CONNECTED MEDIA EXPERIENCE

Historically, vinyl albums and CDs provided a designed extension to the core music experience by including lyrics, artwork, and back-story in the physical packaging. However, the digital media marketplace has largely been based on selling single, stand-alone files, rather than a full media experience.

The rapid improvements to Web standards, as well as an influx of devices that can capture high-quality media, have made it feasible to produce rich multimedia experiences at relatively low costs by relying on Web technologies.

By leveraging the evolving advances in multimedia capabilities that the Web platform affords, the Connected Media Experience seeks to establish a digital packaging standard that can change by incorporating downloadable and streaming entertainment media that is made available after the initial purchase.

Technical Overview

The purpose of the Connected Media Experience standard is to ensure compatibility between compliant devices and content, and between different functional components of the system architecture, such as client devices and service providers. The architecture is designed so that there are no global centralized components. Instead, the architecture can be federated, and compliant implementations can coexist and interoperate. Where possible, the standard uses existing and free technology.

There are four main components of the Connected Media Experience architecture:
- the package
- the service provider
- the retailer or point of distribution and
- the client software/hardware

The package contains or references all the media assets for a specific release. A release may be a music single or album, TV series, movie, magazine, and so on. Content authors will determine which elements in the package are downloaded, and which are accessible on-line. A content owner may also determine that on-line aspects of the package require verification of a digital proof-of-purchase.

A Connected Media Experience service provider acts as the hub for the online components and validates the proof-of-purchase, if necessary. Service providers can be specified on a release-by-release basis.

It is expected that Connected Media Experience products will be made available in a variety of ways, including through normal digital retail outlets.

Connected Media Experience packages are rendered by client software or hardware. The client periodically checks for package updates, and upon user request, obtains them by communicating with the Connected Media Experience service provider.
- **I) The package**
  - Baseline Asset Formats
  - Proof of Purchase
  - Manifest
  - User Interface
- **II) The Retailer / Distributor**

- **III) The Client**
- **IV) The Service Provider**

I) The Package

The Connected Media Experience package is a zipped collection of files, including media assets (e.g., MP3 files), a manifest that includes metadata and describes the assets, an optional proof of purchase, and a description of one or more user interfaces.

Baseline Asset Formats

To ensure compatibility, the Connected Media Experience standard mandates that all assets be available in widely compatible formats to make certain that the baseline experience is available on all devices labeled as being compatible with the Connected Media Experience standard.

Proof of Purchase

Connected Media Experience functionality such as access to certain online content and services can be limited to packages with a valid digital proof of purchase.

The proof of purchase is generated and inserted into the CME package by digital retailers and/or their content delivery networks (CDNs) prior to download.

Manifest

The manifest is an XML document incorporated into the package that describes the primary media assets (e.g. audio tracks, videos) contained within a release. XML was chosen for flexibility and expandability.

User Interface

The user interface of a package is described through a combination of HTML, CSS, and JavaScript. The user interface can adjust based on the platform screen size and capabilities. A package can make use of other technologies (e.g., Flash or Silverlight) if the client supports them.

II) The Retailer / Distributor

Connected Media Experience products can be merchandised and sold alongside conventional digital products. Retailers and other distributors will typically provide the user with the entire CME package, containing the primary media assets (e.g. audio tracks), the user interface, and the digital proof-of-purchase. The service provider (described below) ensures that all the appropriate on-line assets are available.

III) The Client

The Connected Media Experience client is responsible for displaying packages. Since the package can be updated by the content owner at any time, the client is responsible for periodically checking with the service provider for updates. If the user opts in to an update, the client will download and

install it. The client also provides services to the package, such as facilitating transfer of the proof-of-purchase to the service provider so the user can obtain access to certain on-line content, if applicable. Clients are also able to check package integrity through a digital signature.

IV) The Service Provider

The Connected Media Experience service provider is responsible for coordinating access to online assets and data, communicating package updates to clients, and verifying proof-of-purchases, if required. Online content may be available for download or streaming. Some of it may originate from the service, or the service may simply serve as an aggregation point and reference online content hosted elsewhere on the Internet. Content updates may consist of new assets (e.g., a new video or audio remix) or data feeds.