Basic Analytics

Laurel Poertner
Head of Training
Introductions

Laurel Poertner

Over 15 years experience Managing technical support and education teams
Delivered technical and business process training
Supported, used and managed Knowledge Management tool, Knova
Built virtual classroom offerings for an Enterprise Resource Planning software package
Implemented several CRM and KM systems internally and as a Professional Services consultant
Certified Trainer of Knowledge Centered Service v6SM Practices
About This Course

Goal: Empower you to understand and use all the Usage Analytics Tools

- Measure your Coveo search solution
- Monitor user behaviors
- Evaluate performance
- Identify areas to optimize
- Improve the search experience
1. Why Analytics
2. Set up your Organization for Analytics
3. Key concepts
4. Understand – What is Relevant to your audiences
5. Act – On improving Relevance for your audiences
6. Automate – Self-improving Relevance
Why Analytics?

Module 1
“There is nothing permanent except change”
Heraclitus, 535 – 475 BC

“and the need for Relevance”
Why Analytics

Your organizations change

New clients, new products, new employees, new partners, new competitors, new regulations, new technologies, new process etc.

And so are the people working with you
Why Analytics

Since change is constant

The **Content** inside your Information **Systems** is continuously changing

The **Context** of the peoples using those **Systems** is continuously changing

Therefore, the **Behavior** of the peoples searching for **Content Relevant** to their **Context** is continuously evolving
Why Analytics

On the other what doesn’t change

People want **Content** that is **Relevant** to their **Context**

In other words, what never changes is:

The need for **Relevance**
Why Analytics

In addition

How people are searching for **Content** in their **Context**, their **Behaviors**, offers the **most insight** on what is **Relevant** to them.

And the best way to turn user **Behaviors** into **Relevance**, is by using **Machine Learning**.
Relevance you say?

Relevance = Content + Context + Behavior

[rel-uh-vuh] - noun
The condition of being relevant, pertinent or connected with the matter at hand

Knowledge ecosystem
Secure connectivity to reach and unify across the entire enterprise

Integration
In the course of work or digital interactions

Predictive analytics
Wisdom from the interactions’ sumtotal cues likely intent
Business is personal

Relevance drives personalization

“Relevance is the currency of the digital age.”

FORRESTER

The Amazon paradigm

Where you can get a Myrmecology book from Greek: μύρμηξ myrmex, "ant" and λόγος logos "study") is the scientific study of ants, a branch of entomology.

available on Amazon

...every worker and every employee can be a myrmecologist

The era of personalization: People, their work, transactions, interactions are unique

the largest store available, and relevant to one you!
Relevance drives personalization

“...for me”

Relevance or relevancy
[rel-uh-vuh ns] - noun:
the condition of being relevant, pertinent or connected with the matter at hand...
[case, account, employee, customer, shipment, part, product, patient...]

- Profile, locale
- Context, task
- Intent
- Interactions with your company [clickstream, outcomes, ...]
Customers don’t convert and go elsewhere

Poor self-service results in contact center costs going up

Customer satisfaction goes down

Incapable of positively impacting upsells and cross-sells

Employees end up doing repetitive tasks, resulting in a high churn rate

Agents can handle more complex cases

Engineers can work on more complex projects

Salespeople can sell more

Customers can self-serve with ease

Customers can do more, learn more and buy more
Coveo Relevance Maturity Model

**CRMM™ stages**

1. Secured unified ranking
   - Unifies and ranks information from multiple sources

2. Content navigation
   - Configurable rich facets, search tabs, folding and security trimming provide the very first step of personalization for users

3. Tunable relevance
   - Adapt relevance through weighting of ranking factors, query ranking expressions, based on known content characteristics

4. Contextual relevance
   - ...in-product, in-task, and other contextual signals factor the uniqueness of the user and query context and ranks results with higher relevance

5. Contextual suggestions
   - Discovers user's likely intent, by analyzing behavioral data.
   - Machine learning auto-tunes recommendations and ranking to maximize business outcome, enabling true one-to-one user engagement and upskilling.

6. Self learning predictive recommendations
   - ...related content, experts, products or services pushed to expand user’s knowledge and abilities to do more, buy more, learn more, engage more, etc.

**LEADERS**

**Laggards**

1. Basic search captures user’s intent, and saves time retrieving information
2. Entry-level search is resource intensive, relies heavily on taxonomies for relevance
3. Federated search fails at ranking combined result sets relevantly
4. Poor relevance affects conversions, clickthroughs, satisfaction, deflection, escalations, productivity, innovation, work reduction...

Net net, entry-level search [cheaper] is the most expensive strategy.

**Efficiency gains**

**Proficiency gains**

**Contextual suggestions**

**Responsive**

(relevance is personal)

Unifies and ranks information from multiple sources

**Tunable relevance**

(relevance is contextual)

Adapt relevance through weighting of ranking factors, query ranking expressions, based on known content characteristics

**Self learning predictive recommendations**

(relevance is predictable)

Discovers user’s likely intent, by analyzing behavioral data.

Machine learning auto-tunes recommendations and ranking to maximize business outcome, enabling true one-to-one user engagement and upskilling.

**CRMM™ Stages**

- **Manual/hard**
- **Automated/easy**

**Positive business impact & ROI**

**Negative economic Impact**

- **Secured unified ranking**
- **Content navigation**
- **Tunable relevance**
- **Contextual relevance**
- **Contextual suggestions**
- **Self learning predictive recommendations**

**LEADERS**

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Coveo Platform Components

1. Secured unified ranking
2. Configurable Content navigation
3. Tunable and Contextual relevance
4. Analyzing behavioral data
5. Contextual suggestions
6. Self-learning recommendations

Business User

Client

Support Agent

User Interface

Usage Analytics

Machine Learning

Query Pipelines

Index

Source Items

Source Items

Source Items

Source Items

Connectors

Salesforce

Sitecore

Web

Exchange
The Triumvirate of Analytics

Understand 1

What your user are searching for
What they are clicking on
Are they finding what they are looking for
What is relevant to them

Act 2

Optimize the search experience based on what your user are doing
Tune the experience to provide ever-improving relevance

Automate 3

Leverage Machine learning to automate the Relevance tuning process as you go
Free time to do further research
The Tools of Analytics

Understand 1

Act 2

Automate 3

User Interface

Usage Analytics

Machine Learning

Query Pipelines

Index

Source Items

Source Items

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Web

Exchange
The Fundamental concept to understand is that

Change is constant
And so is the need for Relevance

Providing Relevance is a Journey in which you continuously

Understand the Behavior of your users, gain insight
Act on this insight, to provide to improve Relevance
Leverage Machine Learning to Automate the Relevance Improvement
Setting up your Org

Module 2
Plan

1. Why Analytics
2. Set up your Organization for Analytics
3. Key concepts
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5. Act – On improving Relevance for your audiences
6. Automate – Self-improving Relevance
In This Module

Learn how to setup your Cloud Organization to securely and effectively use the Usage Analytic tools.

Learning Objectives

1. Review the concepts of Privileges, Groups and Members
2. Understand the Privileges related to managing Analytics
3. Create Groups to manage Privileges of Analytics Users based on sample personas
Privileges, Groups, Members

A Member is a Identity Provider account that has access to the Cloud Org

Privileges defines the operations that a member can perform inside a Cloud Organization

Groups are used to assigned Privileges to Members.

A Member can be part of multiple Groups

Cloud Organization Privilege Details

Demo - Adding a New Member
Member, Privileges and Groups

Member

Privileges
- Analytics Data - View
- Reports - Edit
- Organization - Edit
- Groups - Edit
- Source - Edit
- Execute Queries

Groups
- Content Managers
- Administrator
- Developers
Controlling who can do what, Privileges

- **Content Privileges**
- **Search Privileges**
- **Analytics Privileges**
- **Organization Privileges**

**Options:**
- View All Content
- Execute Queries
<table>
<thead>
<tr>
<th>Service</th>
<th>Name</th>
<th>View</th>
<th>Edit</th>
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<td>Subscriptions</td>
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<td>Search</td>
<td>Execute queries</td>
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<td>Query pipelines</td>
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<td>Salesforce index configuration</td>
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<td>Search</td>
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<tr>
<td>Search</td>
<td>View all content</td>
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</tbody>
</table>

Privileges are Cumulative

Important!

If a Member is part of Group A and Group B, it will have the Privileges from both group.

Therefore, Privileges are Cumulative.
Analytics Personas

**Viewer**
- View Analytics Reports (Dashboards and Explorers)
- View the Organization Dimensions
- View the Organization Named Filters
- View the Organization Permission Filters
- Use the Visit Browser

**Analyst**
All the Privileges of a Viewer plus:
- Create, Edit and Delete Reports
- View Data Exports

**Administrator**
All the Privileges of a Analyst plus:
- Create, Edit and Delete Dimensions
- Create, Edit and Delete Named Filters
- Create, Edit and Delete Permission Filters
- Create, Edit and Delete Data Exports
- Set Internal IP for Analytics
- View Groups
Demo - Creating Groups
Mandatory Privilege

When creating a new Group, Members must have this Privilege to access the Organization

Organization – Organization, View

This is why this is a **default** Privilege
Administrator Only Privileges

The **Privileges** must **absolutely** be restricted to only the **Organization Administrator**:

**Organization** – Groups, Edit: Allows to invite new Members, create Groups and **assign** Privileges

**Organization** – API keys, Edit: Allows to create API keys that have **any** Privileges

**Organization** - Organization, Edit: Allows to **delete** a Cloud Organization

**Search** – View all content, Enable: Allows you to see **all** the Content inside the Coveo Items stored in the Organization, regardless of the Permissions you have on those Items
## Privileges Combo

### To View Reports

<table>
<thead>
<tr>
<th>Privilege</th>
<th>Setting</th>
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<tbody>
<tr>
<td>Analytics - Analytics data</td>
<td>View</td>
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<tr>
<td>Analytics - Custom Dimensions</td>
<td>View</td>
</tr>
<tr>
<td>Analytics - Named Filters</td>
<td>View</td>
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<tr>
<td>Analytics - Permission Filters</td>
<td>View</td>
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<tr>
<td>Analytics - Report View</td>
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<tr>
<td>Organization – Organization</td>
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</table>

### To Edit Permission Filters

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<td>View, Edit</td>
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<td>Organization – Organization</td>
<td>View</td>
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<tr>
<td>Organization – Groups</td>
<td>View</td>
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</tbody>
</table>

### To Access the Visit Browser

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</tr>
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<td>View</td>
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<tr>
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<td>View</td>
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</tbody>
</table>

### To Edit Named Filters

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<td>Analytics - Custom Dimensions</td>
<td>View</td>
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<td>View, Edit</td>
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<td>Organization – Organization</td>
<td>View</td>
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</tbody>
</table>
# Privileges for Analytics Personas

## Viewer

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<td>Analytics - Report View</td>
<td>View</td>
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## Analyst

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</table>

## Administrator

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<tbody>
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<td>Analytics - Administrate</td>
<td>Enable</td>
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<td>Analytics - Analytics data</td>
<td>View</td>
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<td>View</td>
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<tr>
<td>Organization - Groups</td>
<td>View</td>
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</tbody>
</table>
Demo – Attributing Privileges to Groups
Visit Browser and data restriction

If an Member has access to the Visit Browser, that Member will be able to see all the Events in the Organization.

<table>
<thead>
<tr>
<th>Date</th>
<th>Start Time</th>
<th>End Time</th>
<th>User Name</th>
<th>Search, interfaceLoad</th>
<th>Origin 3 (Referer)</th>
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</thead>
<tbody>
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<td>Response Time (ms)</td>
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<td>Search Is Contextual</td>
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<td>Is Anonymous</td>
<td>false</td>
<td>searchId</td>
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<td></td>
<td></td>
<td>Is Internal</td>
<td>false</td>
<td>VisitId</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Is Mobile</td>
<td>false</td>
<td>VisitorId</td>
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</tbody>
</table>
In Summary

- **Privileges** defines what a **Member** can do inside an **Organization**. **Groups** are how you attribute **Privileges** to **Members**.

- **Privileges** are cumulative

- There are 4 **Privileges** that **must absolutely** be restricted to Administrator only

- The 3 sample **Groups** for Analytics are **Viewer**, **Analyst** and **Administrators**
Key Concepts

Module 3
Plan

1. Why Analytics
2. Set up your Organization for Analytics
3. Key concepts
4. Understand – What is Relevant to your audiences
5. Act – On improving Relevance for your audiences
6. Automate – Self-improving Relevance
In This Module

Learn how to setup your Cloud Organization to securely and effectively use the Usage Analytic tools.

Learning Objectives

1. Review the concepts of Privileges, Groups and Members
2. Understand the Privileges related to managing Analytics
3. Create Groups to manage Privileges of Analytics Users based on sample personas
Key Concept - Events

**Events** are records of actions an user is taking on a given Search Page. There are 3 types of Events:

- **Search Events** are triggered whenever an user is making a Query

- **Click Events** are triggered whenever an user click

- **Custom Events** can be programmatically added to a Search Page to be triggered when an user does something specific.
Key Concept – Events

1 – On the App Store Tab of the Demo page, a user Search for clash.
2 – The user Click on the Clash of Kings result.
Key Concept – Dimensions

All Events are composed of Dimensions. Dimensions are metadata gathered by the search page to give more information about the Context of a Event.

By default, there are 66 Dimensions that are automatically tracked by the Coveo Platform.

An Event will contain different Dimensions based on its Type. For example:

<table>
<thead>
<tr>
<th>Search</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Event Type</td>
<td>Search</td>
</tr>
<tr>
<td>User Query</td>
<td>clash</td>
</tr>
<tr>
<td>Origin 1</td>
<td>Demo</td>
</tr>
<tr>
<td>Origin 2</td>
<td>App Store</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Click</th>
<th>Value</th>
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<tbody>
<tr>
<td>Event Type</td>
<td>Click</td>
</tr>
<tr>
<td>Click Rank</td>
<td>3</td>
</tr>
<tr>
<td>Origin 1</td>
<td>Demo</td>
</tr>
<tr>
<td>Origin 2</td>
<td>App Store</td>
</tr>
</tbody>
</table>
Demo – Default Dimensions
Key Concept - Metrics

Calculated numerical dimension applied as selectable criteria

Displayed as
Indicator
Line Chart
Values within a data table
Trends
Categorized by
Utilization
Performance
Grouped by Event Type
Click
Search
Custom
Key Concept – Metrics

Search

<table>
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<th>Dimensions</th>
<th>Value</th>
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<td>User Query</td>
<td>castle</td>
</tr>
</tbody>
</table>

Click

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Event Type</td>
<td>Click</td>
</tr>
<tr>
<td>User Query</td>
<td>clash</td>
</tr>
<tr>
<td>Click Rank</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Event Type</td>
<td>Click</td>
</tr>
<tr>
<td>User Query</td>
<td>clash</td>
</tr>
<tr>
<td>Click Rank</td>
<td>3</td>
</tr>
</tbody>
</table>

Usage Analytics Database

<table>
<thead>
<tr>
<th>Query</th>
<th>Query Count</th>
<th>Click Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>clash</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>titan</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>castle</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>
### Big Picture – Dimension and Metrics

#### Dimension

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Query Count</th>
<th>Click Count</th>
<th>Average Click Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>clash</td>
<td>12</td>
<td>5</td>
<td>2.6</td>
</tr>
<tr>
<td>lobster</td>
<td>3</td>
<td>3</td>
<td>1.0</td>
</tr>
<tr>
<td>titan</td>
<td>17</td>
<td>2</td>
<td>1.5</td>
</tr>
<tr>
<td>budget</td>
<td>1</td>
<td>2</td>
<td>1.5</td>
</tr>
<tr>
<td>finance</td>
<td>5</td>
<td>2</td>
<td>3.0</td>
</tr>
<tr>
<td>loads</td>
<td>3</td>
<td>1</td>
<td>1.0</td>
</tr>
<tr>
<td>candy</td>
<td>4</td>
<td>1</td>
<td>2.0</td>
</tr>
<tr>
<td>personal finance</td>
<td>1</td>
<td>1</td>
<td>7.0</td>
</tr>
<tr>
<td>battle</td>
<td>1</td>
<td>1</td>
<td>5.0</td>
</tr>
<tr>
<td>warfare</td>
<td>2</td>
<td>1</td>
<td>1.0</td>
</tr>
</tbody>
</table>

#### Dimension Values

1 2 3 4 5 6 7
Key Concept - Period

**Period:** Tool used to display only the Events that occurred during a given time frame.

### Event 1
- **Dimensions:**
  - User Query: Clash
  - Event Type: Search
  - Date: 5:13:53PM 05/01/2017
  - Event Cause: searchboxSubmit

### Event 2
- **Dimensions:**
  - User Query: Clash
  - Event Type: Search
  - Date: 5:13:53PM 05/03/2017
  - Event Cause: searchboxSubmit

### Event 3
- **Dimensions:**
  - User Query: Clash
  - Event Type: Search
  - Date: 5:13:53PM 05/05/2017
  - Event Cause: searchboxSubmit
Key Concept - Filter

Filter: Tool used to display only the Events that have *specific* Dimension(s) Values

<table>
<thead>
<tr>
<th>Event 1</th>
<th>Event 2</th>
<th>Event 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dimensions</strong></td>
<td><strong>Dimensions</strong></td>
<td><strong>Dimensions</strong></td>
</tr>
<tr>
<td>User Query</td>
<td>User Query</td>
<td>User Query</td>
</tr>
<tr>
<td>Event Type</td>
<td>Event Type</td>
<td>Event Type</td>
</tr>
<tr>
<td>Origin 1 (Page/Hub)</td>
<td>Origin 1 (Page/Hub)</td>
<td>Origin 1 (Page/Hub)</td>
</tr>
<tr>
<td>Origin 2 (Tab/Interface)</td>
<td>Origin 2 (Tab/Interface)</td>
<td>Origin 2 (Tab/Interface)</td>
</tr>
<tr>
<td><strong>Value</strong></td>
<td><strong>Value</strong></td>
<td><strong>Value</strong></td>
</tr>
<tr>
<td>Clash</td>
<td>Clash</td>
<td>Clash</td>
</tr>
<tr>
<td>Search</td>
<td>Search</td>
<td>Search</td>
</tr>
<tr>
<td>Demo</td>
<td>Demo</td>
<td>Demo</td>
</tr>
<tr>
<td>Demo</td>
<td>App Store</td>
<td>Web</td>
</tr>
</tbody>
</table>

**Search Origin 2 (tab/interface) is Demo**
# Big Picture – Dimension and Metrics

## Filter

| Search Origin 2 (tab/interface) is Demo | < | 05/14/2017 TO 05/20/2017 | > |

## Dimension

### Dimension Values

- clash
- lobster
- titan
- budget
- finance
- loads
- candy
- personal finance
- battle
- warfare

## Metrics

<table>
<thead>
<tr>
<th>Dimension Values</th>
<th>Query Count</th>
<th>Click Count</th>
<th>Average Click Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>clash</td>
<td>12</td>
<td>5</td>
<td>2.6</td>
</tr>
<tr>
<td>lobster</td>
<td>3</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>titan</td>
<td>17</td>
<td>2</td>
<td>1.5</td>
</tr>
<tr>
<td>budget</td>
<td>1</td>
<td>2</td>
<td>1.5</td>
</tr>
<tr>
<td>finance</td>
<td>5</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>loads</td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>candy</td>
<td>4</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>personal finance</td>
<td>1</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>battle</td>
<td>1</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>warfare</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Results 1 to 10 of 74
Key Concept - Named Filter

**Named Filter:** Pre-configured Filter that allows you to reuse the same filtering rules in multiple reports.

Add a Named Filter

<table>
<thead>
<tr>
<th>Name</th>
<th>Demo Filter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filters</td>
<td></td>
</tr>
</tbody>
</table>

![Selection of Named Filter](image)
Demo – Setting up a Named Filter
Key Concept - Permission Filter

**Permission Filter:** Pre-configured Filter that is automatically applied on all Analytics Reports of a specific Member or Group

Once defined on a Group or a Member, they are always applied and only Members with the Permission Filter, Edit Privileges can remove them.
Demo – Setting up a Permission Filter
Key Concept - Permission Filter

Important!

Permission Filters are not a measure to control Data access.

Indeed, having the Permission Filter, View Privilege also grant access to the Visit Browser, which contains all the Events.

Use Permission Filter as a way to facilitate Report viewing for some of your Personas.
In Summary

By default, when a user perform a **Search** or **Click** on a **Result** inside a Coveo Search Page, it will trigger an Analytic **Event**

**Events** are composed of **Dimensions**, which are metadata gathered on each **Events**

**Metrics** are numerical values compiled on each **Dimensions**

**Dimensions** can be used to create different type of **Filters** to explore the metadata gathered from **Events**

You use the Coveo Javascript Search framework to create your own **Custom Events**
Understand

Module 4
Plan

1. Why Analytics
2. Set up your Organization for Analytics
3. Key concepts
4. Understand – What is Relevant to your audiences
5. Act – On improving Relevance for your audiences
6. Automate – Self-improving Relevance
In This Module

Learn how to create and modify Usage Analytics explorers and dashboards to measure and display analytics data. Learn the tools needed to share and create relevant reports to understand user behavior patterns and trends.

Learning Objectives

1. How to use the **Visit Browser**
2. How to create new **Explorers** and **Dashboards**
3. How to **Export** analytics data
4. Understand how **Named Filters** and **Permission Filters** are used in reports
Visit Browser

The Visit Browser allows you to observed each **Events**, with their **Dimensions** and **Values**, that have been triggered on any of your Search **Hub**, for a given user **Session**.

**Session**: A unique IP address or User ID that visits a Coveo Search Page.

A Session is closed after 30 minutes of inactivity.
DEMO - Visit Browser
About Dashboards

**Dashboards** are advanced tools that allow you to track multiple metrics and dimensions at the same time. Dashboard are divided into **Tabs** (orange), each composed of **Cards** (green).
Dashboard Permissions

Two types of permissions

**Report**
- Only me
- All viewers
- Custom

**Data**
- Create permission filters within the Administration Console navigation menu to restrict data that can be viewed in reports
DEMO – Creating and modifying reports
Anatomy of an Explorer

**Explorer:** Allows you to visualize all the **Values** of one or more **Dimension** and any **Metrics** linked to those **Values**, from all the **Events** that were triggered for a given **Period** (Ex: From 03-2017 to 05-2017)

**Filters:** Allows you to refine your exploration by including only Events that have *specific* Dimension(s) **Values**

**Values**
- motion
- coor
- keith
- las

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Metrics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Reference/CTR</td>
</tr>
<tr>
<td>motion</td>
<td>0.51</td>
</tr>
<tr>
<td>coor</td>
<td>0.63</td>
</tr>
<tr>
<td>keith</td>
<td>0.65</td>
</tr>
<tr>
<td>las</td>
<td>0.65</td>
</tr>
</tbody>
</table>

**Period**

- 03/03/2017 to 04/07/2017
DEMO – Understanding an Explorer
About Coveo for Sitecore and Coveo for Salesforce

When using Coveo for Sitecore with a Coveo Cloud Organization, **Usage Analytics** are enabled by default on the Coveo Search component.

In addition, in Coveo for Salesforce, **Usage Analytics** are also enabled by default.
In Summary

There are two types of reports for displaying Usage Analytics data: **Dashboards** and **Explorers**

**Dashboards** are used to aggregate the data into metric charts using different **Card** types; **Explorers** are used to drill into the data.

You can manage access to **Dashboards** and **Explorers** at the individual report level by **User** or **Group**.

Use the different export functions to **Export** data from the Usage Analytics database and choose which **Event** types to export.
Act
Module 5
Plan

1. Why Analytics
2. Set up your Organization for Analytics
3. Key concepts
4. Understand – What is Relevant to your audiences
5. Act – On improving Relevance for your audiences
6. Automate – Self-improving Relevance
The Triumvirate of Analytics

1. Understand
   - What your user are searching for
   - What they are clicking on
   - Are they finding what they are looking for
   - What is relevant to them

2. Act
   - Optimize the search experience based on what your user are doing
   - Tune the experience to provide ever-improving relevance

3. Automate
   - Leverage Machine learning to automate the Relevance tuning process as you go
   - Free time to do further research
The Tools of Analytics

- User Interface
- Usage Analytics
- Machine Learning
- Query Pipelines
- Index
  - Source
    - Items
  - Source
    - Items
  - Source
    - Items
  - Source
    - Items
- Connectors
  - Salesforce
  - Sitecore
  - Web
  - Exchange

Act 2
In This Module

Learn how to act and tune the Search Experience for each of your audiences with **Query Pipelines**. Learn the tools needed to provide each of them with the **Content** that is the most relevant to their **Context**.

Learning Objectives

1. How to create **Query Pipeline Conditions**
2. How to create new **Query Pipelines**
3. How to use each of the **Pipeline Rules**
4. Understand the concept of a **Query**
5. Understand how **Query Pipeline** and **Conditions** are applied
6. How to set up and use an **A/B test**
Some Vocabulary

**Integration**
System that hosts a Coveo Search Experience.

**Example**: Apple corporate site

**Hub**
Name given to a hosted Search Page or Search Panel, usually based on who is the target audience. An integration may have multiple Hubs

**Example**: App Store, Apple Store

**Query Pipeline**
The conduit by which an Search Page transmits Queries from a Hub to the Coveo Platform. The platform then returns the Items that results from the Queries through the Pipeline.
Query Pipelines, Why?

Usually, an Implementation has one Hub per audience, each with a different Context. These are the most common Hubs:

- Customer Portal
- Support Agents
- Employee
- Case Creation

Query Pipelines allows you to personalize the search experience for each audience by modifying Queries and influencing the Ranking of Items.
Default structure

Integration – Apple

Hub – App Store

Hub – Apple Store

default Pipeline

Coveo Platform
What we Want

Integration – Apple

Hub – App Store

Hub – Apple Store

App Store Pipeline

Apple Store Pipeline

Coveo Platform
DEMO – Pipeline in Action
Quick Review

Coveo Search Interface

1. Query

2. Machine Learning Optimization

3. Search Result
   - Query Suggest Recommendations
   - Recommendation

Coveo Cloud Platform

- Usage Analytics
- Usage Analytics Database
- Machine Learning Models
  - Tune Relevance Model
  - Query Suggest Model
  - Recommendations Model

Query Pipeline

Index

Omnibox Component
query suggestions

Facet Component
query suggestions

Recommendations Component

Dashboard
Dimensions
Metrics

Coveo Analytics Admin
Explorer

Query Pipeline

Index

Search Result List

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Query Pipelines, How do they Work?

Query Pipelines have two components, Rules and Conditions

Rule
Tool that allows you to modify a Query sent from a given Hub or the Ranking of the Items that would be returned to the Hub.

Condition
Set of predefined requirements that a Query must meet for a Rule or Pipeline to be executed. Multiple Conditions can be set for a Rule to be executed.
# Query Pipeline Rules Review

## Rule
Tool that allows you to modify a **Query** sent from a given **Hub** or the **Ranking** of the Items that would be returned to the **Hub**.

<table>
<thead>
<tr>
<th>Modifies the Query</th>
<th>Modifies the Ranking of Results</th>
<th>Modifies the Search Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Thesaurus</td>
<td>- Featured Results</td>
<td>- Triggers</td>
</tr>
<tr>
<td>- Stop Words</td>
<td>- Ranking Expression</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Ranking Weight</td>
<td></td>
</tr>
</tbody>
</table>
WARNING!!

Any modification made to a Query Pipeline Rule is immediately applied on the Search Interface.

Be careful when creating new Rules because end users will be experimenting them as soon as you save them.
Condition Basics

A *Condition* is a rule that can be applied to a pipeline or pipeline feature to determine when it is invoked.

**Query**
- Advanced query
- Device
- Groups
  - Constant query
  - Disjunction query
- Language
- Locale

**Is**
- Is
  - Is not
  - Contains
  - Doesn't contain
  - Matches
  - Doesn't match

+ "value"
DEMO – Creating Conditions
Demo - Setting Up New Pipelines
Demo - Creating Pipeline Rules, Thesaurus
Thesaurus

Expand Any

Rule = Expand any of free, lite with all of them
  ▶ Query = free >> free OR lite

Expand

Rule = Expand flash with quiz
  ▶ Query = flash >> flash OR quiz

Replace

Rule = Replace Minecraft with learning
  ▶ Query = minecraft >> learning
Demo - Creating Pipeline Rules, Stop Words
Featured Results

Promote specific results straight to the top of the results list.

Selected **URI** or document

**Contains**
Expression must be part of the user query

**Matches**
The user query must match the regular expression you enter in the box

**Is**
The user query must be the exact expression you enter in the box
Demo - Creating Pipeline Rules, Featured Results
Ranking Expressions

Influence document score by adding query ranking expressions (QRE)

Boosts or lowers the score of search results matching an expression
Demo - Creating Pipeline Rules, Ranking Expression
Triggers

Notify
Message displayed in the search interface

Redirect
Redirect to a different URL

Execute
Use JavaScript function

Query
Perform a new search query
  - Similar as: Did you mean query
  - Similar as thesaurus replace option
Demo - Creating Pipeline Rules, Triggers
A/B Testing

Start with a hypothesis to resolve

Subtle changes between pipelines A and B

Both pipelines tested simultaneously to ensure test validity

Define to set the proportion of traffic sent to each pipeline
A/B Tests and Reports

There’s two metrics linked to this

**A/B Test Name**: The name of the A/B test the search page in which the user performed the event is a part of.

*Ex: Basic*

**A/B Test Version**: The name of the query pipeline (used in an A/B test) that was effective on the search page the user performed the event.

*Ex: Demo, Web Demo*
A/B Tests and Reports - Filter

If you want to see only **Events** that went through the *Demo Pipeline* for a given **Period** while the **Basic A/B Test** was **active**:

**A/b Test Version** is *Demo*

And if you want to see all **Events** that went through the *Demo Pipeline* for a given **Period**:

**Query Pipeline** is *Demo*
A/B Tests and Reports - Analysis

The Idea behind A/B Tests is to measure how effective are your Query Pipeline Rule are. So by comparing Events with:

A/b Test Version is Demo
A/b Test Version is Web Demo

You can answer questions like:

- Which Pipeline has the most Click-Through?
- Which Pipeline has the least Query Without Results?
Demo – A/B Tests
In Summary

A **Hub** represent a given search page inside an **Integration** and is usually targeted at a single audience.

**Query Pipelines** are used to modify the search experience inside a given **Hub**.

**Query Pipeline** are composed of different **Rules** that can affect the **Query**, the **Ranking** of search results or the search page itself.

**Conditions** can be used to trigger a given **Pipeline** or a given **Rule** inside a **Pipeline** if the incoming **Query** matches specific parameters.

**A/B Test** can be used to compare the effectiveness of two different **Pipelines**.
Automate
Module 6
Plan

1. Why Analytics
2. Set up your Organization for Analytics
3. Key concepts
4. Understand – What is Relevant to your audiences
5. Act – On improving Relevance for your audiences
6. Automate – Self-improving Relevance
In This Module

Learn the how machine learning can help automate the manual actions we just learned about.

Learning Objectives

1. Understand how Coveo Machine Learning works and the different models
2. Understand the different business cases to use Machine Learning
3. Know the requirements to set up and activate the different Machine Learning models
The Tools of Analytics

- User Interface
- Usage Analytics
- Machine Learning
- Query Pipelines
- Index
- Source Items
- Source Items
- Source Items
- Source Items
- Connectors
- Salesforce
- Sitecore
- Web
- Exchange

3 Automate
Machine Learning Models

Tune Relevance Model
Automatically optimize the Ranking of Coveo Items returned by a Query

Query Suggest Model
Provides users with Query Suggestions as they are typing in the Coveo Search Box

Recommendation
Recommends Coveo Items that the user might be interested on viewing next.

Query: IPA

1. Goose Island
2. Alexander Keith's
3. Sleeman
4. Inukshuk Island

clash

Clash of clans
Clash of kings
Clash of lords

Recommended Topic

- Clash of Clans
- Clash of Lords
- Castle Clash
To Remember

Coveo Search Interface

Query Suggest Model

Recommendations Model

Tune Relevance Model

Query Suggestions

Omnibox Component
query suggestions

Facet Component

Recommendations Component

Search Result List
Machine Learning Model Are Pipeline Rules!

Machine Learning Models are in fact **Pipeline Rules**, like Thesaurus or Ranking Expression Rules.

Therefore, you can use Machine Learning Model in combination with any **Conditions**, as you would with any **Rule**.
Which use cases are good fits for Machine Learning?

Sites with Visits driven by similar intents
- Public communities
- Intranet with high % of generally available content

Short & frequent queries
- Mouse on Logitech Support
- Leads, Reports on Salesforce Support
- Vacation on Intranet

Sites with very disparate visits
- No repeat patterns between visitors
- Lack of overlap in visitor intents

Very Siloed Environments
- Low % of content searched for by small % of users
- High % of content with highly restricted access
- “Personal search” use cases (e.g. email search)
Standard Relevance

Most popular items automatically promoted

mx5500

MX™ 5500 match

Purchasing a replacement USB receiver for my MX5500 mouse? Easy. Just plug in a new USB receiver, you can purchase a replacement USB receiver.

cuay59

cuay59 is part number of the usb receiver

With Machine Learning

Marathon Mouse M705

Performance Mouse MX

Wireless Mouse M185

Cordless Desktop® MX™ 5500 Revolution

V220 Cordless Optical Mouse for Notebooks
DEMO – Adding a Tune Relevance Model to a Pipeline
Note

You need approximately 10,000 **Query Events with Clicks** in order to compile an optimal Model.

Depending the number of **Events**, compiling or updating a Model from a given **Training Set** can takes between 30 and 60 minutes.
In Summary

Machine Learning **Models** are compiled from Usage Analytics **Events** and requires around 10,000 **Query Events** to be Optimized

Machine Learning **Models** are added to **Query Pipelines**

There are 3 Machine Learning Models: **Tune Relevance**, **Query Suggest** and **Recommendations**

**Query Suggest Model** requires your Search Interface to have an **Omnibox Component**

**Recommendations Model** requires your Search Interface to have a **Recommendation Component**
The Journey Continues

Questions?
In Summary

Why Analytics
The need for relevance is a constant journey in which you

Understand
Gain insight into the behavior of your users

Act
On this insight to provide quality improvements to relevance

Automate
Leverage Machine Learning to automate the relevance improvement
Questions?