



Chuck Strutt

Executive Director,
Multi-State Lottery
Association (MUSL)

Paul Jason, PGRI: *MUSL performs such a wide variety of services for its members. Is there a core competency that is most fundamental to its mission?*

Chuck Strutt: MUSL has three core tasks; finance and accounting, drawings, and system security. MUSL handles the finances and accounting for the multi-state games; moving funds around to manage the payment of prizes and managing prize reserves. Basically, it involves managing the assets and operations of multi-state games. The skillsets acquired from working for the lotteries have subsequently been leveraged to help the lotteries members in related areas, such as RFP's and vendor contracts,

PGRI Introduction: *It was in 1987 that seven U.S. lottery directors decided to form an association with the purpose of creating and operating multi-jurisdictional games. Rebecca Hargrove, CEO of the Tennessee Lottery, Senior Vice President of the World Lottery Association, was among those seven lottery directors, and is the only one of those seven still active in the industry today. Chuck Strutt was the first employee of MUSL and, 27 years later, continues today as the executive director of MUSL. Tickets for the very first multi-state game in the U.S., Lotto*America, went on sale in 1988.*

*Lotto*America became Powerball in 1992 and Powerball became the most popular lottery game in the U.S, with sales of \$5.766 billion in 2013, growing from sales of \$120 million in its first year of operation. Since it began, MUSL games have brought in sales of over \$57 billion for its member state lotteries.*

MUSL is now steeped in the business of implementing the biggest game launch in U.S. history: Monopoly Millionaires' Club which goes on sale on October 19. Chuck Strutt and MUSL are well-known to everyone in the U.S. lottery industry. But, while we all have an idea about what MUSL does, I wanted to get a more precise picture of its core competencies and range of services. The side-bar article to the right explains it in some detail. And following, Chuck Strutt further rounds out the picture of the MUSL mission to serve its members.

where we have to ensure that any government review will find that we act strictly in accordance with state laws and regulations. MUSL records and reports sales and winner information, including the creation of a report generator that allows the lotteries to review sales data in a number of ways for daily sales comparisons, jackpot comparison and per capita comparisons.

Second, MUSL also conducts draws for the games, including hard rubber ball draws, Ping-Pong draws, RNG's and even pachinko draws. Eventually, this led to performing draws in state lottery games. MUSL conducts multiple draws each day, every day of the year; over 4,600 draws per year.

Finally, MUSL develops logical and physical security standards and conducts reviews to help all members feel comfortable that their partners in the games are operating from the same set of standards. That has led us to work with the lotteries to identify common standards and minimum standards for a secure system. These are sometimes referred to as "audits" but, while that is certainly a part of the process,

MUSL's goal is to maintain security and integrity for lottery games. That involves three areas; working to identify existing and developing threats and creating standards to guard against those threats; setting up prize reserves to protect against player perceptions of problems; and, finally, to review sites to make sure that all have the best practices in place.

A fourth task that is becoming more important, and has probably reached the status of a core task, is to evaluate and model game concepts in a way to predict performance. Beside the math, MUSL is in a unique position to compare player purchase experience for a variety of games in a variety of states over a long period of time.

The responsibility to manage the large sums of money involved with Powerball and the other games would seem to be mission critical with a zero tolerance for errors of any kind.

C. Strutt: We do have a unique fiduciary responsibility to keep the funds safe. Included in that is the responsibility to invest that money to generate additional income for the benefit of our member lotteries and the

About The Multi-State Lottery Association (MUSL)

The Multi-State Lottery Association (MUSL) is a non-profit, government-benefit association owned and operated by its 33 member lotteries. Each MUSL member offers one or more of the games administered by MUSL. All profits are retained by the individual lotteries and are used to fund projects approved by the legislature authorizing each lottery.

Formed in 1987, MUSL's first multi-state game was "Lotto*America." The game ran four years, in two versions, before being replaced by "Powerball." On April 22, 1992, the first "Powerball" drawing was held. Since then, "Powerball" has become the number one lottery game in the United States. Prior to January of 2010, U.S. lotteries could sell either Powerball or Mega Millions, but had to choose between the two because they could not sell both games. In 2010, MUSL began to license the sale of Powerball tickets in the twelve Mega Millions states; and the Mega Millions Consortium began to license the sale of Mega Millions in the MUSL states. Powerball and Mega Millions are now both sold in all forty five U.S. lottery jurisdictions, including D.C. and U.S. Virgin Islands.

MUSL coordinates with the consortium of twelve Mega Millions lotteries concerning their participation in Powerball, and with MUSL member lotteries regarding the operation of Mega Millions. In addition to Powerball, MUSL facilitates 2by2, Hot Lotto, Wild Card 2, MegaHits, and All or Nothing. MUSL also offers the new Monopoly Millionaires' Club, set to launch on October 20.

MUSL provides a variety of other services for lotteries, including:

- Game design and development programs: MUSL provides its programs, spreadsheets, and expertise to member lotteries that need assistance or an additional method to calculate or confirm odds, coverage, cumulative coverage, and sample game runs for predicting sales level, average prize amounts, and overall game performance and outcomes.
- Assist members in establishing processes to operate state games at set prize payout levels.
- Management of game finances: this includes the purchase for members, by competitive bid, of securities and insurance annuities required to fund the purchase of member in-state lottery games.
- Internet and Web Site Services: At its actual costs, MUSL provides e-mail addresses, Internet access, website, database and email list hosting, and related support for member lotteries. MUSL provides space on its hosting infrastructure and can provide basic assistance for member lotteries to establish their own website. Sites currently hosted at MUSL are: AR, CT, IA, ID, KS, NC (2), TN (2), VT.
- MUSL updates jackpot information after a drawing for telephone-controlled electronic billboards used by member lotteries and reports information to other non-electronic sign vendors. Currently, approximately 700 signs are updated by MUSL in 29 jurisdictions (AZ, AR, CA, CO, CT, DE, FL, IA, ID, IL, KS, KY, LA, MD, MI,

MO, NC, NH,
NJ, NM, NY,
OH, OK, PA, RI,
SC, TN, VA, and WV).

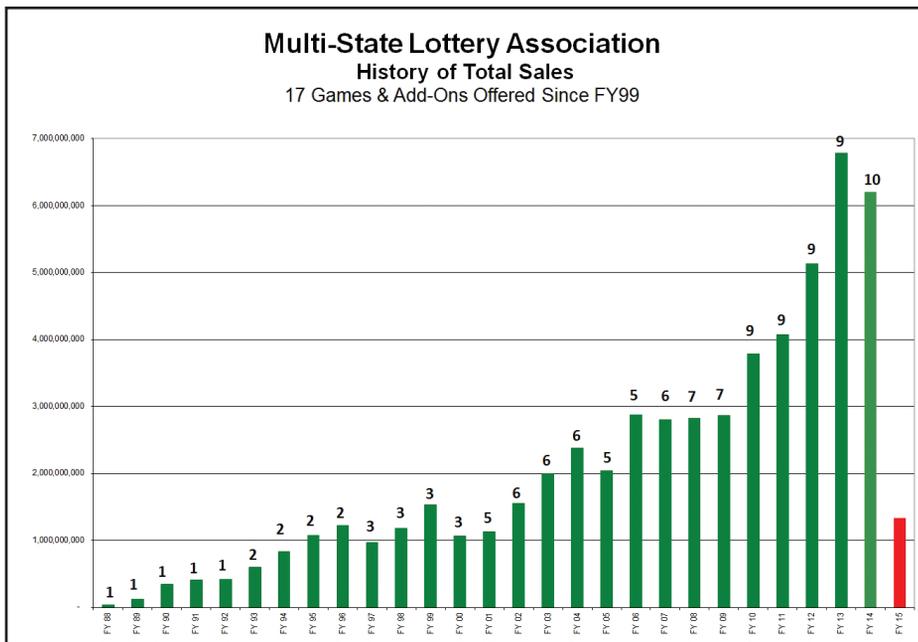


- Security & Computer System Consulting: MUSL provides its members with expertise in the evaluation of computer and physical system security products and processes; MUSL participates in site visits and review of system vendors and in employment interviews for lotteries hiring computer security personnel; and assists in the design and programming of firewalls and routers.
- Player Information: MUSL assists in the preparation of complex individual reports and graphs for lotteries which are provided to players.
- MUSL sends out news items and Grand Prize estimate sheets to any person at the request of a member lottery.
- MUSL provides production, up-linking, and backups of drawings
- MUSL will work with a member lottery to develop a binder of contact information and game design and procedures so that the member's drawings can be conducted in the event of an emergency using either ball machines or an RNG (as agreed upon by the member lottery).
- MUSL develops and builds (at cost) a true-RNG draw machine for use in lottery draws as requested by a member lottery. One or more systems are currently in use in AR, AZ, CO, CT, IA, ID, IN, KS, ME, MT, NE, NH, OK, OR, RI, SD, VT, and WI.
- Web Scan. MUSL will scan, on a regular basis at the direction of the lottery, a lottery's web site to identify vulnerabilities.
- MUSL develops and shares information technology and security standards
- MUSL assists with the coordination of common promotions and advertisements, coordination of public relations, and emergency back-drawing sites for lottery games.

MUSL also hosts the Powerball web site and the websites for more than a dozen U.S. lotteries. The Powerball drawings are held in Florida. MUSL's other draw games are conducted in Iowa. MUSL games operate under the same core game rules in each jurisdiction; however, each lottery is free to vary rules pertaining to such things as purchase age, the claim period, and some validation processes. The Powerball web site averages over 350,000 page-views per day (over 10.5 million monthly). MUSL provides these services to the lotteries at no cost. MUSL earns its income from non-game sources such as earnings on its accounts, bond swaps, and licensing of its trademarks. MUSL also owns the patents and trademarks involved in its operations, holding them for the benefit of its members.

MUSL's director, Chuck Strutt, was the association's first employee in 1987. MUSL headquarters and staff of 12 full-time employees are located in Urbandale, Iowa.

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a local flavor to their national games like Powerball and Mega Millions. Look at the fabulous “California Dreaming” campaign that won most of the Batches awards last year. The Monopoly Millionaires’ Club will try to duplicate the great emotional feeling on a national level with its introductory ad. In fact, one of the benefits of the Monopoly Millionaires’ Club project was to clearly show the value of a cooperative effort. The Powerball group has already agreed to develop funding for national production of advertising and promotion. This gives every lottery the ability to produce high quality campaigns and can free up money and effort for the promotion of purely local games.

So, working cooperatively to promote national games can also benefit regional and local games?

C. Strutt: Yes, but there are other audiences that we need to reach. Local games will always have their own appeal. Big jackpots have universal appeal and we will want to continue to promote that, and to create a wider variety of “hope and dream—change your life” story narratives. But we can also focus on brand messaging that reaches out to audiences at both the national and local level. We also need to appeal to different consumer groups that are defined not by geography but by other criteria, like play style, lifestyle, technological and social media aptitudes, and so on.

Monopoly Millionaires’ Club is a national game with advertising, promotion, and TV Game Show that appeals to a national audience. Yet it has features that appeal on a local level as well.

C. Strutt: There are lots of winners. Instead of one winner from one state, or a small number of winners from a small number of states, there will be lots of winners distributed throughout the country and residing in all participating states. That alone connects Monopoly Millionaires’ Club to local markets, gives it a local feeling. Then there are three ways to become a millionaire, creating a play experience that is quite dif-

ferent from Powerball and Mega Millions. That connects Monopoly Millionaires’ Club to a broader demographic and play-style profile, bringing in new consumer groups. Going forward, new game designs will need to include even more options to appeal to a wider variety of play styles. In effect, game design needs to become flexible and customizable to differentiate markets by both geography and consumer groups with different play-styles, interests, and lifestyles. For example, instead of the lottery setting eight or nine cash prize levels, you could have literally hundreds of prize levels of cash and merchandise and experiences; whatever the player wants. Combine that with flexibility in any number of other game attributes, and the players are given the tools to design their own unique game.

Theoretically, couldn’t the best of both worlds be combined? Games that are national in scope, that leverage the economies of scale that come from collaboration, combined with the flexibility to customize for local markets. Providing the players with multiple options to design their own play experience gets us closer and closer to the market segment of one.

C. Strutt: Marketers sometimes focus on “dominant buying motive.” It certainly is not illogical to try to appeal to what one thinks is the most popular reason for buying a product or behaving in a certain way. We clearly do need to have those basic products in the mix. But today’s reality is that even the smallest markets can be easily reached. The Internet has brought down the barriers that made reaching small segments too expensive. A game like Monopoly Millionaires’ Club takes a step in the right direction. It combines a well-known brand with a broad spectrum of appeal. The U.S. market for lottery products exceeds \$70 billion. That is plenty large enough to support a portfolio of games that include local and regional games, demographic segments, and national games. If a brand is strong enough, we should try to combine local and demographic elements into even a national game, as long as it does not harm the core attraction of the game. Europe has

international games that overcome differences in language, currency, regulatory frameworks, even prize payout percentages. We can do that here if the brand is strong enough. I don’t mean to say that every game should try to appeal to a diverse audience. The usual case will be that a game is designed to appeal to a local market or a national market.

It sounds like the distinction between national and regional or local games is false, or at least not useful.

C. Strutt: Powerball (originally Lotto America) and Mega Millions each started out with less than ten states, and they are considered “national” games. Hot Lotto has fifteen states and we think of it as a “regional” game. But Powerball and Mega Millions are now truly national brands. Our current Powerball Group Chair Jeff Anderson (ID) is extremely interested in moving the brand forward. We have always had a vision for the future, but Jeff is formalizing the process and including all directors, which is certainly a good idea. He wants to consider extending the brand, with a line extension, and well as expanding it. Powerball is a very powerful brand and stands the best chance of extending to a new line and expanding to reach new demographics.

By creating millionaires in every single state that participates, Monopoly Millionaires’ Club provides a local flavor to a “national” game. And as we just discussed, we are exploring ways to integrate components into multi-state games that further enhance that local connection, the appeal to local culture and play-styles and even branding. I agree that national versus local or regional is a false distinction, at least where the brand is strong enough to attract nearly every demographic. Our goal is to have a portfolio of games that appeal to major segments of consumers and to innovatively expand and extend powerful brands that can break through to just about every audience.

As MUSL and its members evolve, we will drill down on the component parts to think about the whole process of building games and strategies that integrate resour-

es, technology, media, etc. in ever more productive ways. Among them will be the ability to pool resources to deliver national impact and build strong brands that can significantly enhance advertising and promotional impact at local levels.

Game design, issuance of RFP's, building contacts, reviewing games and game proposals, applying predictive models to the business of assessing strengths and weaknesses, are just some of MUSL's core competencies.

C. Strutt: We do have a growing list of services and we can hope that we are developing expertise in these areas, but MUSL's top goal is to shepherd projects and ideas through a process that enables the lotteries to make the most informed decisions about how to proceed. We gather the research, run the numbers, organize the data and facts, and try to present it all in a fashion that helps lotteries chart the best course of action.

Yes. But the resources you have, the industry-specific brain-trust and data that have been accumulated over the last 27 years, would seem to be proprietary in the extreme. I can't imagine how even the biggest and richest consultancies, like an Accenture or Ernst & Young or KPMG, could deliver anything remotely comparable to the service provided by the MUSL staff of twelve.

C. Strutt: I appreciate the sentiment. I will say that MUSL employees have had a rather unique opportunity. We've had the chance to work closely in a trusted member relationship with hundreds of lottery directors and even more staff over the years. In the last several years, we've even had extraordinary access to the best and brightest the vendors have to offer. The compliment really belongs to our teachers and the resources they have made available to us.

But seriously, when you talk about deconstructing the component parts of the games and analyzing the vast history of how the games are implemented, and channeling that information into actionable business plans, it would seem to be impossible to replicate the ability of

MUSL to do that. How could anyone else possibly harness the resources to deliver the predictive values that inform the process of making decisions and creating the action-plans that amount to multi-million dollar investments?

C. Strutt: We certainly do not presume to be the sole proprietor of industry intelligence! I hope that have reached the level where we can truly contribute to the industry. We have develop close working relationships with key lottery employees and with vendor employees who welcome the chance to test each other's work and make it better. We welcome input from all sources, inside and outside the industry, and encourage lotteries to do the same. One of the strengths of MUSL—the broader organization—is that we have a measured low of new directors who, for a variety of reasons, have achieved success in their jurisdictions. They bring a fresh view to the industry. If they questions what we believe is set in stone, then if forces us to look anew and re-examine beliefs that can get stale over time. If they bring in something new to consider, then we all benefit. Strategic planning needs to be informed by the experience of others who may not be long in the lottery business but whose experience may shed light on our industry practices. We need to not only be open to that, we need to apply a creative and open-minded mentality to glean insight from circumstances that are not identical to our own but can inform our thought process nonetheless.

Let's take the business of funding annuities. That would seem to require a high-stakes and complex business process that has qualities unique to lottery.

C. Strutt: What lotteries bring to the creation of annuities is that they cannot fail. They also must sometimes meet strict standards sometimes developed by a legislative panels. Over the years, we have developed the resources to build annuities using bonds permitted by the various jurisdictions or to build for-life prizes using standard actuarial tables and a mixture of insurance company contracts and bonds that are both prudent

and provide reasonable earning. Also, we do this through a bid process and usually within a few days.

MUSL provides the service of building and maintaining internet websites?

C. Strutt: We do. Since it is a significant cost item and not all lotteries participate, the MUSL Board of Director has required that MUSL charge for the service. MUSL's hosting needs are unusual. Unlike a YouTube or Google, we only occasionally need that kind of power. A few times a year, we are hosting as much traffic as these big boys. The lotteries can benefit from our need to build that kind of structure and we pass along the service at cost.

MUSL's Powerball website has an average of over 350,000 page views per day. That's an incredible volume of traffic. But when the jackpots roll up, doesn't it spike with tens of thousands more players checking to see if they won?

C. Strutt: A daily average is almost meaningless. Last month, with no big jackpots on the line, our daily average dropped to just under 300,000 per day. But again, our system must be built to handle the big numbers. You are right. When jackpots spike, the number of users trying to hit the site skyrockets; not in the tens of thousands, but in the hundreds of thousands and more. Our biggest draw night saw 1.2 million simultaneous users hitting the site. That means there were 1.2 million person hitting the "enter key" at one time and they were all expecting to see the numbers drawn. On those nights our full IT staff—all four of them—were up late into the night in our "war room" tweaking load balancers and adjusting the site to keep up us up. Then if happens all over again the next business day when players get into work and log on to check their numbers.

MUSL's RNG (Random Number Generator) for draw games is a "true" RNG. What does that mean exactly?

C. Strutt: Lotteries typically use Pseudo-RNG's, or PRNG's, to draw numbers. These

depend, in theory on some predictable act, usually because it involves a human doing something like hitting the “enter key.” A PRNG is actually perfectly acceptable for lottery use. Years ago, we were stunned to hear that lotteries were paying several hundred thousand dollars for RNG’s. We were challenged to do it for less. We decided to design and build a True-RNG, or PRNG for several thousand dollars. There are a number of ways to develop true random numbers. We considered photos of clouds or of a lava lamp for clear days but got a little more serious and decided to use the random decay of radioactive material. The MUSL TRNG’s contain Americium-241 and a Geiger counter. There are about 60 MUSL TRNG’s in use among the lotteries now; each at a cost of less than \$8,000.

In addition to the games operated by MUSL, don't you conduct the drawings for lotteries as a service?

C. Strutt: We do. We began by offering an emergency draw backup service to the lotteries. States are often required to maintain a disaster recovery plan, including a plan for their draws. For no cost, we offer our members the ability to conduct their draws on a moment’s notice. We maintain binders of a lottery’s games and draw procedures and keep them regularly updated. All of that is far more effort than actually conducting emergency draws. Over the years, we’ve probably only conducted a half-dozen emergency draws for lotteries, mostly due to severe weather. Eventually, states found that they could move all of the local game draw to MUSL for less money than hiring staff to do evening and weekend draws. MUSL now handles all states draws for some members.

I'm sure everything possible is done to ensure success of a new game launch. But the reality is that you are always needing to manage for downside risk, aren't you?

C. Strutt: Lotteries live on redundancies. Everyone in this industry hopes for the best and plans for the worst. In a very general sense, it comes down to making sure that

the game is designed to perform and deliver the predicted outcomes. But there are no guaranteed outcomes and we need to manage for that fact. We have to manage for the fact that some games or marketing initiatives are not going to perform as predicted and have a financial structure to cover those instances should they occur. That’s not to say that lotteries don’t take calculated risks. In those cases, our job is to make sure that the lotteries know the possible risks.

I heard someone comment that MUSL's IT and security should be meet the same high standard as those used by financial institutions. But financial institutions get hacked and go down, whereas you have never been hacked or gone down, right?

C. Strutt: We would look at the standards applied to financial institutions as being a big step backward for us! Lottery systems have to be more secure than those of financial institutions. For banks, it is only about some cash held in customer accounts and the banks stand behind those accounts. Theft is acceptable as long as the customer is protected. In the lottery business it is about integrity and the perception of fairness. Simply promising that we would return every buyer’s ticket price is not good enough. Lottery systems has fewer moving parts than financial institutions have, so the requirements placed on our systems are not as complex as those placed on financial institutions. Lottery systems have to guarantee that no compromise will happen, ever.

I would think that MUSL has already faced most problematic industry issues and that information would flow through MUSL such that lottery staff from all around the country could call you for guidance.

C. Strutt: I’m sure that most lottery directors don’t realize how many calls we get from their staff with questions about things that they are encountering for the first time or rarely encounter but that we have already dealt with many times. When we get to meet with new lottery staff, we remind them that we deal with a lot of strange requests for in-

formation and that, if they get one, we probably have already developed a response or collected the information. It works both ways. Lotteries share their issues and MUSL can be a central sources for answers and responses.

The same staff at MUSL has been in place for longer than I can remember.

C. Strutt: It seems like only yesterday. Even now, when I head in to work on Saturdays and Sundays, I’m not alone. There is something about this industry that keeps us going. The staff loves this industry, loves what they do, and the result is long-experienced staff serving the members. One of our toughest jobs is to hire new staff. We need high skill sets but also someone who doesn’t mind working outside of their field when needed. MUSL is too small for any employee to get lost. Those who can’t pull their weight don’t last long and those who do the job right tend to stay.

When cross-sell began in 2010, Powerball was the dominant brand. How has the brand value evolved for Powerball relative to Mega Millions since then?

C. Strutt: We just finished research that include a look at the brands and consumer perceptions of the two brands and comparing the two brands. Mega Millions has improved over the last four years so that it is now comparable to Powerball. We saw some surprising player loyalty for both brands, which still exists today, though it is lessening. As the brands both gain a foothold with players, it become even more important to differentiate the games or we will only compete by jackpot size.

What can be done to fight “jackpot fatigue.”

C. Strutt: What we casually call “jackpot fatigue” is likely a mix of issues that need solutions. In lottery history, the usual solution has been to simply increase the odds to increase the size of the jackpots. We know that we have to do more than that. We can’t simply move to hundreds and thousands of numbers in the drum. For our big brands we need to expand games in ways that attract the

attention of players in different ways. A key element is to recognize what the big jackpot games are selling. We are selling dreams. We are selling the ability to share those dreams with other; to talk about dreams. Humans love to talk. The most successful products and services of all time allow humans to talk; radio, TV, mobile phones, the Internet. We talk when we have nothing to say; we talk to ourselves; send messages into outer space. A successful lottery product is one that gives players something to talk about. We need to find ways to give the press and players something to talk about; some dream to share with their friends and family. We have recently begun to focus on changes in jackpot amounts. Guaranteed jackpots in base 10 jumps are boring. We recently adjusted our prize reserve contribution rate to allow for faster jackpot

growth; to get us out of those boring jumps faster. It worked for a while, giving players more to talk about, though the increasing price of bonds soon brought us back.

As consumers, we all divide our time among a growing number of work, family, and play commitments. We all know that we need to bring the games to the consumer. We need to make it easy to play the lottery. Convenience grows ever more important. One of our most important goals today is to find a way to maintain security while making it easier for the consumer to play the lottery anywhere and everywhere.

Jackpot games have an appeal that is more enduring than practically anything in the market-place. Think about it. What other consumer product has grown its sales year after year with as few fundamental changes

as Powerball and Mega Millions have had? Even today, players are not so jaded as we think. In focus groups players consistently are excited about what we consider low jackpots, but no one is talking about them and players don't hear about them. A big driver to Powerball has been the \$1 million prize level; not that Powerball player care about that prize level. They can't even name it in focus groups. But they do report that they hear about Powerball more often and that reminds them to play. I believe that what they are hearing is local, regional, or state press reports about some of the 500 millionaires created by Powerball every year. The press will ignore a national \$200 million jackpot, but they still pick up stories about a million dollar winner in their state. ■