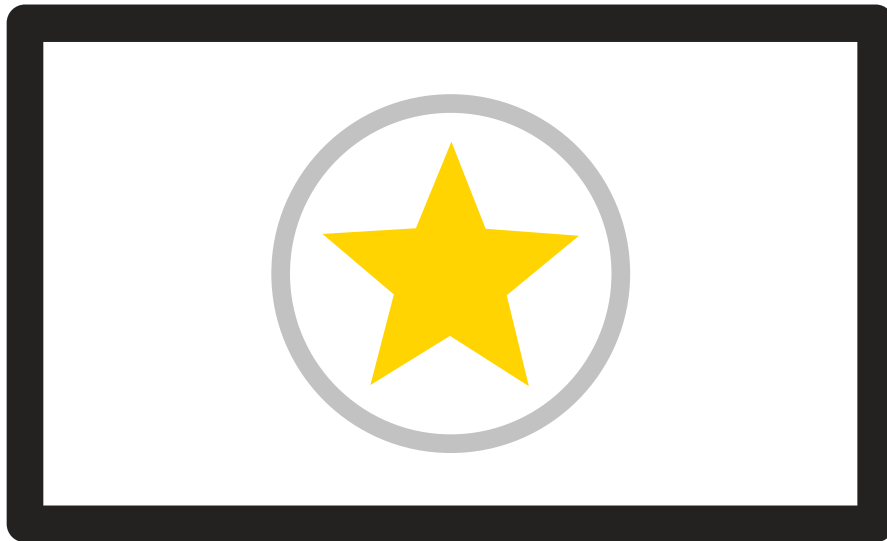eBook

Beenius

VALUE-ADDED

FEATURES

Executive Summary

Beenius Interactive TV Platform is dedicated to providing advanced and user-oriented TV systems for operators and service providers. Our goal is to disrupt the traditional TV viewing experience and deliver the future of TV.

This eBook summarizes all the compelling components of the Beenius Interactive TV Platform, covering the valuable features needed to improve the viewer experience, maintain steady ARPU growth and efficiently manage the platform and user data:

for viewers	for ARPU	for managing
Binge Watching & Continuous Play,	Advanced Messaging,	Concurrent Streaming Limitations,
Kids Mode,	Authorization & Registration,	Content Provisioning System,
Offline Viewing,	Multi-tenancy,	Geo Dependent Restrictions,
Thumbnail Preview	Targeted TV Advertising	Multiple VOD Libraries
	User Analytics	

In introducing each "must-have" feature, we detailly described their specific functionality and applicability. We also highlighted the benefits of implementing such features from both operator's and end-user's viewpoints.

Enjoy your reading! And if you are willing to have an in-depth discussion, welcome to contact us.

Copyright Notice

Contents

Advanced Messaging

Your viewers are just one message away

Being able to reach individual or groups of end users with messages through the user's device may be crucial for customer's satisfactions and upsale.
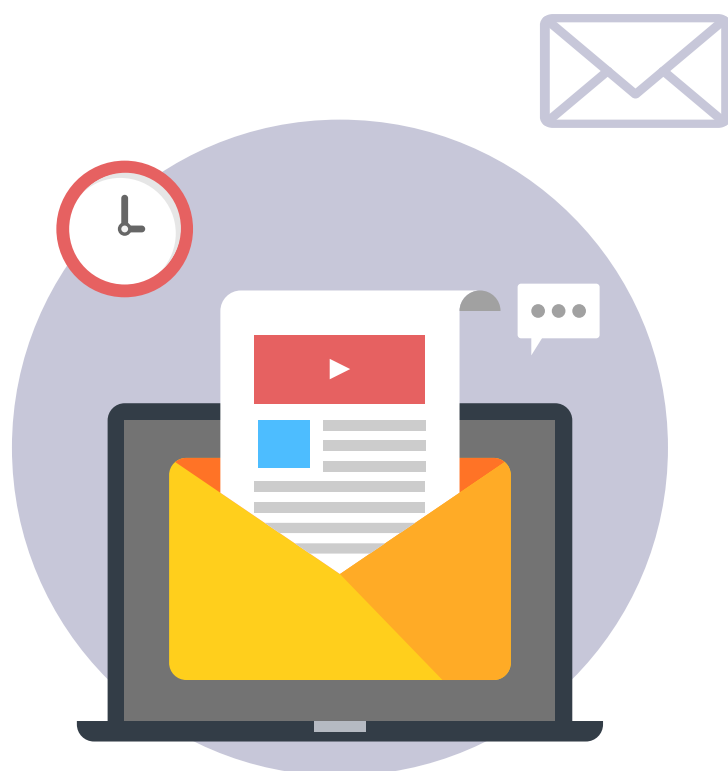
Beenius empowers operators with advanced messaging feature. Operators can now message and notify users via messaging service and through notifications for various purposes using personal messages or notifications. It's a convenient and reliable way to inform users about service availability or disruptions, subscription changes or updates, newly added content to the VOD library, sending personalized offers directly to the users etc.

Personal message - *is a message to be delivered to the target profile and contains rich media information, the personal message is read inside Beenius client application as part of a message inbox view.*

Notification - *is a message to be delivered to the target device and contains rich media information. The message is displayed also as part of the target device native notification mechanism (remote push notifications).*

A messaging API gives an option to automate messaging to users – recipients, based on operator's needs and workflows.

We enable operators to send personal messages or system messages to all subscribers, a targeted group of subscribers or an individual subscriber. Messages can be sent as a plain text message or as a rich text message, containing images and deep-link option which leads users to various in-app content. Operators can track the read receipts of sent messages.

Operators can:

- **Send personal messages**, system notifications with push notification option to all online or offline devices at a specific scheduled time or immediately (when delayed sending is not specified)

- **Track** the read receipt of messages sent

- **Edit or delete** a scheduled personal message or notification

- **Send messages with notification** to targeted group of subscribers or individual subscribers

Users can:

- **Opt-out** of receiving broadcast messages - notifications (personal messages can still be delivered)

- Receive message **regardless of the application state** – running or closed

- **Invoke an action**, proposed by the message, e.g. initiate playout or purchase

1 The arrival and number of messages are indicated by the number, overlaying the icon. User can read a message by tapping on a system notification or through the inbox within the app.
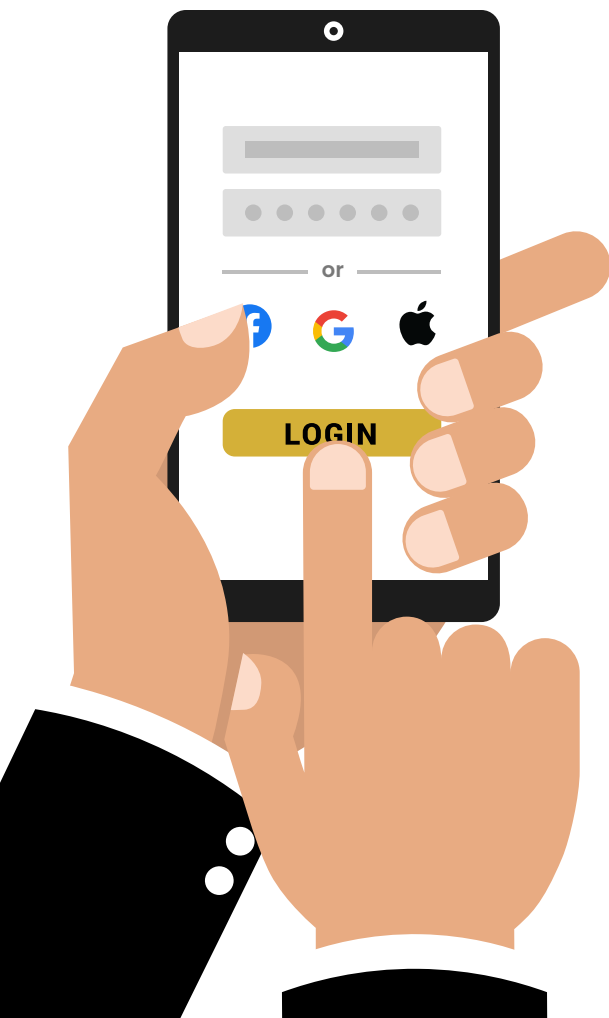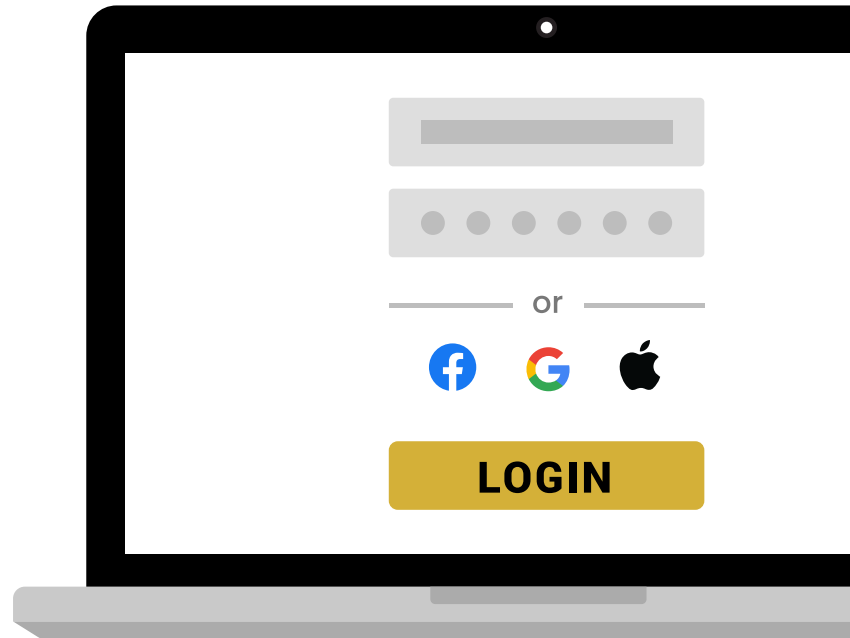
Authorization & Registration

Allow customers to join the operator's services directly from client applications.

With the Beenius Interactive TV Platform, operators can configure and enable client applications to allow users to self-register for their services from the application itself. Until now it was only possible to join an operator's services if the operator had created a user account for a customer and then provided login credentials back to the user.

Additionally, if the user forgets his login credentials he can use the "Forgot password" feature to reset his password. Users can also use their existing accounts from Facebook, Google or Apple to register and log in to the application. Each subscriber can also link different login methods to the same account so he can log in with any of the linked options (for example you can sign up with an email and password, then link your account with a Facebook account and login to the same account either with email and password combination or with Facebook credentials.)

IDM microservice also includes a device quota feature where the operator can limit subscribers with how many devices can access their services. If the device quota is exceeded user cannot log in before some of the previous devices are removed to release the device quota.

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Operators can:

✔ Define and enable desired selected **login methods**

✔ Enable password recovery with the **"Forgot password"** feature where the user gets instructions on how to change his passwords.

✔ Operator can allow linking different login methods to this account. Subscriber can for example then log in with his email-password combination or let's say with his Facebook account to access the same account.

✔ Operator has an option to use the **OpenID** feature and enable usage of an existing account from **Facebook**, **Google** or **Apple** to register and log in to the application.

✔ Operator limit the number of devices per subscriber to access their services.

Subscribers can:

✔ Create an account, log in and start using the service **without contacting** the Operator.

✔ Use their existing account from **Facebook**, **Google** or **Apple** to use the service.

✔ Link **multiple login methods** to his account to use service with any of the linked login methods.

▶| Next Episode

Binge Watching & Continuous Play

Enjoy and watch all episodes of a television show in a single sitting without interruption!

With the Beenius Interactive TV Platform, operators can configure content to be grouped in a series container where subscribers can browse and play all corresponding content in one place. This is mainly used for TV show grouping where multiple episodes are grouped in a season. Series are displayed as regular VOD content within the application with addition of a selector to switch between multiple seasons of the show.
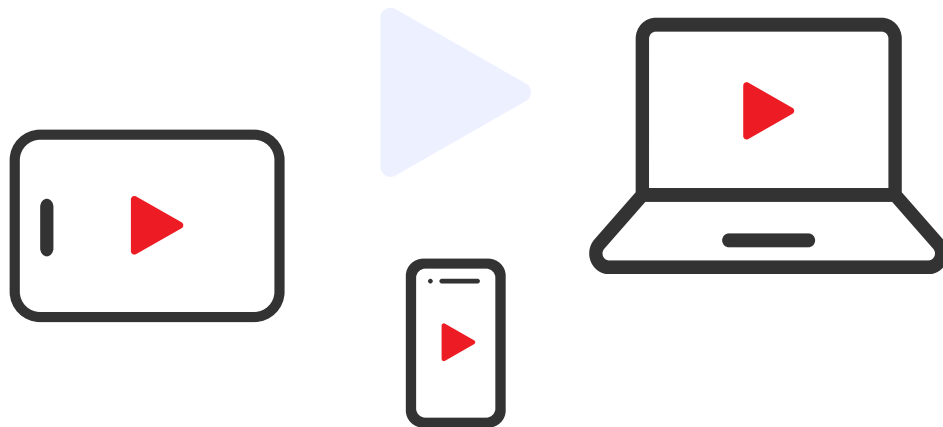
Additionally, when user initiates playout there is no need to exit current view after episode is finished to advance to the next episode. When playout reaches the end of the episode, subscriber gets notified through the user interface that next episode will start in a couple of seconds. If binge watching is interrupted, automatic bookmark is created to allow subscribers to pick up and continue watching from where they previously left off.

Operators can:

- Set up content to be grouped in series container.

- Add multiple episodes and seasons for the series.

- Provide title and description for the whole series and each episode individually.

- Parentally lock whole series to restrict content based on age rating.

- Allow series to be part of SVOD or TVOD package.

Subscribers can:

- Browse and get information about series in a single screen.

- Initiate playout of the first episode and get to the last available episode without leaving the playout screen.

- Continue watching from their last position and quickly resume where they left off.

Concurrent Streaming Limitations

Control the concurrent streams of your content!

As an operator, being able to control the concurrent streams of your content prevents the missuse of your services by your viewers.

To prevent misuse of service by sharing of login credentials among users, or even to create an up sale of the service, operators can use one or both of the following measures:

- **Setting the maximum number of devices (mobile or STB) per subscriber**

- **Setting the maximum number of simultaneous (concurrent) streams per subscriber (CSL)**

Number of web app registrations is not limited.

The referenced limits are valid per subscription, which means that all subscribers that are assigned a specific subscription have the same parameters.

With the Beenius Interactive TV Platform, operators can unregister (delete) a device from a subscriber in Admin or using OB API. Mobile or web devices can be deleted by the end user. The end users can deregister a mobile device within the device app by unauthorizing the selected mobile device. End users are not able to disconnect STB devices, as this is in the domain of the operator.

Appropriate CDR records are generated in every event of registration or deregistration done on any device (Admin, OB API, client app).

The Beenius server recognizes a device by means of the device's unique ID: So, if a registration is made two or more times from the same device, Beenius server regards them as one registration (the previous one will be deleted). In addition, if a device is registered to one subscriber first, and after that it is registered again to a different subscriber, the previous registration will be deleted automatically. The unique device ID is calculated by a Beenius client application from several device parameters and is stored within the Beenius client application.

You have reached the limit of concurrent playouts.

Stop watching on one of these devices and try again:

Samsung Galaxy S7 - "Pine Gap"

Nick's iPhone - "Interstellar"

Zoe's iPad - "Tidying Up with Ma..."

OK

Actions when number of allowed devices is exceeded

Typically, after a subscription change or revocation (immediate or normal) of a service, the subscriber can exceed their number of allowed devices. If user attempts to register a new device when the quota is already reached, the user is notified of the quota status and action to remove some of the devices is suggested.
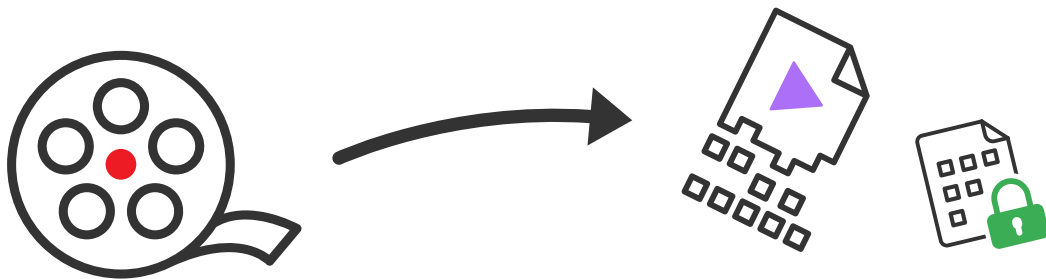
In case a limit of concurrent streams is reached, the user is notified of the situation and advised to take a corrective action.

Operators can:

- Limit the number of devices per subscriber

- Limit the number of simultaneous streams per subsriber

- Notify the subscriber when the limit of concurrent streams is reached

- Unregister (delete) a device from a subscriber

Subscribers can:

- Deregister a mobile device within the device app

- Get notifications when their limit of registered devices or number of simultaneous streams per subscriber is reached.

Content Provisioning System

Enable operators to automate the VOD ingest process effortlessly
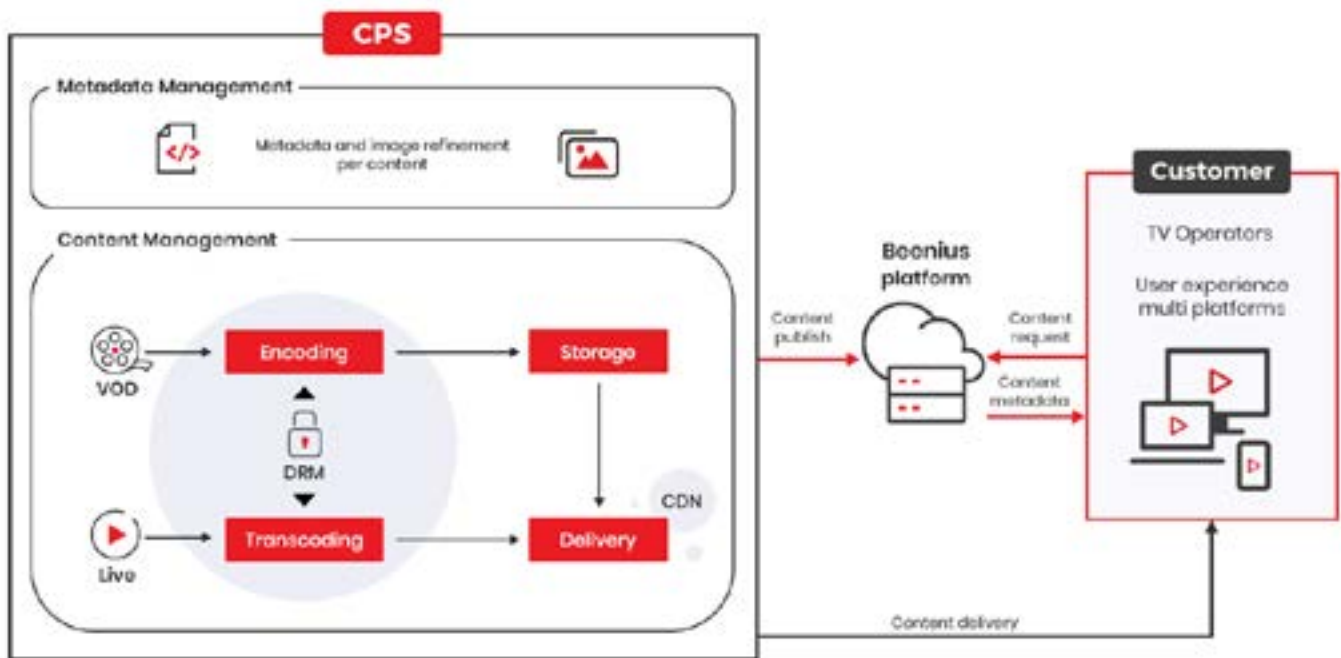
in cooperation with

qualabs

Content provisioning system (CPS) enables operators to automate the VOD ingest process effortlessly. The process starts by downloading the assets and metadata in its original form and ends by placing it into corresponding VOD catalogue and category.

CPS diminishes the information inconsistencies and eases an operator's work when adding new VOD content to different packages or subscription options available for end-users.

CPS offers a web interface to create, update or remove content from various content providers.
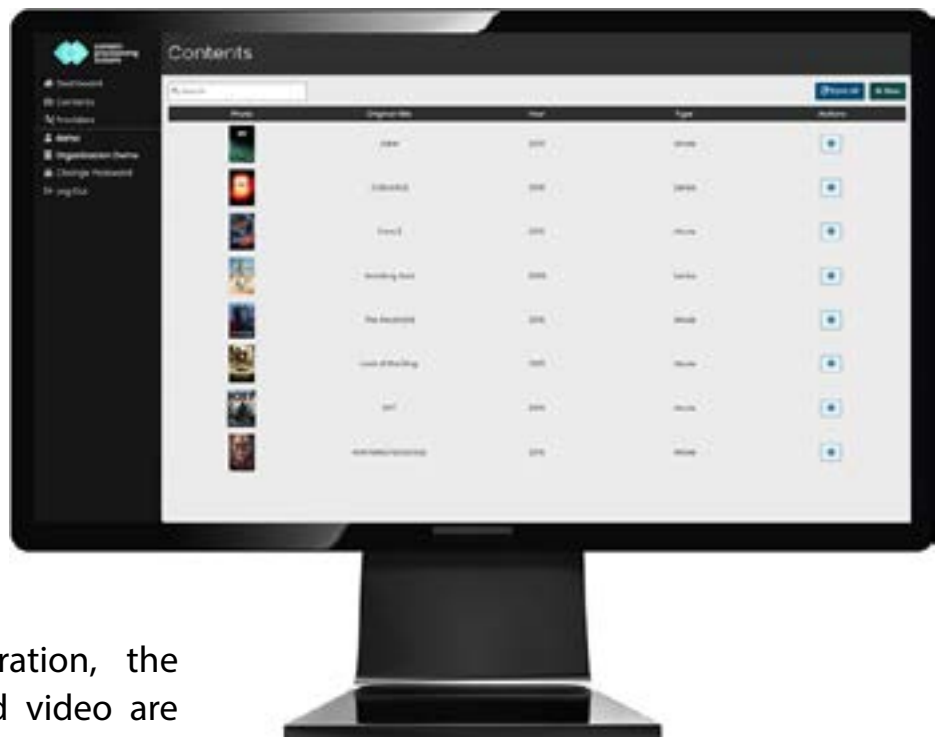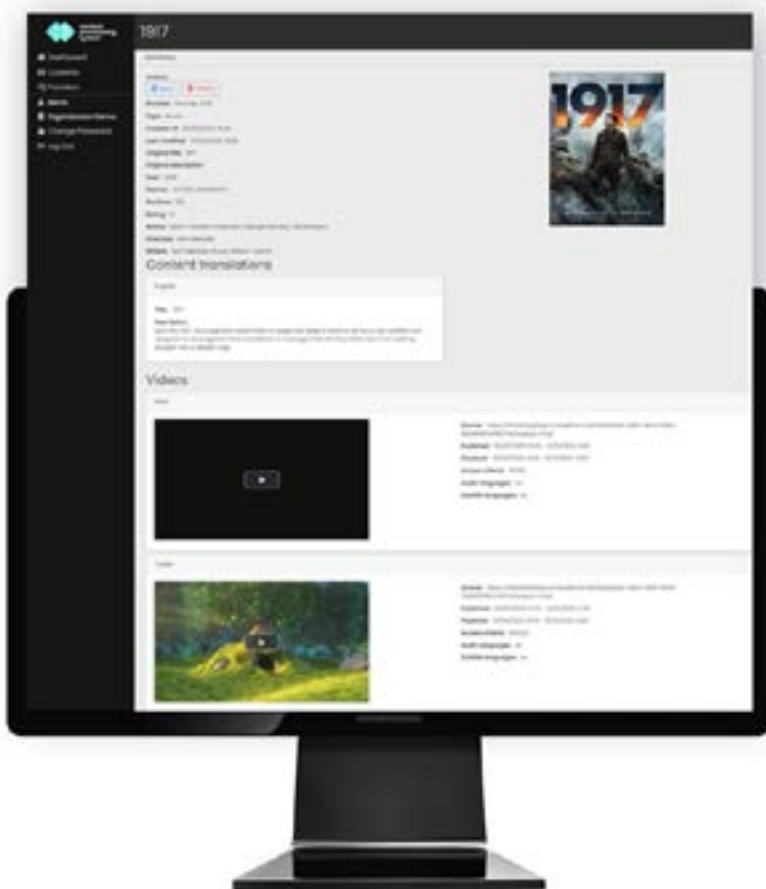

CPS interface: Providers

Deployment for VOD and Live TV

CPS is a cloud based as well as on premises deployment. A third option is to have a hybrid solution where other components, such as transcoding, storage, and delivery, are utilized as an on-premises deployment. With one click on the Sync button, all CPS data are transferred, configured, and shown within Beenius Admin for operators and Beenius UI for the viewer.

The simplicity of a VOD integration, the curation of metadata, images, and video are the content provisioning system's added values.

CPS interface: Content list

CPS interface: Content detail - Movie

What CPS enables:

✔ Content descriptive Metadata management

✔ Adding New provider, content list, content details of a movie/ series/ episodes effortlessly

✔ Quick Sync with Beenius Admin

✔ Adaptive Bitrate Streaming (ABR), device and network adaptation

✔ Encoding processes that include DRM management for each format

✔ Video processing controlled by CPS workflow manager

✔ Adaptation of different content formats

✔ Content protection with DRMs

✔ Geoblocking on per Content basis

✔ Test Player to verify the integrity of the content

✔ HTML iframe player for content embedding

✔ High-availability and scalability of encoding processes

✔ Intuitive web interface

Beenius and Qualabs recognize operators' requests concerning formats, transcoding processes, DRM provisioning, uploading to CDN, subscription assignment, etc., and provide needed workflows to setup the CPS system and integration with Beenius middleware.

Geo Dependent Restrictions

__Restrict__ the available content based on viewer's location

Geo Dependent Restrictions or Geo-blocking refers to the technology that restricts access to Internet content, based upon the user's geographical location. With the increase of OTT consumption and an increase in viewers mobility, it is challenging to control which content is consumed on which location.

Content providers impose strict regulations when it comes to the availability of their content in different region, and operators need to adapt to those regulations. With the Geo Dependent Restrictions that the Beenius Interactive TV Platform enables operators can easily define the location restrictions per content, select the list of countries where a specific content is available, etc. Geo dependent restrictions features enables operators to comply with requirements of content owners and own total control over it, which brings benefits for the viewer also.

With the Geo Dependent Restrictions feature that the Beenius Interactive TV Platform offers, operators can:

- **Offer a subset of content** available to subscribers on a device after they leave the home country to remain compliant with requirements of content owners.

- **Select a list of countries** where a specific content is available, enabling content available per-country or per-countries.

- **Control if a message is shown** on a client's device when they relocate to improve the UX.

- **Assign a new geolocation configuration** to the entity. without having to invalidate any existing configurations.

- **Edit a geolocation configuration** so that changes can be applied within minutes without recreating the configuration from scratch.

- **Remove a geolocation configuration** so that "allow all" policy can be applied.

- **Apply default geolocation configuration** for all content per content type (Live TV, VOD, ...), without having to select configurations for each content.

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While the **benefits** for the operators are many, the **viewers** will benefit from:

- Not being served any content (also purchased), that is not available at their current location or network, so that they are not teased by non-playable content.

- Staying informed about geolocation rules when some content cannot be watched (filtered out, etc.).

- The restrictions are applied per client app and not per subscriber, so if a family member leaves the country, his or her home device can still access the full range of content.

- Availability of previously downloaded content even without IP connectivity.

Kids Mode

Control the content your kids view

Kids Mode is a viewing mode within the Beenius Interactive TV Platform that is modified to be appropriate for young children.

The Kids mode differentiates from the normal mode is in the skin (theme) that incorporates different colors and clearly indicates when the Kids mode is active. Content shown to the user (kids) is limited and appropriate for children and only a reduced set of actions is available in the application. Kids mode is a mode within the default user profile.

Operators can:

✔ Ensure that appropriate content is shown to the users while in Kids Mode.

✔ You can add, configure, and link separate Kids mode library for each library already configured on the server. There can be only one Kids mode library for each regular library. In case no Kids mode library is configured for regular library than this library is not shown in Kids mode.

✔ You can configure new channel category with flag "Kids mode" which will be available in Kids mode. Only one channel category can be flagged with "Kids mode".

✔ You can configure library structure and featured content for Kids mode same as in any other regular library.

✔ You can define color theme with available color keys used in application.

Users can:

✔ You get access to Kids mode where only content suitable for children is shown.

✔ You have a different application skin (theme) to visually indicate when Kids mode is active.

✔ You have the option to decide whether you need Parental PIN for exiting Kids mode.

✔ You can set all purchasable actions on content in Kids Mode to be locked by Parental PIN.

✔ You can set any Settings always locked with Parental PIN while in Kids Mode.

✔ You have persistence of the Kids mode even if application is force-closed, device is rebooted or started without available internet connection.

✔ You have My downloads content filtered to match content available in Kids mode library.

✔ You will not receive ads inappropriate for the children.

✔ The search will be limited just to Kids mode library content.

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Multiple VOD Libraries

Operators can create multiple VOD libraries to organize and offer content to meet their customer's needs.

With the Beenius Interactive TV Platform operators can configure and enable multiple VOD libraries to either group similar VOD content into separate libraries (e.g. HBO content is available in a separate library) or bundle mixed content with TV channels and provide multiple subscription packages to offer up-sell or cross-sell to the existing line of subscription packages (e.g. HBO VOD library with HBO TV channel package).

Each VOD library can be organized with custom categories and certain content can be further exposed with the featured category which is also shown separately in client applications.

Operators can:

✔ Define and enable any number of VOD libraries.

✔ Organize each library content with categories and expose certain content with a featured poster.

✔ Set each library to be free to watch or link it to a subscription package.

✔ Set library to be TVOD library where each content can be bought separately.

Subscribers can:

✔ Browse VOD content based on the various content providers (HBO, Disney+, Hulu, etc.).

✔ Purchase access to the single VOD library.

✔ Subscribe to a subscription package where VOD content and TV channels are bundled together.
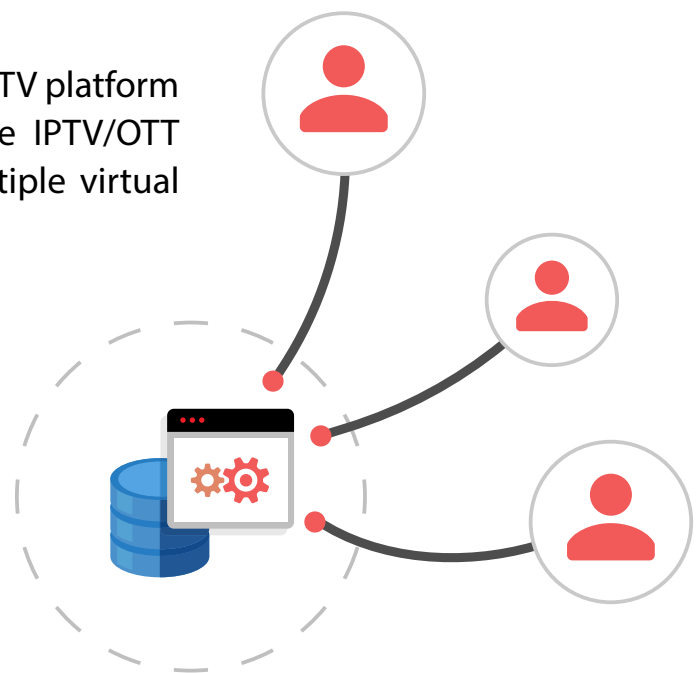
Multitenancy

One TV Platform
*for **multiple operatos***

Multitenancy refers to the mode of software operation where one software instance can provide multiple isolated logical instances and reuse of selected shared resources. Each instance refers to a separate virtual operator or tenant.

The Beenius Interactive TV platform supports multitenancy, where elements of the ecosystem can be shared among tenants, while content availability can be administratively separated. Administration of the system remains exclusively in the hands of the operator owner (i.e. platform owner). However, subscriber and/or content management may be managed by the tenant.

With multitenancy that the Beenius Interactive TV platform offers, the main service provider can provide IPTV/OTT middleware as a service (PaaS) and host multiple virtual service providers – virtual operators.

Virtual operators can deploy interactive IPTV/OTT services more quickly and efficiently, reducing time to market and decreasing investment costs.

The main operator can rent out use of the Beenius Platform to virtual operators. For virtual operators, this is an OPEX-oriented model rather than a CAPEX-oriented model (purchasing the platform). In this way virtual operator can focus on the business and elements their revenue depends on services, content, and end users.

Operator can categorize the virtual platform into regions and apply different client skins, different lists of live TV channels, VOD content, preferred languages, generate statistical and billing data for the virtual operators, etc. all while retaining control over the Interactive TV Platform.
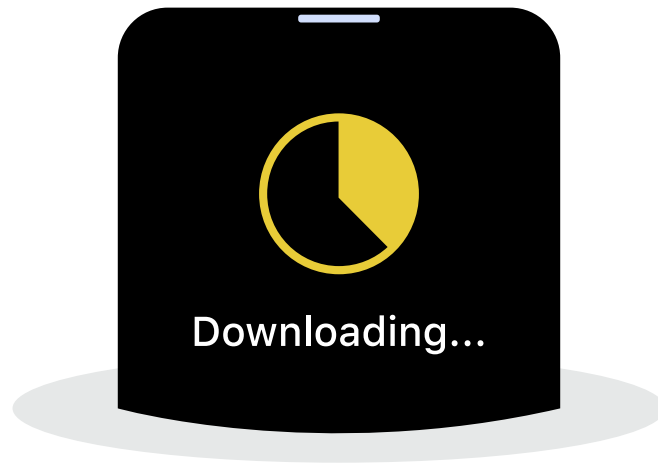
Benefits for the
main operator

- Open additional revenue stream and monetize investment into TV platform infrastructure

- Grow the number of users outside of its own subscriber base

- Improve negotiation position towards technology and content providers
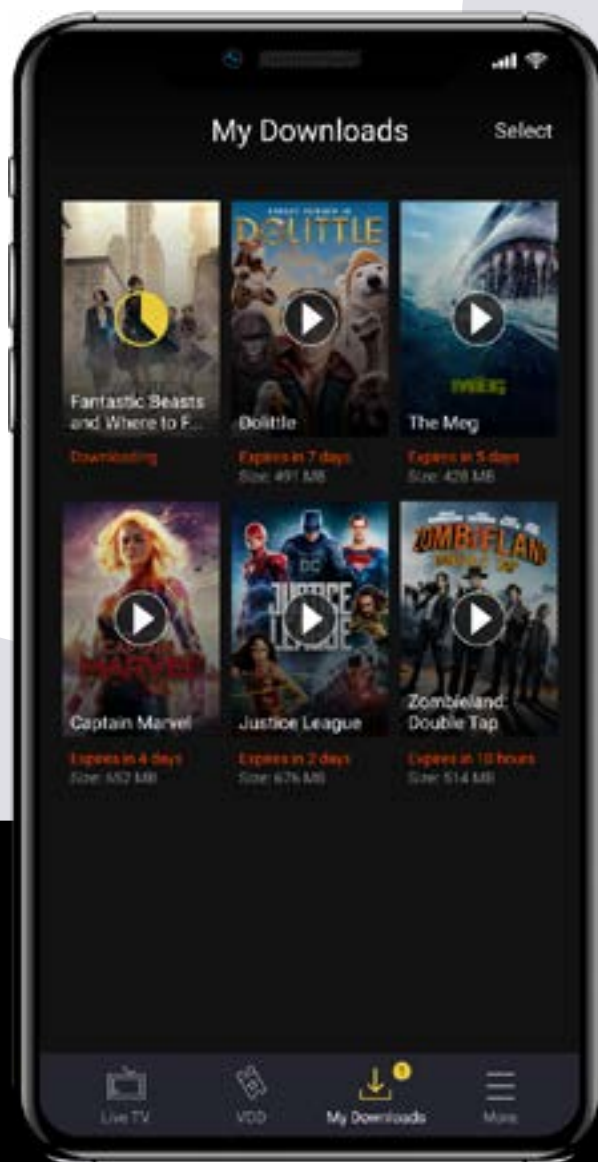
Benefits for the
virtual operator

- Lower investment and operational costs

- Shorter time to market

Downloading...

Offline Viewing

Enjoy your favorite TV content
***on the go**.*

With the Beenius Interactive TV Platform, operators can configure and enable VOD content to be downloaded and saved to the client devices. Setting can be applied to the selected content or complete VOD library. When properly configured, subscribers have an additional option to save the VOD content to the device's local storage. If the content is DRM protected, DRM protection is transferred, and content is protected with an additional license, setting the expiration date to avoid misuse of the feature. The expiration date defines the number of days content is available for viewing.

When content expires, each content license can be renewed, but an appropriate subscription and an internet connection are required for this action.

Expired

Operators can:

✔ Define and set content that is available for download.

✔ Set the license expiration date for downloadable content.

✔ Limit the maximum number of downloads per subscriber.

✔ Transfer DRM protection when content is downloaded to the local storage of the device.

Subscribers can:

✔ Download selected VOD content in the client applications.

✔ Watch their favorite content even if there is no active internet connection.

✔ Limit their data usage if the content is downloaded when on a Wi-Fi network.

✔ Browse all downloaded content in a separate section of the application.

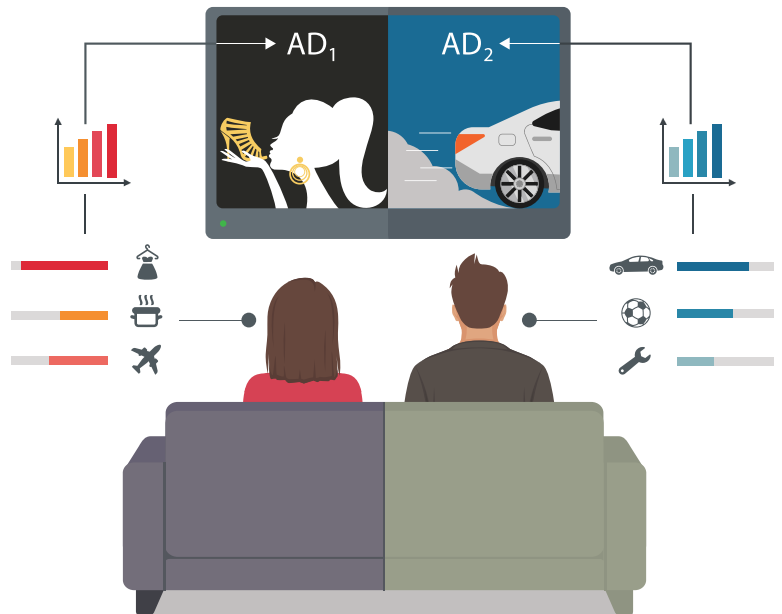✔ Renew any expired content if they still have an appropriate subscription and active internet connection.

Targeted TV Advertising

*A compelling component of the Beenius Interactive TV Platform, supporting **IPTV**, **OTT** & **Hybrid**.*

Targeted TV Advertising (Addressable TV) is data driven next generation advertising concept that enables operators to differentiate between demographic types of TV audience and deliver personalized ads on top of the broadcast linear TV program or within the user-interface of operator apps.

With targeted advertising that the Beenius Interactive TV platform offers, operators can unleash additional revenue from selling advertising space inside the user interface, which is not interfering with any content provider's requirements. With the ad decision service, users are presented with ads based on their past interests.

Operators can offer attractive services to advertisers to **gain additional revenue** through our own Ad Server

Interactive TV advertising and its shift to second-screen devices enables an enhanced **opportunity to address potential customers**

Possible connection to Ad Exchanges and Agencies

A revenue sharing business model

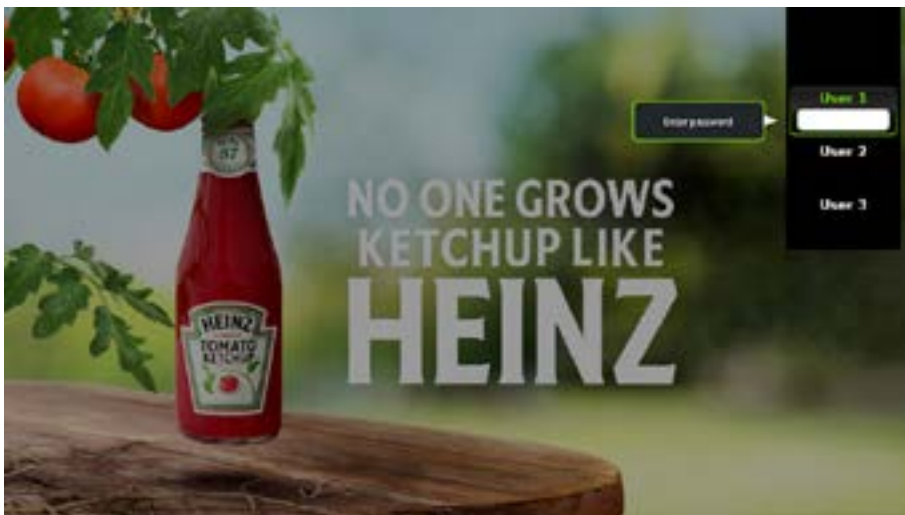Support for random UI placements and Pre/On-pause Roll video

Advertising **formats**

Various advertising formats on **IPTV**, **OTT** and **DVB Hybrid**

| UI

| Log-in screen

Loading screen

Dashboard banner

Dashboard - list item

Details - medium banner

Details - small banner

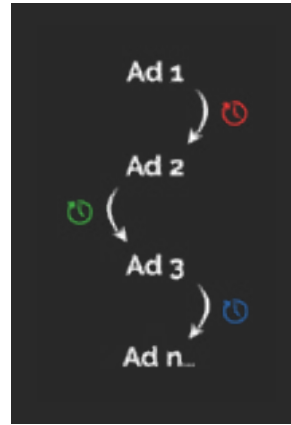# Radio - background

Radio - banner

Pause

Dynamic Ad insertion

Targeting **Options**

Audience targeting based on different variables
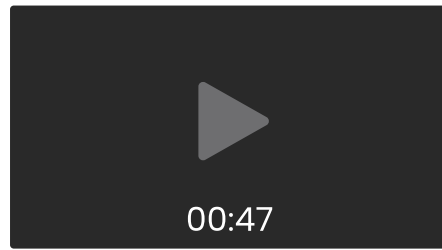
Geo location

Device information

Frequency capping

**CRM & other operator
- owned data**

**Advertising clusters
& personas**

00:47

01:55

Thumbnail Preview

Find and jump to the right position in the timeline.

W ith the Beenius Interactive TV Platform, operators can configure and enable client applications to show thumbnail image preview of the selected playout position when seeking throughout the content timeline.

Thumbnail images can be uploaded or automatically generated by the backend microservice and stored, to be available for consumer applications. Thumbnail images can be used for VOD content or catch-up TV programs.
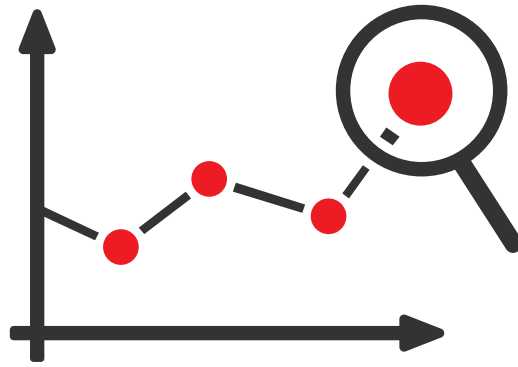
Operators can:

✔ Setup automatic thumbnail creation for all available or selected CUTV channels or VOD contents.

✔ Manually upload thumbnails for any available VOD or CUTV content.

Subscribers can:

✔ Preview a small image of the selected playout position in the timeline while seeking throughout VOD or CUTV content.

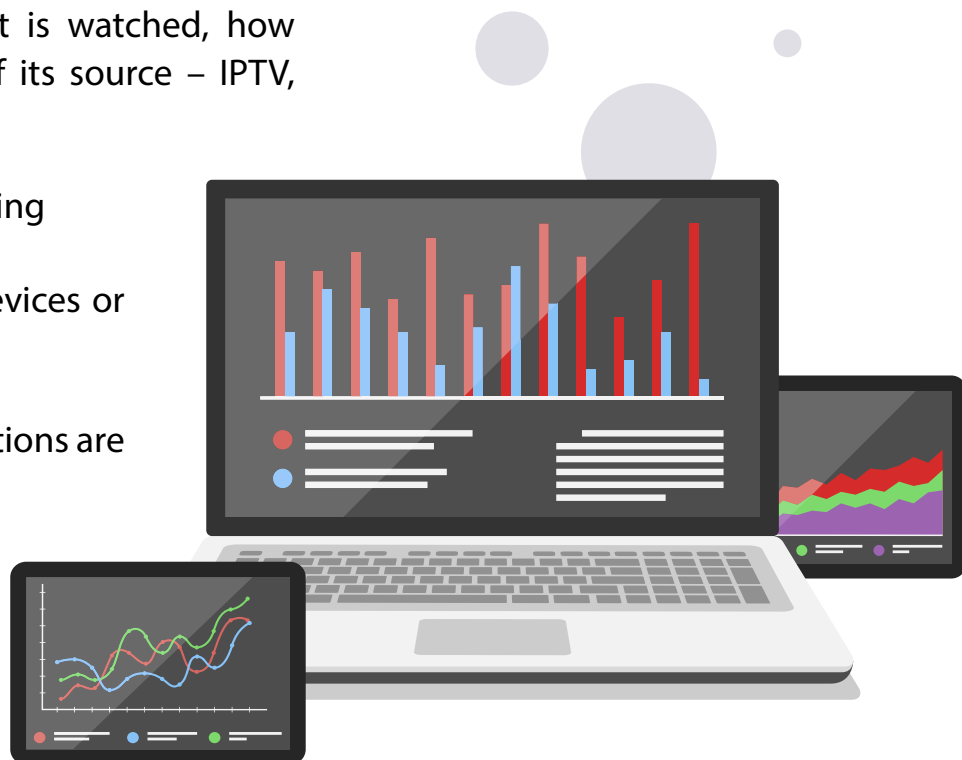✔ Easily browse and find the exact position in the timeline.

User Analytics

*Get to know your customers and their **viewing habits***

Beenius empowers operators with the latest user statistics and provides powerful user analytics. Based on gathered statistics, Beenius' user analytics provide data for assessment of the customers' consumption and behavior. Information such as which Live TV shows, recordings or VoD movies are watched and for how long and similar other user events can be now effortlessly gathered and presented via Beenius Analytics Dashboard. The statistics is collected from several Beenius client applications, such as Beenius Linux STB, Beenius Android STB/TV, Beenius Mobile Android or iOS, as well as Beenius Web app.

Beenius User Analytics offers operators an insight into how the end-users consume the service from couple perspectives:

- **Content:** which content is watched, how and when, regardless of its source – IPTV, OTT or broadcast!

- **Audience:** who is watching

- **Device:** what type of devices or versions are involved

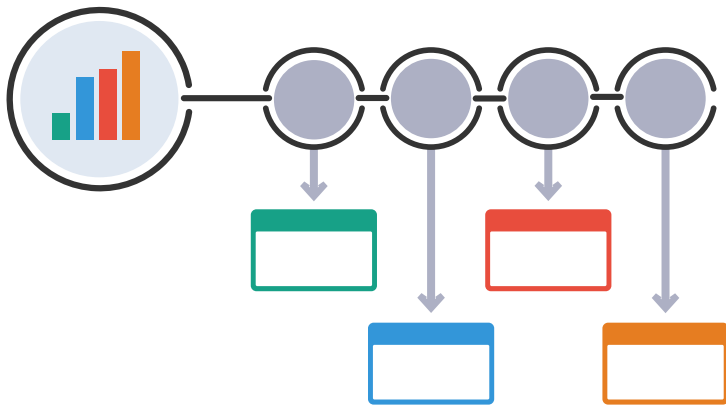- **Purchase:** what transactions are done by user

Dashboard

Beenius Analytics Dashboard can be tailored according to operator's requirements, but essentially provides information about subscriber's consumption, usage, and behavior through selected events such as: Live Most Watched, Unique Viewers, Device Types, Client Types, Catch-up Views by Channel, by program, etc.

API

A flexible API is available for fetching statistics data. The operator can build its own user analytics dashboard using own tools and systems.

The Beenius statistics model includes two components: server and client part. Server part is responsible for gathering data from clients, data processing, and storing it to the statistics database. Client part is responsible for gathering events from user actions in client UI and sending them to the server.

Events

Gathered events can be based on statistics of client consumption of LiveTV Watched, VOD Watched, Program catch-up watched, Pause & Resume operation, and they can also be based on client's UI behavior of VOD bookmark created, LPVR program recording scheduled, Recommendation dashboard action. Events are gathered based on VoD purchase, Subscription purchase, …or Targeted Advertising Live TV, Targeted Advertising VOD, etc.