

# Learning Content Management

## AN EXECUTIVE VIEWPOINT

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## Executive Summary

Elearnity has been tracking the Learning Content Management (LCM) market for over five years. During this time, corporate awareness of LCM has changed from general apathy and confusion to growing recognition of the lack of learning content strategies in their current learning and e-learning thinking. In 2006, this growing corporate awareness led Elearnity to initiate a formal research project to develop a clearer understanding of the drivers, solutions and realities of learning content management in large corporates. Findings from this research are summarised in this Executive Viewpoint paper.

Our focus for the research was to understand the *deeper questions and realities* associated with LCM. The research process included in-depth profiling of participant companies and corporate case studies, knowledge sharing workshops and group discussions, independent market and vendor analysis, and supporting analysis of existing research and whitepapers. The main corporate participant organisations in the research were B&Q, BP, HSBC, LloydsTSB, PricewaterhouseCoopers, Reuters, Rolls-Royce, and Vodafone.

### Scenarios and Drivers

Our analysis from the research indicates three common scenarios of LCM interest:

1. Collaborative e-learning development
2. Distributed management of (mainly) classroom materials
3. Large-scale learning content production for all forms of learning

Analysis of the business drivers for LCM showed that whilst each organisation had its specific drivers and context, many were common across organisations.

Common drivers include: speed and responsiveness of content development, efficiency and cost of production, quality and control of content, reuse and repurposing of content, and the flexibility of resulting learning solutions.

Many organisations are also looking to reengineer or realign their learning content supply chain, and increase sustainability and localisation capabilities.

### Solutions

LCM solutions provide a range of capabilities to address the whole life-cycle for learning content production, management and maintenance. Based on our research, we have defined a LCM Capability Model which includes 6 main categories of capabilities that LCM solutions need to provide:

- Creation, Packing and Learning Content Input
- Learning Content Processes and Workflow
- Learning Content Repositories and Integration
- Learning Content Delivery and Publishing
- Learning Content Management Services and Reporting
- Learning Content Deployment

(See the main document for more detail).

Whilst the categories in the LCM Capability Model are common across each of the three LCM scenarios, the functionality required varies significantly between the scenarios. "Collaborative e-learning" and "distributed classroom management" will involve the use of significantly different tools and processes, and deliver very different outputs. They will also typically have different patterns of usage and expertise profiles.

Our belief though is that "all learning production" is more than a hybrid of the other two. Delivery to any learning media is requires more than flexible authoring and outputs. It is likely to use abstracted content structures which can be transparently rendered to any output media, rather than take one structure (e.g. page-based content) and adapt to the others.



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Ensuring you are clear about your scope and strategy for LCM therefore has a critical impact on solution selection.

From the research, the other major factor which will drive the LCM solution approach is the overall deployment context of the organisation. Because of the obvious benefits in managing the scale of learning content production, there is an implicit assumption that LCM solutions are targeted at large-scale centralised production groups. Whilst this may be partially true, it is a major oversimplification and does not reflect the diversity of need within the corporates or the reality of usage within early adopters. LCM may not be there just to manage scale, but also to manage distribution and fragmentation in the learning content process.

### Summary Conclusions

Overall, our research reinforces the view that *large organisations need coherent strategies for producing and managing learning content* that are geared to the needs and structure of their business. LCM is really about reengineering the supply chain for learning content, internally and externally. It is also about a more holistic and more connected view of learning content.

Significant changes to working processes and skills are required to leverage the LCM solution properly. Adopting an LCM solution will particularly challenge the expectations of sophisticated learning producers who are used to a more open design and development model, and open choice of tools. Managing the engagement process with sophisticated stakeholder groups is critical to sustainable adoption.

Overall, LCM is not a mature capability in organisations, and has been largely led from the e-learning sector. The majority of existing adopters and case studies we reviewed are "Collaborative E-learning" based, and have been using an LCM solution for 12-36 months.

All of the organisations profiled in the research believed their LCM projects have been successful. Some significant benefits are being achieved in terms of content production costs/times, and in terms of increasing the scale of production. But all of them have had negative experiences or set backs, especially technologically, but also organisationally. The most common issues faced by organisations were IT infrastructure challenges, and issues with getting their colleagues to fully engage in the usage of the platform.

Further information on the research conclusions and associated lesson learnt, along with the models for analysing LCM solution capabilities are in the main parts of the document. For further information on the research and resulting analysis, contact David Wilson at [davidw@elearnity.com](mailto:davidw@elearnity.com).



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## Introduction

This document is an Executive Viewpoint on Elearnity's research into Learning Content Management, and contains a summary of the key findings from a collaborative research project, conducted in 2006.

This research followed a prior period of over four years background research and tracking of the interest in learning content management within large corporates in Europe. During this time we saw corporate awareness change significantly, from largely one of apathy and confusion, to one of growing recognition of the importance of learning content strategies and the lack of them within their current learning and e-learning strategy.

This growing awareness led Elearnity, to create a formal research project which was targeted to develop an independent understanding of the drivers, approaches and solutions for learning content management in large corporates.

In particular, the research included:

- Profiling of participant companies including their business and learning context for Learning Content Management (LCM), and external corporations with established LCM solutions to understand their experiences, outcomes and lessons learnt.
- Knowledge sharing workshops and group discussions between core participant members on a range of topics from business drivers, key challenges, solution strategies, implementation options and issues, and recommendations moving forward.
- Independent market and vendor analysis of leading LCM to understand their vision, strategy, experiences, and lessons learnt from corporate LCM projects.
- General market research including analysis of existing research, models, whitepapers, and case studies

## Research Goals

It should be emphasised that the research project was deliberately designed to focus on a *qualitative* rather than quantitative understanding of learning content management. We were most interested in understanding the *deeper questions and realities* associated with LCM, rather than quantifying the market or specific projects. This emphasis is therefore reflected in the goals and process for the research, as well as the research outputs, such as this Executive Viewpoint document.

The aim of the research was to *accelerate understanding and strategy of Learning Content Management*, including developing:

- A deeper understanding of the opportunities and realities of Learning Content Management in large corporates
- Insights into lessons learnt and how to progress LCM related projects
- A recommendations framework and models for analysing an organisations own LCM opportunities and risks, to help accelerate individual decisions and strategy

The research also aimed to help participate organisations decrease their risks of engaging in LCM-related projects through a more objective understanding of market best practice and a comparative understanding of leading vendor solutions and strategies.

## LCM - Key Themes

Some of the key themes covered in the research include:

- The scope and drivers for learning content management, both mainstream learning and development (L&D), and for e-learning
- The underlying realities of corporate case studies and LCM reference stories including business case, experiences, key challenges and lessons learnt



- What is a Learning Content Management System (LCMS) and what does it really do for you? What do the leading products really offer, and how do they differ? What are their strengths and weaknesses?
- The role and value of alternative solutions strategies/components including Enterprise Content Management (ECM), Knowledge Management platforms and Learning Management Systems (LMS) and E-learning Suites.
- Do corporates buy into the concept of Learning Objects? The theory and realities, the role of standards.
- Future directions for LCM including emerging needs and solutions, emerging vendors and products.

### Research Participants

Eight corporate organisations were involved through-out the research process as core research participants, and attending the knowledge sharing workshops. These were:

**B&Q, BP, HSBC, LloydsTSB, PricewaterhouseCoopers, Reuters, Rolls-Royce, and Vodafone**

All of these organisations are large multinationals with a significant historic experience and investment in learning technology and learning management solutions. But all of these core participants were also at an early stage with their interest in learning content management. Two of the organisations had been piloting an LCMS approach, but were in early stages. The rest were actively interested in LCM, and looking at the potential for investment or inclusion in their strategy going forward.

To supplement the relatively inexperienced LCM input from the core team, we profiled a range of other organisations during the research process that had more extensive experience of adopting LCM solutions and their real impact and lessons learnt. These organisations included:

**AgustaWestland, ING Bank, IVIMEDS, Legal & General, Lufthansa, RITI and Swiss Re**

In addition to the independent market analysis and research, we also invited four principal vendors to provide direct input to the research process, including market understanding, solution and capability input, and supporting case studies. These vendors were:

**Eedo Knowledgeware, OutStart, SumTotal Systems, Giunti Labs**

Elearnity would like to thank all of the organisations involved in the research process for both their involvement, and their openness in providing input. The strength of the conclusions in this research is in no small part due to their willingness to share insights and to collaborate with our research process.

### Research Deliverables

The research process resulted in a range of deliverables for the core participants including:

- Knowledge sharing workshops
- Analysis of key theme areas including corporate drivers, opportunities and realities, and external best practice, case studies and experience
- Vendor strategy and solution perspectives from the invited LCMS vendors
- Independent profiles of the core corporate participants, and external corporate profiles and case studies
- Analysis of best practice, lessons learnt, and organisational and solution strategies
- This Executive Viewpoint Report



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### **Viewpoint Report**

This document contains a high-level summary of the key findings from the research project.

For more detailed information on the research and any of the information in this document, or to engage in a more detailed discussion of your organisation's specific interests and experiences with Learning Content Management, please contact David Wilson by email at [davidw@elearnity.com](mailto:davidw@elearnity.com).

### **Elearnity**

Founded in 1996 and with extensive corporate learning technology experience, Elearnity is recognised as Europe's leading corporate learning analyst and independent advisor in learning innovation. More information on Elearnity is provided in the Appendices of this document.

### **Accuracy of Information and Warranties**

Analysis and recommendations are made in this document are based on the information currently available to Elearnity and from sources believed to be reliable. Elearnity disclaims all warranties as to the accuracy, completeness or adequacy of such information. Elearnity will have no liability for errors, omissions or inadequacies in the information contained herein or for interpretations hereof. Opinions expressed herein are subject to change without notice. All content is copyright Elearnity limited unless otherwise identified. All rights reserved.

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## The Business Drivers for LCM

A key element to the research process was to understand why organisations were interested in LCM, including both those that were seeking to deploy an LCM solution and those that had already done so. We wanted to understand both their original context for engaging with LCM, and the specific drivers which ultimately would support their business case for progressing into solution deployment.

The key drivers we found from the research were:

### Speed and Responsiveness

The speed to develop learning content, both in terms of raw production time and in terms of time to market, i.e. time to deployment or access to that learning content across the business.

Improving the quality and responsiveness of learning content to changes in the business and underlying subject matter. This is driven by demand from business to be much more reactive to changes in the business or external environment, including reducing the time from change to delivery, and on increasing the scalability of delivery.

Many organisations are specifically focusing on increasing the scalability and speed to market of their e-learning offering and including accelerating their authoring capability. This is seen as important for the future development of learning content.

### Efficiency and Cost

A central driver for most organisations is cost. They want to reduce the cost of learning content production, the cost of learning content deployment, and the cost of learning content maintenance.

This also drives interest in reusability of learning content, including assets (e.g. media etc.) and content templates.

### Quality, Control and Sustainability

Organisations want to know what learning content they actually have, and to be able to rationalise it; reducing the cost of rework and generating procurement savings. They also want to control the growth of learning content.

Achieving this requires more effective management of learning content, including clearer accountability, and auditability and reproducibility of learning content.

They also want to increase the consistency of learning content across the organisation, believing they currently have no common view of what content they have. Paramount in this is quality control. They need to know that learning content is up to date, or linked to the most up to date version.

All of the above leads to greater sustainability of learning content across the organisation.

### Reuse

A concept fundamental to all of the previous, is that of learning content reuse. Organisations want to remove duplication of learning content, and to promote the repurposing of content.

Organisations are especially interested removing duplication as they break down e-learning into smaller, more bit size chunks.

They also want to promote learning content sharing across the organisation, and globally.

### Flexibility of solutions

Another key driver for LCM is increasing the flexibility and choices for delivery of learning solutions, particularly to support delivery of blended learning.



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Organisations want to be able to create smaller e-learning chunks that can be integrated within blended programmes, rather than create large e-courses. There is also an increasing demand for integrated web-based assessment.

In most cases, reuse actually means the re-purposing of learning content, both across the different parts of the organisation and across different media. Organisations also want the flexibility to support informal learning by sharing content and knowledge without intervention from learning professionals, and to deliver to other e-media other than standard e-learning. This includes mobile learning, knowledge management (KM) tools, and Blogs and Wikis.

### **Supply Chain**

A major theme underlying much of the above is reengineering the supply chain for learning content, especially for e-learning. There are a range of strong vendor management drivers pushing:

- Compressing content production times
- Reducing costs and timescales for production and maintenance
- Gaining control of the production chain and finding other efficiencies
- Future proofing vendor content and strengthening adoption of e-learning standards

Organisations are also looking to strengthen capabilities for localising content for local needs and delivery, rather than a "one size fits all" approach. They want to drastically speed up localisation and delivery to local markets. Velocity of deployment is critical.

### **Future needs and directions**

Putting in place LCM is perceived as giving a key tool to manage the diversity and rate of change of both learning content and learning media/channels in the future, and to meet the increasingly global needs of the business.

### **Underlying Business Drivers**

Many of the above drivers are actually associated with the learning content processes. As such they are symptom of other underlying business drivers including time to market, responsiveness and cost of production as big business drivers.

Equally significant are other underlying business drivers such as meeting compliance requirements (and an expectation of increasing regulation and compliance in the future), and in viewing learning content as part of a broader tool to increase employee engagement as a whole.

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## What is Learning Content?

A by-product of the research enquiry was the need to identify what we actually meant by “learning content”, and to clarify the primary scope of learning content interest/focus for LCM?

*Are we interested in “all learning” content, or are we being more selective?*

Is learning content, all content used for learning, or more restrictive? This may not be especially helpful as it provides little restriction on both what learning content is, or how it would have to be managed.

From our research we focused specifically on the focus of learning content as being **content designed specifically to be used for learning**. This is a more restricted definition to clearly associate an intent or purpose for the content. It also brings some other characteristics of learning content as well:

- Core Content – the raw content itself
- Structure – the way in which the content is structured
- Origin – the source of the content (and original purpose)
- Purpose – the purpose of the learning content, its learning goals
- Formality – how formalised is the content, how is it to be used?
- Validity – the scope of circumstances under which this content is valid
- Transience – the longevity of the content, when does it become out of date or in need of update?
- Usage/Modality – how is the content intended to be used, what channels of delivery does it support?
- Presentation – How is the content presented to a learner?
- Complexity – how complex or deep is the content, is it layered or have simpler versions embedded?
- Navigation – how do we navigate around the content? A combination of structure and presentation, and navigational interface
- Relationships – how does the content relate to other learning content? Does it have external structure or relationships to other learning content?

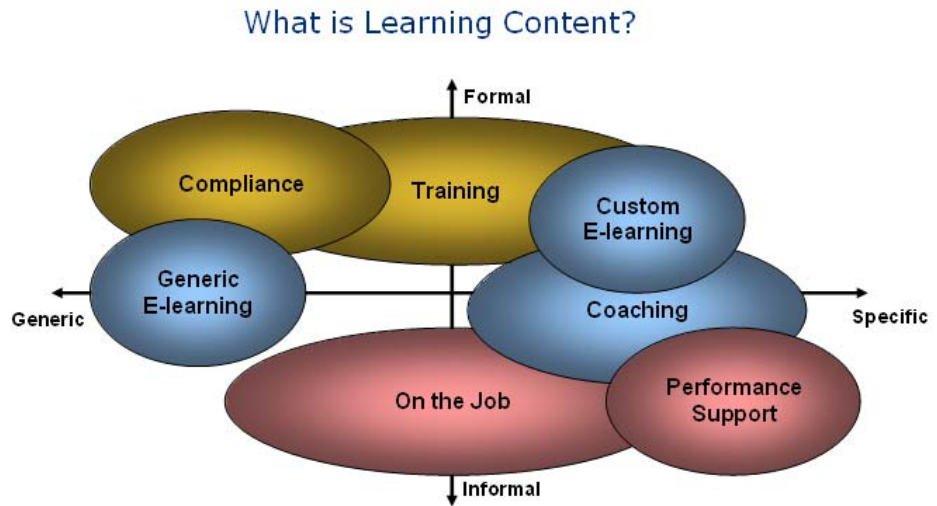
Strategies and solutions for managing learning content must be able to represent and manage these characteristics, as well as the raw content itself. In fact, the capability to capture these characteristics, and the functionality to manage them effectively, are central to the value of an LCM solution.

Some examples of this might be:

- Managing content structure is integral to managing how that content may be assembled with other content
- The origin of the content will link to the source for future updates
- Content transience should trigger content maintenance cycles or removal
- Content presentation may be limited to one media, or be abstracted to be rendered to any media

### Learning Content Scope

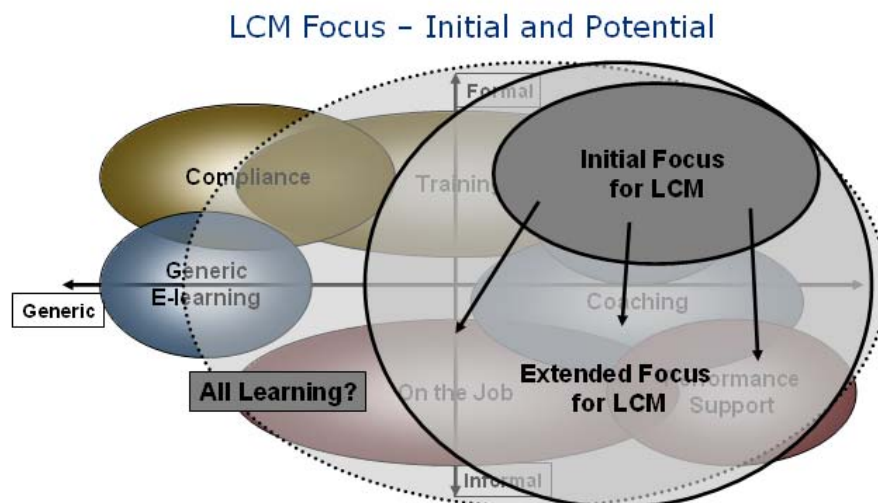
The following diagram summarises the overall scope and principal types of learning content within most organisations:



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As part of the research we asked each of the participant organisations to redraw this model for their specific organisation, and to identify their initial focus for LCM, and their potential longer term scope for LCM.

Analysis across the range of organisations indicated the following pattern of interest and scope:



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Note: It is explicit from the above diagram that an interest in using LCM to manage “all learning” means more than classroom training plus e-learning (a frequent assumption). All learning also includes informal learning activities, performance support and on-the-job learning, often areas that are outside the scope of current learning management systems.

## LCM Solution Approaches

### Common LCM Scenarios

Analysis to responses to the question of scope, together with profiling with additional organisation who had already invested in LCM solutions identified three common scenarios of LCM interest:

1. Collaborative e-learning development
2. Distributed management of (mainly) classroom materials
3. Large-scale learning content production for all forms of learning

We defined these three scenarios as follows:

### Common LCM Scenarios

Scenario	Collaborative E-learning	Classroom Production	All Learning Production
<b>Typical Characteristics</b>	Small to medium team (10-50) E-learning content focus, authoring tools critical Extended group (SME) review	Medium to large team (50-100's) Centralised and/or distributed Standard Office tools and print layout tools Delivery to print media or presentation media	Large distributed team (100's to 1000's) All forms of learning content (class, doc, e, etc.)
<b>Focus</b>	Developer productivity Template and asset reuse Ease of maintenance E-learning standards (AICC, SCORM)	Control, versioning and distribution of materials Time to delivery Scalability Print control and standards	Whole supply-chain for learning content Single sourcing, multi-purposing Process management and efficiency
<b>Further Potential</b>	External/contract development with internal maintenance	Transitioning content to other learning channels	Integrated learning and knowledge infrastructure Extra-enterprise supply

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In our core participant group, interest was fairly evenly split between collaborative e-learning and the all learning production scenarios.

From our broader research including existing LCMS users and other third party conversations, we would estimate that the initial scope of interest in LCM is approximately:

- 50% Collaborative e-learning
- 10% Distributed classroom management
- 40% All learning production

Some of the collaborative e-learning and distributed classroom organisations also had a stated longer-term aspiration to expand focus to all learning.

**Note:** We believe that this interest profile partly relates to an historical picture of where LCM (particularly LCMS) has come from, i.e. mainly e-learning centric. It also reflects who from the participant organisation was involved in our research discussion. In many cases, this was being led from the e-learning group within a company.



### LCM Solution Capabilities

LCM solutions need to provide a range of capabilities to address the *whole life-cycle for learning content production, management and maintenance*, and to effectively support authoring, distribution, sharing, tracking, repurposing and reuse. Our analysis of LCM needs and solutions indicates there are 6 main categories of capabilities we need LCM solutions to provide:

- Creation, Packing and Learning Content Input
- Learning Content Processes and Workflow
- Learning Content Repositories and Integration
- Learning Content Delivery and Publishing
- Learning Content Management Services and Reporting
- Learning Content Deployment

It is outside the scope of this document to describe each of these capabilities in significant detail, but the following diagram provides a summary of the principle functionality and capabilities we would expect to find under these headings:

### LCM Capability Model

Creation, Packaging and Input	Processes and Workflow	Repository and Integration	Delivery and Publishing	Management and Reporting	Deployment
Authoring Authoring Tools SME Authoring Content Import Content Ingestion Templating Packaging Asset Selection Asset Creation Language Devices Assessments	Taxonomy Workflow Tasks Review Controls Versioning Repurposing Maintenance Translation Print Management	Asset Types Native Standards Search ECM Integration KM Integration Search Integration Archiving Interoperability Virtual	Portal Courses Objects EPSS Static Delivery Dynamic Delivery Standards* Player Devices Print Adaptive Delivery Prescriptive Del. Language IPR/DRM E-Commerce Personal Tools Collaborative Tools LMS Integration	Learner Management Security Organisation Access Roles Partitioning Domains Reporting Analytics	Architecture Scale Resilience Configuration Distribution Access Devices Hosting Systems Mgt.

\*Standards: AICC, SCORM, IMS, S508/DDA, PENS, QTI, OKI

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In the LCM Capability Model, there are many areas of potential functionality provided in each of the categories. Not all LCM solutions will provide all this functionality, or provide capabilities in all categories. In fact, most LCMS solutions only cover part of the capability model, or support certain types of learning only.

Our analysis of different vendor solutions indicates that the depth and extent of functionality provided in each capability area can be highly variable too, even for common capability areas such as authoring, content ingestion, asset management, workflow, and repository and so on.

It is critical for an organisation to understand its specific focus for LCM first, and to understand what other parts of its learning technology architecture or broader IT architecture are in place to provide components of the capability model.

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The purpose of this document is not to provide a comprehensive analysis of individual LCM solutions against the LCM capability model, but to provide the model itself to support organisations in their assessment of LCM needs and solutions options. A (very) high-level perspective is provided on each of the four vendor participants is provided in the Appendices of this document. This is summary view of the vendors positioning in our models and analysis, and does not include any detailed capability assessment.

Elearnity is happy to provide a more detailed discussion of the analysis and models discussed in this paper, including the LCM market and vendors, on an advisory basis. Please contact David Wilson at [davidw@elearnity.com](mailto:davidw@elearnity.com) to discuss further.

### LCM Capabilities by Scenario

Whilst the categories in the LCM Capability Model are common across each of the three LCM scenarios, the functionality required varies significantly between the scenarios. “Collaborative e-learning” and “distributed classroom management” will involve the use of significantly different tools and processes, and deliver very different outputs. They will also typically have different patterns of usage and expertise profiles.

Our belief though is that “all learning production” is more than a hybrid of the other two. (As we said earlier in the analysis, all learning was more than e-learning plus classroom training). Delivery to any learning media is requires more than flexible authoring and outputs. It is likely to use abstracted content structures which can be transparently rendered to any output media, rather than take one structure (e.g. page-based content) and adapt to the others.

The differences in the way the capabilities manifest themselves between the scenarios is summarised in the following matrix:

LCM Capability by Scenario Matrix

Scenario	Creation, Packaging and Input	Processes and Workflow	Repository and Integration	Delivery and Publishing	Management and Reporting	Deployment
Collaborative E-learning Development	E-authoring Asset assembly Templating SCORM packaging	Collaborative Development SME Review Versioning	E-content centric Workgroup repository Tools integration	Static or dynamically rendered SCORM player	Development oriented Page centric Learner tracking	Via LMS or Dynamic Prescription
Distributed Classroom Management	SME Authoring Content Ingestion Document layout Templating	Distributed Devt Versioning Repurposing Print Management	Document centric Enterprise-wide repository Print integration	Statically rendered Print or presentation	Process oriented Document centric Usage and versioning Event tracking	Via Print or presentation Static Fixed
All Learning Production	Distributed Authoring Content ingestion Single sourcing Templating Dynamic packing	Production Mgt Learning Object Management Flexible workflows Dynamic processes	Object centric Enterprise repository Dynamic rendering Business integrated	Dynamically rendered All players/devices Intelligent asset selection	Object oriented Object centric Sourcing Learner and object tracking	All channels Dynamic Personalised

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As well as obvious differences related to the media type (e.g. e-learning or classroom), there are also major differences in the tools and processes used to manipulate the content, the primary standards they need to support, the typical workflow, the delivery or output management, and even basic patterns of usage. The capabilities for collaborative e-learning are geared to individual development and small group collaboration. Those for distributed classroom content towards larger scale process and controls, including repurposing of existing materials, and print output.



We see four main strategies within this model for LCM:

<b>Centralised</b>	Central production and delivery of learning content
<b>Syndicated</b>	Centralised production of learning content for localisation and delivery within local organisational structure
<b>Federated</b>	Decentralised production of learning content but with potential for common delivery
<b>Localised</b>	Decentralised production and delivery of learning content

It may be that an organisation has a single large centralised function exists and delivers learning content to a largely centralised organisation. But if so, this is a rarity. Most organisations will have some a central learning group and some decentralised groups. They also often have some programmes that are managed globally, and many more than are handled locally, i.e. they effectively exist in all boxes in the model.

The challenge for LCM is that a solution geared towards a single production unit, may not be suitable for distributed authoring and sharing amongst groups in different parts of the organisation. E-learning has typically been centrally managed in most organisation is it was a niche competency. As e-learning became more mainstream, so the responsibility for e-learning development typically became more distributed in an organisation.

For most organisations, classroom content creation is typically decentralised, unless a large central training function is still in place. But even then a lot of "in business" training is developed and delivered locally without central visibility, enabled by the availability of low-cost ease-to-use office tools such as Microsoft PowerPoint.

The following variant of the LCM Deployment Model outlines how the different positions in the model impact the way in which learning content is produced and managed.

### LCM Deployment Model

<b>LEARNING PROCESSES</b>	Decentralised	<u>Federated</u> Flexible tools Local sharing and collaboration Scaled deployment Local standards Common infrastructure	<u>Localised</u> Flexible tools Local sharing and collaboration Distributed deployment Local standards Different infrastructure
	Centralised	<u>Centralised</u> Fixed tools Production process Scaled deployment Common standards Common infrastructure	<u>Syndicated</u> Fixed tools Production process Localisation needs Distributed deployment Common standards Different infrastructure
		Centralised	Decentralised
<b>ORGANISATION</b>			

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The more centralised the learning process, the more fixed are the core processes and tools used to create the learning content, but the more decentralised the organisation to be delivered to, the more variable the final delivery will be, and the more variable the delivery infrastructure will be.

Decentralised learning processes lead to more variation in tools and learning content processes, and also to smaller groups, collaborative approaches and less "production" thinking.



Organisations may find they function in one of the four boxes for some learning programmes, and in other boxes for other learning programmes. Creating a learning content management strategy that can address all learning programmes will involve working across all of the boxes.

### **In Summary**

Answering how your LCM solution strategy will address the diversity of deployment need in your organisation is therefore critical to the long-term success and sustainability of it. In particular this should include the:

- Scope of the LCM strategy, and the key stakeholders with which it engages
- Goals for any associated LCM solution (both macro goals and stakeholder specific)
- Organisation structure for adoption of the LCM solution
- Associated supply-chain for learning content within the solution
- Architecture for deployment of the LCM solution
- Value delivered by the LCM solution to the organisation (again, macro and stakeholder)

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## Lessons learnt

The following is an analysis of the key lessons learnt from the research, particularly from our independent profiling of organisations that had been using LCM solutions for some time.

### Tools

“Buying Word does not make you an Author” - LCM is about much more than a tool, but much of the LCM debate is being driven by tools vendors.

Learning specialists with strong personal tool/design preferences will find LCMS constraining initially. They may also struggle with the separation of instructional design and content production.

### Lack of Strategy

Most organisations do not currently have any form of LCM strategy or understanding of their current processes, resources and investment.

A clear scope and focus for the LCM solution is needed, even if it expands longer term. This will also significantly influence the kind of solution you should select.

### Templates and Taxonomies

Need to invest upfront to get your learning model, templates and taxonomies right for your organisation. Changing taxonomies later on is likely to involve lots of work.

### Learning Curve and Usage

LCMSs are not the easiest to use products. There will be a significant learning curve for most products.

Initial enablement and project selection is critical, as is providing the right training and support upfront.

Engagement with SMEs is likely to be critical and needs active and continuous management right from the beginning.

### Technology

Pick a solution partner that will be responsive and have *depth of expertise* to help you surmount the technical issues and challenges that you will inevitably face, particularly in integrating the LCM solution into your IT environment and with your chosen applications and tools.

Integration with the LMS and with chosen authoring tools is critical.

### Standards

Standards (e.g. SCORM) are not a panacea and will prove challenging to adopt and use successfully.

But standards are important to future proofing your content and options

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## Other Observations

The following are some broader observations on the LCM market place and broader thinking.

### LCM Marketplace

The marketplace for specialist LCMS solutions is still embryonic. Generally corporates still do not understand the value proposition associated with LCM solutions, or have been too busy focusing on other learning technology problems (e.g. LMS) to focus upon them (yet).

We expect this to change rapidly over the next 2-3 years given the challenges faced by corporates, and then need to realign learning content processes to meet the increasingly challenging demands from business. It will also be enabled by increasing willingness from L&D to use technology to automate and accelerate solutions.

### LCM Strategies

LCM initiatives are not well integrated into broader enterprise content and knowledge management initiatives.

The majority of organisations consulted in the research view Learning Objects as an interesting idea only (at this stage). They are generally sceptical about the reality of learning objects, but see the value of reuse, versioning and repurposing/re-skinning.

LCM strategies do not have to be focused around centralised "content factory" approaches, although LCM solutions can bring big benefits to production-centric models of learning content development. (See discussion of LCM Deployment Model).

### E-learning Suppliers

Custom e-learning vendors are still reluctant to adopt client-owned LCMS solutions but are increasingly having to do so. E-learning vendors prefer to use their own tools and technologies, partly because of their investment in methodology, skills and pre-created assets are often heavily linked to those platforms, but also because it enables to better control the client engagement.

We are seeing early signs of new custom vendors emerging that see their use of an LCMS for production as a competitive advantage, and are building their production processes around such a platform. Whilst this may be advantageous if this is also your chosen platform, it is could be a significant barrier if it isn't.

Vendor experience with specific LCMS platforms will emerge as a competitive differentiator, as it is now for LMS's, but this is some time away.

### Enterprise Content Management

Whilst enterprise content management (ECM) platforms have made some strides to position themselves in the learning content space too (by announcements of partnerships or e-learning standards adoption), the reality is they do not currently provide a sufficiently functional platform to meet learning-specific needs – particularly for e-learning. They do not currently understand the specialist tools and workflows associated with learning content creation, packing and maintenance, or have robust support for specialist learning standards such as SCORM and AICC.

Whilst we expect continued positioning by the ECM players in the learning content market, we do not see it as a major focus for them or a sufficiently large niche to warrant significant additional market focus or R&D. Acquisition of an LCMS player by an ECM vendor is possible, although not the most likely outcome.



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### Internal IT Challenges

Even though most of the projects we reviewed had significant involvement from the organisation's IT function, the IT organisation and infrastructure still represents a significant challenge for LCM projects.

Implementation on a Corporate IT Infrastructure can cause significant challenges, and has negatively impacted LCM projects. Areas of potential IT risk include:

- Bandwidth and system performance
- Technical integration with ECM systems
- Network security and cross-domain issues
- General IT support to projects
- Commitment to best of breed solutions versus generic ECM
- Liaison with vendors and technical problems resolution

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## Summary Conclusions

The following is the main summary of the conclusions from the research

1. Large organisations need coherent strategies for producing and managing learning content that are geared to the needs and structure of their business
2. Whilst context will always be specific to an individual organisation, the key drivers for LCM are largely common across most organisations: Cost, production efficiency, time to market, scalability, reuse, control, compliance, auditability, risk management, multi-channel delivery, etc.
3. LCM is not a mature capability in organisations, and has been largely led from the e-learning sector. LCMS in particular is still an emergent market

The majority of existing adopters and case studies we reviewed (provided via the vendor organisations) are “Collaborative E-learning” based, and have been using for 12-36 months+.

4. All of the organisations profiled in the research believed their LCM projects have been successful. Some significant benefits are being achieved in terms of content production costs/times, and in terms of increasing the scale of production. Partly this may also be because the companies profiled were self-selected, as they have agreed to be case studies.
5. But all of them have had negative experiences or set backs, both technically and organisationally. Many organisations experienced significant IT infrastructure challenges, and issues with getting their colleagues to fully engage in the usage of the platform. In some cases, this has significantly narrowed the benefit opportunities for them in using their solution.
6. LCM is really about reengineering the supply chain for learning content, internally and externally. It is about a more holistic and more connected view of learning content.
7. Significant changes to working processes and skills are required to leverage the LCM solution properly. This includes: changing roles and skills, organisational support and resource, dealing with traditional vested interests and carefully managing expectations. It is also important to manage perceptions of value – not least, why are we adopting an LCM solution and what is important from the content?
8. Adopting an LCM solution will particularly challenge the expectations of sophisticated e-learning producers who are used to a more open design and development model, and free choice of authoring tools. Managing the engagement process with sophisticated stakeholder groups is critical to sustainable adoption.

(Our guess is that this is also true for sophisticated print producers too, who will be forced to equally make compromises over their specialist tools and methods.)

9. Standards will always force compromise, but are important for future proofing the learning content against change in need as well as change in tools or media.

## Appendix A: LCM Case Study Snapshots

The following information is provided as a high-level snapshot of some of the LCM solution adopters profiled during the research. Information provided was stated as of July 2006. Some

### AgustaWestland

Using OutStart Evolution to create learning content to support very high volume learning content production (e.g. Bowman project for the UK Army). This includes:

- Complex multi-screen e-content for use in classroom and remote CD delivery, plus to print as well (via Framemaker)
- Huge scale of development and delivery (e.g. 4.1m objects)
- Impressive “content factory” model and production line

Lessons

- LCM is about much more than the tool
- Automation can lead to accelerated delivery
- Build quality in at all stages
- Need to build trust with the customer (our training analysts are infiltrators)
- Challenges with SCORM on multi-screen delivery

News Link: <http://www.elearning.com/A555F3/research/research.nsf/ByKey/DWIN6PGMCN>

### ING

Using OutStart Evolution to develop e-content (help system) and assessments for mortgage advisors

- Using for 4 to 5 years
- Delivery via 3rd party LMS to launch and track
- Content authoring is distributed within business, either SMEs directly or local L&D specialists

Lessons

- Not fully exploiting the potential or value of platform
- Would have been wiser to have picked a simpler, more learning-oriented, initial project
- Need additional resources to properly support the LCMS
- Issues with the flexibility of reporting for internal needs
- User registration has been a significant challenge

### IVIMEDS

Using Giunti Learn eXact to develop e-learning materials for a network of 27 Medical Schools

- Centralised content creation and hosting
- learn eXact Packager was the key element of their decision to use this solution
- All content is packaged via SCORM for delivery by partner schools through their local LMS or learning environments (which vary)

Lessons

- Model and technology does the job!
- SCORM packaging critical because of heterogeneous delivery

- Need a technical partner that can really add value and be responsive

### **Legal & General**

Using Eedo Forceten to develop e-learning content for financial services staff including compliance, product and industry training

- Incremental to original LMS project (THINQ), the LCM business case bolted on this
- 20 e-learning developers using Forceten or Captivate
- Deployed by intranet currently (challenges with LMS)

Lessons

- Change management is critical
- Effort to learn the tool and get content in to start with
- Needed a clear and consistent learning model

Update: Subsequent to the original research, Legal & General have implemented Saba Learning in replacement to THINQ, and are changing their LCM strategy to be Saba-centric.

### **Lufthansa**

Using Eedo Forceten as one of a range of tools within their E-learning Competence Centre for authoring (rather than content management currently)

- Originally driven by a need for web-based authoring without plug-ins
- Stated 65% saving in course development costs
- 40-50 people using the system (although 100 registered)
- Delivery via SAP enterprise portal rather than LMS

Lessons

- Lots of capabilities, but have had some usability issues
- Able to use world-wide
- Most of trainers have accepted role changes (coach/virtual)
- Issues with unions with online testing

News Link: <http://www.elearnity.com/A555F3/research/research.nsf/ByKey/DWIN6TTLBK>

### **RITI (NHS Radiologists)**

Using Giunti Learn eXact to develop e-learning content for Radiologist training within the NHS

- 20 core staff including 13 dedicated instructional designers and 6 technical development staff (Working with 370 SMEs)
- Generated over 600 hours of learning content with a 10:1 reduction in production time
- Detailed medical content with images and some animations
- Delivery via hosted Oracle iLearning site

Lessons

- Creating true partnerships and managing the SMEs
- Setting and managing expectations of stakeholders (timescales, scalability, poor initial planning)
- Estimate cost of production < £5K / hour

News Link: <http://www.elearnity.com/A555F3/research/research.nsf/ByKey/DWIN6W6EHV>



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### Swiss Re

Using Aspen 2.5 LCMS (TotalLCMS) to develop and deploy e-learning content to underwriters (internal / external). Using for 18 months. Approach was LCMS not LMS led

- Total solution and page/template-oriented approach to content
- Initially hosted externally to accelerate deployment and use of the platform
- Subsequent challenges with internal IT infrastructure have delayed progression from pilot into full live release

### Lessons

- Host the infrastructure
- Never underestimate customisation
- Important to get good advice and support (including effective training) to help accelerate your initial use of the system and get productive quickly

FORCETEN

## Appendix B: Vendor Synopsis

### Eedo Knowledgware



#### Summary description:

A privately held US company, founded in 1999 that focuses on the e-learning and learning technology market, based around their Forceten LCMS product, but now expanded to include a range of learning and knowledge technology options.

Customers include Sikorsky, the US Army, Dell, Lufthansa, Microsoft, and Matsushita Avionics, and Legal & General.

#### Primary LCM offering:

Forceten

#### Other Related Products

EedoContext	Performance Support Tool
EedoEnable	Index & Search Tool
EedoUnify	Administrative Management Tool
KnowledgeSync	Online/Offline Synchronisation and Content Delivery Platform

#### Elearnity Perspective:

Established player in the US market with expanding aspirations and customer base in Europe and the UK.

Forceten is a best of breed LCMS with a good credibility and track record in the corporate and public sector arena. Mainly orientated initially towards e-learning content development and management, Forceten has expanded over its releases to provide a platform for managing all learning, and is now positioned as an e-knowledge tools rather than purely learning.

Our primary corporate perspectives of Forceten have been in the e-learning development space, including profiling discussions with Legal & General and Lufthansa. Forceten provides an intuitive and well structured environment for e-learning content creation and management. It provides an extensible process framework that supports collaborative development and production workflows, and the capability to render content to other media types such as print output or mobile learning.

We expect to see Eedo/Forceten to be a common presence in corporate LCM shortlists moving forward.

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**Giunti Labs**

Summary description:

A privately held Italian company, and part of the Giunti Group (publishers since the late fifteen century), Giunti Labs has been in the learning and knowledge systems business for over ten years.

Customers include: Astra Zeneca, Roche, Pfizer, Boeing, Thales, Banca Intesa and NHS.

Primary LCM offering:

learn eXact LCMS Suite

Other Related Products

learn eXact Siter	LMS providing course management, user enrollment and community tools
eXact Mobile	Mobile LCMS solution supporting context-aware learning content delivery
eXact Portfolio	ePortfolio management system



Elearning Perspective:

With its base in Italy and heavy involvement in EU-funded learning technology research projects, Giunti Labs is unusual in being a European learning technology company achieving success and market profile on a global (but largely US dominated) stage.

Research and development seems to us as the heart and soul of Giunti Labs, and it is involved with many innovative research projects including wearable learning solutions and digital TV, as well as offering an extensive suite for LCM in corporate and academic markets. Our research profiling with the NHS RITI project and the IVIMEDS virtual medical school network reinforced a strong technology and standards leadership commitment.

Giunti's European base and credentials means it potentially has a local operating advantage in the European market, but it currently has a less well-established direct sales and support channel in the UK, and lower visibility in corporate LCMS shortlists than its main US competitors. Giunti has started to address this, establishing a local UK office in 2006 and expanding its sales and marketing activities.

Going forward, we expect to see steady growth in the corporate awareness of Giunti's offering, and a continued and strong presence in research circles. Growing interest in Mobile Learning may provide an increasing opportunity for differentiation.

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**OutStart**

Summary description:

A privately held US company, and a leading player in the LCMS market since its inception, OutStart has a range of learning technology and knowledge solutions that have built organically and by acquisition.



Customers include: AgustaWestland, British Telecom, General Electric, ING, Steelcase, Time Warner, the US Navy and the UK Navy.

Primary LCM offering:

OutStart has two distinct LCMS offerings: Studio and Evolution

Other Related Products

Evolution LMS	Entry-level LMS solution
Participate	Community management and knowledge sharing tool
SoftSim	Simulation development tool
Trainer	E-learning authoring tool

Elearning Perspective:

OutStart is a well established vendor in the US LCMS market with significant profile in corporate shortlists, and a growing presence in Europe. The acquisition of Participate in late 2004 has also reinforced OutStart's repositioning as an eKnowledge business.

OutStart is unusual in that it has two distinct LCM offerings; Studio being a page-orientated collaborative e-learning development tool, and Evolution targeted at large scale content production (e-learning, print or all learning). Although we reviewed the Studio product, our primary focus in the research related to Evolution as a solution geared towards enterprise-scale learning content development and deployment. Our research profiling was with ING and AgustaWestland.

Evolution is very different from the other LCMS solutions we viewed as it a large-scale "learning asset" assembly and management environment which is inherently output agnostic. Adoption of this approach would require a significant change in approach for "authoring tools"-orientated content developers, but can bring significant downstream production benefits. AgustaWestland had the largest scale of learning content production of all the companies we profiled.

We expect to see a continued strong presence from OutStart in European corporate discussions for both Studio and Evolution, including further wins in the Defence sector, building on successes with the UK Navy and AgustaWestland. We also expect to see greater profile for Participate in Europe, but only limited cross-over opportunities with the LCMS business in the short-term.

Contact Details : [www.outstart.com](http://www.outstart.com)

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## SumTotal Systems

### Summary description:

A publicly quoted US company (NASDAQ: SUMT), SumTotal is one of the leading LMS and e-learning suite vendors, formed from the merger of Click2Learn and Docent in 2004, and the subsequent acquisition of Pathlore in 2005. SumTotal's primary offering is the SumTotal Enterprise Suite built around the TotalLMS platform.



Customers include: Accenture, DaimlerChrysler, Microsoft, Novartis, United Airlines, US Army, and Vodafone.

### Primary LCM offering:

TotalLCMS

### Other Related Products (subset)

TotalLMS	Enterprise LMS platform
TotalPerformance	Community management and knowledge sharing tool
Toolbook	E-learning authoring tools
ResultsOnDemand	Software-as-a-Service suite offering

### Elearning Perspective:

SumTotal provides a different perspective of the LCM story as SumTotal's competitive strengths are as an aggregated talent and learning management provider. The LCMS capability is primarily a component of its' Enterprise Suite offering, rather than a specialist LCMS product. (Although one of the customers we profiled, Swiss Re, we using the LCMS in isolation for the LMS.) SumTotal also has a long background in e-learning development via the Toolbook authoring tools, originally part of the Click2Learn product set, as was the LCMS component.

TotalLCMS focuses primarily on e-learning content management and is more suited to collaborative e-learning than the other scenarios. TotalLCMS's strengths are in the integration it provides with the other SumTotal components including Toolbook. In future, SumTotal's LCM plans include a tiered authoring and content management approach, starting from standalone authoring, through to workgroup authoring and enterprise content management.

As one of the enterprise LMS leaders, SumTotal will continue to have a significant presence in corporate LCM discussions, as either an integrated suite solution, or as the incumbent LMS supplier. Whilst its LCMS functionality may be more limited than some of its specialist competitors, the integrated suite approach may prove compelling for many companies, particularly if their primary focus for LCM is e-learning content management.

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Founded in 1996, Elearnity is Europe's leading independent Learning Analyst with a track record of providing strategic advice, best practice research and expert consultancy to major organisations in the UK and Europe.

We provide expert independent advice including:

- Learning and e-learning research with in-depth best practice research, strategic market analysis, news and commentary
- Independent advisory consultancy on strategy and best practice

Supported by a unique insight from direct research with major European companies and independent market/vendor profiling. We do not sell products, or provide implementation or development services. We have no vested interest and purely focus on providing you with best advice.

Key topics include: E-learning strategy, learning evaluation and ROI, blended learning, learning management strategy, enterprise learning management systems, management development best practice, collaborative learning and learning communities.

Example customers include: BAA, B&Q, BP, BT, Cable & Wireless, Coca-Cola Enterprises Europe, HSBC, LloydsTSB, Marks & Spencer, Marsh, Pfizer, PricewaterhouseCoopers, Reuters, Rolls-Royce, Royal Bank of Scotland, Unilever and Vodafone.