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Project:

BP Upstream Learning
Supporting IT Infrastructure

Document:

Strategy & Architecture Vision

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Summary:

This document outlines how the BP Upstream Learning Supporting IT Infrastructure project supports the Operational Improvement Program and proposes a step-change to how BP currently manages their Learning and Development.

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Version:

V1.0

The Architect's Guide templates are for BP IT&S project use. The templates are based upon how TOGAF describes architecture with a very heavy bias towards the TOGAF 9 content meta-model. Although these initial templates are predominately for guidance, there is an underlying goal to achieve consistency and commonality across the architecture deliverables. This will further increase architect efficiency and productivity throughout BP. If this template does not fulfil project need and/or improvements have been identified, then please direct feedback to Vincenzo Marchese either via email or via the Architect's Guide discussion forum on [Link](#).



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SUMMARY:	This document outlines how the BP Upstream Learning project will be supported by IT infrastructure and systems.

Amendment History

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Associated Documents (This document should be read in conjunction with):

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Approver	Name	Date
Chief Architect	Danny Ducharme	09/30/2011
Key Stakeholders	German Camacho Mark Prasatik	09/30/2011



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2 Executive Summary

Upstream Learning's mission is to partner with BP's Upstream business to create, provide and deliver efficient, cost effective, innovative, high-quality performance-oriented learning solutions that drive business results. Upstream Learning leads and guides training and learning policies – local and across the organization – and acts as the thought leader in learning development and deployment. From this leadership position, Upstream Learning shapes the guiding principles for learning requirements and guides the acceleration of knowledge transfer - meeting corporate commitment, employee expectations, and local / worldwide regulatory compliance. Finally, from this leadership position, Upstream Learning leads the adoption and implementation of state-of-the-art, global content management technologies and learning management systems to support global, corporate development and delivery requirements. These systems save the organization time and money, and better prepare the business' safe and successful operation globally.

2.1 Project Background

BP Upstream is a matrixed organization creating complicated requirements for assignment, tracking and reporting of learning activities. These requirements for a global enterprise learning operation are not currently being met by the existing learning technology systems. The implementation of learning technologies has primarily been driven by local or program specific needs. This approach has been moderately successful in the Upstream organization but does not provide consistency or a view into the learning of employees globally.

Created three years ago to centralize learning in BP Upstream, Upstream Learning has been responsible ever since for developing and managing performance oriented learning solutions for the segment's 11,000+ petrotechnical employees involved in Development, Exploration, Production, Research and Technology. These learning solutions leverage industry best practices, field experience and information about cutting edge technologies and transform them into knowledge, skills, behaviours, and attitudes that meet the needs of the business. Each year, Upstream Learning works closely with each function and RPU to determine current and upcoming needs for learning programs. This information is used to guide the development of updated and new petrotechnical courses.

In several areas, there is work underway to resolve these issues and remove the obstacles.

2.2 Project Objectives

GLOBAL LEARNING TECHNOLOGY LEADERSHIP

The number one issue is global learning technology leadership. Remaining in a state of multi-owner learning solutions will not allow the global organization to implement the proper governance, administration, process and consistency necessary to resolve the two primary issues, enabling learners to find the courses and curriculums they need; and the organization's ability to report on training activities globally and locally.

LEARNING TECHNOLOGY CONSOLIDATION AND CENTRALIZATION

BP Upstream Learning is poised to address the need for the addition of new learning technologies to support the business's growth in learning demand, the centralization and consolidation of all learning technologies, and the replacement of legacy learning technology systems.

Two years ago, the Global Access Team was created in order to develop Petrotechnical-related blended learning solutions accessible globally through cutting edge technology. While the introduction of the Global Access Team and the Upstream Learning Group has had a positive impact on BP's Upstream business, it is still part of a disconnected learning organization which, at the same time, is looking for connection and direction as the demand for learning continues to grow. However, there are multiple disconnected systems (Challenge, CMAS/ICAN, Technical Learning Portal) and multiple points of connected content distribution (VTA, Weblearn, Moodle) creating multiple levels of inconsistencies in the delivery of learning.

Moving forward, BP Upstream Learning will be responsible for implementing a number of training and learning programs. Several initiatives including the Upstream eXcellence Program, innovative Accelerated Development Programs (ADP's), Bly-Report based stop-gap training measures and distance learning initiatives have been or are being contemplated to be put in place to enable the competency and capability of BP's workforce.

In order to do so the best way possible, it is imperative that new technologies are put in place that support each and every learning style. Students learn in a variety of different ways, according to their own comfort levels and abilities. Almost all students learn in a combination of learning style. Within each contemplated Upstream learning program, each of the four main learning styles will be supported by learning activities that best support each learning style and supported by technologies that will best support these learning activities.

The three circular tables on the following page shows the progression from LEARNING STYLE, to SUPPORTIVE LEARNING ACTIVITY, to SUPPORTING LEARNING TECHNOLOGY.



2.3 High Level Conceptual Solution

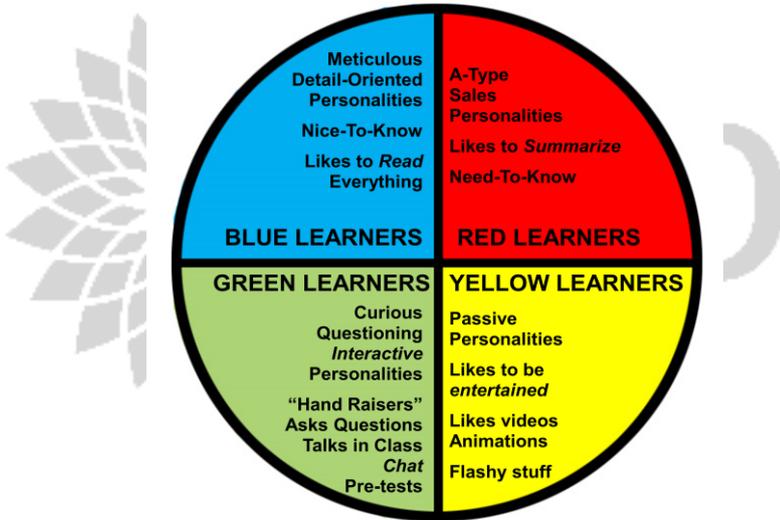


TABLE 1. MAIN LEARNING STYLES

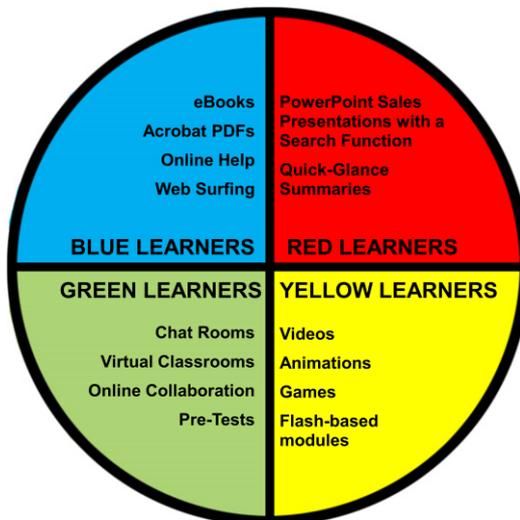


TABLE 2. SUPPORTIVE LEARNING ACTIVITY

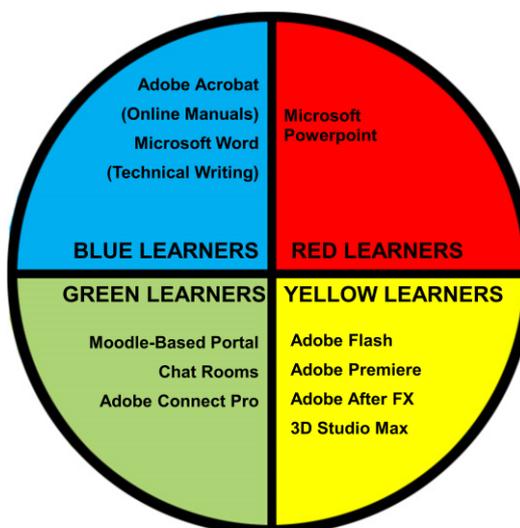


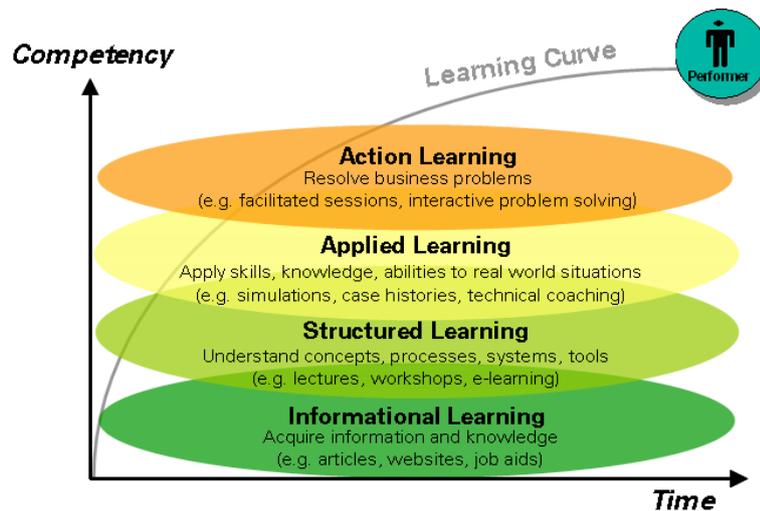
TABLE 3. SUPPORTING LEARNING TECHNOLOGY





LEARNING TECHNOLOGY CONSOLIDATION AND CENTRALIZATION - CONTINUED

Each of the technologies are going to have to feed information about students, assessment performance, and completion information to a central repository, so that management can run reports to view success/failure and compliance information per employee/student. Thus, it is imperative that a Learning Management System be implemented in such a way that each learning activity be able to communicate this information effectively to it.

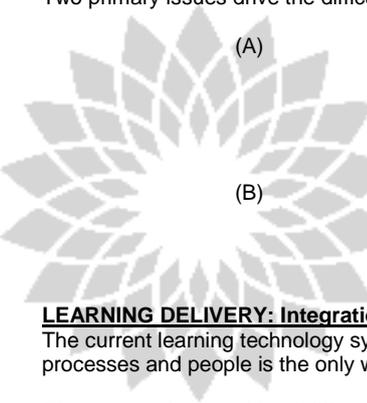


Upstream Learning must support all these learning solutions but it is likely that at each level there is a preference for each type (E-learning, OLC and VLE) due to its relative level of sophistication. These layers of learning together form the basis of the "learning curve" and illustrate the process that an individual learner follows, from a basic understanding of a topic through to being fully competent with the ability to contribute to solving live business problems.



3 Problem Description

Two primary issues drive the difficulties currently being experienced by the Upstream Learning organization.

- 
- (A) **LEARNING DELIVERY:** Learners are having difficulty understanding what training they are required to complete and why they are required to take it. There is no clearly defined, clear-cut learning path/career path being made accessible and being communicated to employees, and there are multiple places learners need to go to access learning activities.
- (B) **LEARNING MEASUREMENT:** While reporting is top priority, it remains one of the most difficult elements to achieve, mostly because there is no central place information about learners is being stored. The administrative and management staff continually have difficulty reporting on learning progress.

LEARNING DELIVERY: Integration of the learning strategy to existing learning systems.

The current learning technology systems do not support the learning strategy of Upstream Learning. Dependency on manual processes and people is the only way in which the organization is currently meeting the needs of the business.

Disconnected ownership of different learning systems creates an issue with consistency and accuracy of information. Increasing the number of delivery options creates the need to provide a specific path for the learner. There are potentially nine different systems with which the learner must interact. This is highly confusing for the learner and creates inefficiencies in the process of delivering and administering learning.

BP does not train employees on how to use learning technology systems. In the past, when these systems to manage learning were implemented, the learners, managers and administrators remained unaware of how to use them. To overcome this issue, additional staff have been hired to manually work around the broken processes.

Content Organization

Learning content is in a critical state at BP. The ability to locate, assign, and report on learning activities with consistency is very difficult. Organization, distribution and delivery are vital components to the success of any learning system, to learning delivery and proper reporting and evaluation. Yet, content is fairly disconnected across the organization. There is corporate and RPU specific content, but often the same required corporate content is duplicated throughout the business because the proper content cannot be located.

Distinct problem exists with the process of content development, identifying past content and creating a consistent product for the entire organization. In many cases they have taken to creating their own content to replace what was originally delivered by corporate just to ensure they were able to meet compliance requirements. RPU's have been left on their own with regard to content development and they have run with it, mostly with good execution - but the process has disconnected the ability to report on learning progress and completion at a global level.

With 60,000 items of content in the existing learning systems, much of which might be duplication, it is becomes important to move through a plan of cleansing and organizing all content before considering a new learning system.

Content Distribution

There are issues with consistent delivery of learning and content. Learners cannot find content and frequently do not understand assignments. Frustration has led to manual processes and administrative staff intervention. Disconnected systems and multiple points of content distribution (VTA, Weblearn, Moodle, etc.) create inconsistencies in delivery of learning. Bottom line, if learners are frustrated with the process of locating and taking training, their experience and retention will be poor.

Content Delivery

Serious issue with the final delivery of eLearning exists in many locations. Specifically, problems exist in Indonesia, Angola and Alaska. Performance of key systems and heavy media content delivery is at a critical state. In general, RPUs use work-arounds to avoid dealing with poor system performance and ultimately the learner and organization suffer because of poor learning delivery.

LEARNING MEASUREMENT Evaluating learning and defining success

In the current environment it is difficult to track and report with consistency on basic learning events. There is an increased demand for evaluation data such as:

- Standardization of evaluation processes
- Customizable evaluation templates, instruments and reports
- Centralized database of evaluation data and results

With the demand for this data it is important that the organization's learning systems support this process.

In portions of the organization where manual processes have created more sophisticated reporting, the demand for additional learning data and reports has significantly increased. As compliance and measurement requirements increase and more data becomes available, the appetite for additional data is likely to overwhelm the learning teams. It is a priority to have new learning systems installed to solve these issues immediately.

3.1 Project Stakeholders, Concerns and Objectives

RPUs desire a more globally led and integrated approach to learning and learning systems and are looking for a team to help provide best practices, requirements, direction and consistency. They expect leadership and are concerned that they have



been left to figure out these issues on their own. This extends beyond the basic operation of the learning systems and directly to content organization, curriculums and how they should work within a learning system.

There are too many locations for the learner to find/access learning and their required training activities. The environment is confusing for the learner and therefore many RPU's have removed the learner from the systems and taken on the process of manually managing learning and the tracking of learning activities.

Each RPU has specific business compliance objectives to meet local needs and requirements. In certain geographies, training may include local contractors who may have different needs than local BP employees. For many RPUs, it is apparent that a major challenge in meeting learning objectives is access to the content on learning platforms. Inadequate searching capabilities, network latency which slows program response, and poor Internet connection make the experience frustrating and slow, likely affecting knowledge transfer and retention, affecting the overall learning experience, making it harder to meet learning objectives with satisfactory results.

3.2 Issues to be addressed

Upstream Learning is responsible for developing and managing performance oriented learning solutions for the segment's 11,000+ petrotechnical employees involved in Development, Exploration, Production, Research and Technology. These learning solutions leverage industry best practices, field experience and information about cutting edge technologies and transform them into knowledge, skills, behaviours, and attitudes that meet the needs of the business.

Several initiatives including the Upstream eXcellence Program, innovative Accelerated Development Programs (ADP's), and distance learning initiatives have been put in place to enable the competency and capability of BP's workforce. However, there are a number of other programs that need to be put into place to fill gaps and will be. An example of this is the Bly Report that was published after the GOM accident. In this report, there were a number of gaps discussed and BP will need to create learning and training programs to close them.

What follows is a discussion of the issues with which Upstream Learning is currently involved or contemplating solving:

RPU SPECIFIC BUSINESS REQUIREMENTS/LEARNING AND TRAINING PRIORITIES

BUSINESS REQUIREMENTS - Business requirements definitions which drive all RPU operations. The four top priorities for all RPUs:

- Reducing the cost of operations
- Assuring compliance with business and HSE standards
- Increasing production flow
- Identification of Technicians who can perform necessary tasks in the field and
- Meeting the standards and requirements in the countries and regions they operate. (Angola and Azerbaijan only).

LEARNING REQUIREMENTS -Included below are the top priorities for the respective learning organization in each of the RPU's and other global businesses, based on direct interviews with each RPU.

ANGOLA

Angola's primary focus is competencies. Their intended learning focus is developing national capabilities And creating a mandatory, "you will do it" environment for their constituents. Development of a long term (Challenge) program is highly desired. An overarching L&D strategy is desired, coming strictly from Upstream Learning.

AZERBAIJAN

Azerbaijan's primary focus is meeting 80% of RPU training priorities, which are driven by mandated regulated training (2-3 year certification) and supporting the rapidly expanding business which is made up of large numbers of contractors, and so ensuring that training is consistent across the board is vital.

INDONESIA (ASIAPAC DISCOVERY)

Indonesia's primary focus is technical training, and especially safety training, where contractors are learning alongside employees. In Tangguh, there are competency and certification requirements for each position. ICAN was brought in to merge training results with competencies.

NAG

Vision: Learners would own their own learning and development.
Reality: Learners need to be pushed and guided
Desired from UPSTREAM LEARNING: Retain the "learning flexibility" that now exists.

NORTH SEA

North Sea's primary focus is production, safety, and technician training – where the RPU Training Plan is first based on BP's safety and training recommendations.

ALASKA

Senior RPU management reacts well to training and learning needs.
Alaska's primary focus is production, safety, and technician training – however, technical issues are impeding meeting learning objectives

GLOBAL LEARNING OPERATIONS

GLO's primary focus is Compliance training, however there are issues surrounding content ownership and versioning.



NAGP

NAGP's focus is also on Compliance driven learning activities, however, there are issues concerning reporting

EXCELLENCE PROGRAM

The Upstream Learning eXcellence Program is designed to increase and assure the professional depth of BP's workforce thereby increasing global organizational capability. It covers all functions in Upstream for levels J, I and H staff. The program is based upon robust professional development plan (roadmaps) created for the key roles in the functions. These structured development roadmaps are provided for key technical and professional roles that specify required job experiences and formal learning, along with structured informal support and validation of individual development through a defined review process.

The program provides a natural progression from the Challenge program further develops employees with deep technical capabilities during the early part of their career. Challenge is a 3 year program covering the first 3 years of Petrotechnical learning, followed by the eXcellence program which covers the next 4 – 10 years of Petrotechnical learning. The Challenge database was launched in March of 2010 and tracks competencies and skills. The program was designed to ensure competencies in certain areas. Currently, there are no interfaces into the Challenge Database today. Learner data gets into the Challenge DB by manual entry. Managers do get primarily exception REPORTING and gaps on learning in the DB. Basically, learners may have need to access WebLearn and/or VTA and other areas to accomplish all their required learning. The Challenge DB does not connect to any of those systems. The Accelerated Development Program (ADP) are Petrotech courses that are not specifically aligned to any one program but can be taken across all programs by Petrotech technicians.

The intent of the eXcellence program is to accelerate the development and deployment of professional competence. To enable this, it is important to understand the gaps, needs and strengths of every person in the program and provide sound development advice, direction and support. This requires BP to assess employees' skills and progress against the requirements of each Roadmap. A total of 36 roadmaps are being developed. This assessment and guidance will take place in the development reviews. Part of this review process calls for face-to-face meetings and part of the process calls for the creation of a specialized portal where employees upload work product examples and receive feedback from managers in an interactive online process.

Completion of an individual development Roadmap is an important achievement and will be an indicator of technical and professional depth. The eXcellence program uses Roadmaps as a way to provide a full view of the formal learning, job experience, informal structured support and development reviews to achieve the target roles. Roadmaps provide a structured guide for an employee's development. They have been developed by experts, functional leads and top performers in the Disciplines from around the world, in a standardized process to ensure that the requirements meet the business needs for technical depth.

BP's experienced workforce whom are not immediately enrolled in the eXcellence Program are key to the success of the program and will be expected to provide the coherent transfer of knowledge and skills vital to the development of others. Additionally, ongoing leadership development offers, technical coaching, advanced technical training and opportunities to build broader and deeper professional networks and professional skills are all areas where our 10+ year workforce can add value to the Program.

Upstream Learning initiated the program in early 2010 based on a development initiative from Drilling & Completions originally called the 10-Year Plan and renamed the Upstream Learning eXcellence Program. Petro-technical professional development was identified as the first priority for the program with Operations, HSSE & Engineering, Drilling & Completions, Subsurface & Wells, and Projects designated as the highest priority for the development of key roadmaps. Subsequently HR, Finance, IT&S and PSCM were added to ensure a segment-wide approach.

Vital supporting technologies include video teleconferencing technologies and online classroom technology. An interactive training portal creating a robust learning environment and online community where interactivity is key to creating the communication required and needed between employees, managers, and educators taking part in the eXcellence program and is currently being contemplated and designed.

D&C began piloting the program in May, 2010 through a series of on-site executive briefings involving SPU leadership teams, discipline leadership teams, workshops, and townhall meetings. The approach has proven highly successful and the other functions are at various stages of building their roadmaps and rolling it out beginning in 4Q 2010 with the plan to complete in 2Q 2011.



The process can be summarized as follows:-

Scope: Employees leaving the Challenge Programme and covered by the E&P eXcellence programme include:-

- Drilling & Completions
- Subsurface & Wells
- Operations, HSE & Engineering
- Projects
- Finance
- IT&S
- HR
- PSCM

Timing: Development reviews will occur every 3 years.

Focus: The development reviews will focus on:

- Individual progression against the plan
- Looking back to inform future development
- Experience
- Formal Learning
- Structured Informal Support
- Individual Capability
- Technical knowledge/skill
- Success at the task level
- Technical delivery

Methodology: The development review will be a rigorous, template-driven four-step process, designed to support career development. It will include:

Step One: Preparation

- Communication
- Expectation Management
- Data Gathering

Step Two: Development review

- Progression against plan
- Delivery capability

Step Three: Specific Guidance on identified gaps

- Experience
- Formal learning
- Structured informal support

Step Four: Action Planning

- Actions to implement specific guidance
- Plan developed by individual
- Plan reviewed with line manager

Output: The output of the development review, as documented in the action plan, will feed other processes such deployment and the PDP. It will be used in the annual PDP conversation to ensure development activities agreed in the development review are progressing.

Issues/Risk Mitigation: The two most significant feedback issues to date are:

Concern about resources to implement (people and \$\$)

- Centralized function assessors for global consistency and fairness
- Manage the process and support post roll outs
- Additional budget \$\$ to support increased training required
- Insufficient capacity for faculty to deliver increased courses
- Technology infrastructure to support the online review process and online community

Concern about long-term sustainability

- Continued leadership support and direction
- Upstream Learning in partnership with the Functions is developing sustainability and continuous improvement plans for post rollout

eXcellence Program Needs: Completion of the Development Review (Assurance) Process and database tool development. Redesign and acceptance of the Personal Development Page (PDP), turning it into a portal to support the program . A data and resource rich web portal providing employees with information and tools for their individual roadmaps and will be populated as roadmaps are finalized



BLY REPORT

Within 24 hours of the accident aboard the Transocean Deepwater Horizon, BP E&P requested that an accident investigation team be formed. Mark Bly, BP Group Head of Safety & Operations, was assigned to lead the investigation team. The investigation was conducted independently from BP teams managing the ongoing accident response and regular operations. Over the course of the investigation, the team involved 50 internal and external specialist from a variety of fields: Safety, operations, subsea, drilling, well control, cementing, wellbore dynamic modelling, blowout preventer (BOP) systems, and process hazard analysis.

As this was a BP internal investigation, the team made a series of recommendations based on eight key findings that relate to BP, its contractors, and its service providers. These recommendations will no doubt serve as areas where Upstream Learning will need to create training and learning programs, in addition to the eXcellence program, and they will cover the following areas:

DRILLING AND WELL OPERATIONS PRACTICE & OPERATING MANAGEMENT SYSTEM IMPLEMENTATION

PROCEDURES & ENGINEERING TECHNICAL PRACTICES

- CEMENTING
- WELL CONTROL (BOPS)
- TUBULAR DESIGN
- NEGATIVE PRESSURE TESTING
- WELL CONTROL / INTEGRITY INCIDENT REPORTING
- HPHT FOAM CEMENT SLURRIES
- RISK MANAGEMENT PROCESS

CAPABILITY & COMPETENCY

- CREATE CLEAR DEFINITION OF TA'S ROLE IN CEMENTING & ZONAL ISOLATION
- DEFINE KEY ROLES TO BE INCLUDED IN ENHANCED COMPETENCY PROGRAMS
- DEEP WATER WELL CONTROL TRAINING PROGRAM – BEYOND INDUSTRY & REGULATORY
- CREATE BP-OWN CENTRAL EXPERT TEAM – FOR SUBSEA BOPS & BOP CONTROL SYSTEMS
- SUGGEST TO IADC – CREATE FORMAL CERTIFICATION PROGRAMS IN:
 - SUBSEA ENGINEERING
 - DEEPWATER BOPS & CONTROL

SYSTEMS

AUDIT & VERIFICATION

- STRENGTHEN BP RIG AUDIT PROCESS

PROCESS SAFETY PERFORMANCE MANAGEMENT

- ESTABLISH INDICATORS FOR WELL INTEGRITY, WELL CONTROL, RIG SAFETY EQUIPMENT
- AUDIBLE INTEGRITY MONITORING SYSTEM REQUIREMENT FOR DRILLING CONTRACTORS

CONTRACTOR & SERVICE PROVIDER OVERSIGHT & ASSURANCE

CEMENTING SERVICES ASSURANCE

- REVIEW THE QUALITY OF SERVICES PROVIDED BY ALL CEMENTING SERVICE PROVIDERS
- CONFIRMATION OF ADEQUATE OVERSIGHT & CONTROLS ARE IN PLACE REGARDING
 - COMPLIANCE WITH PROVIDER/BP/INDUSTRY STANDARDS
 - ENGINEERING/SUPERVISORY PERSONNEL COMPETENCY
 - RISK IDENTIFICATION, COMMUNICATION, MITIGATION

WELL CONTROL PRACTICES

- CLEAR DEFINITION & RIGOROUS APPLICATION OF
 - ESSENTIAL WELL CONTROL & WELL MONITORING PRACTICES
 - ON ALL BP-OWNED/CONTRACTED OFFSHORE RIGS
 - ON ALL BP OWNED/CONTRACTED ONSHORE RIGS:
 - FEATURING HPHT/ERD/SOUR SERVICE
- DEFINED AND CODIFIED AS BP MINIMUM STANDARDS FOR DEMONSTRATED PRACTICE
- FORMALLY BRIDGED IN CONTRACTOR RIG SITE WELL CONTROL POLICIES & PROCEDURES
- REINFORCED VIA REGULAR AUDIT BY BP WELL SITE LEADERS

RIG PROCESS SAFETY

- REQUIRE HAZOP REVIEWS OF SURFACE GAS & DRILLING FLUID SYSTEMS
 - FOR ALL BP OWNED/CONTRACTED DRILLING RIGS
 - AS EXPLICIT CHECK FOR RIG ACCEPTANCE & AUDIT
 - PHASE 1: OFFSHORE RIGS
 - PHASE 2: ONSHORE RIGS
 - FEATURING HPHT/ERD/SOUR SERVICE
- HAZOP REVIEWS – REVIEW SUITABILITY OF LOCATION & DESIGN OF
 - SURFACE SYSTEM HYDROCARBON VENTS



BOP DESIGN & ASSURANCE

- ESTABLISH MINIMUM LEVELS OF REDUNDANCY AND RELIABILITY FOR BP'S BOP SYSTEMS
- REQUIRE AUDITABLE RISK MANAGEMENT PROCESS TO BE IMPLEMENTED
- STRENGTHEN BP'S MINIMUM REQUIREMENTS FOR DRILLING CONTRACTOR'S BOP MAINTENANCE MANAGEMENT SYSTEMS
- MOC'S FOR SUBSEA BOPS
- DEVELOP CLEAR PLAN FOR ROV INTERVENTION INDEPENDENT OF RIG-BASED ROV AS PART OF EMERGENCY BOP OPERATIONS
- INCLUDING OPTIONS FOR SHEARING PIPE & WELLBORE SEALING
- REQUIRE DRILLING CONTRACTORS TO IMPLEMENT VERIFICATION/QUALIFICATION PROCESS SO THAT BSR SHEARING PERFORMANCE CAPABILITY IS COMPATIBLE WITH WALL THICKNESS/MATERIAL STRENGTH/TOUGHNESS OF RIG DRILL PIPE INVENTORY

As it can be seen above, there is a huge need for a multitude of oilfield-related stop-gap learning programs that must be put in place in order to support the recommendations of the Bly Report. In order to comply, certain supporting technologies must first be put in place. First and foremost is a Learning Management System - a repository wherein records of compliance with BlyReport-related learning programs and records of competency with the improved Upstream techniques and technologies can be easily stored and reviewed by managers per each and every employee. This will be a vital need to ensure compliance, provide proof that improvements are being made, as well as measurement of the increments of change across the global organization. Other technologies are also necessary – including the need for an online community very much like the one discussed above for the eXcellence program, specific to the Bly Report initiatives, where managers, employees, SMEs and educators can interactively communicate. The vehicle for learning activities must include and take into consideration the various learning styles – so video technology, video conferencing technology, online classroom technology, eLearning modules, etc are all viable vehicles for learning activities for these Bly Report based learning programs. However, it is imperative that each and every learning vehicle be able to communicate effectively with the LMS. Of course, whether these learning programs are separate or part and parcel of the eXcellence program remains to be contemplated and decided.

WORKPLACE LEARNING

Research shows 80% of learning happens outside the classroom. BP and Upstream Learning have an opportunity to optimize this space. A Learning Organization continually expands its capacity to create its future through Personal mastery, Mental models, Building a shared vision, Team learning and Systems thinking. In a true Learning Organization, team members learn as they are doing and adapt. In creating a robust Workplace Learning program, Upstream Learning needs to set up the technological infrastructure and processes to enable the organization to learn from itself. The basic characteristics of workplace learning include: Self-directed learning, Organizational learning, Communities of practice, Technical coaching, Business conferences and Performance support tools. For each one of these elements, there are technology needs – including the need for portals where learners can log in and find knowledge bases, libraries of white papers, chat rooms, and other materials that can help facilitate a student's workplace learning, whether self directed, or mentored by senior level engineers. An LMS is also a vital component - capturing student assessment and progress.

4 Baseline Architecture

4.1 Baseline Business Architecture

CRITICAL ISSUES REQUIRING RESOLUTION

Before Upstream Learning moves forward with implementing new learning systems, the following five items need strategy, direction and resolution in order to support the growth and demand for learning within the organization issues.

- Global governance
- Aligned administrative structure and processes
- Data governance and integration plan
- Content organization plan
- Basic agreement on connecting learning throughout the business

Change Management will be a significant need during any process of modifying existing systems and processes and a change management project team should be contemplated and planned for during the Select phase. The aforementioned topics will help address many of the organizational issues and concerns from the field. Yet global change will require an investment in people through training on new systems and processes, alignment of learning and objectives and integration of new structures.

4.2 Baseline Application Architecture

The current learning technology systems do not support the learning strategy of Upstream Learning. Dependency on manual processes and people is the only way in which the organization is currently meeting the needs of the business. Disconnected ownership of different learning systems creates an issue with consistency and accuracy of information. Increasing the number of delivery options creates the need to provide a specific path for the learner. There are potentially nine different systems with which the learner must interact. This is highly confusing for the learner and creates inefficiencies in the process of delivering and administering learning. A brief description of each system follows:

<u>Existing System</u>	<u>Description</u>
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Adobe Connect Pro

Adobe Connect Pro is a virtual training application that is used to support BP's remote face-to-face training. Adobe Connect was selected as BP's preferred virtual learning tool based on its comprehensive functionality that provides a better learner experience than WebEx or Live Meeting. Custom coding is currently being written to interface Adobe Connect Pro with Moodle. Adobe Connect Pro is expected to be part of the long-term solution.

Challenge Database

The Challenge Database is a homegrown application that is used to assign and track training to learners in the Challenge Program. It does not electronically interface with any other system. It will be replaced by the LMS.

CMAS / ICAN

CMAS is a process used to track technician competency and certification training. ICAN is the homegrown database application that was created to assign and track the completion of technician training. It does not electronically interface with any other system. It will eventually be replaced by the LMS.

SharePoint 2010

BP ITS is rolling out SharePoint 2010 as the standard document and content sharing tool in the company. SharePoint can also support forums and some social networking functionality. E&P Learning is currently experimenting with and evaluating how best to use SharePoint 2010 within the BP learning environment. SharePoint 2010 is expected to be part of the long-term solution.

SkillPort / SkillSoft

SkillPort is the SkillSoft LMS that is available to SkillSoft content customers. In addition to content that customers purchase from SkillSoft they may also upload their own eLearning content and use SkillPort to manage instructor led training. Some BP Upstream Learning functions contract with SkillSoft and use SkillPort to support certain learning activities. Completions in SkillPort are exported to VTA for reporting. These courses should be incorporated into the LMS

Technical Learning Portal (TLP)

The Technical Learning Portal is a web application that was homegrown to help learners search and find training that they are required to take. TLP was originally meant to support only certain types of technical training, however given the difficulty that earners have finding their training in VTA, the type of courses listed on TLP has expanded beyond the original scope. Learners do not register for or launch courses in TLP. They only use the site to find their require courses. This portal will be replaced by the LMS.

Virtual Learning Environment (VLE) / Moodle

VLE is a collection of learning technologies designed to support blended learning. BP blended learning includes eLearning, online classroom, 3D virtual reality, face-to-face (ILT), homework, discussions and journals. The three key components in VLE are Moodle, Adobe Connect Pro and SharePoint, however Moodle is the primary technology used. Moodle is an open source, Linux based Content Management System (CMS). While some people in the industry refer to Moodle as an LMS, it is really a CMS. The default Moodle install does not have functionality to track course completions and produce learner transcripts. Moodle's primary design is the support of semester long courses in the educational environment. Because it is open source, additional, functionality can be added to Moodle using custom code. Currently any course completed in Moodle is reported back to VTA. This portal will be accessed by the LMS.

Virtual Training Assistant (VTA)

VTA is the primary LMS used within BP. VTA is a 3rd party product that was originally created to support the oil and gas industry. VTA has been rolled out to most of the BP sites around the world on a site-by-site basis. The product includes considerable ability to support face-to-face and compliance training in a regulated industry. However, limitations of the governance model used to manage the system and lack of functionality required for other learning types currently bottlenecks the ability of BP to assign and track training worldwide. VTA is the system of record for tracking learning activities. The SkillPort and VLE training completions are reported back to VTA. This portal will be replaced by the LMS.

Weblearn

Weblearn is a branded version of the SkillSoft SkillPort LMS operated by a different organization within Upstream Learning. Besides the portal name and the content included, everything else if the same as the other SkillPort site. This portal will be replaced by the LMS.



5 Baseline Data Architecture

5.1 Data Architecture Issues

In the current environment it is difficult to track and report with consistency on basic learning events. There is an increased demand for evaluation data such as:

- Standardization of evaluation processes
- Customizable evaluation templates, instruments and reports
- Centralized database of evaluation data and results

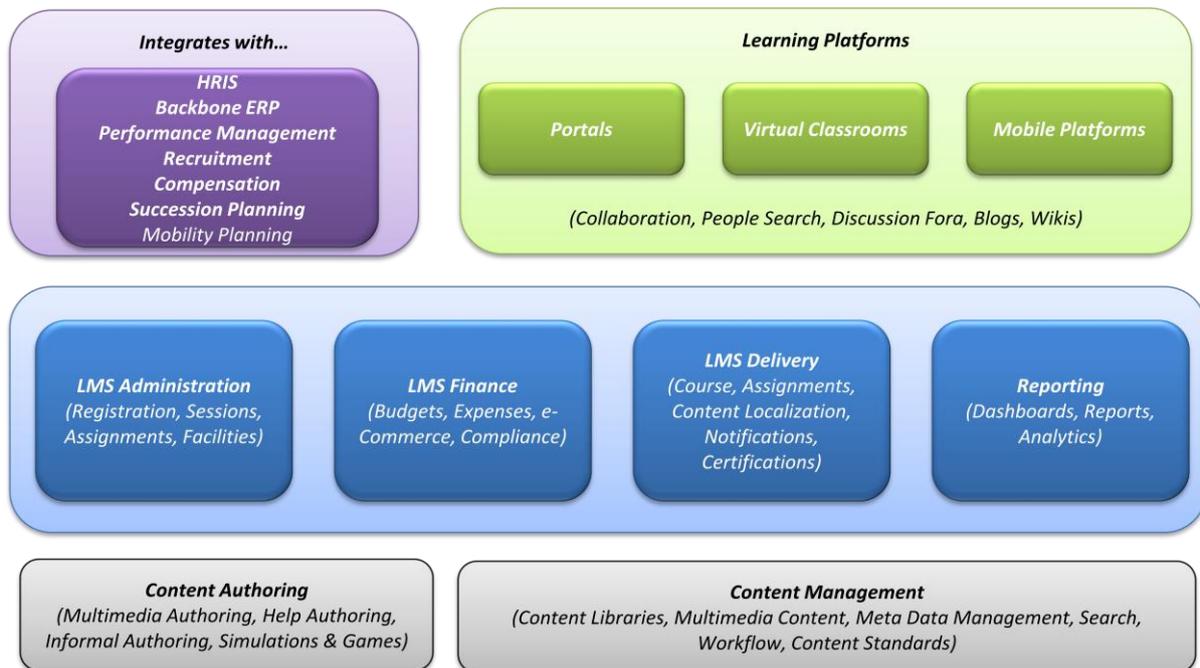
With the demand for this data it is important that the organization's learning systems support this process.

In portions of the organization where manual processes have created more sophisticated reporting, the demand for additional learning data and reports has significantly increased. As compliance and measurement requirements increase and more data becomes available, the appetite for additional data is likely to overwhelm the learning teams. It is a priority to have new learning systems installed to solve these issues immediately. There is a huge need for a Master Data Repository for data regarding learners and their learning activities.

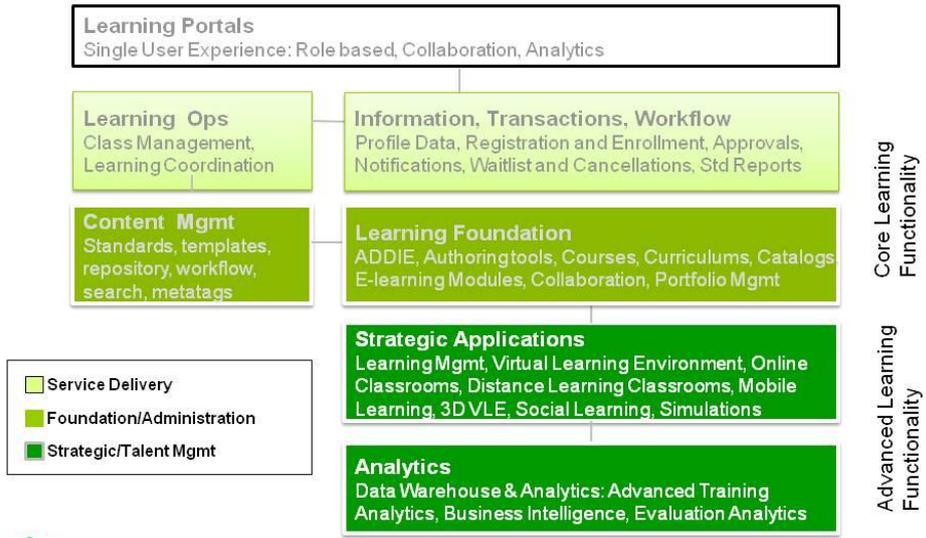
6 Conceptual Target Architecture

6.1 Conceptual Target Business Architecture

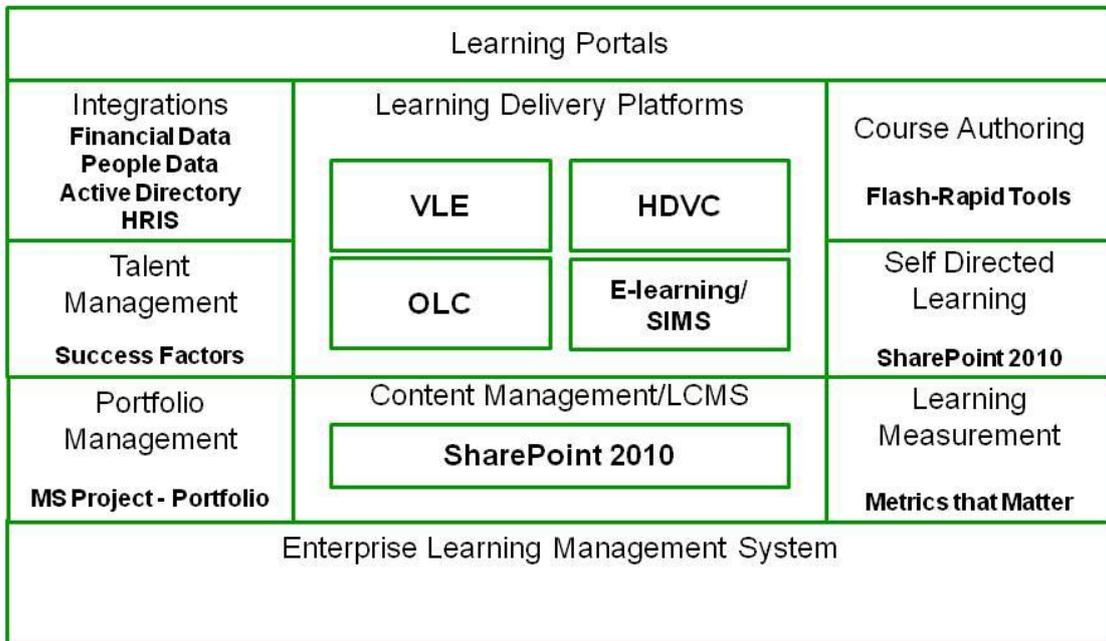
The following diagrams present the BP Upstream Learning Supporting IT Infrastructure processes and how they are closely integrated. These are intended to be used by BP as a guide to support the subsequent phases of the BP Upstream Learning Supporting IT Infrastructure Strategy.



Five Year Learning Process & Systems Roadmap



Learning Technology Architecture



7 Technology Gap Analysis and Assessment

7.1 Recommendations & narrative

FOUNDATIONAL TECHNOLOGIES

Foundational technologies are ones upon which Upstream Learning is going to depend to create the foundation of its global learning environment. This includes the following elements:

Upstream Learning Portal

The Upstream Learning Portal will serve as the one place that employee/students will go to for their training and career development. Within this portal, the employee/student should be able to do the following:

- (a) View their career roadmap – which will include training courses, eXcellence programs, Bly Report-based programs, etc.
- (b) Access and enroll in a wide variety of courses, including eLearning, Instructor-led live courses (in classrooms or online virtual classrooms), online presentations, videos, simulators, etc.
- (c) Interact with fellow students, managers and instructors
- (d) Access a library of materials for learning, such as white papers, manuals, powerPoints, etc
- (e) View their progress within each part of their career roadmap.

The Upstream Learning Portal should also serve as the one place that managers and instructors use not only to interact with employee/students with their training and career development, but also within their own community – as an online community between managers and instructors. Within this portal, managers and instructors should be able to do the following:

- (a) View their constituent employees' career roadmap – which will include training courses, eXcellence programs, Bly Report-based programs, etc.
- (b) Access and run reports about a wide variety of courses, including eLearning, Instructor-led live courses (in classrooms or online virtual classrooms), online presentations, videos, simulators, etc.
- (c) Interact with students, as well as fellow managers and instructors
- (d) Access a library of materials for learning, such as white papers, manuals, powerPoints, etc
- (e) Create a community of excellence with regard to employee management and training.

Sharepoint should be incorporated into the architecture of this portal, allowing a variety of sites for managers and instructors to access.

Management System (LMS)

Upstream Learning's learning management system (LMS) will be a software system for the administration, documentation, tracking, and reporting of training programs, classroom and online events, e-learning programs, and training content. The LMS should be able to do the following:

- (A) centralize and automate administration
- (B) use self-service and self-guided services
- (C) assemble and deliver learning content rapidly
- (D) consolidate training initiatives on a scalable web-based platform
- (E) support portability and standards
- (F) personalize content and enable knowledge reuse.

The LMS should be a system for managing training and educational records, distributing courses over the Internet with features for online collaboration. Upstream Learning will use the LMS to automate record-keeping and employee registration. Student self-service (e.g., self-registration on instructor-led training), training workflow (e.g., user notification, manager approval, wait-list management), the provision of on-line learning (e.g., Computer-Based Training, read & understand), on-line assessment, management of continuous professional education (CPE), collaborative learning (e.g., application sharing, discussion threads), and training resource management (e.g., instructors, facilities, equipment), are also key features needed in the Learning Management System. It will also be used to enhance and support classroom teaching, offering courses to a larger population of learners across the globe.

LMSs cater to educational, administrative, and deployment requirements. While an LMS for corporate learning, for example, may share many characteristics with a VLE, or virtual learning environment, used by educational institutions, they each meet unique needs. The virtual learning environment used by universities and colleges allow instructors to manage their courses and exchange information with students for a course that in most cases will last several weeks and will meet several times during those weeks. In the corporate setting a course may be much shorter in length, completed in a single instructor-led event or online session.



The characteristics shared by both types of LMSs include:

- Manage users, roles, courses, instructors, facilities, and generate reports
- Course calendar
- Learning Path
- Student messaging and notifications
- Assessment and testing handling before and after testing
- Display scores and transcripts
- Grading of coursework and roster processing, including wait listing
- Web-based or blended course delivery

Characteristics more specific to corporate learning, which sometimes includes franchisees or other business partners, include:

- Auto enrollment (enrolling Students in courses when required according to predefined criteria, such as job title or work location)
- Manager enrollment and approval
- Boolean definitions for prerequisites or equivalencies
- Integration with performance tracking and management systems
- Planning tools to identify skill gaps at departmental and individual level
- Curriculum, required and elective training requirements at an individual and organizational level
- Grouping students according to demographic units (geographic region, product line, business size, etc.)
- Assign corporate and partner employees to more than one job title at more than one demographic unit

Technical Aspects

Most LMSs are web-based, built using a variety of development platforms, like Java/J2EE, Microsoft .NET or PHP. They usually employ the use of a database like MySQL, Microsoft SQL Server or Oracle as back-end. Although most of the systems are commercially developed and have commercial software licenses there are several systems that have an open-source license.

Learning content management system (LCMS)

A learning content management system (LCMS) is a related technology to the learning management system in that it is focused on the development, management and publishing of the content that will typically be delivered via an LMS. An LCMS is a multi-user environment where developers may create, store, reuse, manage, and deliver digital learning content from a central object repository. The LMS cannot create and manipulate courses; it cannot reuse the content of one course to build another. The LCMS, however, can create, manage and deliver not only training modules but also manage and edit all the individual pieces that make up a catalog of training. LCMS applications allow users to create, import, manage, search for and reuse small units or "chunks" of digital learning content and assets, commonly referred to as learning objects. These assets may include media files developed in other authoring tools, assessment items, simulations, text, graphics or any other object that makes up the content within the course being created. An LCMS manages the process of creating, editing, storing and delivering e-learning content, ILT materials and other training support deliverables such as job aids.[citation needed]

Learning Management Systems compared to Learning Content Management Systems

Some systems have tools to deliver and manage instructor-led synchronous and asynchronous online training based on learning object methodology. These systems are called Learning Content Management Systems or LCMSs. LCMSs provide tools for authoring and reusing or re-purposing content (mutated learning objects) MLO as well as virtual spaces for student interaction (such as discussion forums, live chat rooms and live web-conferences). Despite this distinction, the term LMS is often used to refer to both an LMS and an LCMS, although the LCMS is a further development of the LMS. Due to this conformity issue, the acronym CLCIMS (Computer Learning Content Information Management System) is now widely used to create a uniform phonetic way of referencing any learning system software based on advanced learning technology methodology.

In essence, an LMS is software for planning, delivering, and managing learning events within an organization, including online, virtual classroom, and instructor-led courses. For example, an LMS can simplify global certification efforts, enable entities to align learning initiatives with strategic goals, and provide a means of enterprise-level skills management. The focus of an LMS is to manage students, keeping track of their progress and performance across all types of training activities. It performs administrative tasks, such as reporting to instructors, HR and other ERP systems but isn't used to create course content.

By contrast, an LCMS is software for managing learning content across an organization's various training development areas. It provides developers, authors, instructional designers, and subject matter experts the means to create and re-use e-learning content and reduce duplicated development efforts. In the remote AICC hosting approach, an LCMS may host the content in a central repository and allow multiple LMSs to access it.



Primary business problems an LCMS solves are

- centralized management of an organization's learning content for efficient searching and retrieval,
- productivity gains around rapid and condensed development timelines,
- productivity gains around assembly, maintenance and publishing / branding / delivery of learning content.

Criticism of LMS is that it is not content centric. In this sense the technology is used for organizational control rather than the empowerment of the learner. The platform is usually poor in its content, and is part of a hierarchical bureaucratic (Max Weber) rather than socially oriented system. A/R/D/T is a term referring to its implementation in complex organizations sometimes replacing regular web sites

Rather than developing entire courses and adapting them to multiple audiences, an LCMS provides the ability for single course instances to be modified and republished for various audiences maintaining versions and history. The objects stored in the centralized repository can be made available to course developers and content experts throughout an organization for potential reuse and repurpose. This eliminates duplicate development efforts and allows for the rapid assembly of customized content.

To look at this another way, an LMS is learner-centric. It focuses on e-learning process management and content delivery. In essence, an LMS is software for planning, delivering and managing learning events within an organization, including online, virtual classroom, and instructor-led courses. For example, an LMS can simplify global certification efforts, enable entities to align learning initiatives with strategic goals and provide a means for enterprise-level skills management. The focus of an LMS is to manage students, keeping track of their progress and performance across all types of training activities. It performs administrative tasks, such as reporting to instructors, HR and other ERP systems but it isn't used to create course content.

An LCMS is content-centric. Here, the focus is on the authoring and management of e-learning reusable content.

By contrast, LCMS solutions are ideally suited to create content-centric learning strategies, supporting multiple methods for gathering and organizing content, leveraging content for multiple purposes, and operation for mission critical purposes. LCMS technology can either be used in tandem with an LMS, or as a standalone application for learning initiatives that require rapid development and distribution of learning content.

Rather than developing entire courses and adapting them to multiple audiences, an LCMS is designed for managing learning content across an organization's various training development areas. It provides developers, authors, instructional designers, and subject matter experts the means to create and re-use e-learning content and reduce duplicated development efforts. An LCMS provides the ability for single course instances to be modified and republished for various audiences maintaining versions and history. The objects stored in the centralized repository can be made available to course developers and content experts throughout an organization for potential reuse and repurpose. This allows for the rapid assembly of customized content.

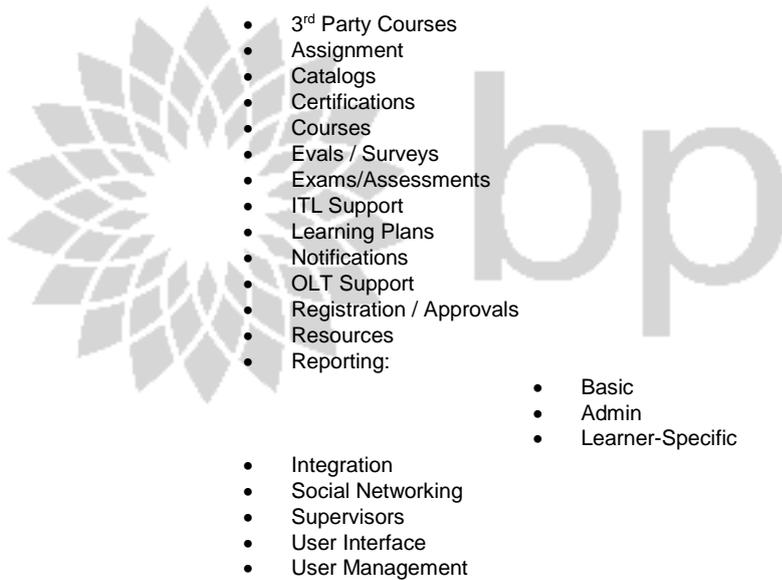
In addition, Brandon Hall believes that: "when LCMS technology is appropriately applied and matched to an orchestrated e-learning strategy, with a complete instructional design plan for designing and using learning objects, great efficiencies can and will be achieved, such as:

- The ability to make instantaneous, company-wide changes to critical learning content
- Rapid and productive content development efforts
- Seamless collaboration among subject matter experts and course designers
- The ability to create multiple, derivative versions of content applicable to different audiences from senior management to line-level workers
- Access to find and reuse learning content, 'just-in-time' and 'just enough'

Ultimate reusability of content by making it available through a wide array of output types such as structured e-learning courses, CD-ROM courses, learning material available from a Palm device or PocketPC, print-based learning for use in classroom settings, and so on."



At the time of the writing of this document, it was not known which LMS package Upstream Learning had selected. However, the following list of LMS functional requirements and needs were identified:

- 
- 3rd Party Courses
 - Assignment
 - Catalogs
 - Certifications
 - Courses
 - Evals / Surveys
 - Exams/Assessments
 - ITL Support
 - Learning Plans
 - Notifications
 - OLT Support
 - Registration / Approvals
 - Resources
 - Reporting:
 - Basic
 - Admin
 - Learner-Specific
 - Integration
 - Social Networking
 - Supervisors
 - User Interface
 - User Management

LMS Trends

Today the biggest trend in the e-learning market is for these systems to be integrated with 'Talent Management Systems'. A talent management software serves towards the process of recruiting, managing, assessing, developing and maintaining an organization's most important resources. Bersin research shows that in 2009 more than 70 percent of large companies have an LMS already and almost one third of these companies are considering replacing or upgrading these systems with integrated talent management systems.

Success Factors

Some LMS providers include "performance management systems", which encompass employee appraisals, competency management, skills-gap analysis, succession planning, and multi-rater assessments (i.e., 360 degree reviews). Modern techniques now employ Competency-based learning to discover learning gaps and guide training material selection.

Driving employees to execute on individual goals and organizational strategy—every day—sets the stage for even greater levels of success. Seamless execution is no easy task in any organization—large or small. Putting hundreds or even thousands of employees on the same page, at the same time, to create the best possible business result requires a synchronized effort. And, this effort starts at the top.

SuccessFactors is being implemented as part of the Upstream Learning portal. It provides a unique suite of Business Execution. These software solutions are web-based, easy to implement and scalable. Success Factors' Business Execution Suite includes the following integrated modules:

360 Degree Reviews

Obtain feedback from multiple sources for a holistic view of your employees.

BizX Insights

Drive critical decisions with question-driven analysis and benchmarks.

Business Performance Accelerators

Ensure effective interactions throughout the employee lifecycle.

Calibration

Make better talent decisions based on consistent and objective ratings.

Career & Development Planning

Develop leaders and fill competency gaps with directed training plans.

Compensation Management

Link compensation and performance expectations.

Employee Central

Get the complete employee picture with our next generation core HRIS solution.

Employee Profile

Share a complete picture of your employees using social media tools.

Goal Management

Align the efforts of your entire workforce with organizational objectives.

Metrics Navigator

Access key summarized performance metrics in a dynamic dashboard.

Performance Management

Gain real-time, actionable insight into employee performance.



Recruiting Management

Navigate the recruiting maze to find and hire the right employees.

Reporting

Get timely and detailed information at your fingertips.

Stack Ranker

Identify high- and low-performers in a side-by-side comparison.

Succession Management

Build and cultivate bench strength to fill gaps today, tomorrow and beyond.

Workforce Analytics

Drive fact-based business decisions with reliable workforce insights.

Workforce Planning

Plan today to ensure you have the workforce needed for the future.

It is not known how many of these modules are going to be implemented, and how many of them overlap with other systems – especially SAP and the LMS package being contemplated.

Metrics That Matter

Metrics that Matter is a software solution for learning measurement evaluation. If an organization utilizes learning and development to drive business outcomes, Metrics that Matter® is software that improves the effectiveness and business impact of learning.

Metrics that Matter utilizes a “cloud-based architecture” to enable implementation and integration with other enterprise software systems (including LMS, HRIS, Integrated Talent Management Suites, CRM, ERP and more) to paint a complete picture of learning, talent and business performance. Analysis is rendered through automated dashboards, scorecards and detailed reports that can be customized for every role from executives to front-line managers.

Metrics that Matter reaches beyond formal learning programs and learning management systems to measure learning effectiveness in informal and social learning environments. The software even includes a benchmark database with over 750 million external data points and 100 standard reports. Benchmark data can be sliced by industry, course type, job function and more; providing learning & development experts with the opportunity to compare learning effectiveness against external averages.

Gaps & Issues

One of the biggest gap or issue with regard to LMS technology within Upstream Learning is that, for the last decade or so, there have been multiple LMSs scattered throughout BP globally. This not only has made it difficult for students to know where to log in for learning activities, but it has also made reporting about BP learning almost impossible – both from a student-by-student level and also from a big picture, global level. One of the biggest challenges for Upstream Learning will be to consolidate effectively and accurately all of these systems into one.

Also – another issue will be that of architecture. In many cases, the LMS serves as the backbone of a corporation’s learning portal, including the ability to run reports regarding learning and its effectiveness. However, Upstream Learning is contemplating using a Sharepoint backbone for its learning portal, with the LMS and other packages (Success Factors, Metrics that Matter, Moodle) serving in the background.

Special care must be taken to make this seamless – from technological and branding perspectives.

The problem in the past has been the myriad of different portals and places a student needed to access for learning. Although Upstream Learning’s portal will be an amalgamation of different systems and software packages, it must operate and appear as if it were ONE system to the users, whether they be employee/students, managers, and/or instructors.

CONTENT AUTHORING AND PRESENTATION

Currently, there are a number of packages being contemplated for Content Authoring and Presentation. They are as follows:

- Adobe Products - eLearning Development
- Adobe Connect Pro - Online Classrooms
- Moodle – Online Collaboration
- Unknown Technology - Video Streaming

One of the drawbacks of using Adobe-based products for eLearning development is that they do not really represent “Rapid Development” tools.



In the mid-1980s, Adobe entered the consumer software market with Adobe Illustrator, a vector-based drawing program. Illustrator, which grew from the firm's in-house font-development software, helped popularize PostScript-enabled laser printers. In 1989, Adobe introduced what was to become its flagship product, a graphics editing program called Photoshop. Stable and full-featured, Photoshop was ably marketed by Adobe and soon dominated the market.

In 1993, Adobe introduced PDF, the Portable Document Format, and its Adobe Acrobat and Reader software. PDF is now an International Standard: ISO 32000-1:2008. The technology is adopted worldwide as a common medium for electronic documents. In December 1991, Adobe released Adobe Premiere, which Adobe rebranded to Adobe Premiere Pro in 2003. In 1994, Adobe acquired Aldus and added Adobe After Effects to its production line later in the year.

On December 12, 2005 Adobe acquired its main rival Macromedia in a stock swap valued at about \$3.4 billion, adding Adobe ColdFusion, Adobe Contribute, Adobe Captivate, Adobe Acrobat Connect (formerly Macromedia Breeze), Adobe Director, Adobe Dreamweaver, Adobe Fireworks, Adobe Flash, FlashPaper, Adobe Flex, Macromedia FreeHand, Macromedia HomeSite, Macromedia JRun, Adobe Presenter, and Macromedia Authorware to Adobe's production line.

In July 2007, Adobe released Soundbooth. This product was not intended to replace the existing Adobe Audition but merely to provide an environment for professionals not specializing in audio. (Underline is used to emphasize the packages needed for eLearning and video development).

On August 3, 2007, the company announced their plans to discontinue development of Authorware, the "visual authoring tool for creating rich-media e-learning applications for delivery on corporate networks, CD/DVD, and the Web." Authorware was one of the development tools acquired in the Macromedia/Adobe merger. It was replaced by Adobe Captivate.

The Adobe Creative Suite was introduced in 2008 and includes three different versions: Design, Web, Production - at prices from about USD \$1,700 to \$2,500.

However – none of these packages are actually designed directly for curriculum and course development. Even though Adobe Flash has become the standard for online content design and delivery, the developer is still stuck having to "re-create the wheel from scratch" when looking to develop courseware – especially with regard to the coding necessary to communicate with an LMS. None of these packages actually create a SCORM package – without the necessity for additional coding and application development via Flash and Dreamweaver.

It is suggested that other similarly priced packages that have been optimally designed especially for eLearning development be contemplated. Trivantis is a company that manufactures and sells what most in the industry believe to be the state of the art in this regard, a package called "Lectora".

Lectora Inspire

Lectora Inspire is a similarly priced package that, like the Adobe Creative Suite, is a collection of applications that, used together, makes online course development fast and simple. Lectora's powerful curriculum authoring tools are bundled with an easy flash content creation tool, screen capture tools, audio recording software, enabling the user to quickly create dynamic video and Flash eLearning content without having to know how to code in Flash's Actionscripting language.

The Lectora Inspire Package includes:

- Lectora – see Lectora section below.
- Flypaper™ for Lectora – Anyone with basic content creation skills can develop professional, custom interactive exercises without having to know Flash or Actionscripting. Engage learners by adding Flash animations, special effects, and transitions to Lectora courses. Flypaper for Lectora Major New Features:
 - Create interactive touch-screen learner experiences with multi-touch support for slide, swipe, pan, zoom and rotate motions
 - Conveniently stream video feeds from various new sources or specify your own FLV, MV or MP4 feed
 - More than 25 other improvements such as web video search enhancements, file recovery improvements, performance upgrades, and much more.
- Camtasia® for Lectora – Creates professional tutorials by easily capturing real world video, Flash animations, or 3D design software. Enjoy powerful video editing capabilities for zooming and panning, audio handling, transitions, and more. New Captioning Features
 - Use the speech-to-text in Camtasia to automatically create captions from voice narration or audio
 - Create 508 compliant closed and open captions
 - Now you can export your audio for easy transcription into a caption file, and then import the transcription back into your video
- Snagit for Lectora - Easily create and edit screen captures of your desktop, specific applications, or portions of your screen. Add callouts, highlights, colors and more and insert the images directly into Lectora. Capture anything on your screen to create custom images. Add visual appeal by inserting special effects, combining images, or magnifying content.
- Lectora Internal Audio Recorder and Editor - Record voice-overs using a microphone and insert them into Lectora. Edit existing audio files and synchronize audio playback with events that occur within your Lectora project. Enhanced Audio Recording - Audio recording has been enhanced for producing higher quality audio with smaller file sizes.
- Lectora Internal Video Editor - Edit existing video files and synchronize video playback with events.



- Lectora Internal Image Editor - Create and edit static images and animated GIF files and save them in one of several standard formats.

With built-in resources for rapid eLearning development, such as wizards and templates, Lectora Inspire gives you the power to integrate multimedia, assessments, and variables into your coursework. And Lectora lets you automatically publish content to: Web (HTML) Mobile and tablet devices, SCORM and AICC-compliant learning management systems (LMS), and CD and DVD.

Trivantis Lectora

The flagship of the Inspire package, Lectora enables educators to quickly deliver training to learners. What follows is a subset of its vast toolset – which is available at the same price point as Adobe Creative Suite, which is not specifically designed for eLearning and curriculum development without extensive coding/additional application.

Mobile Device Support

Curriculum designers can access mobile learners using dozens of new tablet and mobile templates in the Lectora intuitive rapid development environment. Lectora offers seamless publishing to mobile and tablet devices such as the iPad and iPhone.

Internal Content Organization & User Friendly Interface

Lectora's layout and user-friendly interface enables you to maintain efficient content organization for faster development and file access. Customize your toolbars, dock or float the Title Explorer, and create a work space that maximizes efficiency.

Tip of the Day

Enhance your Lectora skills by reading a helpful tip each time you open Lectora.

Customizable Toolbars Pick and choose which toolbars and toolbar icons you want displayed within Lectora and move them to your desired location.

Help Agents

Quickly learn Lectora with the new interactive video help guides that provide animated tutorials on the key features in Lectora to help you begin creating content immediately with virtually no learning curve.

Title Wizards

Choose from an array of professionally created Title Wizards to quickly create the look and framework of your title, thus saving time and providing you with a starting point for content creation. Each wizard serves as a content creation guide and will walk you through the steps needed to complete your course.

Template Gallery

Access more than 250 templates directly within Lectora, which are conveniently categorized and include helpful descriptions of each template. Makes creating a title easier than ever before!

External Content Organization

Lectora copies, organizes, and stores all necessary files into one easy-to-access directory, saving time in locating folders and files.

Flash & Games Library

Keep learners engaged by easily adding interactive flash animations and games to your courses. Choose from a library of customizable flash games and animations such as flash cards, jigsaw puzzles, million dollar question game, reveal game, hangman, word scramble, tic tac toe, text animations, male and female characters, industry-specific characters, digital and analog clocks, and more.

Clip Art Gallery

Adding high-quality, professional images to your course is a breeze with over 250 new clip art images added to the existing library of 6,000.

Symbol Library

Save time by easily importing symbols such as copyright and trademark symbols directly into text.

Shapes & Lines Designer Choose from an array of shapes and lines, such as arrows, circles, squares, triangles, trapezoids, parallelograms, and more to enhance visual appeal.

Background Wizards

Choose from a gallery of 38 pre-designed backgrounds which are conveniently categorized by type or create your own custom background to enhance visual appeal.



Animation Wizards

Easily create more engaging courses by using the animation wizards which guide you through configuring and customizing Flash animations from the Media Library.

Button Wizards

Utilize the seven types of pre-designed and pre-defined buttons or four custom buttons. Edit button text, size, and colors or add animated GIF buttons or your own navigation quickly and easily.

Chart Creator

Save time by quickly creating a variety of charts, such as bar, pie, and line charts based upon standard spreadsheet formatted data. Charts will appear as editable images that can easily be recreated.

Rapid Development

Dynamic Titles Instantly update the text within published titles by editing an associated published XML file. Makes updating published titles fast and easy.

Sharing and Reviewing Content

Share & Store Media, Templates & Library Objects Online - Easily share media, templates, and library objects with any and all Lectora users – even those outside your own organization! This makes collaborating on courses fast and simple and eliminates the need to email, FTP, or store files on a network. Enhance a collaborative authoring environment by adding notes to a course, which tracks the name of the author who created the note and the time it was created. Notes Report - Print a report of all the notes in your title for a helpful quick reference. Export to Word - Easily repurpose and share course content in a Word document by exporting the text from your title to Microsoft Word (.doc).

Save Title as Template Save your Lectora title as a template to increase consistency and efficiency. Enables authors to share designs across an organization. Import from Existing Title - Share chapters, sections, or pages from existing Lectora titles, which promotes a collaborative authoring environment.

Video Support

F4V Video Support - Get stunning video quality with lower file sizes with F4V video, now automatic when converting video to Flash in Lectora. F4V lets you combine video, data, graphics and sound as video for Flash Player 9 and above.

Forms - Create electronic forms by adding pre-created or custom form elements such as text fields, radio buttons, check boxes, pick lists, and drop down menus. Configure forms to receive real-time, two-way data. Save custom form elements for titles to ensure consistency. Save time and effort by using the same variable within multiple forms, thus conveniently populating previously entered form data.

Extensive Media File Support

Insert an array of media files such as images, audio, video and Flash(From Flypaper). Edit the size and position of your media and add actions to enhance interactivity.

Page and Object Transitions

Make pages and objects more animated with transitions such as wipes, splits, checkers, strips, fly actions dissolve, circles, and boxes.

Hyperlinks Easily add hyperlinks to text, which links to another page, section, web address or e-mail address. Conveniently change the default hyperlink color to enhance the look of a course.

Launch Programs & Documents Engage end users by adding programs or documents, such as PDFs, Microsoft Word, Excel, and PowerPoint. Simply drag and drop your desired files directly into Lectora and easily select any additional file from a dropdown list of previously added files, thus eliminating time spent inserting documents.

Flash Conversion Automatically compress and convert all video and audio to Flash format prior to or upon publishing. Provides better compression for faster loading of content, high quality files, smaller file sizes to free up bandwidth space, complete browser compatibility, and the option to view videos in full screen.

Streaming Flash Videos Eliminate the need for users to download videos within a course by streaming Flash videos from any location on the Web.

Streaming YouTube Enable learners to conveniently play a YouTube video directly in a Lectora title.

Skinnable Flash Player Easily change the color and style of your Flash Player by choosing from predefined Flash Player skins.

Interactivity -Actions Create interactive content without the need for Flash by utilizing an array of actions that can move, start, stop, show, hide, size and play objects or go to specific locations within your course.

Pop-up Windows Enhance interactivity and visual appeal by adding customizable pop-up windows to courses. Pop-up windows in HTML titles appear in a modern, browser-based window, eliminating all pop-up blocker and message error issues.



Content Accuracy and Protection

- Author Control - Prevent inadvertent revisions in collaborative authoring environments by password protecting portions of a Lectora title.
- Auto Error Check - Make any necessary corrections on the fly with Lectora's automatic error checking feature and conveniently print content located in your error check dialog box.
- Published Content Protection - Protect published content and make it nearly impossible for students to copy and paste from course pages.
- Lock/Unlock All - Make your content safe and secure by locking and unlocking the size and position of multiple items at once.

Tests and Surveys

- Change Contents for Questions - Questions can now be the target for a change contents action, enabling questions to update on the page with the new answer. This is especially helpful when creating interactive, custom questions which include media.
- Reset Questions - Automatically reset individual questions on a page so they automatically return to their original states, which is ideal for repeating a question until it is answered correctly.
- Assignable Unit Prerequisites Create custom learning paths quickly and easily by specifying requirements for moving to a specific part of a course.
- Grading and Results Tracking - Submit assessment scores and results instantly via e-mail to multiple addresses, CGI, XML, AICC, or SCORM. Provides seamless integration with any standards-based learning management system.
- Customizable Questions and Tests Control the color and layout of tests and assessments by including a wide array of multimedia and interactivity. Also, create weighted questions for enhanced flexibility and specify whether you would like to round up or down in order to round the scores of tests, combined tests, and surveys involving numbers.
- Bulk Question Importer - Import already existing questions and files stored in access databases, excel spreadsheets, or flat files, saving time and effort in creating questions.
- Question Banking – create banks of questions and access them randomly per assessment, per student. Avoids students cheating through sharing questions and answers on assessments.
- Certificate Tool - Reward users for a job well done by quickly creating certificates for test or course completions. Simply use certificate templates that you can easily customize with desired colors and fonts as well as specified names and dates.
- Immediate QuestionFeedback - Engage students by instantly displaying question feedback after each question is answered, but before the answer is submitted.
- Customizable Multiple Choice Questions - Display multiple choice answers in a drop down list or in a list box, providing greater customization and a more diverse look.
- Separate Grading - Include more than one correct answer for multiple choice and hot spot questions and have each answer graded as a separate question.
- Custom Likert Responses - Create custom responses for Likert questions by specifying your own desired number of choices and using your desired text.

Publishing

HTML5 Support - Offer rich training experiences on the widest range of handsets, including PC, Mac, iPhone, iPad or Android 2.2. With single click publishing to virtually any device, you can offer video in MP4 format, audio in MP3 format, or integrate iPhone specific media types like M4V video or M4A audio into your courses.

Multi-Language Publishing

After translating your title into multiple languages you can easily publish courses to all your desired languages at the same time, saving time and effort.

Single-Click Publishing - Publish to the Internet, CD-ROM, Single File Executable, AICC, SCORM, CourseMill, or any standards-based LMS with the simple click of a button. Enhances ease of use and serves as an added time saver.

Publish to iPhone - Stay on top of cutting edge technology and provide learners with multiple ways to access courses by choosing from ten templates and two wizards to conveniently publish Lectora titles to iPhone and iPod Touch.

Preview/Test in Browsers - Ensure course compatibility with multiple browsers by conveniently previewing and testing each page on multiple browsers. Use the pull-down on the Preview button to choose the browser in which you want to preview your published title.

eLearning Standards & 508 Compliance

Enhancements for Screen Readers - Lectora has been enhanced for screen readers in the areas of questions and forms.



508 Documentation Learn to create your own 508 compliant content by utilizing the 508 documentation which also references courses and templates for developing 508 content. FLV Closed Captioning - Easily make your FLV videos 508 compliant by adding closed captioning. Simply supply the text and Lectora does the rest. Screen Reader Functionality Buttons work seamlessly with popular screen readers, such as JAWS. 508 Checker - Use the 508 Compliance Checker to conveniently check your title for consistency with Section 508 accessibility guidelines and receive helpful feedback on how to resolve any issues in your title that do not meet these guidelines.

SCORM Compliance

Lectora has been tested and conforms to the latest SCORM 1.2 and SCORM 2004 specifications. AICC Compliance Lectora is an AICC certified Authoring System which has been tested by AICC independent test labs to comply with AICC guidelines and recommendations.

As the above shows, a package like Lectora would make creating content for eLearning, Online Classrooms, and video streaming easier, faster, and SCORM compliant, without the need for additional coding/application development via Flash, and at a similar price point as Adobe.

Trivantis Snap!

Snap! by Trivantis allows even more rapid learning content development by harnessing PowerPoint for eLearning. For only \$99, Snap! creates engaging Flash content in minutes with absolutely no learning curve. Snap! by Lectora truly reinvents the term 'rapid' by providing you with easy-to-use e-Learning software to create stunning courses, presentations, and compelling Flash content.

Compare Snap! by Trivantis to Articulate (\$999) and Adobe Captivate (\$500) for similar software.

EFFICIENCY

The following tools have been contemplated for use by the Instruction/content creation community within Upstream Learning to manage efficiency with regard to learning content creation.

- Projects Portfolio
- Document Management
- Content Management
- Office Communicator (OCS)
- Voyager (Windows 2010)

It should be contemplated that these tools be incorporated into an interactive, online portal very similar to the actual Upstream Learning portal – perhaps Sharepoint based, where all educators can interact with each other the way they interact with employees/students and managers.

In this environment, document management and content management can be managed and tracked efficiently, as well as intercommunity communication – perhaps also using Moodle to create chat rooms where best practices can be shared, training development symposiums can be put on online using the same online classroom and video streaming technologies being used for petrosience training purposes.

An educator's portal will go a long way to ensuring efficiency among the Upstream Learning community.

DATA HUB

The issue in this section revolves around the usage of a centralized data hub, where data from various systems including HR, Competency, Performance, Organizational, LMS, Success Factors, Metrics That Matter and SAP all reside.

It may not be a practical thing to attempt to create one database for everything – especially where technical performance over a global network is concerned. From this standpoint, it may improve performance to have a database for each system.

Another issue is one of updating and upgrading. If one system (LMS for example) is being upgraded and the structure of its data is changing, it may be easier to change one database that is a subsystem rather than touching a massive central data hub. If one section gets corrupted, it may be simpler to fix or replace if it is a subsystem of the data structure.

However, if the structure is not centralized, efforts must be made to interconnect them in such a way that data may be pulled from each one to construct a report, for example.



LEGACY SYSTEMS AND COURSES

Leveraging information and courses from stakeholder Legacy Systems (See Baseline Architecture Section) and Legacy Courses (currently, there are about 60,000 legacy courses) is also going to be an issue.

Baseline Application Architecture was conducted to understand the current Application Architecture issues and help to inform the BP Upstream Learning Supporting IT Infrastructure Strategy on the focus for target improvement areas.

BP currently maintains many existing systems to support learning requirements. Some of these systems are commercially available, some are based on open source software and some are homegrown. It is clear that learning systems were brought online to solve either local or program specific issues. The view in a large global solution does not appear to have been considered as part of the original implementation process. Examples of this are the Challenge Database, Technical Learning Portal and the initial implementation of SkillPort.

These portals and systems will eventually need to go away entirely, to be replaced by the LMS, or else, rebranded in order to make it look like the student is accessing one system.

Courses will need to be re-evaluated, repurposed, rebranded. There is no way around the fact that this will be a huge, time-consuming process.

