



Using Widgets to Monetize Web-Enabled TV - The Service Provider's Perspective

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Setting the Stage

Consumer broadband connections have long terminated at or near the home PC, thus physically and psychologically demarcated from the living room home entertainment system and the primary home TV. Within the next few years, this will change...forever.

Today, all major CE vendors are deeply involved in planning and designing web-enabled video platforms. In 2010, retail shelves will feature a wide variety of “connected TVs,” priced from mid-end (around \$1,500) to high-end (\$2,500 or more). Though web-enabled TVs have been the province of hobbyists and others willing to entangle themselves with kits and adapters, very soon the experience will be available for all to enjoy.

The question for TV Service Providers is not “if?” to embed Internet connectivity in new video platforms but “in what form” to do so?

Given such trends, TDG believes that web-enabled TV is no longer just a possibility, but an inevitability. It will arrive either directly, embedded within the TV itself, or indirectly via ancillary platforms such as Blu-ray players, DVRs, game consoles, and set-top boxes. And once it gets there, it will fundamentally alter the business of home video.

The question for TV Service Providers, then, is no longer “if?” to embed Internet connectivity in their set-top boxes but “in what form?” to do so. Operators must identify those solutions which best optimize the web-enabled TV experience while encouraging consumers to spend more money on new services and applications. In doing so, operators must make certain to avoid simply “dumping the Internet” on the TV. A qualitative distinction, perhaps, but one the end-user will appreciate and which will serve to drive customer retention and revenue.

This paper will present TDG’s latest primary consumer research on consumer demand for web-enabled TV-based applications in general and from PayTV Service Providers in particular. The paper also discusses the advantages of a widget-based approach in delivering such services and the benefits that PayTV operators can expect when offering a widget-based interface on their web-enabled set-top boxes.

Home Video Services in the Age of Internet TV – Competitive Realities

PayTV operators are facing the most challenging environment of their 50+ year history and it is about to get significantly more competitive. Once the Internet arrives at the TV, the “established order” of the home video value chain will be fundamentally and forever altered. From content creation to aggregation and distribution, the “business of TV” is set to be redefined.

Change, by its very nature, is least well received by incumbents – those who enjoy a privileged stake in the status quo. In the world of home video, incumbents are those PayTV operators who, long atop the food chain, have benefited from both a combination of proprietary content and consumer-premised equipment (CPE) which controls the flow of video services to the home TV. Even today, PayTV operators manage the content, the conduit, and the consumer video relationship. It is not surprising, then, that they are seen by consumers as the default choice for new home video services.

This arrangement consequently gives incumbents a number of advantages over competitive upstarts looking to lay claim to the home TV. Defensively, this provides the operator a natural barrier against competitive threats. Offensively, this provides a solid foundation upon which to launch new services.

Either way, it means incumbent PayTV providers are in the best position to introduce and leverage web-enabled TV services.

Then again, should an operator choose not to take advantage of this opportunity, rest assured a competitor will. In fact, there is no better way to actualize one's "dumb pipe" status than for PayTV operators than to forfeit control of Internet TV to a competitor.

In this new world of web-enabled TVs, the "local cable company" is but one of several entities capable of providing TV and video services to the home. The list of potential competitors is diverse and includes consumer electronic OEMs, over-the-top video providers, and other PayTV providers looking to exploit new web-enabled solutions and services. We begin the discussion with CE OEMs.

CE OEMs

Some five years ago TDG predicted that in by 2010, most CE OEMs would offer mainstream platforms that featured embedded support for Internet connectivity. This prediction seems to have been prescient. As is widely known, the vast majority of CE OEMs are set to launch mainstream video platforms not only featuring embedded Internet connectivity but, in many cases, branded third-party video content.

Sony, for example, announced that by 2010 close to 90% of its CE platforms would be Internet-enabled.¹ Enabling web connectivity, however, is just the beginning of a much broader effort by Sony to deliver a variety of video content to each and every connected video platform by going over-the-top (OTT) of incumbent PayTV operators and establishing a direct fee-based relationship with the end user. And Sony is not alone. LG, Samsung, Toshiba, and Vizio (to name but a few) are set to roll a variety of web-enabled video platforms with branded video services from the likes of Amazon, Blockbuster, and Netflix. CE vendors hope to share in the revenue generated by these new services – revenue (and profit) that may have gone to the PayTV operator in the form of video-on-demand and pay-per-view fees.

Over-the-Top Video Providers

Not surprisingly, many web-based video aggregators are now looking beyond the PC, hoping to use home networks and Internet-enabled consumer electronics to push their content directly to the living room TV. These OTT competitors come in two varieties, those looking to supplement an existing PayTV service and those looking to replace it. The former includes companies like Apple and Vudu which, while not positioned as a TV replacement service, are certainly hoping to scrape revenue from value-added PayTV services such as video-on-demand (VOD) and premium movie subscriptions (e.g., HBO). The latter includes companies like Sezmi which, via proprietary hardware and subscription services, is explicitly positioned as a PayTV alternative. Regardless of the specific offering, the target of these efforts is clear – the revenues and profits of incumbent PayTV operators.

To quantify the significance of this opportunity (or threat, depending upon one's perspective), in January 2009 TDG conducted primary consumer research to determine how many consumers are likely to cancel their primary TV service for a broadband TV service that features a customized 20-channel TV line-up, on-demand movies, and specific online video content. The results were noteworthy. Approximately 45% of adult broadband users are to varying degrees likely to replace their current PayTV service with an OTT video service at monthly

The inclusion of Internet applications and content within the TV experience is no longer a possibility; it is an inevitability.

¹ From CEO Howard Stringer's presentation on Sony's mid-term corporate strategy given in Tokyo on June 26, 2008 (http://www.sony.net/SonyInfo/IR/info/Strategy/pdf/presen_01.pdf).

rate of between \$25 and \$55. If you think such models are unsustainable, you are mistaken. Even today, services such as Kylin TV and SkyAngel have each signed up in excess of 100,000 subscribers at similar price points and are nearing break-even.

The OTT threat is significant, even if it has yet to fuel a mass exodus from traditional PayTV services. The most immediate threat to incumbent operators is actually other PayTV providers, especially those already rolling out web TV applications.

Other PayTV Operators

In the U.S., incumbent phone providers Verizon and AT&T went to the expense of laying fiber-to-the-home and fiber-to-the-curb (respectively) and are now armed to deliver a variety of free and fee-based web applications directly to the TV. While cable and satellite operators have been slow to progress on this front, both Verizon and AT&T are moving quickly to take advantage of their high-powered networks to add new levels of interactivity and web-based applications to their TV experiences.

These market dynamics – combined with growing consumer use of and demand for Internet-enabled media platforms – have created a competitive context in which PayTV operators have little choice but to embed networking support in their set-top boxes. Simply “including” Internet support, however, will not be enough to fend off competitors, much less grow revenue. PayTV providers must own the Internet TV experience – that is, set the standard by which all other TV-based web services are evaluated, continually expanding the service roster to defend against new competitors looking to own the default interface through which all content (including PayTV channels and services) are accessed. For these reasons, operators must embrace the concept of web-enabled TV and move quickly to own the experience. This is predicated, of course, on equipping set-top boxes with the right web solutions.

Identifying the Right Solution

For PayTV operators, survival (much less success) means identifying and supporting the most compelling web TV applications and presenting them in a simple, easy-to-use format. Yes, the experience must be robust, but merely “dumping the Internet on the TV” will not work. Unwarranted complexity can kill the deal (remember WebTV?), while an innovative interface can push surprising levels of functionality onto everyday devices without the slightest complexity.

For PayTV operators, selecting the right solution means doing your homework, evaluating:

- The nature of the experience delivered relative to spend (value or cost vs. benefit);
- The impact on revenues and profits (and not just from hardware sales); and ultimately
- Long-term brand integrity, which can itself be transposed into the visual experience and thus set the stage for new service relationships and additional revenue.

To ensure that the outcome is positive (and convincingly so), PayTV operators must assess a number of specific variables, the most important of which include:

- The interface – the way in which “the Internet” is presented to the consumer and incorporated into the TV experience;
- The applications – what the “power of the Internet” actually brings to TV viewing and how operators can monetize those most compelling; and
- The solution – the types of hardware and software required to deliver high-quality, high-demand TV-based Internet applications.

Simply stated, to enable properly a web TV experience – one that engages consumers and satisfies advertisers – PayTV operators must seamlessly incorporate the Internet – its complexity, its content, and its conveniences – into the TV viewing experience. It must be integrated with the TV's native guide as opposed to being switched; it must be extremely easy to use with a traditional remote control; and it must avoid the use of a browser and URLs. Only then can you deliver the benefits of the Internet without the complexities of the Internet. Simply stated, it must be "TV simple." We'll begin with a discussion of the interface.

The Right Interface – the Widget Toolbar

As you are likely aware, attempts to deliver the Internet to the TV are not new. We've seen a variety of fits and starts in this space, none of which has successfully diffused beyond a handful of early adopters. This is very similar to what has transpired in the mobile web space: solutions and services were available for years before consumers finally picked up on the message. Why? Let's be honest: if you were asked to point to one factor that "changed the game" for mobile web usage, what would you say? Chances are you would point to the introduction of Apple's iPhone.

In the not so distant past, web-enabled mobile devices were bulky and complex to use; applications focused on the business user. Regardless of marketing and messaging, mainstream consumers were not buying it. The mobile web was neither perceived as desirable nor cool, meaning consumers had no problem living without it. Not surprisingly, mobile web usage languished, even as PC-based web usage evolved from information and productivity applications to digital media.

Enter Apple's iPhone and the widget-based interface.

The iPhone as Proxy for TV-Based Widgets

The arrival of the iPhone heralded a tipping point in how consumers perceive and use the mobile web. Why? Because of its ingenious use of *widgets*, small icons that when clicked immediately launch a specific application without requiring the use of a web browser or URLs. In lieu of a browser-based interface, Apple chose widgets to serve as graphical references for specific web-based applications. Though widgets themselves are hardly a groundbreaking innovation – from a consumer perspective, they are just repurposed PC icons – their use as a mobile web interface encouraged usage and subsequently changed how we think about the Internet as a non-PC medium. Within a very short period of time, mobile web usage in the U.S. grew from virtually nothing to an audience of 41 million weekly users, more than double the number from only one year ago.²

The relevance of this discussion? TDG believes that the iPhone's implementation of widgets provides an insightful lens through which to view the future of widget-enabled web TV; an exemplar by which PayTV operators should go about introducing consumers to the experience of web-enabled TV.

The Consumer Responds

In December 2008, TDG queried a random sample of 2,000 adult broadband users in the U.S. regarding the value of a "widget toolbar" interface for TV-based web applications. The results were striking, with more than three-fourths of consumers responding positively. Rarely in TDG's research has a new product or feature received such strong support. It seems very clear that consumers are ready for web-enabled TV and understand the value that a simple widget-based interface would deliver.

² "Mobile Internet Becoming a Reality," comScore press release, March 16, 2009.

As was the case with mobile web usage post iPhone, once consumers get a taste of how easy-to-use and enjoyable widget-based web TV applications can be, what consumers do on their TV – and the role that it plays within the home – will change, forever and for good. Both the consumer and the operator will find the simplicity and usability of widget-based applications to be addictive.

One specific benefit for both consumers and operators is the widgets ability to reduce the complexities traditionally associated with engaging the Internet. By providing a simple, easy-to-use means of “packaging” specific aspects of the Internet for presentation on the TV, widgets avoid the complexities associated

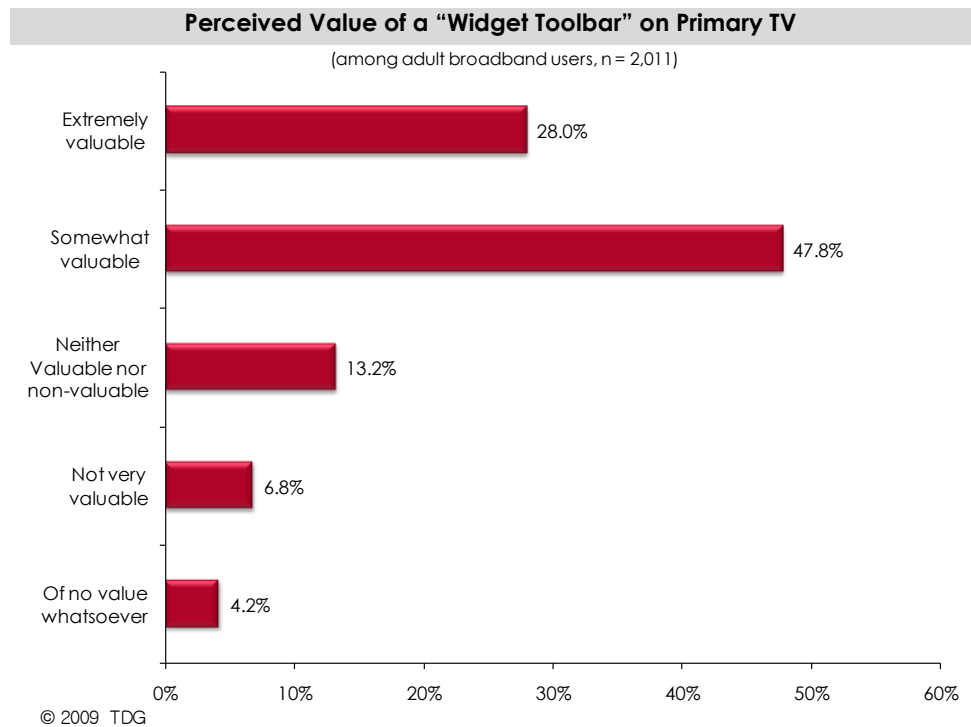
with simply “dumping the Internet” on the display and requiring consumers to interact with a PC-like browser or URLs – a sure-fire death sentence for any web TV effort.

The interface is, of course, just the first variable in a three-part equation – an oft overlooked and important part, for sure, but still only one element. The second variable pertains to types of widget-based applications that an operator chooses to offer its customers.

As this market takes shape, specific applications will rise to the top as being more relevant or enjoyable for consumers. These are the applications that PayTV providers must immediately own – they hold the greatest value both in terms of “stickiness” and long-term revenue opportunities. It is thus imperative that TV Service Providers identify the most relevant widget-based applications; those which consumers find most compelling. It is to this subject that we next turn.

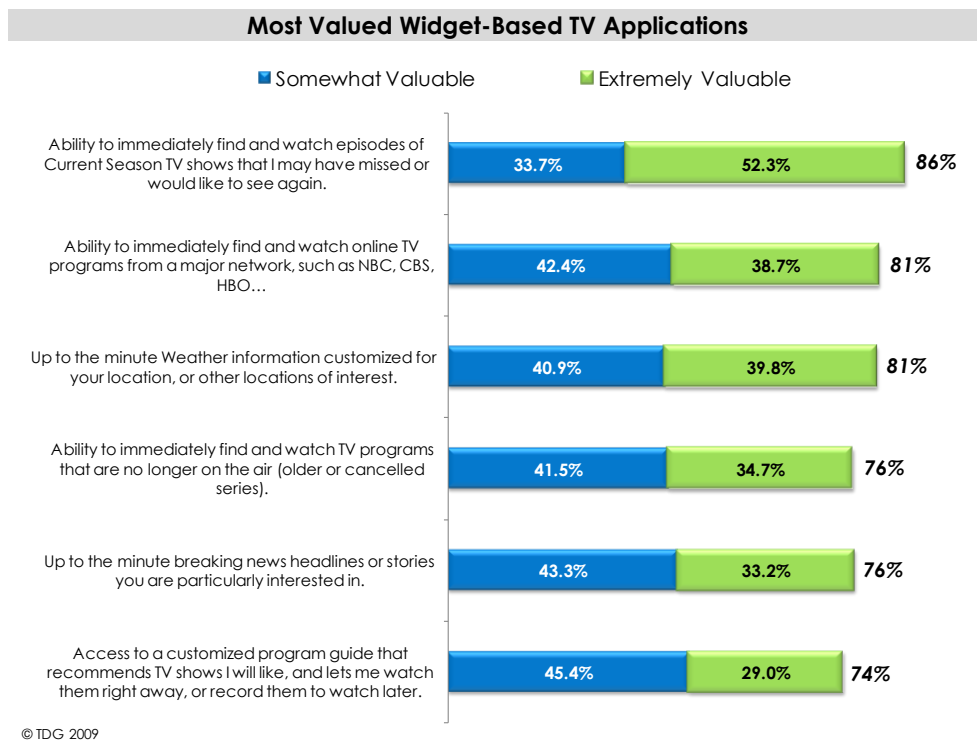
The Right Applications – More than Just On-Demand Information

TDG recently tested 26 different widget-based TV applications to assess their general value and identify the individual apps consumers most wanted to be featured on their widget toolbar. In terms of the types of applications evaluated, primary categories included integrated web/TV video apps; online photo and music services; real-time information updates (e.g., news, weather, sports, and stocks); advertising-related inquiries and purchases; and a variety of “new media” applications such as simultaneous chat and social networking. The table below lists in descending order those applications that placed in the top value quartile (that is, those apps which 75% or more of consumers ranked as either “somewhat valuable” or “extremely valuable”).



The results of the research were quite telling. For example, while simple “information push” applications such as on-demand weather and news rank highly, it is the metadata and media-intensive applications that consumers consider most valuable.

Of the six applications that achieved at least a 75% value rankings, only two are simple “information push” applications – in this case, on-demand weather ranked third and on-demand news fifth. These are what TDG refers to as “default” or “entry-level” applications (apps which will be included in every widget-enabled video platform, even the most basic). The remaining four are video-related applications, each of which requires a powerful media processor capable of, among other things, robust metadata management (search and discovery of content, recommendation engines, dynamic program guides, etc).



When asked to limit their list to only their “Top 5” favorite widget-enabled apps, respondents replied similarly. Approximately two-thirds of consumers selected a “virtual DVR” widget to be in their “Top 5,” followed by approximately one-half (49%) who selected on-demand movies. As with general value rankings, only two of the six most valuable were information-push apps (weather and news) while four were video-specific apps. This runs contrary to the today’s “received wisdom” regarding TV-based web applications; that simple apps like weather or news updates are sufficient for widget-enabled platforms. Then again, it is not at all surprising to TDG: prior research on TV-based Internet apps produced similar results.

Framed another way, regardless of the array of applications tested, those perceived as most valuable

TV-based web functionality is most valued as a tool for enabling a better TV experience, not necessarily for Internet-specific applications such as social networks or chat services.

tended to center around enhancing the current TV and movie experience as opposed to applications that were more overtly “Internet” in nature. This insight is very important for any company – operator or solutions vendor – attempting to determine which applications their set-top boxes must support.

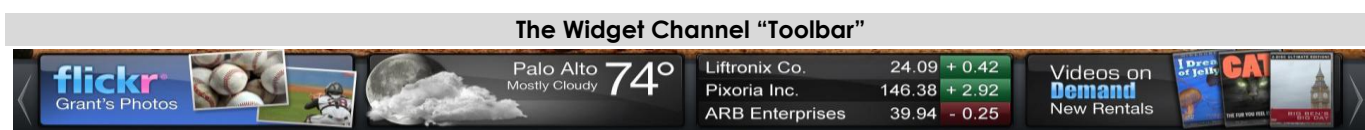
To complicate matters for the Service Provider, the set of widget-based applications considered “in demand” will rapidly outstrip entry-level applications stores and bargain-basement hardware. It is for these reasons that operators must identify a suitable “widget library” solution that features a wide variety

of TV-ready applications. An excellent example of such a solution is the **Widget Channel** software framework.

Co-developed by Intel® and Yahoo!®, the Widget Channel offers an ever-growing variety of widget-based web applications from which consumers can select. It also includes an elegant interface that is intuitive for the consumer and ready-made for the Service Provider to implement. As seen on the below, the UI (when activated) only takes a small part of the viewing surface either at the bottom of the screen or as a sidebar. The user can easily navigate the interface using simple remote control commands.

In the end, consumers will demand access to such a wide range of TV-based applications. PayTV operators that fail to deliver a robust and constantly-updated “widget gallery” will not only be unable to keep pace with emerging web TV competitors. They will forfeit additional revenue sharing opportunities associated with the more robust widget-based applications.

If Apple's experience is any indication, the variety of widget-based TV applications demanded by consumers will rapidly exceed expectations.



As previously mentioned, consumer demand will quickly outstrip the capacity of bargain-basement hardware and app stores. It is about delivering high-quality in-demand applications that keep up with consumer appetite. Underestimating this appetite will render new set-top boxes obsolete years before originally planned, leading to millions in stranded capex and the inability to monetize emerging widget applications. As will be discussed, this makes initial set-top design decisions paramount; including the right hardware and software is critical to platform longevity and revenue potential.

New Widget-Related Revenue Opportunities

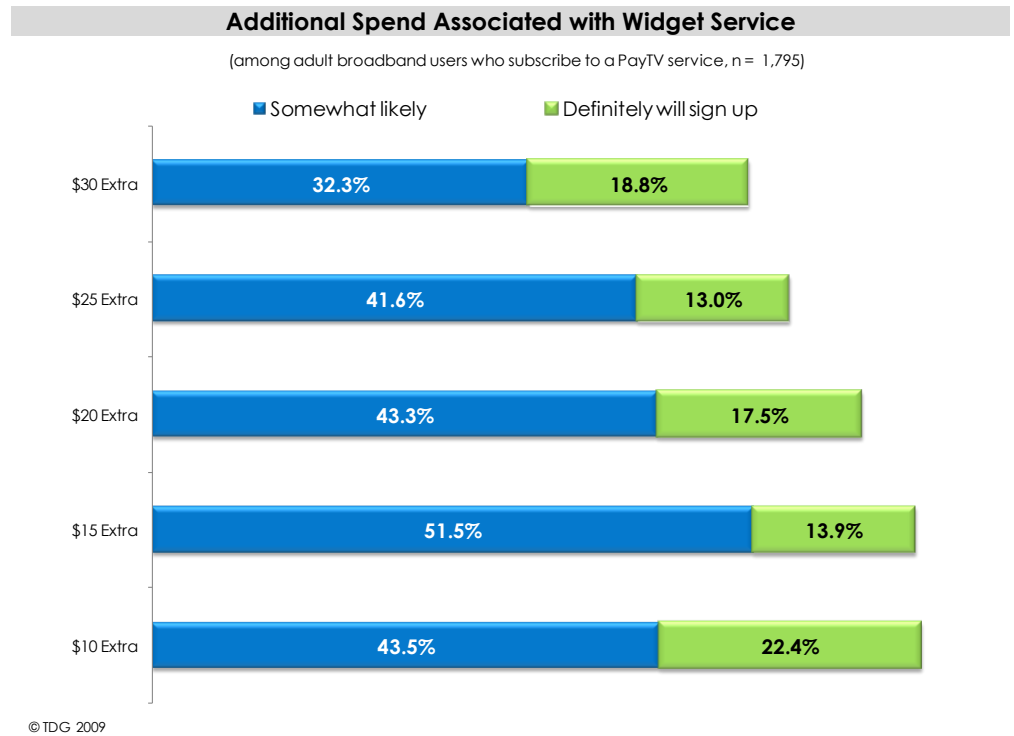
By incorporating a “gallery” solution such as the Widget Channel, PayTV providers will have the flexibility to respond to market pressures and evolving consumer demand by adding or expanding the types of applications supported (assuming, of course, that the hardware has appropriate headroom to support such expansion). With this capacity onboard, not only will the platforms be more appealing to consumers, but they will also drive greater spend. A properly-equipped widget-enabled video platform can create a variety of new revenue opportunities, both in terms of greater ARPU and from ongoing app-related revenue sharing.

While adding Internet connectivity to the set-top box was once considered taboo for incumbent PayTV providers, within the next few years it will become a mainstream expectation – an “entry level” requirement. More innovative operators, however, recognize that when more fully exploited, a web-enabled set-top box can be used as a key differentiator, one capable of thwarting new competitors before they gain a foothold on the living room TV. As well, incorporating Internet content and a widget-based interface can actually generate additional revenue for PayTV operators (thus increasing ARPU). In other words, a web-enabled set-top box offers compelling defensive and offensive advantages.

Increased APRU

A key objective of TDG's recent consumer research focused on quantifying the revenue potential associated with delivering widget-enabled TV applications. Assuming operators provide the types of widget-based applications consumers find most desirable (those previously defined), end users are comfortable spending a few extra dollars per month. In other words, providing the right set of widget-based web TV applications will actually increase average revenue per user (ARPU).

As illustrated on the right, 66% of PayTV subscribers who subscribe to a broadband Internet service are likely to sign up for a TV-based widget service for an additional fee of \$10 per month. Even at \$30 extra per month, 51% are to varying degrees likely to sign up. Given this data, TDG is extremely confident that a sizeable segment of consumers would pay at least \$10 per month for TV-based widget service that enabled their favorite applications (as previously identified). The level of interest is viewed as sufficiently compelling that



Pay TV providers should strongly consider implementing a widget-enabled application library and packaging it with their TV offerings. The data is simply too compelling to ignore.

Value-Added Revenue Share

Second, a well-equipped web-enabled set-top box presents a number of unique revenue-sharing opportunities that a today's set-top boxes are incapable of enabling.

A variety of third-party vendors are looking for opportunities to reach the consumer via the Internet, anywhere that connection may be. Operators that own and manage these web-connected gateways are viewed as a means to that end, so negotiating as many points of presence as possible is a key motivation for these application providers – so much that they are willing to share revenue with those who own these home gateways. A web-enabled set-top box thus creates a variety of new incremental revenue prospects for PayTV operators, a list that grows as operators add new applications to their widget library. As in the mobile space, developers will flock to the widget libraries that can reach the most consumers, giving Pay TV operators a leg up on the competition and ensuring a ceaseless flow of new applications and revenue opportunities.

Ad-Related Revenue Opportunities

With a web connection to the TV and right the widget-based interface, Service Providers can enable the type of personalized, dynamic advertising to which consumers will respond and for which advertisers will

pay. How? By capturing detailed information about the TV and advertising viewing experience that can be mined in real-time to assign specific ads to specific consumers.

Creating a more compelling advertising experience – and the ability to monetize this capacity – is based upon being able to collect better information about viewers. In the past, the best an operator could hope to achieve in this regard is collecting simple demographic data (e.g., age, gender, income, and location) and limited behavioral information. Why? Because the set-top platform did not have the processing power, the memory controller, and the visual computing power necessary to enable this level of real-time analytics. In other words, operators are constrained by the “lowest-common denominator” set-top boxes they currently have in field.

Today, new technologies offer substantial improvements in all three of these areas, meaning tomorrow's set-top boxes can deliver the type of advanced advertising for which leading agencies and their clients are searching. When asked what they could do with these new ad technologies, one leading advertising guru stated very simply, “Dramatically improve our yields.” That about sums it up!

When armed with the right hardware and software, web-connected set-top boxes will not only deliver a more robust TV experience; they will support best-in-class advertising applications to better target consumers. Imagine being able to collect this type of information during viewing hours, then processing this data and dropping a “basket” of customized ads onto the set-top box overnight. The next day, these customized ads are presented to consumers in the context of enjoying their favorite content or applications.

Remember, one core obstacle to delivering truly personalized advertising is having access to non-personally identifiable information about the end-user and the ability to process that information in real time. The value for viewers is equally compelling: ads are more interesting and more relevant to their individual desires and needs. In the end, this is about bringing the dynamics of Internet advertising into the TV environment in a way that impresses advertisers and engages viewers by improving audience targeting – be it behavioral, demographic, or contextual.

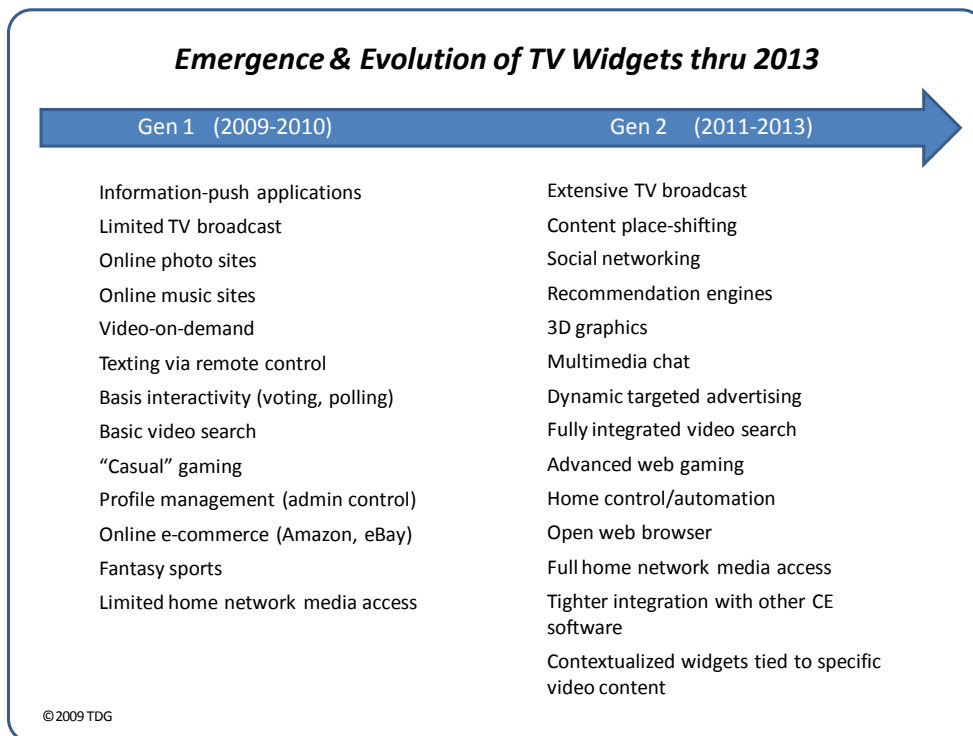
The Right Solution – A Powerful Media Processor

Yes, the prospects are immense. But there is one caveat – the range of web-based TV applications enabled is necessarily limited by the hardware and software selected. A low-end processor, for example, will only support low-end applications (those least likely to be compelling to the consumer, least likely to differentiate one's products, and least likely to drive new revenue opportunities). A robust processor, on the other hand, will have the horsepower and headroom to support a wide variety of bandwidth-intensive applications. For example, it can simultaneously decode video content from a multitude of sources. From the consumer's point of view, this means switching seamlessly between broadcast and broadband programming – on the fly, with no need to go outside TV “channels” or an ancillary source. As well, this means the ability to access to an integrated program guide which, regardless of the content source, provides the listings and recommendations that consumers seek, on demand.

Essentially, the right CE media processor will:

- Have the horsepower to support today's media-rich applications;
- Have sufficient headroom to support tomorrow's bandwidth-intensive applications;
- Switch seamlessly between broadcast and broadband media content (or even do both simultaneously); and
- Support existing and emerging industry standards for Internet (no premature obsolescence).

Given the wide range of applications that web-enabled TV solutions must support, the limited capacity of entry-level processors will quickly be exhausted, either overcome by individual application requirements (e.g., metadata management for multisource on-demand search and discovery) or multiple simultaneous applications (e.g., handling both broadcast and Internet video content so that the source of the video becomes irrelevant and the on-screen experience is integrated). In either case, usage models will quickly exceed the capabilities of most hardware and software solutions. Without the right processor, such “behind-the-scenes” work, instead of being seamless and transparent to the end user, complicates the viewing experience. The figure on the right illustrates TDG’s expectations as to how the TV widget application space is likely to evolve during the next few years. Given that Service Providers expect their set-top boxes to be in use for up to five years, chances are their platforms will need to support these applications during this time horizon.



Choosing a bargain-basement processor for Internet-connected set-top boxes could be a major mistake for any TV service provider. If a TV service provider chooses a processor that is not sufficiently future proofed – that supports only a handful of today’s basic web-enabled TV apps – it will be unable to handle the more compelling applications that are certain to emerge, that consumers are certain to want, and that are certain to generate the greatest revenue sharing opportunities.

Remember, software and firmware upgrades are useless if the processor cannot support the apps.

It is thus imperative that operators select the correct components for these new web-enabled set-top platforms, especially the right media processor – one with the power to support an evolving array of applications. The Intel® Media Processor CE 3100 is an excellent example of this type of solution. The CE 3100 is optimized to support all Widget Channel applications and, unlike most media processors, is capable of rendering widgets in high-definition, a simple but effective means of enhancing the usage experience. The CE 3100 has the performance and headroom needed to handle evolving consumer usage models. As well, the CE 3100 can come with the Widget Channel software onboard, thus ensuring rapid deployment cycles for set-top vendors and giving operators time-to-market advantages that will prove critical in this dynamic market space.

For many Service Providers, it is difficult to think about applications beyond the life cycle of a set-top box. In other words, the types of applications that can be delivered in any particular 5-8 year period are necessarily constrained by the capabilities of the set-top box. This model worked fine as long as consumers did not demand experiences that transcended this capacity.

In the Internet age, however, consumers are constantly exposed to all sorts of non-TV video experiences (new content, new interfaces, new levels of interactivity, etc.) which inevitably impact their expectations of the TV platform and their TV service. The viewing platform for Internet video has been the PC, a platform with a much more rapid replacement cycle than an operator-subsidized set-top box. Why is this important to Service Providers? Because web-enabled set-top boxes, if not properly future proofed, will become obsolete much faster – neither capable of supporting the applications that consumers demand or tapping into emerging revenue sources that operators desire. In other words, a set-top box that once enjoyed 5-8 years in the field is now obsolete in 2-3 years – not a pretty picture for Service Providers.

As previously noted, software and firmware upgrades are useless if the media process cannot support them. Shorter STB life spans, premature obsolescence, additional capex and opex, not to mention consumer and investor frustration – these are the consequences of choosing a bargain-basement media processor. When it comes to web-connected set-top boxes, you get what you pay for, meaning that choosing the right hardware and software partners when first designing the box is crucial.

The irony, then, is Service Providers end up spending more to support these less-expensive solutions. They are either forced to replace the STB sooner than expected, or they leave them in the field, unable to support new revenue-generation applications (thus leaving money on the table).

Conclusion

To successfully incorporate the Internet into the TV experience, consumers will likely turn to operators they trust most when it comes to living room media. In other words, they will turn to their local TV provider, no doubt a reflection of their long history of delivering compelling TV services.

In order to take advantage of this loyalty, PayTV operators must deliver web-enabled experiences that are:

1. Easy to use;
2. Enable a compelling suite of applications and content (both now and in the future); and
3. Deliver the benefits of the Internet without its complexities.

The optimal solution, then, requires the right balance of interface, applications, and hardware. Operators who fail to deliver all three fronts will be incapable of enabling, securing, and delivering the types of web-enabled TV experiences that consumers expect. Consequently, operators that enable a minimal feature set will be at a competitive disadvantage and ultimately risk alienating their consumer base and damaging their brand. On the other hand, operators who offer the right combination of interface, apps, and hardware in their new set-top boxes can deliver a seamless, uncomplicated, and compelling TV experience, both today and tomorrow. Solutions such as the CE 3100 with the Widget Channel can deliver precisely this type of experience, as well as creating additional retail spend and long-term revenue opportunities for TV Service Providers.

Success in the emerging Internet-enabled TV space means making the right decision at the right time. The right time? Now. TDG strongly believes that the tipping point for web-enabled TV is unfolding and will manifest itself more completely in the next 12-24 months. The right decision? Arming new Internet-enabled set-top platforms with the right components to withstand a very aggressive consumer usage curve, one that will rapidly transcend basic web-enabled TV solutions. It only remains to be determined which companies will best exploit this opportunity, stepping up to the plate and owning the web-enabled TV experience.