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Understanding Loyalty & Reward Programs.

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Summary.

Loyalty programs are crucial for companies to attract and retain customers, increase customer spending, and encourage the purchase of additional products. This white paper discusses the financial reporting and accounting for loyalty programs, understanding customer behavior and program levers, and the use of data analytics to improve actuarial models for valuing loyalty program liabilities.

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The Program Overview.

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.

The Loyalty Value Proposition.

In any financial institute, customers are your most important asset. From growing revenues to enhancing competitiveness, every aspect of your financial success depends on the ability to attract and retain customers, as well as drive their adoption of new products or services.

Profitability of Loyalty Programs (Revenues – Costs)	
Incremental Revenues	**Incremental Costs**
• Increased purchase frequency • Increased purchase volume • Reduction in customer churn rate • Willingness to pay premium • Increased advocacy and referrals	• Rewards redemption and accrued liability • Cost of soft benefits (e.g., acceleration) • Program communications (e.g., advertising, mailings, email) • Information technology investment and maintenance • Enterprise training and support (e.g., call centers) • Business unit overhead (e.g., Program Management) • Research and development

The objective of a loyalty program is 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 for the Brand.

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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 fulfilment of member benefits under rebate or points programs can result in a build-up of large balance sheet liabilities over time. Accordingly, having the Loyalty program, will address fundamental accounting issues for the recognition and measurement of;

- Revenues and expenses on the income statement and
- Related liabilities on the balance sheet

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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 the Brand's evolving goals and needs.

The Program implements these changes in a variety of forms as illustrated by the following examples:

 **Additional Earning Options**	✓ Adding new acceleration partnerships ✓ Adding tactical earning offers based on business requirements
 **Additional Redemption Options**	✓ Increasing product range based on member feedback ✓ Option to use points for other offers and internal inventory/programs ✓ Option to redeem points for gift cards; and ✓ Offering a "cash and point" 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

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Understanding Customer Behavior and Program "Levers".

The following are examples of "levers" will be used:

- Change in number of points required to qualify for a reward
- Change in points 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 products); and
- Introduction of points expiration date or inactivity period rules after which points 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 the 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.

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Data, Data, and More Data.

A variety of statistical models are used to analyze various aspects of the The Loyalty Program. Gaining a complete understanding of the available historical data is an important consideration in determining the modelling approach.

The data available for analysis varies. Granular data, including individual customer earning/redemption activities, when available, which provides flexibility in the actuary's selection of the modelling approach. The alternative approach may only have access to aggregate data or only a quarters of new data, a common problem if the program structure has changed (e.g., mergers) or information technology systems have changed. Program management will provide significant insights into possible data issues, which is critical in the early stages of the analysis.

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Data, Data, and More Data.

To improve the accuracy of actuarial models, the actuary will 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

The Loyalty program captures certain data elements for each program member, including:

- Enrolment date/tenure in program
- Amount/timing of points earned
- Amount/timing of points redeemed

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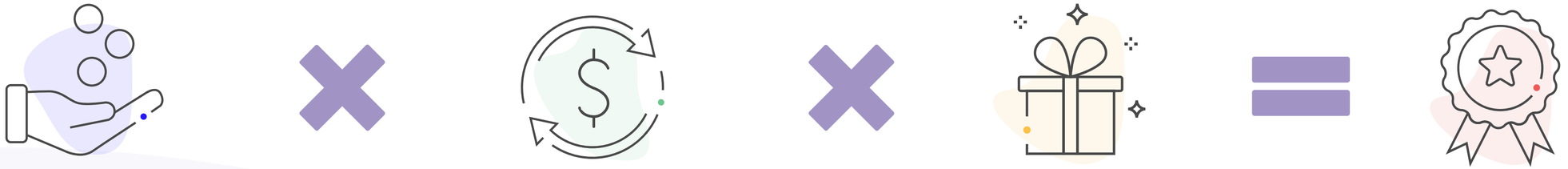
Actuarial Methodologies.

The valuation of the loyalty programs 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 your 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 the program analyses. For example, the loyalty program's liability can be calculated using the following equation:



Points Outstanding × Redemption Cost Per Point × Redemption Rate = Rewards Liability

Actuarial methodologies.

Calculating the number of points outstanding is straightforward because it simply consists of using the 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 the analysis.

Determining the redemption rate applicable to the 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.

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Redemption Rate Types.

Several types of models will measure the program redemption rates:

1. 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 where points expire after a specific time period ("date stamped"). In the FIFO approach, we will "map" historical point redemptions to historical point earning transactions in order to "burn" the older points first.

2. 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 member’s 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 the program increases.

Redemption Rate Types.

3. 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 member’s 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.

4. Transition Model

The transition model is an alternative model which is useful 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.

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Customer Relationship Metrics.

Performance "dashboards" or key performance indicators is essential for measuring the financial success of the loyalty program. Some useful metrics are listed here below:

- **Participation rate** - Percentage of customers who are members
- **Activity rate** - Percentage of members actively participating in the program through earning/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

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Customer Relationship Metrics.

- **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 member's relative to number of activities (i.e., bookings, etc.) for non-program participating customers
- **Pacing** - Elapsed time between purchases
- **Revenue** – Amount spent on the inventory/services/card type 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 member's relative to non-program participating customers
- **Breadth of activity** - Measure of the number of product categories to which a customer's purchases apply
- **Loyalty program percentage cost** - Total monetary cost of points awarded as a percentage of total customer spending

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Customer Behavior Analysis.

Predictive modelling techniques will identify key membership characteristics that are predictive of future behavior. For example, members with a certain level of spend or sales may tend to redeem 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 are used to predict future member behavior, such as a member's likelihood of leaving the program or being delinquent.

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 the program's "best" members. The actuary will need to be discussed with stakeholders and the definition of a "best" member (e.g., high spenders, high frequency members, low redeemers, etc.) and, once defined, predictive modelling techniques will help identify the key characteristics of these members. Such analysis will provide the program with a powerful tool to improve future marketing efforts and the program's profitability.

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Customer Behavior Analysis.

Not all members generate the same profits for the loyalty program, and all prospective members should receive the same level of attention from the Loyalty program.

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Customer Behavior Analysis.

The following table shows a typical example of spend/cost distribution for the 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.

Member Type	"Profit Score" Quartile	% of Revenue Generated by Program	% of Profits Generated by Program	% of Program Redemption Cost	Number of Annual Point Earning Transactions	Number of Annual Point Redemptions Transactions
High-Value	75 - 100%	55%	60%	50%	8.0	3.0
Aspiring Loyalists	50 - 75%	20%	25%	20%	3.0	1.0
In Limbo	25 - 50%	15%	10%	15%	2.5	0.5
Marginal	0 - 25%	10%	5%	15%	2.0	0.5