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Real Time Business Intelligence

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A Near Real-Time Personalization for eCommerce Platform

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Personalization in eCommerce

Personalization is a process of gathering and storing information about site transactions, analyzing the information, and, based on the analysis, delivering the more relevant information to people who visit Web site.

Phases of Personalization

Within the e-commerce industry, personalization has gone through different phases.

Initially, personalization was used to keep a visitor on a Web site for a longer time, which provided opportunities to advertise and promote products.

During next phase, it was used for offering more expensive or related products as an attempt to increase average spend.

Today, personalization is increasingly used as a means to expedite the delivery of information to a visitor, making a Web site more useful to returning visitors and increasing the number of repeat-customer visits.

Personalization at eBay

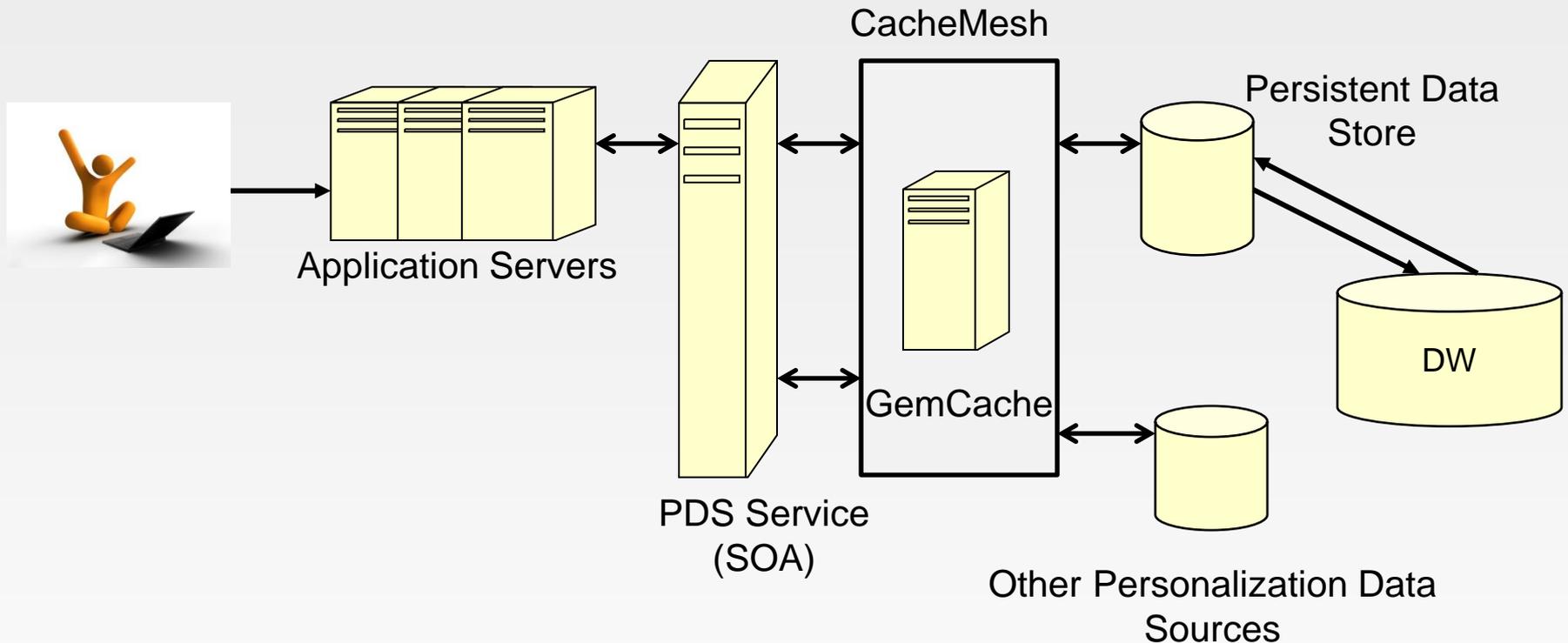
eBay Inc. User Base



Share and Leverage Combined Personalization Data

eBay does see an opportunity to provide more customized information to customers through real-time personalization by using dynamic site and applications to deliver targeted content. Personalization filters out the noise for consumers, helping them avoid information overload.

Personalization Data Service (PDS) components

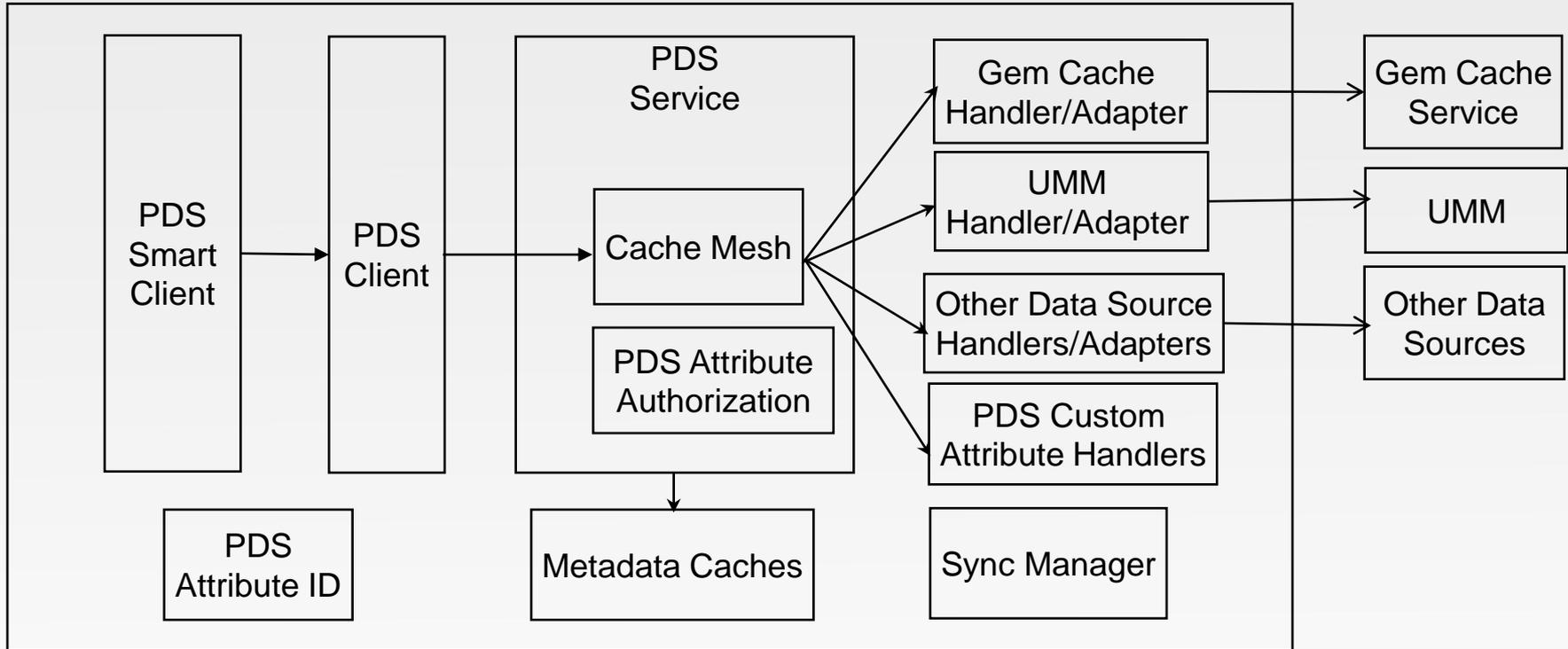


Core components, which make up the Personalization Data Service (PDS)

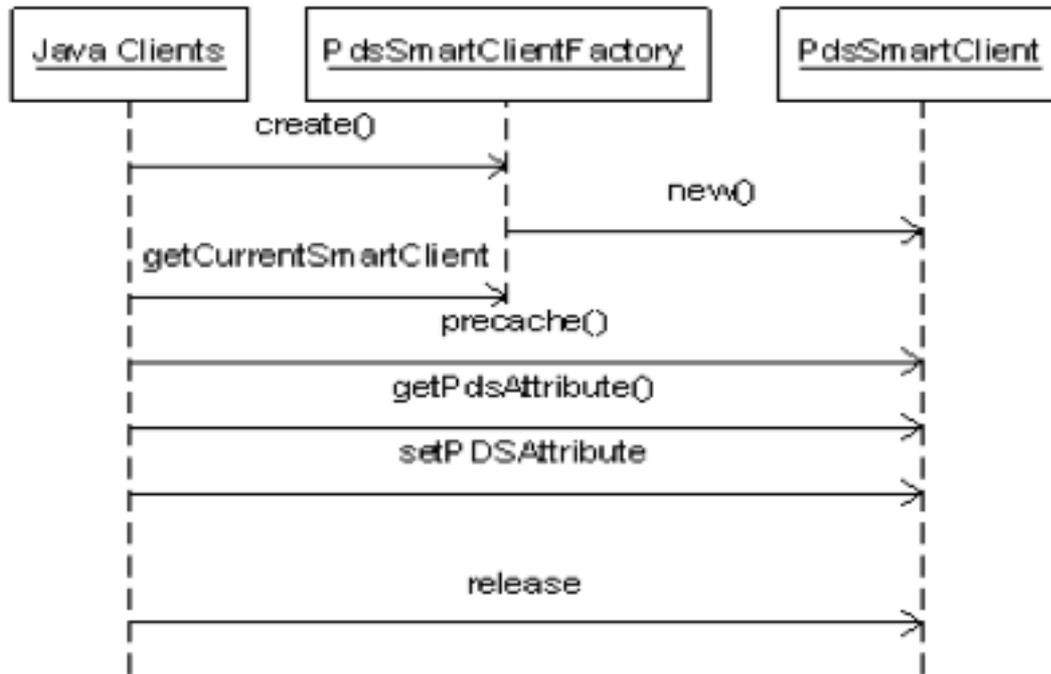
- PDS Client/ SOA service
- PDS attributes
- CacheMesh
- Gemcache

Personalization Data Service (PDS) Internals

PDS

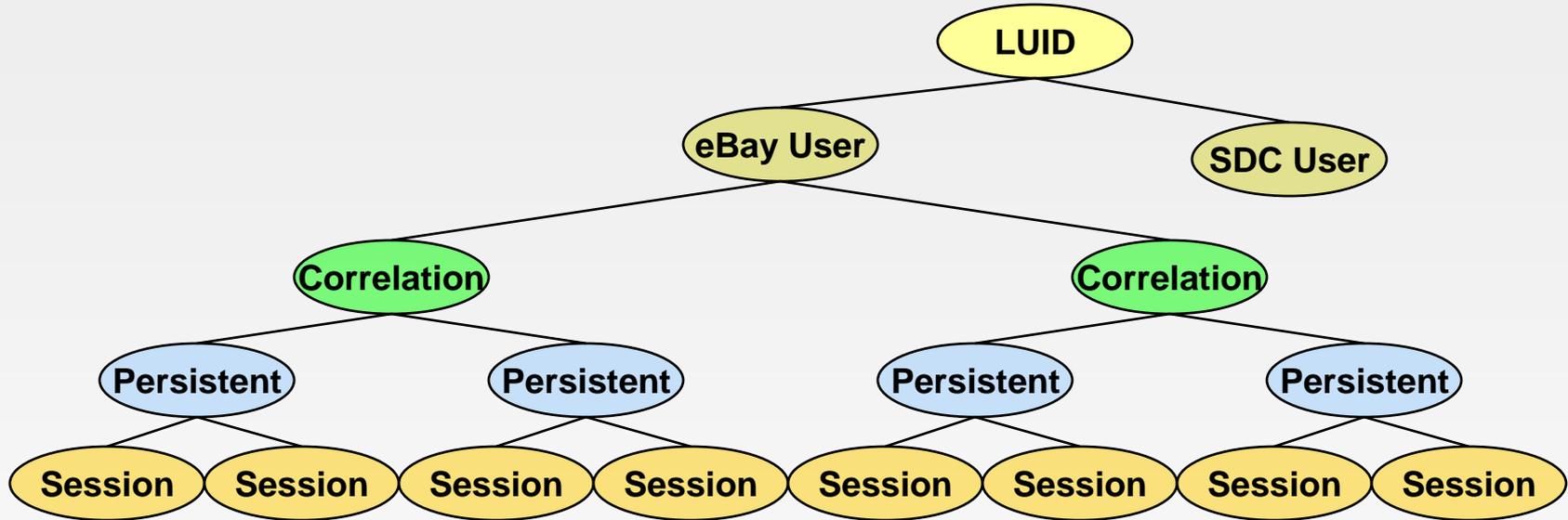


Personalization Data Service (PDS) Smart Client



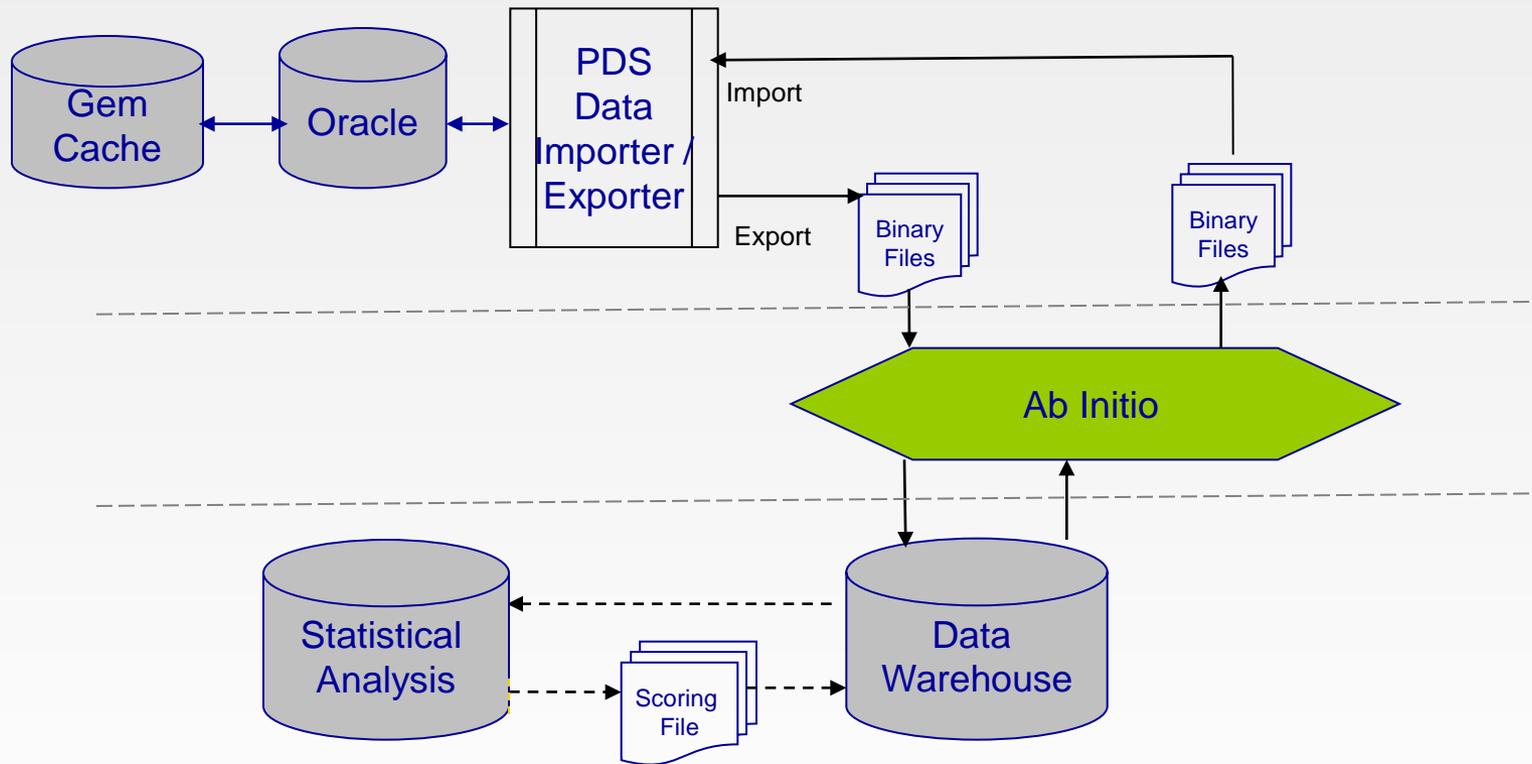
Personalization Data Service consumers use the PDS SmartClient for getting/setting the personalization data. It supports the learning of attributes used within an application by pre caching the attributes, which are accessed frequently. It promotes good usage of PDS service by encouraging pre cache and batching of attribute updates.

Personalization Attributes



At eBay, transaction profiles are a collection of implicit and explicit attributes that we maintain or derive in order to support personalization. There are more than 100 plus personalization attributes that exist today.

Leveraging Statistical Analysis and Data warehouse



Personalization example at eBay



User visits eBay

User performs search using keyword

User gets recommendation based on implicit/explicit profile

Rule-based techniques provide an environment for specifying business rules to drive personalization. This requires figuring out the appropriate rules. Rule-based techniques can be used with filtering techniques, either before or after the filtering process, to develop the best recommendation.

Filtering techniques employ algorithms to analyze Meta data and drive presentation and recommendations. The three most common filtering techniques used are simple filtering, content-based filtering, and collaborative filtering.

Improving Personalization Efficiency

The cost of personalization can be reduced by the degree of personalization. For example, instead of creating pages specialized for each individual client, sets of pages specialized to groups of visitors could be created. This could allow reuse of some pages, thus increasing the utility of caching.

Changes can be propagated forward from the database server to the browser during a purchase. When a certain number of changes, or certain type of changes, occur, the trigger monitor can update the affected Web pages and distribute updated pages to the caches.

Conclusion

Dynamic personalization at eBay drove an increase in click-through rates for home page (www.ebay.com) and Sign Out Placements.

Organizations should also examine how their needs are likely to change and whether their approach to personalization will enable them to move along the continuum from preliminary targeting efforts to tapping the potential of every possible segment.



Questions

