

A NEW PERSPECTIVE ON LOTTERY GAMES

PART TWO

This perspective may be “new” in the sense of “newcomer.” I hope it is useful to those who are overly familiar with the games, as well as those new to the lottery industry.

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The first part of this article, in the March/April issue of *Insights*, described lottery draw games as a kind of performance. This second part describes instant games as manufactured products.

The most salient feature of this kind of game is the fact that every ticket already has its final value when it is created. Winning or losing is just a matter of buying a winning or losing item, from among many that look the same. Another way to look at this key feature is to say that since the value is already predetermined, that value can be revealed instantly whenever the purchaser gets control of the ticket. The instant games category is complementary to draw games; the term “instant” presents predetermination as a user benefit.

SECURITY AND INTEGRITY

The most familiar instant games are printed on paper. A game typically comprises millions of individual tickets. The value of a ticket is revealed by scratching off a protective coating. Contemporary instant tickets include many features designed to assure that the value of the ticket is revealed only to its buyer, and not to others who may handle it as it makes its way from warehouse, to retail store, to display, to the hands of the buyer. Those who are lucky enough to get a guided tour through one of the few manufacturing facilities that produce these games can learn more about these “hiding” features. The design of the printed products also makes it difficult to alter the apparent value of the ticket, once that value is revealed. These design features have evolved over time, in response to frauds attempted by various parties.

With instant games, as with draw games, the most fundamental threat

to integrity comes from insider fraud. Knowledge of which instant tickets are most valuable is deliberately obscured, even to all those involved in manufacturing the games. The manufacturing process is heavily computerized, and employs complex algorithms that precisely control the aggregate value of all the tickets in a game, while maintaining uncertainty about the individual value of any ticket. Since these algorithms are secret in any case, there is no need for them to be simple or easily explained. This is in marked contrast to draw games, where the rules determining value must be simple enough to explain to a player. The ability to employ value-determining rules of great complexity allows the designer of an instant game to have practically complete control over the prize structure of the game. There can be few, or many, value levels of prizes, as preferred. Within each value level, the count of prizes can be specified as desired.

This is not to say that the value of the ticket appears to the player to be arbitrarily determined. Rather, the game rules as explained to the player provide a story about “how to tell what it’s worth,” and the scratched-off ticket displays artwork that is consistent with the value of the ticket according to this story. The rules as explained to the player can be simple and/or entertaining, and essentially unrelated to the rules implemented during the manufacturing process.

While the application of hidden rules to populate a file of outcomes is integral to the manufacture of printed instant games, an outcome file can be packaged, sold and revealed to players piecewise in other ways than by printing tickets. The presentation can be purely electronic, as is the case with video lottery terminals (VLTs) and online instants. “Online” here can be in the 1980s

sense of “served through a dedicated lottery retail terminal,” or it can be online in the modern sense of “served to your device over the web.” For clarity, I will conform to custom by calling the former online instants and the latter e-instants.

Online instants in the old sense generally display the wager result, obtained from a file, in a form that suits the special printer used to produce lottery draw game tickets. This is a simple printer. Still, the outcomes can be represented in ways corresponding to a great variety of games. It is also possible to represent the instant outcome as resulting from matching with an independent draw game wager. This is used to position the instant game as an add-on to a draw game.

The electronic presentation of instant outcomes to the player can take a huge, perhaps unlimited, variety of forms. VLTs are hard to tell from slot machines. Many e-instants borrow the graphical format of successful printed instants. The draw game Keno can be represented in an e-instant, though it can also be implemented in instant form as a “single player vs. lottery” draw game.

INTENSITY OF PLAY AND RETURN TO PLAYER

The creation of an instant game results file is not, in principle, much different than running the pick and draw of a draw game repeatedly, and creating a file recording the sequence of outcomes. We could imagine,

for instance, creating an e-instant Keno game by using a random number generator to create a player pick, then the lottery draw, and recording the resulting prize (or non-win), one result at a time, to populate a file of millions of results. How would playing against this file differ from playing five-minute Keno in a live setting, for a player who chooses to let a random number generator choose quick picks, rather than selecting the numbers herself? A key difference is that the instant Keno player can play as fast as she wants, rather than waiting for the draw. There is no schedule to moderate the intensity of play.

It is well accepted that the more intensely a player plays, the more generously the player must be rewarded in order to sustain engagement. The faster the results come, the more encouraging they need to be. Consequently, an instant Keno game may earn more for its provider if it pays out more, and/or more frequently, than the standard five-minute game. The metric that represents the lottery's cost in providing this experience is the Return to Player (RTP): the prize cost as a percentage of the cost of wagers. In Michigan, where both Club Keno and instant Kenos thrive, the instant games return upwards of 85 percent of spending to the player, while Club Keno returns about 65 percent.

An e-instant game that has a completely flexible prize structure, not tied to a draw game, can return 95 percent or more of the money wagered to the player as prizes. With such games, as with VLTs, the top line sales dollar is largely meaningless, and reporting is based instead on Net Win or Gross Gaming Revenue (GGR) – that is, the value of wagers minus prizes.

PRICE AND PACKAGING

In printed instant games, the intensity of play is reflected not so much in frequency of play as in the dollars put at risk with each play – the price of the ticket. Tickets priced at \$1 return the least to the player; tickets priced at \$20 or more the most. The rate of return to player is significantly lower for printed games than for e-instants. This is because the printed games have a higher cost of sales. It is worthwhile to understand this in some detail.

The retailers who deal with the player typically are paid a percentage of the sales price of each ticket; they may be paid at a rate that reflects their labor in redeeming winning tickets, or they may be paid for redemptions separately. The costs of handling physical inventory drive those who sell these games to emphasize the higher price points: Selling 100 \$20 tickets might earn the retailer about five percent of \$2,000, or \$100; redeeming one-third of these as winners might involve about 30 player transactions. In contrast, selling 100 \$1 tickets would earn the retailer \$5, and might well cause 25 redemption transactions. From the retailer's point of view, the efficiency of the premium-priced games is clear.

The lottery pays not only the retailer, but also the manufacturer of printed tickets. Tickets that sell for \$10 apiece allow the printer to excel in crafting an attractive product, while tickets that sell for \$1 invite only efficiency. Premium-priced tickets give the printer scope to innovate and differentiate.

Finally, the lottery pays the provider of the computing infrastructure, usually in a way tied to sales volume. It is thus not uncommon for lotteries to bear a direct cost of sales on printed instant games that amounts to 10 percent of sales. A game that returned 90 percent of sales to the player and incurred a 10 percent cost of sales would earn the lottery exactly nothing. In practice, most lotteries find the marginal return more sustainable if the maximum RTP is below 80 percent. At an 80 percent RTP, with 10 percent cost of sales, the lottery earns as much from the transaction as its partners-in-sales. With higher RTP, the game could be said to operate more for the benefit of the partners-in-sales than for the state.

Lowering the cost of sales is one of the main benefits of "going

online" in the modern sense of e-instants. In e-commerce, the enterprise is not burdened with the logistics of handling a physical product, and prize redemptions can be handled over the e-platform as well. Consequently, intense play can be supported by speed, at any cost-per-wager. Offering wagers at less than \$1 each is thus practical.

Printed instant games are packaged, for practical distribution, in packs of certain size. Retailers, in effect, buy packs of tickets from the lottery, usually at a cost of hundreds of dollars per pack. Although the value of any particular ticket is unknown and can be zero, the law of large numbers (and certain practices of the manufacturer) make it possible to guarantee that the pack has at least a certain aggregate value. Thus the retailer may (for instance) buy a pack of tickets for \$500, with a guarantee that the value of the individual tickets totals at least \$300. The practice of making some guarantees about the properties of a pack of tickets evolved to accommodate retailers.

The existence of this minimum value guarantee is known to some players. These players may prefer to buy whole packs from the retailer, choosing to engage at a very intense level: "If I spend \$250 on some assortment of tickets, I could lose it all, but if I spend \$500 on a pack of this game, I will not lose more than \$200 and I could still win big!"

In the future development of e-instants, it may be worthwhile to consider selling wagers in virtual packs – high-priced aggregates with some guaranteed properties.

TOP PRIZES

Most of the growth in lottery GGR in this century has come from the instant game category. The appeal of instant games seems to depend less on offering top prizes of fantastic size than on delivering wins of an engaging size, with an unpredictable but not too sparse frequency. Still, the opportunity to play for a really big prize is a proven attraction. In printed instant games, the ability to support a big top prize depends entirely on the size of the print run. A game with tens of millions of tickets can distribute the cost of a big top prize very lightly.

Some VLTs and online instants have also provided big top prizes by distributing the cost of that prize widely, in the form of wide-area progressive (WAP) top prizes. The wide area part: Multiple instances of these electronically-served instant games each have "a shot at the big prize" as a defined prize level. The big prize pot resides on a server somewhere, and a shot at the big prize lets each individual game try to win it. The progressive part: Within the prize structure of each participating game, some dollar value is allocated to the shot at the big prize. That value is added to the pre-existing value of the big prize pot each time one of the wide-area games tries for it. The top prize then grows over time, with a speed that depends on the intensity of play over the whole wide area. Not only does this scheme provide a big top prize, it provides some of the sociality that is a valuable property of draw games.

SUMMARY

Instant games hide prize values, determined during manufacture, to be revealed only to their eventual purchaser. Instant games support intense player engagement with constant availability, and return a relatively high proportion of the wager cost as frequently-won prizes. Instant games printed on paper have defined the category, and have been responsible for most recent growth of the lottery business. Electronic presentation greatly expands the variety of forms the games can take, and reduces the cost of both sales and prize redemptions. ■