

ACCESS Twine™

The 360° Smart Media Platform for Operators and Content Owners

Running a profitable, successful service requires much more than just setting up a technically sound solution. It means continuous optimization in terms of increasing revenues and reducing costs. ACCESS Twine™ is the 360° Smart Media Platform that enables consumers to seamlessly access public, private and premium content, at home, remotely in the car or on the go at any time, combining the home, the car, and the mobile domain.



Benefits for operators and content owners

Smart Media Platform provides the framework to enable operators to create fully integrated services now and in the future. On one hand there is the traditional multiscreen media support – on the other hand there is the seamless integration of Smart Home & IoT devices and services.

The 360° Smart Media Platform ACCESS Twine™ puts the user in the center of activity to support him at home, on the go or in his car. Interaction between the user and among the three silos Media, Security Appliances and IoT Sensors & Actors is the base for all services provided by or connected to ACCESS Twine™, like Remote Access, Cloud Services, Provisioning, Logging & Analytics, Operator Integration

and last but not least Permissions & Digital Rights.



_ ACCESS Twine™ 360° Smart Media Platform

(click to enlarge)

Media Domain

ACCESS Twine™ enables operators to leverage their content services the most desirable content solution for their subscribers. This includes all kinds of content sources, be it public, private or premium content. It provides a way for operators to answer the plurality of other video services to increase user experience and customer loyalty by avoiding application hopping. Content monetization and service profitability are perfectly supported by ACCESS Twine™, as it provides all possibilities of building a highly differentiated unique selling proposition compared to other services and of creating a one-stop solution for all contents by integrating 3rd party services into the operator offering.

In order to increase revenue, the service should attract new customers and satisfy the end-users expectations. ACCESS Twine™ is the perfect tool to provide the information needed to understand their consumer base better by setting up a customer intelligence system, creating, transferring and storing relevant usage data of media consumption, behavior and the most popular devices and allows analytics on this data.

ACCESS Twine™ helps to reduce churn and increase customer loyalty by enabling the operator to understand the end-user needs better. The operator service can be benefit in multiple ways by using Twine modules, e.g.:

- content aggregation
- aggregated search
- “follow-me” functionality / place-shifting

ACCESS Twine™ enables operators to optimize the user experience as all desired contents and information can be accessed from one single service.

Furthermore, new revenue streams can be generated when knowing the consumer desires and usage behavior in more detail, e.g. targeted advertisements and campaigns. These can be integrated by ACCESS

Twine™ in many ways, like banners, pre-rolls or mid-rolls, etc. In addition, ACCESS Twine™ eases up the integration of further services to the operators' proposition no matter whether they are own cross- and up-selling offers or the integration of 3rd party external services, like VoD/OTT offerings, including prominently placing the according brands. Enabling these functionalities lead into an increased service reach when they are based on the customers' desires.

ACCESS Twine™ also supports operators and content owners in preserving their investments by providing secured media access and enabling secured multiscreen media sharing. Additionally, by pre-integrating Conditional Access / Digital Rights Management solutions the latest security requirements of the studios can be adhered to by operators. While ACCESS Twine™ is CA/DRM technology agnostic it is open to be integrated with any of such systems, including Microsoft PlayReady®, Verimatrix VCAS® and ViewRight™ technologies.

Finally, optimization of costs is a ubiquitous task ACCESS Twine™ can help operators to address. It helps to overcome the issue of device fragmentation as its SDKs are available for all major OSes, be it desktop or mobile. Additionally, operators benefit from ACCESS' wide experience of the consumer electronics market having deploying on more than 1.5 billion devices

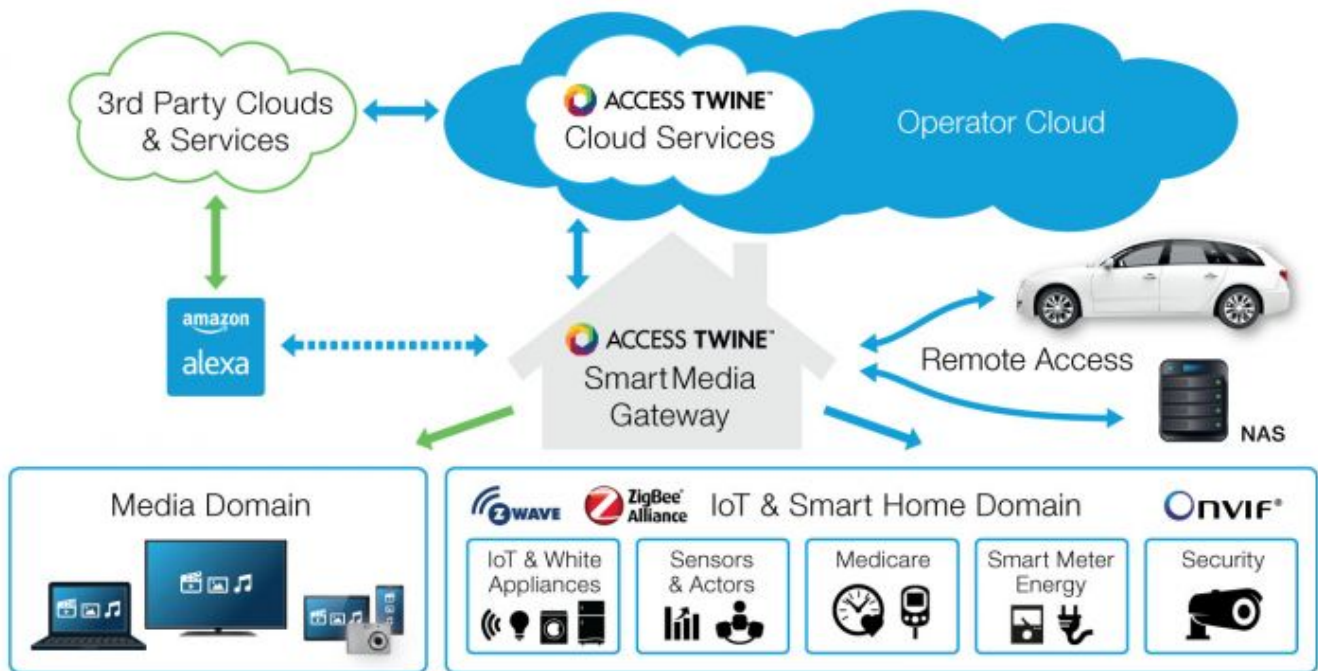
Furthermore, by enabling multiple content sources accessed from a single operator service joint marketing initiatives can be enabled. Hence, the individual costs per party can be reduced in contrast to addressing the same customer group separately.

IoT & Smart Home Domain

ACCESS Twine™ integrates the IoT & Smart Home Domain in the different fields of Security, of Smart Metering / Energy, Medicare, generic Sensor & Actors, and further IoT & White Appliances by supporting protocols and standards like ONVIF, ZigBee, Z-Wave, etc. The Twine SmartMedia Gateway is fully extensible of integrating cloud services enabling 3rd parties, like Amazon Alexa, for example. In addition, the open structure of ACCESS Twine™ allows for the easy possibility of adding further protocols and standards to extend to the relevant use cases as they are identified by operators.

One of the biggest advantages is the seamless integration of the IoT & Smart Home Domain with the Media Domain which leverages on the joined capabilities. For example, a video stream from a surveillance camera can be place-shifted to any screen from the media domain. It can be recorded in the cloud by the Twine Cloud Services and by using the remote access functionality everything can be controlled and consumed even on the go from your mobile.

Rulesets, like IfTTT, can be established and can be executed in the combination of the Twine Cloud Services with the Twine SmartMedia Gateway when triggered by any user defined combination of events.



_ ACCESS Twine™ Smart Home & IoT Overview

Use cases



Operator use cases

Seamless SmartHome & IoT integration

Operators are already focusing on SmartHome and IoT services, typically by supporting some devices speaking one protocol and basically connected to its proprietary gateway device and dedicated app. ACCESS Twine™ enables the operator to widen their services easily and providing a much more complete world of interaction to their end-users through one single branded app: It supports common protocols like Z-Wave, ZigBee and ONVIF, but also allows integration of further protocols and devices already present in the operators' and users' environment. This makes the operator's service the central point of the all-day-life and reducing the efforts necessary by the end-user to let all the different devices collaborate with each other, using centralized rulesets and being accessible from in-the-home, on-the-go and even from a car.

Content delivery extension from main set-top box to all available devices

ACCESS Twine™ enables operators to deliver premium video services beyond the first set-top box to further available devices in the household such as tablets & smart-phones, smart TVs and PCs. Operators can even include with place-shifting, the desirable “follow-me” functionality. ACCESS Twine™ provides usage data which enables operators to analyze and optimize their content portfolio tailored to consumer’s needs and viewing habits.

Flexible control of premium media distribution

ACCESS Twine™’s advanced domain and device control functionality enables operators to monitor and control consumer devices usage. While ACCESS Twine™ is agnostic to the applied mix of security technologies, it has proven to perfectly support DTCP-IP for link protection, to excellently work with e.g. Microsoft PlayReady®, Verimatrix VCAS® and ViewRight™ technologies, and to provide great support for further solutions like Google Widevine®, Apple FairPlay Streaming™, etc.

Monetization

ACCESS Twine™ provides operators insight into consumer usage patterns and facilitates the development of new revenue streams, such as personalized recommendations and targeted advertising. Furthermore, it provides the base for optimizing the content portfolio to reduce costs and to increase customer satisfaction as well as ARPU

Consumer use cases

User, Device & Rights management as umbrella for Media & SmartHome

As ACCESS Twine™ integrates SmartHome & IoT devices seamlessly into the domain of the user, it is natural that sensor events and values can trigger actions, that AV streams even from surveillance cameras can be watched on all connected devices, can be recorded in the cloud, local recordings can be accessed from remote, etc. This enables the end-user to grant the rights to access such private contents and information to family and friends, on a similar granularity as content owners do when protecting their content.

One-stop access to all contents

Services utilizing ACCESS Twine™ enable consumers to access all kinds of content sources using their familiar user interface. No matter whether it is live or on-demand media or whether it is public, private or premium content. In addition, it supports all the typical consumer electronic devices like STBs, smart TVs, game consoles and mobile devices in and around their home.

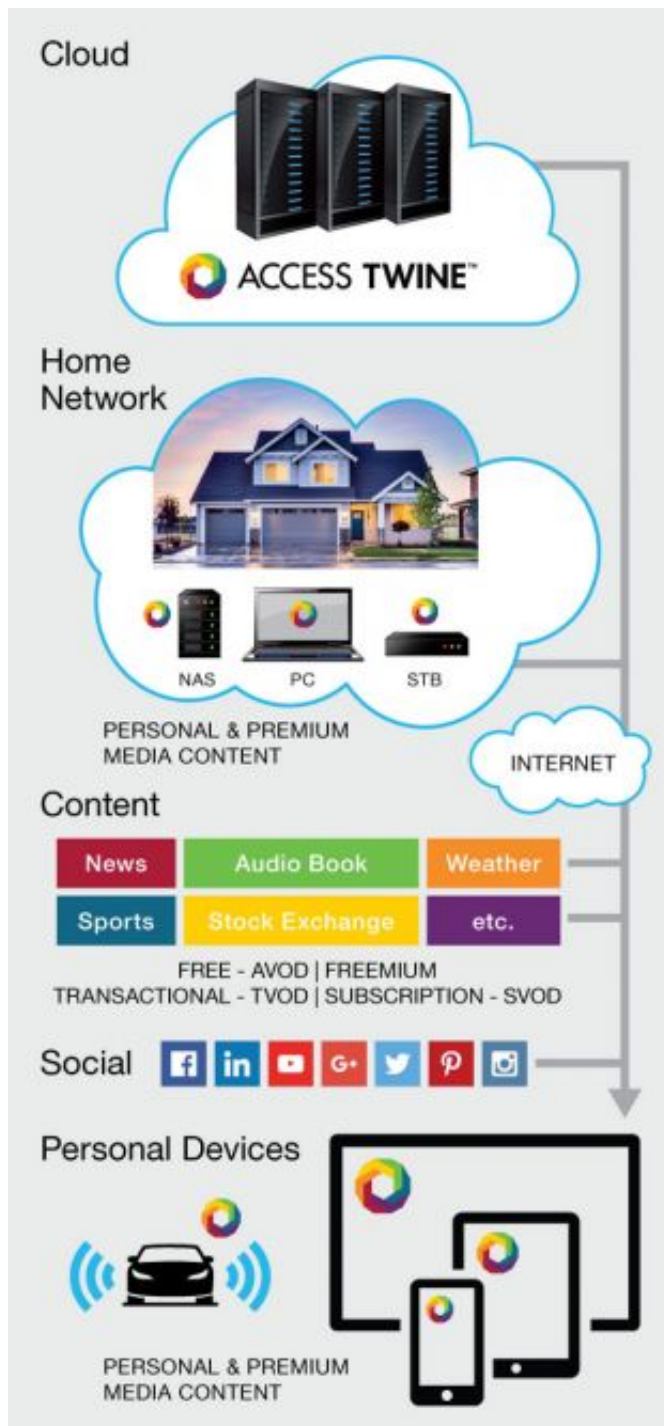
Secured media distribution to any device

ACCESS Twine™ powered services enable consumers to securely share any media with any combination of registered devices. Even a comfortable “follow-me” functionality is available to easily drive content from one device to another and continue exactly at the same point of media.

Best content quality

ACCESS Twine™ is totally agnostic to the transportation layer of contents, but can support broadcast distribution as well as IPTV services so that consumers have always access to the best possible quality available. Thus, premium contents and their catalogue media can be presented best to engage consumers’ interest.

Feature highlights & Advantages



ACCESS Twine service diagram (click to enlarge)

ACCESS Twine™ provides seamless multiscreen solutions

ACCESS Twine™ extends traditional multiscreen solutions by providing true “follow-me” functionality, also known as place-shifting. This enables the end-user to change the displaying screen during playback and the content will continue exactly at the same position on the new destination. Thus, content can follow a consumer from room to room.

ACCESS Twine™ interconnects IoT and Media

ACCESS Twine™ allows for complex rulesets triggered by sensors and their values to perform automated actions, enables the user to bring the surveillance camera streams to the screens of all connected devices and allows granting rights to such private information and contents. Thus, it is ensured that users can only access content they are entitled to.

ACCESS Twine™ supports content owners / operators security requirements

ACCESS Twine™ allows the integration of diverse security mechanisms from link protection (DTCP-IP), over Conditional Access (CA) to Digital Rights Management (DRM) solutions, e.g., Microsoft

PlayReady®, the Verimatrix VCAS® and ViewRight™ technologies, to provide a security level that matches the studios' security requirements. This leads to a robust end-to-end protection of the contents and a consistent consumer experience over all the devices in a household.

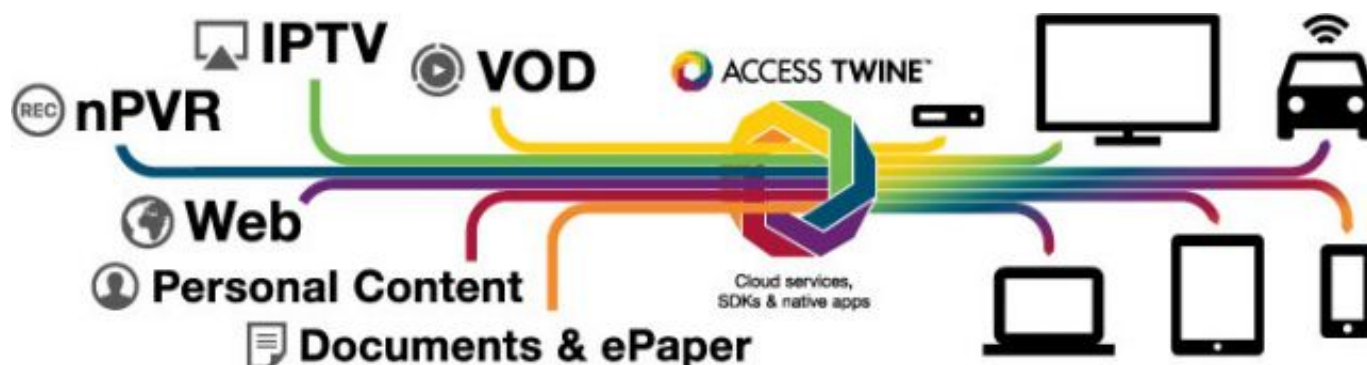
ACCESS Twine™ helps consumers to find the desired content

ACCESS Twine™ provides modules to apply content aggregation and aggregated search. Content aggregation gives the consumer the ability to see all contents available independent of source, aggregated search provides an easy way to find the desired content across all integrated content providers within the operators offering.

ACCESS Twine™ supports all kinds of content sources, be it public, private or premium, and supports all kinds of media, be it live or on-demand, and can integrate additional 3rd party content portfolios.

ACCESS Twine™ provides flexible software components

ACCESS Twine™ consists of complementary components working together as device based and as cloud based components. The device based software is available for set-top boxes (STB), digital TVs, home gateways, smartphones, tablets, network attached storage (NAS) boxes, personal computers and more, while the cloud based software provides the central services for domain, user, device & security management, provisioning, content management, usage data logging and analytics, etc.



ACCESS Twine Overview

Device based components

- Twine Gateway
- Twine Server
- Twine Client

Supported devices: Set-top boxes (STB), digital TVs, home gateways, smartphones, tablets, network attached storages (NAS), personal computers, etc.

Supported OS: Embedded Linux®, Google® Android®, Apple® iOS™, Microsoft® Windows®, Apple® macOS® / OS X®

Cloud based components

- Twine Management Service
- Twine Content Service

- Twine Data Service
- Twine Dashboard

Separate & Complementary Modules (Add-Ons)

- DTCP-IP
- CVP-2 / VidiPath
- Conditional Access / Digital Rights Management
- Remote Access
- Cloud Content Metadata search & management
- IoT & SmartHome (Z-Wave, Zigbee, ONVIF, etc.)
- 3rd Party Cloud Service connectors (Amazon Alexa, etc.)

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