Bridging the G2S® Gap

A White Paper on

Game to System® (G2S) Viability

in the Distributed Gaming Market

SPIELO®

Performance Gaming Dedicated Service

Introduction

Many gaming manufacturers refer to "open protocols" to suggest an industry shift that will allow gaming operators to gain more benefits from their products. They paint a picture of a future where products from all manufacturers will work together seamlessly, where operators' game libraries will grow exponentially, and where operators will control gaming content on a whim.

But not all gaming operators are alike. Only a few manufacturers fully understand the complex distinction between commercial casino and government-sponsored, distributed gaming. Unlike commercial casino operations that usually function under one roof, Electronic Gaming Machines (EGMs) in distributed gaming markets are physically scattered throughout a regulated jurisidiction, often with just a few machines per venue among thousands of venues.

The purpose of this document is threefold. First, it aims to clearly define the universal benefits and functions of open standards for all gaming operators by looking at the development of the G2S protocol.

Second, it outlines why manufacturers need to expand the current G2S protocol in order to meet the distributed gaming market's unique needs, and what distributed operators can do to support those efforts.

Finally, it offers a checklist on how to prepare for full adoption of G2S protocols in your distributed gaming operation.

The effect of proprietary protocols on operators

To run efficient, successful gaming operations, jurisdictions need variety. That's why most operators offer their players a selection of EGMs and game content from multiple manufacturers.

> "The cost savings from standardizing protocols and eliminating inefficiencies caused by incompatible systems is significant, and could be channeled to customer-focused benefits."
>
> James R. Maida, CEO,
> Gaming Laboratories International,
> in Public Gaming International,
> March 2009

Central system providers have adapted their products to gaming operators' diverse EGMs by creating languages, or protocols, that allow EGMs to communicate with their systems.

Whether or not a manufacturer is willing to freely share its proprietary protocol information, all central system providers have complete control over any changes to their protocol -- for instance, to upgrade functionality. Operators would prefer to have more input and control over those changes.

Some operators have also claimed that the ambiguity of various proprietary protocols can complicate or delay the installation of products in their gaming venues.

Meanwhile, EGM manufacturers spend considerable research and development resources on the adaptation of games to proprietary protocols -- instead of developing new and innovative player-focused products.

Game manufacturers prefer an open protocol because it reduces the cost, effort, and delivery timelines of game development, which would otherwise be spent supporting multiple protocols.

Open protocols will also reduce the deployment time for popular games. Vendors will no longer need to test a game in one protocol, and then decide whether or not to port the game to one or more additional protocols.

A single open protocol will also reduce game certification costs by eliminating the need for additional verification for multiple protocols.

Those combined issues have become the impetus behind the open standards movement in the gaming industry.

The ideal scenario

Since a manufacturer can claim a protocol is "open" while it is still proprietary, the key word in "open standards" is "standard." It refers to a protocol that functions universally among all manufacturers, and is overseen by an independent body that maintains the standard and its evolution.

In a truly open standard, the protocol might remain one entity's intellectual property -- but there's no cost to share the technical documentation, and the protocol must conform to a governing body's requirements.

Ideally, open standards provide operators the freedom to take the best products from each manufacturer and integrate them into their gaming operations seamlessly. Operators then have unfettered control over changes and development of their network.

The open standards movement seeks to fundamentally change gaming operators' focus. Operators want to reduce the complexity of hardware and software integration by opening communications between all EGMs, central systems, and other internal systems.

In doing this, the operators and manufacturers can devote more resources to offering diverse and top-performing game content and player services, with the ability to provide and change that content on demand.

The Gaming Standards Association's role

To make open standards truly open, manufacturers have had to cooperate at unprecedented levels.

In May of 1998, the Gaming Manufacturers Association (GAMMA) was formed with 20 member companies as a non-profit organization to eliminate the technological communication problems that gaming manufacturers and suppliers were facing.

In 2001, the association decided to change its formal name to the Gaming Standards Association, (GSA, www.gamingstandards.com) in order to reflect the growing number of casino operator members.

Now, the GSA continues to grow in scope as well as numbers. More recently, a significant area of association membership growth has been in the lottery sector. Of the 16 members who are operators, eight represent lotteries.

Why G2S isn't in every casino . . . yet

The Game to System or G2S protocol is an XML-based open communication protocol that allows networked gaming features like remote configuration and software downloads. The protocol was designed to be extensible so it can be easily upgraded and updated to meet evolving gaming operation requirements.

Today, most casinos connect their EGMs to their central systems via serial protocols -- most often Slot Accounting System (SAS). Serial protocols have evolved over the years to support functionality like ticket validation, Ticket-In, Ticket-Out (TITO), and cashless gaming.

GSA and the gaming industry recognize that the future of gaming rests in high-speed IP connections, Ethernet networks, and XML data transfer. However, switching to Ethernet-based EGMs could be a costly alternative because it may require upgrading site wiring, upgrading or replacing EGMs to support Ethernet, and purchasing games written for the G2S protocol.

Despite these hurdles, many operators are learning that G2S can be phased in to co-exist with existing slot floor networks.

The challenge for distributed gaming operators

G2S isn't a foreign concept to distributed gaming operators. Out of necessity, they've been early adopters of downloadable game technologies. Remote and centralized operation is a fact of life for successful distributed gaming networks. Distributed markets are more than ready to embrace G2S technology because it's simply another step using an already familiar approach.

However, since G2S was initially driven by casino manufacturers, suppliers, and operators, the standard didn't take into account the fundamental differences between commercial venues and distributed government-sponsored markets.

In a casino, local servers enable data collection, and in many cases a local central system assists in the management of the casino floor. All this typically happens under one roof.

But in distributed gaming environments, EGMs scattered throughout a geographic area are controlled through a remotely-located central system. The system often communicates through the most cost-efficient communication option available. That's often a basic dial-up connection using a local site controller based in distributed retailer locations.

Under these constraints, an operator with a low-bandwidth network can use the G2S protocol by "tuning" the protocol. According to GSA Technical Director Marc McDermott, the operator can choose to conserve bandwidth by making fewer requests for information, subscribing to fewer events, and asking for less associated information from the system.

"The protocols themselves are capable of successfully conveying information" in either high or low-bandwidth environments, McDermott writes in the January 2009 issue of Slot Manager.

"The key for low-bandwidth operations, then, lies in exercising the restraint necessary to request only the information needed instead of the information desired. However, because of the incredible array of information that the GSA protocols are capable of providing, staying with what is 'needed' may not be an easy task."

On the other hand, the demand for more information is outpacing the ability to deliver it affordably through existing communication solutions. Many distributed operators are just as interested in knowing how their games are performing during normal and peak operating hours as their counterparts in casinos.

Distributed operators' hunger for information comes from a desire to collect game play data at a more granular level. In the past, a daily summary of cash won and cash played per terminal might have been enough. Today, though, operators are asking for this information at the game level and at intervals through the day.

In order to report on the data, you need to collect it. In order to collect it, you need a communications network to support it.

Therefore, in order for operators to gather data in real-time, they need a more robust communications network.

But investing in a high-speed network upgrade may be too expensive for most distributed operators. Unlike a casino, where a high-speed network can easily be deployed and maintained, distributed operators need to consider the upgrade costs to support as many as thousands of sites across many different communication networks. While high-speed networks are more readily available, and costs are coming down, some locations still don't have access to high-speed networks. Their alternatives include communications networks like radio, dial-up, and satellite. In some cases, distributed gaming operators have had to consider multiple types of communication to support different geographic locations.

Operators also need to assess whether or not their legacy terminals support G2S requirements, including Ethernet communications and the performance of an XML-based protocol. If not, they would also need to upgrade to more powerful EGMs. In the worst-case scenario, they would need to purchase new EGMs that support those requirements.

While distributed operators have to consider how they can support existing G2S requirements, their operations could also require specific functions not available with the current G2S protocol, such as:

- Setting Video Lottery Terminal (VLT) operating hours
- Allowing remote VLT master resets without the need for an on-site technician
- Allowing the system to initiate a cashout on the VLT, prior to maintenance or as part of a responsible gaming feature
- Configuring VLT cash limits, which may be dictated by jurisdictional regulations
- Optimizing download time and download messaging/enabling
- Ability to enable/disable and specify time for Gaming Authentication Terminal (GAT) verification
- Communicate VLT storage space capacity to the central system
- The ability to use a transport mechanism designed for slower communication models.

GTECH® developed an extension of EGM operating hours to ensure that distributed market operators can meet jurisdictional legislation governing hours of operation. The extension ensures that EGMs store operating hours locally so they can self-disable during non-operational hours. Over the next year, GTECH will be submitting even more extensions in order to make the G2S protocol fully supportive of distributed market operations' needs.

The solution for distributed operators

How can the industry adapt the full capabilities of the G2S protocol to the realities and demands of distributed environments? *Through the creation of extensions.*

An extension is a new class or part of a protocol that a manufacturer develops to extend, or add functionality to, a GSA protocol. The GSA typically reviews a manufacturer's extension to ensure compatibility, and if accepted, approves the extension by a formal vote by one of GSA's technical committees. Once approved, the extension becomes part of the respective standard applied by all GSA-compliant operators, and is maintained by the GSA.

However, most manufacturers haven't been compelled to invest the effort into making the changes needed to extend the functionality of the G2S protocol for the distributed space.

That's why the manufacturers who understand the specific needs of the distributed gaming market are best suited to provide those solutions.

In June 2009, the GSA approved the first-ever manufacturer-submitted extensions designed specifically for the distributed gaming market. As more extensions are developed for the distributed market, distributed operators will soon be able to benefit from G2S.

Operators also play a key role in supporting those efforts. By becoming an active member of GSA and its technical committees, your support can help advance the cause for distributed operators and ensure that distributed-market extensions are accepted as part of the G2S open standard.

Making G2S work in distributed markets

There are strategies you can put in place right now to prepare your distributed operation for open standards.

- ☑ Ensure that your system can capitalize on G2S protocol-supported functions, or at a minimum, be able to support G2S as it gains acceptance and popularity.
- ☑ Ensure that your system can collect more data from the terminals in the distributed market, and use that data to optimize your terminal and gaming network, including performance, diagnostic and security reporting.
- ☑ Ensure that the systems and EGMs that you install are G2S compliant -- in other words, that they conform to GSA standards and are poised for interoperability.
- ☑ Your EGMs should support being fully downloadable and network gaming ready. They should feature upgradeable memory capability, extendable storage space for games, and secure data links.
- ☑ The system should be field tested and proven in the distributed market. This is a critical element.
- ☑ The system should support the additional security needed to monitor and control terminals in a distributed market that are not under the watchful eyes of staff dedicated to walking the floor and monitoring security cameras - protection that's typically available in casinos, but difficult to implement in the distributed environment.
- ☑ The system needs to be able to enable or disable gaming machines across a distributed network and not rely on site operators to disable the games outside of regulatory hours.
- ☑ To avoid substantial startup costs, the system should optimally support your existing EGM network and provide a way of supporting terminals as they are upgraded or replaced. This would include the simultaneous support of legacy protocols and newer protocols like G2S.
- ☑ The system should allow games to be downloaded, installed, scheduled and switched on an EGM. This will potentially save millions of dollars in operational expenses needed to add new games to a large network, and allow the distribution of new games in a fraction of time.
- ☑ The system and EGMs you purchase should also come with experienced, knowledgeable, and dedicated technical support.

The future is open

"As a buyer, you will now be more firmly positioned in the driver's seat and can make decisions that are based on the right product mix, unique product features, quality of service, preference, compatibility, openness, data access, and flexibility."

Peter DeRaedt, President,
Gaming Standards Association,
In Public Gaming International, Nov. 2008

By equipping your operations with end-to-end, G2S-compliant solutions, you'll be ready to embrace G2S when the extensions you need soon become available. It will open up new functionalities, make your operation more nimble and versatile, and create efficiencies and significant cost savings in multiple areas of your operation.

You'll be able to choose a GSA-compliant vendor without thinking twice about product compatibility. You'll be able to cement players' loyalty by offering the games they want exactly when they want them. You'll have even more ways to implement responsible gaming features on your EGMs.

In short, you'll be securing your future as a successful distributed gaming market operator.

For more information about preparing your distributed gaming operation for open industry standards, contact SPIELO® at lottery.gaming@gtech.com.