

Global Training and Certification for the Extended Enterprise

Nortel Deploys Single Worldwide Management Platform for Classrooms, e-Learning and Virtual Instructor-Led Classes

—Chris Howard, *Principal Analyst* | October 2007

▶ IN THIS CASE STUDY

Many corporate learning organizations with international audiences operate within an infrastructure of decentralized technology. Each region or nation maintains a separate learning management system (LMS) application and database. Nortel, seeking to optimize and rationalize its training and professional certification activities worldwide, has implemented a global LMS that supports all of its customers and business partners in more than 150 countries using a single, centralized system. During the past 12 months, Nortel's technology infrastructure has provided delivery of classroom training, e-learning, virtual instructor-led training and blended learning to nearly 160,000 individual students across the globe.

This case study examines three strategic learning management initiatives that predominated Nortel's strategy for developing, delivering, and managing training and professional certification for customers, strategic business partners and employees.

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1. Over the last four years, Nortel has consolidated multiple regional learning management systems into one global multilanguage LMS implementation. Today, the company uses a single set of technology systems and tools; standardized business processes, policies and rules; and, a global supply chain infrastructure to develop, deliver, and track training and certification for all audiences.
2. Nortel has successfully transitioned from classroom-only training to a blended approach that embraces electronic delivery mechanisms, such as self-paced e-learning and virtual instructor-led training. Today, approximately 34 percent of Nortel's employee and customer training is delivered via e-learning. Both Nortel and its customers have achieved quantifiable cost-savings from these new learning programs. The company estimates that North American customers alone saved \$7.7 million between 2005 and 2006.
3. Nortel integrated employee training into the global LMS used for administration and management of customer / partner training and certification, thus eliminating the hosted LMS solution previously used for employee development and talent management. Cost-savings have been achieved in operational areas (such as content development, and tracking and reporting), as well as in hard costs (like technology and resources). 

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Company Overview

Founded in 1895 as Northern Electric and Manufacturing – a supplier of telecommunications equipment for Canada’s fledgling telephone system – Nortel has grown to attain global recognition as a leader in delivering communications capabilities that enhance the human experience, power global commerce, and secure and protect critical information. Nortel delivers technology solutions to both service provider and enterprise customers, including end-to-end broadband, voiceover IP, multimedia services and applications, and wireless broadband. Nortel’s 2006 revenues were \$11.42 billion.¹

Business Environment

Nortel products can be found just about anywhere a voice or data network operates. With customers in more than 150 countries around the world, Nortel provides customer and partner training and certification programs on a truly global level. The audience for these learning programs includes voice and data network service providers, and cable and wireless operators, as well as channel partners that sell and integrate Nortel gear for large enterprises, small and mid-sized businesses, and governments.

Nortel recognizes that skills competency and product knowledge are critical to the successful deployment of complex technology solutions in today’s network environments. A professional certification program allows channel partners to demonstrate their competency in designing, installing and supporting Nortel solutions. By helping its business partners learn how to assess and implement mission-critical solutions, Nortel gains improved customer satisfaction, customer loyalty, productivity and earnings. As a result, partner certification is a key business driver of the company’s global learning strategy and objectives.

¹ Source: Nortel, “About,” <http://www.nortel.com/corporate/index.html>.

Another goal of Nortel's global learning programs is to offer technical product training directly to customers, such as large enterprise IT departments or network service providers. For these end-user organizations, certification may be optional, but technical employees are expected to remain current on the latest changes in Nortel products and software releases.

Nortel employee development is driven by a different set of business dynamics. The telecommunications boom of the late 1990s led Nortel and its competitors to hire large numbers of new employees very rapidly. The subsequent slowdown in telecom equipment sales led to job losses and downsizing. Nortel shed 70 percent of its workforce from 2001 to 2006. The resultant challenge for Nortel has been to reengineer its employee learning programs and increase their cost efficiency by leveraging the global learning technology infrastructure that serves customers and partners.

“Certification is the engine that drives our training programs for customers and channel partners. The vast majority of course development is geared towards helping students achieve the highest possible level of professional certification with Nortel solutions.”

– Global training supply chain prime, Nortel knowledge services

Learning Organization

Over the past five years, Nortel's learning organization has evolved from a decentralized to a centralized model. Training developers and instructors – who were formerly assigned to specific business units – are now assembled together under an umbrella organization, called “Knowledge Services.” This shared services group manages the training technology infrastructure for all business lines. The knowledge services group, which encompasses employee training, external customer training, certification and documentation, reports to corporate operations. Bersin & Associates research indicates that best-practice

KEY POINT

Senior executives struggle to find the perfect “home” for learning organizations that deal with employees, customers and business partners.

organizations are centralizing their training technology and supporting services.²

The mission of knowledge services is evolving rapidly. The group spent years building a single global supply chain that describes how training courses are developed, how students register and pay for training, and how training is delivered to customers and channel partners around the world. The global supply chain (which is now highly mature) includes tools, websites, processes and business rules.

Today, the knowledge services group is turning inward to address the development and learning needs of Nortel employees. Managers who once focused on product training and global supply chain management are now shifting their attention to employee talent management, roles and competencies, and compliance tracking.

From Regional to Global Training and Certification

Nortel's decision to centralize its regional training systems into a single global LMS and supply chain was driven by three key business drivers:

1. The lack of global consistency in training content, business processes, and rules / policies;
2. The cost of duplication of technology and other resources; and,
3. The inability to measure and compare costs and other metrics across geographies.

Nortel divides itself into four global regions: North America; Caribbean and Latin America (CALA); Europe, the Middle East, and Africa (EMEA); and, Asia. From the 1980s until the early 2000s, each region's training and certification organization developed and built its own technology systems and tools, business strategies and models, work processes, and business rules and policies.

² For more information, *The High-Impact Learning Organization: WhatWorks® in the Management, Organization, and Governance of Corporate Training*, Bersin & Associates, June 2005. Available to research members at www.elearningresearch.com or for purchase at www.bersin.com/highimpact.



KEY POINT

Nortel has a large active training audience. From March 2006 to February 2007, the company reported 159,690 global unique names in its learning management system (LMS).

Issues with the Regional Approach

Although this approach allowed each region to fine tune learning programs to meet local customer needs, it also resulted in a high degree of inconsistency, particularly with respect to with customer- / partner-facing policies. For example, customers in India could cancel anytime up to the day of a training course, while North American customers had to cancel within 14 days of course registration. Nortel's customer base was becoming increasingly globalized and the company had to ensure that it could consistently meet customer expectations in every corner of the world.

The need for commonality extended to tools and systems, as well. The high cost of technology, content development and IT support meant that Nortel was wasting valuable resources on duplicated efforts. For instance, the majority of course content was developed in North America – and then subsequently redone in each country or region to fit local standards, and run on local systems and tools. Nortel wanted to be able to develop a course once, and then simply make minor modifications for each region or country.

Training and certification call centers were another significant area of duplication. Each region had a separate call center that provided customers / partners with general information and assistance with registration, payment and technical support issues. Not only was this an expensive waste of resources, but inconsistent handling of callers highlighted the problem of not having uniform policies and procedures.

Additionally, Nortel management was unable to pool global training metrics to compare one region to another. Learning services managers wanted to determine how much it cost to develop a course across the globe and how much it cost to serve a course to a student. But incompatibilities across systems and processes made it impossible to evaluate one region or country against another.

Implementing a Global Approach

Approximately four years ago, Nortel executive management approved the corporate goal of consolidating regional training and certification systems and processes into a unified global supply chain. First, the



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company selected a single learning management system for the initiative.

North America had implemented the TEDS Learning on Demand™ LMS, not only as a portal for learners to access courses and other resources, but also as a training administration and management platform. The company decided to leverage the LMS for enterprisewide implementation because:

- The North America IT department would be most able to provide technical support and services, as compared with less resource-rich regional IT departments; and,
- The TEDS LMS delivered advanced features and functionality, with scalability for growth and expansion in other areas, as well.

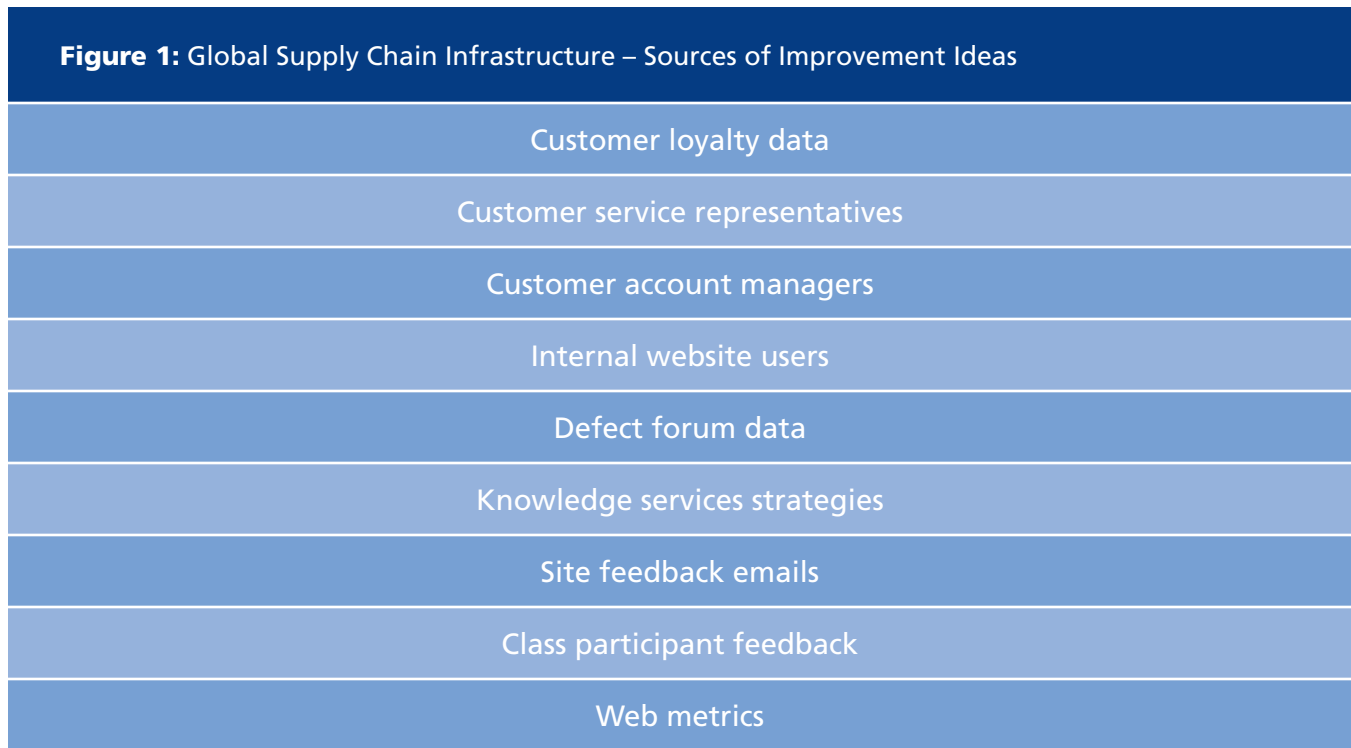
The other global regions had put significant effort into developing local systems and tools, so they were hesitant to give up their own platforms and accept the imposition of technology from North America. The knowledge services organization overcame these issues by using the following change management tactics.

1. Nortel management communicated to the other regions that North America was not going to drive the initiative – instead there would be “shared leadership.” This concept took form in the establishment of two cross-functional, cross-regional groups that oversaw the process of merging the regional training systems. The groups now continue to manage the improvement process. The supply chain team is led by a North American knowledge services manager, while the process / tools team is led by a counterpart in Europe.
 - **Global Supply Chain Leadership Team** – This group makes strategic decisions regarding the training and certification of the supply chain, including tools / systems decisions and business rules implementation. Ideas for improving the global supply chain infrastructure come from a wide range of sources (see Figure 1). The group, which includes stakeholders from each region, meets biweekly.
 - **Global Process and Tools Leadership Team** – This group implements the tactics that support the strategic decisions made by the supply chain team, such as driving global business rules



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Source: Bersin & Associates, 2007.

decisions and prioritizing resource initiatives. This group also meets biweekly and includes stakeholders from each region.

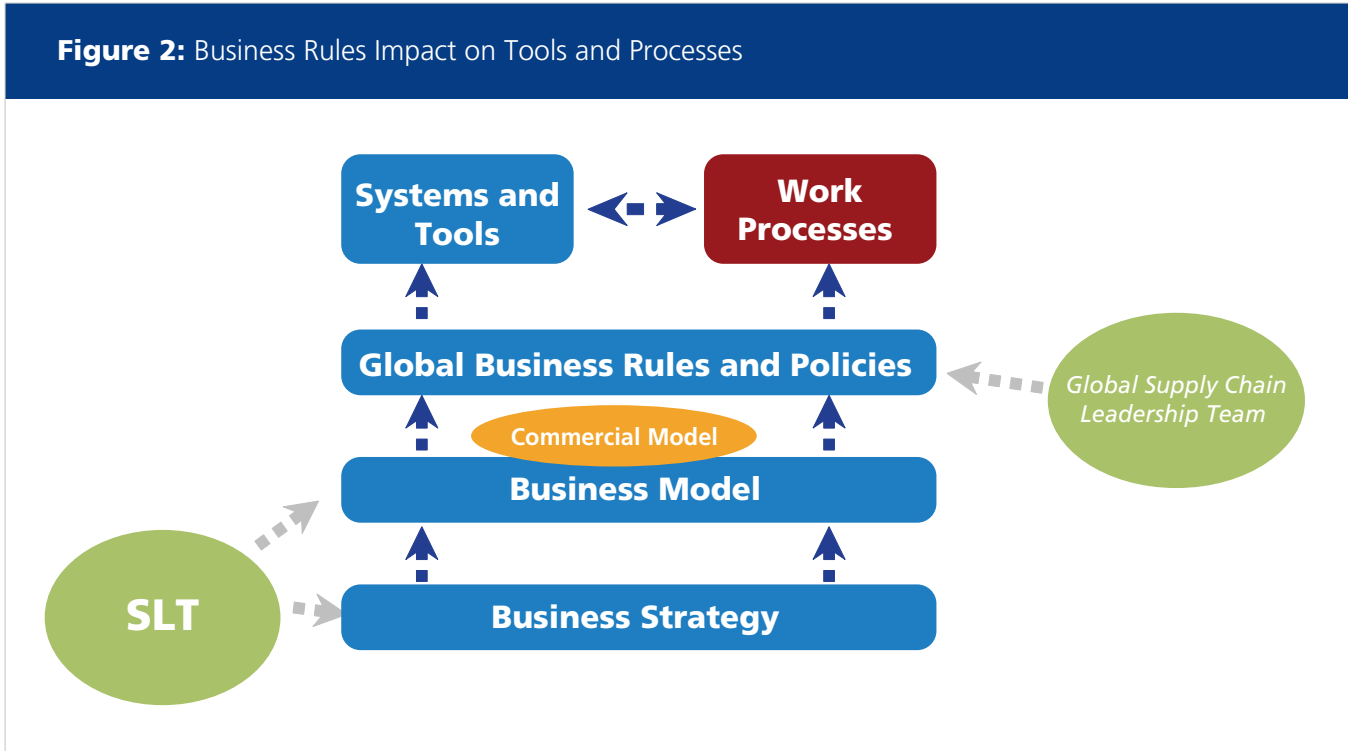
The global supply chain leadership team was the gatekeeper to the LMS. The team strove to standardize business processes to align with business rules (see Figure 2). While its mission was to force commonality, the group allowed for some differences and then “managed through these differences.” Today, a manager in the knowledge services organization estimates that 80 percent of the business processes have been standardized, while 20 percent are still regional.

2. Providing opportunities for regional input (and ownership) was another tactic for effectively dealing with change management issues. An effort was made to acknowledge each region’s contribution of a particular process or tool to the final supply chain architecture. This helped overcome the “not invented here” syndrome so prevalent at large enterprises.
3. The third change management tactic involved a gradual rollout of the global training system. The group tackled EMEA first because

★ BEST PRACTICE

Business requirements and processes should be understood (and standardized across functional departments and business units) prior to embarking on a training automation project.

Figure 2: Business Rules Impact on Tools and Processes



Source: Nortel, 2007.

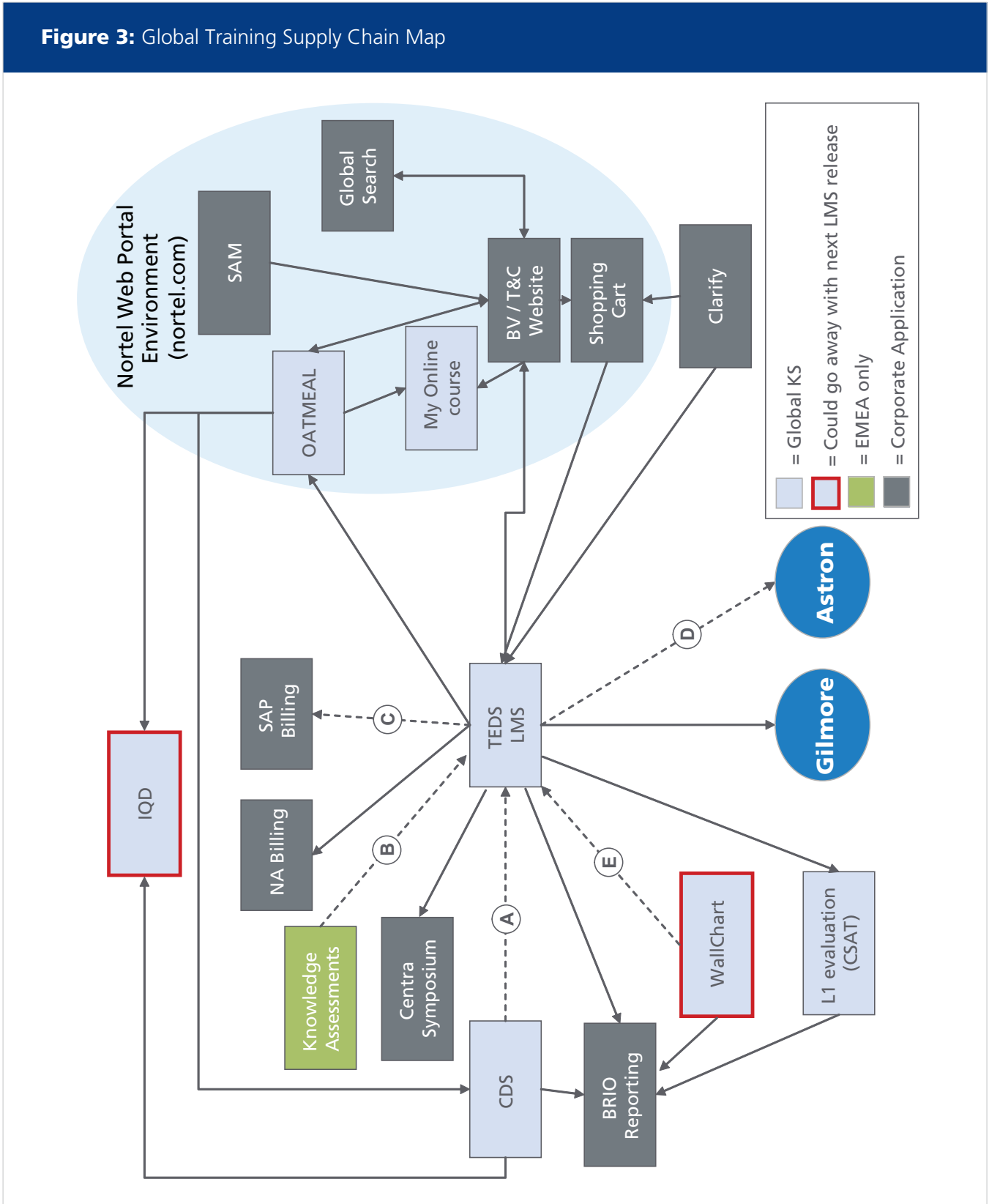
Europe had more similarities to North America than Asia and higher volumes of training than CALA. Once the global supply chain was established in Europe, it was rolled out to CALA and then Asia.

Global LMS Deployment and Supply Chain Integration

The TEDS architecture allows Nortel to support all audiences across the globe with one database and one software load. As seen in the supply chain map (see Figure 3), the LMS is integrated with corporate applications, the Nortel.com web portal environment, and other global knowledge services systems and processes. The LMS incorporates the following.

- Connections with **North America regional billing** and **SAP billing systems**, which allow for back-end financial integration. Training revenues are automatically recognized without manual data reentry.
- **Knowledge Assessments**, an internally developed application. While the LMS can provide the same functionality, knowledge

Figure 3: Global Training Supply Chain Map



Source: Nortel, 2007.

services chose to retain this EMEA tool as part of the regional buy-in change management strategy discussed earlier.

- **Centra Symposium**, which provides virtual classrooms for instructor-led e-learning courses.
- **Course Data System**, a workflow process that was also developed by EMEA and adopted for the global supply chain. This process controls the circulation and channeling of a new course once it leaves development. The process encompasses everyone from the marcomm specialist who writes course descriptions for the website, to the business analyst who determines pricing. A new course cannot be uploaded to the LMS until each step of the workflow process has been completed.
- The commercial **reporting application**, as recommended by the LMS vendor.
- Although the functionality overlaps with LMS resource management, Nortel retained its commercial **scheduling application** for managing rooms, instructors, lab equipment and other training resources.
- **Level One Kirkpatrick evaluations**, developed and delivered through Websight surveys to help measure customer satisfaction.
- Automated interfaces with **print vendors**, which allow pre-work and course reference materials to be printed, packed and shipped to students.
- **Authentication**, to ensure that students access the learning system with a valid user name and password.

While Nortel uses a wide range of LMS features and functions, the knowledge services organization names three capabilities that are particularly important.

1. **Billing Automation** – The e-commerce interface allows customers and channel partners to order training products, enter shipping addresses, and pay with credit cards or purchase orders.
2. **Portal Wrappers** – Knowledge services has built a single portal that can be customized with different interfaces for each region or country.

★ BEST PRACTICE

Changes to the LMS are accommodated first by configuration; if that method fails, knowledge services will customize the software. Customization is a last resort because Nortel does not want to maintain multiple streams of code for different regions.

ANALYSIS

Despite the globalization of Nortel's training and certification systems and processes, significant local differences remain. Self-paced e-learning is still not fully embraced or perceived as highly valuable in Latin America and Europe, as it is in North America.

Figure 4: Languages Supported by the Nortel Global LMS

Region	Supported Language Preferences
Asia	English
Caribbean and Latin America	English, Portuguese, Spanish
Europe, Middle East and Africa	English, French, German, Italian, Spanish
North America	English, French

Source: Bersin & Associates, 2007.

- Organizational Domains** – The LMS enables knowledge services to set up domains for specific groups of users with links into the Nortel organizational chart, so managers can access training reports only for the employees who report to them. Domains enable data in the LMS to be separated among departments and business units.

Multilanguage support is another important function for Nortel’s global training and certification programs. Nortel’s upgrade to TEDS 7.7.3 will fully support multiple languages; but, while operating on 6.10 today, most courses are offered in English only, with course descriptions, training policies and pricing information translated into multiple languages (see Figure 4) through back-end tables that migrate the translated data onto the web portal pages.

From Classroom Training to e-Learning

In conjunction with Nortel’s initiative to support all global training and certification activities from a single technology infrastructure, the company has completed an equally important second project – developing a broad spectrum of e-learning programs.

KEY POINT

Nortel’s North American customers, who completed e-learning rather than classroom training, saved more than \$7.7 million by avoiding travel and living expenses between 2005 and 2006.³

³ Based on conservative travel and living expense calculations and customer e-learning registrations from August 2005 to July 2006. Source: Nortel knowledge services.

Nortel has a large potential audience for training. A few years ago, the company's finance department alerted management of a growing liability on the accounting books – millions of dollars worth of unused “training bank” credits. The credits were given away as sales incentives and many customers had never used them. Compounding the issue was the fact that some customers were using the credits to take expensive instructor-led classroom courses, which meant that Nortel was receiving less revenue to cover trainers, travel and other expenses.

Nortel management stopped the practice of using training credits as a sales incentive and approved a plan to develop, deliver and promote instructor-led e-learning as a way for customers to spend their credits. Today, the knowledge services organization reports the ratio of training delivery has scaled from 90:10 classroom versus e-learning to 60:40 e-learning versus classroom.

As a result of this shift in delivery mechanisms, both Nortel and its customers and business partners have saved significant direct and indirect costs – which remain a central driver of Nortel's blended-learning strategy.⁴ The company reduces the length of instructor-led courses by providing students with self-paced pre-work accessed over the Internet. Because students are better prepared, a five-day course becomes a three-day course, giving the instructor two additional days to generate revenue.

The shift from brick-and-mortar classroom to virtual classroom further reduces resource costs for Nortel and its customers. Nortel's customers and business partners not only save direct costs (like travel and living expenses), but also receive productivity gains due to less time spent out of the office. Customers and channel partners gain maximum flexibility in managing their workforces and minimizing the impact to their businesses.

Blended Curriculum

Nortel offers a wide variety of training and e-learning solutions, allowing customers and partners to decide where, when and how Nortel knowledge is passed on to them.

⁴ For a detailed discussion of all the options for the design of blended-learning programs, we recommend, *The Blended Learning Book: Best Practices, Proven Methodologies, and Lessons Learned*, Josh Bersin, Pfeiffer, October 2004.

KEY POINT

The knowledge services organization reports the ratio of training delivery has scaled from 90:10 classroom versus e-learning to 60:40 e-learning versus classroom.

Self-Paced e-Learning

Available as either CD-ROM or web-based courses, this self-study option allows students to learn the fundamentals of a product or the differences between software releases. Nortel designs self-paced e-learning courses to help prepare students for instructor-led courses. Recent releases of e-learning courses have featured a variety of user engagement techniques, including graphical animations, simulations, interactive sequences, videos and audio narration. Lessons are delivered in small modules that allow students to choose the topics they want to learn about in the order that works best for them. Student feedback confirms that this approach works best.

Instructor-Led e-Learning

Also known as virtual classes, these are leader-led Centra Symposium events. Centra replicates typical classroom interaction with a set of features for highly interactive group learning, bringing together voice, video, data and graphics in a structured online learning environment for up to 500 simultaneous users. Nortel delivers instructor-led e-learning courses in two different formats: “facilitated” e-learning and “hands-in⁵” e-learning.

Facilitated e-Learning - Facilitated e-learning is online learning facilitated in real-time by an instructor. Students can raise their hands and communicate with the instructor in real-time, just as they would in a traditional classroom. Students can work in “breakout rooms” with other students, as they would in a traditional classroom.

Hands-in e-Learning - Hands-in e-learning offers the same benefits as facilitated e-learning, but this cutting-edge delivery method also allows students to complete exercises on working Nortel equipment from their own locations. For example, optical switches can be controlled remotely to perform troubleshooting exercises.

⁵ The phrase “hands-in” is used by Nortel in its training to refer to a ‘hands-on’ style of learning.



KEY POINT

Nortel also offers self-paced training on CD-ROM because broadband Internet access is not commonly available in some regions of the world.

Metric: Nortel has an e-learning portfolio of more than 130 courses with an average customer rating of 4.1 on a five-point scale, more than an 80 percent approval rating.

Traditional Training

Traditional instructor-led hands-on training can be delivered at a Nortel facility or at a customer / partner location. These courses are designed to ensure that students gain hands-on experience and knowledge. When customer site training is an option for a particular course, the course description will link to a Customer Site Request Form. Customers simply complete and submit the form to request that training be delivered at their locations.

Blended Learning

Blended learning combines courses and modules into one comprehensive learning experience. The courses or modules are delivered using the most appropriate media for the information, so students get a blend of delivery methods, from self-paced e-learning to instructor-led hands-on training.

From Customer / Partner Certification to Employee Development

A third strategic shift in learning has occurred at Nortel in recent years. Until 2005, the company maintained one learning platform for employee soft skills and compliance training, and another completely separate and distinct learning platform for customer and channel partner product training and certification.

At the height of the telecommunications boom, Nortel had more than 100,000 employees. The need for employee training grew so rapidly that the HR organization was unable to keep up with demand and the company turned to an outsourcing solution. For nearly 12 months, administration and management of employee learning and development was handled by the outsourced vendor, which also provided a technology platform.

The subsequent slowdown in the telecommunications industry led to layoffs and Nortel lost two-thirds of its employees over five years. The outsourced training solution was no longer economically justified,

KEY POINT

Job cuts forced Nortel to streamline and focus on one LMS solution for internal and external audiences. The company has gained cost-savings benefits with no apparent downside.

so Nortel folded employee development into the knowledge services organization and LMS platform that handles customer / partner training. As a result, Nortel has reduced costs in developing content, tracking and reporting, technology redundancy, and resource redundancy.

Looking Forward

The knowledge services group is planning to upgrade to a new version of the LMS software in the immediate future. To help make the upgrade process less disruptive to end-users, a stringent user-acceptance testing plan has been implemented across every region. Global teams will test new software or any other changes to the learning system to verify that internal interfaces work with other supply chain elements.

The new LMS version will automatically support multiple language translations based on Latin characters. To support Chinese language characters using the double-byte character set (DBCS), the database for the LMS server will use UTF-8⁶ encoding to display non-ASCII values.

Another project currently underway is aimed at supporting employee development. HR-compliance training programs, such as those related to workplace harassment or discipline, are being folded into the LMS.

Longer term, the knowledge services group is contemplating the integration of a learning content management system (LCMS) with the LMS. This integration will support multilanguage functionality by enabling Nortel to more easily develop a course once in English and then deliver the actual content in different languages around the globe. The LCMS will also offer the significant benefit of facilitating content reuse between training and documentation.

⁶ According to Wikipedia, "UTF-8 (8-bit UCS / Unicode Transformation Format) is a variable-length character encoding for Unicode. It is able to represent any character in the Unicode standard, yet the initial encoding of byte codes and character assignments for UTF-8 is backwards compatible with ASCII. For these reasons, it is steadily becoming the preferred encoding for e-mail, web pages and other places where characters are stored or streamed." Source: <http://en.wikipedia.org/wiki/UTF-8>.

★ BEST PRACTICE

Rigorous testing of enterprise LMS software pays dividends in end-user satisfaction and project success.

Lessons Learned

Nortel has learned several important lessons that can be used by other learning organizations seeking to consolidate global technology platforms and processes, or to implement e-learning options that enable students to take classes anytime, anyplace.

Gain Support from Upper Management

According to a knowledge services manager interviewed for this case study, all three of the learning initiatives have required strong support from key executives throughout the enterprise. The global supply chain initiative was particularly challenging, as it involved so many different groups with dissimilar processes and tools.

The knowledge services manager admits that his group would have benefited from more high-level leadership and executive sponsorship, especially from the global regions. Knowledge services had to put together a business case to persuade each region to join the global infrastructure. Within each constituency, the knowledge services group would recruit an advocate, build his / her trust in the process, and then use him / her to convince others in his / her group to cooperate with the effort.

While the entire process was handled remotely, using telephone conference calls and email, the knowledge services manager also stated his belief that one or two face-to-face meetings at the beginning of the process would have helped to build bonds with the major representatives of each region.

Establish an Organizational Structure

The knowledge services manager believes that Nortel was successful in creating a single global training supply chain because the company had the right people committed to making it happen. Because the global training supply chain effort was managed from the bottom up, a formal organizational structure and job descriptions were never put into place



KEY POINT

Knowledge services used “influence management” to gain the support of disparate groups with conflicting agendas.

to support the global infrastructure. Now, the manager is concerned that commitment to the unified global approach may waver as personnel changes occur.

Conclusion

Within Nortel, the knowledge services department has become a model for setting goals and exceeding expectations on a global scale. Its practice of holding regular standing meetings with key regional stakeholders, for instance, is now a best practice followed by any Nortel group that wants to accomplish a single goal in multiple global regions. The shift from traditional classroom training to self-paced and instructor-led e-learning has improved cost structures and boosted profit margins for learning programs. While customer and partner product training and certification programs are comprehensive and robust, employee development and talent management programs are just now being developed and implemented.

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About Us

Bersin & Associates is the only research and advisory consulting firm focused solely on *WhatWorks*® research in enterprise learning and talent management. With more than 25 years of experience in enterprise learning, technology and HR business processes, Bersin & Associates provides actionable, research-based services to help learning and HR managers and executives improve operational effectiveness and business impact.

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