

Symphony

Enabling Search-Driven Applications

John Shafer, Rakesh Agrawal, Hady Lauw

{jshafer, rakesha, hadylauw}@microsoft.com

Need for Search Applications

- While people use search engines for general information needs, they frequently turn to specialized sites when needs are more focused
 - Bing Shopping, Google Scholar, Yahoo News
 - Amazon.com for books, Weather.com for weather, IMDB.com for movies, WebMD.com for health
- But how do we address the myriad of needs and interests people may have?

Retail Scenario: Video Store

- Store owner has structured content:
 - Movie title, rating, genre, description
 - Content is in some electronic form as flat-files or a DBMS
- Owner does not have, but knows where to find:
 - In-depth movie reviews
 - Movie trailers/posters
 - Discussion forums on various movie-related topics
- How does the store owner create a search experience that leverages his data and expertise?

Other Scenarios

- Wine enthusiast:
 - Search proprietary database of wines
 - Include links to reviews, wineries, recipes, wine-flights
 - Include wine-focused ads and owner shares in revenue
- Personal Music Library:
 - Search MP3 library constructed of exported ID3 tags
 - Include links to reviews, music videos on YouTube
 - Include referrer links to Amazon.com to purchase
- Modify and extend to other search-driven applications
 - Build or modify public applications others have built
 - Templates into which others can “pour-in” their own data

Symphony

- Goal:
 - *Enable non-developers to create and monetize custom search-driven applications that combine:*
 - *Their proprietary data*
 - *Their domain expertise*
 - *Search and other 3rd-party services*
- How?
 - Leverage search engine technology and infrastructure to evolve search engines from a destination into a platform
- Why?
 - By empowering others to be successful, the platform is made successful (a la Windows 3.0 SDK)

Existing Solutions

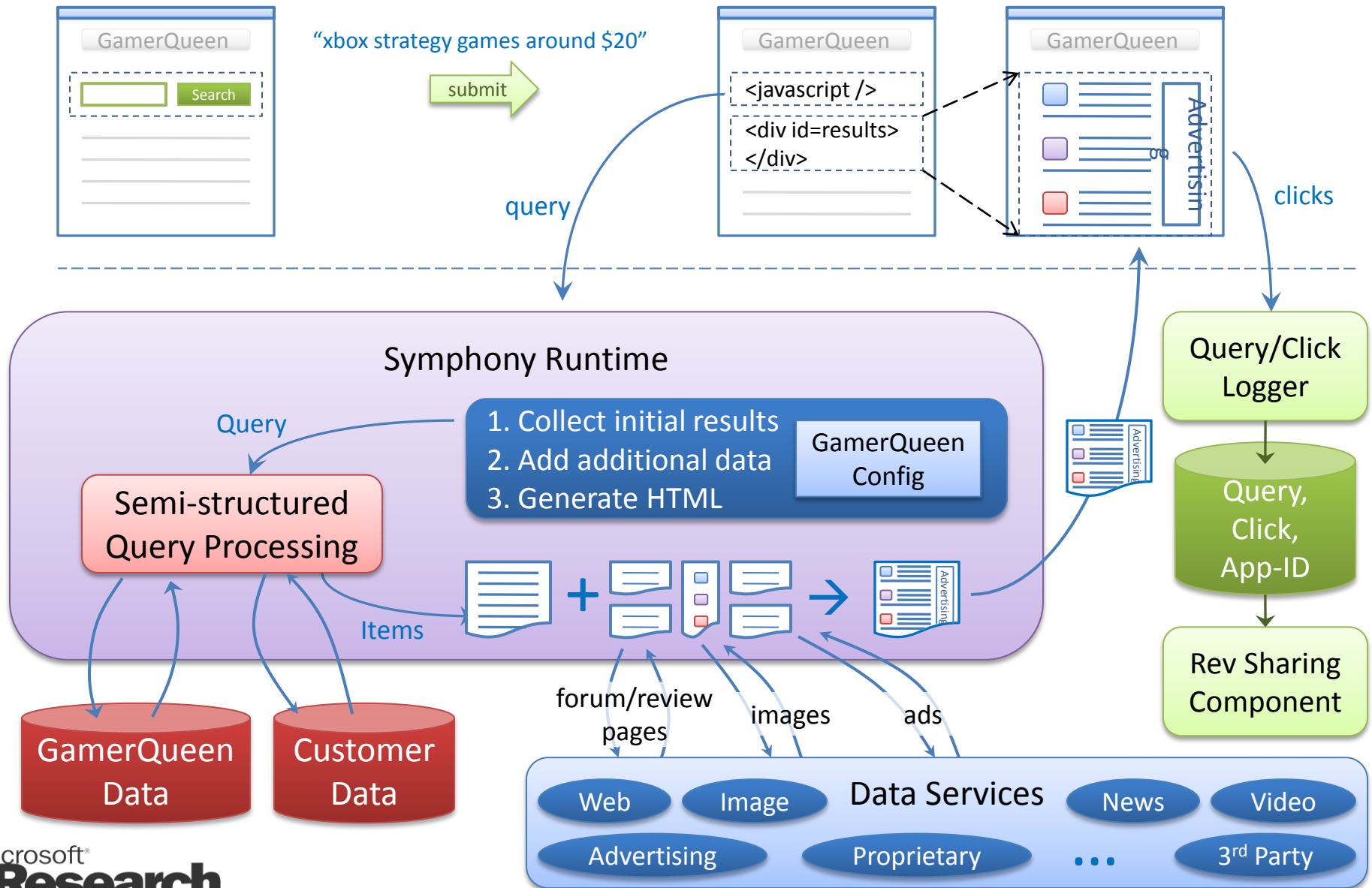
- Custom search engines
 - Google Custom Search Engine, Live Macros, Rollyo.com
 - Limited customization
 - No proprietary content
- Mashup platforms
 - Microsoft PopFly, Yahoo Pipes
 - Limited ability for proprietary content
 - Data-flow models
- Developer tools
 - Yahoo BOSS!, Bing Search API, ...
 - Requires developer skills
 - No hosting

Features of Symphony

- Leverage proprietary content
- Built-in search services for web/video/image/ads
- Mashup multiple content sources
- Control over presentation
- Drag-n-drop design interface
- Hosting: applications run on Symphony servers
- Publishing: can embed in 3rd-party websites
- Monetization via ad revenue sharing

DEMO

System Architecture



Summary

- Symphony platform facilitates the creation of custom search-driven applications
- Provides a unique set of features
 - Mashup of proprietary and 3rd party content
 - Control over look-and-feel of application
 - No developer skills required (drag-n-drop UI)
 - Monetization via advertising revenue sharing

Future Directions

- Leverage structure in content and in query
 - Helix project (demo in SIGMOD 2009)
- Automatic relevance tuning
 - Implicit feedback based on queries and clicks
 - Explicit feedback based on thumbs up/down widgets
- Social features
 - Collaborative search
 - Query / results suggestions from friends
 - Relevance signals from social network
- Automatically generated custom search engine
 - Use one's online social profile to create initial engine