Glossary

Exchange Solutions User Documentation

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Glossary of Exchange Solutions and Related Terms

The terms below are classified into categories to keep similar terms together. In many cases, the title term is the acronym because this is what you are most likely to encounter in meetings or documents.

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Additional Resources

Account Management Knowledge Library: Communication preference - Account Management Knowledge Library - Confluence (atlassian.net)

Agile Software Development Method Terminology

Agile

Agile is an approach to software development that seeks the continuous delivery of working software created in rapid iterations. For more information, see: What is agile methodology? (redhat.com)

Agile Rituals

For information about how ESI uses Agile rituals, refer to: Wizard - Confluence (atlassian.net)

Backlog

A list of new features, changes to existing features, bug fixes, infrastructure changes, or other activities that a team may deliver to achieve a specific outcome. It is the authoritative source for the things that a team will work on.

Backlog Grooming

When the product owner and members of the team refine the backlog on a regular basis to ensure that it contains appropriate items and that they are prioritized.

Burndown Chart

A chart, usually a descending line, that tracks the amount of output (hours, story points, or backlog items) a team has completed across an iteration or project at any given time during a sprint.

Create, Read, Update, Delete (CRUD)

CRUD refers to the four basic operations a software application should be able to perform: Create, Read, Update, and Delete. In such apps, users must be able to create data, have access to the data in the UI by reading the data, update or edit the data, and delete the data.

Daily Meeting or Scrum

One of the most commonly practiced Agile techniques, the daily meeting presents an opportunity for a team to get together on a regular basis to coordinate their activities. During the meeting, each participant provides answers to the "Three Questions":

- What have you done since the last scrum meeting (yesterday)?
- What will you do before the next scrum meeting (tomorrow)?
- What prevents you from performing your work as efficiently as possible?

Epic

A large user story that cannot be delivered within a single iteration, or is large enough that it can be split into smaller user stories. Epics allow you to keep track of large, loosely defined ideas in your backlog without the need to overpopulate your backlog with multiple items.

Estimation

The evaluation of the effort necessary to carry out a given development task or a specific ticket in Jira. This is expressed in terms of story points, a measure of the amount of effort required to reach Dev Complete on a ticket. For more information about how story points are estimated, see Ticket Management > Ticket Estimation Key on the following Confluence page: Wizard - Confluence (atlassian.net).

Integration

Refers to any efforts still required for a project team to deliver a product suitable for release as a functional whole. This may include setting up the means for ESI software to communicate with other software packages to create a unified whole.

Scrum

Scrum (the term is not an acronym but is derived from rugby scrums) is a lightweight framework that helps people, teams, and organizations generate value through adaptive solutions for complex problems.

In a nutshell, Scrum requires a Scrum Master to foster an environment where:

1. A Product Owner orders the work for a complex problem into a Product Backlog.

2. The Scrum Team turns a selection of the work into an Increment of value during a Sprint.
3. The Scrum Team and its stakeholders inspect the results and adjust for the next Sprint.
4. Repeat.

The Scrum framework is purposefully incomplete, only defining the parts required to implement Scrum theory. Scrum is built upon by the collective intelligence of the people using it. Rather than provide people with detailed instructions, the rules of Scrum guide their relationships and interactions.

Scrum Meetings

Story time, planning, review, retrospective, daily scrum.

Scrum Poker

A tool and method for capturing the knowledge of the developers to estimate story points on a specific ticket.

Sprint

A time-boxed iteration of the product.

Sprint Planning

An event that occurs at the beginning of a sprint where the team determines the product backlog items they will work on during that sprint. For more information, see: Wizard - Confluence (atlassian.net).

Sprint Review (Demos)

A meeting during which the features in a release are demonstrated by the developers who worked on them. These demos are for the benefit of other team members and the Product Owner, who can accept or reject the results of the sprint.

Story

A short description of the issue at hand. Example: "We need to expose Apple and Foundation through a single point. The first step will be to create a router based on the Foundation Listener."

Story Points (estimates in)

Agile teams generally prefer to express estimates in units other than the time-honored "man-hours." Possibly the most widespread unit is "story points." For more information about how ESI uses story points, see Ticket Estimation Key on this page: Wizard - Confluence (atlassian.net)

Unit Testing

A short program fragment written and maintained by the developers on the product team, which exercises some narrow part of the product's source code and checks the results.

User Stories

A user story template is a common format used to write user stories that helps you include key pieces of information about that user story.

One particular template, often referred to as "As a... I want to... So That...", is the most commonly recommended aid (often outgrown once past the novice stage) for teams and product owners starting to work with user stories and product backlog items in general:

- As a (who wants to accomplish something)
- I want to (what they want to accomplish)
- So that (why they want to accomplish that thing)

An example:

- As a bank customer
- I want to withdraw money from an ATM
- So that I'm not constrained by opening hours or lines at the teller's

Velocity

At the end of each iteration, the team adds up effort estimates associated with user stories that were completed during that iteration. This total is called velocity.

Work in Progress (WIP)

Any work that has not been completed but has already incurred a capital cost to the organization. Any software that has been developed but not deployed to production can be considered a work in progress.

Architecture and Tool Stack Terminology

Amazon Cognito

Provides authentication, authorization, and user management for web and mobile apps. The two main components are user pools (directories that provide sign-in options for app users) and identity pools (which allow users access to other AWS services). For more information, go to: What is Amazon Cognito? - Amazon Cognito.

Amazon Web Services (AWS)

Amazon Web Services, Inc. is a subsidiary of Amazon providing on-demand cloud computing services to individuals, companies, and governments on a metered pay-as-you-go basis. ESI uses the AWS Cloud as the cloud computing service provider for most of its products.

AWS Simple Storage Service (S3)

Amazon Simple Storage Service (Amazon S3) is an object storage service that provides scalability, data availability, security, and performance. Customers of all sizes and industries can use Amazon S3 to store and protect any amount of data.

Exchange Solutions uses S3 extensively for data object storage, although data is increasingly stored and managed in Snowflake (see below). For more information about S3, see: What is Amazon S3? - Amazon Simple Storage Service

DynamoDB

Amazon DynamoDB is a fully managed NoSQL database service that provides fast and predictable performance with seamless scalability. It is used within the AWS Cloud. For more information, see:

What Is Amazon DynamoDB? - Amazon DynamoDB

Figma

Figma is a web-based graphics editing and user interface design app. You can use it to do all kinds of graphic design work, from wireframing websites and designing mobile app interfaces to prototyping designs and crafting social media posts.

Lambda

Lambda is an AWS compute service that lets you run code without provisioning or managing servers. Lambda runs your code on a high-availability compute infrastructure and performs all of the administration of the compute resources, including server and operating system maintenance, capacity provisioning and automatic scaling, and code monitoring and logging. For more information, see: What is AWS Lambda? - AWS Lambda (amazon.com)

OAuth

"Open Authorization" is a protocol that provides a way for resource owners to grant a client application secure delegated access to server resources. It specifies a process for resource owners to authorize third-party access to their server resources without providing credentials. Designed specifically to work with Hypertext Transfer Protocol (HTTP), OAuth essentially allows access tokens to be issued to third-party clients by an authorization server, with the approval of the resource owner. The third party then uses the access token to access the protected resources hosted by the resource server. Wikipedia - OAuth

Oracle Cloud Infrastructure (OCI)

Used for ESSO (IOL). The Oracle Cloud Infrastructure includes resources for computing (on bare metal, VMs, containers, or functions), networking, and storage.

Simple Email Service (SES)

AWS Simple Email Service (SES) is a cloud email service provider that can integrate into any application for bulk email sending. For Exchange Solutions, SES is currently used to send notification emails as part of our fraud prevention protocols (Fraud Plus), so that an aggregate email is sent to the appropriate Exchange Solutions personnel providing details about potentially fraudulent behavior

detected within a particular time period (such as a month). The behavior event is also logged and action is taken to place restrictions on that member account.

Simple Queue Service (SQS)

SQS stands for Simple Queue Service. It is a service operated by AWS to handle the queuing of messages. One service sends messages in a queue and another service receives those messages. SQS frees developers from the task of setting up and managing a queue structure as a managed service. Instead of making one service communicate directly with another, the contact may be intermediated by a queue. It can also deal with bottlenecks that can become a problem when a service depends on another service that cannot scale to the same level or as quickly as the first one. Having a queue between service A and service B is useful in such situations because the queue can handle peak demand from A and send messages at a slower rate that B can cope with. See: What is SQS. SQS stands for Simple Queue Service — is... | by Wakeupcoders | Medium

Simple Storage Service (S3) Bucket

Amazon Simple Storage Service (Amazon S3) is an object storage service that offers industry-leading scalability, data availability, security, and performance. For more information, see: What is Amazon S3? - Amazon Simple Storage Service

Snowflake

Snowflake is a data cloud platform that provides the processing power to support real-time advanced analytics and machine learning capabilities that power the intelligence embedded in ESI's personalized offers products, ES Engage and ES Loyalty Boost. Snowflake also enables ESI to present real-time performance results to their clients as an extension of the ES Loyalty product.

Sumo Logic

Sumo Logic is a tool to reduce downtime with real-time alerting, dashboards, and machine-learning-powered analytics for all three types of telemetry: logs and events, performance metrics, and distributed transaction traces.

Artificial Intelligence (AI) Terminology

Affinity Score (Gen AI)

Previously, product affinity prompts were triggered in Snowflake. This enhancement replaces the current method of invoking OpenAI with a new trigger-based approach during offer pool uploads integrated with the GenAI module. Now, when the offer pool is uploaded for the first time and there is no data for `GLOBAL + PRODUCT_SELECTORS` in the campaign processor, or when there is a difference between the old and new `PRODUCT_SELECTORS` list, the GenAI module is invoked.

The prompt relates member attributes or past purchases to member product affinity:

- **Member attribute product affinity** — Propensity to buy a product based on relevant attributes such as gender, average household income, state or province of residence, a recency/frequency/monetary value (RFM) index, how many days ago the last purchase occurred, and so on.
- **Past purchase product affinity** — Propensity to buy products related to past purchases as measured by a Gen AI score for products deemed either similar or part of the same purchasing patterns (similar to the "Products related to this item" list on Amazon).

This feature allows comprehensive evaluation of buying patterns to provide rewards that are more appealing to members, thus increasing purchases.

Algorithm

An algorithm is typically a set of instructions for a computer to follow. Those designed to search and sort data are examples of computer algorithms that work to retrieve information and put it in a particular order. The searched and ordered items can consist of words, numbers, code, or symbols, but the algorithm must have finite steps for completing the task.

Artificial General Intelligence (AGI)

AGI has not quite arrived yet. It could result from current efforts to create a machine that can think and learn like a human being. It would need self-awareness and consciousness to allow it to adapt to its surroundings and changing circumstances and to perform a broader range of tasks autonomously.

Audience Recommender

Creating audiences, or collections of members with similar or identical attributes or affinities, helps the marketer more accurately target similar members with suitable offers. An audience can be built

manually, but another option is to have an audience built by a generative AI engine that responds to an audience description entered by the user. This is referred to as the Audience Recommender, a feature that allows for the creation of member audiences using natural language prompts. It uses a generative AI engine to generate audiences based on the descriptions provided by the user. This tool is particularly useful for marketers as it helps in targeting members with similar attributes or behaviors more effectively. By describing the features of a desired member audience, the Audience Recommender builds that audience using member data and returns a description of the logic used to capture that audience, which the user can review and verify. Once the audience meets the specified requirements, it can be named, saved, and used in conjunction with offers.

Boost LLM

Boost LLM is the application of a Large Language Model (see below) to some of the key functionality in Exchange Solutions' ES Loyalty Boost product. The intent of combining Boost with powerful LLM technology is to optimize efficiency and flexibility, enhance key client KPIs, and increase speed to market. A main area of focus in the first iteration was on product recommendations, specifically making better recommendations to members by using the values producing the best results for the formula: "Spend X on product Y and get Z rewards."

Future enhancements may continue to mine relevant input data for Boost, narrowing in on:

- **Discovery** — For instance, what are important customer attributes for a fuels marketer?
- **Productivity** — Can SQL code be generated to calculate spend recency?
- **Scoring** — How strongly is attribute value A correlated to increased purchases of product B?
- **Classification** — What season or holiday period is this product most associated with?

Calculated Member Insights (CMI)

Calculated Member Insights (CMI) is an Exchange Solutions feature available through the Console. It allows marketers to create and use data-driven insights to understand and enhance member engagement, specifically through metrics such as incremental member revenue, margin, and engagement. For instance, analysis can be carried out on the number of days since a member's last purchase, or "recency," to provide the basis for marketing strategies and offers geared to this type of customer. CMI can break all available data into groups such as deciles (10 equal parts) and then categorize members by those deciles based on recency. This allows each to be treated differently for marketing and offers provided.

Chatbot

A chatbot is a computer program that can carry out a conversation with a human user. Modern chatbots rely on generative AI to help them process prompts and display responses. The chatbot is usually presented in a web or software application interface and is meant to be useful within the context of its associated environment and data.

Deep Learning

A form of AI that employs neural networks and learns continuously. The "deep" in deep learning refers to the multiple layers of artificial neurons in a network. Compared to neural networks, which are better at solving smaller problems, deep learning algorithms are capable of more complex processing because of their interconnected layers of nodes.

Generative AI (Gen AI)

Generative AI is a type of artificial intelligence that can create various types of content, including text, images, video, and audio. It is the result of a person feeding information or instructions, referred to as a "prompt," to the Gen AI system, which produces an output based on its interpretation of the prompt and the data available to it. The prompt is fed into a "foundation model," such as a large language model (LLM) trained on a vast, diverse quantity of data such as a large percentage of the information on the internet or a more specialized data set. It can be accessed through interactive tools and applications such as chatbots, code-writing assistants, and design tools meant to allow the entry of prompts and the retrieval of responses. Generative AI is designed to find long-range patterns in sequences of data, allowing it to assemble a response from the "most likely" elements. The best-known Gen AI engine is currently OpenAI's ChatGPT for text responses. Exchange Solutions uses the OpenAI GPT as the engine of its own Gen AI capabilities but reserves the right to change the Gen AI engine as general capabilities evolve over time.

Generative AI Help

Generative AI Help consists of a chatbot window available in the Console by clicking the **Help** button. The user enters a prompt in the prompt window and a response is generated based on a large volume of information about Exchange Solutions products and features. Generative AI Help can answer general questions about loyalty programs as well as specific queries about Exchange Solutions' features, capabilities, and procedures. This provides the user with a quick and efficient way to retrieve the information they need about how to understand and use the products.

Generative Pretrained Transformers (GPT)

OpenAI's ChatGPT is an example of a Generative Pretrained Transformer (GPT), based on Google's work with a transformer model in 2017. OpenAI's GPT is likely to evolve quickly, bringing rapidly-scaling AI technology into the heart of Exchange Solutions' products.

GPT-4o

GPT-4o ("o" for "omni") is a step towards much more natural human-computer interaction. It accepts any combination of text, audio, image, and video as input and generates any combination of text, audio, and image outputs. It can respond to audio inputs in as little as 232 milliseconds, with an average of 320 milliseconds, which is similar to human response time in a conversation. Exchange Solutions currently uses this model at the heart of its generative AI tools such as Gen AI Help and Audience Recommender.

Hallucination

A "hallucination" occurs when a foundation model presents responses that are not grounded in fact and are incorrect, but presents them as being correct and reliable. Hallucinations are one of the primary shortcomings of current AI technology and the main reason why disclaimers about the accuracy of responses are often associated with those responses. User assessment and judgement is still required.

Large Language Model (LLM)

A Large Language Model (LLM) is a deep learning algorithm capable of summarizing, creating, predicting, translating, and synthesizing text and other content based on training on large amounts of relevant data. The LLM can be trained using open-source, publicly available data sets or on more specialized data pools.

Machine Learning (ML)

Machine learning is a branch of AI that relies on techniques to let computers learn from the data they process. For example, an ML system may be provided with millions of images labelled "dog" or "cat" and can learn the features of each. This is a process known as "training." The system relies on statistical regularities in the images to distinguish between images of dogs versus cats. ML systems are best at recognizing patterns, but not as adept at long chains of reasoning or complex planning.

Member LLM Score (Gen AI)

A generative AI module is used to evaluate members on a number of member profile values and past product purchases to create an aggregated score that can be used to determine how to optimize offers for those members. The profile values considered include:

1. Gender
2. Average Household Income
3. Province of Residence
4. Recency, Frequency, Market Value (RFM) Level Rating (for example, Bronze, Silver, Gold, Platinum, or No Purchase)
5. Date ranges for how many days ago the last purchase occurred

Past product purchases are used to retrieve affinity scores for related products. For example, using a 0–1 scale for affinity, someone who purchased "DIAPERS" may also purchase "WIPES" (affinity score = 1) or "BABY_FOOD" (affinity score = 0.8).

Natural Language Processing (NLP)

Natural language processing is a form of machine learning that can interpret and respond to human language. It is the basis for applications such as Apple's Siri and Amazon's Alexa. NLP works by ingesting human communications, then responding with formulated content most likely to meet the requirements of the question or instructions in the prompt. It can interpret words from context, for example, determining whether "club" refers to a "golf club," a "club sandwich," or a "chess club" from the surrounding words in a prompt.

Neural Network

A neural network is a technique that mimics the way neurons operate in the human brain. Groups of pseudo-neurons or "nodes" — which are essentially code that carries out processing — send information to one another. Neural networks "learn" in a way very similar to machine learning to find useful patterns. For example, a website may use a neural network to process large amounts of data and determine the preferences and activities of individual users on their site with the objective of serving up the most relevant content and activities to those users.

Compliance Standards Acronyms

California Consumer Privacy Act (CCPA)

The California Consumer Privacy Act governs the handling of Personally Identifiable Information (PII) for all residents of California. It is considered the strictest privacy law in the United States and also the standard to meet for any company that does business on the US national level or in California.

Canada's Anti-Spam Legislation (CASL)

Canada's Anti-Spam Legislation protects consumers and businesses from the misuse of digital technology, including spam and other electronic threats. Among other things, CASL prohibits companies from:

- Collecting or storing personal information without consent
- Sending electronic messages, including text, SMS, or email messages, without consent
- Collecting electronic addresses such as email addresses without consent

Certified Information Systems Security Professional (CISSP)

Certified Information Systems Security Professional is a certification awarded after a rigorous course of study including security management and practices, security architecture, access control, operations security, cryptography, network and internet security, and disaster recovery.

General Data Protection Regulation (GDPR)

General Data Protection Regulation is a legal framework that sets guidelines for protecting the personal information of residents of the European Union (EU). To do business in the European Union, online businesses must be GDPR-compliant. For more information, see: General Data Protection Regulation (GDPR) Definition (investopedia.com)

Health Insurance Portability and Accountability Act (HIPAA)

HIPAA is designed to keep medical patient information safe and secure, whether on paper or online. Any company storing or processing patients' medical information must be HIPAA-compliant.

Payment Card Industry (PCI)

Payment Card Industry compliance has been formulated by credit card companies to provide a set of standards that ensure the security of credit card transactions. Companies that adhere to PCI Data Security Standards (PCI DSS) are considered to be in compliance with PCI. For more information about PCI and compliance, refer to: PCI Compliance Definition (investopedia.com)

Personally Identifiable Information (PII)

Personally Identifiable Information is information that, when used either by itself or with other relevant information, can identify a person. Examples include a person's full name, their email address (if their name is included), passport number, social insurance or social security number, credit card information, mailing address, driver's license, financial information, or medical records. Under many forms of privacy protection legislation, companies and other organizations are required to take steps to protect PII from disclosure. For more information about PII, see: Personally Identifiable Information (PII) Definition (investopedia.com)

System and Organization Controls 2 (SOC 2)

System and Organization Controls 2 is a reporting framework in which third-party auditors assess and test controls used by a company to provide sufficient levels of security, availability, processing integrity, confidentiality, or privacy. ESI undergoes regular auditing to ensure SOC 2 compliance, which can be a requirement in some client contracts. For more information about SOC 2, particularly in an AWS environment, see: What is SOC 2? Introduction and Overview (socreports.com)

Data and Analytics Terminology

AWS Lambda

AWS Lambda is a serverless computing service provided by Amazon Web Services (AWS). Users of AWS Lambda create functions — self-contained applications written in one of the supported languages and runtimes — and upload them to AWS Lambda, which executes those functions in an efficient and flexible manner.

Lambda functions can perform any kind of computing task, from serving web pages and processing streams of data to calling APIs and integrating with other AWS services.

Data Migration

Data migration is the process of moving stored digital information between computers, systems, or formats. Data migration occurs for a number of reasons, including server replacement or maintenance, a change of data centers, data consolidation projects, and system upgrades. As much of a company's corporate knowledge and business intelligence is contained in its data, any data migration project must be done carefully to minimize risks.

In the case of Exchange Solutions, data migration usually refers to a process that is sometimes required when onboarding a new client. It is the process of moving that client's data, including member data, from their existing (legacy) system into an Exchange Solutions database. Migration must follow a refined process in order to mitigate the risks associated with moving valuable member data.

Data Type

The data type of a value (or variable in some contexts) is an attribute that tells what kind of data that value can have. Most often the term is used in connection with static typing of variables in programming languages like Java where the type of a variable is known at compile time. Data types include the storage classifications like integers, floating point values, strings, characters, and so on.

Data Warehouse (DWH)

A data warehouse (DWH) is a system that aggregates data from different sources into a single, central, consistent data store to support data analysis, data mining, artificial intelligence (AI), and machine learning. A data warehouse system enables an organization to run powerful analytics on huge volumes of historical data in ways that a standard database cannot.

DynamoDB

Amazon DynamoDB is a fully managed NoSQL database service that provides fast and predictable performance with seamless scalability. DynamoDB takes care of operating and scaling a distributed database, including tasks such as hardware provisioning, setup and configuration, replication,

software patching, and cluster scaling. It also offers encryption at rest, which eliminates the operational burden and complexity involved in protecting sensitive data.

With DynamoDB, you can create database tables that can store and retrieve any amount of data and serve any level of request traffic. You can scale up or scale down your tables' throughput capacity without downtime or performance degradation. You can use the AWS Management Console to monitor resource utilization and performance metrics. DynamoDB also provides on-demand backup capabilities. Point-in-time recovery helps protect your tables from accidental write or delete operations. With point-in-time recovery, you can restore a table to any point in time during the last 35 days.

Extended Member Data (EMD)

See Extended Member Data in the Features list.

Extract, Transform, Load (ETL)

Extract, Transform, Load (ETL) is a three-phase process where data is extracted, transformed (cleaned, sanitized, scrubbed), and loaded into an output data container. The data can be collated from one or more sources and it can also be output to one or more destinations. ETL software typically automates the entire process and can be run manually or on recurring schedules either as single jobs or aggregated into a batch of jobs.

A properly designed ETL system extracts data from source systems and enforces data type and data validity standards and ensures it conforms structurally to the requirements of the output. Some ETL systems can also deliver data in a presentation-ready format so that application developers can build applications and end users can make decisions.

JavaScript Object Notation (JSON)

JSON (JavaScript Object Notation) is an open-standard file and data interchange format that is also easily understood by humans. It uses attribute-value pairs along with objects and arrays to convey data types and their values. JSON is commonly used in Exchange Solutions' applications, including as the means for conveying data in the APIs and most of the feeds. Here is an example of JSON (in this case, as used in the `PUT Update Profile with Extended Data CUX API Suite` request):

```
{
    "dateOfBirth": "2002-09-25",
    "gender": "M",
    "firstName": "Hudson",
    "lastName": "Sampson",
    "email": "hsampson@hfconcrete.com",
    "businessName": "Hudson Cement",
    "postalZipCode": "M3K 2A8",
    "street": "955 Wilson Ave.",
    "street2": "Unit 5",
    "provinceState": "ON",
    "phoneNumber": "(647) 646-9955",
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    "city": "Toronto",
    "extendedData": {
        "bonusPointSegmentation": "Yes",
        "cherryPicker": "Yes",
        "frequencySegmentation": "No",
        "monetarySegmentation": "No",
        "recencySegmentation": "No",
        "registrationStatus": "Registered",
        "rfmSegmentation": "Yes"
    }
}
```


JSON Web Token (JWT)

JSON Web Token (JWT) is an open standard (RFC 7519) that defines a compact and self-contained way for securely transmitting information between parties as a JSON object. This information can be verified and trusted because it is digitally signed. JWTs can be signed using a secret (with the HMAC algorithm) or a public/private key pair using RSA or ECDSA. Exchange Solutions uses the secret to access Tableau Server for reports.

Snowflake

Snowflake is a cloud-based data warehouse built on top of the Azure and AWS cloud platforms. It is a fully managed SaaS offering that is easy to use and does not require hardware or software installation.

It is very scalable and can support many users and transactions. It is designed for high availability and can help ensure the continuous operation of an organization without the risk of downtime or

interruption.

Structured Query Language (SQL)

SQL stands for Structured Query Language, which is a language used by databases. This language allows handling information using tables and provides a language to query these tables and other related objects (views, functions, procedures, and so on). Most databases — such as SQL Server, Oracle, PostgreSQL, MySQL, and MariaDB — use this language (with some extensions and variations) to handle data.

System of Record (SOR)

A system of record (SOR) is an information storage and retrieval system that stores valuable data of an organizational system or process. There may be multiple data sources and one or more locations with remote access. However, to ensure data integrity and validity, there must be only one SOR for a given piece of information. For information that does not change, such as historical data, a SOR provides a traceable source of the original data. For information that is subject to change, such as a bank account balance or loyalty program member point balance, a SOR offers the most current information.

Human Resources Terminology

Performance Management

Performance goals can be set up and the Performance Dashboard accessed through the ADP Workforce Now website: ADP. Once in the portal, navigate to **Myself > Performance Goals** to log your goals, or **Myself > Performance Dashboard** to view your performance tracking information.

Time Tracking

Time tracking is done through Dovico timesheets. To fill in your timesheets (before 12:00 noon on Mondays for the previous week), log in at: DOVICO Software - Login (valuex.com).

Note that for employees not logging hours for a particular contract, daily hours are filled in automatically (including for statutory holidays) with the exception of days off such as vacation, float,

and sick days. The employee is expected to log these in Dovico. If unsure, speak to your manager.

Integration

CataBoom

Companies in various industries are using gamification strategies to encourage spend, shape specific customer behavior, and to collect zero-party data to understand customer preferences. In view of the benefits of gamification to our clients, Exchange Solutions has partnered with CataBoom, a gamification provider, to drive loyalty program member acquisition and increase member engagement.

A member does something that is tracked in ES Loyalty such as registering for the loyalty program, performing an activity such as filling in a survey, making a purchase, or redeeming points. In return, they are rewarded with gameplay facilitated through CataBoom. In the first iteration of this feature, the member gains access to an "instant win" gameboard followed by another board where they collect stamps for game completion towards a sweepstakes prize.

See: CataBoom Integration - ES Loyalty - Confluence and Cataboom_PRD_v1.docx.

Data Integration Gateway (DIG)

The Data Integration Gateway (DIG) is a generic module that accepts messages sent by ES Loyalty corresponding to various supported integrations. The module applies filtering rules to messages arriving from Loyalty, and based on the applied filter, directs messages to the appropriate "connector" module, which in turn is responsible for consuming the message and interacting with an external vendor or provider (for example, a client's email service provider, data integration provider, and calling the appropriate API).

At a high level, the solution decouples all the integration code into a module that is responsible for the actual integration with external data partners (ESPs included). ES Loyalty sends "generic" events and messages to this module, and the module has the logic to determine the which, what, and how of sending the data across to the appropriate external data partner.

The module named DIG is used as a funnel for messages sent out of ES Loyalty to external Martech systems like ESPs that can consume messages from DIG via connectors. Connectors can be built by

ESI staff, by clients, or by System Integrators (SIs).

Marketo

Adobe Marketo Engage™ is a digital marketing platform. Marketo is used by ES Loyalty as a trigger platform for email, specifically for when a member carries out a redemption, is awarded a badge, or registers in the loyalty program. The Marketo connector transforms the generic messages sent by ES Loyalty to a structure that corresponds to Marketo data structures and calls the corresponding Marketo REST APIs. The result is an email sent to the member for one of the three occurrences listed.

Optimove

Exchange Solutions has a partnership with Optimove™, a science-first marketing relationship hub. Optimove is considered a product that has CDP, CRM, and ESP capabilities. This partnership provides value to our joint clients by combining ES Loyalty's strength in offer personalization and Optimove's strength in orchestrating CRM journeys. Exchange Solutions takes advantage of Optimove's CDP and ESP capabilities by:

1. Syncing Loyalty data points to Optimove.
2. Supporting personalized loyalty email communication that a client wishes to send via Optimove.
3. Syncing promotional offers and member interactions with promotions to Optimove.

The result is that the Optimove platform can use data generated in ES Loyalty to enhance the data available in the CDP.

See: Optimove_PRD_v1.docx

Salesforce Marketing Cloud (SFMC)

ES Loyalty has native integration with Salesforce Marketing Cloud (SFMC)™ that supports core loyalty marketing communications. This includes both batch and near-real-time integrations that allow marketers to inform members about their status through targeted, triggered email messages. This data exchange can be made through near-real-time integrations (APIs) or batch and feed integrations.

Exchange Solutions can trigger communications via email through SFMC. This feature has a goal of publishing targeted offers and other information to SFMC so that emails can be sent based on the state of the client's offers, including current offers, reminders, confirmations, tier status, and so on.

See: Exchange Solutions SFMC Integration v3 2024-09-03.docx

Marketing Terminology

Brand Standards Guide

The Brand Standards Guide is a set of tools and rules on how to use our branding elements. The Guide is used by designers, writers, and anyone else using the brand's elements — such as our logo — to create marketing materials. The ESI Brand Standards Guide is in PDF presentation format and covers how different elements of the brand work together to form our brand identity. The Guide is the basis of consistency in how we present the company and its products to the world. To view the Brand Standards Guide, contact the Marketing department.

Client

Used to describe one of our current roster of retailers with whom we have active contracts.

Consumer

The preferred reference to a retailer's customer and/or member. In most cases, this word is also used consistently when referencing a visitor, guest, cardholder, or user.

Customer Lifetime Value

Customer Lifetime Value (CLV) refers to the total value (in terms of purchases of goods and/or services) associated with a member during the duration of their relationship with the client's company. This metric can be derived as an average for all members or, in some cases, as a metric associated with particular member segments to identify those groups of members most likely to be loyal to the company or brand and to make purchases.

Monthly Active Users (MAU)

Monthly active users (MAU) is a key performance indicator (KPI) that refers to the number of unique customers who use the product or service of an online company in a specific month. It measures user engagement and also growth or reduction in use of an application (by tracking the metric on a

month-to-month basis). Online companies can facilitate growth in MAU by providing compelling content and activities (such as games) or by rewarding engagement (for instance, through a loyalty program).

Partner

The preferred reference to a company with which we have an active third-party integration that supports our clients' needs.

Retailer

The preferred reference to a business or target account of interest to us.

Return on Ad Spend (ROAS)

Return on ad spend (ROAS) is an important key performance indicator (KPI) in online and mobile marketing. It refers to the amount of revenue that is earned for every dollar spent on a campaign. Based on the return on investment (ROI) principle, it shows the profit achieved for each advertising expense and can be measured both on a high level and on a more granular basis. Whether you want to measure ROAS for an entire marketing strategy or look at performance at the campaign, targeting, or ad level, it is a key metric for measuring and determining strategic success in mobile advertising.

ROAS can be calculated with a simple formula:

```
ROAS = (revenue attributable to ads / cost of ads) x 100
```

For example: if you run an ad campaign that you invest $1,000 into, and you are able to attribute $3,000 in revenue to those ads, the resulting ROAS of 3 is a very good result.

Total Addressable Market (TAM)

TAM is the total market demand for a product or service if 100% of the market were to purchase. TAM is measured in annual revenue or unit sales.

Value Exchange Optimization (VEO)

We define this phrase as "Understanding an individual consumer's current behaviors, identifying what incremental actions they could perform, and presenting an economically rational incentive that delivers value to the consumer while ensuring an incremental and profitable transaction for the retailer."

Products

ES Loyalty

ES Loyalty is a comprehensive loyalty program management platform that includes the following features:

- Unified Member Database
- Integration Technologies (APIs, Feeds, SDKs, Web Listening Tools)
- Advanced Promotional/Campaign Engine
- Accrual/Redemption Engine
- Flexible Rewards (currency agnostic — $ off, experiences, services)
- Self-Serve Console (manage members, configure promos, reports)
- Membership Tiers
- POS Receipt Messaging & Prompts
- Trigger/Journey Communications
- Multi-Currency
- Refer-a-Friend, Gamification & Badging
- Localization & Multi-Language
- Premium/Subscription Loyalty
- Loyalty Report Suite
- Load-to-Card Offer Functionality
- Multi-Brand Programs & Strategic Coalitions
- Pre-Integrated with ES Loyalty Boost (Personalized Offers for Loyalty Program members)

ES Loyalty Boost

ES Loyalty Boost delivers highly tailored and personalized incentives to members in exchange for performing incremental behaviors, thereby optimizing promotional spend. ES Loyalty Boost helps close behavior gaps related to both spend and engagement, such as redemption recency, referrals, digital behavior, and more. Features include:

- **Real-time advanced analytics** — Detect behavior gaps including for recency and frequency of spend, average order value, not shopping in certain categories, not engaging with digital and social channels, not redeeming in the loyalty program, and more.
- **Intelligent rules and automated offer decisioning** — Determine the right offers for each consumer based on their specific gaps while also calculating the minimum incentive amount required based on the consumer's predicted likelihood to perform the missing behaviors.
- **Offer presentment and reward** — Consumers are engaged in real time at the POS, on the website, or through the call center, or via marketing channels pre- or post-interaction such as email, mobile push notifications, or direct mail, to deliver the personalized offers and award the incentives after the missing behaviors are completed. Incentives can be tailored to whatever motivates consumers, such as bonus points, coupons, free gifts, and exclusive experiences.
- **Offer automation** — Ensures consumers keep receiving new offers that are tied to the consumer's latest performance and behavior gaps.

ES Engage

ES Engage identifies ecommerce consumer purchase intent, then engages with personalized, margin-aware offers optimized based on real-time purchase intent. Features include:

- **Real-time data analysis** — Using the consumer's clickstream actions and available historical data, ES Engage determines — in milliseconds — answers to a few key questions during each browsing session: Is the consumer likely to buy? How much will they spend and is there an opportunity to stretch their basket? Will they respond to an offer? How much margin is available in the cart to support an offer?
- **Offer decisioning** — Based on real-time data analysis results, intelligent rules select the right type of offer, the right spend amount, and the right incentive value to drive the desired action — and sometimes the best action is no action at all. Why waste incentive dollars when the consumer was going to buy anyway?
- **Offer presentment** — Offers are presented in real time, customized to the client's brand standards and leveraging any available rewards currencies, such as coupons or loyalty points. The reward is issued in session only once the consumer qualifies for the offer and checks out.

Promo Enhance

Promo Enhance is a modular, SaaS-based offering that enhances loyalty program performance without having to replace an existing loyalty platform. Promo Enhance leverages superior promotion personalization, automation, customer experience, and analytics and insights features and functionality from Exchange Solutions' ES Loyalty product.

Specifically, Promo Enhance allows retailers to:

- Execute complex, highly personalized offers in minutes
- Drive both transactional and engagement-style behaviors
- Delight members with engaging offer experiences across all channels
- Boost operational efficiency with an intuitive, self-serve SaaS console
- Measure promotion performance with real-time insights
- Enable through a quick and seamless integration that works with any loyalty program

---

Product Features, Offer Types, Reports, and Reporting Metrics

A/B Testing

This is the testing of one group of members against another regarding the promotions they receive. The point is to be able to compare results:

1. Deliver differentiated program experiences or to withhold program treatment.
2. Measure the impact of those experiences.
3. Report on the incremental performance of the program.

Note: The extent and duration of client-facing reporting is assessed on a case-by-case basis.

For instance, one group may see offers and the other may not. In this case, the two groups are:

1. **Test** — Users are evaluated for the offer and get coupons selected for them. The offer or coupon is presented and encouragement messaging is displayed and recorded.

2. **Control** — Users are evaluated for the offer and get a coupon selected for them. However, the offer or coupon is not presented and there is no messaging displayed or recorded (that is, this is a Ghost Offer).

The percentage split between the Test and Control groups can be adjusted. Commonly used splits are 90:10 and 50:50.

Account Association

This feature enables the establishment of associations between ES Loyalty accounts. The associations support the following use cases:

- Reporting roll-ups (that is, aggregate results for associated accounts)
- Enabling console (member admin) users to be aware of associations so that they may execute business processes and apply business logic (for example, performing points transfers).

Accounts can be associated with:

- **Bill-to accounts** — Accounts responsible for paying the bills for the business sub-entity.
- **Ship-to accounts** — Accounts associated with the information required to ship purchases to the correct end address.

For example, if headquarters consolidates the bills from other company locations for payment on purchases, it may have a separate "Bill-to" account. There may be multiple locations to which the purchases are shipped, each with its own "Ship-to" account.

See: Account Association - ES Loyalty - Confluence

Account Closure

Account closure is the process of closing an existing member account in the loyalty program. However, in some cases, it is not enough to simply close the account. Additional precautionary processes may be required to zero balances in the account and to protect the privacy of related data in order to comply with Personally Identifiable Information (PII) legislation.

Account closure through the Console for ES Loyalty allows the user to close the account and optionally to zero the balances in the account and to randomize PII data in the account. This ensures that the closure meets client requirements.

Account Expiry

Accounts expire after an extended period of inactivity, which must be managed in a full lifecycle that describes how accounts become expired and how they can be removed from that status. The main scenario being solved for in this solution is an account which has been dormant for an extended amount of time, and for which any outstanding balance should be removed from the user's account. Additional information:

1. When accounts become expired, they are zeroed out so as to reclaim the points liabilities associated.
2. Expired accounts are not barred from interacting with the system, and when they do, they are flipped back to an active state.
3. Expired points are not reclaimed automatically when becoming active; manual intervention by a CSR is required.
4. Accounts become expired a set amount of time after their Last Activity Date, which is defined by a set of actions they can perform or that can be performed on their behalf that delay account expiry.
5. See: Account Expiry Solution Analysis - ES Loyalty - Confluence

Activity

There are two main meanings for "activity" in ESI products:

- **Business activity** — Something that a member did to satisfy criteria within the loyalty program. For example, they may have purchased a certain amount, written a review, downloaded an app, booked an appointment, or completed any other action the client sets as the criteria. For instance, if a member signs up by completing their profile information and submitting it, system activity is generated.
- **System activity** — An activity that occurs within the ESI system resulting from a business activity. The Activity Feed or Activity API captures information about what activity occurred, who did it (member ID), and other related information (a description, the date when it occurred, and so on). An activity can be used for: (1) triggered offers — triggered by an event or reaching a specified value, causing the offer to commence; or (2) behavioral offers — completing or contributing to the completion of one or more specified behaviors, causing the offer to commence. Activities (transactional in nature) should not be confused with Extended Member Data (EMD), which is information that is associated with the member and persists until something changes (such as the Last Activity Date).

Activity Offer Behaviors

Broadly, behaviors are things that members can do that a client program might reward.

Direct Behaviors

Things like buying a specific item, spending a certain amount of money on a brand in a single transaction, or a specific activity reported as being done by the user. These are typically rewarded in real time because they are easy to evaluate and generate points in response to.

Indirect Behaviors

Things that are not necessarily immediate and may take multiple transactions or activities to fulfill. For example, a user may be asked to spend $40 in four different transactions before earning their reward (Frequency Offer) or be offered extra points for being a high-value customer that has spent above a certain threshold or earned above a certain threshold of points. These are sometimes done in real time as the user completes the final task or may be rewarded in batches (for example, rewarding everyone who spent $500 this month on the first day of the next month).

Note that a client might convert an indirect behavior in their system into a direct one in ours, if they send an activity indicating the user has hit a value threshold on their side that we do not yet support.

This design focuses on activities, which means that all of the offers evaluated are based on direct behaviors.

Activity-Triggered Offers

Activity-triggered offers are offers targeted in reaction to customer behavior as reported through activities. This allows clients to create near-real-time experiences that "reward" behavior with an opportunity to earn rewards.

Some examples include:

- Targeting a default suite of offers when the member first registers to cover the gap between registration and when the regular offer refresh occurs
- Creating "offer journeys" that suggest the next way to engage with the program (for example, after completing a survey, incentivize a related purchase)

See: Activity Triggered Offers - ES Loyalty - Confluence

Add to Cart

For information about add to cart, see: Add to cart - Account Management Knowledge Library - Confluence (atlassian.net)

Ad Hoc Rewards (Earn)

This feature is used by client partners and business units to issue ad hoc bonus points to members without running a promotion inside ES Loyalty. Bonus points can be rewarded using APIs, regular feed processing, and file upload through the Console. The bonus points are recorded in the system as a transaction type (`RequestAction=ADHOC_REWARD` and `TransactionParts.Action=BONUS`). The issuers (client partners or business units) will associate the rewards with a reward identifier for reporting purposes. A list of valid reward identifiers is maintained through the Console.

For more information, see: Adhoc Reward - ES Loyalty - Confluence (atlassian.net)

Ad Hoc Redemptions (Burn)

This feature is used by client partners and business units to redeem points on behalf of the member. The points can be redeemed using the CUX API, regular feed processing, and file upload through the Console. The redemption is recorded in the system as a new transaction type (`RequestAction=ADHOC_REDEEM` and `TransactionParts.Action=REDEEM`). The redeemers (partners or business units) associate the redemption with a `redemptionId` for reporting purposes. A list of valid redemption identifiers is maintained through the Console.

Additionally, instead of specifying the amount of points to be redeemed, a catalogue item identifier can be provided which can be mapped to a particular points value for redemption. A list of valid catalogue item identifiers is maintained through the Console per partner and business unit.

For more information, see: Adhoc Redemption - ES Loyalty - Confluence (atlassian.net)

Ad Hoc Redemptions for Households

Redemptions for households differ significantly from those for individual members. The household features accommodate the ability to define the contribution from each member of the household toward a redemption.

Originally, the redemption logic (set in the configuration) allowed only "PROPORTIONAL" redemptions, meaning that the reward points were drawn equally from the available points of each member in the household who had points before the redemption. Now, as an alternative, the redemption logic allows "REQUEST_DEFINED" redemptions, meaning that the amount drawn from each household member account can be specified in points. A member with REDEEM privileges in the household sets the contributions from each member and can make the redemption.

If this feature is enabled through configuration, the option for Redemption Logic is shown on the Householding page in the Console.

Secondary members may also redeem, but only from their own available rewards balance and if contributions from other members are not required. Product catalog items can also be included in the request to restrict the scope of the redemption to those catalog items.

Adjustment

An adjustment is a change to the consumer's points based on one of a number of factors, including previous errors in applying points, returns and refunds, or other factors. A no-receipt adjustment is made when an adjustment process is carried out without the information provided by the consumer's receipt. A void completely nullifies a transaction and the associated award of reward points.

For more information about adjustments, see: Adjustments - Account Management Knowledge Library - Confluence (atlassian.net)

Affinity (ES Loyalty Boost)

At a business level, affinity maintains consumer spending within the categories, brands, and products to which they have displayed a connection. For instance, for ES Loyalty Boost:

- **Goal** — To maintain a consumer's general spend level with the client.
- **Success indicator** — Maintain AOV at the overall consumer level and within various categories, brands, and so on. Maintain overall offer engagement (acceptance, completion).
- **How this optimization works** — An Offer Template is selected from a category, brand, or product in which the consumer has historic spend. The emphasis is on templates with a spend threshold closest to the consumer's historic spend. The priority is for templates with lower incentive amounts. New consumers with no purchase data receive random offer templates.
- **Guidance on applying templates** — Ensure that the templates' currency value represents your typical member spend (perhaps $5 to $15 on the low end, $75 to $150 on the highest end). "For

every $1" templates will almost always be selected over a spend-threshold template.

Aggregate or Aggregation (noun)

A running tally of events that have occurred, using metric data. For example, if each transaction metric is logging the total amount spent, this aggregate could tally that up. Usually done in varying increments, such as Lifetime, Yearly, Monthly, and so on. Note that it is usually restricted to one type of data; a second aggregation would be used to track bonus points earned, for example.

Aggregate (verb)

The act of tallying up multiple events into a single total value. This could take the form of a running total (sum) or an average, or potentially other types of tally operations.

American Address Handling

In early use, ES Loyalty was only able to support the use of Canadian addresses for clients. However, as Exchange Solutions began to pursue customers in the US, there was a requirement to have the flexibility to deal with Canadian addresses or American addresses (not both) for a single client. To this end, some of the data fields used in APIs and feeds were renamed to accommodate either Canadian address elements (for instance, province or postal code) or their American counterparts (state or zip code). See: American Address Handling - ES Loyalty - Confluence

Annual Point Expiry

Clients require flexibility in the points expiry feature, such as the cadence on which points expire. Different clients may prefer to use different expiry periods to align with the needs of their business. Points can be expired once annually or on a monthly basis. For annual point expiry, options can be set by the TSA in the configuration and related functions to support points expiry on an annual basis. Expiring points helps to keep loyalty program liability in check.

Anonymous Prompt

The objective of this feature is to present prompts to anonymous shoppers to inform them about points they could earn if they swipe their loyalty cards, thus increasing the scan rate.

Anonymous prompts are for mass offers and are for trial calls. The Promotion Engine is responsible for choosing and returning a prompt based on a priority associated with the prompt message itself. Note: This design considers that Anonymous Prompt work will follow the Near-Miss Prompts logic.

API

An Application Programming Interface is used to enable communications between different computer systems or software packages in a standard format. ESI APIs rely primarily on JSON value-pairs to allow attributes to be matched to their corresponding values. ESI APIs for different products are used to send requests to the ESI system, and to return information resulting from those requests.

Audience

An audience refers to a group of people who consume or engage with a particular piece of content or a message. An audience is typically a larger and broader group than a segment as it consists of various demographics and interests.

An audience shares at least one (but often more) attribute value. For instance, an audience may be defined from the pool of all members as one that includes females over 45 who have transacted vitamin purchases of more than $100 last year. In this example, in order to be in this audience, the member must meet all the criteria. The audience is used to make it easier to target the groups of members most important to the client when presenting offers to members.

Audience Builder

The Audience Builder is the older, manual way to build a segment or audience in the Console, consisting of a group of members with common targeting attributes. In building the Audience, the user can:

- Assign a unique audience ID, as well as an audience name and audience description.
- Use all existing profile and past purchase attributes available to that client (including EMD).
- Use existing logic and query builder concepts and UX components (for example, and/or conditions, condition grouping).
- Port logic that was set up in an Offer into the audience setup (for example, easily recreate logic that was used in an offer).
- Preview audience count.

Creating an audience gives the user the ability to group members with common attributes for quick and efficient targeting.

Audience Recommender

The Audience Recommender in the Console is the newer way of creating an audience. Instead of building an audience by selecting features and targeting, the user can provide the criteria for the audience by entering a prompt with delimiting information and submitting it to a generative AI engine. Gen AI generates the SQL script used as the basis for the query that creates the audience. The user can view the audience count or make changes to the prompt. When they save the audience, the user provides the audience name and ID to publish the audience.

Audience Recommender has some limitations in terms of what it can query on, meaning that the product catalogue must be loaded on a per-client basis to answer questions about those products. To extend the functionality, enhancements have been made to the feature to:

1. Recognize new levels of product hierarchy data (department, family/group, and vendor, in addition to the original brands, categories, and sub-categories) and search corresponding data.
2. Build audiences based on offer engagement. For example: "members who accepted offer ID ABC" or "members who completed offers in the past month."

For more information, see: Audience Recommender Enhancements - ES Loyalty - Confluence (atlassian.net)

Audience Targeting Based on Transaction History

This feature is about targeting audiences for promotions based on their transaction history. Users can create their promotions and target members who have had:

1. **Specific spend amounts** — Purchased spend amount (based on the aggregated cart final amount) or purchased quantity (based on quantity in cart).
2. **On specific products** — Based on SKU or product hierarchy info (category, subcategory, family, brand, vendor, department).
3. **In a specific time frame** — On a specified date or specific date range.

This capability complements the existing user profile targeting (account attributes, Member Extended Data, partner links, membership tiers, badges) to enhance the breadth of user targeting options.

See: Audience Targeting Based on Transaction History - ES Loyalty - Confluence and Purchase History Targeting - ES Loyalty - Confluence.

Automated Clearing House (ACH)

Automated Clearing House (ACH) is an electronic funds transfer system that collects necessary bank account details and executes US fund transfers. ACH is a batch process, store-and-forward system for disbursements (credits) and collections (debits). The ACH network is open for processing payments 23.25 hours every business day and settles payments four times a day. Payments are only settled during business hours and the system is closed on federal holidays and weekends.

Average Order Value (AOV)

Average order value (AOV) is a mean value that tracks the weighted average cart currency amount spent whenever a customer places an order on a website, in an application, or in a store. AOV is considered one of the most important metrics because it can be an indicator of whether your marketing and sales strategies are successful. It can apply to B2B or B2C. See also Basket Stretch Offer.

AOV may often be tracked on a daily or weekly basis to ensure the client can make timely adjustments to their strategies to maximize the AOV value.

For more information about AOV, see: Average order value - Account Management Knowledge Library - Confluence (atlassian.net)

Badge

A badge is a signifier that the member has accomplished something in your loyalty program. Badges can be tailored to specific actions, behaviors, or achievements you want to encourage or reward among your members. Earning a badge means that the member has demonstrated their loyalty to the brand through their behaviors. The badge can be displayed with information related to their account to show their loyalty.

See: Badging - ES Loyalty - Confluence

Balance

For information about a member's balance, see: Balance - Account Management Knowledge Library - Confluence (atlassian.net)

Bank Identification Number (BIN)

The term bank identification number (BIN) refers to the first four to six numbers on a payment card. This set of numbers identifies the financial institution that issues the card. As such, it matches transactions to the issuer of the card being used. BINs can be found on various payment cards, including credit cards, charge cards, and debit cards. The BIN system helps financial institutions identify fraudulent or stolen payment cards and can help prevent identity theft.

Banner Fly Out

In Engage, clients can choose to have their cart implemented as a "fly out" window showing relevant messaging at the bottom. As a shopper visiting a favourite e-commerce site, I want to be able to view a promotional message at the bottom of the cart so that I can leverage the offer and earn rewards while purchasing items that I would already purchase. As a marketer, I want to have that encouragement banner at the bottom of the cart to encourage shoppers to spend more so as to increase the incremental spend metric.

The client provides a DIV tag in the fly out window so that Exchange Solutions can provide messaging in the window in the form of an encouragement banner at the bottom of the mini cart flyout. The text is shortened from the regular message to fit in the fly out window.

Base (Points)

Base points are the points that are awarded on every transaction for each qualifying purchase made.

For more information about base points, see: Base points - Client Success Knowledge Library - Confluence (atlassian.net)

Basket Stretch Offer

A basket stretch offer (sometimes referred to as a "stretch offer") is one that incentivizes the consumer to buy or spend more. For instance, a consumer may get an offer that provides more reward points if they spend more than they currently have in their cart or basket. If consumers consistently respond to basket stretch offers, their average order value (see above) will rise. For ES Engage, these are referred to as AOV stretch offers, and as basket stretch offers for ES Loyalty Boost.

Behavior Gaps

These are the behaviors each individual consumer is currently not performing, but has the potential to perform, that would be strategic and desirable for the retailer.

Blackhawk Network (BHN)

Blackhawk Network is a vendor that provides various payment solutions, including gift card and payments enablement. For our purposes, BHN provides a payment solution that enables currency transfers from a corporate client to loyalty program members. This allows the client to transfer rewards as dollars directly into member accounts. The purpose is to increase member engagement and satisfaction with the loyalty program.

For more information, see: Customer Disbursements | B2C Payments | BHN

Bonus (Points)

Bonus points are awarded based on offers that have been applied to the cart. They are beyond base points, or points regularly earned related to spend, and are related to a particular offer.

For more information about bonus points, see: Bonus points - Account Management Knowledge Library - Confluence (atlassian.net)

Budget (Campaign Budget)

A budget is used in ES Loyalty Boost to provide financial resources for running a marketing campaign. Establishing a budget helps the user to control the costs associated with running a particular campaign. For example, they may choose to stop a campaign once all financial resources have been consumed, or to roll resources remaining at the end of a campaign into subsequent campaigns.

Budget Burn Down

A campaign budget must be managed to ensure that it stays within specified limits. A number of features of the budget must be managed, including the list of vendors that are governed by the budget, the duration of the budget, and the maximum allowable amount for the budget. In addition, budgets can repeat on a schedule (each repetition is an iteration) and key metrics such as the current number of points earned towards a budget and the start and end dates of the iteration are also tracked.

To ensure that the budget limit is not exceeded, there is a setting for the allowable number of points (as a percentage) allowed before the budget will block any further points from being awarded. Currently, the default configurable value is set to 75%. Offers are blocked from being selected if the budget has been consumed.

The start and end date/time stamps are set, as is the budget amount for each iteration and the amount type (points). The cadence is set to weekly, meaning that between the start and end dates, there are eight iterations of the budget, each beginning with the budget amount specified.

Through the use of these various features, the spending of the budget — or the "budget burn down" — is tightly controlled.

Burn

For information about burning points, see: Burn - Account Management Knowledge Library - Confluence (atlassian.net)

Business Unit

The business unit functionality allows different divisions or business units of the same client company, or different companies, to use the same loyalty program. However, the separate business units can be partitioned in terms of Exchange Solutions' features so that each can only access those for which they have permissions.

Business Unit (BU) Filtering

BU filtering is used to focus on data for a specific business unit. For example, in an API request that returns offers, the business unit can be specified in the request to ensure that the data in the response is only relevant to that business unit.

Business Unit (BU) Segregation

This is the principle and practice of separating data, offers, and so on in one business unit from those in another. For instance, in the Console, if the client has more than one business unit, the correct BU must be selected before accessing the related audiences, offers, banners, or badges.

Buy One, Get One (BOGO)

Buying one product to get another of the same type free is a common marketing strategy to get members engaged with the products. This type of offer can be set up in ES Loyalty by providing a 50% discount offer on the purchase of two items.

Buy Online, Pick Up in Store (BOPIS)

BOPIS refers to the practice of buying a product online (through a website or app), then picking up the item in a client's store. The benefit for the client is that they avoid the cost and logistics associated with shipping that item directly to the member and they may also have upsell opportunities once the member is in the store. Therefore, it makes sense for some types of businesses to provide offers, discounts, and incentives that encourage members to engage in BOPIS. For more information, see: BOPIS Product Brief.docx

Calculated Member Insights (CMI)

Calculated Member Insights (CMI) is an AI-powered, conversational tool designed to help loyalty program managers create, customize, and apply various insights to their member base. It is a feature being developed for release in late 2024.

This feature guides marketers through defining, customizing, and applying various analytical metrics to their member base. By combining advanced data analysis with human expertise, it allows for the creation of tailored CMIs such as recency segmentation, churn prediction, or cherry-picker identification. The result is a set of actionable insights, where each member is marked with specific CMI values, enabling more targeted and effective loyalty program strategies.

For more information, see: Calculated Member Insights (CMI) - ES Loyalty - Confluence (atlassian.net)

Campaign

In ES Loyalty Boost, a coordinated set of offers. The campaign may have one or more iterations during its lifecycle (for instance, the campaign may recur weekly for six weeks).

Cardinality

The number of elements in a given mathematical set. In ES Loyalty, for example, a triggered offer may be set to be run for every consumer a maximum number of times, say 5 times; the cardinality of this triggered offer is then 5. A counter is incremented each time the offer is given to a specific member

and the count is used to prevent the same triggered offer being given to the member again after the counter has reached 5 for that consumer.

Coalition

For information about loyalty coalitions, see: Coalition - Account Management Knowledge Library - Confluence (atlassian.net)

Communication Preference

For information about communication preference, see: Communication preference - Account Management Knowledge Library - Confluence (atlassian.net)

Console

Product name for the administrative and user UIs that are used, in different configurations and with different features, for various Exchange Solutions clients and products.

Continuity Offers

A continuity offer is a promotion or benefit that is provided to customers who maintain their membership or subscription for a certain length of time. For example, a streaming service may offer a continuity offer to its loyal customers, such as "Get one month free after subscribing for six consecutive months." This type of offer incentivizes customers to stay with the service for a longer period of time and rewards their loyalty with additional benefits. The basic concept is to reward customers who remain loyal and committed to the service or product over a longer period of time.

Credit Statement

In the context of Exchange Solutions Loyalty, a Credit Statement is a file containing a list of all account members and amounts that members have redeemed since the last generated statement. The file is used by clients to apply money to a loyalty member's account. Like a credit card's statement credit, this reduces the amount to be paid by B2B members and the credit statement is a benefit of a loyalty program. Clients in all geographical regions can use this output.

Customer Data Platform (CDP)

A CDP is a marketing system that pulls in customer data from any channel, system, or data stream in real time to enable customer modeling and optimize the timing and targeting of messages and offers. Related tools usually include a customer database and automation, as well as management resources for multichannel campaigns, real-time customer interactions, and connected data. It is used by other systems to analyze, track, and manage customer interactions.

Digital sources for a CDP include:

- **Behavioral data** — Such as action taken on a website, in an app, or through other channels such as live chat or digital assistants, and the number and length of interactions and frequency of those interactions.
- **Transactional data** — Such as customer purchases and returns, from ecommerce or POS systems.
- **Demographic data** — Such as the customer's name, birth date and month, and address.

Customer Lifetime Value (CLV)

The total amount of money a customer is expected to spend in your business, or on your products, during their lifetime. For instance, based on consumer behavior on the website and comparison or categorization of the buying patterns, a retailer may be able to discern that the consumer will spend an average of $X/yr. for the next 20 years, so the total Customer Lifetime Value = $X × 20. Sometimes, this is referred to as the "lifetime value of the customer." For more information about CLV, see: Customer lifetime value - Account Management Knowledge Library - Confluence (atlassian.net)

Customer User Experience (CUX) System

A CUX system is one that facilitates online transactions (through a website or mobile app). For example, data generated by member activities in an app or on a website is delivered to Exchange Solutions' systems via a CUX Application Programming Interface (API) and messages can be returned to the member through the app or website.

For more information, see: Exchange Solutions ES Loyalty API Suites (getpostman.com)

Data Integration

Data integration is the process of consolidating data from different sources into a single dataset with the goal of providing users with a unified view of the data and enabling analytics tools to create

business intelligence. As a practical example, the key data integrations for ES Loyalty Boost include:

- **Transaction data** (feed or API, outbound from client systems to ES Loyalty Boost) — Used for offer behavior recognition (for example, did the customer buy the pants? If so, provide the reward points).
- **Product data** (feed, outbound) — Used for product targeting (for example, we need to know what are all the SKUs that map to `CATEGORY = "pants"`).
- **Event/Activity data** (feed or API, outbound) — Activities or events sent to ESI that can either trigger an offer or be rewarded on (for example, write a review, complete a survey).
- **Store location data** (feed, outbound) — Used for store targeting (location, kind of store, end customer profile for that store).
- **Member data** (feed, outbound) — Used to determine who are known members, as well as for audience targeting (for example, ESI needs to know who has `PROVINCE = ON` so we only reward those members for a given targeted ON offer).
- **Rewards Transaction** (feed, inbound from ES Loyalty Boost to client systems) — Consume and apply bonus point issuance needed for points to actually show up in member accounts, apply bonus point adjustments.
- **Offer data for email** (feed, inbound) — Consume offer targeting feed and integration to email, which allows clients to show offers in email.
- **Reconciliation** (feed, inbound) — Consume reconciliation data and integrate to data warehouse and in-house reporting. Allows more detailed client-side tracking and reporting.
- **Website Experience data** (API real-time tag on client website) — JavaScript tag placed on the customer's site to present offers (Offer Gallery).

Data Integration Gateway (DIG)

Data Integration Gateway (DIG) is a generic module that accepts messages sent by ES Loyalty corresponding to various supported integrations. The module applies filtering rules to messages arriving from Loyalty, and based on the applied filter, directs messages to the appropriate "connector" module, which in turn is responsible for consuming the message and interacting with an external vendor or provider (for example, the client's email service provider or data integration provider, and calling the appropriate API). For more information, see: ESP Modularization - Data Integration Gateway - ES Loyalty - Confluence (atlassian.net)

Delayed Targeting

Delayed targeting refers to targeting jobs that are scheduled for some time after the offer is published and typically before the promotion goes live. This feature is applicable for any Load to Card (LTC) offers that are set up in advance for a segment of customers. Because it uses static targeting, it is applicable for offers sent in email. Here is an example of the flow for sending a delayed targeting offer:

1. Offers for a specific group of members (for example, segment = "Lapsed") are set up in advance.
2. Right before the offer start date, targeting is run, the correct members are statically targeted, and the offer targeting details are synced to SFMC.
3. An email with specific offer details is sent to only the members who are known with certainty to qualify for this offer.

For more information, see: Delayed Targeting vs. Dynamic Targeting.pptx

Delayed Transactions

Delayed transactions are those for which rewards have not yet been posted to the account pending a specific event, such as payment for the order and/or fulfillment of the order. The points are not added until the conditions are met, and then only if there are no holds on the points.

- **Order** — The action that creates a transaction that may be delayed.
- **Confirmation** — The action that updates the order status so that it can now be rewarded.
- **Pending** — Pending transactions and the points associated are not yet posted to the account and require another event to confirm and post the transaction. All of the normal side-effects of a transaction have not yet happened. No redeemable balance will be provided, no reward control, no frequency offer progress, no membership tier progress, and so on.
- **Posted** — Transactions that have been applied to the account. Posted transactions are still subject to hold rules after the fact (the account has earned the points but cannot access them until the holds have run their course).

For more information, see: Delayed Transactions.docx

Demand Shaping

Demand shaping is a concept used with ES Engage to use a coupon to encourage members to add a specific product to a cart. The demand shaping offer is presented on promoted product pages for items that the client wishes to clear out or on product category pages for that product category.

Therefore, the member is being directed to that product page and incentivized to buy that product. Eventually, demand shaping will be a function that can be used during business as usual (BAU) periods or during special promotion periods to drive demand and control margins for specified products.

Direct Deposit

In the context of Exchange Solutions Loyalty, B2B clients in Canada may wish to offer the ability to electronically transfer funds to their loyalty members. This is done by having a Direct Deposit File — a file that contains a list of loyalty members along with bank account details. The actual file is generated by ESL on a configured weekly cadence. The client then retrieves the file from ESL and initiates fund transfers using payment/payout processor software as part of back-office operations.

Discretionary Points

Discretionary Points are points that can be added or subtracted from an account by an agent to adjust an incorrect balance. For example, if a member was awarded too many or too few points on a transaction, the Discretionary Points option on the Member page in the Console can be used to adjust the account points balance by up to ±250,000 points. Details of the adjustment, including the agent's name, are recorded on the transaction record.

Discounts for Inventory Clearance

Engage clients sometimes have a goal to create a sales uplift for online websites by providing a "middle road" between excluded products on which no discount is provided and "mass discounted" products on which significant discounts are applied. By targeting discounts and managing margins, Exchange Solutions offers a way to discount merchandise for inventory clearance but without deep "mass discount" incentives. The key is to target smaller discounts to motivated buyers as opposed to regular buyers as a way to clear inventory.

The solution also includes A/B testing to allow clear results for the sales uplift and inputs to ROI calculations. As part of the feature, listening tags are also created for use on the client's website.

Dynamic Targeting

For dynamic targeting, the audience is selected in real time at the moment of an interaction (for instance, checking out or through digital engagement on a website). For instance, dynamic targeting

allows "Load to Card" (LTC) offers to be targeted to a specific audience using logic. A use case for this is to allow targeting for members that use a partner payment card. Note that there is no way to know in advance which members the offer will apply to; it depends on an evaluation of who meets the criteria at the time of an engagement or interaction. For more information, see: Delayed Targeting vs. Dynamic Targeting.pptx

Earn

For information about earning points, see: Earn - Account Management Knowledge Library - Confluence (atlassian.net)

Earn Rate

For information about earn rate, see: Earn rate - Account Management Knowledge Library - Confluence (atlassian.net)

Economic Value

Relevant to ES Loyalty Boost. Economic Value is an optimization concept that can be layered into (ensembled into) the core slot Optimization Objectives. Today, this value is calculated based on a member's historic spend in the categories that an offer template's eligible products belong in. There are several applications for this value. Today, one such application is to prioritize offers when there are many eligible for a member. For example:

- **Affinity** — When a member has past spend in many categories, brands, and so on for a given slot, we prioritize those with the highest economic value.
- **Stretch** — When a member has past spend in many categories, brands, and so on for a given slot, we prioritize those with the highest economic value.
- **Penetration** — If a member has spend in all the available categories, brands, and so on for a given slot, we prioritize those with the lowest economic value.

In the future, economic value is expected to continue to be a factor in prioritization, combined with other factors (for example, relevancy) to determine the best offer.

Ensemble Capabilities (AKA Ensemble)

Relevant to ES Loyalty Boost. Ensemble capabilities allow Boost's optimization objectives to convert multiple inputs and attributes into a score (that is, how far from "good" is this attribute value?). Those scores have a configurable weight applied and are then combined (ensembled) to produce one score for each offer. That score is then used to select the best offer.

This can be used to ensemble multiple optimization inputs, such as:

- Economic value
- Repurchase cycle
- High Household Penetration (Heuristics)
- Recommender (ML)
- Others (for example, in future: weather, demographics, offer engagement)

Future optimization enhancements may be implemented to optimize the "weights" of the ensembled inputs to improve the performance of the model.

Expiry Rules

For information about expiry rules, see: Expiry rules - Account Management Knowledge Library - Confluence (atlassian.net)

Extended Member Data (EMD)

EMD is additional data about a member. It may be data being used by the client that is not in Exchange Solutions, or for offer targeting, or for transmitting data for other specific features.

Feed, Data Feed, or File Processing

A data feed is a way of delivering structured data (such as XML, CSV files, or JSON) from one system to another. This could be for specific information, news, social media feeds, or ecommerce marketing and advertising. The advantages of this feed-based system are that it is easy to implement and does not require the sender (or the receiver) to use special tools or advanced API formats.

The downside is that there is no good way to continuously update the receiving party about changes. The receiver has to download and process the entire feed every time. This means that real-time updates are nearly impossible. It is called a data feed because the file is updated frequently (every day or every hour); this way the product information is constantly fed (uploaded) into other systems, like

shopping channels. Furthermore, the data that is sent is limited to the specific format. Currently, data feeds are still the most used form of data exchange in affiliate platforms, advertising networks, and marketplaces.

First-In First-Out (FIFO) Point Expiry and Auto-Redemption

FIFO (first in, first out) is an inventory management and accounting concept that has been applied to loyalty. In the simplest terms, this means the earliest points earned (first in) are the first ones to be burned (first out). Points that do not "go out" (are not redeemed) after a certain duration are either expired (simply swept from the account) or auto-redeemed (the value is provided to the member in some other way such as a gift certificate), depending on the requirements of the client.

From a feature perspective, this consists of two components:

1. The FIFO tracking of points.
2. A process to sweep them either to redemption or expiry.

See: FIFO Points Expiry/Redemption - ES Loyalty - Confluence

FIRE Mandate

Term used by Forrester to describe what businesses are looking for in the ecommerce software market. FIRE stands for: (1) Flexible to integrate; (2) Inexpensive via component-based pricing; (3) Rapid to implement and upgrade; and (4) Easy to administer. See also MACH.

First-Party Data

Encompasses an individual's site-wide, app-wide, and on-page behaviors. This also includes the person's clicks and in-depth behavior (such as hovering, scrolling, and active time spent), session context, and how that person engages with personalized experiences. With first-party data, you glean valuable indicators into an individual's interests and intent. Transactional data, such as purchases and downloads, is also considered first-party data.

Flat File

A flat-file database stores data in a simple manner. Each line of the text file holds one record. Fields are separated by delimiters, like commas or tabs. Most database programs, like Microsoft Access and FileMaker Pro, can import flat-file databases and use them in a larger relational database.

A flat-file architecture transfers sets of data (for a selected date range or number of records) via a CSV file or other flat-file format. Flat-file integration works well to transfer batch files for payment processing using SFTP (secure file transfer protocol).

Fractional Amounts for Base Multipliers

This feature satisfies a client requirement to be able to provide multipliers on base rewards that are not strictly whole numbers (for example, 2) but could include a decimal or "fractional" portion (for example, 2.5). This feature allows clients to more finely tailor their rewards for their members and to more closely control loyalty program rewards liability. See: Handling fractional amount for BASE multiplier offers - ES Loyalty - Confluence

Fraud Controls

For information about fraud controls, see: Fraud controls - Account Management Knowledge Library - Confluence (atlassian.net)

Frequency Offers

A frequency offer refers to a promotion or reward that is offered to customers who make a certain number of purchases or purchase a specified quantity of particular items over a defined time frame. For instance, a retailer may offer a frequency offer to its loyal customers such as "Buy 5 items within the next 30 days and receive a 10% discount on your next purchase." This type of offer encourages customers to make repeat purchases and rewards their loyalty with a discount or other incentive. The basic concept is to reward customers who make frequent purchases with special promotions or rewards.

Frequency Offers Details Report

This standard report provides details about frequency offers (see above). The user sets the business unit (if applicable), the period type and value, and the promo start and end dates to create a data range. The report shows the number of members who participated and completed frequency offers in that period, the bonus points issued, the average number of items in cart and basket size, and other metrics that define the success of the specified frequency offers. The report further breaks down the frequency offers by type (spend vs. units/transactions) and ranks the frequency offers by offer codes. Finally, the user can choose to drill down into details of specific offers.

Gated Offers

Gated offers are targeted, gated promotions designed for members of a particular group based on their occupation, life stage, or affiliation, such as "college student" or "member of the military." The process for redeeming a gated offer is protected by digital verification, a step that checks consumers' credentials against authoritative data to confirm their eligibility.

It's important to understand that verification of a buyer's eligibility occurs only after they've expressed interest. Rather than chase buyers based on inferred clues, marketers create a gated offer based on known attributes of a target segment and invite them to engage.

Part of the value of gated offers is the ability to narrow down the targeting to a specific group of members. For instance, if a marketer has a limited marketing spend, they can target specific groups to get the most returns from their offers. In addition, gated offers have an air of exclusivity that makes them appealing to selected members. And by validating the gating criteria, the risk of fraudulent fulfillment by non-qualified members is greatly reduced.

Generative AI Help

Generative AI Help is provided in the Console to give the user a fast and convenient AI-driven way to generate information about various aspects of loyalty programs, Exchange Solutions product features, procedures in the Console, and feeds and APIs. The user enters and submits a prompt to receive a relevant response providing the information requested.

For more information, see: Gen AI Help - ES Loyalty - Confluence (atlassian.net)

Ghost Card

These are cards that have been allocated for print which may or may not have been used by a member. A ghost card can have transactions if the member has done purchases prior to registering the card.

A ghost card could be two things in our system:

- Card allocated = true, ACTIVE card status, and UNREGISTERED account status.
- Card allocated = true, but no account exists for the card in our system.

Ghost cards can accumulate reward points, but usually cannot redeem them until the holder is a registered member in the loyalty program. See the exception (Ghost Redeem Override) below.

For more information, see: Ghost or blank card - Account Management Knowledge Library - Confluence (atlassian.net)

Ghost Redeem Override

For more information about a "Ghost Card," see the entry directly above. Typically, ghost cards can earn points but not redeem them until the holder is registered in the loyalty program. However, there are instances where an agent may want to accommodate a customer's wish to redeem rewards without providing their email address and completing the registration process. In that case, if the option is configured for that client, the agent can select a flag in the Account Status section on the member's page named "Allow redemption for this unregistered member." That will allow the customer to redeem their rewards for this account. See Ghost Redemption Override - ES Loyalty - Confluence and Earning and Redemption Eligibility Rules - ES Loyalty - Confluence.

Global Trade Item Number (GTIN)

The Global Trade Item Number is an identifier for trade items, developed by the international organization GS1. Such identifiers are used to look up product information in a database which may belong to a retailer, manufacturer, collector, researcher, or other entity. The uniqueness and universality of the identifier is useful in establishing which product in one database corresponds to which product in another database, especially across organizational boundaries.

Help

Help is available by clicking the **Help** button in the Console. The window that opens allows the user to pose natural language questions about ES Loyalty features and receive a response based on all available documentation. The Help feature facilitates a fast and easy way for Console users to get more background or procedural knowledge to support them in their use of the Console.

High Household Penetration (Heuristics)

Relevant to ES Loyalty Boost.

HHP Background:

- In simple terms, household penetration is the percentage of households that have purchased a product or shopped in a certain channel or retailer. This concept can be modified and applied for loyalty by considering the percentage of members that have had spend in a given category.
- ESI's hypothesis is that this concept can be used to add more relevancy to our Offer Selection Engine, which will drive up the all-important offer engagement KPIs.

HHP in ES Loyalty Boost:

- The High Household Penetration (HHP) metric for Boost is a score calculated for every Offer Template at a global/program level.
- The score considers the percentage of loyalty members that have bought any product from that Offer Template in the past 12 months. Templates with a higher percentage of members with purchases have a higher HHP score.

HHP Summary:

HHP = the number of customers who made a purchase in a specific offer template, divided by the total number of customers. For example, if there are 100,000 total customers and 95,000 of them purchased in the "oral health" product category while 80,000 of them purchased in "beauty":

- oral health HHP = 95,000/100,000 = 0.95
- beauty HHP = 80,000/100,000 = 0.80

Householding

For information about householding, see: Householding - Account Management Knowledge Library - Confluence (atlassian.net)

Lapsed Member Targeting

The lapsed member targeting feature aims to re-engage members with reduced interaction with the business using ES Engage. This feature allows recognition of lapsed members, provides them with customized offers to engage them, enables customer retention, and extends the customer lifecycle. This Engage model is able to identify lapsed members for targeting and can determine the best and most effective offers to re-engage lapsed members and to encourage conversions.

Lapsed members, distinct from new members, are defined based on:

1. **Time-based definition** — Those who have not engaged with the website or app for a specified period of time.
2. **Purchase behavior definition** — Those who have not shopped as much as they did previously.

ES Engage can group lapsed members based on past purchase frequencies and the quantity of the spend. The period of time that constitutes the "lapse" is configurable as per client requirements.

Loyalty Penetration

For information about loyalty penetration, see: Loyalty penetration - Account Management Knowledge Library - Confluence (atlassian.net)

Loyalty Program

For information about loyalty programs, see: Loyalty program - Account Management Knowledge Library - Confluence (atlassian.net)

MACH

MACH is an acronym describing a set of architectural decisions and features as applied to marketing software. The structure of MACH software centers on:

- **Microservices** — Specific functions that can be developed, deployed, and managed independently from each other, resulting in faster updates and quicker access to new features.
- **API-first** — Application Programming Interfaces (APIs) enable flexibility to think beyond the limits of any one platform or technology — seamlessly connecting systems in a more modular fashion.
- **Cloud-native** — A cloud-native application is one that is built specifically for, and operated within, the cloud environment, providing quicker wide-scaling capabilities, both vertical and horizontal, beyond storage and hosting.
- **Headless** — Headless refers to the decoupling of the front end and back end, so it is possible to change either the content presentation layer or business functional (commerce) layer without touching the other. Headless may also refer to software that includes the backend engine, but not the content presentation layer, instead integrating into other presentation layer software.

In summary, MACH describes a modern, composable software strategy defined by working with smaller solutions that seamlessly integrate with one another. It is this composable architecture that

allows for a modular approach meaning every component is pluggable, scalable, replaceable, and can be continuously improved. Exchange Solutions uses some MACH principles in its design. See also: FIRE Mandate.

Margin Data and Standardization

Margin data — data about the difference between the cost of providing a product or service and the sale price — is used in reporting, data export, and member segmentation. There are multiple ways that margin information is both brought into the Exchange Solutions system (through sources such as product feeds or real-time data from a transaction) and applied or calculated to member transactions.

There is a need for standardization of transaction margin data so it can be efficiently used by our expanding suite of data-driven features. Current and planned use cases include:

- **Audience Recommender** — Cart-level margin, segmenting members based on margin, compound segmentation of members involving margins as one of the metrics.
- **Calculated Member Insights (CMI)** — For use as input to a Monetary Value and other scoring, as dollar or percentage margins over a specified timeframe or per transaction, or at the product or category level.
- **Reporting** — Supporting additional reporting capabilities to drill down into margin-related data.
- **Products** — The early use cases implemented focus on members, but future use cases can focus more on products; for instance, products with the highest margins, categories with a margin above a specified threshold, or brands that appeared in the most carts with a value >$1,000.

Mass Offers

Mass offers are offers that do not discriminate between consumers in order to tailor the offer to an audience. If all of the consumers that visit your website are provided with the same "spend $50, get 100 points" offer, then they are all being treated exactly the same, and that is a mass offer. They may have to accept the offer, but it is available to everyone.

From a technical point of view, within the system, there are two types of mass offers:

- **"Everyone" + "AutoLoad"** — The mass offer is available to everyone and is autoloaded to their account. All the consumer needs to do is fulfill the requirements of the offer to get the reward specified.

- **"Everyone" + "LTC"** — The mass offer is available to everyone, but is not autoloaded. The consumer must first accept (Load To Card) the offer to make it available to them. Then they must fulfill the requirements of the offer to get the reward specified.

Member Identifier

For information about member identifier, see: Member identifier - Account Management Knowledge Library - Confluence (atlassian.net)

Member Profile

For information about member profiles, see: Profile - Account Management Knowledge Library - Confluence (atlassian.net)

Member Scoring and Intelligence

The Member Scoring & Intelligence (MSI) intuitive interface empowers loyalty program managers to generate, tailor, and easily implement comprehensive member insights. MSI supports two distinct categories of member scores: descriptive and predictive scores.

Descriptive scores are built from user-defined parameters and transaction history, and require Snowflake database queries:

- **Recency** — How recently members engaged.
- **Frequency** — How often members interact.
- **Monetary Value** — Member spending patterns.
- **Profitability** — Revenue-to-cost analysis.
- **Offer Engagement** — Response to promotional efforts.
- **Churn** — Likelihood of a membership lapse.

Controls in the interface allow loyalty program managers to select and refine their member scoring initiatives. They can also interact using prompts to get the results they want.

Metric

A metric is a standardized data format that logs various points of data related to a single event. For example, it might log various information about a transaction, such as how much was spent and

earned, and in what categories the earn occurred.

Metric Source

The raw data that is the source of the standardized metric data. For example, transaction history is the source of earn and burn metrics.

Multiple Active Cards

Based on configuration, clients are able to allow multiple active cards on a single account. This situation might occur, for instance, when a group of family members each have their own card to access a common account, or when the member has multiple cards that they might keep in different locations. Each of these cards can be used to gain and redeem rewards on the account. See: Multiple Active Cards (MAC) - ES Loyalty - Confluence

Near-Miss Promotion Prompts

Near-Miss Promotion Prompts are returned by the POS API to provide lift by prompting customers who have nearly met the requirement for some offer before the transaction has been fully completed. The intention is that the member is informed that had they met the criteria (such as spending a few more dollars), they would have earned a reward. To provide this message before the transaction is completed (to allow the member to engage in appropriate action to receive the reward), Near-Miss Prompts are an exclusive feature of trial calls — the dry-run simulation of the Finalize call. The Promotion Engine is responsible for choosing and returning a prompt based on a priority associated with the prompt message itself. See: Message Rules (Near-Miss Promotion Prompts) - ES Loyalty - Confluence

Non-Points Rewards ($ Off, % Off)

NPR stands for Non-Points Rewards, which refers to promotional offers that provide benefits without awarding points. These rewards can be structured as flat dollar amounts or percentages, and they are designed to enhance customer engagement without impacting loyalty points accumulation. The validation of these offers is crucial to ensure they are correctly configured and processed within the system. For instance, the member may be offered a specified number of dollars in discounts for completing an offer, or may be offered a percentage discount, both on either a specified item or on the entire cart. For example, the offer may say: "Buy 3 Snazzy Widgets by Friday and get $3 off."

Null Value Data Capture

For Engage, although we can monitor HTTP errors (400, 500), we don't have a way to tell if logical errors are occurring (for example, zero subtotals on order pages should not cause HTTP errors) that might affect Engage performance. Engage tags are highly sensitive to site changes, and although tags may seem to work in Dev and QA, at any given moment we may encounter these logical errors in production. The Error Event capture feature allows us to capture these errors, give some insight to why the error is happening, and monitor the severity of the error.

ES Engage can use a "PING" event — an empty order — to ensure connectivity to an order page. If the "PING" message is successful, then even orders without the proper confirmation can be accepted as completed orders. In addition, if data is returned that contains erroneous zero values, they should be flagged as errors. These types of errors can now be flagged in SumoLogic to provide near-real-time notification instead of waiting for Analytics reports to determine that there is an issue.

Alerts are used to immediately signal when there is:

1. **Bad order data** — Complete data is required on the order confirmation page for ES Engage to work properly. If any information (for example, subtotal, cart details, coupon used, order ID) is missing, then reporting numbers may be miscalculated and an error message is generated.
2. **Bad cart data** — Cart data must be available on every page for ES Engage to work properly. If cart data cannot be retrieved through an API or web scraping, or if it is missing, then an error message is returned.
3. **Insufficient product information** — With "pre-atc-product" enabled, product information must be captured from product pages. If SKU and/or category information are not available, an error message or warning is generated.
4. **No category information** — With "pre-atc-product" enabled, category information must be captured from category pages. If category information is not available, an error message or warning is generated.

The alerting process allows these errors to be captured and remediated quickly. It generates error messages for breaking changes and warnings for missing data. It allows the Exchange Solutions team to respond more quickly and efficiently to issues affecting our clients.

Offer

For information about offers, see: Offers - Account Management Knowledge Library - Confluence (atlassian.net). In general terms, an offer is a published, promotional entity that has targeting, date

ranges, and is able to reward points.

Offer Pool

A set of offers uploaded into the Console from which offers for a particular campaign can be selected.

Offer Template

A reusable asset that is referenced to create offers efficiently. The following are some examples of offer template considerations for "Spend $" templates where the member is required to spend a specified number of dollars to complete the offer (or to be rewarded on increments of spending).

Stretch:

- Templates with low or no spend thresholds will be selected infrequently as they will fall below the spend stretch goals.
- "For every $1" templates will rarely be selected over a spend-threshold template.
- The exception is in cases where the member's historic spend in that product-set is larger than the highest spend-threshold (for example, the average spend on "bath" is $71, but the highest spend-threshold template is "Spend $50 on bath").

Affinity:

- Ensure templates' dollar values represent your typical member spend (for example, $5, $10, $15 for low-spend categories, and $75, $100, $150 for high-spend categories).
- "For every $1" templates will almost always be selected over a spend-threshold template.

Penetration:

- Templates with low or no spend thresholds should be matched with this goal as the member does not have historic spend in this category.
- "For every $1" templates will almost always be selected over a spend-threshold template as it is the lowest and easiest offer for a member with no spend to achieve.
- Note: Optimization is limited to only category, brand, or product-level offer templates (not appropriate for generic spend).

Alternatively, the member may be asked to buy a specified number of units from a product set to fulfill an offer. To optimize "Buy # Units" templates along with "Spend $" templates, the optimization

normalizes the units into dollar terms. For members with historic purchases in a product set, we use their average unit spend in that product set. For members without historic purchases in a product set, we use the global average unit spend in that product set.

Here are examples for "Buy # Units" templates:

Stretch:

- Stretch attempts to prioritize templates with a spend threshold greater than X% above historical spend.
- A member has a historical spend of $20 in a given product set. Their average unit spend is $5.
- Therefore, a "buy 5 units" offer would be normalized to $25, and could be selected for stretch (that is, $25 is a 20% stretch on the $20 baseline).

Penetration:

- Penetration attempts to prioritize templates with the lowest spend threshold.
- A member has a historical spend of $0 in a given product set. Their average unit spend is therefore $0, but the global average unit spend is $5.
- Therefore, a "buy 1 unit" offer would be normalized to $5 and this offer would be selected over a "Spend $10" but not a "Spend $1".

Affinity:

- Affinity attempts to prioritize templates with spend thresholds closest to the member's historic spend.
- A member has a historical spend of $10 in a given product set. Their average unit spend is $5.
- Therefore, a "buy 2 units" offer would be normalized to $10 and would be optimal for the affinity optimization.

Note: Like the "for every $1" offers, a template that uses "get Y points for every 2 units" will be considered to be 2, 4, 6, and so on units. Therefore, if the historic spend on a unit was $5, this would be normalized to $10, $20, $30, and so on.

Online Documentation

Online documentation is the content available by clicking the **Documentation** button in the Console. The content provides contextual and procedural information about how to use the features available

in the Console. The documentation also provides a navigation menu, search capabilities, and a built-in glossary to support the Console user.

Partial Cart Transaction

Partial Cart Transaction is a feature that allows clients to earn points as each item in the cart (whether the whole line item or part of a line item) is confirmed. "Confirmation" means "this item is fulfilled or ready to be shipped." In addition, the feature also enables:

1. Canceling a whole line item or part of a line item within a cart.
2. Replacing a whole line item or part of a line item within a cart.

Partner Linking

Partner linking refers to the Exchange Solutions mechanisms for allowing clients to have their loyalty members and accounts link to a partner's account, for instance, a payment card or third-party loyalty program card. Partner linking can also allow the partner to reward or redeem points much as the client would. This partner activity involves evergreen and ad hoc promotions and is facilitated by features supporting ad hoc rewards and ad hoc redemptions. See: Partner and Payment Card Linkage - ES Loyalty - Confluence

Penetration (ES Loyalty Boost)

At a business level, penetration boosts sales in categories, brands, and products where consumers are not spending. For instance, for ES Loyalty Boost:

- **Goal** — To drive sales in categories, brands, and products where members have little or no spend within a specified period.
- **Success indicator** — Increase sales for various categories, brands, and products and grow the average number of categories, brands, and products in which the consumers shop.
- **How this optimization works** — An Offer Template is selected from a category, brand, or product in which the consumer has no historic spend. The emphasis is on templates with the lowest spend thresholds and prioritizing higher spend thresholds. If a consumer spends in all areas, the emphasis is on where they have the lowest spend.
- **Application to different offer templates** — Templates with low or no spend thresholds should be matched with this goal as the member does not have historic spend in this category, brand, or

product. "For every $1" templates will almost always be selected over a spend-threshold template as it is the lowest and easiest offer for a consumer with no spend to achieve.

Personalization

According to Forrester: "An experience that uses customer data and understanding to frame, guide, extend, and enhance interactions based on that person's history, preferences, context, and intent." Forrester also notes that: "Companies base personalized moments on a spectrum of methods: segmentation, discrete interactions, preset personas or customer journeys, and contextual understanding and anticipating customer needs."

Personally Identifiable Information (PII)

For information about PII, see: Personally Identifiable Information - Account Management Knowledge Library - Confluence (atlassian.net)

Phone Number Enablement (SMS)

Companies wish to engage with members of their loyalty programme through SMS marketing. SMS marketing results in high engagement rates with members. According to market data, the average open rate for an SMS campaign is 98%. In contrast, the open rate for email campaigns is 20%.

This feature allows Exchange Solutions to drive SMS marketing for clients. It includes the following core requirements:

1. Ability to capture, update, and delete a phone number from registered and unregistered members through various channels.
2. Changes to POS prompts and receipts to support the feature.
3. Member ability to opt in to SMS communications and opt out of SMS communications through various channels.
4. Support registration scenarios (via subscription page) and sync updated records back to ES Loyalty.
5. View subscription status from the Console.
6. Target banners and offers based on phone number and subscription status information.
7. Generate an email notification when a phone number for a loyalty member is changed.

8. Get reports related to phone numbers, subscription status, and channels and where any changes were initiated via an upgraded Standard Daily dashboard.
9. An audit trail for Canada's Anti-Spam Legislation (CASL) compliance.

The feature provides comprehensive support for SMS communications. For more information, see: Phone Number Integration - ES Loyalty - Confluence (atlassian.net)

Placement Assessment

A full assessment takes into account all of the activity in the relevant period to determine which tier the user is initially placed in for a particular benefit period. For example: during the 12 months immediately prior to the benefit period, the account holder spent enough money to achieve gold status in this benefit period.

Placement Assessment Period: The period of time for which all behaviors by the account holder are evaluated for their next benefit period. Usually it is a period of time immediately prior to the benefit period in question and therefore overlaps with the previous benefit and upgrade periods.

Upgrade Assessment: A "regular checkup" that can happen at any frequency, either real-time or on a schedule. This allows customers to move to the next tier level during the current benefit period when they perform behaviors that would allow them to qualify. For example, getting from bronze to silver because they spent an extra $100.

Upgrade Period: Some programs allow their account holders to upgrade "early" by performing the required behaviors before the next benefit period starts. This allows new users to bootstrap their benefit tier as soon as possible, as well as allow already enfranchised members to upgrade their benefit tier as soon as possible. The upgrade period always includes the benefit period to date and optionally includes a period of time prior to the beginning of the benefit period. For example, a program with a yearly benefit period with a year-long assessment period may choose an upgrade period of 2 years. This means that behaviors in the current benefit period and behaviors in the previous benefit period count towards the upgrade.

Points

For information about points, see: Points - Account Management Knowledge Library - Confluence (atlassian.net)

Point Types

For information about point types, see: Point types - Account Management Knowledge Library - Confluence (atlassian.net)

Point-of-Sale (POS) System

A POS system is one that facilitates in-store transactions. For example, a cash register or payments terminal would be part of the POS system as it conveys purchase information into the system and receives appropriate responses (such as terminal prompts or receipt messages). Exchange Solutions has a suite of Application Programming Interfaces (APIs) that allow Exchange Solutions to exchange data with the POS system (see below).

POS API Suite

The POS API is a suite of API calls for ES Loyalty designed to interact with a point-of-sale system that may support checkout terminals (with an operator or self-service for members) or a website or app. The suite of API calls and responses supports a wide range of functionality associated with these interactions. For more information, see: Exchange Solutions ES Loyalty API Suites (getpostman.com)

Points Transfer

In the Console, on the member page, an agent can facilitate the transfer of reward points from one account to another. The transfer is requested by the member, then carried out by the agent. The transfer may be due to a reallocation or gift on behalf of the originating member. See: Points Transfer - ES Loyalty - Confluence

Preferred Partner Network (PPN)

A PPN consists of different groups that have a special relationship with the retailer. For instance, a medical supply company may give different discounts to medical students and to various groups of healthcare providers and practitioners as a way of increasing affinity and the lifetime value of the members. These groups are "preferred" in that they receive special treatment compared to regular members.

Profile

For information about member profiles, see: Profile - Account Management Knowledge Library - Confluence (atlassian.net)

Program Tiers

Benefit Period: The benefit period represents the period of time members maintain their tier and therefore their benefits before it is possible for them to be assessed at a lower benefit tier. This is usually a divisor of a calendar year, for example Monthly, Yearly, or Quarterly.

Benefit Period To Date: The portion of the benefit period that has already passed when considering the current benefit period. For example, in a yearly program on April 15, the benefit period to date is the period from January 1 to April 15.

Manual Assessment: A manual upgrade driven either by an action from the Console or a feed provided to ESI which assigns the account holder to a specific tier within the program.

Promotion Configuration Tool

Allows qualified users to create and manage offer data.

Promotion Details Report

The Promotion Details report provides wide-ranging data about promotions or offers and has three main sections:

1. **Summary** — By setting a number of filters (including periods and dates, business unit, vendor-funded, event ID, promo audience, offer ID, reporting identifier, and whether it is a frequency offer), the user can view critical KPIs for promotion performance. The KPIs include metrics related to the volume and value associated with the promotion, average number of cart items and cart value, and bonus points issued.
2. **Top 10 Offer Codes** — The offer codes that provided the best returns based on selectable dimensions (such as offer code, offer description, or reporting identifier) and metrics (related to sales or quantity, completed offers, bonus points issued, completed transactions quantity or value, or non-point rewards).
3. **Promotion Details** — Allowing the user to drill down into details of specific promotions.

Promotions

Promotions are the precursor to offers. We create a promotion that will generate individualized offers for each qualifying account.

For additional information about promotions, see: Promotions - Account Management Knowledge Library - Confluence (atlassian.net)

Prompt and Receipt Messaging

Messaging is provided from ES Loyalty both in the form of on-screen prompts to a payment terminal, website, or app and as messages on a printed or electronic receipt. For example, a prompt on a POS terminal screen may remind the operator to ask the customer if they want to provide their email address to register a loyalty account. A receipt message might let the customer know that they could have earned rewards on their purchase if they had swiped a loyalty card. In both cases, the messaging can also be provided in a localized language depending on configuration and other settings. For more information, see: Managing Prompts and Receipt Messages (MVP) - ES Loyalty - Confluence (atlassian.net)

Purchase History Targeting

This is targeting set up within an offer to target an audience that purchased particular products and/or in a particular amount or quantity and/or within a specified timeframe. An example: "Purchased more than $10 in soap during 2024." In the context of creating an offer, purchase history targeting can either be used by itself or combined with targeting on member profile attributes (for instance, gender); for example: "Males who purchased more than $10 in soap during 2024."

Recency, Frequency, Monetary Value (RFM)

Recency, frequency, monetary value (RFM) is a marketing analysis tool used to identify a firm's best clients based on the nature of their spending habits. An RFM analysis evaluates clients and customers by scoring them in three categories: how recently they have made a purchase, how often they buy, and the size of their purchases.

For more information about RFM, see: RFM - Account Management Knowledge Library - Confluence (atlassian.net)

Reconciliation

For information about reconciliation, see: Reconciliation - Account Management Knowledge Library - Confluence (atlassian.net)

Redemption

Redemption is the process of "cashing in" on rewards such as points or dollars. For members, redemption is the motivator for being part of the loyalty program as it realizes the rewards they have collected and provides a reduced price on particular items or implements some other form of reward. The redemption may be initiated by the member or programmatically provided by the client.

Redemption Cap Exclusions

This feature is an enhancement to our existing daily redemption cap feature and allows certain redemption amounts to not contribute to the cap (be excluded or exempted from the logic) so that a lower cap can be maintained in general, while still allowing certain high-value redemption use cases through.

Redemption Offer

A redemption offer incentivizes members to redeem their points during a campaign period. This offer type allows clients to influence targeted redemption behavior, which has been proven to create more loyal customers and shows the value of the loyalty program. Example: Redeem 25,000 points, receive 5,000 points.

To test the optimal configuration for a redemption offer, a Global Test group of offers is created with different redemption threshold permutations. The permutation selected for each member is the highest available for their points balance. For instance, for a customer with 60,000 points, an offer to redeem 50,000 points would be generated if the member met all offer qualifications, including that at least X days have passed since the member's last redemption and that they have points available for redemption. If the criteria are not met, the slot is left empty.

Global Control group offers send the lowest possible redemption offer to Global Control group members who have an appropriate points balance to qualify and redeem.

A new optimization objective (Redemption) has been added to previous objectives (Affinity, Stretch, and Penetration) to facilitate the Redemption function.

Success of these offers is measured using the following metrics:

1. Number of members redeeming.
2. Percentage of members redeeming.

3. Percentage of members redeeming to the optimized/offered redemption threshold.

The objective and success measure for these offers is different from most traditional spend-and-get offers, so they are not included in calculations for Standard Reports. They are shown in the campaign configuration section of the Campaign Comparison dashboard and in a new dashboard dedicated to redemption offers, including metrics such as:

- Spend over redemption threshold
- Number of members in redemption test vs. control groups
- Offer/member acceptance and completion rates for redemption offers only

The result is to make redemption offers attractive, resulting in reduced rewards debt for the client and increased member engagement.

Referral

Referral is a type of promotion that offers incentives for a current member to refer someone they know to the loyalty program. In most cases, the referral is deemed successful if the referred new member makes a purchase within a set period. The incentive may be for the current member (referrer), the potential new member being referred (referee), or both. Referral programs can dramatically lower the cost of acquiring new loyalty program members and may also be a way to reward active influencers for bringing new members into the program. This feature is expected to be part of the Loyalty platform by EOY 2024.

Referee

A referee is a new member who has been referred to the loyalty program by an existing member. In this context, if the referee completes specified tasks such as enrolling and spending over a specified threshold, then the referrer or both they and the referrer may receive reward points.

Referrer

A referrer is an existing member who has referred someone else to the loyalty program to become a new member. If the referee completes specified tasks such as enrolling and spending over a specified threshold, then the referrer or both they and the referee may receive reward points.

Relevancy - Recommender (ML)

Relevant to ES Loyalty Boost. Recommender is an input used to help increase offer relevancy. At its core, this input provides a scoring on the predicted relevancy of various products, categories, brands, and so on for each member. These scorings may be further split by products the member has bought before versus ones they have not bought before.

The input may then be layered into (ensembled into) slot Optimization Objectives (for example, part of the Penetration Optimization Objective). Today, this input is not used by any of the Optimization Objectives.

In the future, Recommender will be used to enhance the Penetration Optimization Objective by pointing the optimization towards Offer Templates that may be relevant among the Offer Templates that the member has no or low spend on. Likewise, Recommender will be used in a similar way for Stretch and Affinity in the edge case that a member has no or low spend.

Reporting

For information about reporting, see: Reporting - Account Management Knowledge Library - Confluence (atlassian.net)

Reporting Identifiers

A Reporting Identifier provides categorization of offers or badges based on pre-defined identifiers that may be selected in the Console when creating the offer or badge. This allows those offers to be included in specific reports. Here are examples of how these reporting identifiers may be used by a client:

Identifier	How It's Used
None	To set up an offer with no earn value. May be used, for example, to create an audience for CRM or targeted email.
Flash Sale	Short duration offers available to a mass or targeted audience. For instance, for one day only, get 25× the points.
Category Mass	Offers available to everyone (flyer offers) for a product category, for example, get 25× the points on baby products.

Identifier	How It's Used
Global Mass	Weekend and weekday offers available to everyone. For instance, spend $50 and get 25,000 points, plus get an additional 25,000 points when you load to card on this offer (both are Global Mass).
Digital Personalized Offers	Using a CSV file or query builder to target the audience. For example, get 200 points for every $1 spent on Levi products.
Coupon Offers	Using any coupon (mass or targeted). For example, buy any pair of Levi jeans and get $20 off when you scan this coupon.
Redemption Offers	Using any redemption offer (mass or targeted), for example, redeem 25,000 points and get 5,000 points.
Behavioral Offers	Offers not related to a purchase, but to behavior or an activity. For instance, get 20,000 points when you register your account by providing an email address.
Partner Digital Personalized Offers	Any partner offer configured by the client. For example, spend $50 using our partner's payment card and get 25,000 points.

Reporting Portal

UI that allows qualified users to create, manage, and review reports based on program data.

Repurchase Cycle

Relevant to ES Loyalty Boost. Repurchase Cycle is an optimization concept that can be layered into (ensembled into) the core slot Optimization Objectives.

Today, Repurchase Cycle is implemented in a variant of the "Affinity" optimization, and is denoted as "Affinity_Repurchase" in the campaign slot configuration. In its current execution, instead of prioritizing offers that you have affinity with (that is, past spend) based on their economic value (the logic used for basic "Affinity"), offers are prioritized based on a member's repurchase cycle.

The current logic used to determine a member's repurchase cycle for a given product is achieved by comparing a member's current time to repurchase in the sub-category of a given product versus the global average. If a member's current days is above the global average, it can be considered that they are past due, and that it would be a higher priority to give them a related offer.

Seed List

Relevant to ES Loyalty Boost. A seed list is a list of a small number of test members with whom you can test an ES Loyalty Boost campaign before setting it up for everyone on your member list. A seed list allows you to test the campaign in a controlled way. It allows a high-level assessment of whether the output aligns with business goals and controls, as well as lets you spot-check offer copy and creative elements.

Segment

A segment refers to a subset or specific group within a larger audience. It is a more targeted and niche group, characterized by specific attributes or behaviors. Segmentation allows marketers to personalize their messages and tailor their offerings to better resonate with specific needs and preferences of a group within an audience.

Settlement

For information about settlement, see: Settlement - Account Management Knowledge Library - Confluence (atlassian.net)

Simple Messaging Service (SMS)

See Phone Number Enablement (SMS).

Single Sign-On (SSO)

Single Sign-On (SSO) is an authentication method that enables users to securely authenticate with multiple applications and websites by using just one set of credentials. SSO is supported for ES Loyalty clients so that members can easily sign in to their accounts.

For example, Exchange Solutions has integrated with Salesforce identity management (supporting SAML2.0 and OAuth2.0) to enable Console SSO login for client sales, marketing, and administrative

personnel. SSO can be enabled for all relevant client sites for members.

Slot

A framework used to help marketers define the number, mix, and sort order of offers as well as which Offer Templates are eligible for the campaign.

Slot-Level Audience Targeting

Slot-level audience targeting is the ability for Boost to choose an audience in a campaign at the slot level so that each slot can be optimized for a specific audience. The audience selector dropdown is located in the **Slot** section of the campaign creation UI. For example:

1. Include only members that are "low fuel spend" in a slot dedicated to stretching fuel spend.
2. Include only "non-employees" in all slots.
3. Include "Cherry Pickers" in a slot with "Milk & Eggs" AND exclude them from the highest reward templates.

For more information, see: Slot-Level Audience Controls - ES Loyalty Boost - Confluence (atlassian.net)

Special Promotion Period

Prior to development of this feature, Engage offers would often be in "blackout" or not operational during periods where special promotions would take place (for example, for Black Friday, Cyber Monday, or Christmas holiday sales). This was to prevent "offer stacking" and other effects that would erode margins. However, the goal of this feature is to incorporate these special promotions into the ES Engage platform so that Engage becomes the single tool for creating all promotions. The key is the ability to closely control the start and end date and other features of the promotion, including the assignment of special offers for the period and variants on the offers (for example, for different products).

Static Targeting

With static targeting, the audience for the offer is determined ahead of time using some criteria to determine who should receive the offer.

Sticky Offer

A sticky offer is one that, once a member has seen it, remains available to that member until expiry, whether they load it or not.

Stock-Keeping Unit (SKU)

In the field of inventory management, a stock-keeping unit (SKU) is a distinct type of item for sale, purchase, or tracking in inventory, such as a product or service, and all attributes associated with the item type that distinguish it from other item types. For a product, these attributes can include manufacturer, description, material, size, color, packaging, and warranty terms. When a business takes inventory of its stock, it counts the quantity it has of each SKU.

Store and Forward (SAF) API Call

If ES Loyalty and the client POS or e-commerce storefront lose connectivity, all finalized calls should be converted to SAF for forwarding at a later date. SAF cannot process redemptions, so redemptions will be processed once connectivity is restored. SAF transactions still qualify for rewards but the transaction date will be backdated to when the offers occurred to maintain reporting accuracy.

If a purchase made by a non-loyalty account is delayed being sent into the system until after the user was registered, no points are awarded since the user was not associated with a Loyalty Account when the purchase was made.

Store Targeting

Store targeting is used to define what stores an offer can be contributed to and/or completed at. Targeted stores (also known as included or eligible stores) can be defined using the query builder using Store ID (for example, "Store ID is in 123, 456, 789"). In addition, store targeting can be based on Store Province, Store Postal Code, or other attributes included within the Store Details feed.

Stretch (ES Loyalty Boost)

At a business level, stretch optimizes consumer spending by getting consumers to buy more of what they already buy. Here is an example from ES Loyalty Boost:

- **Goal** — To grow overall spend by stretching existing spending habits.
- **Success indicator** — An increase in Average Order Value (AOV, see definition above), both overall and within specific categories, brands, and so on.

- **How this optimization works** — An Offer Template is selected from a category, brand, or product in which the consumer has historic spend. The emphasis is on templates offering more than the consumer's historic spend and with higher incentive amounts. If there is no historic spend, then random templates are selected.
- **What this offer will not include** — Templates with low or no spend thresholds, "For every $1" templates, any templates if the consumer's spend is typically higher than the highest spend-threshold template.

Tableau

Tableau is the engine used for the display of reports and dashboards in the Console. It provides access to a powerful array of both standard and client-custom reports. The visualizations are driven using Tableau's world-class data processing capabilities to provide users with the key metrics that are most relevant to them. Access to these reports is supported by the provisioning of Tableau licenses for the client.

Tableau Pulse

For users who have Tableau Pulse enabled for their company and are assigned to the corresponding Pulse group and a license, they can view selected metrics directly on the landing page of the Console (the first page after login). Tableau Pulse shows the user the metrics most relevant to them in an accessible and convenient format. They can also drill down into the visualizations to view actionable details about their key metrics.

The Coupon Bureau

The Coupon Bureau is an industry organization that has developed the Universal Coupon AI (8112) standard, which seamlessly connects manufacturers, retailers, and consumers with secure, cutting-edge coupon solutions. The advantages to different players in the coupon industry are:

1. **Manufacturers** — The format and redemption process for manufacturer/vendor coupons is standardized and real-time validation implemented, providing security (fraud prevention) and an audit trail for coupons provided. The coupons are serialized, meaning each has a unique identifier, and the coupon is validated in real time at the point of sale (POS). In addition, the coupons can be assigned to specific products through SKU-level validation.
2. **Retailers** — Real-time standardized validation prevents delays at checkout for coupon use and greatly reduces the possibility of fraud. Integrations allow the presentment of coupons through

additional channels.

3. **Providers** — As entities involved in the creation, distribution, redemption, and management of Universal Coupons, the providers benefit from single-use, serialized coupons that can be adapted to any retail environment and allow GTIN-level validation to target specified products.
4. **Clearinghouses** — Provide processing and settling of coupon transactions. Real-time validations initiate a clear audit trail, and the standardization of the Universal Coupons makes settlement easier, more efficient, and less prone to fraud.

See also: The Coupon Bureau | Universal Digital Coupons

Third-Party Data

Obtained or purchased from sites and sources that are not your own, third-party data used in personalization typically includes demographic information, firmographic data, buying signals (for example, in the market for a new home or new software), and additional information from CRM, POS, and call center systems.

Tiering

For information about tiering, see: Tiering - Account Management Knowledge Library - Confluence (atlassian.net)

Transaction

A business transaction or purchase involves the POS or website sending an activity call including relevant purchase information, points redemptions, ghost card registration, and card status checks. The activity call is processed by the Promo Engine and returns receipt messaging, points awarded, redemption offers, and additional offers. The business transaction may therefore invoke one or more system transactions within ESI. The system transactions invoked are determined by the client. Transactions are immutable and should never be updated once created.

Transaction History

For information about transaction history, see: Transaction history - Account Management Knowledge Library - Confluence (atlassian.net)

Universal Product Code (UPC)

A UPC is a type of code printed on retail product packaging to aid in identifying a particular item. It consists of two parts — the machine-readable barcode, which is a series of unique black bars, and the unique 12-digit number beneath it. It is used to make it easy to identify product features, such as the brand name, item, size, and color, when an item is scanned at checkout. UPCs are also helpful in tracking inventory within a store or warehouse.

Wide-Screen Banner

The banner we provide for client websites must respond to viewing on a wide-screen monitor while maintaining a "safe area" for content in the middle of the page. To achieve this, the banner is responsive to form factors up to 1,200 px wide (the banner fits itself to the screen), then adaptive to wider form factors while maintaining the 1,200 px safe area (the content in the safe area is consistently maintained, but the banner expands to fill the rest of the screen width). The intent is to match other banner-type content on the client's website.

Zero-Party Data

Zero-party data is that which a customer intentionally and proactively shares with a brand. It can include preference center data, purchase intentions, personal context, and how the individual wants the brand to recognize them.

As industry regulations such as GDPR and the CCPA put a heightened focus on safeguarding consumer privacy, and as more browsers move to phase out third-party cookies and allow users to easily opt out of being tracked, marketers are placing a greater premium and reliance on data that their audiences knowingly and voluntarily give them. Experts also agree that zero-party data is more definitive and trustworthy than other forms of data since it comes straight from the source. While this is not to say all people self-report accurately, zero-party data is still considered a very timely and reliable basis for personalization.

Product Releases

Deployment

A "Deployment" is any implementation of a software component to production. These components could be deployed independently, or as part of a Version package. This depends on how the

technology, AM, TSA, and operations teams choose to execute the upgrade or onboarding plans for clients, once a Release review has verified the scope and quality of a Version.

Dev Build

A "dev build" is an intermediate-level quality build produced from Technology. The key difference between a "Dev Build" and a "Release Candidate" is that a Dev Build has not yet passed all regression tests.

Launch

A "Launch" is the set of coordinated organizational activities necessary to make a specific product version available to clients and prospects. It is the "outward-facing" set of activities necessary for outward-facing teams to be ready to communicate about and support a new product version — that is, market ready. A "Launch" could complete before, at the same time as, or after a "Release," depending on the activities in the Launch.

Launch Checklist

A "Launch Checklist" is an advance set of categories and line items that the broad "outward-facing" set of teams deems necessary to communicate to market and to existing clients a quality product version of new software to production. The Launch Checklist is owned as a template, and managed on a per-release basis, by Product Management.

Onboarding

"Onboarding" refers to the business process of implementing the latest version of a product for a new client. Each onboarding should have a plan and a checklist completed in advance, so the onboarding teams address all the product components. In the Release Checklist Template, each Release has a task to update the Onboarding checklist with new or changed steps.

RC:GO

Final quality control meeting of Release team participants to determine software product quality. Final ReleaseCandidate:GO (RC:GO) is decided by Product Management. Previously called a "Go/NoGo."

Release

A "Release" is the set of coordinated organizational activities necessary to make a specific product version ready to be used in production. It is the "inward-facing" set of activities necessary to ensure a product version is of sufficient quality to move to production and be supported by technical support teams — that is, operationally ready.

A "Release" culminates with the official availability of a product version in production, ready to be used as intended. It does not necessarily mean when it is actually used. It is when the organization is ready for it to be used in production.

Release Candidate (RC)

"Release Candidate" is the term given to a product build that has completed all technology quality checks to ensure the current level of expected quality for production release. The key difference between a "Release Candidate" build and a "Dev Build" is that a "Release Candidate" build has passed a complete regression cycle from QA.

Release Checklist

The Release Checklist is used to track progress towards a release for all the related categories of work (other than feature development) involved in the release. The Release Checklist is maintained by the PMO using information gathered in weekly team meetings.

Release Progress Tracker (RPT)

The Release Progress Tracker is used to track progress towards major and minor releases. It breaks down each release into the features that will be included, then tracks each feature through the design, development, data and analytics, testing, and documentation cycles. The RPT is maintained via weekly team meetings in which the progress in various feature categories is updated. The process is led by the PMO.

Upgrade

An "Upgrade" is the business process of moving an existing client from one version of a product to a later version. Each upgrade from version X to version Y should have a plan and a checklist completed in advance, so the teams performing the upgrade — and other teams with communication tasks related to the upgrade — address all the product components and all the affected clients. In the

Release Checklist Template, each Release has a task to update the Upgrade checklist with new or changed steps.

Version

A "Version" of a product is a numbered set of components that constitute a product. That version number refers to the set of all components, which have been tested to work together. The purpose of a "version" number of a product is to assist alignment of, coordination with, and communication to external stakeholders (market, prospects) and internal stakeholders (teams) by simplifying to a common definition of a set of software components that constitutes a "version," to aid internal management of teams in their management of the components of the product.

Because the "version" of a product is visible external to the organization, the determination of version numbers (major, minor) is determined by Product Management, and the primary concerns in its numbering are to: (a) communicate something about the meaning, value, and impact of the constituent components of the product; (b) indicate progression and order against previous versions by increasing but not decreasing in order but not necessarily in strict sequence (that is, v1.1, v1.5, or v2.0 could follow in-production version v1.0, but v0.9 could not follow v1.0).

Software Development and Testing

Build

A build is a version of a program that is a pre-release version and is identified by a build number rather than by a release number. The DevOps team compiles the source code to make sure it is functional and tests code quality before committing it to the repository. Iterative (repeated) builds, otherwise known as continuous integration, are an essential part of an optimal development process where application components are collected and repeatedly compiled for testing purposes to ensure a reliable final product. Build tools enable developers to automate some programming tasks to further streamline the process.

Camel Case

A spelling standard for attribute names. The first letter in the attribute name is lowercase, then the first letter of all subsequent words (with no spaces) are uppercase with the remaining letters in that

word being lowercase. This standard is called "camel case" because the letters are lowercase or uppercase, and the uppercase letters look like the humps of a camel. Examples: `loyaltyId`, `accountId`, `primaryExternalIdentifier`, `extendedDataSource`, `cardHolderType`.

Configuration File

In many instances, one or more clients may require access to features that other clients do not need. This is usually handled through a configuration file. The configuration file is a text file containing settings and preferences that customize and control the behavior of software applications or operating systems. These files typically store data in key-value pairs and, for ES Loyalty, are formatted in JSON. It enables TSAs and system administrators to modify application parameters without the need to alter the source code.

DevOps

Development Operations is a set of practices intended to reduce the time between committing a change to a system and the change being placed into normal production, while ensuring high quality. DevOps includes cultural aspects, specific practices, and a set of commonly combined tools. For more information, see: DevOps - Wikipedia

Idempotent

Multiple calls to the subroutine have the same effect on the system state as a single call. An operation can be repeated or retried as often as necessary without causing unintended effects.

JavaScript Object Notation (JSON)

JavaScript Object Notation is an open-standard file format and data interchange format that uses human-readable text to store and transmit data objects consisting of attribute-value pairs and arrays (or other serializable values). JSON is widely used by ESI, for instance, in product APIs. For more information, see: JSON - Wikipedia. Note that JSON may also be referred to as NDJSON, or Newline Delimited JSON, which is a variant that includes line breaks to make the code more readable.

Pascal Case

A spelling standard for attribute names. The first letter in each of the words in the attribute is uppercase with the remaining letters in that word being lowercase. Pascal case is also used for naming

classes in most programming languages. Examples: `LoyaltyId`, `AccountId`, `PrimaryExternalIdentifier`, `ExtendedDataSource`, `CardHolderType`.

Production Environment

The Production environment is the client's "live" environment, the one that their loyalty members engage with. The Production environment is made available after the client has completed and signed off on User Acceptance Testing (UAT, see below), meaning that there are no bugs that prevent them from approving the features for activation in production.

Py-boost

Relevant to ES Loyalty Boost. Py-boost is a library for Python that provides faster computation through parallel processing and improved memory management. It is not a complete replacement for Python and is mainly used to speed up specific tasks. Py-boost can be used to supplement Python for performance optimization when needed.

Python

Relevant to ES Loyalty Boost. Python is a high-level, interpreted, general-purpose programming language. It was created in the late 1980s and has since become one of the most popular programming languages, particularly for scientific computing, data analysis, and artificial intelligence. Python is known for its readability and concise syntax, which makes it a good choice for both beginners and experts. It also has a vast ecosystem of libraries and modules for various tasks, including machine learning, web development, and computer vision. This makes it a versatile and flexible language for a wide range of applications.

For more information, see: What is Python? Executive Summary | Python.org

Quality Assurance and QA Environment

Quality Assurance is the process of systematically testing new features to ensure that they meet requirements. This is often done using a QA environment version of the Console for features that integrate with the Console in some way. The QA environment tends to be specific to a client so that configurations and user roles can be set up independently.

Regression Testing

Software testers perform regression testing on a changed or updated computer program to ensure that older software features — which were previously developed and tested — still perform exactly as they did before. Regression testing will often involve running existing tests against the modified code to make sure that the new code did not break anything that worked before the update. Regression testing can eliminate much of the risk associated with software updates. In addition to running existing tests, testers might tweak existing tests by introducing different secondary conditions as variables.

Technical Debt

Technical debt (also known as tech debt or code debt) describes what results when development teams take shortcuts in code quality or flexibility to expedite the delivery of a piece of functionality or a project which later needs to be refactored. Technical debt, if not addressed, can affect the long-term flexibility and viability of a software platform, so effort must be invested in cleaning up aspects of the code from time to time.

UAT and UAT Environment

User Acceptance Testing (UAT) is the phase of product development when one or more clients test new features in their UAT environment to determine if they are operating as they should. The result of UAT is that the client verifies and accepts the release features before moving them to their production environment. UAT is the last phase in testing.

Software Planning and Project Management

Business as Usual (BAU)

This term applies to development of the core functionality of the software platform as opposed to working on specific projects associated with particular clients and the functionality that they want to see. As with many software development companies, ESI must balance BAU activities — meant to develop the standard available functionality of the software platform and products — with the need to address specific client requirements.

Detailed Design (DD)

The DD is developed from the specifications outlined in the PRD. It provides the technical details of how the feature will be built and all the aspects that go into its development. The DD can be used as a resource to break down the work into individual development tickets in a tool such as Jira, and also as a reference for the developers working on those tickets to understand the overall feature and their part of it. The DD is the technical "guiding light" for building a software feature. The Detailed Design is almost always a Confluence page in the Space for the related product.

High-Level Solution Design (HLSD)

The High-Level Solution Design gives senior management an overview of the system at the end of the project. It covers architecture, hardware, networking, software modules and components, and user transaction flow.

Product Development Lifecycle (PDLC)

Product Development Lifecycle is a systematic way of developing quality software. It provides an organized plan for breaking down the task of program development into manageable chunks, each of which must be successfully completed before moving on to the next phase. Once a feature is approved at the PRP stage (see below), it goes into the product development queue. For more information about ESI's product lifecycle, contact the Project Management Office (PMO). Here is the draft (in progress) PDLC diagram for ESI.

Product Requirements Document (PRD)

A Product Requirements Document is a document used in the product development process to communicate what capabilities must be included in a product release to the development and testing teams. The PRD will contain everything that must be included in a release to be considered complete. The ESI PRD connects business requirements to software requirements and includes a brief marketplace assessment, core requirements and criteria, any client-specific requirements and acceptance criteria, non-functional aspects (such as the need not to affect SLAs), and a product guardrails assessment to ensure that the development can be carried out in alignment with guiding principles. The PRD is followed by the Detailed Design (DD), carried out by developers or software engineers/architects.

Platform Roadmap Prioritization (PRP)

Platform Roadmap Prioritization is a method of prioritizing all of the possible features in the roadmap to decide the near-term focus for software development. The result of this method is also called a PRP and contains the results of prioritization.

Release Progress Tracker (RPT)

The Release Progress Tracker is a spreadsheet that is reflective of the Product Roadmap regarding Release Candidates (sub-release, minor, major, and hot fixes for ES Loyalty, ES Loyalty Boost, and ES Engage). The Tracker includes all the high-level statuses and updates on feature progress against product release (all the things that need to be done to release a particular version). The Tracker is updated weekly in the Wednesday ES Platform Release Progress meeting, which involves representatives from Product, Project Management, the Dev and QA teams, the TSAs, and Data and Analytics to provide updates on feature and release status and to dynamically manage release tracking.

Service Level Agreement (SLA)

The Service Level Agreement is a contract between a service provider (ESI, in this case) and its clients that documents what services the provider will furnish and defines the service standards the provider is obligated to meet. For example, an SLA might specify access to a particular software product and also specify standards such as maximum allowable downtime of the services per month, the maximum allowable latency of transactions, and so forth.

Scientifically Wildly-Aimed Guess (SWAG)

There are several possible definitions of "SWAG," but we will go with "Scientifically Wildly-Aimed Guess." This is a method of estimating the effort required to develop features and requirements for a particular solution, and it involves experience, intuition, and approximations. At ESI, a high-level task breakdown is used in the SWAG process to roughly scope a solution in terms of the development budget in person-days.

Technical Solutions Architect (TSA)

An Exchange Solutions staff member that works with clients to understand and manage the technological requirements relevant to the products they use.

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*Last updated on **Oct 14, 2018***

(Simulated during dev for better perf)