Loyalty analytics exposed: What every program manager needs to know
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Customer loyalty programs have proliferated in recent years as companies seek to acquire and retain customers, increase customer spending, influence customer spending habits, and encourage the purchase of additional products. In fact, some loyalty programs have become so aligned with company brands that they have become a core product offering.

As loyalty programs have grown and matured, various accounting, actuarial, and regulatory models have emerged. Not surprisingly, differing views on recognizing and measuring loyalty program benefits and costs have led to diversity in practice. Gaining an understanding of these different perspectives, particularly with respect to point-based loyalty programs, is critical to establishing an effective loyalty program strategy and proper financial reporting.

Loyalty program designs commonly follow one or, increasingly, a combination of the following three forms:

- **Discount programs**, where participants receive instant discounts/benefits at the point of sale (e.g., supermarket membership cards or free internet shipping).
- **Rebate programs/cash back**, where customers accrue financial benefits from purchases tracked by the program sponsor and receive their benefit after a set time period (e.g., two percent cash back annually on credit card purchases).
- **Points programs**, where members accrue points, credits or miles (the "currency") by buying goods and services from an issuing program sponsor. The sponsor tracks the earned currency which the consumer can use to obtain free or discounted goods or services (e.g., frequent-flyer and hotel programs).

**Value proposition for program sponsors**

Loyalty program members who redeem points to obtain rewards are more likely to continue, or increase, their spending and use of the underlying product or service and stay engaged with the program and brand longer. For example, many travellers choose airlines and hotels based almost solely on their ability to earn points.

As the table below illustrates, the profitability of a loyalty program can be evaluated by examining the difference between incremental revenues generated by profit and incremental costs.

<table>
<thead>
<tr>
<th>Incremental Revenues</th>
<th>Incremental Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ancillary revenue (e.g., membership fees, point sales, partner payments)</td>
<td>Rewards redemption and accrued liability</td>
</tr>
<tr>
<td>Increased purchase frequency</td>
<td>Cost of soft benefits (e.g., perks, recognition, member events)</td>
</tr>
<tr>
<td>Increased purchase volume</td>
<td>Program communications (e.g., advertising, mailings, email)</td>
</tr>
<tr>
<td>Reduction in customer churn rate</td>
<td>Information technology investment and maintenance</td>
</tr>
<tr>
<td>Willingness to pay premium</td>
<td>Enterprise training and support (e.g., call centers)</td>
</tr>
<tr>
<td>Increased advocacy and referrals</td>
<td>Business unit overhead (e.g., staffing payroll and benefits)</td>
</tr>
<tr>
<td></td>
<td>Research and development</td>
</tr>
</tbody>
</table>

The objective of a program should be to achieve the ideal balance between incremental earnings (revenues) and incremental redemptions (costs), with the goal of attracting "profitable" members and generating maximum incremental profits to the program sponsor.
Accounting for loyalty programs

Typically, between two and ten percent of the amount customers spend on products or services fund rewards programs. In addition to being a significant expense, delayed fulfillment of member benefits under rebate or points programs can result in a build-up of large balance sheet liabilities over time for the program sponsor. Accordingly, companies need to address fundamental accounting issues for the recognition and measurement of 1) revenues and expenses on the income statement and 2) related liabilities on the balance sheet.

US GAAP has offered little specific, authoritative guidance on accounting for loyalty programs, so diverse accounting practices have emerged. Recent changes in international accounting rules have triggered changes in some major programs, and possible modifications in US GAAP have generated further discussions. Depending on the nature and size of the program, accounting changes to loyalty programs can significantly impact a company's balance sheet, profits, and financial disclosures. As a result, companies need to maintain an awareness of emerging accounting practices and how they will impact the company's program.

US GAAP recognition of revenue for customer loyalty programs

Under US GAAP, two dominant accounting approaches have emerged to recognize and measure loyalty program revenues and costs.

- **"Cost/provision."** Under this approach, the nature of the awards are viewed as a marketing expense so a company immediately recognizes the full payment received from the customer as revenue in the period of the qualifying purchase (e.g., when points are earned). At the same time, the company records a provision for the cost associated with the company's future obligation to its customers. Divergent practices have emerged as to how this cost is determined, ranging from incremental to full cost estimates. Incremental cost is equivalent to the program's cost of goods sold, while full cost estimates may refer to a "fair value" notion or a retail selling price. The customer's redemption of accrued points ultimately eliminates the program liability.

- **"Deferred revenue."** Under this alternative approach, the issuance of points is viewed as a separate component of a sale. Therefore, a company defers the recognition of a portion of the company's revenue, which is directly related to the earning of loyalty points, to a future period in which the customer either redeems the points or the points expire. This approach generally uses a "fair value" notion to estimate the cost.

Aside from the different revenue recognition methodologies, both approaches establish a liability on the balance sheet – "program liability" under the cost/provision approach or "unearned program revenue" under the deferred revenue approach – between the time points are earned by customers and the time points are redeemed, forfeited or expired. The amount of the liability, and therefore the impact on a company's net income, often will be larger under the deferred revenue approach than under the cost/provision approach, as the revenue associated with rewards is typically greater than its costs, particularly if only incremental costs are considered.

With little guidance related to the derivation of loyalty program costs under US GAAP, "fresh-start" accounting rules applicable to reorganizations or bankruptcy proceedings are an important exception. These "fresh-start" rules, which require loyalty program liabilities to be stated at fair market value, have been applied in a number of recent bankruptcy proceedings in the airline industry.
Since 2002, the US Financial Accounting Standards Board (FASB) and the International Accounting Standards Board (IASB) have been working on a joint project to clarify the principles for recognizing revenue and develop a common revenue standard. The FASB and IASB issued the initial exposure draft, *Revenue from Contracts with Customers*, in June 2010, as well as subsequent drafts in November 2011 and January 2012. The upcoming final version of this document will address specific issues related to accounting for loyalty programs, and ultimately could lead to a more conservative approach (e.g., deferred revenue and/or fair market value concepts) than current US practices. Such a change could dramatically impact loyalty program accounting in the US in a manner similar to the recent changes in international accounting standards (discussed below).

While originally intending to issue a final revenue standard by 2011, the Boards still have not issued a final standard. The timing of the publication of this final standard is unclear at this time but it is reasonable to assume that the effective date of the standard would not be earlier than annual periods beginning on or after January 1, 2015.

**The consequences of IFRIC 13**

Because of diverging accounting practices, International Financial Reporting Interpretations Committee 13 (IFRIC 13) was issued in 2007 (effective July 1, 2008) to provide more specific guidance and to bring greater consistency regarding the treatment of loyalty program liabilities. The two major concepts underlying the application of IFRIC 13 to loyalty program accounting are:

1. The issuance of credits or points must be accounted for as a separate component of the sale. In essence, this requires a deferred revenue approach, whereby the income statement immediately recognizes the portion of revenue related to the sale of a good or service and defers the remaining revenue allocable to the value of loyalty points. This deferred revenue is recognized when the loyalty points earned at good/service purchase are redeemed, forfeited or have expired.
2. The process of calculating the amount of deferred revenue when issuing points must be based upon the *fair market value* of those points to the customer. This guidance means that a company must defer the value of the points (less expected "breakage") according to the value that customers put upon them. In contrast, US GAAP allows an alternative approach for the recording of points at a value that is based upon the program sponsor's internal cost of goods sold.

IFRIC's starting position for determining fair value is "the amount for which the award credits could be sold separately." In practice, this definition can require significant estimation and judgment by management, particularly in the absence of significant sales of points to third parties. Where third-party point sales are significant, the cost of the points in the sales transaction is often the most appropriate and compelling evidence of the fair value of the points. In the absence of third-party point sales, the estimated fair value of the goods and services for which the points may be redeemed likely would be used to determine the fair value basis of the points.

The following table summarizes the difference in current US accounting practices in accordance with US GAAP and IFRIC 13:

<table>
<thead>
<tr>
<th></th>
<th>Current US practice</th>
<th>IFRIC 13</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Income statement</strong></td>
<td>Deduction of revenue (&quot;deferred revenue&quot;) or marketing expense (&quot;incremental cost&quot;)</td>
<td>Deduction of revenue (&quot;deferred revenue&quot;)</td>
</tr>
<tr>
<td><strong>Balance sheet</strong></td>
<td>Accrual/provision, e.g., program liabilities</td>
<td>Deferred program revenue</td>
</tr>
<tr>
<td><strong>Measurement</strong></td>
<td>Various, but generally at related cost to fulfill the obligation for the company</td>
<td>Fair value to the customer</td>
</tr>
<tr>
<td><strong>Recognition of revenue</strong></td>
<td>Varies at earning or at redemption</td>
<td>At redemption</td>
</tr>
</tbody>
</table>
Although not required in the US, IFRIC 13 accounting for loyalty programs is becoming more pervasive as companies domiciled outside of the US (e.g., Europe, Canada, Australia) are required to follow that standard.

Changing accounting treatments for loyalty programs could be difficult. For example, converting from a US GAAP approach to IFRIC 13 likely would increase liabilities for most loyalty programs. Such a conversion could require a one-time adjustment to increase liabilities and decrease net equity if a company previously accrued the liability based on the cost of the points rather than upon the deferred revenue approach. Even if a company previously used a deferred revenue approach, stating the liabilities at fair market value could significantly increase the booked liability. In recent years, some international airlines have recorded significant increases in loyalty program liabilities upon adoption of IFRIC 13, as have some domestic carriers undergoing reorganization or bankruptcy for which the relevant accounting guidance required "day one" recognition of the liabilities at their fair market value.

Although loyalty program ultimate costs intrinsically are unchanged, the timing of revenue and profit recognition can be significantly different under the alternative accounting treatments. Therefore, a thorough understanding of the current accounting treatment is critical for program managers to prepare effectively for possible future accounting changes or alternatives.

**Loyalty program measurement models**

*Understanding customer behavior and program "levers"*

Loyalty programs tend to evolve over time with the introduction of additional member earning/redemption options and the modification of overall program terms and conditions (T&C) to reflect a program sponsor's evolving goals and needs. Programs implement these changes in a variety of forms as illustrated by the following examples:

| Additional earning options | • Adding a new retailer partnership, e.g., dollars spent at restaurants that accrue to an airline loyalty program;  
|                           | • Launching of a co-brand credit card; and  
|                           | • Adding hotel properties from which the member can earn points. |
| Additional redemption options | • Adding new airline partners to existing airline redemption options;  
|                               | • Option to use points for "special events" tickets;  
|                               | • Option to redeem points for gift cards; and  
|                               | • Offering a "cash and point" or "cash and miles" option. |
| Bonuses and promotions | • Offering bonus points to encourage spending on the underlying product; and  
|                       | • Offering promotional redemption program where points have increased value to encourage redemption and build brand loyalty. |

These examples focus on possible expansions to earning or redemption options. Loyalty programs also can implement changes in T&C to limit their overall offering. These changes often relate to the programs' cost structures and the sponsors' abilities to sustain increasing costs. The following are examples of "levers" frequently used in various industries:

- Change in number of points/miles required to qualify for a reward;
- Change in points/miles thresholds for various membership levels;
- Introduction of "blackout" dates or high-season dates (e.g., more points needed to get an award);
- Capacity restrictions (e.g., reduction in number of available seats on flights or reduction in the number of rooms available for a free night); and
- Introduction of points/miles expiration date or inactivity period rules after which points/miles are forfeited.
The implementation of any of these changes can directly impact the members’ ability to earn and redeem points, which can affect the ultimate redemption rate (URR) of points or the actual cost of the redemptions (cost per point or “CPP”). Both the URR and the CPP are critical components of a liability estimation analysis. A detailed understanding of a program and its changes over time is therefore vital to reflecting any potential shift in member behavior in the actuarial analysis and, ultimately, producing reliable results.

Data, data, and more data
A variety of statistical models may be used to analyze various aspects of a loyalty program. Gaining a complete understanding of the available historical data is an important consideration in determining the modelling approach. The approach also should consider information regarding material program changes and other available data based on discussions with management.

The data available for analysis varies from program to program. For some programs, granular data, including individual customer earning/redemption activities, is available, which provides flexibility in the actuary’s selection of the modelling approach. Other programs may only have access to aggregate data or only a few years of recent data, a common problem if the program structure has changed (e.g., mergers) or information technology systems have changed. Program management can provide significant insights into possible data issues, which is critical in the early stages of the analysis.

To improve the accuracy of actuarial models, the actuary may segment the data, to the extent that each segment has sufficient volume to be statistically reliable, into homogeneous categories exhibiting similar behavior. Characteristics that may impact the proportion of rewards members are likely to redeem include:

- Type/level of membership;
- Member enrolment inception date;
- Length of membership (i.e., tenure);
- Reward points credited/earned or spent annually; and
- Geography/location.

A program should capture certain data elements for each program member, including:

- Enrolment date/tenure in program;
- Amount/timing of points earned;
- Amount/timing of points redeemed; and
- Member tier at the time of transaction or at the evaluation date.

Actuarial methodologies
The valuation of loyalty program liabilities is similar to the valuation of insurance company reserves -- both involve the projection of future contingent events, e.g., whether or not members will redeem points and when the points will be redeemed. Specifically, estimating loyalty program liabilities involves projecting the probability, timing, and cost of award redemptions. Not surprisingly, commonly accepted actuarial approaches used in the insurance industry may provide a sound basis for loyalty program analyses. For example, a loyalty program’s liability can be calculated using the following equation:

\[
\text{Rewards Liability} = \text{# Points Outstanding} \times \text{Redemption Cost per Point} \times \text{Redemption Rate}
\]
Calculating the number of points outstanding is straightforward because it simply consists of using program data at a specific evaluation date. The redemption cost per point can be estimated in a number of ways – historical cost, member value, "fair value" – all of which require an in-depth understanding of the accounting standards applicable to an analysis. Determining the redemption rate applicable to a loyalty program can be challenging but is vital to the estimation of the rewards liability. The challenge stems from the fact that a certain proportion of the total earned points will not be redeemed due to point expiration, point balances below the minimum reward level, and dormant or cancelled members. This is referred to as "breakage". The estimation of a program's breakage rate generally requires the application of actuarial techniques.

Several types of models can measure loyalty program redemption rates:

- **Earn Year Model**: This approach determines the ultimate redemption rate for points earned to date by historical earn year. This method assumes a "going concern" program, and recognizes that some future redemptions of historically earned points will require members to earn additional points in the future. This approach estimates the time lag between the earning of a point and its actual redemption based on a "first-in, first-out" (FIFO) assumption. This assumes that members redeem "older" points before points recently acquired, which is a concept that is highly effective with programs where points expire after a specific time period ("date stamped"). In the FIFO approach, the analyst must "map" historical point redemptions to historical point earning transactions in order to "burn" the older points first.

- **Enrolment (Joining) Year Model**: This model is a lifetime accumulation model, which aggregates cumulative points earned and redeemed by enrolment year (i.e., the year in which the member joined the program). Over time, the number of points earned and redeemed grows, and the number of active members decreases as members leave the program or become inactive. Once all members stop participating in the program, the cumulative redemption rate reaches an ultimate value. The enrolment year model generally produces a more conservative measure of URR since breakage tends to drop as the tenure of a member within a program increases.

- **Attrition Model**: This model projects the future membership lapse rates (frequency) and the ultimate redemption rate (severity) separately and then combines the results of the frequency and severity projections in order to obtain a URR for the entire program. The goal of the frequency component is to determine when members will leave the program, i.e., the model "runs-off" members until all members cease to be active program participants. The goal of the severity component is to project the ultimate redemption rate for each member at the time of exit from the program. A key assumption under this type of model is that members that remain active in a program for a longer period tend to leave the program with a higher URR than members that leave after a shorter program tenure. The resulting URR from this approach reflects the ultimate expected percentage of points to be redeemed over a member's lifetime, similar to the enrolment year model.

- **Transition Model**: The transition model is an alternative model which is useful for programs where points break due to inactivity rules. This model involves developing transition rates which measure the probability of points becoming inactive over time and tracks the transition of points from an active to an inactive status. These transitions represent probabilities that a given point will break, be redeemed, become inactive for a longer period of time, or become refreshed by member activity. This approach also is useful in evaluating a member's behavior relative to that particular member's most recent activity. While the model is neither an earn year nor an enrolment year model, the transition model generally takes a calendar year view of members, which more closely aligns with the earn year approach.

- **Predictive Model**: This type of model identifies attributes or behaviors that explain how many points a given member ultimately will redeem. The key to this approach is to identify and use historical drivers of redemption at the member level to predict each member's future redemptions. For example, redemption drivers may include membership tier, tenure, average earned points per year and a member's redemption history. Predictive models also lend themselves well to customer behavioral analysis (discussed below).
Within each type of model, the actuary can estimate URRs using standard actuarial methods or techniques, including development methods and Bornhuetter-Ferguson methods, which the actuary selects based on informed judgment and experience with these types of programs. A critical element in estimating loyalty program liabilities with these methods is the tail factor selection, as historical data for most programs is not mature enough to provide a complete historical development of the cumulative redemption rates. The actuary generally can use standard regression or curve-fitting techniques to project the tail factor and may find it prudent to run multiple actuarial methods and tail projections to produce a range of estimates. The calculation of a range of estimates provides a clearer picture of the uncertainty surrounding the ultimate point redemption ratio (and the overall estimated liability).

**Customer relationship metrics**

Developing performance "dashboards" or key performance indicators is essential for measuring the financial success of any loyalty program. Some useful metrics include:

- **Participation rate** - Percentage of customers who are members.
- **Activity rate** - Percentage of members actively participating in the program through earning/re redeeming points.
- **Tenure** - Length of membership.
- **Attrition or churn rate** - Rate at which members drop out of the program, typically based on a defined threshold, such as 18 months of inactivity.
- **Ultimate redemption rate** - Percentage of points issued that members are expected to redeem prior to expiration or forfeiture.
- **Breakage rate** - Percentage of points issued that members are not expected to redeem due to insufficient balances, expiration, or forfeiture (complement of ultimate redemption rate).
- **Cost per redeemed point or cost-per-point** - Total monetary cost of redeemed awards (e.g., USD) divided by the total currency amount redeemed (e.g., points), over a defined time period.
- **Inactivity Period** - Measure of time elapsed since the customer's last activity in the program (a good indicator of potential attrition).
- **Frequency** - Number of points earning activities for program members relative to number of activities (i.e., stays, flights, etc.) for non-program participating customers.
- **Pacing** - Elapsed time between purchases.
- **Revenue** - Amount spent on the company’s products/services by program members.
- **Average member spending per transaction** - Average sales price of member purchases.
- **Lift** - Measure of the incremental points earning (or spending) of program members relative to non-program participating customers.
- **Breadth of activity** - Measure of the number of product categories to which a customer's purchases apply, e.g., a typical bank offers several products such as deposit accounts, investments, loans and credit cards.
- **Loyalty program percentage cost** - Total monetary cost of points awarded as a percentage of total customer spending.

**Customer behavior analysis**

Predictive modelling techniques can identify key membership characteristics that are predictive of future behavior. For example, members with a certain level of income may tend to fly more frequently than others, and members with children may tend to stay in hotels more frequently than others. Upon the identification of these member characteristics, predictive modelling techniques can use them to predict future member behavior, such as a member's likelihood of leaving the program or of reaching higher tier status.

While predictive models could retrospectively determine the differentiating characteristics of members that have left a program with different redemption rates, another possible use of these models is to identify a program's "best" members. The actuary should discuss with program management the definition of a "best" member (e.g., high spenders, high frequency members, low redeemers, etc.) and, once defined, predictive modelling techniques can help identify the key characteristics of these members. Such analysis can provide a program with a powerful tool to improve future marketing efforts and the program's profitability.
Not all members generate the same profits for a loyalty program, and all prospective members should not receive the same level of attention from a rewards program enrolment team or marketing department. The following table shows a typical example of spend/cost distribution for a rewards program. For this example, we defined profit as the members’ generated program revenue minus the redemption costs associated to these same members. We then split the population into profit quartiles to identify the characteristics of members based on their “profit score.” We can clearly observe that different member types generate different levels of activity, and also different profitability results, within the program.

<table>
<thead>
<tr>
<th>Member type</th>
<th>&quot;Profit score&quot; quartile</th>
<th>% of revenue generated by program</th>
<th>% of profits generated by program</th>
<th>% of program redemption cost</th>
<th>Number of annual point earning transactions</th>
<th>Number of annual point redemption transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>High-Value</td>
<td>75-100%</td>
<td>55%</td>
<td>60%</td>
<td>50%</td>
<td>8.0</td>
<td>3.0</td>
</tr>
<tr>
<td>Aspiring Loyalists</td>
<td>50-75%</td>
<td>20%</td>
<td>25%</td>
<td>20%</td>
<td>3.0</td>
<td>1.0</td>
</tr>
<tr>
<td>In Limbo</td>
<td>25-50%</td>
<td>15%</td>
<td>10%</td>
<td>15%</td>
<td>2.5</td>
<td>0.5</td>
</tr>
<tr>
<td>Marginal</td>
<td>0-25%</td>
<td>10%</td>
<td>5%</td>
<td>15%</td>
<td>2.0</td>
<td>0.5</td>
</tr>
</tbody>
</table>

A program that can develop a targeting approach that focuses on more profitable members can significantly increase its value. Similarly, a program that can develop incentives that will motivate members to change their behavior and move toward the behavior of high-value customers also can generate significant value to the program sponsor.

**Regulatory considerations**

Financial regulations can have a significant impact on loyalty program liabilities, and program managers should monitor regulations to mitigate risk proactively and manage loyalty program liabilities. Below is a brief synopsis of current, relevant regulations.

- **Sarbanes-Oxley** – The US Sarbanes-Oxley Act provides oversight and rigor for corporate financial records, specifically for publically traded US corporations.
- **Tax Law** – Interestingly, the Internal Revenue Service (IRS) relies on a company’s accounting treatment to determine its liability related to loyalty programs. Currently, the IRS accepts both an incremental cost and a deferred revenue approach. Another evolving issue is the tax treatment of fringe benefits. In most countries, members can earn loyalty currency when a 3rd party, rather than the member, pays for the underlying ‘product’. In some countries, such as Australia and parts of Europe, these fringe benefits are taxable to members, and a similar treatment has been discussed in the US.
- **Dodd-Frank Wall Street Reform and Consumer Protection Act** – The Dodd-Frank Act provides consumer protection guidance for financial transactions and terms. This Act also may apply to programs featuring co-branded credit cards.
- **Financial Accounting Standards Board (FASB) Revenue Recognition (Topic 605) - Revenue from Contracts with Customers** – In June 2010, the FASB and the IASB issued a joint exposure draft related to revenue recognition. This document includes many provisions that would directly impact the accounting approaches used by many loyalty programs in the US. This standard has not been finalized yet, and the FASB is still reviewing comments regarding its most recently published exposure draft. According to current plans, the final revenue standard would not be effective prior to annual reporting periods beginning on January 1, 2015.
**Conclusion**

As loyalty reward programs have evolved in recent years, so has the environment in which they operate. Changes to accounting rules and regulations are being considered and implemented both in the US and internationally, and the models used to evaluate program benefits and costs are becoming more and more sophisticated.

Accordingly, loyalty program managers continually struggle to balance the goal of preserving program stability with responsiveness to the changes happening around them. While maintaining the status quo may be the easiest option, achieving the best long-term solution and avoiding unpleasant surprises down the road likely will require management to make program changes.
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