

A NEW PERSPECTIVE ON LOTTERY GAMES

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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Our trades and professions have specialized language. Words and ways of speaking are acquired along with experience in the trade; fluency in their use is part of (and can be mistaken for) proficiency. Sometimes, the specialized usage may be adopted in the culture at large, as a figure of speech. Our language shows the influence (however transient) of our trades.

Consider the expression “the project developed a head of steam.” This construction clearly evokes the early industrial revolution, a time before the adoption of the internal combustion engine, when boiling water to make superheated steam was a precondition to big movement. I speculate that few contemporary users of the phrase appreciate this, and instead using it to convey a notion of momentum – a property of things that are already moving. The “instant on” property of our contemporary systems makes waiting for a head of steam unrelatable.

Just as “head of steam” dates to decades of the late 19th century, when steam power moved most transport, the language of the lottery trade clearly originates in one decade of the twentieth century, namely, the 1980s. At that time, “online” and “instant” unambiguously described the whole universe of lottery games. The terms persist in our lottery usage and documentation in their 1980s senses, while online at least has come to mean something completely different. This can be a cause of confusion, especially to those new to the industry or empowered

to regulate it. Further, I suggest that using these terms may reflect an unexamined attitude toward what they signify. My purpose here is to review, in two brief articles, the range of lottery games now available, how they have developed along with popular information technology, and where they might be headed in the near future.

ONLINE IN THE 1980S

I distinctly remember making the transition from typewriter to word processor around 1980. Because I was a Ph.D. candidate, I had the privilege of using a teletype (the dumbest of dumb terminals) to communicate from my lab in Indianapolis to Indiana University’s mainframe computer in Bloomington, where the word processing software resided. I was such a terrible typist that this was a big advantage for me, except when a thunderstorm obliged the computing center to shut down all remote communications. Being online in 1980 meant being connected, by means of a terminal, a modem, a telephone and some wires, to a central computer where all the information and computing power for the whole university came together.

By 1990, the picture was different. My small private lab had its own microcomputers, each sufficient for and dedicated to our needs. I still used a modem and telephone line to connect to big remote resources, like the Library of Congress. Peer-to-peer networking among dispersed, independent microcomputers, and using these for communication and

commerce, did not become a “thing” until the mid-1990s. Throughout the 1980s, being online meant being among the “many” in a many-to-one system, and communicating with that central “one” according to its own conventions and forms.

THE ONLINE LOTTERY

The signature game of the 20th century lottery was Lotto. In its classic form, Lotto (6/49) offers very long odds (about 1 in 13 million) at a very big prize (\$1 million or more). Only lottery organizations that could muster a large dollar volume of play could afford to risk paying the big prize, so being able to offer the game successfully depended on selling tickets at a certain scale. It was partly on this basis that state lotteries were created as monopolies.

The arrival of commercial computing in the last quarter of the century made it potentially practical to sell and administer Lotto over a big geographic area. This was an opportunity (and a challenge) that arrived at roughly the same time as the readiness of state legislatures to consider lotteries as sources of funding.

ONLY RECENTLY, AUTHORITIES HAVE AGREED THAT SECURITY AGAINST COUNTERFEITING CAN BE MAINTAINED WITHOUT RELYING ON SPECIAL- ISSUE PAPER AND SINGLE-PURPOSE PRINTERS.

As North American lotteries were established in the 1980s, the central “one” of a state lottery was the resource that kept track of all the wagers made in a big game like Lotto. The “many” were the lottery terminals, found where Lotto tickets were sold. Only by transacting with the central resource through one of these specialized terminals could a ticket for the Lotto game be issued. Playing the Lotto game thus depended on finding one of these terminals that was connected to the central computer.

Although the traditional Numbers game (1/10, 3x) was tenable on a smaller scale than Lotto, it was also transacted through these terminals. The fundamental business system priority of the 1980s lottery was administration of Lotto and Numbers games online.

Just as tree sap traps foraging insects, business-requirements documents capture issues of the moment. “Online games” became the name for the category of games that were to be implemented on the central system. And just as tree sap fossilizes to amber, preserving ancient insects, business-requirements documents, passed from one generation to another, preserve old nomenclature. Thus we find ourselves using the term online games, in the sense that was current four decades ago.

The online games have other distinguishing features that could be used to name the category. Most significantly, the outcome of every wager is determined by a drawing – that is, by the act of the lottery choosing symbols from a defined set, in a defined way. This continues unchanged, even while the meaning of online changes. A better name for this important category is draw games.

THE NOT-ONLINE LOTTERY

What lottery games could be sold and played in the 1980s, even if the central system was unavailable? Games that do not depend on a drawing. How can we tell whether a ticket of this game is a winner, if there is no drawing? The ticket is a manufactured product that is determined to be a winner or not, when it is created. The value of the ticket is concealed from all who handle it. A player can reveal the value at any time after it is purchased.

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.

I will discuss instant games in another

article. What follows here deals with draw games, and the way evolving information technology affects the practice of selling draw games, particularly with regard to security, integrity and sociality.

SECURITY

The lottery ticket, printed on paper, is always proof of a transaction. Sometimes it is a bearer instrument worth money. Winning tickets can be worth enough money to motivate counterfeiters. Consequently, lottery systems have developed features to defeat counterfeiters.

Among the most basic anti-counterfeiting measures, lotteries have required that tickets be printed on special lottery-issued paper, by special lottery-issued printers.

Having all wagers registered and uniquely identified on a central computing system was a big security benefit delivered in the 1980s. This made it (in principle) impossible for a “winning” ticket to be constructed that did not correspond to a wager duly registered, before the drawing, in the system. The opportunity for counterfeiting was thus reduced to producing a fake ticket with all the features of a genuine ticket. Among these features was a unique identifier assigned to the wager by the central system, and printed in legible form on the ticket issued to the player. To guard against a fake ticket that duplicated all the information on the genuine ticket, lotteries relied on the security provided by the special-issue paper and printer.

For a retailer, the presence of a special lottery printer is evidence of a level of trust from the lottery. However, the benefit of this endorsement is weighed against the inconvenience of having special-purpose hardware and supplies at the point of sale. As the point of sale has become a focus of efforts to improve the efficiency of retail operation, the special lottery requirements have been regarded as more of a burden. Consequently, lotteries have re-examined their reliance on special hardware and supplies. Only recently, authorities have agreed that security against counterfeiting can be maintained without relying on special-issue paper and single-purpose printers.

As more lotteries adopt internet-based transactions (iLottery), the digital record becomes the definitive proof of the transaction. The physical ticket may be eliminated altogether. However, the lack of a physical bearer instrument may create new issues regarding ownership of a winning wager. Account-based wagering may rub hard against the custom of anonymous lottery play. To the degree that players like anonymity, there may be demand to retain the old paper tickets, or to provide digital solutions that preserve anonymity.

GAMES THAT CAN DRAW PEOPLE TOGETHER INVOKE COMPLEX SOCIAL DYNAMICS (INCLUDING PEER EXPECTATIONS, AND WHAT IS CURRENTLY CALLED FEAR OF MISSING OUT).

Also, to the degree that players enjoy the physical reality of paper tickets and paper money, the old-school printed ticket works very well. And doesn't the willingness of our current players to transact with us exclusively in cash suggest that they do like handling these things?

INTEGRITY

Lotteries need the confidence of players that the tickets they buy all have the same likelihood to win, however small that likelihood may be. Draw games invite the player to choose any combination of symbols allowed within the rules of the game.

The lottery drawing that determines outcomes is in principle a public event. The fact that every one of a multitude of players witnesses the same draw outcome supports public confidence. If players believe that the lottery draw conforms to the rules of the game, they have every reason to accept the outcome.

Measures taken to thwart any potential bias, such as weighing little balls that represent each number, contribute to a view-worthy spectacle. Lottery drawings once drew large viewing audiences on television. Viewer taste has changed, however, and in the 21st century most lottery drawings are done by lottery personnel using random number generators, rather than ball sets, and witnessed by contracted auditors rather than by a television audience.

The reliance on software and live auditors to ensure integrity of lottery drawings has been thwarted by corrupt insiders. Following the 2016 conviction of Eddie Tipton, formerly Director of Security for the Multi-State Lottery Association, for multiple felonies, lotteries have examined their practices, and in some cases changed their procedures. There has not been a general movement to revert to physical ball drawings. Rather, lotteries aim to increase preventative measures around drawing software, and improve the auditability of the process to detect irregularities.

SOCIALITY

Although security and integrity are often discussed, the sociality of draw games may be an unfamiliar concept. By sociality, I mean the capacity of a game to draw people together. Games that can draw people together invoke complex social dynamics (including peer expectations, and what is currently called Fear of Missing Out). These social dynamics support continued play, and are consequently good for lottery business.

When draw games were first introduced, they had high sociality – large numbers of people tuned in to watch the spectacle of the live drawings on television. The same games now have low sociality. What has been lost is more than entertainment value – one person can be entertained, or not. What has been lost includes the shared experience – the awareness that all around the state (or country), people were seeing the same spectacle in the same instant, and so in some way participating in it. This mass participation (even as a passive viewer) was once shared with televised sports. Spectator sports continue to thrive on sociality, inspiring countless conversations every week, based on the assumption that we have all viewed the same spectacle. But contemporary lottery does not make good television.

In the 21st century, though, sociality does not depend on broadcast television. Lottery games may be able to recover sociality, if they can draw people together where they spend their time – namely, online in the modern sense. In the old-school lottery game, the lottery drawing was a “one” spectacle viewed by the “many” – the players – each of whom, generally, was playing independently of the others.

Is it possible to structure new-school lottery games that invite cooperative or competitive play? I believe that this is an area of great promise.

Consider how Jackpocket, a kind of lottery concierge or courier service, is leveraging modern communications standards to enable pooled play of old-school draw games on a massive scale. Once subscribed to the service, players can effortlessly join pools administered by Jackpocket and comprising thousands of wagers. This could support a sense of cooperative play. It could enable instant reporting of success at the pool level, instead of just at the individual wager level. And if there are multiple pools, these are potentially competitors. Cooperation and competition on a grand scale could draw players together, even for a last-century lotto game.

If a concierge service can accomplish this, it may pay lotteries to think more deeply about how a game could be built to thrive on sociality in the current century. Building opportunities for cooperation and competition into the structure of the game is key.

SUMMARY

Draw games are live performances, where the lottery has the opportunity to build trust by following its own rules. This live aspect distinguishes draw games from instant games. The lottery drawing is both a point of vulnerability (with regard to integrity) and an opportunity to build sociality. Lotteries could make draw game transactions much more convenient by fitting in with changing practices at retail. Still, players may appreciate having a physical ticket to symbolize their stake in the lottery's next drawing. ■

LOTTERIES COULD MAKE DRAW GAME TRANSACTIONS MUCH MORE CONVENIENT BY FITTING IN WITH CHANGING PRACTICES AT RETAIL.