covers one story exactly and another story approximately. The
xact story has a centralized auction taking place at some specified date. Prior to this date, seller
rrives and selects reserve price

and then seller arrives, observes , and selects reserve price .

Each buyer submits a sealed bid. The allocation is according to the seller-offer double auction, which works as follows. Make a single list, sorting the reserve prices and bids from highest to lowest, with ties ordered randomly. Set price equal to the reserve price or bid in the lowest position on this list. All sellers amongst the lowest positions will sell a unit and receive dollars; all buyers with values in the remaining 2 higher positions will purchase a unit and pay dollars. The remaining sellers and buyers do not transact. This means that the price paid by each winning buyer is set by either a losing buyer or a seller, but not his own bid. Thus, every buyer has a dominant strategy to bid his value so that he wins a unit if and only if profitable to do so. But a seller can both sell a unit and set the price, distorting his incentive to set a reserve at his cost.

The approximate story is that the selling procedure is decentralized. Sellers arrive sequentially and set reserve prices as before, but this time each seller activates a separate ascending price auction. Once all of the reserve prices are chosen, the auctions begin, and buyers can bid in any of the auctions. The auctions end when some period of time passes with no further bids. Peters and Severinov (2006) have treated a similar environment in which sellers choose reserve prices simultaneously and have independent private costs. They further assumed a finite grid of allowable prices in the auctions coinciding with the supports that the sellers and buyers draw their costs and values from. A key result in Peters and Severinov (2006) is that there exists a perfect Bayesian equilibrium in the bidding game, in which each buyer bids minimally as needed, only bidding in the auction with the lowest price whenever that buyer is not already the highest bidder in one of the auctions and that the lowest price is less than his value. Such a strategy could be implemented by a computerized algorithm or machine proxy. If all buyers used it and if the bid increments became finer and finer, the selling procedure would be strategically and outcome equivalent to the seller-offer double auction described above, in the same way that Vickrey (1961) found strategic equivalence between a single-unit second-price auction and an ascending price auction in a private-values setting.

Previous research on the design of auctions has shown that when there are many sellers and buyers in online markets, the reserve prices set by the sellers are equal to their marginal costs. In contrast to sealed-bid auctions characterized by simultaneous choice of reserve prices, it is unlikely that in online markets sellers choose reserve prices simultaneously. Rather, a seller who comes to the market first, chooses a reserve price knowing that another seller will arrive after him. In principle, sellers may have a good estimate of how many competitors to expect. Such a strategic environment could be seen as a Stackelberg model with reserve prices as the choice variable – one of the three baseline models of competition in industrial organization, where one firm takes the lead by arriving to the market first.