

# Chapter 8.9

## Standards?

### What and Why?

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#### ABSTRACT

Specifications define the nature of the interconnections between the distinct parts of complex learning systems, but not their boundaries. Next generation CMS tools are emerging from standards discussions that challenge current e-learning systems design boundaries. They raise the prospect of a complex but smoothly functioning set of components and services that aggregate in ways that best serve individual communities of users. Users need to engage in the process to express their requirements for e-learning software. These building blocks, produced by a small number of organizations, are establishing the framework that will enable CMS environments to become vastly different than the CMS you might now be using.

#### INTRODUCTION

Our exploration of next-generation course management systems begins with the important and somewhat hidden efforts to develop e-learning specifications and standards. These building blocks, produced by a small number of organizations, are establishing the framework that will enable CMS environments to become vastly different than the CMS you might now be using. The environment that emerges from well-defined specifications is a landscape that makes the current boundaries set by course management systems both artificial and limiting. The logical outcome of this work is a complex but smoothly functioning set of components and services that aggregate in ways that best serve individual communities of users. Specifications define the nature of the

interconnections between these distinct parts of a complex learning system but not their boundaries. The result is a future world where we'll look back on this discussion of CMS software as a quaint footnote in the development of more robust educational technologies for teaching.

## COMMON NEEDS

Specifications and standards arise from the need to promote technical, syntactical, and semantic interoperability. This need is important in relation to metadata, content, databases, or repositories, designs for learning, vocabularies, learner profiles, assessment, expression of competencies, and networking protocols. Standards and specifications make the “abilities” (Nissi, 2003) of e-learning possible. These abilities include:

- **Interoperability:** Systems work with other systems, within and between institutions or organizations. Content developed in one system is not restricted to that system by proprietary encoding or protocols.
- **Reusability:** Learning objects or resources are easily used in different curricula, learning settings, and for different learner profiles.
- **Manageability:** The system tracks information about the learner and the content.
- **Accessibility:** A variety of learners, with different learner profiles such as educational and physical needs, easily access and assemble the content at the appropriate time.
- **Sustainability:** The technology evolves with the standards to avoid obsolescence.

## Why are Specifications Important?

Specifications enable people to focus on a problem by providing a shared vocabulary of words and ideas. They represent a current “state of the

art” consensus among developers and architects of educational software about a particular data structure, functional behavior, or service that is important for an online learning system. They are intended to capture agreement in the face of change. As such, they provide a hedge against the risks of this volatile environment. To achieve the best return on investment, these systems must be sustainable, flexible, scalable, and interoperable with new learning technologies.

## Specifications and Standards Live in the Background

A key advantage of an effective standard or specification is that, with proper implementation, the standard becomes largely invisible. In this state, the standard is a building block for features that differentiate one product from another.

Take, for example, a typical electronic device you use every day. When you purchase a clock radio or a microwave oven, you focus on the features of the device. You want good sound from your radio or a small size for your microwave. You don't think about the plug that you will insert into the wall to power the device. Plugs and electrical sockets have been standardized, as have voltages and currents. You are not expected to think about these factors to use each device you have purchased. If you needed an adapter for each electrical item, you would think twice about every purchase.

The same advantage of key standards applies to CMS systems. If your content had a standard “plug” for all CMS systems, your world of content choice would be greatly expanded. Similarly, if all CMS systems could communicate with the system used by the registrar's office to exchange key student information, your class roll would always be up to date, and grade submission would be virtually finished when you posted your grades to the CMS. Such is the promise of specifications, yet unrealized.

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