

# Introducing Reusable Learning Objects

This chapter will help you get to know reusable learning objects (RLOs). To get you started, this chapter introduces many of the concepts involved: standards, reusability, applications, and so on. These elements form a foundation of knowledge that we will build on throughout this book as you create your own plan for developing and delivering training solutions based on RLOs.

Here are the specific areas we will cover in this chapter:

- What are learning objects and reusable learning objects?
- Why do I need a strategy?
- Why focus on reuse?
- What are the myths?
- What are the benefits?
- What are the delivery options?
- Are there industry standards?

## WHAT ARE LEARNING OBJECTS AND REUSABLE LEARNING OBJECTS?

The term *learning object* means many things to many people. Definitions range from something as small as a paragraph of text to something as large as a complete training course. Some people focus on any grouping of like content with an associated performance objective or learning objective. Others shy away from the concept of learning and instead focus on content or knowledge objects. Still others exclude any small granular objects, media elements, or interactive assets as mere building blocks that can be pulled together to form a learning object. In fact, the more people you ask about what they believe a learning object is, the more answers you will get. As for the learners, they see a variety of terms for what they experience as a class, module, unit, lesson, chapter, page, section, and so on. In fact, each is simply a collection of learning objects.

Notice the use of the term *granular*. In the context of learning objects the concept of granularity refers to the smallest item that is found inside a “course” or other deliverable created from learning objects. An individual grain can be called an asset, or element, and is similar to grains of sand that form a beach, or building blocks that are combined to form a structure. However, the size of these granules is open to definition, just as the size of each learning object can be uniquely defined. You could choose to define a letter, word, sentence, or paragraph as the smallest granule, element, or asset.

There is one industry-accepted definition of the term that we can refer to, although it is very broad and does not clearly address issues of learning objectives, performance outcomes, measurement, and other elements you would expect. According to the IEEE Learning Technology Standards Committee (LTSC) IEEE P1484.12.1-2002 Learning Object Metadata Working Group ([http://ltsc.ieee.org/wg12/s\\_p.html](http://ltsc.ieee.org/wg12/s_p.html)), learning objects are “any entity, digital or nondigital, which can be used, reused, or referenced during technology-supported learning.” The phrase “any entity” opens a Pandora’s box of various-size objects with different functions and target audiences. As for “technology-supported learning,” according to the IEEE specification, this includes “computer-based training systems, interactive learning environments, intelligent computer-aided instruction systems, distance learning systems, and collaborative learning environments.”

In its white paper titled “Reusable Learning Object Strategy,” Cisco Systems, Inc., defined a two-level hierarchy of objects in which five types of reusable

information objects—concept, fact, principle, process, and procedure—were used to build a larger structure based on a single terminal objective called the *reusable learning object*. Cisco simplified the terminology over time to avoid any confusion between levels of the hierarchy. This resulted in the company’s use of the student-familiar terms *lessons* and *sections* to represent the RLOs and RIOs, respectively.

Cisco’s follow-up white paper, titled “Enhancing the Learner Experience,” defined the ideal learning object as containing “a single learning or performance objective that is built from a collection of assets that provide static or interactive content and instructional practice activities. Any learning object can be ‘tested’ through assessments that measure the learning or performance objective and are either positioned with the learning object or collected as an assessment object.”

Others in the training and performance-support industry have created similar definitions for learning objects. Most training vendors, and organizations with a large set of existing content in their curriculum, look at their current hierarchies and pick out the smallest logical group that they may want to leverage and reuse in another context or have students access as a discrete learning experience and call that the learning object. Most would agree that, from a utility point of view, the learning object should have some context and meaning for the learner. Thus, a graphic on its own would likely not be considered a learning object. However, the graphic next to a procedure table and a simulator for practice can be combined to form a meaningful learning experience, and so this would likely be called a learning object.

Missing from many definitions is the idea of context and the impact that context has on being able to find, modify, and reuse existing learning objects from a database of courses, lessons, or modules. Many argue that context is what enables a piece of information to move from simple reference material to active training experience, something that encourages learning-to-job transfer. Depending on the size and scope of the learning object the context can result in collections and packages with labels that you and the learner are familiar with, such as courses, lessons, labs, case studies, role-plays, and so on. Regardless of the label, it is important to keep in mind that context is a key component in a learning object definition, and it will be discussed in more detail throughout the book.

Put very simply, a working definition of a learning object is as follows: *a learning object is an independent collection of content and media elements, a learning approach*

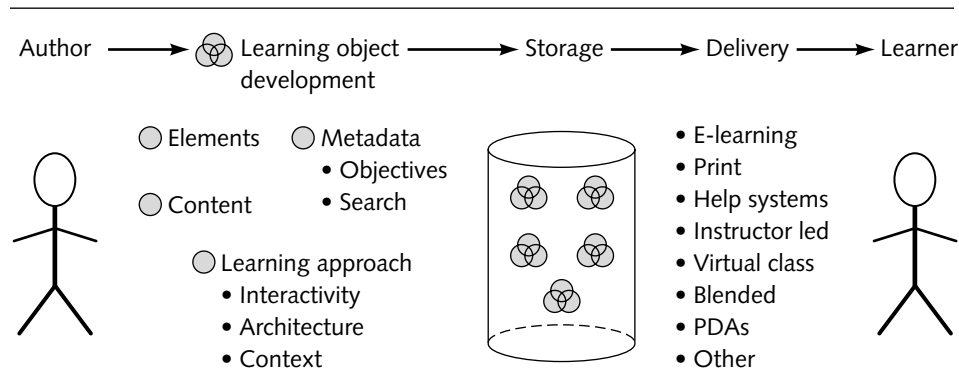
(*interactivity, learning architecture, context*), and *metadata* (used for storage and searching). Metadata is part of the definition. As you will learn in Chapter Five, the term *metadata* refers to a collection of keywords, attributes, and descriptive information that tells authors, learners, and systems about a learning object. This rich set of data is critical when using applications and databases throughout the learning object creation and delivery process.

Learning objects are authored in small pieces, assembled into a database, and then delivered to the learner through a variety of delivery media (see Figure 1.1).

The learning object definition needs to encompass delivery and format issues as well as elements and context. Context and learning objectives should fit with accepted instructional design approaches and methodologies. Storage and retrieval of learning objects and their elements from a database should be allowed. To be *reusable*, learning objects must also contain search data so that users can find these objects and reuse them. Ideally, learning objects should include the following features:

- *They should be objective-based.* They should accomplish a single learning objective by combining a series of elements including content, media, and interactivity. (The process of creating these elements is presented in Chapter Four.)
- *They should be context-free.* Content, media, and interactivity are combined to form a meaningful structure so that the learning object can stand alone from the rest of its associated hierarchy, making it portable, reusable, and relevant as an independent learning experience. (How to build this structure is covered in Chapter Four.)

**Figure 1.1. The Learning Object Process**



- *They should be interactive.* Although this is not always required, engaging learners, making them active participants in the learning experience, is key to having them meet the learning objective.
- *They should be self-descriptive.* Search data (or metadata) associate with each element and learning object to be used by the system, authors, and learners. (Metadata will be covered in Chapter Five.)
- *They should be self-contained.* Each learning object is capable of either standing alone or standing in unison with other learning objects to create any number of training programs or technical manuals.
- *They should be single-sourced.* A learning object is written so that multiple authors, in multiple learning environments, and in multiple delivery formats ranging from print to e-learning, can use it. This requires writing and reuse guidelines and processes that will be discussed later in this book.
- *They should be format-free.* To be reused in multiple delivery media, learning objects should be created free of look-and-feel formatting. The formatting happens during the delivery of the learning objects to the learner. (Delivery is covered in Chapter Three.)

In this book we most frequently use the term *reusable learning object* (RLO) because our focus is on learning objects that are accessed, reused, or reformatted throughout a database system. The idea of reuse has implications for both authoring and delivering learning objects; therefore, it is important to include in your strategy. Throughout this book we also acknowledge that learning objects have benefits besides reuse, and supporting reuse may result in some difficulties. More on the subject of reuse follows in a later section of this chapter.

## WHY DO I NEED A STRATEGY?

The purpose of any strategy is to document a plan of action, goals, and deliverables for a project or undertaking. In this case, the strategy you are developing is the implementation of reusable learning objects in your department or organization. Your strategy may be narrow, focusing on a small group of internal authors creating RLOs for a modest-sized internal audience, or it may be global, relying on every employee as an author, leveraging the help of external vendors and partners, and establishing a commerce model for external learners.

Obviously, the ambitiousness of your goals, the size of your organization, its willingness to change, and your time lines will all have an impact on the size and scope of your RLO strategy. This strategy should contain an assessment of the risks, challenges, and benefits for authors, the organization, and learners. It should specify deliverables, milestones, and projected costs. It should identify partners and vendors who will help roll out your RLO-based authoring, delivery, and management tools. It should highlight possible integration issues with your existing systems and integration with your “legacy” or existing knowledge and training infrastructures. As you can guess, changing your existing process and content to an RLO-based system will require additional resources.

An RLO strategy will be necessary in order for you to document all these points. If you do not have such a strategy, you will have difficulty communicating your plan. This is especially critical when the strategy is global or its implementation requires a great deal of change management to deal with possible resistance. This book will help you answer questions that you should consider in developing your strategy, including these:

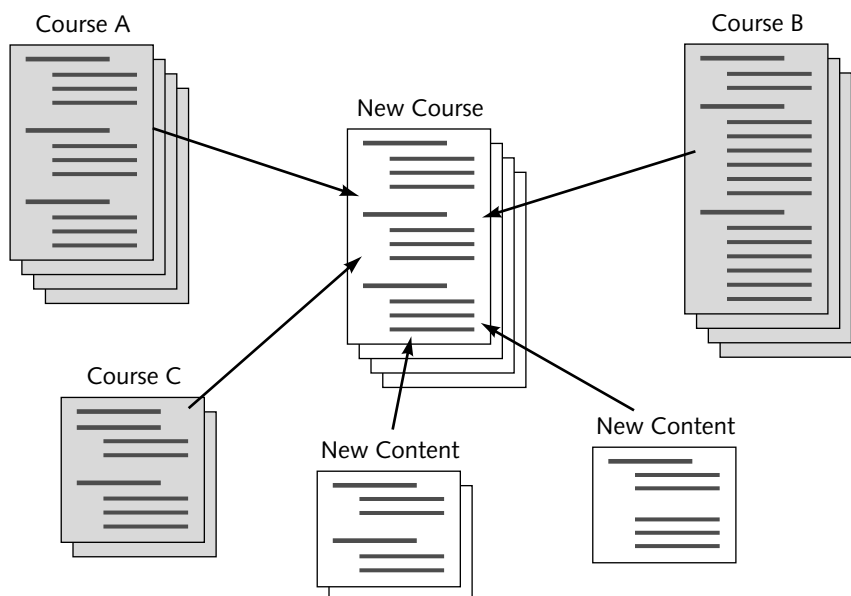
- Will all training and information be developed to the RLO strategy?
- What resistance will you face in implementing the RLO strategy?
- Will the RLOs be authored and delivered internally or externally?
- Will the RLOs be delivered on-line, as part of a performance support tool, in a classroom, in print, or through some combination of all of these?

By the time you finish this book, your strategy should be complete. It will become your project plan, best practice guide, business justification, and integration map for implementing RLOs at your organization. Without this document, your ability to implement RLOs successfully will be greatly reduced.

## WHY FOCUS ON REUSE?

As you can see, the concept of reuse is only one element in learning objects. It is in the title of our strategy because many authors and implementations of learning objects have found the potential of reusing existing learning objects and elements to be a key business driver for adopting such a strategy. Figure 1.2 illustrates the goal of looking for existing materials from multiple sources and bringing them together in a new course, unit, lesson, or other performance solution. This level of

**Figure 1.2. Leveraging or Reusing Existing Training**



reuse is ideal. It assumes that pieces or elements from other learning objects can be found to fit into a new learning object. It also assumes that you will be able to find those elements and learning objects from all the other possible sources throughout your learning object database or existing course curriculum. Reuse, as you will quickly guess, is not as clean and easy as we would like. Therefore, it is important to think beyond reuse when adopting an RLO strategy.

Remember, the promise of learning objects is that they can be leveraged, linked, or copied by multiple authors, placed into any number of training and performance programs, and then delivered in a range of delivery media. Of course, there are other *r* words that could equally speak to the advantages of learning objects. We could focus on modifying these objects through *repurposing* while avoiding redundant information. We could focus on *returnable* learning objects that can be checked in and checked out by authors. Likewise, we could talk about *restrictive* learning objects that force you to author based on a specific instructional design approach. These “r” words are covered in more detail in Chapters Two and Three.

For now, let us keep in mind that pure reuse is an ideal scenario; in practice, many authors adopt a repurposing approach. This is the process of finding existing learning objects and changing them in some way to fit the author's specific needs. Although this does allow for custom solutions that fit the new context, repurposing content can have some negative consequences. To begin with, each modified object becomes a copy in the database, and therefore adds more and more objects to a learning object repository that may be difficult to distinguish. This provides a larger number of objects for potential reuse in the future, but it can also significantly limit your ability to find them. Other issues such as version control, ownership, and updating the original also need consideration.

All the issues around the *r* in front of learning objects, including reuse, repurpose, redundant, return, and restrictive, are addressed in later chapters.

## WHAT ARE THE MYTHS?

Just as there are many definitions for learning objects, there are many myths about their benefits, costs, and limitations. In the previous section we listed the possible benefits of learning objects, including reuse, distributed authoring, single-source delivery, and customized learning experiences. These may not be of equal difficulty or cost to implement. In fact, some critics of learning objects have focused on the restrictive nature of granular, single-source content, asserting that it lacks context and relevance. Others have focused on the costs of integration, conversion of existing content, finding learning object-authoring tools, changing authoring habits, and engaging the learner in meaningful, rich, problem-solution-based learning experiences. Others think that only step-by-step, procedural, technical training can be built from RLOs.

So how do you determine what is a myth and what is a possible reality? There is no simple answer to this question. It will depend on the size and scope of your learning object strategy, the tools you have to support that strategy, the size of your authoring community, and the demands of both your business and your learners. One way to separate myth from reality is to look at your RLO strategy and everything you would like to accomplish through learning objects. Assume that everything can be done given enough time, resources, and intellectual capital. Then do a reality check. Look at the tools, partners, and resources available to help you complete your implementation. Those items that prove too costly, out of



scope, or limiting for the learning experience should be highlighted and either modified or removed from the strategy. Likewise, you may find that some items you thought would be difficult to fulfill are in fact possible. So instead of perceiving those impossible features and functions as limitations, or myths, realize that they are simply out of scope for your current implementation.

That said, we will address four myths about RLOs here: they only work with technical content; they result in directive learning; single-sourced content is impossible with them; and they solve any training problem.

### **They Only Work with Technical Content**

One of the frequent criticisms of RLOs is that they only work with technical content. Because many organizations look at RLOs to support e-learning initiatives, and there is a great deal of procedural technical training on the market today, the impression is that RLOs only support technical-based e-learning.

Of course, this is not accurate. Many companies have used learning objects to build soft skills, such as sales skills, management skills, or other nontechnical training. As you will see in the case studies in this book, both Cisco Systems and Redwood Credit Union have implemented soft-skills training using RLO strategies. Cisco Systems has successfully applied RLOs to sales and client relationship training as well as to technical training. Redwood Credit Union is creating a strategy that will use RLOs for customer service, management, and operations training.

### **They Result in Directive Learning**

Another common myth is that RLOs can only be strung together to form step-by-step directive learning architectures. This is where the learner cannot explore, apply problem-solving skills, or achieve higher cognitive learning objectives such as synthesis and evaluation. The reason why many people focus on directive learning is because of the tie to traditional computer-based training, where lessons are connected through a forward and backward button, following a page-turning metaphor. In addition, many of the database-oriented authoring tools of today present learning objects in a fixed hierarchy that is based on that same page-turning metaphor.

In her book *Building Expertise*, Ruth Clark (1998) identified four distinct architectures for the design of training programs: receptive, directive, guided-discovery,

and exploratory. Table 1.1 presents a brief description of each. (More discussion can be found in Chapter Three.) Looking at the content that goes into each of these architectures, we can see a place for learning objects. Exploratory environments allow the learner to jump from area to area—or learning object to learning object—with little or no system control. Guided discovery allows learners to solve problems and perform complex tasks just as they do on the job. Learning objects in

**Table 1.1. Learning Architectures**

<i>Architecture</i>	<i>Description</i>
Receptive	Training and presentations based on a receptive architecture put learners in the inactive role of observer. They may be in the form of a long lecture (with no questions) or a series of e-learning screens with no interactivity. In these cases the learner is passive and has little or no control over the speed or flow of events.
Directive	The directive architecture places learners in a more active role. The training provides small sections of material followed immediately by an opportunity to apply the learning through practice or interactions. Although learners are more active, they still may not be in charge of the speed and flow of learning.
Guided discovery	The guided-discovery architecture is based primarily on problem solving. Ideally, the problems presented to learners are replicas of the types of problems they will solve in the workplace. Learners also receive a variety of instructional support techniques to use when solving the problems being presented.
Exploratory	The exploratory architecture provides learners with a large and complex set of materials that can be used to learn new things. This architecture does not try to guide the learning in any way. Learners are free to choose from any number of experiences to master a new topic or task.

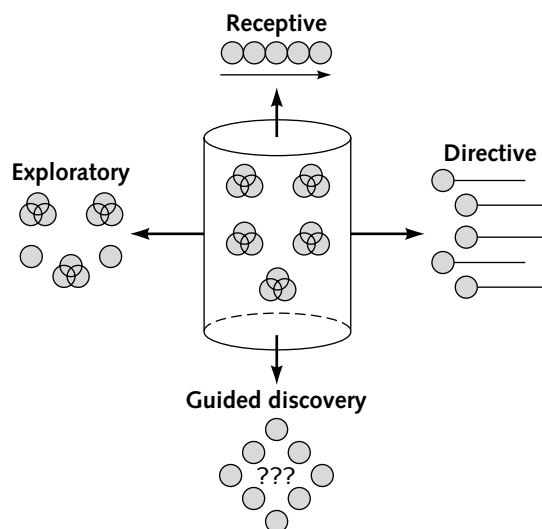
that architecture include all the tools, resources, and supporting context that build the guided-discovery learning experience.

It is not hard to imagine, or require, that those small granular objects can be leveraged in a guided-discovery environment, in a hands-on lab activity, or in a feature-rich simulation (see Figure 1.3). The myth is based on the limitations of today's tools and the general cost of building any course in terms of instructional design and programming. In other words, since it is not very easy to create a guided-discovery architecture even with existing tools, it must be impossible with RLOs. The myth is that learning objects cause directive architectures, when in fact that approach is often driven by the costs of developing alternative learning architectures.

### Single-Sourced Content Is Impossible

Although it is not impossible to do, creating one learning object that can be used in any delivery medium is challenging. Some media-rich content developed for e-learning obviously will not exist in print. However, you should be able to produce equivalent elements that can detect if the output is going to be e-learning or print. In this case, you could argue that the learning object itself, its target audience, learning objective, search data, static content, and instructional approach are

**Figure 1.3. Leveraging RLOs in All Learning Architectures**



all single-sourced. Only the media that is dependent on the delivery environment is unique (see Figure 1.4).

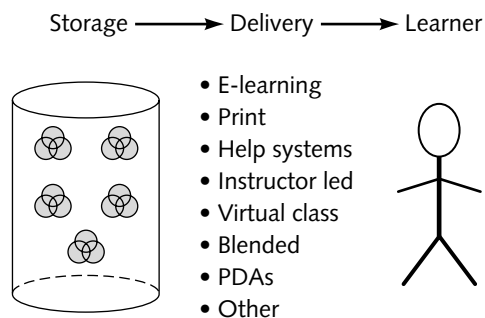
When it comes to e-learning and instructor-led training, the instructor could use the same media elements in the class as are used in the e-learning version. For example, a video clip would play well in both settings. If the classroom is set up with computers, the instructor could also have small groups work through simulations and case studies that are reused from the self-paced e-learning. A more difficult transition is from the classroom, where a learning objective calls for small group activities among the learners, to the e-learning environment, where an on-line community may not be available.

In sum, making RLOs work in many delivery media is not impossible. Alternative delivery types, instructional design approaches, and equivalent objects are covered in more detail in Chapters Two and Three. For now, let us just make it clear that single source is possible with some work and planning.

### They Solve Any Training Problem

Obviously, this is a myth, but it is one that often gets lost in the marketing hype and the lure of trying out the “next big thing” in training. We have seen the rush to adopt all things new in the training and human performance world in the past. Starting with every form of new instructional media—from audio, film, computer-based training, laser discs, e-learning, and so on—our industry has a fixation with trying the latest technology before research is in place. Each of these new technologies has been sold as a cure-all, something that will help solve any training problem. Admittedly, technology *has* helped solve many problems: limiting the cost of travel,

**Figure 1.4. Media-Dependent Elements May Be Needed**



simulating dangerous work environments, creating economies of scale, accommodating multiple learning styles, and so on. However, the problem drove the solution when these technologies were used effectively. The solution should never try to find a problem to fill. As you read this book, keep in mind your performance problem, your goals, your needs, and what elements of an RLO strategy, if any, will help you address them. Plan time to research your needs and your results once RLOs are in place.

Be cautious of any sales pitch portraying RLOs as the greatest training innovation since the Web, film, textbooks, and so on. Realize that very little, if any, quantitative research has been published on the effectiveness of RLOs for a given performance problem. This book is based on solid human performance technologies, processes, and best practices. Some research on instructional design can be leveraged in defining an RLO strategy, but areas such as context, granularity, learner preferences, effectiveness, and so on need further research. Keep this and the other RLO hype in mind. To help you do this, throughout this book we will mention specific concerns to watch out for in implementing RLOs in your environment.

## WHAT ARE THE BENEFITS?

No matter how well you plan, the transition to RLOs can still be rocky. At some point you (or others) may ask: *What is the advantage to RLOs? Why are we doing this again?* Fortunately, you can enumerate numerous benefits to help answer those questions. Depending on the tools and process you follow, converting to an RLO approach for the design, development, and delivery of training and performance-support materials should result in benefits for authors, learners, and eventually, the organization sponsoring this implementation. Although this section lists some of the most important benefits, you will likely pick up on others as you read through this book. We suggest that you make notes of any benefits that seem applicable to your RLO strategy, and disregard those that do not apply.

### Benefits to Authors

Did you ever write a page or two of training material only to discover that someone else had provided the exact same information in a different course? If the answer is no, then consider yourself lucky. It is also possible that your existing curriculum is so broad, and has so many authors from different training entities, that you

simply cannot track every learning objective that has been developed into a course. In contrast, if you have been able to reuse existing content, then you already understand that one of the benefits of learning objects is avoiding re-creating material that already exists.

In addition to finding existing learning objects for possible reuse in new solutions, RLOs afford authors the following benefits:

- Object-specific templates for streamlining the process of creating content.
- A consistent design and development process that allows more time to focus on actual content.
- Searching for existing content to reuse (or repurpose) to reduce the possibility of multiple authors creating the same content.
- The ability to create one object for use in a classroom handout, a Web page, a personal digital assistant (PDA), and an on-line technical manual. (See the earlier section on single-sourcing.)
- The ability to reconstruct training into new and novel configurations with little or no retyping.
- The ability to share the exact same information easily across various departments or divisions.

### **Benefits to Learners**

Perhaps the greatest benefit to learners is consistency. This does not mean that every training program will be a carbon copy of the last, but it is important for training across the organization to maintain the same general look and feel. Learners will also see these benefits:

- RLOs can be used for just-in-time training or information, giving learners what they need just when they need it.
- Training can be easily individualized, eventually reaching the point of being prescriptive, where the delivery system will suggest RLOs for a particular learner.
- Learners may be able to get the same information in multiple formats, allowing them to choose their preferred method.
- Learners can “test out” of certain RLOs, allowing them to focus on areas where they need improvement.

## **Benefits to the Organization**

Of course, if reusable learning objects provide benefits to authors and learners, that should translate into benefits for the organization. However, there is an important caveat here: reusable learning objects are not a cure-all for an organization's training problems.

If an organization is not following a sound instructional design (ISD) process, then the resulting training may be mediocre at best. If you fail to apply sound ISD to a reusable learning object strategy, then you will still get poor results. In other words, a reusable learning object strategy is not a replacement for following good instructional design principles when training programs are created.

## **WHAT ARE THE DELIVERY OPTIONS?**

In the previous section we talked about the benefits of learning objects for the learner. We have also mentioned that they can be used in multiple delivery modes—from e-learning to instructor-led training—and that they can be used with any of the four learning architectures. The limitations to delivering a meaningful, effective, and motivating learning experience derive largely from the limitations of tools, resources, or instructional design skills. If learning objects are used properly, learners should have an experience that closely resembles that afforded by the e-learning, virtual classroom, instructor-led training, support systems, and print documentation that they use today.

### **E-Learning**

In today's high-tech world, e-learning may still be the front-runner for applying the RLO strategy. This is especially true if the RLO strategy is planned around the just-in-time concept of training. Training courses are easily placed on the corporate intranet, on the Internet, or on a CD. The e-learning environment also gives learners the flexibility to test out certain RLOs and only complete the ones that they need.

### **Instructor-Led Training**

Reusable learning objects are equally at home supporting instructor-led training. Objects can be created that are then used to print student handouts, instructor guides, and practice and assessments. One solution is to print class slides via HTML files that will mimic a Microsoft PowerPoint presentation.

## Blended Solutions

*Blended solution* is the term applied to training programs that include elements of classroom training, e-learning, and possibly on-the-job performance. It goes without saying that if RLOs support both e-learning and instructor-led training they will support blended solutions as well.

Blended solutions can cover literally hundreds of scenarios. The following are just some of the possibilities: reading print-based manuals and completing on-line practices or assessments; completing an on-line module followed by classroom discussions; combining classroom discussions, on-line practices, and an on-the-job performance-based assessment.

## Technical Manuals

By now you have seen that RLOs are not just applicable to training. The same content blocks used in a training program may be reused in a technical manual or a policy and procedure guide. The underlying principles and concepts are the same for technical documentation and for training. And it does not matter if the technical document will be delivered in a printed manual, through an on-line system, or in some form of help file.

## More Flexible Options

In addition, you may find RLOs being delivered in personal digital assistants, help systems, job aids, mp3 players, and other nontraditional training delivery media. RLOs may also be used to consolidate both training and knowledge inside an organization, encompassing everything from technical documents and product specifications to e-mail lists, on-line communities, and communication tools. RLOs may be leveraged and delivered to both internal and external applications. RLOs may be adopted by marketing groups, human resources, sales, manufacturing, and others who are normally not in alignment with traditional training materials.

## ARE THERE INDUSTRY STANDARDS?

The answer to this question is complex; this is because there is a difference between standards groups and specifications groups. The IEEE is a standards group, whereas organizations like Advanced Distributed Learning (ADL), IMS Global Learning



Consortium, and Aviation Industry CBT Committee (AICC) are specifications groups. Just as a bill in the U.S. government gets passed from committee to committee and is then voted on by both the House and the Senate to become a law, specifications groups supply the standards groups with requests to create a new standard based on a specification that they created.

To date, there is only one official standard that deals specifically with learning objects. The IEEE voted to approve a metadata framework, simply called learning object metadata (LOM). In Chapter Five, we talk more about metadata and the LOM. For now, just think of the LOM as a common set of metadata that can be used by anyone implementing learning objects. It includes ways to extend that metadata to fit specific implementation.

As you begin storing and searching for reusable learning objects you quickly understand why a metadata standard is important. If two authors use different metadata, then they may miss each other's objects when conducting searches for existing RLOs to reuse in their solutions. Likewise, learners are unable to find RLOs to meet their needs without a rich set of metadata that they can either directly search on or leverage in creating profiles and preferences. Without metadata, one of the main benefits of reusable learning objects would be lost.

A specification that is quickly becoming a de facto standard is the Shareable Content Object Reference Model (SCORM) from the ADL project (see [www.adlnet.org](http://www.adlnet.org)). This project has created a stir among training-tool vendors and providers of large curricula of off-the-shelf courseware because it attempts to unify a number of specifications in order to ensure that learning management systems can exchange learning objects between systems. We cannot explain all of the possibilities of SCORM here, but you should be aware of its existence. Many of the vendors, training partners, and content providers you research will claim SCORM compliance. You will have to determine if SCORM compliance is in the best interests of your organization.

To learn more about using SCORM, we suggest you review the *SCORM Best Practice Guide for Content Developers* (Rehak, 2003), published by the Learning Systems Architecture Lab at Carnegie-Mellon (see [www.lsal.cmu.edu/lsal/expertise/projects/developersguide](http://www.lsal.cmu.edu/lsal/expertise/projects/developersguide)). This document is designed for content developers, instructional designers, writers, programmers, and subject matter experts who are creating new content that is SCORM-conformant or converting existing content into SCORM-conformant content.

## CHAPTER REVIEW

By now you should have gained a firm definition of reusable learning objects and understood what a reusable learning object strategy is. This chapter has discussed a number of preliminary questions to help you begin defining your own RLO strategy. We have debunked some myths, talked about benefits of learning objects, and noted what learners will experience. Specifically, this chapter answered the following questions:

- What are learning objects and reusable learning objects?
- Why do I need a strategy?
- Why focus on reuse?
- What are the myths?
- What are the benefits?
- What are the delivery options?
- Are there industry standards?

As you move forward in your RLO strategy, keep in mind that although we offer advice, provide examples, and describe best practices for RLO design, development, and delivery, you will need to choose those elements and features that best fit your organization's needs. The remaining chapters in this book help you focus on the day when your learners will be using RLOs.

## **RLOs in Action: How One Company Got Started**

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Each chapter in this book concludes with a section called RLOs in Action. This section captures how a sample medium-size company applies the topics covered in the chapter to develop an RLO strategy that addresses its needs. Each RLOs in Action section is presented as a case study and a way to summarize what you just read. It is difficult, however, to create a believable case study that covers every possible aspect of the RLO strategy that you may want. For example, you may be planning a turnkey solution for your organization, whereas our RLOs in Action company is planning a phased approach. You may find it helpful while reading each RLOs in Action section to review your own

developing RLO strategy and determine what lessons or best practices you will apply.

To get started, here is some background information on NoWaste Goods, Inc., the company that we will track as it moves forward with its strategy. You may want to note the learning environment and what the organization sees as the possible benefits and opportunities for RLOs to meet its employee and customer needs.

### **Size and Location**

NoWaste Goods, Inc., has twenty-seven hundred employees and has been in business for twelve years. It has one hundred retail stores located in fifteen western U.S. states, including Alaska and Hawaii. Each retail store has between fifteen and thirty employees. Locations in some cities have a small staff of consultants. There are two regional warehouses, each with twenty employees. Finally, the corporate offices, in Portland, Oregon, have about 250 employees. There are plans to expand the retail and consulting services into the eastern United States within two years. Currently there are a total of twenty-seven hundred employees, with future growth pushing that number to near four thousand.

### **Business Plan**

NoWaste earns income from in-store and on-line retail sales and consulting services. The retail locations and on-line catalogue sell household and office supplies made from recycled and renewable materials. They include a large selection of non-perishable organic and vegetarian food items. No fresh produce is being sold currently. Minimal waste and packaging are emphasized. Each retail location runs off solar power; the company is considered "earth-friendly" by environmental groups.

NoWaste also offers consulting services to local companies, schools, and government agencies, focusing on how each group can meet the low-waste and zero-waste regulations in each state through education, purchasing choices, manufacturing changes, automation, and employee action. Consultants help reduce energy consumption and set up solar-based power systems. In addition, the consulting groups offer free or discounted educational and training events to the local community. These are conducted in the retail locations or in local schools and businesses. The company leverages these engagements to draw business into its retail locations to promote its branded products.

## Learning Environment

Four primary groups in the company traditionally have their own unique learning environments: the corporate headquarters, warehousing and distribution, retail sales, and consulting services. NoWaste also has a marketing department that is focused on customer education through product information materials available in the retail locations, through consulting services, and on the NoWaste Web site.

There are three training groups in the company, as well as a documentation group, which maintains print-based materials and the Web site. The documentation group is housed in the marketing department. Currently, there is very little sharing of training resources or product information between these groups.

## Opportunity for RLOs

There are many areas of duplication at NoWaste. Each training group recognizes that its content, training materials, and delivery needs are similar to those of other groups. However, project schedules, development processes, authoring tools, and distribution channels have largely kept the groups separate. This is about to change for the better as the team has just learned about RLOs and is pulling resources together to begin exploring the solution in more detail.

This process started when the vice president of HR and the vice president of retail training began discussing ways to provide better access and updates to employees about their 401k and stock purchase benefits. These two areas seem to be obvious possibilities for RLOs because they have common elements for each state in which NoWaste does business. If employees are new to the program or simply looking for more information about the current plan, they want quick access to the most updated information. Likewise, when employees sell stock options, or leave the company, they need additional training and information.

In other areas of NoWaste, management noticed that the consulting group could use the product-marketing information created for external customers instead of creating its own separate materials. The consulting training programs are also customized for each state, because local recycling and waste reduction regulations vary. Key areas of each course in each state remain the same, but often the training becomes out of sync because updates and revisions are not passed around to each state's version of the course. Finally, many of the skills and knowledge needed by the consulting staff are also useful to the staff at the

retail locations. The retail staff often answers tough questions on local policies and products before suggesting that customers talk to a consultant.

The VP of documentation and some developers in the training departments are aware of the need for standards and have heard of SCORM and the IMS Global Consortium, but they are not sure why they should care. Their exposure to RLOs and standards has largely been limited to vendors, journal articles, and those claiming compliance with “industry specifications.” The entire documentation department is currently using Information Mapping to “chunk” content into concepts, fact, processes, principles, and procedures. They are also using XML (a method for creating Web sites) and some established document management guidelines and tools.

### **RLO Strategy Task Force**

Based on hallway conversations, the inefficiencies of duplicating training and product materials, and exposure to RLO standards, the CEO and management decided to begin an RLO strategy effort. Because of her background in standards, templates, and Information Mapping, the management team tasked the VP of documentation to lead the effort to build the strategy and implementation plan. She was given access to key company personnel to create a task force, including team members from the retail, warehouse, HR, consulting, customers, and product areas. Information technology team members were also included to assist with development and delivery issues. All team members agreed that the overall RLO strategy made sense, but the consulting group expressed some trepidation. The VP of consulting services voiced concerns about sharing the information his department used with the retail sales staff and on the public Web site; he feared that consulting needs might be reduced. These concerns will be addressed in the strategy as the task force moves forward.

As you will see in the upcoming chapters, the team developed three RLO-based pilot projects to address the specific needs of HR and retail and consulting sales, as well as those of documentation. They felt that if their RLO strategy could meet the needs of these three groups, then it could accommodate all training and knowledge areas in NoWaste.