Widget Channel: Personalize, enjoy and share your favorite Internet experiences on TV

Intel® architecture has been essential to the development of the Internet and the proliferation of Web-based services and usage models. To bring Internet-based usage models to TV, Intel is developing Intel architecture-based system-on-a-chip (SoC) media processors designed to access video from multiple sources, including broadcast TV and IP networks. In addition to these new SoC media processors, Intel has collaborated with Yahoo! Inc. to provide a full-featured software framework named Widget Channel that allows TV viewers to enjoy rich Internet applications called TV Widgets while watching their favorite programs.[†]

Consumer Electronics (CE) platforms from Intel such as the Intel® Media Processor CE 3100 provide the robust processing performance and headroom needed to create a new consumer experience. Widget Channel provides a simple and user-friendly way to personalize, enjoy and share Internet content and services on TV by enabling multiple Internet-based applications to be displayed on the TV screen concurrently with video programming. The software framework is designed to run on a variety of connected CE devices including advanced DVD players, Blu-ray* players, set top boxes (STB) and integrated Digital TVs.

New Usage Models

By providing a development environment for Internet-based content and services, Widget Channel supports the adoption of new usage models and easily accessible Internet services on TVs.

Personalization

Individual consumers can find and select the content and services they prefer. Service providers can provide subscribers with continuous updates and recommendations about content of special interest to them.

Social networking

Tapping into the power of the Internet allows consumers to share content and connect with their existing social networks and communities on the Web from the comfort and convenience of the living room.
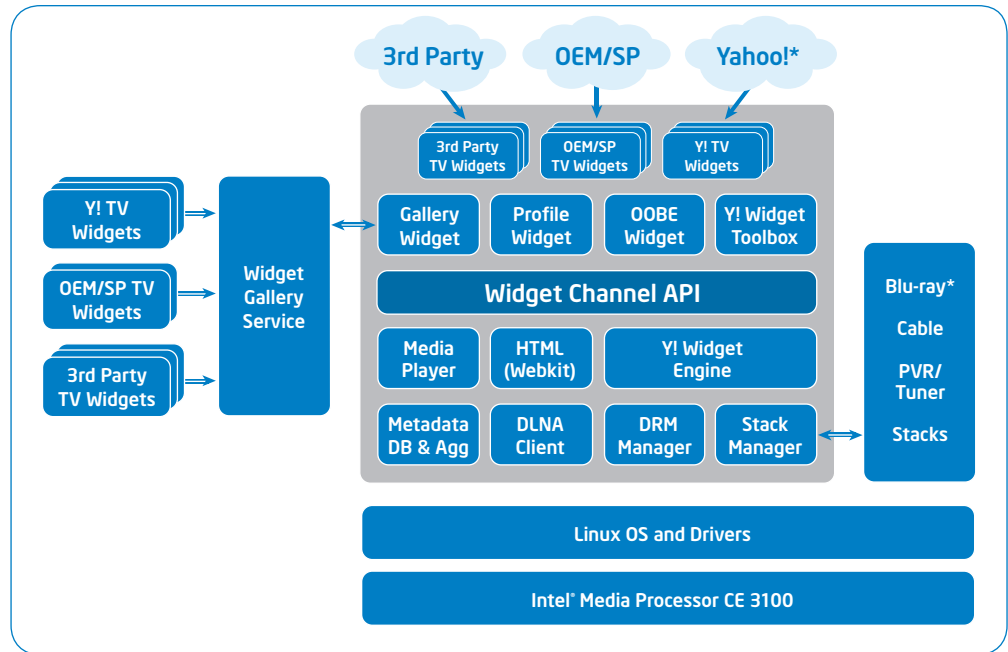

Figure 1. Key Components of Widget Channel Widget Channel includes Widget Channel API, TV Widgets, Gallery Widget, Widget Gallery Service, Media Player, Stack Manager, DLNA Client, DRM Manager, Metadata Database and Aggregator. A Gallery widget on the client device connects to a live Widget Gallery Service. Third party developers, service providers and OEMs can use Widget Channel API to develop additional TV Widgets.

Intel's Consumer Electronics Platform

Intel architecture is at the heart of hundreds of millions of PC-based internet clients, and has helped drive the proliferation of Web-based services and usage models. To help accelerate the delivery of interactive applications and Internet services to TV, Intel is harnessing the power of Intel architecture in a new line of SoC media processors. These highly integrated devices include a high-performance Intel architecture processor core, multi-stream high-definition video processing capability, integrated graphics and other functional units to help set top boxes and other CE devices run multiple widgets concurrently with TV programming. By combining a high-performance processor core with integrated graphics, hardware codecs, I/O and other functional units on a single chip, Intel is bringing the benefits of Intel architecture to consumer electronics. Thanks to Intel's world-leading process technology and manufacturing capabilities, Intel architecture-based SoC media processors can provide the application performance and integration required to meet CE requirements, with the capacity to keep pace with evolving Internet video standards on a consistent

hardware platform. Support for both broadcast and Internet video content helps to provide viewers with a seamless viewing experience, regardless of the video source.

Widget Channel

Intel has collaborated with Yahoo! Inc. to provide Widget Channel, a full-featured software framework that allows TV viewers to enjoy rich Internet applications called TV Widgets while watching their favorite programs.[†] Widget Channel takes advantage of the outstanding performance and media support of the Intel media processors and is powered by the Yahoo!* Widget Engine, a fifth-generation applications platform. The software framework helps CE original equipment manufacturers (OEMs), service providers, content service providers (CSPs), Web developers and advertisers quickly and affordably develop and deploy TV Widgets. The user interface is designed for TV-centric viewing and easy control and navigation using the TV's remote. Widget Channel complements traditional TV viewing and avoids the usage model issues that have plagued Internet-based interactive TV services in the past.

Figure 2. The user interface is designed for TV-centric viewing and easy control and navigation using the TV's remote. Widget Channel complements, rather than distracts from, traditional TV viewing, thereby avoiding the usage model issues that have plagued Internet-based interactive TV services in the past.

Widget Channel is an essential building block that provides a set of key capabilities:

- Rapid development of TV Widgets—small Internet applications designed to complement and enhance the traditional TV-watching experience and bring content, information and community features available on the Internet within easy reach of the remote control.

- Industry standards-based in-home connectivity that helps TVs to access digital content stored on PCs and other connected consumer electronics devices.

- A TV-centric user interface that gives developers a consistent canvas for publication, with the flexibility needed for easy brand customization and differentiation.

- A cross-platform application programming interface (API) for TV Widget development, based on industry standard technologies.

- Built-in support for security, privacy and parental controls.

Designed to enable ease of development, key components of Widget Channel include Widget Channel API, TV Widgets, Gallery Widget, Widget

Gallery Service, Media Player, Stack Manager, DLNA Client, DRM Manager, Metadata Database and Aggregator (as shown in Figure 1). Widget Channel API enables developers to use JavaScript,* XML* and HTML* technology to write TV Widgets for the platform, extending the power and compatibility of PC application developer programs to TV and related CE devices.

TV Widget

Widgets are small Internet applications designed to complement and enhance the traditional TV watching experience and bring content, information and community features available on the Internet within easy reach of the remote control. Widget Channel makes it possible for any developer to meet the growing demand for this new class of application. Each TV Widget is a self-contained JavaScript, XML or HTML-based application that runs in a contained instantiation, thus enabling predictable and reliable operation. TV Widgets use the Internet to connect to the same back-end Web services that support conventional browser-based applications. These Web services can deliver a rich array of content and services to the TV Widgets. The user interface provides a convenient way of accessing Web-based information and other services on TV while concurrently watching television or another video stream.

Gallery Widget

The Gallery Widget is a key component of Widget Channel that allows consumers to download new TV widgets to their CE devices. It is a special-purpose platform widget on the CE device that connects to a back-end Widget Gallery service, and which manages TV Widget downloads to the CE device. The Gallery Widget can be used to help ensure only trusted TV Widgets are downloaded. It can also present viewers with the selection of TV Widgets that are available to download and run on a particular client device based on its hardware capabilities.

Widget Gallery Service

The Widget Gallery Service handles back-end services for reporting, storage, security and signature verification. It provides the source for differentiated services and can be constantly updated. The Widget Gallery Service provides CE OEMs and CSPs with a control point for the administration of business policies as well as services from third-party developers. Widget Gallery Service can be used to operate one or more Widget Galleries. One initial Widget Gallery is expected to include a diverse collection of TV Widgets from Yahoo! Third-party developers, CSPs and CE OEMs can use the Widget Channel API to develop additional TV Widgets.

Benefits for CSPs and CE OEMs

Widget Channel API provides a consistent software interface and development canvas for CSPs, Web developers and advertisers to present their content across a broad range of connected CE devices. CSPs can use the Widget Channel API to move existing services to a TV-centric platform that can be adopted by many CE OEMs across multiple generations of products, thereby reducing or eliminating the cost and inefficiency of custom development.

Widget Channel also provides CE OEMs with a quick time-to-market solution for the development and deployment of interactive Internet capabilities on their CE products and for integrating local applications with broadband content. Using the software framework, OEMs can select from a growing pool of branded TV Widgets, while providing a platform user interface that can be used across multiple product segments and platforms, ranging from digital TVs to set top boxes to DVD and Blu-ray players. Intel media processors provide the performance and flexibility to support these new usage models, including content-aware TV Widgets that can deliver relevant advertising and interactive e-commerce services designed to complement TV programs and video content.†

Available to Developers

Intel is working closely with CE OEMs, CSPs and Web developers to create TV Widgets based on the Widget Channel API, taking advantage of industry-standard JavaScript, XML and HTML technologies through a Widget Development Kit (WDK). Licensed third-party developers can use the WDK to create applications and services for viewing on TVs, or to move applications to the TV from the PC viewing environment.

The Intel Platform Advantage

Using Intel's world-leading process technology and manufacturing capabilities, Intel architecture-based SoC media processors provide the application performance and integration needed to support new services. Widget Channel is designed to accelerate the delivery of these services to TV. Together, Intel architecture and Widget Channel provide a CE platform built from the ground-up for Internet-connected consumer electronics.

For more information, visit the Intel Consumer Electronics home page at: www.intel.com/go/consumerelectronics