

Cracking the Code: Behavioral Targeting for the Gaming Industry

The impact of online gaming, social media, new video technology and player psychology on casino revenues.

INTRODUCTION

This is a summary of three papers authored by Clear Peak, describing the challenges, opportunities and necessary action steps that destination gaming resorts should consider to attract and retain customers for their properties. Section 1 examines gaming industry trends and what is required to build knowledge of visitor and gambling using behavioral targeting. Section 2 describes the next generation of customers, how they engage in virtual social media and content sharing and how game equipment manufacturers are redefining casino gaming. Section 3 identifies steps that destination resorts need to adopt to optimize revenue mix from hotel services, gambling activities and player compensation.

SECTION 1

Gambling Redux

In 2008, Sherman Bradley, Online Casino Advisory's senior gambling analyst, advanced the idea that diversification in Las Vegas is as responsible for the city's lost revenues as the national economy. By choosing gambling as just one of many income streams, casino operators lost the recession-proof quality the resorts had enjoyed.

Keith Schwer, the head of the Center for Business and Economic Research at the University of Nevada, Las Vegas offered a similar explanation. "Historically, Las Vegas was seen as a low-cost destination. Today, its price attractiveness has increased but not so for price competitiveness. While online gambling forecasts predict rapid growth in revenues, casino operators are trying to maximize profits, causing disaffection among gamblers. If Vegas doesn't show the average visitor a more luxurious time than they can have near home, as a way to reward for making the trip to gamble, they'll just stay home."

In 1990, non-gambling revenues were 42 percent of a casino's total income. By 2008 it reached 60 percent, making Las Vegas as a gambling destination uncompetitive with casinos closer to home of travelers. During the same decade casino stocks fell in value by a similar 60 percent and are under further earnings pressure since the current economic downturn.

For two decades Vegas resorts were innovators in entertainment, mainly as lures to draw gamblers. Today, Strip hotels compete in offering destination packages for the larger tourist market with a secondary revenue interest in gambling. Amenities such as upscale restaurants, club venues and high drink prices along with exorbitant cover charges are the norm. Improvements in hotel décor and electronics have pushed room rates to levels seen at major city hotels. Gambling has become an option, not a reason to visit. Las Vegas saw itself as front and center of the entertainment industry that has not become so recession-proof.

The attractiveness of comps and free amenities, long a mainstay to gamblers, needs to be revisited. Luxury and status need to be enticements, not revenue generators. Non-gambling services and products need to cover costs, but should be viewed as a way to create more revenue opportunities from gambling. The goal is to attract traffic normally diverted to local slot parlors and Indian casinos where the destination and resort mystique is missing.

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For tourists a destination resort is all about surrounding attractions, climate, local culture and events. The primary aim is to keep a visitor's spending as much as possible within a property. If someone goes off somewhere else, that revenue stream is gone. Resort properties, such as in the case of Las Vegas, are clustered near each other, so visitors have no disincentive to move quickly to other venues.

Unlike local slot parlors, Indian gaming and riverboat destinations, most casinos in Vegas are less than sixty seconds away from a guest staying at their hotel from straying to neighboring casinos. Many visitors see entertainment and shopping as the primary reason for coming, with gambling as an option - not an objective. This forces casino operators to offer non-gambling related services to attract traffic, adding pressure to their bottom line.

Worldwide Internet gambling is also having an impact. While facing legislative hurdles in the US, many people have experienced virtual gambling without leaving their home. Discretionary income is nibbled away electronically and at a low marginal cost to the gambler. After all, no cash is needed for travel, lodging, meals, tips and other expenses. Casinos cannot compete on this economic level, at least until gambling on the Web becomes legal in the US.

Are there destination resort models that can work for casinos? Some Caribbean resorts are packaging their location and isolation as a means to keep people on property. In some resorts, all amenities are covered in the package, gambling excepted of course. This creates a different value model for the gambler. Everything looks "free" in that it is prepaid for the stay.

Slots are often seen as attractors for traffic, filling up the floor at certain hours, otherwise mostly inactive. Much of this has to do with the limited number of game options that current slot technology offers. On average, 40 percent of the machines offer traditional progressive reel slots, another 35 percent in multi-function card games (blackjack, poker, bingo), and the balance in the "fun to play" category (multi-level progression). It is this last category that attracts casual gamblers who, while gambling smaller bets, spend more time playing.

Another influence is a technological revolution in slot gaming technology inheriting exposure from computer games played at websites or driven by Play station, Nintendo and Xbox games. This has brought adult gamers comfortable with playing online in groups or alone, to seek similar action at a casino. It is a wakeup call to the concept of a "destination" not being just physical; it extends to virtual gaming worlds that new players want and expect to play. Unlike today's slot machines that support a limited set of gambling options, newer "X-Plays" are more like computers, reprogrammed remotely, and managed centrally, with the ability to change games to reflect what a gambler wants to play at any moment.

This concept of user "choice" rather than a casino's "offer" overturns everything gaming resort operators understand about traffic, location, payouts, play duration and actions - information that previously was consistent over time because the machine was *the* constant. An *X-play* machine is capable of personalizing any session when behavioral information about the visitor is available and used effectively.

MULTIPLAYER GAMING

Understanding gambling behavior with the right marketing stimulus has caused casinos to rethink their strategy to attract and retain a newer generation of gamblers. What people do in their personal lives, their relationships, demographics and

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socioeconomics are the key elements in building behavioral models. These complement information on visitors and gamblers in casino customer databases. Seeing players as numbers creating revenue models is not enough. Personalization is an absolute requirement. Even more important is relationships with their friends as a group sharing common interests.

People often come to Vegas as a group, sharing their stay and events. Yet slot gambling is mostly a single player experience – one machine, one player. With reprogrammable machines, this is no longer a limit. One can join a multi-player, multi-slot blackjack or poker game, each person in a different place, perhaps even different casinos, playing at a *single* virtual table or video game. Mobile gaming, easily powered by smart devices and phones is exposing people to experiences that resorts are only now beginning to address. “Smart gaming” is quickly growing in other countries and will attract a large population here in the US once legislation addresses the potential revenue to be had. A few casinos are experimenting with hand held gaming devices provided by the operator. It is a short step to provide the same application with security on an iPhone.

From a casino’s standpoint, becoming a destination resort is all about mitigating risk in the mind of a potential visitor. Choosing a destination is the kind of decision that implies a medium to big risk as a visitor is unable “to try before buy.” A repeat customer’s choice can be influenced by a previous experience, good or bad. If this impression is unknown to the casino, it might as well be a new customer from the standpoint of marketing. The decision process a visitor makes, first addresses basic choices that address psychographic needs. Choices are complicated by external factors such as distance, finances, time, demographics, gender and age. Most important is how the visitor perceives gambling: is it seen a social event, something to avoid or a compelling and dominating need?

BEHAVIORAL TARGETING

In the drug industry, pharmaceuticals are first tested *in-vitro* (in the lab). Once proven, they are tested *in-vivo* (with living people), in carefully controlled and expensive trials. Only then can a drug go to market. Casinos do not have this luxury; in the lab for them is the same as in the market. Testing is mostly trial and error, regardless of what gambling industry consultants state.

Most casino issue loyalty cards carry some customer history but it is not as long-living or sophisticated as data collected by the credit card industry. However, it is a short hop to overlay address specific data from vendors such as Dun Bradstreet, Donnelley or Acxiom, all of whom profess to have hundreds of data morsels for every living person in the country. A good statistical modeler could reverse engineer such information into distinct, actionable profiles for casino targeting of prospects and repeat visitors. Adding behavioral data during a stay to loyalty cards allows real time targeting as a powerful incentive tool to keep visitors in the system.

People choose a gaming resort for two obvious reasons: entertainment and gambling. Both depend on price and offer and the value of time. If someone wants to spend the maximum amount of time playing a slot without losing everything, then the value of time played is more than the value from payouts. The choice of bet is kept just slightly above the minimum to keep playing. When payout is more important than time, the player wants to win with the fewest bets and is willing to risk more per bet. In between these options is a broad spectrum of need models that can be readily identified through behavioral targeting. Existing models focus more on revenue yield and less on what behaviors play a role. As such most existing yield models may only have 2 or 3 important variables.

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Contrast this with data available from internet multi-user games. Here we can see how players master the rules, find shortcuts, exchange information with other players and continuously strive to get to the next level. Monitoring this behavior is very rich in terms of behavior and interactions with other players. On the Web, behavioral analysis is vital to the study of social media sites to keep members from leaving while attracting new members for advertising opportunities. This can equally apply to casinos and their “loyal” repeat customers.

Casinos need to study social media theory and understand how virtual relationships created on the Web infer relationships in the real world, using a wealth of information found in social media site member pages, their likes, aversions, shared media, applications, comments and opinions. Social theorists believe that shared opinions (*crowd sourcing*) is one of the most powerful trends spawned by the Internet. All this data extends to others through their virtual connections. This is an ideal information model for casinos to adopt and morph into their destination resort concept. The next generation, multi-functional, electronic gaming machines (let’s finally relegate “slots” to places hidden away), will transform gambling into a new genre that is well suited to the concept of an entertainment destination resort.

SECTION 2

Social Media & Gambling

The recent Pew Internet American Life Project¹ looked at how people are moving to an intensively connected lifestyle. Among their findings on young adults, 94 percent use the Web, with 90 percent accessing the Internet from home and 68 percent using mobile connection through texting, Web access and media sharing. Social media platforms are becoming *the* primary outlet for expression dominated by Facebook, MySpace and YouTube. Video sharing is growing exponentially and doubling every 2 years, with personalization using applications, widgets and blogs. A key reason is content sharing, though some of it illegal. Social media is now *the* starting point for online game play in larger player communities focused on specific venues. Internet gambling is starting to gain worldwide traction driven by less stringent regulations in other countries.

People with shared ideas and experiences are at the forefront of a virtual society defined by relationships among participants; the scope of connections to others; the two way nature of shared content and frequency of interaction. This movement away from physical towards digital exchanges is now accepted as the norm. Technology is accelerating this transition with many people preferring a virtual social network model as a way to enrich their lives. Notwithstanding the battle between free and paid-for services, with advertisers searching for the economic return that the Web and mobile media can provide, people are the ones that create value with social media acting as the crucible. It is becoming the next distribution channel and a larger focus for media and advertising, but it needs to be viewed as a means, not an end.

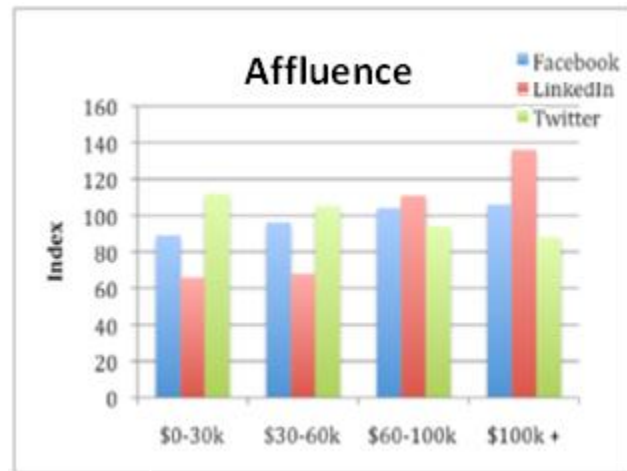
Understanding the psychology of why people engage, their online behavior, how to measure their expectations and how to translate this into economic value is the real challenge. From the perspective of marketing to social media audiences, one has to detect and measure patterns, activities and behavior as benchmarks for measuring metrics and ROI. Web analytics is the first step; behavioral modeling and targeting the next; creating incentive models for continued engagement with business offerings being the final result. To attract young adults to participate in new gaming venues through social media can be a rewarding opportunity for destination resorts and casinos. There are however, a few cautions.

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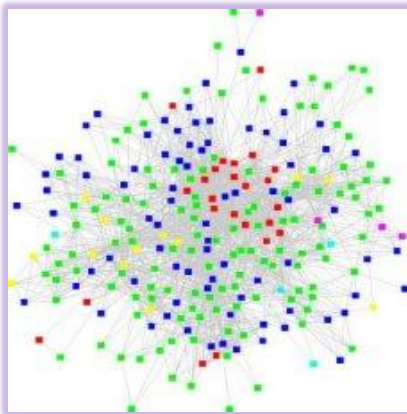
According to Gartner analyst Adam Sarnerⁱⁱ, more than 75 percent of Fortune 1000 companies with Web sites are engaged with online social-networking, while 50 percent of those campaigns will eventually be classified as failures. Businesses rush into online communities to connect, but they essentially come up short. Even addictive campaigns often provide little value with Web marketing efforts showing a high resistance from viewers. Sarner states that there is no universal approach to social-media advertising and marketing, but he offers some tips: make sure that there's a clear reason *why* a campaign is instituted, and understand that "getting people to respond" isn't enough. You have to anticipate trends and leverage them to your advantage. A static approach is doomed.

Social Media Networks

Social media sites exhibit a broad range of differences in the makeup of their members, even for the top sites. For example (graph at right), a simple attribute of **affluence** shows a strong disparity among the top three social media sites. Casino marketing needs to integrate traditional and social tools, driven by understanding ongoing relationships among types of media, who are the main influencers, and who are followers. Knowing about these relationships is the foundation to answering the challenge of creating the right metrics to measure how to take advantage of social media.



(Credit: Quant cast)



Social networksⁱⁱⁱ comprised of individuals or organizations, provide a graphical view using *nodes*, and connected through dependencies such as friendships and exchanges, on many levels. Social network *analysis* describes such relationships using a theory of networks comprised of *nodes* and *ties*.

A **node** is usually a person (*actor*) within the network, and **ties** measure relationships between actors, often creating complex structures with many links (image left). Research shows these networks play a critical role in determining the way problems are solved, organizations are run, and the degree to which individuals succeed in achieving their goals.

Social media networks can be used to measure *social capital* -- the value an individual gets from belonging to a group. A social network *diagram* is the visual metaphor of this process. For an example of social capital, one study^{iv} found that happiness is correlated within social networks. When a person is happy, nearby friends have a 25 percent higher chance of also being happy. People at the center of a social network tend to become happier in the future than those at the periphery. Attribute values and the position of an actor in the social graph can translate to metrics useful for marketing.

One should however, pursue such measures of social capital with caution. Seth Godin^v recently said, "Networking is always important when it's real, and it's always a useless distraction when it's fake. What the Internet has allowed is an enormous amount of fake networking to take place, and it's so easy to be seduced." He emphasizes that the true value of social

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networking for business is the opportunity to form real relationships with people and organizations who are relevant to the business, but who are far less approachable in real life than they are on the Web.

While online social media activities are somewhat benign (Facebook, Myspace, LinkedIn, Twitter), they are providing the foundation for activities that do not have to be anchored within a site; instead they are connected through applications and services using widgets and newer forms of media – the Web 2.0. It is this environment that suits the gaming industry in establishing and nurturing customer relationships so that *branding*, when properly executed, can build social capital that infers loyalty and repeat business.

Factors of Influence

The general factors that influence behavior can be stated within four categories: personal, social, situational, economic (table below). This approach is based on Herzberg's Two Factor Theory^{vi} developed by Frederick Herzberg who separated motivational factors into 2 categories: those that lead to satisfaction and those that do not affect satisfaction but if not present, can lead to dissatisfaction. These factors^{vii} are a good measure of how people decide for example, in choosing a destination resort with economic and marketing factors playing a strong role from a gambling perspective.

Tourist personal factors	Socio-cultural factors	Situational factors	Economical and marketing factors
Needs	Family	Age	Income
Motivations	Referential groups	Health	Interest rates
Sensations	Social status	Mood	Inflation
Perception	Social Role	Time allowances	Prices
Attitudes	Culture	Family cycle	Products
Personality	Education		Commercial communication
Self image	Religion		
Life values	Leaders		

Table columns 1 and 2 directly map to the theory of personal interests in social media. Columns 3 and 4 derive decision behavior based on psychographic and economic influences. Put together, these factors can be used to create a social capital model applicable to the gaming industry when coupled with destination resort offerings. Measuring social network dynamics is challenging since network structures are complicated due to feedback effects (reciprocity, transitivity, popularity, subgroup formation). The existence of linkages is also highly dependent on the number and depth of other linkages. Extending this to gambling behavior and its stimuli is more complex. The following is a good example.

Writing for the Journal of Gambling Studies^{viii}, Corney and Cummings provide an analysis of cognitive dissonance by players who exhibit consistent biases in gambling choices measured in terms of duration of play, amounts wagered, and satisfaction or dissatisfaction with play. The anxiety that comes with the possibility making bad decisions creates a tendency to create additional reasons or justifications to support one's choices. For example, a person who just spent too much money on a new car might decide that the new vehicle is much less likely to break down than their old car. This belief may or may not be true,

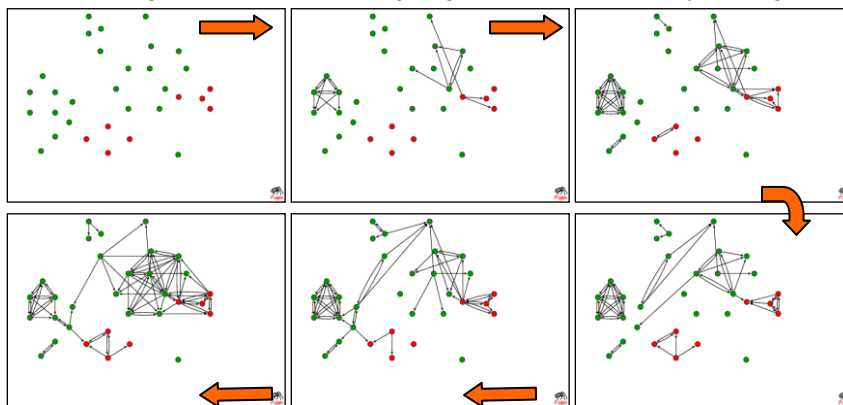
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but it may reduce “dissonance” making them feel better about their choices. Measuring bias to calculate social capital is not easy.

The biggest challenge is creating normative measures useful in a robust statistical model. Qualitative attributes are difficult to define, more so when biases are a hidden part of behavior and not easily visible. Gambling exhibits compulsive and addictive choices easily swamping the influence of social and demographic attributes that are useful in statistical tests. For example, conjoint measurement, where people tradeoff one product feature against another feature to construct a measure of its utility, quickly breakdown when one attempts the same with measures based on beliefs and biases. Nevertheless, newer statistical methods, such as genetic annealing, support vector machine and correspondence analysis are applicable in social behavior analysis.

Factors of Group Formation

The following social graphs show a time view of a group forming subgroups over time (gender is represented by green for males and red for females). Snapshots were by hour. It’s reasonable to assume in the example that gender plays a role in the level of reciprocity and sub group formation. However, a common misconception is that groups are dynamically formed, then becoming stable. Often the opposite is the case – a stable group tends to splinter into sub groups as belonging to one group introduces new opportunities for sub group interests. People join groups based on affinity in the group shares a set of interests.



Hourly view of changes in male and female group linkages

Sub group formation occurs when individual relationships dictate a smaller set of connections (family members, friends, or workers) or when interests align (Catholics → Catholic priests → Latin Mass). Sub groups appear when knowledge of behavior in members becomes exposed over time to the larger population (example: voting preferences, cultural choices, needs and social goals). The temporal nature of sub groups (e.g. former contacts at a previous employer) is closely related, using statistical terminology, to the degrees of freedom in a behavioral model. This principle can be viewed as **gravitational attraction** where the strength and number of connections provide a measure of stability -- how long a group survives.

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Ad Hoc Groups^{ix}

Ad Hoc groups are by definition, *temporal*. A group may have a high gravitational measure but its existence is dominated by an artificial reason. A good example is a *project* group where participants are brought together for a period of time. They disband (in a loose sense) when objectives are met and the reason for connecting to each other become less important over time. A 2005 study of group mobility modeled the difficult aspects of simulations of applications and systems designed for temporal situations. Currently, there is no publicly available data capturing movement of actors in large-scale ad hoc groups. Instead, synthetic models are used. The most widely used describe individual movement as a Random Walk Mobility Model (similar to Brownian motion in physics), and used to represent movements within a system.^x With the availability of mobile location based services (GPS), we are now moving away from a static group views to a dynamic view of members that change links as locations change. Marketing stimulus is no longer based only on person's profile but can now determine *what* an individual or group is doing and *where* they are at any time.

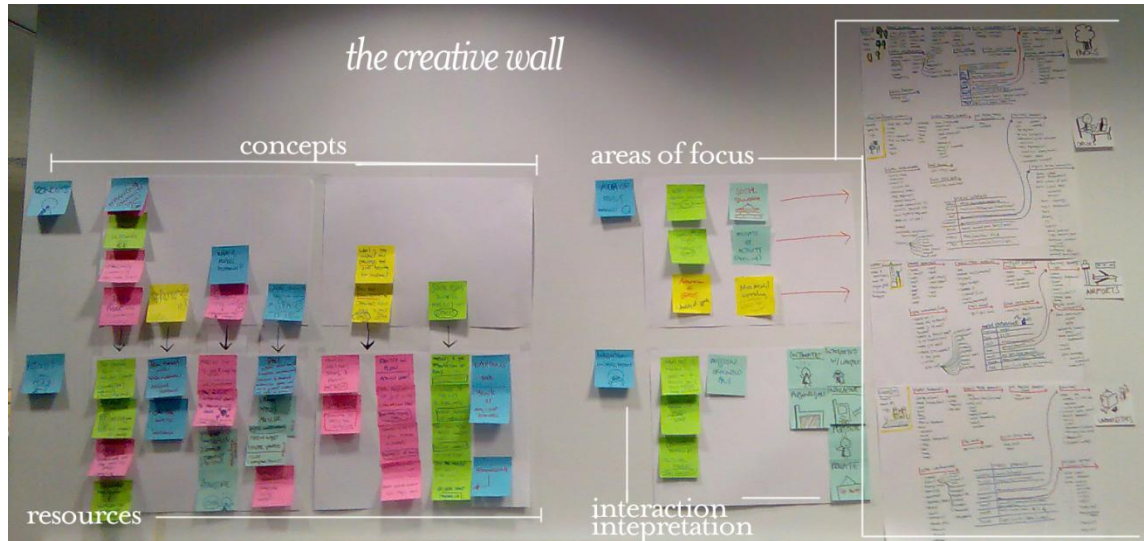
As such, all synthetic movement models are weak in mapping reality. Random mobility models generate behavior that is quite inhuman-like. This last point is important. Mobile devices are usually carried by people, so the movement of such devices is necessarily based on human decisions and socialization behavior; it simply means that as an accessory, the device is a proxy for behavior.

It is important however, to model the actions of individuals moving both in *and* between groups. Ad hoc networks are a good example (disaster relief teams, military groups.) In order to measure this type of behavior, it is necessary to define group mobility models that are heavily dependent on the structure of the relationships among the people. Existing group mobility models fail to capture this social dimension and but properly designed, can accurately express how social media behavior operates in a gaming environment to drive marketing offerings with higher response rates.

My favorite picture (image below) of how ad hoc groups define themselves shows how people work together using a basic tool – sticky notes. The label colors indicate task ownership by different sub group with some individuals tasked with more than one responsibility. It is clear that there are many types of abstractions that we can overlay within the example, some based on a person's expertise (e.g., their knowledge of encryption), and others on formal groupings (e.g. having a security clearance).

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Abstraction is an important concept because it consists of two driving forces: (1) modalities, and (2) relationships.



Modalities describe multiple connections within a group. One set of attributes (our expertise example) brings together security and encryption experts. Another set is controlled by who has security access to documents. If there are only 2 encryption experts but 11 of the 13 members have access to secret documents, then sub-groups are created. Encryption sub group (2) belongs all or in part to the document access sub group (11) who are in the main group (13).

Relationship is defined as the set of measures that accurately explain why a group exists. In a perfect model, attributes are complete (no missing data). Here a random walk model is useful in that clustering measures can identify attributes having high correlations and then ranking them by how well they explain the variance of a measure (e.g. duration of membership). Pre defined relationships also play a role (group leader, expert, facilitator, early adopter). Normally, these types of actors act as attractors to other members. A key focus of social network modeling is *identifying* members who dominate a group in that most of the connections terminate pointing first to them rather than flow in all directions.

Simple affinity models, like the social media business website **LinkedIn**, describe modality in constrained ways (where you work and where you went to school). The **SlashDot** site is an opposite case where member interests are so diverse that disparate sub groups are formed with little affinity amongst themselves. In such cases an individual can also be in several sub groups (an actor with different roles and with different interests).

Mobile cellular groups are a more interesting case since the user device (portable media) defines what you can do; the contact list defines who you already know; and the network that allows you to connect to known and unknown actors. In a sense cellular groups describe an *artificial group* model where dominant members are measured by how often they engage, and how much time was spent on communicating (call, message, media, surfing the Web). Mobile groups intentionally spawn ad hoc groups because of their specific nature (talking to a girlfriend versus conferencing a team). Knowing a user's preferences and behavior is a useful surrogate and can help determine affinity in types of gaming experiences people are attracted to at a resort.

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Gaming Machine Behavior

Behavioral analysis of machine based gambling is not new. In a 2006 Stanford University Study^{xi} of casino loyalty card program for 198,223 customers, researchers analyzed factors that influence slot machine play behavior. They concluded that gamblers are *myopic* in how they make choices where their current play is affected only by (immediate) past plays. This is in contrast to previous models of rational addiction where behavior and choice of play - past and expected future - effects current play. The study results showed that the median gambling play lasted two hours, the total amount bet \$ 450.00 and the median total cumulative win was \$ -46. This is an estimate of casino gross revenue of about ten percent, consistent with evidence on slot machines margins. As for comps - the median value was \$ 0, with a mean of \$ 9, about two percent of the amount bet. Given that the gross margin is 10%, it suggests that casino spend 20% of gross revenues on comps. Some interesting facts emerge.

1. When examined for gender and age, the majority of players were older, white females (greater than sixty years of age).
2. Customers are on average were less likely to play again if they had a higher previous bet, and conditional on frequency of play, their bet amount is also lower. This is evidence against addiction in gambling behavior, at least at the population average level.
3. The “hot hand” myth where players believe that a previous win is positively correlated with the likelihood of a future win was not statistically valid. The same test also fails for the “gambler’s fallacy” where the probability of a win in a future game is negatively correlated with a past win^{xii}.
4. An interesting positive influence was shown for the total amount of wins on bet amounts. The higher the total, the larger the bet, was consistent with current industry assumptions.
5. The influence of comps was positive and significant for both the bet amount and continued play. One can conclude that marketing activity was positively related to both bet amount and probability of participation.
6. Time of play had a negative impact. This may be due to satiation, play fatigue or individual time constraints. A curious result showed that players who have a high intrinsic bet amount and a high intrinsic probability of participation were more likely to be prone to addictive behaviors^{xiii}.

Social Behavior in Machine Gaming

The commonly accepted profiles of slot players are replete with long-held views by the gambling industry. The traditional player seen as a middle aged, predominantly female smoker, no longer describes the newer generation of players. The X (post baby boomer) and Y (Millennial) generations represent the new gaming market opportunity. Raised during the age of digital media, heavily reliant on mobile devices, astute at playing video games - single or multi-player, Web savvy and members of social media sites, X and Y represent a different class of gaming dynamics. It is only in the last couple of years that the gaming machine manufacturers began to realize that the existing slot machines are no longer attractive for these new players.

The emergence of “slot” machines providing games that draw on familiar entertainment subjects (Sex and the City, Ebay, Wheel of Fortune), demonstrate the new examples of how people engage with something already part of their lives. These new machines are usually located in clusters so a person is surrounded by others playing the same game. Newer machines, coupled with loyalty cards, allow personalization – a list of games that matches a player’s preferences or previously played

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games. The next step would be to introduce “applets” on a machine. This would allow multiple players to engage in games across “connected” machines, combining bets and sharing rewards, even aggregating comps.

Such an approach begins to deliver what people already experience with Internet gambling. Casinos are now experimenting with “virtual tables” and hand held gaming devices like the Cantor device, currently in use in Vegas at M Resorts and soon by Tropicana and Hard Rock. Combining these two examples, casinos are a just short step away from bringing in a new class of customers with prior experiences in Web gaming as well as with Xbox, Nintendo and PlayStation games played at home. All this bodes well for casinos that can tailor their resort as a destination, not only by theme, but also by the newer gaming environment.

The trick is how to attract the younger gamblers and select the right type of machines. Part of the problem is also how casinos use marketing promotions and what methods they use to reach first time visitors and hopefully, gamers. Traditional direct mail is well understood with casinos producing scores of promotions each month. These tend to work well with repeat and loyal customers but are generally ignored by the first time visitor. Email campaigns likewise suffer even though response rates are marginally higher, depending on the list source. The newer technologies like smart mobile advertising, iPhone and 3G phone applets and location based texting, are in experimental mode but fail to leverage on behavioral data and the difficulty of acquiring this information from disconnected systems.

Slot play statistics are separated into two categories: the handle and slot machine play statistics. Casinos know what the payout is on any machine and can cross-link this data to anyone playing while using their loyalty card. That’s about it. Slot machine plays are generally tracked by the machine provider but are mostly used to determine which game is played, how long, how many plays and so on. This is a real obstacle to the statistician attempting to build a predictive behavioral model. Often, only certain variables are available. Much of the data spans different time periods and cannot be cross-linked to a particular machine with a specific player.

As for social behavior information, outside of data internally gathered by casinos, no one has figured out how to take advantage of social media profiles of new and existing gamers. For example, if one knows that a loyal customer has multiple friends on a social media site, it is a short step to direct an offer to them with a “share offer” to linked friends. The same goes for media ad placements that couple an existing player’s experience to their social media profile, extending the model to include other factors predicting behavior.

Some of the new classes of machines support Internet protocols (IP addressing) that could allow a player to engage with their friends using social media tools like Facebook or Twitter while they play. Currently these activities are not seamlessly connected but they will occur as time goes on. Clearly, the new machine is no longer a “select bet – push button” event; it now becomes an extension of a player’s social behavior that exists outside of the casino.

SECTION 3

Next Steps for Gaming Properties

The previous sections discussed how gaming resorts need to address and adopt new methods and promotions to both existing customers while preparing to reach the newer generation of young adults that are heavy users of social media and gaming technologies. The key goal is to strike a balance between destination resort values and new gaming experiences. The objective

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is to increase gaming play time based on personalization and behavioral targeting, and that extends and persists beyond a visit to attract satisfied and repeat customers. For destination gaming resorts to implement marketing programs using behavioral targeting requires a game plan. Here are steps.

Step 1 Identify your data collection points

The good news is that data is available from multiple systems: Slot accounting, customer relationship management, campaign management, hotel services, facilities management and third party data providers. Behavioral targeting (BT) can take advantage of these data streams because each provides a touch point to an existing customer and can be used to model profiles for prospects. It is important to be able to measure the impact of campaigns and stimulation on customer behavior. The ability to measure response and adjust is a critical requirement and can be approached through data warehousing techniques to create a single source of information across your business. Another approach is to create “data nets” trapping information flows going in and out of existing systems. These can be simple replicators to create temporary archives with appropriate security controls. Remember, the goal is to have a separate, simple information source to support collection.

Step 2 Design a data model with the “customer” as the primary focus

Spend time on how you view a customer or prospect. The purpose is to identify the ways you can reach, stimulate, track and reward. There are plenty of existing data sources. For example, slot accounting focuses on machines. Hotel services looks at what’s consumed. Facilities are all about operations and assets. Third party data describes prospects using data from external sources. You can find data on customers in each but not necessarily as the primary key. If you have a player or loyalty club program, then start here by defining your customer using simple metrics that map into your *existing* data nets. Remember, a key value in BT is in tracking behavior over time. This means that you need to measure recency, frequency, and stimulus. Hold off in trying to define how you measure the value of a customer. This is determined with BT modeling.

Step 3 Identify your behavioral targeting objectives.

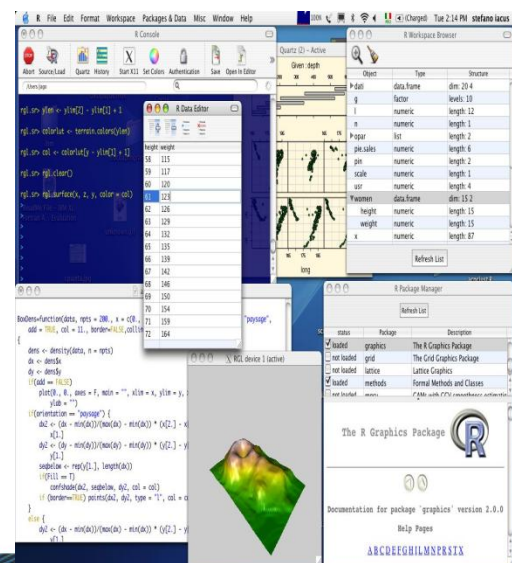
Do you want to increase traffic to a specific property or build up your customer base? These objectives are not necessarily aligned and need different stimuli. Do you want more traffic during the week or increase visits for specific months? Do you want to increase play time or promote new gaming experiences? Do you want to promote group activities or stimulate underperforming customer segments? Each defines different success factors and measures.

Step 4 Develop a behavioral targeting competence.

Behavioral modeling is all about applying the correct statistical techniques using appropriate data elements. If you have an in house modeling group, introduce open source software to get started. One suggestion is using [R Project](#), available at no cost.

Avoid spending hundreds of thousands of dollars on software from the likes of SAS, SPSS and IBM. You can find a pretty good list of free resources [here](#).

If you don’t have a modeler, hire a consultant that is adept at managing information sources to create the data model *and* is familiar with BT



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statistical methods. Use a trial project to test the waters before you invest in creating a practice. Avoid outsourcing. You won't save money in the long run. Like in any business, knowledge is much broader inside an organization than can be found outside.

Step 5 Choose your weakest segment to model

Businesses tend to focus on their strongest customers to improve market share or yield. Under performing market segments are usually underserved because their perceived value is too small to attract interest. BT can discover the reasons why and make them more attractive. This is especially important when looking at visitors as opposed to loyal customers. One suggestion is viewing a casino and hotel revenue stream in total and separating out the contribution from customers you track. The balance is from "walk-in" customers. By looking at descriptors like weather, day of week and time of day, as well as ongoing events at other properties and promotions, a good BT model will isolate the contribution of these factors.

Step 6 Choose the right value metric you want to model

There is a tendency to use revenue or yield metrics as the dependent variable in modeling. While they are important, they may be secondary to the true measure that creates a positive increase. For example, how comps are treated and personalized along with their amount and restrictions can heavily influence the willingness of someone to come to a property and play. If you know how your loyal customers react to your comp program gives you guidance on how to attract new customers, perhaps by giving more comps initially, and switching to different types of comps as they revisit. Remember, BT focuses more on qualitative rather than quantitative measures.

Step 7 Select the right marketing channel

Direct marketing is one of the easiest business functions to measure results. Mail and email marketing using campaigns track response at point of contact. It is important to make sure that you capture the campaign identifier at the property and at the required time of response. If you don't have a system to do this, create an electronic type of log that collects this with a time stamp. This piece of information is critical to measuring the success of a BT campaign. Try not to stimulate the same prospect with competing offers that are too close together in time. This will avoid response dampening. In other words, treat your prospects as if you have one shot.

Sending too many offers will cause people to spend less time in deciding, usually by ignoring what you present. Try using Web 2.0 marketing channels like social media sites, location aware mobile messaging, special event programs, and social group activities. Each of these comes with pre existing behavioral data that may increase response rates. The more BT data you collect, the more BT statistical models can improve revenue and yield.

Step 8 Personalize customer experience

Once on your property, keep in touch with your customer. Increasingly, new technologies are allowing you to communicate and interact with customer inside your premises. iPhones, cell phones and iPads allow almost instant access to your customers even inside your gaming floors and new open systems gaming applications such as IGT's SBX platform allow direct access to a slot customer during a playing session. Existing information systems inside a resort give ample opportunity through loyalty cards to personalize activities. New gaming machines are already able to provide amenities by remembering a player's visits, comps, play time, and so on. A real time BT system can update a perceived customer value measure as they continue to play, during the visit and over time. Like a FICO score, you can stimulate during periods of higher satisfaction differently from when

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things are not going so great for a player. Keep track of what you did during the stay and measure the effect, if any. This at least will tell you what works and what doesn't. It really works well when your visitor is here with other friends. If you are able to link loyalty cards during a visit, try to stimulate the group as a whole than separately individuals in the group.

Step 9 Respect customer privacy

BT is about knowing everything on how your customer or prospect responds to your offer and what they experience at your property. There is a fine line between privacy and disclosure. Web marketing is all about giving the viewer an opportunity to opt-out and not being tracked using cookies and other techniques. In Europe, companies must get permission from people before they can target, track and stimulate. This is the opt-in model. Make sure you disclose what you do and what people can choose what they don't want to be used in your customer relationship management database. You can also infer some form a value to a customer for allowing the property to track certain information. In other words, comp the customer for tracking some of their data. This creates a true measure of the value of information from the customer's viewpoint.

Step 10 Be consistent in behavioral targeting

Consistency is the key to successful behavioral targeting strategies. Customers expect a similar experience from a property, regardless of marketing channel. If you determine that one BT approach works well with a customer segment, make sure a markedly different one does not conflict when targeting the same customer in another segment. This means keep track of not only which campaign was used with a prospect or loyal customer, but also what metrics and goals were used in each. This is of great importance in brand management and applies equally to behavioral targeting.

Step 11 Make Mistakes Faster (Don't be afraid to experiment)

With behavioral targeting capabilities in place, harvesting segment value is now truly possible. Experiment with new programs and stimuli with sample groups and measure their response. Expand programs that work and discard the failures. If you determine that one BT approach works well with a customer segment, make sure a markedly different one does not conflict when targeting the same customer in another segment. The ability to innovate ahead of your competitors becomes only limited by your creativity and ability to understand your customers.

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CONCLUSION

There are many obstacles to taking advantage of the future world of gaming experience: legislative, security, privacy, diversion of attention from play, machine adoption and awareness. Still, if casinos do not embrace the expectation of newer generation players and gaming machine vendors are reluctant to promote the “open data sharing” concept, the revenue potential for gambling, as a percentage of total destination revenue, will continue to decrease. Regional and local casinos are now diverting gambling resort customers to places closer to home. Destination gaming resorts need to be aggressive in redefining the gambling experience offered and must create a new way of reaching their customers through behavioral marketing and targeting social media. The next generations are here and are willing to play.

ABOUT THE AUTHOR

Andre Szykier is resident Chief Scientist at Clear Peak, focused on behavioral targeting and gaming technologies. A brief overview of Andre Szykier's remarkable career history includes: Signal telemetry work on the Mars Viking and Apollo programs, managing the Super Collider project, helping develop the FICO score and serving as a security expert to U.S. government agencies including the NSA, TSA and NRO. He brings unmatched expertise in scientific and mathematical modeling to Clear Peak's clients.

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Clear Peak is a management and technology consultancy specializing in Business Intelligence. Our clients call us The Data People. That's because Clear Peak defines BI as the practice of harnessing the power of data to give our clients actionable insight, bottom-line improvements and a competitive advantage. The firm focuses on Fortune 1000 companies across a broad set of industries. Clear Peak's C-level veterans and senior technologists deliver a suite of services spanning Sales and Marketing, Operations, Finance and IT. Since 2000, Clear Peak has helped client companies realize hundreds of millions in bottom-line improvements. Put your data to work with Clear Peak (www.clear-peak.com).

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ⁱ "Writing, Technology and Teens", Lenhart, A., Arafeh, S., Smith, A., Macgill, A. R., *Pew Internet and American Life Project*, 2008

ⁱⁱ *Gartner Symposium/ITxpo 2008*

ⁱⁱⁱ *Wikipedia* definition of social graph theory

^{iv} Some studies suggest that human social networks may have a genetic basis. Using a sample of twins from the National Longitudinal Study of Adolescent Health, *in-degree* (the number of times a person is named as a friend), *transitivity* (the probability that two friends are friends with one another), and *between-ness* (the number of paths in the network that pass through a given person) are all significantly heritable. Existing models of network formation cannot account for this intrinsic node variation, so the researchers propose an alternative "Attract and Introduce" model that can explain heritability and many other features of human social networks. ("Genes and the Friends You Make" – *Wall Street Journal* January 27, 2009.)

^v *Agents of Change*, [Seth Godin](#), 2009

^{vi} [Two Factor Theory](#) *The Motivation to Work* 1959

^{vii} *Loyalty Programs that influence the decision process in choosing tourism destinations*, SASU DINU VLAD, POPA ADELA LAURA, SECAR OANA MARIA, UNIVERSITATEA DIN ORADEA, FACULTATEA DE STIINTE ECONOMICE, CATEDRA DE MANAGEMENT I MARKETING

^{viii} *Journal of Gambling Studies* Volume 1, Number 2 / September, 1985

^{ix} *Determining virtual ad-hoc groups in quasi-social networks*, Andre Szykier, *Behavioral Modeling*, April 2007

^x *Social Networks Based Ad Hoc Mobility Models*, Mirco Musolesi, Stephen Hailes and Cecilia Mascolo
Department of Computer Science, University College London, 2005

^{xi} *An Empirical Analysis of Individual Level Casino Gambling Behavior*, Sridhar Narayanan, Puneet Manchanda, Graduate School of Business, Stanford University 2006

^{xii} *Pathological Gambling*, Potenza, M. N., T. R. Kosten, and B. J. Rounsaville, *Journal of the American Medical Association*, 2001

^{xiii} *A Theory of Rational Addiction*, Becker, G. S., and K. M. Murphy, *Journal of Political Economy*, 1988