Chapter III

Assisting Cognitive Recall and Contextual Reuse by Creating a Self-Describing, Shareable Multimedia Object

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Abstract

Digital media elements, or digital assets, are used to illustrate things such as images, sounds, or events. As humans, we use many senses to assist our cognitive processes, and providing multiple representations will enhance our ability to store, recall, and synthesise the knowledge and information contained in the digital asset. This chapter introduces a model for a multimedia object, that allows multiple representations to be managed, and includes a structured metadata file describing the asset that captures the original context. Humans are capable of classifying and describing...
millions of such objects, but recalling context and content often blurs over
time. Computer systems provide us with a way to store electronic objects,
and with a variety of representations and sufficient metadata they can be
used to assist cognitive recall.

Introduction

With the large number of digital assets available on the Internet, it has become
common practice to use and reuse these elements in many different contexts.
A significant problem that occurs is that the original context and associated
metadata gets lost. When the digital assets, such as images, sounds, or videos,
are created, they have specific properties and they exist in a specific and
describable context. Electronic elements have derived properties, such as a
type and size, and can be automatically generated. If the element is part of a
group, then common properties could be described and would include such
things as the author, possibly the location, and maybe some contextual
information such as the event. This metadata could be created in a template and
automatically added to the description of an element. Annotated information
that describes the element can also be attached to the metadata.

Humans are capable of classifying and describing millions of such objects. For
example, for image, the scene information may be retained in short- or long-
term memory, and for most individuals, the details will blur over time. Computer
systems provide us with a way to store electronic objects, and with sufficient
metadata, they can be used to aid in classifying, managing, searching, and
reusing these objects in a variety of contexts whilst still retaining their original
context.

This chapter describes a model that allows a digital asset to be described in its
original context, captures ownership details and annotated metadata, and
allows for multiple representations. As humans have variable memory capaci-
ties, the representation of a digital asset as a multimedia object will assist
multiple cognitive processes by providing appropriate metadata and alternative
representations.

The proposed metadata model is based on commonly used standards and
utilises eXtensible Markup Language (XML). Standards included are the
Semantic Web’s Resource Definition Framework (RDF), the Dublin Core
(used by library systems), and vCard which is used to identify individuals.
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