

Big screen application development

v 1.2



Where are we now?
What is the future of the big
screen?



What is the smart TV (we call it "big screen")?

- Almost all multimedia services requires multiscreen approach
- Web
- Mobile phones, tablets:
 - Android
 - iOS
 - Windows Phone 8/Windows 8
- **Big screen**
 - Smart TVs (Samsung, LG, Philips, Panasonic, SONY, VESTEL, Hisense, Vizio)
 - Game consoles (Xbox 360/Xbox One, SONY PlayStation)
 - Set-top boxes (Albis, Arris, Dune HD, etc.)
 - Android set-top boxes (GeniaTech, Changhong, SDMC, Jezetek, Gigabyte, etc.)
 - Multimedia centers (Apple TV, Fire TV, Roku, etc.)
 - HbbTV (Not only for TV broadcasters ⇒ virtual TV channel)
- Wearables



Why big screen?

- Usable only for few types of services (90% of all apps we develop are VOD)
 - VOD applications
 - Radio/music applications
 - Rich news
 - Simple games
 - Weather information, Sport
 - Applications for kids
- If we focus on VOD applications:
 - High quality of the video (Full HD/4K), screen size
 - Socializing factor
 - Internet connection without caps and with good bandwidth
 - Popular among viewers: Up to 50% of the non-web traffic
- Other reasons
 - Joint marketing campaign with TV vendor
 - Catch with competitors



Technical challenges 1/2

- Testing / maintenance
 - TV lifetime
 - Regular updates for next year models
 - Issues with firmware updates
 - Issues with the service API changes
- Fragmentation (technical level)
- You need multi-DRM system (Widevine, PlayReady or proprietary - Verimatrix VCAS, SecureMedia, FairPlay, etc.)
- Specific UX design
- Resolution (1280x720px, 1920x1080px)
- Agreements with TV vendors
- TV vendors QA procedures/communication



Technical challenges 2/2

- Purchasing many test devices, game console devkits
- Vendors' QA 2-12 weeks
- Development time: 3-12 man/months
- Cross-platform port: 0.5-2 man/months per platform
- Code size: 10.000-50.000 lines in JavaScript



User-related challenges

- Around 40% households in CZ have smart TV
- 700.000 sold annually in CZ, but not everybody uses its "smartness"
- TV performance is far beyond mobile phones (5 years?)
- Smart TVs do not have really user-friendly and intuitive user interface
- User interface is slow and laggy
- Web browser does not work
- Only few (often low quality) applications available



Testing

- Very important factor
- Average TV life time 6+ years
- Smart TV:
 - 2012+ models
- HbbTV
 - Users have large number of 2010+ TV and DVB-T/S set-top box models from various vendors
 - Full acceptance tests are focusing on most popular devices (90% of users uses <10% of all device models)
 - Prior the application launch we run "silent" application for collecting statistics about users' devices
- We have ~150 test devices



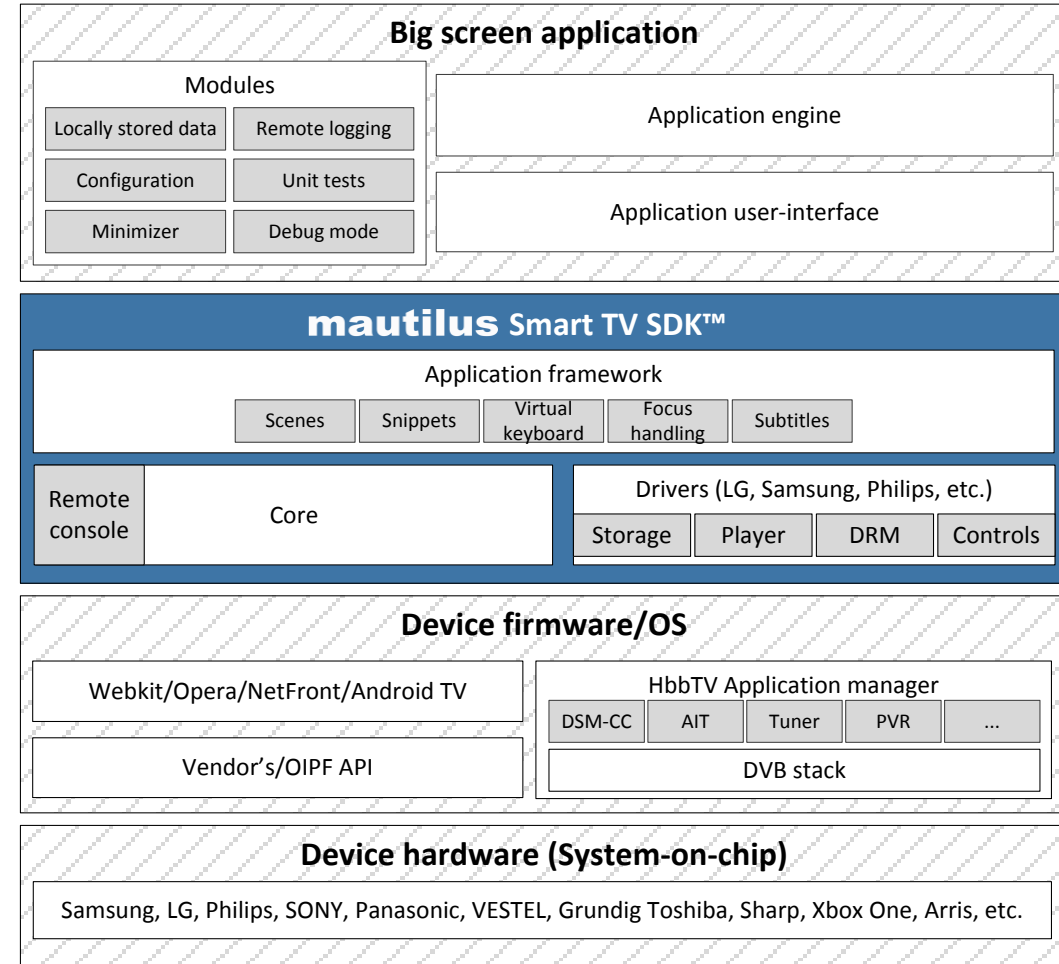
How is our approach?

- Goals to achieve
 - Lower the CAPEX costs
 - Shorter time to market (~2 month for integration)
 - Simplify maintenance
- Solution
 - White-label application for OTT big screen
 - Smart TVs, same consoles, set-top boxes
 - Native applications for Android TV and Apple TV
 - White-label application for HbbTV
 - Open-source **Mautilus SmartTV SDK™** for big screen development



Mautilus SmartTV SDK™

- All our application are based it
- New BSD License
- Applications are developed only once, and thanks to drivers dynamically loaded from the SDK, they can be installed and run on any TV platform
- Reduces the development effort
- Simplifies the long-term maintenance
 - <http://smarttv.mautilus.com/SDK/>
 - <https://github.com/mautilus/sdk>
- Support for other devices could be integrated into SDK



Mautilus OTT White-label 1/3

- Set of basic applications:
 - Movies
 - TV Series
 - Live TV
 - Settings, Login/logout
- While-label customization:
 - Graphical design (~1 week)
 - Server connector (~2-4 weeks)



Mautilus OTT White-label 2/3

Riki | FEATURED | TV SHOWS | MOVIES | NEWS | 🔍

Remember 8.4 | EN 96% • Korea | TV SHOW

My Sunshine (Direct) 8.4 | EN 100% • China | TV SHOW

Bromance 8.4 | EN 100% • Taiwan | TV SHOW

Kill Me, Heal Me 8.4 | EN 100% • Korea | TV SHOW

Dead Friend 8.4 | EN 100% • Korea | MOVIE

I Remember 8.4 | EN 100% • Korea | TV SHOW

PAIRING WITH ACCOUNT

FATV | MOVIES | Action | HOME | MOVIES | TV SHOWS | LIVE TV | 🔍

Captain America: The First Avenger | ACTION | 18+ | USA, 2011, 119 min | ★★★★★☆

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate

PLAY | TRAILER | CAST

SIGN IN or SIGN UP

المسلسلات التلفزيونية | المسلسلات | الأفلام | 🔍

تري ميري كاهاني 5★ | 2012, رومانسي | الأفلام

English Vinglish | **Samrat** | **Roméo Ranjha** | **Double Trouble** | **Ishqiya** | **Bhootnath** | **Gulaab Gang**

تسجيل | تسجيل الدخول

MTN | LIVE TV | HOME | MOVIES | TV SHOWS | LIVE TV | 🔍

Now in television | ... SEE MORE

NBC	↑	11.00	X-Men: Apocalypse	11.55
CBS		10.55	Teenage Mutant Ninja Turtles	11.25
Discovery		10.28	In the Heart of the Sea	12.00
FOX		11.00	Legend	11.55
BBC		10.20	News	12.00
Showtime		10.45	Breaking Bad V (33)	11.50
CNN	↓	11.00	World News	11.30

SIGN IN or SIGN UP



Mautilus OTT White-label 3/3

Home Categories Favorites Search

INTELLIGENCE

JOSH HOLLOWAY

Recommended

- VIKING
- BOOMTOWN
- ENLIGHTENED
- GAME OF THRONES
- KNOCKED UP

Popular

- UNDER THE
- KNOCKED UP
- VIKING
- BOOMTOWN
- ENLIGHTENED

Martian

Sci-Fi, Action | USA, 2015, 134 min

DIRECTED BY Ridley Scott

CAST
Matt Damon
Jessica Chastain
Chiwetel Ejiofor
Jeff Daniels
Michael Peña
Kate Mara
Sean Bean
Kristen Wiig
Aksel Hennie

Play Trailer Wishlist

BRING HIM HOME
MATT DAMON
THE MARTIAN

Related Movies

- GAMER
- STAR TREK
- TRANSFORMERS
- DOOM
- UNDERWORLD
- THE MONUMENTS MEN
- THE MONUMENTS MEN

My Library Offers Free Recent Weekly Top Drama Settings

Favorites History Unfinished

- The Borgias
Drama, Historical
★★★★★
- 300: Rise of an Empire
Action, Fantasy
★★★★★
- Captain America: The Winter So...
Action, Thriller
★★★★★
- Pain & Gain
Action, Comedy
★★★★★
- 22 Jump Street
Action, Comedy
★★★★★
- The Hobbit: The Desolation of S...
Fantasy, Adventure
★★★★★

300: Rise of an Empire

2013 98 mins ★★★★★ CZ CZ, ORIG

After its victory over Leonidas' 300, the Persian Army under the command of Xerxes marches towards the major Greek city-states. The Democratic city of Athens, first on the path of Xerxes' army, bases its

PLAY TRAILER RATE ADD TO FAVORITES

Cast & Crew

- Noam Murro
- Sullivan Stapleton
- Eva Green
- Lena

Related



Mautilus HbbTV White-label 1/2

- Set of basic applications:
 - Archive, EPG, Weather, News, Teletext, Games
 - Interactive advertisements/quizzes integration
 - Red button manager
 - Open for 3rd party applications integration
 - Google Analytics full access provided
- Compatible with HbbTV 1.0, 1.5 and 2.0
- While-label customization:
 - Graphical design (~2 week)
 - Server connector (~4-8 weeks)



Mautilus HbbTV White-label 2/2

MAU TV •TV9• TV SPORT DT ONE DT TWO 11:30 | 9.12.2015

12. Monday 07.12. Yesterday Today Tomorrow Friday 11.12. Sat

10:05-13:05 ARCHIVE	TODAY 13:05-14:10 ARCHIVE	TODAY 14:10-15:45 ARCHIVE	TODAY 15:45-16:40 ARCHIVE	TODAY 16:40-17:30
Public, 1983 the picture	Czech Republic, 2000 Wooden Marika	Czech Republic, 1935 Hero of one night	Czech Republic, 2013 Stories of famous	Great Britain, 1991 Hercule Poirot
A quest for the girl. Scenario M. am F. German.	The pure love and the magical powers of nature. Scenario M. coriander. Camera P. Pole.	The romantically-based rural tailor. Scenario J. Neuberg and S. Razov. J. Stallich camera.	Lover of life. Remembering the unforgettable King Miroslav, since his death this year, it passed 15 years. His acti...	Theft royal ruby. British detective is able to memorable Christmas holidays. According literary...

Exit Apps

MAU TV 11:30 | 9.12.2015

A-Z Main menu Search

Exit Apps

SERVIS TV Salzburg 19°C ☀ 11:40 | 8.12.2014

A-Z HAUPTANGEBOT SUCHE

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

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Beenden

ČT1 EPG A-Z VYHLEDÁVÁNÍ 11:40 | 8.12.2014

Úterý 6. 12. Středa 7. 12. Čtvrtek 6. 12. Včera Dnes

12. 9.00 - 9.45 ARCHIV	ČTVRTEK 6. 12. 9.45 - 10.30 ARCHIV	ČTVRTEK 6. 12. 10.30 - 11.15	ČTVRTEK 6. 12. 11.15 - 12.00 ARCHIV	ČTVRTEK 6. 12. 11.15 - ... ARCHIV
ČR, 1979 Potvrzení /R/	ČR, 1969 Hříšní lidé Města pražského (11/13)	ČR, 1969 Hříšní lidé Města pražského (12/13)	ČR, 1969 Hříšní lidé Města pražského (13/13)	ČR, 2015 StarDance VII ...kdokola /R/
Nadešel čas vánočních svátků. Povídka z oblíbeného cyklu Bakaláři	Seriál kriminálních příběhů podle povídek Jiřího Marka	Seriál kriminálních příběhů podle povídek Jiřího Marka	Seriál kriminálních příběhů podle povídek Jiřího Marka	Nezávislému Char nečakane obrátia život jeho brat Ala synovec Jake...

Ukončit



Interactive HbbTV Advertisements 1/2

HEMAN Powered by Mautilus EVENTS 01/12/2016 10:45:06 +00.00

Events > Hyundai Actions

Identifier
32424234325265438659

Title
Hyundai

Signalling
Stream events
Http polling
Http long polling (Comet)

Broadcaster (TV Channel)
Noe TV

FROM Day 01/12/2016 Time 09:25:04 Duration 1d 00:00:00
TO Day 01/13/2016 Time 09:25:04

Status Enabled

EDIT IN JSON

USER DATA

SAVE PREVIEW

HEMAN Powered by Mautilus EVENTS 01/12/2016 10:45:06 +00.00

Events > Hyundai > User data Export to CSV

Send e-mails
 Yes No

E-mail frequency
12 hours
Daily
Weekly

marketing@tv7.uk - Remove
news@armtv.cc - Remove

+ Add another e-mail address

Status Enabled

SAVE



Interactive HbbTV Advertisements 2/2

- Gallery
- Exterior
- Interior
- Performance
- Tech

LED TAIL LIGHTS 3.8 WITH 18-INCH ALLOY WHEELS HTRAC AWD SYSTEM HTRAC ALL WH

Order Test Drive Now Back

Order Test Drive Now!

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.

6 0 3 0 1 8

Back

DAWN OF THE PLANET OF THE APES

- TRAILERS
- POSTERS
- GALLERY
- CHARACTERS
- GET TICKETS
- QUIZ - ANSWER AND WIN BLU-RAY
- EXIT

INDIVIDUAL OFFER

MONTHLY I

Spend	200 €	<input type="range"/>
Call	120 min	<input type="range"/>
Send	100 SMS	<input type="range"/>
Surf	800 MB	<input type="range"/>
My number	776 895 144	<input type="text"/>

SEND

EXIT

Adjust here or scan the QR.

Our consultant will contact you within 24 hours.

Thank you

Petr Mazanec

CTO

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