

Content Reference Forum

Backgrounder

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Current Digital Content Industry Problem

There is currently a lack of interoperability between digital content technologies that makes it challenging for consumers to easily get the content they want, in the format, platform and other preferences they choose. Additionally, there is currently no technology framework in place that allows all market participants to ensure that the business agreements they make are respected. Today, there does not exist a technical and business framework to achieve interoperability across multiple technology platforms and enable new business models. The Content Reference Forum plans to change that.

Mission

The Content Reference Forum (CRF) is a recently formed standards group of leading technology and content-related companies established to develop a universal way to distribute digital content across various mediums and geographies. The organization's goal is to create a dynamic marketplace where participants can promote, sell and legitimately share content; consumers can get the right content for their location, platform and preferences; and the underlying commercial agreements and rights surrounding the content are respected.

CRF's work will benefit many different audiences including content and technology companies as well as services companies (e.g. cable, telecommunications, cellular) and related businesses (e.g. Internet portals/media companies, wireless companies, computer manufacturers, consumer electronics makers, entertainment companies). Consumers will also eventually benefit as it becomes easier for them to find and share the content they want in the way they want it.

The technology is context sensitive. It's the antithesis to once size fits all mass market distribution models. This makes it quite powerful and consumer friendly. The user's situation is relevant and respected: rendering environment, location, existing relationship with content provider(s), language preferences, etc.

Content References Architecture

At the crux of The Content Reference Forum's architecture are "Content References," data packages that uniquely identify content and the context in which it will be used. Content References are resolved by "Reference Services" that determine the right content, user context (including rendering environment, language and location) and commercial terms of usage. The "Reference Service" facilitates the seamless acquisition of appropriate content (e.g., matching consumer's preferences and platform capabilities) by providing an offer or offers for the consumer to buy the content, or connecting the consumer to the appropriate retail source, per contractual agreements for content distribution.

A real world example of a Content Reference is when a consumer wishes to share a video file with a friend. Via the consumer's personal computer, she sends the friend a "Content Reference" - a pointer describing the content and the prior value chain participation (e.g., an original retailer). When the friend clicks on the reference, her computer messages a "Reference Service" with another "Content Reference" which unites the information about the content and its distribution parameters with the information supplied by the friend (e.g. her country, preferred

device and format). The “Reference Service” checks this information against contractual agreements contained in the Reference Service, and presents a set of purchase or promotional offers to the friend. This is all done transparently to both consumers.

Technology Specifications

CRF promotes the adoption of specifications and design guidelines, leveraging existing standards, to create an open framework for interoperable, platform- and business model-independent digital content distribution. Over the next few years, CRF will continually issue specifications for public review, modify them and encourage participation and adoption by relevant parties looking to benefit from a universal way to distribute digital content across various mediums and geographies.

The initial set of specifications being offered for review in December 2003 is CRF Baseline Profile v1.0, which covers some of the aspects of content distribution using Content References architecture. CRF Baseline Profile v1.0 assumes interaction of software agents on Internet-available computer-based platforms and covers specifications for messaging, service description and discovery, basic content references structure, identification and description of content and of user environment, expressions of rights, offers, licenses and contracts and reference resolution protocol.

At the core of the specifications are formats of Content References and a profile of the Contracts Expression Language (CEL), a language created by CRF to express and enforce complex contractual agreements. CEL is designed to automate determination of the appropriate offerings or other actions and make the commerce fully dynamic and accommodative of any business model. CEL is being harmonized with the international e-business standards and international law through the United Nations/CEFACT.

This set of specifications is not envisioned as a complete “blueprint” for the Content References architecture, but rather as the first step to enable experimentation and solicit feedback. Specifications for Content References are being harmonized with relevant standards from MPEG, OASIS, W3C and WS-I. A liaison has already been formed with MPEG.

Members and Participation

Founding and current member companies of the Content Reference Forum are ARM, ContentGuard, Macrovision, Microsoft, Nippon Telegraph and Telephone, Universal Music Group and VeriSign.

The Content Reference Forum encourages interested parties to take an active role in its efforts by providing feedback to CRF’s specifications. Member companies will play a key role in working with the group to develop a dynamic marketplace for digital content. More information on CRF and its latest specifications available for review are available at www.crforum.org.

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