



INTERNET TV

Internet Connectivity for Your Entertainment System

What is Internet TV?

- One Definition: Video delivered over the Web to your TV
- Newer Definition: Video and Information delivered
- Much more than just watching archived movies and TV shows
- “Cloud” services are enabling smart TV’s to become portals for vast libraries of entertainment
- Dynamic changes in the works - features and capabilities are expanding very rapidly

Why Connect to Your TV?

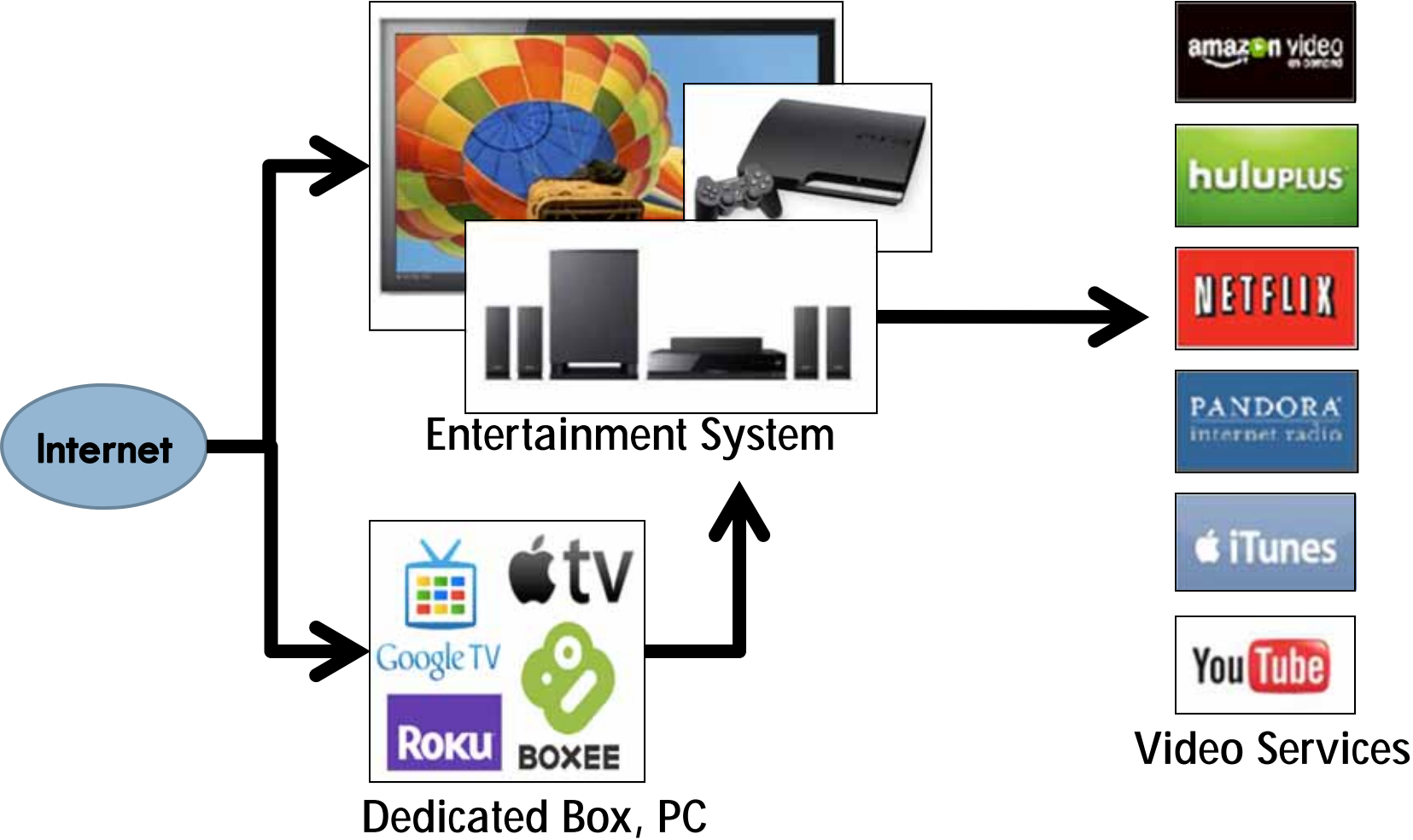


- Access to more entertainment programming (tens of thousand versus hundreds)
- Watch “when you want” versus a “fixed schedule”
- Immediate access to a wide range of info from the “cloud” including news/sports/weather, etc., etc.
- Video conference on large screen TV (Skype TV)
- Ability to interact with others while watching (social networking)
- New features are only limited by imagination

Are We “Cutting The Cord”?

- *“Cord-cutting refers to the phenomenon of people dropping pay TV packages with the growth of online video offerings through Hulu, Netflix and other services.”*
(AP Article, 2/16/2011)
- Internet TV doesn't (currently) include live programming
- Netflix is venturing into to becoming a full-fledged network with it's own original TV series
- Cable companies are scrambling to retain customers due to rapid developments in Internet TV.

Connecting to the Internet



3 Types of Video Services



- Pay-Per-View (pay for each)
 - ▣ Amazon, iTunes, Vudu, Zune, etc.
- Subscription (monthly fee)
 - ▣ Netflix, Hulu Plus, MLB.TV, etc.
- Free
 - ▣ YouTube, Google TV *

* Google TV also has access to PPV & Subscription Services

Video Services vs. Internet Devices

- ❑ Current Internet Devices can only handle some Video Services (but not all)
- ❑ Even though a device is Internet Enabled, it may not be able to handle the Video Service(s) you desire
- ❑ This limitation is controlled by the devices firmware and system upgrades may add additional services (but perhaps unlikely)
- ❑ Recommendation: Before buying anything, identify Video Service(s) desired

Comparing Video Services

Video Service	No. of Movies & TV Episodes	Rental Fee Per Title	Current Devices Available
Amazon	42k+ (no info on HD)	\$1-\$4 for SD \$2-\$5 for HD	TV, Blu-ray, Home Theater, Roku, Tivo, Xbox 360, Google TV
CinemaNow	14k+ (incl. 1k HD)	\$2-\$4 for SD \$3-\$5 for HD	TV, Blu-ray, Home Theater
Hulu Plus	ABC, Fox, NBC Season shows	Unlimited at \$8/mo.	TV, Blu-ray, Home Theater, Roku, PS3
iTunes	65k+ (no HD)	\$3-\$4 for SD (no HD)	Apple TV
Netflix	20k+ (incl. 1.3k HD)	Unlimited at \$8/mo.	Almost every device...
Vudu	20k (incl. 4k HD)	\$3-\$4 for SD \$4-\$5 for HD	TV, Blu-ray, Home Theater

Media Download vs. Streaming



Media Download

The transfer of an entire media file to the memory of your device. Playback is available after entire file is downloaded.

Media Streaming

The transfer of media data in a continuous stream for immediate playback. The entire media file is typically not stored in the memory of your device.

Is Your Internet Service Fast Enough?

- Video Streaming requires fast Internet speed
- Recommended Speed:
 - ▣ 720 dpi HD Programming: 1.5+ mbps (450 kbps min.)
 - ▣ 1080 dpi HD Programming: 5 mbps
- If your speed isn't fast enough, streaming content may occasionally "pause" during viewing or picture quality will be automatically reduced
- Check your system speed at:
www.speakeasy.net/speedtest/

3 Types of Internet TV Devices

- Home Entertainment Devices (Internet Enabled)
 - TV, Blu-ray/DVD, Home Theater, DVR, Game Machines
 - Most do not have built-in wi-fi (If not, will need USB Lan Adapter)
- Dedicated “Set-top” Boxes:
 - Apple TV, Roku, Boxee, Google TV, WD TV Live, etc.
 - Most have built-in wi-fi
- PC (laptop), iPad, Tablet:
 - Connect via HDMI or Wi-Fi

Comparing Set-Top “Boxes”

<i>Service Features</i>	Apple TV	Roku XD	PS3	Xbox 360	Boxee Box	Tivo Prem.	WE TV Live +	Google TV
Netflix	★	★	★	★	★	★	★	★
Amazon	☹	★	☹	★	☹	★	☹	★
YouTube	★	★	★	★	★	★	★	★
Your Movies	★	☹	★	★	★	☹	★	★
Your Photos	★	☹	★	★	☹	★	★	★
Web Browse	☹	☹	★	☹	★	☹	☹	★
Apps	☹	☹	☹	☹	☹	★	★	★
HD	☹	★	★	★	★	★	★	★
Cost	\$100	\$80	\$300	\$200	\$200	\$300	\$100	\$300

Apps, Widgets, Channels

- Enabled Devices often have “extra” built-in features
- These features are called apps, widgets, or channels
- Apps extract web info and display on TV
- Apps often better than Browsing
- App Stores becoming available (Samsung, Google TV)
- Examples of apps include:
 - ▣ Audio: Pandora, Last.fm, Slacker, Mediafly
 - ▣ Photos: Flickr, Picasa, FrameChannel
 - ▣ Social Networking: Facebook, Twitter, Skype TV
 - ▣ News/Sports/Weather Widgets
 - ▣ Games Widgets

PC/Tablet to TV Option

- Use Laptop/Tablet as Source and HDTV for Display
- 2 Connection Methods
 - ▣ HDMI to HDTV (with Wireless Keyboard, \$35)
 - ▣ Wireless Display Adapter (Wi-Di, \$85)
- Advantage: Lots of web applications available
 - ▣ Netflix
 - ▣ Pandora
 - ▣ Web Browsing
 - ▣ Control your TV (iPad w/ DirectTV)
 - ▣ Etc., etc.
- Potential problem with screen display setup

Google TV – The Platform



- Google TV is a software platform & not hardware
- Integrated web browser & media player
- Current Hardware Devices
 - ▣ Logitech Revue (\$300)
 - ▣ Sony Internet Blu-ray (\$400)
 - ▣ Sony Internet TV (\$\$\$)
- Great potential but system currently needs work

Google TV – Advertised Features



- ❑ Simultaneous search of TV, web and apps
- ❑ Access to anything on Web using Chrome/Flash
- ❑ Apps available via Android App Store
- ❑ Control with your iPhone or Android phone
- ❑ Fling video from your phone to your television
- ❑ 40k+ movies/shows available (Netflix/Amazon)
- ❑ Watch YouTube in full screen HD
- ❑ Watch and browse, simultaneously (p-i-p)

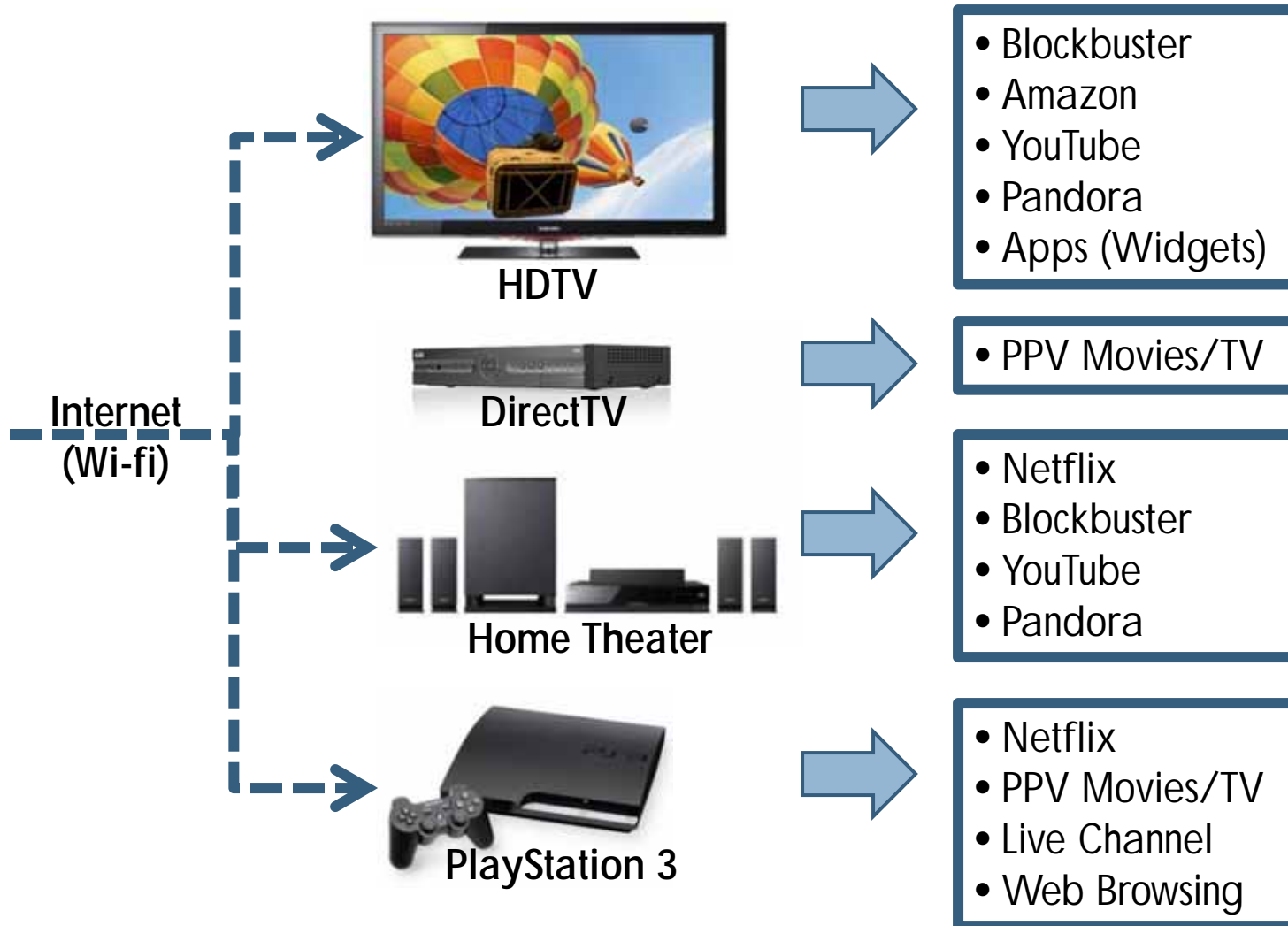
Google TV – Advertised Features

- Setup a Home Page with your favorites
- Find your favorite episodes (page for ea. TV series)
- Create TV playlist (Similar to DVR but for the web)
- Record from the search bar (DISH only)
- Music through your sound system
- Watch your photos on your TV
- Automatic over-the-air updates

Potential Issues with Internet TV

- ❑ Your Internet service speed
 - ❑ Your wi-fi signal strength at TV (if using wi-fi)
 - ❑ Image quality (Internet TV 720 dpi \cong DVD)
 - ❑ Audio sync
 - ❑ No surround sound
 - ❑ Control lag
 - ❑ No special features as on Blu-ray/DVD
 - ❑ No subtitles (except foreign films) *
 - ❑ Movie and TV Show availability *
 - ❑ Browsing not very good *
- * Improvements coming rapidly

My Entertainment System



HDTV Example (Samsung)

- Video (YouTube, Blockbuster, Amazon, no Netflix)
- Apps (Widgets)
 - ▣ Music (Pandora)
 - ▣ Pictures (Flickr)
 - ▣ News, Stocks, Weather, Facebook
 - ▣ No downloadable Apps available
- No Web Browsing
- Content Library (Gallery, Cooking, Wellness)
- Media Play Capability (Photo, Music, Movie)
- Online system firmware update capability

My HDTV "Widgets"



My HDTV "News" Widget

The image shows a screenshot of a Yahoo Sports HDTV news widget. The widget is split into two main sections. On the left, there is a news article titled "A fresh start for Tiger at Torrey" with a sub-headline "A fresh start for Tiger at Torrey" and a byline "AP - 01/27/11, 10:20am". The article text reads: "Tiger Woods' twirled the driver in his hand after another tee shot went where he was aiming, right down the middle of the first fairway on the South Course at Torrey Pines." Below the article is a navigation bar with "Previous Headline" and "Next Headline" buttons. On the right, there is a video player for an "EARLY SHOW" featuring a baseball player in a white Royals uniform with the number 55, identified as "MECHE". The background of the widget is a blue and black abstract design with a central image of a man in a suit and tie. At the bottom, there is a weather ticker showing "JOSE 68°, SUNNY", "SAN FRANCISCO 67°, SUNNY", and "REDWOOD CITY 72°, SUNNY".

Y! SPORTS
News Details

A fresh start for Tiger at Torrey
AP - 01/27/11, 10:20am
Tiger Woods' twirled the driver in his hand after another tee shot went where he was aiming, right down the middle of the first fairway on the South Course at Torrey Pines.

EARLY SHOW
> MECHE

JOSE 68°, SUNNY **SAN FRANCISCO 67°, SUNNY** **REDWOOD CITY 72°, SUNNY**

My HDTV "Content Library"



My HDTV "Media Play"



Home Theater Example (Samsung)



- ❑ Video (Netflix, Blockbuster, YouTube)
- ❑ Music (Pandora)
- ❑ No downloadable Apps available
- ❑ No Web Browsing
- ❑ Content Library (Gallery, Cooking, Wellness)
- ❑ Media Play (Photo, Music, Movies)
- ❑ Online system firmware update capability

My Home Theater System



My Home Theater "Netflix"



My Home Theater "Netflix"

NETFLIX

instant queue 1 | 42

Ultimate Heist

play

★★☆☆☆

remove

Jean Reno Gaspard Ulliel Vahina Giocante Sami Bouajila Isaac Sharry Alberto ...

Hoping to escape the long shadow of his father, Milo, a powerful mobster who controls an organized crime syndicate in France, Anton Malakian plans one final heist that will enable him to begin a new life.

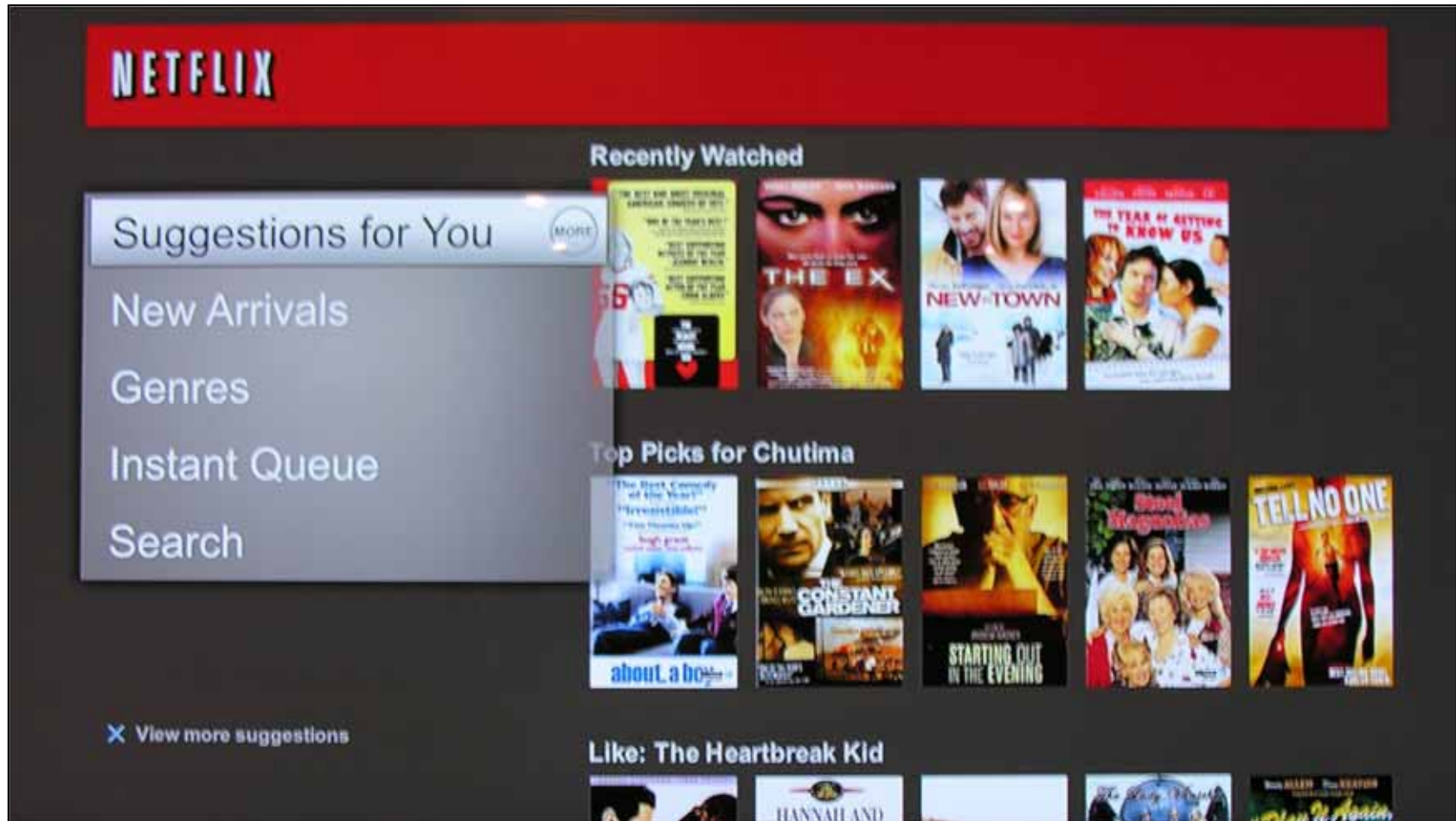
1h 35m 2009 **R** | **HD** director Laurent Tuel

Foreign Thrillers, France, French Language Exit

PlayStation 3 Example

- Has built-in Wi-Fi (no USB lan adapter needed)
- 1080 dpi HD gaming machine including online gaming
- Apps
 - Netflix
 - Pay-Per-View movies/TV shows
 - Live Channel (news/weather)
- Web Browsing (wireless keyboard needed @ \$60)
 - Pandora
 - Facebook
 - Etc., Etc....
- Online system firmware update capability

PlayStation 3 "Netflix"



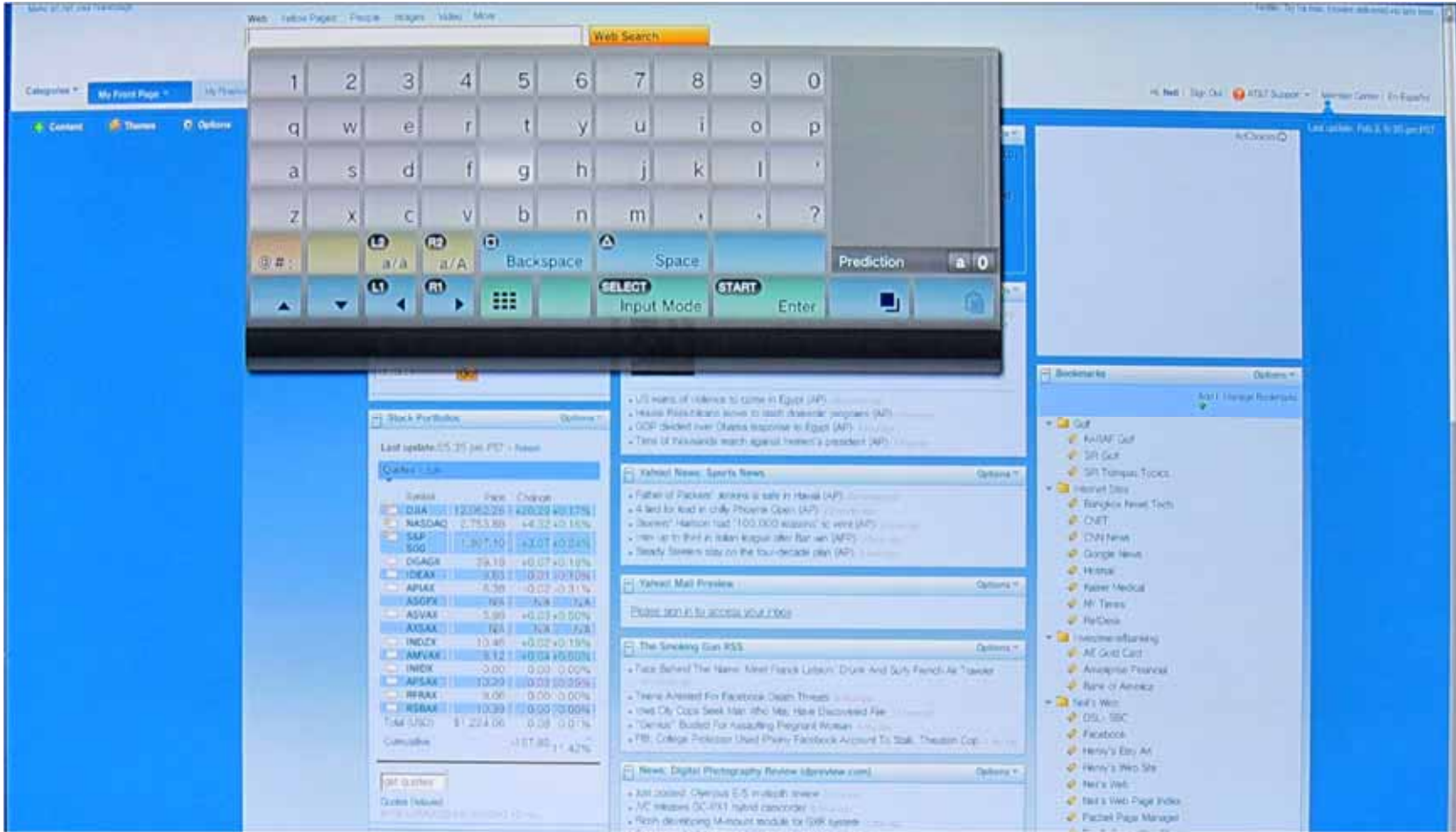
PlayStation 3 – Web Browsing



PlayStation 3 – Web Browsing



PlayStation 3 – Web Browsing



PlayStation 3 – Web Browsing



My Internet TV Recommendations

- ❑ If you currently have an Internet enabled TV, DVD, Home Theater, etc. device, use it to connect
- ❑ Buy a new Blu-ray player – It's a low-priced way to get Internet and can serve double duty as HD disc player
- ❑ Use a Game Console only if you plan to buy one
- ❑ Use a Set-top Box only if you don't want a new TV or Blu-ray player
- ❑ Use your Laptop Computer if you have one

Where is Internet TV Going?

- Tremendous changes and advancements coming
- There are lots of technological and contractual issues yet to be resolved
- Your TV is going to become the gateway to the Internet with search, cloud, social networking functionalities
- Internet and TV will seamlessly merge as one entertainment platform
- One vision: “Eventually the Internet will become television”

The End.....



CAT Web Site: sir-web.org/computer/