

systema AI



Client_Name

AI Recommendations for eCommerce

Technical Integration Overview:

Systema AI Recommendations for Client_Name

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1 Introduction

This document outlines how to implement Systema's AI recommendations on the Home Page, Category Pages (also known as Product Listing Pages), or Product Detail Page of your website.

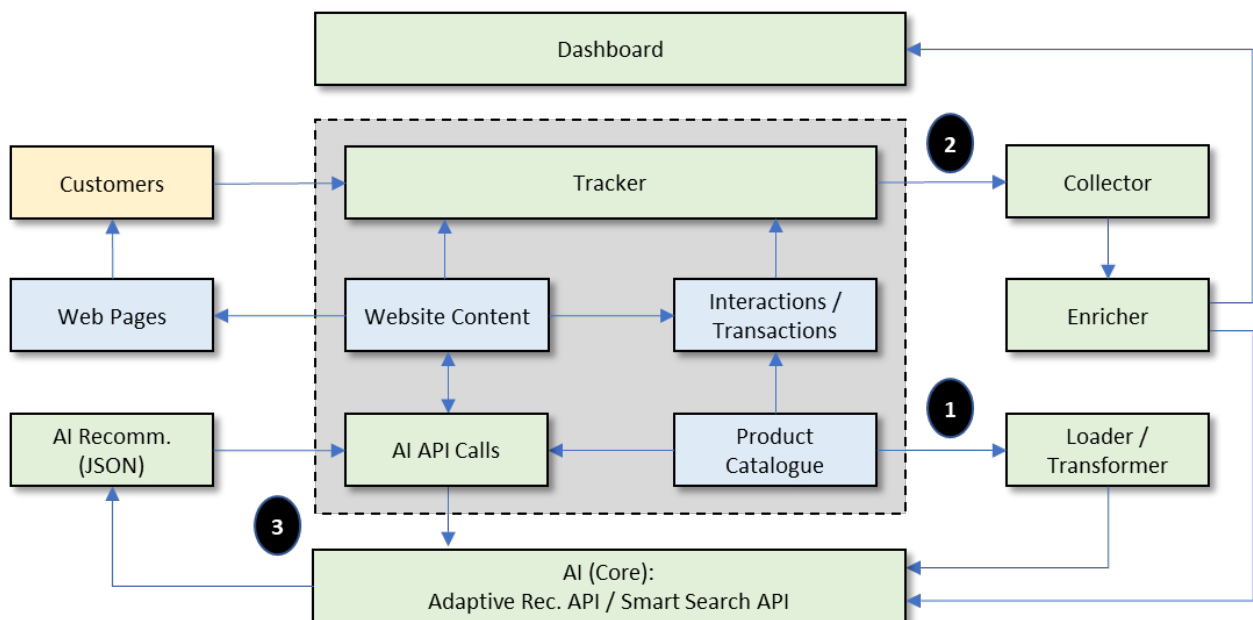
The overall implementation sequence is:

1. Read through and familiarise yourself with the [Systema documentation](#)
2. [Get started](#) by performing the following:
 - a. Obtain the [Client API Key](#)
 - b. Provide Systema with access to your [product catalogue](#)
3. Install the [Tracker](#) on your website
4. Integrate [Systema's API's](#) on nominated pages
5. Test and [deploy the solution](#) into production
6. Monitor performance via the [Systema AI Dashboard](#)

2 Context and Key Steps:

The following diagram shows the 3 key implementation steps required to enable AI Recommendations on the Client_Name website:

Figure 1 - Client_Name implementation steps



Step 1 - Load Products	Step 2 - Track Behaviours	Step 3 - Make Recommendations
1. Client_Name provides access to the product catalogue 2. Systema supports different mechanisms for product	1. Systema creates a client API key 2. Systema provides a small 'Tracker', (JavaScript code) to Client_Name	1. Client_Name determines where to show AI recommendations 2. Client_Name places API calls on pages where



Step 1 - Load Products	Step 2 - Track Behaviours	Step 3 - Make Recommendations
ingestion (Loader / Transformer) Systema ingests product data on a scheduled basis	3. Client_Name places the tracker in the header of base page(s) 4. Cart events are registered via the tracker to capture sales transactions 5. The tracker sends all user interactions to the Systema backend	recommendations are to be shown 3. Systema APIs return JSON list of recommendations to be shown 4. Client_Name renders the recommendations according to website layout 5. The Systema Dashboard tracks eCommerce metrics and performance

3 Documentation:

The technical specifications for integration is available at <http://docs.systema.ai/>. This will provide you with information about how to:

- Data Import - Obtain an API key and provide Systema with access to your product catalogue.
- Tracking and Analytics - Add the systema tracker to analyse user behaviours and begin collecting statistics about your customers.
- Adaptive Recommendations – integrate recommendation API's to interact with Systema's real-time AI recommendation engine.

Please note that the following features are discussed but may remain out-of-scope for Stage 1. These features may be implemented in a subsequent project phase.

- Smart Search - Developer information for interacting with Systema's Smart Search similarity engine.
- Feeds and Filters – Product attribute and tag fields which can be used to filter search results.

4 Getting Started:

Once you have read through the technical documentation, you are ready to provide Systema with access to your product catalogue and use the Client API Key to communicate with Systema.

4.1 Product Feed:

Systema's AI needs to analyse the items in your product catalogue to personalise recommendations. You will need to provide us with an up-to-date product catalogue.

Most clients find that the easiest way to provide the product catalogue is via an API endpoint on their website. There is usually an API or plug-in on most eCommerce platforms to access the product/inventory database. Systema is able to handle multiple product file formats, with the most common being Google Product Feed format.

Please provide Systema with the necessary details of your product feed and we will perform a check to verify completeness of your product/inventory data structures.

You can find more information about the product feed at <http://docs.systema.ai/feeds/>



4.2 Client API Keys:

Systema will generate a client API Key for your Client_Name website. The keys are used to identify the data coming from each site and handle any API “request”/“response” exchanges:

- Client_Name API Key:

5 Implementing Tracking on your Site :

In order to provide personalised recommendations, Systema will need to anonymously track, then analyse, user interactions to predict online shopping behaviours.

The Event Tracker (“tracker”) is a mechanism for collecting data on all user interactions throughout the Client_Name website. It is a set of JavaScript code that is placed in the header of all pages (including base pages) on your website.

The tracker is designed to capture user behaviour (such as page views and clicks) and monitor specific transactions, such as shopping cart events (for example, “add to cart” or “remove from cart”). Cart events are captured through the tracker and configured on any pages where a cart may be updated.

Once the tracker is implemented, Systema’s AI can be used to predict how different patterns of user interaction relate to different buying outcomes, such as a successful sale or cart abandonment.

To install the tracker, please follow the instructions at <http://docs.systema.ai/javascript/>. This will provide you with access to the relevant JavaScript package to install on your website

6 Enabling AI Recommendations:

Systema provides two core recommendation APIs:

- A. Adaptive Recommendations API – provides recommendations, based on a user’s online shopping journey, and analysed against other user’s patterns of behaviour.
- B. Smart Search API – provides recommendations based on image recognition and text analysis to bias results (that is, sort, filter, rank, weight and prioritise), based on what the user is looking for.

Each of these API’s have optional flags and parameters which can be set to deliver different types of recommendations. For example, using the “/similar” or the “/popular” flag on the Adaptive Recommendations API will return either the most similar item or the most popular product in the catalogue, respectively.

An explanation of the use and structure of the “Adaptive Recommendations” API can be found at <http://docs.systema.ai/recommend/>.

6.1 Example of Adaptive Recommendations on the product page – showing 2 carousels

The following example shows the application of the “Adaptive Recommendations” API on the Product Detail Page with two different types of recommendations:

- A. “You may be interested in...” - Recommendations based on the user’s online shopping journey. This utilises the “Adaptive Recommendations” API with the “/related” flag parameter set.



- B. “You may also like...” – Recommendations based on similar items to the product being displayed/viewed. “Adaptive Recommendations” API with the “/similar” flag parameter set.

The following code snippets show the respective “request” and “response” calls for the two use cases (above). In each example (for section 6.2 and 6.3), assume that “id : product-1” refers to a

6.2 Adaptive Recommendations API with “/[webpage]/related” flag (“You may be interested in...”)

Table 1 – Example REQUEST format using “/product/related”

```
curl -X POST "https://<api key>.hyper.systema.ai/v1/product/related" -H 'Content-Type: application/json' -d'
{
  "user_id": { "uid" : "some_user_id_hash", "sid": "some_users_session_id_hash" },
  "id" : "product-1",
  "size" : M
}
```



Table 2 – Example RESPONSE using “/product/related”

```
{ "results" :
[   { "id": "121535",
      "in_stock": True,
      "tags": ["shirt", "casual"],
      "price": 59.95,
      "description": "Casual Men's White Shirt",
      "link": "https://www.example.com/product-1?sys_campaign=systema_recommendations&sys_source=abc123&sys_term=mixed&sys_medium=recommendation&sys_content=itemid", "image_link": "https://www.example.com/static/product-1.jpg" }
]
"pagination_timestamp": 1549325118400
}
```





6.3 Adaptive Recommendations API with “/[webpage]/similar flag” (“You may also like...”)

Table 3 – Example REQUEST format using “/product/similar”




<pre>curl -X POST "https://<api key>.hyper.systema.ai/v1/product/similar" -H 'Content-Type: application/json' -d' { "id" : "product-1", "size" : M }</pre>	
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Table 4 – Example RESPONSE using “/product/similar”

<pre>{ "results" : [{ "ids: "product", "in_stock": True, "tags": ["shirt", "evening wear"], "price": 99.95, "description": "Formal Men's White Evening Shirt", "link": "https://www.example.com/product-1?sys_campaign=systema_recommendations&sys_source=abc123&sys_term=mixed&sys_medium=recommendation&sys_content=itemid", "image_link": "https://www.example.com/static/product-1.jpg" }]</pre>	 
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Please note, the RESPONSE for both “/related” and “/similar” flags will return a “results” list object of all the matching items for the API call. Optionally, there are additional flags that can be used with the “Adaptive Recommendations” API call to filter, sort and rank results in many ways.

You can find more information about the recommendation API’s, including a full description of the use and meaning of different parameters and flags at <http://docs.systema.ai/recommend/>

7 Testing and Deploying the solution:

Systema will work closely with the Client_Name project team to test the solution during integration and prior to production deployment. Systema utilises a number of tools to ensure correct operation of the following:

- A. Proper ingestion of the Product Catalogue
- B. Complete tracking across the site
- C. Capture of all user interactions and transactions
- D. Correct configuration of AI-enabled recommendations
- E. Quick response times for recommendations

F. Dashboard metrics

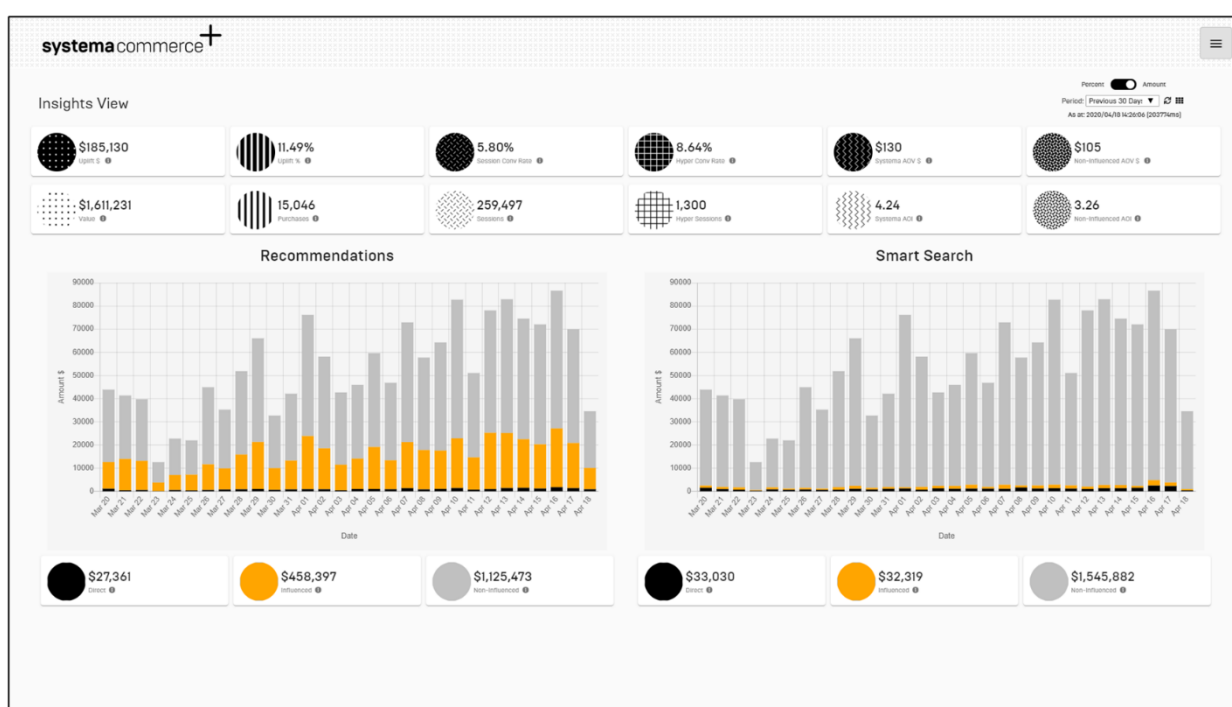
Additionally, Systema has defined Service Level Agreement to outlining its maintenance, support, availability and performance obligations to Client_Name

8 Dashboard Reporting and Performance Statistics:

Systema provides a comprehensive dashboard for clients to monitor and analyse recommendation performance. The Systema Dashboard is accessed via the following URL link <https://admin.hyper.systema.ai/login>. Authentication mechanisms (username and password) control access to the site.

The following diagram shows the current Systema Dashboard, metrics and graphs.

Figure 2 - Sample Systema Dashboard with metrics and graphs



The following table defines all the elements contained within the Systema Dashboard.

Table 5 - Description of Dashboard Elements

Dashboard Element	Data Type	Description
Uplift	Dollar Value - Cell	The total amount of revenue contributed by Systema Recommendations. This is calculated as "Total value * uplift %".
Value	Dollar Value - Cell	Total value of all purchases for the period selected
Uplift	Percentage Value – Cell	The total percentage of revenue contributed by Systema Recommendations. This is calculated as "Direct % + (Influenced % * Influenced Ratio)".
Purchases	Quantity – Cell	Total number of purchases captured during the period selected.
Session Conv. Rate	Percentage Value – Cell	The total of sessions that converted into a purchase. This is calculated as " (Sessions / Purchases) * 100"



Dashboard Element	Data Type	Description
Sessions	Quantity – Cell	Total number of browser sessions recorded during the period selected.
Hyper Conv. Rate	Percentage Value – Cell	The percentage of purchases that resulted from a Systema interaction. This is calculated as “Hyper sessions / Purchases”.
Hyper Sessions	Quantity – Cell	Total number of purchases where a recommendation was clicked during the user journey.
Systema AOV	Dollar Value - Cell	Total average total number of purchases where resulting from a Systema interaction.
Systema AOI	Quantity – Cell	Total average number items in purchases, which has resulted from a Systema interaction.
Non-influenced AOV	Dollar Value - Cell	Total average total number of purchases, not resulting from a Systema interaction.
Non-influenced AOI	Quantity – Cell	Total average number items in purchases, which have not resulted from a Systema interaction.
Recommendations	Amount/Percent - Graph	Stacked line graph showing Direct, Influenced and Non-influenced sales for the period – as a result of Systema Recommendations. This can be shown in dollar amounts or as a percentage of sales.
Smart Search	Amount/Percent - Graph	Stacked line graph showing Direct, Influenced and Non-influenced sales for the period – as a result of Systema Smart Search recommendations. This can be shown in dollar amounts or as a percentage of sales.
Direct	Amount/Percent – Cell	A product was purchased after the user clicked a recommendation at some point during their shopping journey.
Influenced	Amount/Percent – Cell	A purchase was made, and at some stage during the user journey, the user was presented a recommendation for at least one of the products purchased.
Non-influenced	Amount/Percent – Cell	A purchase was made for a product that was never presented to the user as a recommendation during the user journey.
Percent / Amount	Unit Selector – Toggle	Mechanism to show dollars or percentage amounts on Graphs and for Direct, Influenced and Non-influenced figures
Period	Period Selector - Dropdown	User selectable parameter, allowing data to be shown for either 7, 14, 30, 60 or 90 days.
Table View	Table Selector - Icon	Allows the user to view data and daily metrics in tabular view. The user is able to download and save this information for offline purposes.
Refresh	Reset Period - Icon	Refreshes the current dashboard to bring in the latest data (such as up-to-the-minute statistics)

The following steps outline how to use the Systema Dashboard

1. Go to the provided URL for the dashboard (above link)
2. Type in the Username and Password (credentials will be provided by Systema)
3. You will be presented with the "Welcome" screen
4. Select the top right sub-menu (3 horizontal lines)
5. Select the Analytics option
6. You will be taken to the Client_Name eCommerce stats page



7. You will be presented with eCommerce stats (i.e. two top rows), then two graphs with stats at the bottom of the page. The left graph is for Recommendations and the right graph is for Smart Search (e.g. Visual Search). The graphs show data for Direct / Influenced / Non-influenced sales.
8. You can click on any of the ⓘ information buttons to obtain a description of the metric being displayed
9. You can toggle between the Percent / Amount option (top, right-hand-side, toggle button)
10. You can select the period, over which the data will be generated (Period drop-down)
11. You can obtain a tabular view of the underlying (daily) data by pressing on the 📊 icon (3x3 squares icon, next to the Period field)