



## Let the Games Begin

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Major operators are overhauling their game selections, replacing the old guard of Snake and Memory with a pack of new casino, action, adventure and sport entertainment packages. Operators recognize that people want to do more than talk on their phone.

“Our consumers have spare time at the bus stop, in between meetings, in the bank line, or before a movie starts,” says Jeff Hallock, senior director of marketing in Sprint PCS’ consumer business division. “They see a game as a way to kill five minutes or more a couple of times a day.”

Forecasts from In-Stat/MDR put the worldwide value of online mobile gaming at \$2.8 billion by 2006. Analysts also see this audience mushrooming. DataMonitor predicts that the worldwide gaming population will grow from the current 157 million players to 500 million by 2006, and that revenue from these gamers by then will reach \$17.5 billion.

With this type of revenue on the horizon, what is slowing down the deployment of games to consumer launch pads? According to game developers, billing systems aren’t the only obstacle; they tick off a long list of culprits, including slow handset rollouts, minimal revenue sharing incentives and haphazard procedures for quality assurance testing.

### Paying to Play

For the game developers, the operator’s billing system is not a major sticking point. “We have complete confidence that carriers will handle billing,” says Mark Weber, executive vice president at gaming company PaletSoft. “They have been doing billing for years. They’re experts.”

Weber regards his experience with Nextel’s billing system as “ideal.” PaletSoft set the price point, and Nextel sent a regular check with a statement outlining the transactions. PaletSoft could also access reports to get updates on the number of games downloaded.

Frederick Ghahramani, managing director at Air Games Wireless, agrees that operators have made incredible improvements to their billing systems. “Two years ago, there was lots of discussion about inflexible systems,” he says, “but now the carriers are up to speed.”

For the game developers, who just want a simple check at the end of the month, shared revenue based on downloads is better than they ever expected.

But QPass, which counts Cingular and AT&T Wireless as its customers, sees a much different picture. “Carriers are facing the issues of real-time billing, as well as a much larger product offering from thousands of content providers,” says Tom Trinneer, vice president of products. “Thousands of content providers and products must be mapped to the subscribers. It’s unlike anything the operators have ever faced.”

Another major billing factor is the development language. BREW and J2ME, the two most popular gaming platforms, take different approaches to billing. “BREW does billing extremely well,” says Brian Levin, president at Mobiliss. “J2ME is getting there.”

BREW uses an end-to-end model. Qualcomm, the platform’s developer, sits in the middle between the application developer and the carrier and takes a certain percentage of the price charged for the game. The game developer negotiates a “wholesale” price with Qualcomm, and the carrier is free to charge any “retail” price to its users.

Under J2ME the carrier negotiates directly with application developers on pricing and revenue sharing for an application. Since no entity like Qualcomm provides financial settlement and reporting, the carrier must handle those activities itself.

With this exceptionally different service that has so many variables, the bigger off-the-shelf billing companies are having difficulty breaking into the market. Air Games' Ghahramani says that among his operator partners, in-house billing systems have been more successful. Access Systems America, which offers a content subscription server for wireless operators, claims that many of the off-the-shelf offerings are too powerful. "Billing for online content is a straightforward process," says Chung Liu, CTO and vice president of engineering. "These products are overkill."

## Billing Model Basics for Online Gaming

Today most gamers play single-player, arcade-style, non-traffic-generating games priced from free to up to \$15 per download. This model is easy for consumers to understand and simple to bill, which is the key to making mobile gaming a success.

Ghahramani contends that DoCoMo's i-Mode is a poor example for North American carriers because it's complicated. Although appropriate for Japan, it cannot be replicated in the United States because premium service offerings are too costly for the consumer and too expensive for operators to implement. The high costs of implementing the system, communicating the logistics to the end user and deploying content within the system are impossible to recoup, given the low user volume on this model, explains Ghahramani.

"You don't want to make a subscriber work to play a game," he says. "We want something that generates revenue simply and users can provision easily. We turn away partnership opportunities when the operator won't adopt a simple model. We can predict that the offering will fail."

When reviewing billing models with operators, Air Games insists that the operators stick to four fundamentals: simplicity, transparency, scalability and profitability for both parties.

Jamdat, a leading aggregator of mobile games, and others in the mobile community have adopted the vending machine as an archetype for presenting consumers with online options. They want to translate the user's known, familiar vending machine buying experience to the mobile world.

"When a consumer walks up to a vending machine, he quickly notes the price of each item offered and can easily purchase his goods. These tenets must pass to the wireless world," explains Tom Ellsworth, executive vice president of marketing and corporate development at Jamdat. "Nomenclature and pricing rules need to be clear, and the prices must be easy for the consumer to understand and compute. We can't try to change consumer behavior."

Ghahramani says the second fundamental rule, transparency, means that a service provider has a standard, universal business deal with all its content partners. Current behind-the-door negotiations, where the operators cut separate deals with each game developer, are unhealthy for the industry, he says. "We need to build an environment where everyone is getting the same cuts, and only the best applications survive," he says.

In general, the game developers claim that each negotiation with a carrier has unique features, but the deals include standard cuts of gross receipts. Just as in other content deals, game developers typically take 70 percent to 80 percent of the game's gross.

While these initial revenue shares may favor the game developers, some operators whittle those numbers down with additional fees. In PaletSoft's early experience with Nextel, storage fees, billing costs and surcharges brought down the game company's take-home pay closer to 45 percent to 50 percent of gross.

"We expected the support costs to be minimal," says PaletSoft's Weber. "We were naïve. Now we have lawyers that know how to read the fine print."

In terms of the third rule of thumb, scalability, Ghahramani says operators must outline how many applications they want to offer and include a scalable billing model that will grow from zero customers to 1 million. Some operators are slowly adding new games to their portfolio. Others have been tasked to find 10,000 games by 2003. Billing the games as premium services or charging for transport will depend on the size and scope of the subscriber base.

“Each operator will make decisions based on the metrics of its installed base. Successful operators will have a knowledge group that will create a cohesive data content vision,” says Ghahramani.

For Liu at Access, scalability is a key to ensuring mobile gaming’s future success. His company discourages operators from adopting a vending machine model because of scalability issues.

According to Liu, the vending machine becomes a bottleneck because the operator’s IT group must first test and then upload all the games, ring tones and other content. “Working with 20 to 30 content providers overwhelms the IT staff,” he explains. “Operators need a third party that hosts the content and manages nonrepudiation transparently.”

And Ghahramani’s fourth suggestion, that both partners must align their revenue plans, may trigger the most contention. Game developers explain the concept succinctly: operators will generate revenue only if the games are successful. If the operators define a plan to share the revenue based on performance, both partners will be successful.

In today’s current model, however, where operators refuse to share transport fees, game developers have no incentive to create games that increase traffic. “If the operators only share the premium costs, but not the transport, we won’t create applications that drive transport,” says Ghahramani.

### **Forget About the Minutes: Revenue Alternatives**

For the operators, the “share the minutes” argument is old and tired. “Transport is ours to keep,” says Sprint PCS’ Hallock. Patient game developers, such as Greg Costikyan, who has been designing games and consulting for the last 20 years, expect that this attitude will change within two years.

Instead of waiting for a new mindset, forward-looking companies are suggesting alternatives that will increase game developers’ revenue without tapping into the operators’ minutes. And since the developers and operators have such a symbiotic relationship, these alternatives would also benefit operators.

“Game developers need to look for new sources of revenue, such as viral sharing,” says Liu at Access. “They need to enable revenue streams that are completely separate from the service provider.”

Today, gamers can’t share the application because of copyright problems. Viral proliferation—point-to-point distribution, where one friend forwards the game to two friends, who each forward the game to two more friends, and so on—can’t occur.

To open up this type of grassroots growth, Access is developing digital rights management (DRM) tools that will allow players to share games. “Adding DRM could enable new business models that move a game’s price point from \$5 to \$90,” says Liu. (For more, see “DRM: Balancing Usability with Security,” *Billing World & OSS Today*, October 2002.)

Inciting players is another suggestion for building revenue. For example, if a player shares a game with five friends and two buddies purchased the games, the original owner would receive two tokens good for a discount toward a new game. Or, in the case of multiplayer games, a player could invite a friend to play and offer to pay for the friend’s session.

Rewarding the player with free minutes could be another incentive. If a pal introduces a friend to a new game, the original game player may get free minutes added to his bucket. “We need to introduce the value of playing a game and get away from looking at a network event consuming a megabyte,” says Trinneer at QPass. “We need to give incentives for users to play with friends and disassociate the minutes of game play. The industry needs to think about the activity rather than the network events that transpired.”

### **Answering \$64,000 Questions**

Like all burgeoning markets, mobile gaming is abuzz with controversy. On the development platform front, J2ME has a considerable advantage based simply on the legions of Java developers in the market. BREW, on the other hand, requires C++ programmers, a decidedly smaller pool. Symbian, which has limited availability in the United States, will not be a factor for many more months.

Both J2ME and BREW still have limitations. Developers are comfortable using J2ME, but it prevents basic gaming activity. For example, developers can't create spaceships that turn and shoot at the same time. BREW allows developers to be more creative, but some game developers report that it's a difficult work environment.

The good news, according to long-time developer Costikyan, is that the technologies are similar enough so that game developers can port a game developed in BREW to J2ME, or vice versa. Companies like Jamdat are adept at creating games that cross both platforms.

PaletSoft's Weber claims that the industry has room for all platforms. "J2ME, BREW and Symbian will co-exist, but break into niches," he predicts. "Low-cost, mass market, quick-and-dirty games will be created in J2ME. Flashier, more sophisticated games will be in BREW, and higher-end business applications will come over Symbian."

On the single-player vs. multiplayer front, gamers may not see real multiplayer games for many months. Business models and technical concerns are keeping these games from the consumer. On the business side, developers are reluctant to create multiplayer games until operators agree to share transport costs.

If mobile gaming becomes popular and operators incite developers to create multiplayer games, the partners will have to solve some technical issues. Network latency is a serious problem for developers testing multiplayer games. "We can't maintain a solid data connection," says Weber. "You can't play these games without that."

Costikyan agrees. "If you compare multiplayer games over the wired Internet, you can see the problem quickly. In the wired environment, gamers' ping times are between 100 and 200 milliseconds," he explains. "If you move to a wireless network, the ping time grows to seconds, not milliseconds. This time lapse makes a whole set of games not feasible in the mobile environment. None of carriers are working on latency, though."

Wireless bandwidth limitations are not a concern at this point. As Sprint PCS' Hallock says, traffic bottlenecks would be a nice problem to have. When PaletSoft first began developing mobile games, it optimistically created tools to throttle traffic and slow down the system. To date, though, excessive traffic hasn't been a problem. Instead, the company is trying to speed interaction through compression and preventing lost packets.

Even with these concerns, Hallock foresees multiplayer games in the future. "Consumers want to connect to play head-to-head events and mystery games," he says. "The capability exists, but to date people are just learning their way around the games. For now, simpler is better."

Many game developers are distressed that operators are refusing to work with the smaller development houses and pushing for market consolidation.

"I understand why aggregators are easier for carriers, but aggregators have preconceived notions," says Weber. "I don't want to see the mobile entertainment industry follow the same path as the music industry. Aggregators stifle creativity and constrain consumer choices. Unfortunately, I expect we'll see four to six publishing houses control 90 percent of the development."

Whether a small development house or large aggregator, gaming companies are being asked to create brand name games. Hallock at Sprint PCS claims that the known, familiar games are one means to increase consumer adoption. "People immediately recognize Pac-Man," he says. "They are more likely to play something they know. We are interested in unknown games, but we want to start with branded games."

With only a single line of text to promote the game and a small screen, a recognized brand is an asset for the operators. But obtaining rights from the intellectual property holder could cost the game developer up to \$250,000, says Weber. A company may gain the rights and put resources into developing the game, but the operator may decide not to deploy it. "We need a guarantee that we will make back our money," says Weber.

## Q/A Testing

With a crowded field of operators, multiple platform environments and a large pool of handsets, quality assurance testing is tricky. The entire approval process can take anywhere from two weeks to two months.

Overwhelmed by the sheer number of games available, operators are outsourcing the process to third-party companies, such as VeriSign, or blindly accepting the game if the application was approved for another network.

To begin the approval process, service providers post basic specifications and a list of all devices for the gaming companies. Sprint PCS provides a set of Java tools for developers on its Web site. These specifications explain interaction basics and give guidance on issues such as how to invoke the vibrator mode, how to add sounds, how the network works and how to handle incoming calls during a game.

The biggest problem for the developers, though, is that these specifications are unique for each operator. "The testing process depends on the application, the technology and the carrier. Everyone does Q/A differently, and it requires a lot of resources on our part to optimize the user's experience across so many different environments," says Mobiliss' Levin. "We need standardization."

Game developer Costikyan explains that a game could be designed in Java to run on different handsets, but if the operator supports a wide range of Nokia handsets, the developer must add the Nokia API to make the game look better and run more efficiently. Java also doesn't auto-scale graphics, so the game must be compiled to look good on each handset.

Inconsistent Q/A testing is another problem that game companies have faced. Games can be turned down for any number of reasons. Cosmetic concerns, such as whether instructions should be in all uppercase letters versus initial caps, can send a game back to the developer. Technical issues, such as how to handle memory management, can also halt a game from reaching consumers.

"Certification requirements often change mid-stream," explains PaletSoft's Weber. "Operators outline the steps that we have to go through, and then they update the steps. Certification becomes a moving target."

Operator certification imposes costs, too. Weber says his company paid \$1,400 per game for certification with Nextel. Other certifications range from \$400 to \$1,500. "We can spend \$2,000 to \$5,000 to develop one application," he says.

## Game Ready

Even though analysts' data strongly support mobile gaming's future, service providers and game developers must strengthen their partnerships. For the emerging market to be successful, the two groups must attempt to understand one another's business models. Game developers, for example, must grasp operators' dependence on ARPU, which is ever decreasing. And operators must recognize the costs required to develop a game. Intellectual property rights and certification programs take a heavy toll on the game companies' revenue.

Both groups can expect slim profit margins unless they adjust current billing models and add ways to incite gamers. Starving the game developers is not in anybody's best interest. The operators realize that both partners need to be profitable, but they encourage prudence in the fledgling market.

"We want mobile gaming to be a big win for us and the developers," says Sprint PCS' Hallock. "When either of us gets too greedy, though, it drives the price of the content up. We have to balance the costs with what consumers are willing to pay."

The developers, in the mean time, want more access to subscribers and more support. If the operators can drive subscribers to purchase the new handsets, the gaming contingent claims, mobile gaming will explode.

"We have been successful at generating revenue, and we can make the operators successful," says Air Games' Ghahramani. "We just need to define a simple plan for building the applications for multiple environments and for sharing revenue based on performance."