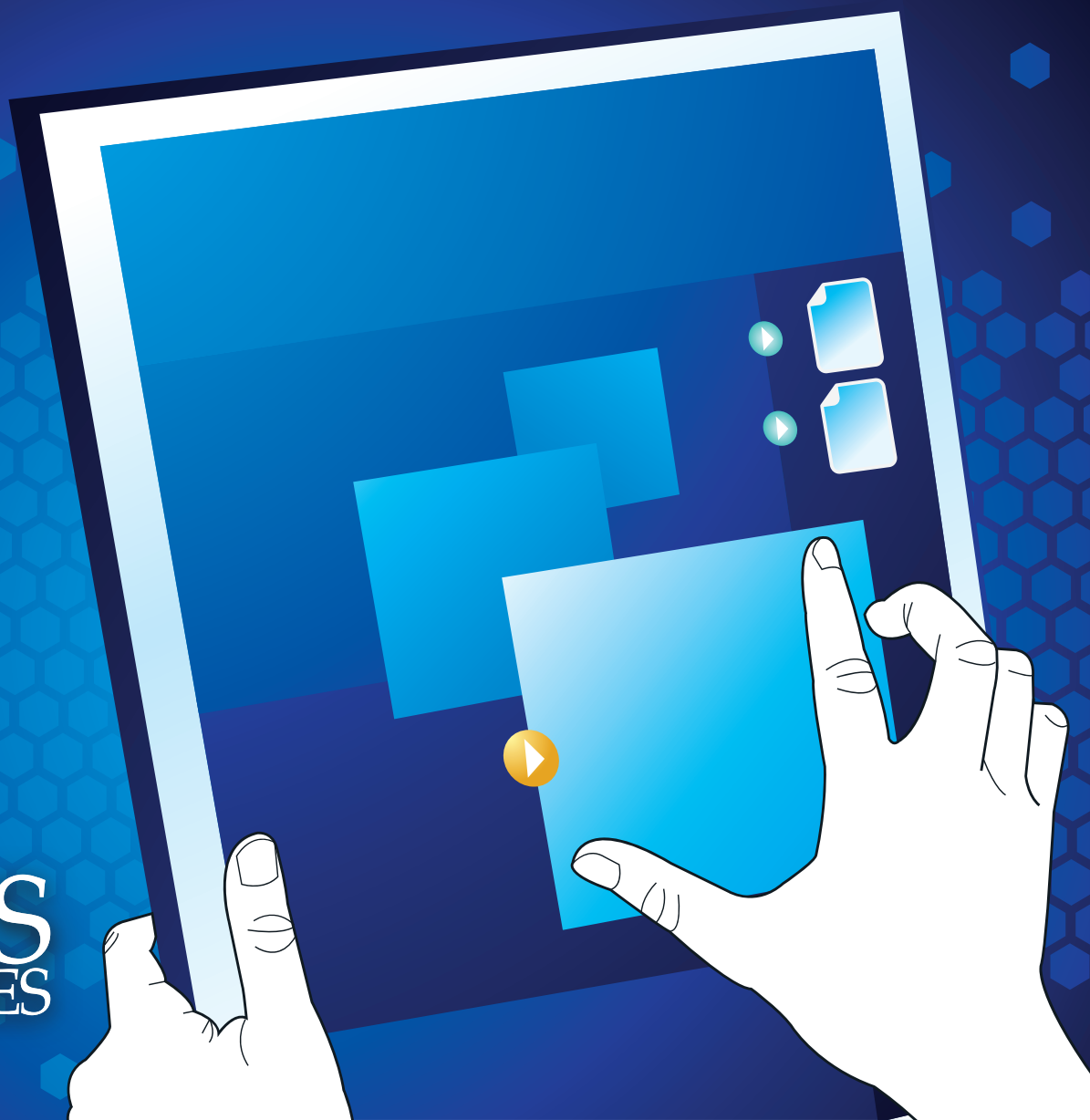


The Connected TV and Video Experience: Recommendations, Search, and the User Interface

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The Building Blocks of Search and Discovery on the TV

As the number of content sources to the television screen grows (broadcast, video-on-demand, online, network storage, etc.), the challenge consumers have in locating, evaluating, and selecting content of interest becomes an important issue—and one providers must address. While the electronic program guide (EPG) helps by organizing available content and relevant metadata for review, systems with enhanced search functionality and content recommendations allow consumers greater control over the discovery and evaluation process and thus play a significant role in promoting content and maintaining customer satisfaction. While these search-and-recommendation methods differ among solution providers, each system relies on a combination of information sources.

Information Sources for Search and Recommendation Systems

Source	Description
Profile	The system uses viewer-entered data on content preferences to identify and recommend content. Some systems allow consumers to select among profiles in order to allow recommendations to multiple users in the home.
Usage	The recommendation engine tracks consumer usage and makes recommendations similar to content frequently selected.
Related content	For viewer-selected content, the engine recommends similar content based on various criteria and the complexity of the recommendation engine (e.g., genre/subgenre, actor, actress, director, etc.).
Social	Results are based upon recommendations or viewing habits of other consumers. The scope of social results may range from a large universe of consumers (i.e., nation, region, or service provider footprint) to a limited set of approved friends / family.
Promotional / Provider-driven	The content provider defines a set of titles that it seeks to promote (VOD, etc.). The search engine may prioritize these options in the search results or display them separately.

How Consumers Choose Content Today

Recommendations from friends or family are second only to advertising as the primary factor in influencing consumers on their entertainment choices.



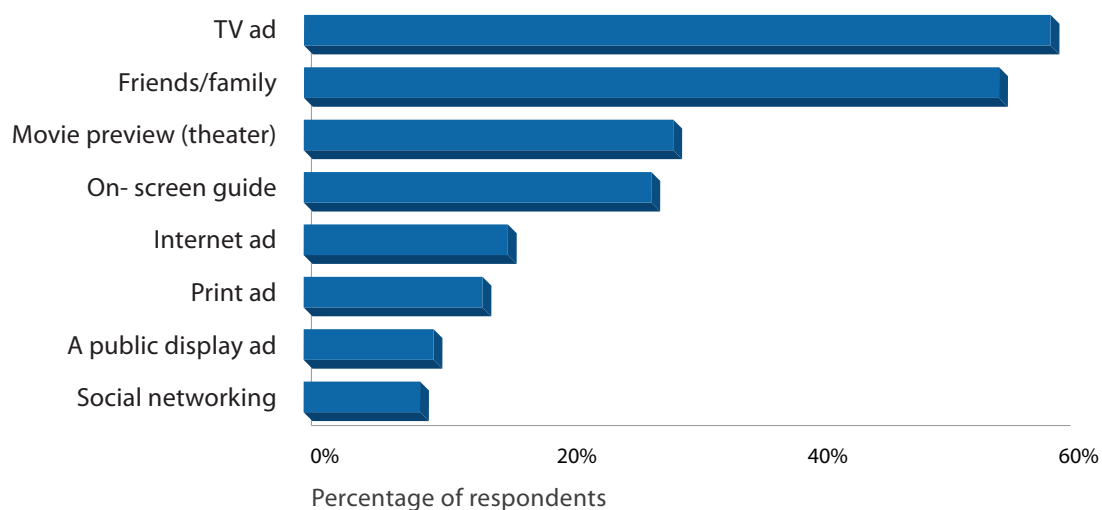
Recent data also indicate that the program guide itself serves an important function in helping consumers discover TV shows and movies. Social networking sites are also an important aspect of the content discovery process. As guides become more interactive, we can expect to see convergence between social networking communities and guide-delivered recommendations.

There are key demographic differences in the way in which consumers choose content.

For example, consumers 18-24 are significantly more likely to make decisions based on a discussion on a social networking site than from viewing movie previews in the theater. For consumers 55 and older, the on-screen guide is a more significant prompt than for any other age group.

What Prompts Consumers to Choose Content? U.S.

"Generally speaking, which of the following prompt you to watch particular films, TV shows?"



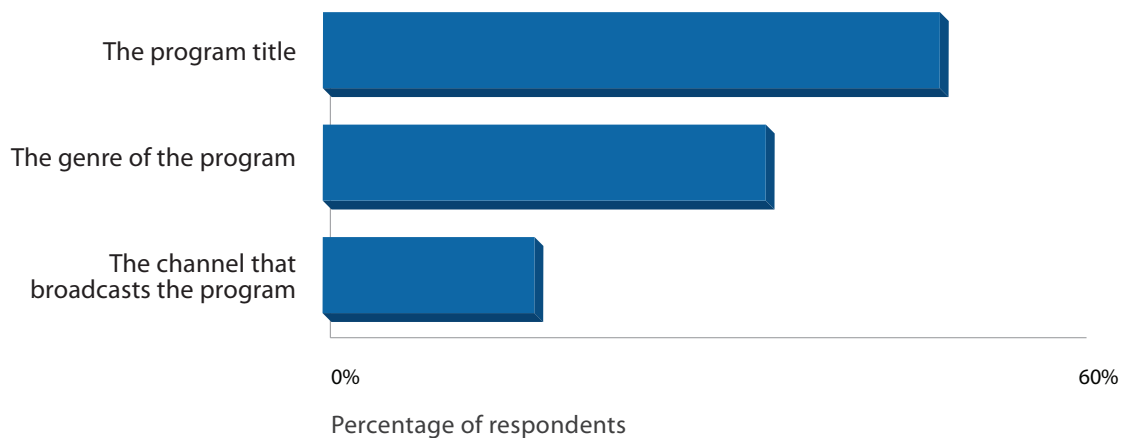
Source: *All Eyes on Video: U.S.* (Q4 2009)
Sample base: U.S. broadband households | © 2010 Parks Associates

Preferences for Video Search

The way in which consumers search for content also provides some interesting insight. For example, searching via film or show title is the top way consumers find content, but a significant percentage of viewers are searching in a more general way: by genre. When seeking out VoD of TV shows, only a few viewers are searching via the channel itself. These findings indicate a majority of consumers will find the content they want through content searches—and not through specific channels. As a result, subtle suggestions—based on a viewer's current mindset and/or emotional state—may play a more significant role in the future in providing the best recommendations.

What is the Preferred Search Method for VoD? U.S.

"When searching for a video-on-demand TV program to watch, would you find it easier to search by..."



Source: *All Eyes on Video: U.S.* (Q4 2009)
Sample base: U.S. broadband households | © 2010 Parks Associates



The disassociation between a particular channel and its content is most acute among young consumers (18-24). They are much more likely to search for a program title rather than the channel. In this sense, it is clear that program guides based on strict linear aspects (channel lineups and programming times) will be less important in the future than ones with more intuitive ways to search for specific content.

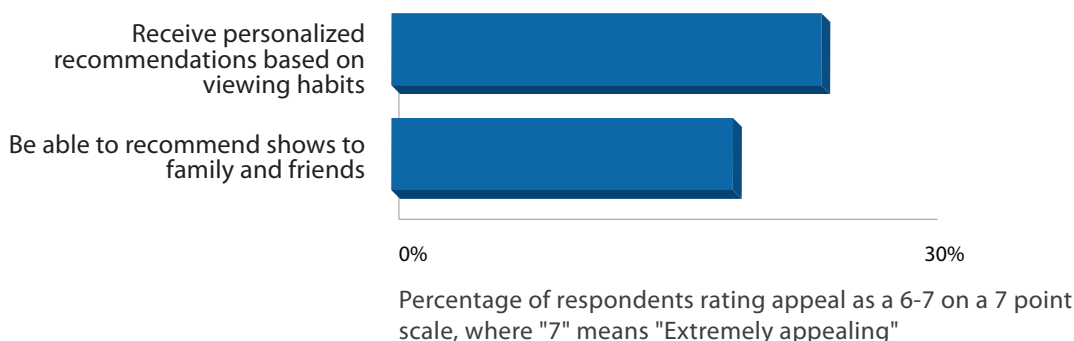
Algorithmic and Personal Recommendations

The electronic program guide and consumer electronics user interface hold significant potential as canvases for standard banner advertisements, which would market content such as video-on-demand. On a deeper level, upcoming programming can be advertised within the program guide itself, allowing programmers to pay a premium for this kind of positioning.

Beyond standard marketing, the way in which service providers, content owners, and consumer electronics manufacturers use demographic, contextual, and behavioral data to recommend content will be a significant trend.

Appeal of Recommendation Features

"How appealing would you find the following features for your TV?"



Source: *All Eyes on Video: U.S. (Q4 2009)*
Sample base: U.S. broadband households | © 2010 Parks Associates

Much of this targeted marketing will remain relatively simple—advertisers will designate certain programming and other advertisements based on demographics, geographic area, or “hot” content (television shows and movies that recently won major awards, for example). However, there are opportunities to generate recommendations based on viewer behaviors. While this kind of marketing must be pursued carefully so as not to overwhelm the user with privacy concerns, it has significant potential. Already, high percentages of consumers indicate receiving personal recommendations would be highly appealing.

At the same time that the industry is working to refine algorithmic recommendations, consumers are showing a growing interest in using social networking to both receive and make television-based content recommendations. Among the interactive TV features tested in multiple Parks Associates surveys, the ability to provide recommendations via an on-screen application grew the fastest, suggesting consumers’ social networking habits will transfer into a video environment. As is the case with the other emerging interactive features, interest in providing peer recommendations is highest among the youngest consumers, those who are already active in social networking, and those who multitask while watching television.

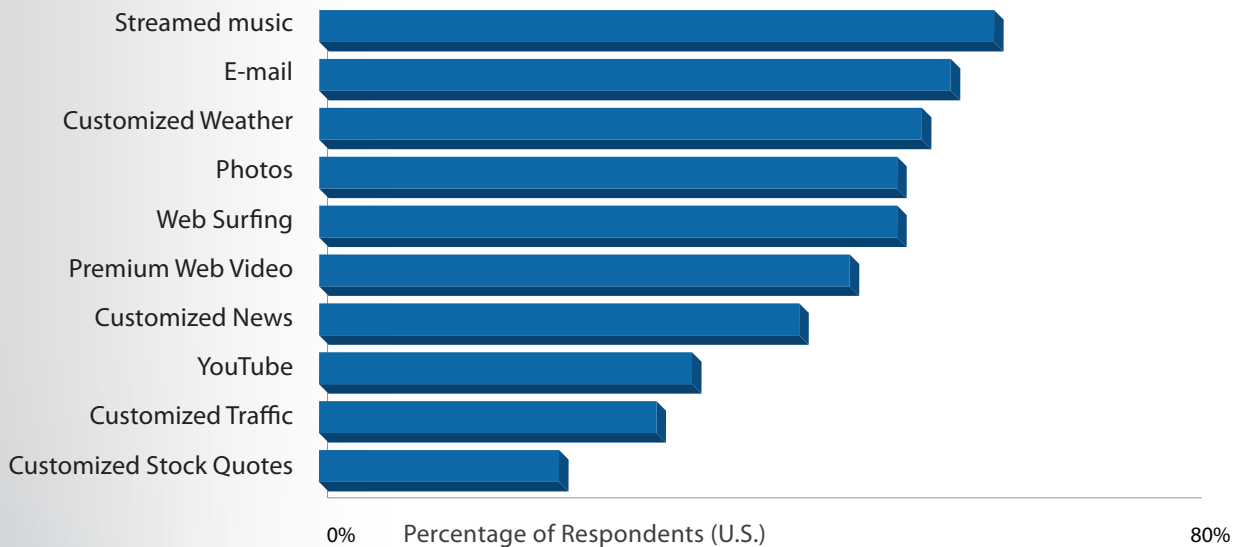
The User Interface in Mixed Media and Device Environments

The user interface is especially important for networked consumer electronics because the interface must be able to guide users across different devices and grant access to different types of files.

This cross-platform capability is particularly important now that connected consumer electronics are reaching beyond the network and into the cloud. To be successful, the user interface must dynamically present content from both local and Internet-based sources in a consistent and appealing manner.

Top Content Desired in a Connected Environment

Percentage of respondents finding STB-to-PC/Internet feature appealing



Source: TV 2.0: The Consumer Perspective | © 2010 Parks Associates

In addition to cross-platform compatibility, successful UI development requires the ability to incorporate metadata from different sources, including professionally and individually generated information. For example, studios and content producers may supply well-known metadata engines such as Rovi's AMG or Sony's Gracenote with data on artists, actors, and other key information while individual users create their own tags and ratings for digital media. The interface must be able to combine and then display this information, in a consistent manner, on the UI and in search results.



About the Author



Kurt Scherf studies developments in home networks, residential gateways, digital entertainment services, consumer electronics, and digital home technical support services. Kurt is the sole author or contributing author/analyst to more than 100 research reports and studies produced by Parks Associates since 1998.

Kurt joined Parks Associates following a career in political research and multi-tenant dwelling management. He earned his BA from The University of Iowa.

INDUSTRY EXPERTISE: Home Networks & Residential Gateways, Home Networking Media, Set-top Boxes, Connected Consumer Electronics, Consumer Storage, Media Server Hardware and Software, Consumers and Digital Entertainment, Television Services, Online Video, Digital Home Technical Support.

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The company's expertise includes new media, digital entertainment and gaming, home networks, Internet and television services, digital health, mobile applications and services, consumer electronics, energy management, and home control systems and security.

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