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IN THE SPIRIT OF CO-OPETITION

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By John Wilson

In the Spirit of Co-opetition



Pictured L to R: Tim Parrott, President & CEO – Americas, Aristocrat; Bruce Rowe, Senior VP of Strategy & Business Development, Bally; Peter DeRaedt, President, Gaming Standards Association; Stephen Morro, Chief Operating Officer, IGT; and Orrin Edidin, Executive VP and Chief Operating Officer, WMS.

PUBLISHER'S NOTE: *True competitors partnering to work toward a common goal is a rarity in this world, but that is the case with the advancement of an open network for the casino floor that Casino Enterprise Management has been keeping you up-to-date on this past year. What's happening in gaming's technological development arena is monumental, and it's with an astounding cooperative effort that our industry will take a giant stride forward to a better, stronger and more technologically advanced future.*

CEM asked the leaders of four gaming manufacturers on the forefront of this collective process, and the standards association they are a part of, to meet and stand together for this month's cover. We feel this symbolic gesture shows their solidarity and commitment to continue to work together to meet the demands of the operators of our industry. The backdrop of the dry desert lakebed represents both the wide open space and the vastness of the possibilities that this commendable group effort will bring.

Technology. It's a word tossed around like a football. It can be used to impress people and to promote new advancements in our lives. Technology increases our standards of living, making our lives easier, longer and more enjoyable. Or at least that's what it's supposed to do. We can be warned of natural disasters, solve medical problems and protect the environment. We have so many more opportunities and capabilities because of technological advances. But technology isn't perfect. And it can't do everything for us. Perhaps the largest problem is the advancement of technology itself. The more technological advances we make, the more we can make. While this pushes

technological development ahead, it makes previous developments obsolete. And the more technology advances, the faster it goes, constantly increasing in speed.

Do we really need all of this technology? Do we need to keep up with the cutting edge? Some technological advances offer little true value, but others ingrain within us, becoming a necessity. Consider e-mail. How many people can function without e-mail capabilities? Could your business run efficiently without it?

How does this affect the gaming industry? If we could peer into a crystal ball, what would we see? What new technology is on the horizon, promising to make the industry a better place to work? Will it be something wonderful and useful like e-mail, or something that really isn't necessary? Will it provide a benefit — a true benefit? And who will benefit? Is it going to be the operator? Or the player? Will it increase revenue, generate more interest and provide more entertainment value? The largest single technological advancement that will drive the industry for several years is on the horizon. Hold on to your hat, Jack, it's going to be quite a ride!

This advancement involves a full bi-directional network on your casino floor, linking your slots, systems and other peripheral devices, such as ticket redemption machines. This network will be open, allowing interoperability.

What exactly is an open network that allows interoperability? It is when different hardware and software can interoperate on the same network, communicating between different machines using different software — and not just slots. Kiosks, ticket redemption machines, table games, plasma displays, your hotel, food and beverage services — basically everything and everyone in your facility will interoperate. Even enterprise facilities will use the network, connecting different locations.

The gaming industry is lagging behind the rest of the world in the area of networking insofar as the casino floor is concerned. Certainly back offices and administrative areas already have networks, hubs, etc., just like millions of offices around North America. The casino floors, however, the areas where the revenue is generated and our customers congregate, just aren't up to speed. They currently use proprietary protocols and can't support all of the wonderful things that we would like them to do.

A Quick Look at Networking

Let's study networking first. The easiest example of a computer network can be found in your own home. Perhaps you have a personal computer for the kids where they can do their homework, play games, chat online and download music. It's likely located near your cable TV outlet and has a broadband modem and network router. You may also have a computer in your office. This may be hardwired into your router, connected through an Ethernet cable. And, quite possibly, you have a laptop that you use at work. It connects to your network through a wireless connection. This would be a typical home network. It allows your computers to connect to share files, share printers and give everyone an Internet connection. It works well and is far easier to set up than it was a few years ago. And, in keeping with technological advancement, it's cheaper to install and operates faster than before.

We can also call this an open network. Being "open" doesn't mean your neighbors get to access your network and get free Internet access. You can enable security and encryption to keep unauthorized people out of your network, just like you would on your casino floor. Being open means that you can run your own software and use your own hardware on the network. The network is open to having

various systems and devices connected. It was designed to and conforms with industry standards. There are specific protocols and commands used to communicate between computers over the network. These standards dictate how a computer identifies itself to the network, how it communicates requests and even what types of requests it can communicate. It handles error conditions, such as two computers trying to communicate over the network at the same time. The standards dictate a valid language for every computer device on how to talk and what to say. What type of Ethernet network card do you need for your home computer? As long as it conforms to the standards, it doesn't matter who makes it. You may have a laser printer or an inkjet. If your operating system supports it, any computer on the network can print to that printer, whatever type, whatever make. These are just some of the benefits of open networking.

Andy Ingram, senior vice president of IGT's network gaming systems, explains the open network concept as follows:

An open network means 3 things: standards, access and interoperability.

Standards — a defined set of standards that everyone can comply with. The underlying framework is open Internet networks, TCP/IP, Ethernet, etc. It's been there for 30 years but didn't show up in this industry before. The primary protocols are G2S and S2S. Those protocols are gaming industry specific, overlaid on the gaming industry standards.

Access — anyone can build to those standards and can plug into the network. I don't have to pay a license somewhere. I'm not precluded. SAS 6 was a standard, but not open. It was proprietary and people paid for rights to access it.

Interoperability — plug multiple different vendors into the same network and they interoperate.

What are the Costs?

Open networking isn't synonymous with free. There are associated costs. First, you have to purchase the hardware. Second, you need software to work on the network. Your home computer may be running some version of Windows that allows your various devices and software applications to work over the network. If you want to do word processing, you have to purchase a license for Microsoft Office or Word Perfect, or some other software application that suits your requirements. And there are many other considerations. Does your motherboard support Ethernet cards? Will your processor and its supporting hardware allow networked communication? Because of the standards that have been in place for a long time, you don't even think about this when purchasing a computer. With established standards, manufacturers create hardware to these accepted standards, making it beneficial for the end-consumer.

What open networking also means, however, is that you don't have to pay a special licensing fee to use the network. It's your hardware and you own it. Your operating system includes networking capabilities, and you don't pay a fee based upon how many computers will be on the network. This is one worry about the gaming industry's implementation of open networking — that someone will hold the intellectual property rights to it and charge every manufacturer of hardware and software a licensing fee to communicate information over it.

The End of Intellectual Property?

I don't see the end of IP happening in the gaming industry. The networks installed aren't going to be proprietary. Should one manufacturer decide to create proprietary hardware, software and

supporting technology, it will be less attractive to operators than a manufacturer using standard networking hardware and protocols. It's just not cost efficient to redesign a complete network using solely proprietary devices. There's too much existing technology on the market that will do this already. And this technology is not only inexpensive, but it's also mature and readily available.

Furthermore, many manufacturers are already working on open networking and interoperability. They have systems developed that are being tested. These are based upon open architecture.

WMS is one of the leaders in this arena, embracing the open architecture concept for the benefit of the player. "At WMS, our focus is on the player and the applications that will allow us to personalize and customize their gaming experience," WMS' Executive VP and Chief Operating Officer Orrin Edidin says. "This known, our adherence to the GSA standards and full interoperability with all manufacturers is the foundational step toward making this happen. We have been engaged in full interoperability testing with multiple manufacturers since G2E of 2006 and currently are the only company with a GSA endorsed submission in the labs."

As Edidin points out, developing and adhering to standards is the key towards realizing the full potential of an open network. There are just too many drawbacks to proprietary networks. Proprietary networks are expensive to set up and to maintain — not just for the operator, but for the manufacturer, too. At this point, it just isn't a sound business practice to support such a network. Manufacturers will develop their own systems and applications to run on the network. They don't need to provide the network itself. Consider the price of your home computer. A complete network-ready system can be purchased for a couple hundred dollars. There isn't a large markup on computer hardware. The return on a manufacturer's investment on a proprietary network is going to be very low. And when you consider installation and technical support costs, it's going to end up being a cost factor as opposed to a revenue-generating tool. It's better to work with an open network and make your profit and competitive advantages in how you work on the network rather than trying to control the entire network.

It is keenly important to note the difference between open architecture and open source. "Open architecture" means everyone can use it. You're allowed to drive on the freeway because it's designed to be open for all licensed drivers. You cannot, however, add new lanes to the freeway yourself. "Open source" means the software programming and/or hardware schematics are made available for others to see and use, and to make changes to as they see fit. Some software products, like the web browser Firefox, are open source products. You can actually look at the software's programming code and modify it, making changes and adding new features you think would be beneficial. It's available for others to work with. The gaming industry isn't going to an open source. Everyone will continue to have their proprietary software. The operating system within the slot machine will be a custom-developed, proprietary and copyrighted piece of intellectual property. That's where the revenue will come from. A manufacturer won't release its slot operating system to allow everyone to make changes to it. It just isn't sound business practice for them to do that.

"There will always be proprietary systems and intellectual property that will not be shared with competitors," Mark Pace, vice president of engineering services at WMS, states. "That is a limiting factor to openness. However, openness here means that an operator can run any application or service it wants to run on the network, as long as those applications or services conform to the adopted standards. We are there in the PC industry; we have

to get there in our industry reflected on the casino-floor network."

Manufacturers will try to come up with competitive products to increase their market share on your floor. They will each use the network and interoperability to their advantage, capitalizing on the capabilities they offer. They will continue to design ergonomic machines that look better than another manufacturer's. They will continue to offer new content and sophisticated math models to draw players to their machines and to keep them there. They will continue to offer systems and applications to make your job easier and to provide not only more information, but also more capabilities. And they will begin to offer solutions based on the networking that will set them apart from every other manufacturer to encourage you to buy their products, and lots of them.

Once we have a network in place, interoperability will come into play. Cost may be a factor for a casino network, and in some cases, it may be a considerable cost. New casinos can build for the network and take advantage of building it from the beginning. Retrofitting the floor for a casino will have cost and time factors. However, as technology advances, this will become a requirement.

Peter DeRaedt, president of GSA, shared his research on the cost of the network. "An operator shared with us the cost of putting a fast network in place; it amounted to about \$450 per slot machine, and this includes duct work and cables and network switches," he said. "At the end of the day, it's going to be a sunk cost — something that's required."

Before we get to interoperability, however, we have a major step to take. We can get our hardware and put the network in place, but having software that works on it is the next step. This is where standards come into play. Just as the network itself is based on accepted (and proven) standards, the gaming industry will require standards of its own.

Let's consider another analogy — your automobile. Vehicles are built to many standards. There are safety standards and crash tests to certify them, emission standards, and a host of other accepted standards. One is the fuel that your engine operates with. Not only is your gasoline engine built to certain standards, but the fuel available also conforms to industry accepted standards. When you purchase an automobile, apart from specifying a gasoline or diesel engine, you give that aspect very little consideration. When you drive your car into any service station in North America, or throughout the world, you know that your engine will operate properly because the fuel conforms to specific standards. The key point here is the standard, and that's a vital area for the gaming industry as well.

Soon any machine you purchase or lease will conform to the open network and interoperability standard. You won't give this much thought, just as you don't check out the fuel available at your local service station before purchasing your new vehicle. It's just going to be the accepted standard that everyone will conform to.

According to DeRaedt, "GSA standards will drive innovation as it will enable vendors to differentiate their systems and applications from other vendors on the same plug-and-play network."

But we already have standards in the industry. Are new standards required for interoperability? Jamal Azzam, director of product management at Aristocrat, says: "There is a misconception on the operator's side that if I take a G2S compliant system and plug in a G2S device, it should work. But it's not that way. There is that misconception that because devices and systems and the network are G2S compliant that they are interoperable. Standards need to be developed for open networks and interoperability."

TANGIBLE RESULTS



Lyle Bell
GSA Chairman, 2005-Present

“The implementation of S2S in Class II and Class II/III mixed casinos changed the way casinos operate their businesses.”

EVERYBODY WINS

GSA
10
YEARS

GAMINGSTANDARDS.COM

Those who attended CasinoFest™4 in California last September heard Jay Walker's keynote speech about open networks and interoperability, and a futuristic view of the casino floor. He equated the future of the gaming industry to the introduction of electricity. The supply of electrical current to your house is through an open network. In the beginning, there were very few devices, or applications, that could work on this network, one of which was the newfangled electric light — which I'm sure many thought would not catch on. As companies studied this network, however, new innovation came about to create new devices to connect to it — you

could have an electric iron to keep your clothes pressed, for example. Now there are thousands of devices that connect to this open network. And by open, it's not free, either. You pay a fee based on the amount of electricity you consume. What you don't pay, however, is a fee based on which appliances you connect to the network. Whether you have a cordless drill or a television set, there isn't an extra fee to connect it to the network. You simply pay for what you use.

The network of the future will be much like the electrical network of days past. Right now we can envision few applications that will run on the network. In the future, however, hundreds of

manufacturers will be producing hardware and software to operate on your network. New companies will be started just to write applications for the gaming industry on open networks.

But are these standards truly good? Are they restrictive or enabling? In a sense, they're both. The standards allow different manufacturers to create devices that will operate on the network. They know the standards that are required and can create their products to support them. They can be tested and certified so that you know they will work on your network. But can they be restrictive? What if a manufacturer wants to go beyond the standards? There's nothing to say that any manufacturer has to stop at the accepted standards. It can put in its own features and functions, surpassing the current standards. On the one hand, this may provide a competitive edge — that manufacturer can support extra features that nobody else does. And that's a good thing. However, this can create problems. The extra options can't interfere with the base standards, and they can't affect the operation of devices on the network from other manufacturers.

Once we're there, with open networks running through casino floors and operating on certified standards, the work will just begin. "It's not enough just to get to interoperability, we have to maintain it," Azzam states. "We must consider revisions to the standards that GSA comes up with. Manufacturers are forced to freeze implementation levels to a particular revision level of GSA due to resource restrictions and development requirements. There has to be consistency in timing so vendors have a realistic point of time between revisions and so manufacturers can catch up to the revisions. If different manufacturers are at different revisions, it affects interoperability."

How Will It Come Together?

Pace raises a key point: "I think that we all need to realize that slot operators are going to have products from each of the different gaming manufacturers on the casino floor, and they all operate on different backend systems — ticketing, slot accounting, player tracking, etc., developed in many cases by different system providers.

"As we continue to work down this networking path, interoperability is important because operators need full assurance that the products will coexist and work with all the machines on the floor."

Edidin agrees, and WMS has already been hard at work to make this a reality with its products. "As with any complex IT environment, like that of our casino partners, software and hardware integration is of the utmost importance," he says. "We need to allow the players the choice and discretion to play what they want, and when they want it. Our Wide Area Game Enhanced Network (WAGE-NET) suite of products is a seamless 'bolt-on' to any existing third-party slot system and provides operators the choice to use 'off-the-shelf' components to enable our system to be their full floor solution or merely an addition that provides revolutionary player enhancements."

It is obvious, then, that competitive manufacturers have to work together. But this is nothing new to the industry. We already have standards. Some, like SAS, were proprietary and you had to buy a license to use them. But G2S, through GSA, isn't owned by one manufacturer. It involved years of work and collaboration between GSA, manufacturers, suppliers, operators and regulators.

And the cooperative efforts will pay off. Bruce Rowe, senior vice president of strategy and business development for Bally

Technologies, adds, "It will be open because we have an agreement in the industry, an agreement to adopt the computer industry standards."

Numerous manufacturers, including Bally, WMS and IGT, had slot machines from various manufacturers in their booths at G2E in November 2007. The GSA booth was full of slot machines from every major manufacturer, and many smaller ones, too. These were all tied together, all working together on an open architecture configuration.

What Are We Going to See?

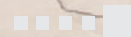
Like any new technology, we're going to experience some growth and some applications that may or may not last. Some will be tested and never gain mainstream acceptance, only to disappear into obscurity. Others that are not even imagined yet will be developed and molded into future applications.

"The first thing the operators want will be a common tool for running these interoperable applications," Rowe states. "They don't want multiple business intelligence systems running their floor. They will need one accounting system. There has to be a single way of accounting for these things through a parent application. There may perhaps be smaller applets perhaps doing other things for them. It will allow better integrity and the ability to interrogate the game and understand game condition, status of peripherals, etc. This will be done bi-directionally to check the health state. Operators can be proactive to make sure the game is ready for play. It will reduce customer dissatisfaction levels. It involves things on every game on the floor regardless of the manufacturer."

Parting Thoughts

This might be the first real technological advancement that truly does benefit the player. While many have had some benefits, this promises to open up many doors and different avenues on the floor that will provide players more opportunities for their entertainment dollar and their leisure time.

Open networks and interoperability won't be on the casino floor tomorrow. It's going to take some time to develop the networks and the underlying standards. However, it's clearly a direction that this industry needs. Over the next year or two, you will start to see these networks and the next generation of applications on casino floors. In three to five years, there will be a mass acceptance and installation, and the capabilities of new games and technologies are going to be astounding. It's technology that's long overdue in this industry, and it's going to be beneficial for everyone involved. The next few years promise to be the most dynamic and interesting time of our industry.



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John Wilson is the Owner of ICS Gaming, providing slot consulting services and game design. He has designed several slot games in both Class II and Class III markets. He can be reached at jwilson@icsgaming.com.