

SABA White Paper

ANALYTICS: Understanding the Economics of Learning

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This white paper introduces the need for analytics in human capital development and management and proposes a solution.

Learning Management and Learning Management Systems (LMS) that are employed to drive learning initiatives have gained substantial acceptance within business today: The American Society of Training and Development (ASTD) estimates place the cost of learning at a 2% of payroll, no small measure of investment for any organization.

Today's challenge is more than moving learning seamlessly through the extended enterprise; it is to ensure that the right skills and competencies are at play in key elements of the organization. The best performing organizations are seeking to understand the economics of their learning initiatives, and to leverage that understanding to create the efficiencies and effectiveness that are the hallmark of market leaders. Specifically, they are seeking to measure learning results by the same metrics as core organizational objectives, and to quantify the ROI of their learning projects in terms that speak directly to stakeholders and shareholders alike.

The evidence shows that a high level of investment and focus on the development and management of human capital is correlated with superior business results, and, therefore, performance on the public markets. The ability to produce a credible report on the effectiveness of human capital development and management programs within an organization is, as a result, increasingly mandatory: stakeholders demand accountability for the organization's efforts to leverage human capital to its greatest advantage.



Why are organizations motivated to invest in learning? In an increasingly verticalized and specialized world, the transfer and collection of skills and competencies is one of the few truly horizontal requirements. Organizations may be motivated by any number of strategic imperatives including:

- How do I ensure that my sales force is flexible enough to sell new product lines better than the competition?
- How do I ensure that my company is incompliance with government regulations?
- How do I guarantee that customers and potential customers have access to enough information to differentiate my products from those of my competitors?
- How do I drive organizational development to ensure that employees have the right skills and capabilities to achieve our company's strategic goals?
- How do I ensure that my channel partners understand how to provide the right level of customer service to defend my brand and market position?

In a challenging economy, most organizations are not focused on sales and channel readiness. Organizations must keep an eagle eye on developments in the area of regulatory compliance and channel certification. All successful organizations with long-term aspirations devote substantial time and resources to ensuring a viable talent pool to support their planned growth. Learning initiatives represent a significant opportunity to address these key business drivers – and to implement these initiatives, organizations invest large amounts of money, resources, and time.

According to a 2002 ASTD survey of more than 367 major companies, organizations spend as much as 2% of their annual payroll on learning costs. On a per-employee basis, that averages out to a learning bill of more than \$700 annually. Those companies that made a dedicated commitment to developing the knowledge, skills, and abilities of their employees, spend twice as much. Leading learning organizations, therefore, average as much as 4% of their annual payroll, or \$1,574 per employee, on addressing core business issues through learning.

The organizations dedicating the greatest level of resources recognize that learning can be a significant contributor to top line revenue. In product centric businesses (software and retail computers, for example), customer education is a major contributor to revenue and profit. Software companies, for example, see a comprehensive learning program contributing 5-10% life in their license revenues; this is a predictable, high margin business which drives both growth and customer satisfaction.

"If you can't measure it, you can't manage it."

- Nolan & Norton Consultants

Enterprises generate large amounts of data around their business initiatives and their learning programs. And, while enterprises have made great strides capturing this data, and even break down the walls between business units that hinder the sharing of data, they have struggled to make the data actionable. That is, they have struggled to connect the data that they are collecting to the overall objectives for the business. Many books have been written on the topic, yet still, according to ASTD, one of the top three issues affecting the learning industry is the need for employees to produce demonstrable, strategic business results and show a return on investment in learning.

Some of the critical areas that companies want to measure include:

- **Learning Activity and Effectiveness:** Where is learning (used consumed is appropriate for a food product)? What impact is it having in these groups? Which programs are most effective?
- **Catalog Utilization:** Which titles and courses are generating high results? Which can be dropped? What is the customer revenue profile by course?
- **E-Learning:** What is the company's performance in migrating to e-learning? Which e-learning programs generate the highest results? Which business units and managers use the most e-learning? Which e-learning vendors and which titles are top performers? Which can be discontinued?
- **Total cost of learning:** What is our real cost of learning on a program-by-program basis? Which programs provide the highest return per dollar? Which can be dropped to reduce expenses without impacting program quality?
- **Compliance:** How are we doing in our mandatory certifications? Which business units, managers, and geographies are most in compliance? Most out of compliance? Where do we have exposure with large groups of people with certifications about to expire?
- **Line of Business Impact:** How can line of business managers best manage the learning and ongoing education of their workers so that they meet company targets?
- **Learning Revenue Analysis:** Which end users consume which courses? How can we increase or optimize learning revenue?

Even more importantly, leading organizations are seeking to create a set of learning and human capital metrics which are used to set standards and to identify an appropriate infrastructure that involves line of business managers in managing, and acting upon these metrics.

THE KIRKPATRICK MODEL: A SOLUTION?

The well-known Kirkpatrick model for measuring learning has been around for a decade and continues to reign as one of the most revered and respected set of metrics for evaluating learning. Yet despite its followers, few companies today truly take advantage of this premise. According to the 2002 ASTD survey, nearly 78% of organizations measure the learner satisfaction of learning (Level 1). However, when it comes to real impact, the numbers drop dramatically. Fewer than 32% measure how much learning is taking place (Level 2), and only 9% attempt to measure the impact of learning programs on an individuals' job performance (Level 3). A mere 6% try to measure the impact on the business as a whole (Level 4).

Why is this? At the most fundamental level, the process of measuring level 3 and 4 metrics has proven too difficult for the majority of learning programs. Particularly when dealing with extremely large groups of learners (as in a Fortune 1000 company, or large governmental agency), the sheer volume of data to be collected, collated and analyzed is too daunting to encourage the start of many programs. Indeed, the need correlate learning data with business data in order to create objective measures of organization impact, and therefore the need to combine and standardize data from many different sources, has stretched the scope of such a program beyond the borders typically managed by the learning community.

THE SOLUTION: LEARNING ANALYTICS

In the 1990's, a quiet revolution took place in corporate America; data warehousing and data mining changed the entire landscape of how business was being done. Instead of leaving disparate data in its own silo in a series of business applications, enterprising organizations found ways to merge the data together and provide a level of decision support that was hitherto not even conceived of.

The most storied discovery of data warehousing and data mining is the story known simply as Beer and Diapers. The story goes that a large retailer employing data mining for the first time discovered that on Friday evenings there was a trend – that was almost unnoticeable to the human eye – where shoppers who bought beer also bought diapers. Why? On closer inspection, it turned out that Dad was watching the kids, and needed supplies for them, and some level of comfort for himself.

Is this story apocryphal or real? Next time you're in a large retail store, look around and see whether baby supplies and adult beverages are strategically placed relative to one another at the weekends – you may be surprised!

As time has passed, the almost impenetrable world of data warehousing and data mining has coalesced into an area now known as Analytics. Simply stated, Analytics represents the discipline of correlating and analyzing large quantities of data that may originate from diverse and divergent locations, in order to identify trends and opportunities for innovation and mission critical strategic improvement. In other words, with Analytics, leading organizations can create causal relationships between the efforts they make toward objectives and the results they produce.

In this way, learning organizations today have the opportunity to draw together data which has, to this point, been organized into disconnected silos, and to apply the same level of analytical rigor to their specialty as has been directed toward retail operations, customer relationship management and supply chain management.

Just as companies have learned to measure the effectiveness of their sales and marketing programs, it is possible to measure the effectiveness of learning and human capital. And, the best way to do it is with an analytics-focused solution. Analytics connects employees and the extended enterprise with business results, by correlating skills and competency acquisition with achievement of core organizational objectives. It goes even further, however, by providing organizations with direct visibility over the activity, compliance, effectiveness, efficiency, revenue, cost, and impact of their learning investment.

THE ANATOMY OF A LEARNING ANALYTICS SYSTEM

The essence of effective analytics in any segment of an organization is the distillation of dizzying amounts of data into actionable information. An effective learning analytics system must act as the conduit to information that is otherwise hidden from view, and be so user-friendly as to be an instant addition to the decision-support infrastructure of the learning program. The key attributes of a learning analytics system, must be:

- User-friendly interface
- Out of the box analyses, requiring no additional work
- · Intuitive and efficient data-sharing capabilities
- · Architecture scalable to the needs of the enterprise

The following sections address each of these requirements individually.

A learning analytics system is intended to be a different solution to commonly used operational reporting applications and tools, such as Crystal Reports. With a learning analytics system, you should have immediate access to business analyses, business metrics, and a flexible interface to group and filter data; drill up and down through logically; and easily create visually expressive charts.

Traditional, non-analytical reporting applications provide high value when it comes to static regular operational reports; they will absolutely continue to be an important resource for regular operational reports. However, these reports are "static", and largely disconnected from other enterprise data that would allow you to identify trends and correlations between learning and organizational objective achievements.

More specifically, reports are largely pre-defined and limited to their original intent. The interface to your learning analytics system must allow for simple, visually intuitive point-and-click re-definition of key parameters. While a traditional report may deliver the average cost of learner across the organization, a learning analytics system should allow you to simply click the organization link to see how average cost per learner deviated across different regions. Also, a learning analytics system will allow you to drill down further by clicking on a specific region to see how the results varied across offices within that region.

In addition, a learning analytics system should free you from having to understand the details of LMS databases and from having to write SQL queries to develop reports. All information in the learning analytics system must be available at the click of a button, in an easy to use interface, which requires no technical background.

One of the most important features of a learning analytics system is a "walk up and use" capability. There should be no training required to start analyzing and understanding the impact, effectiveness, and efficiency of learning operations. Whether you are a manager, executive or analyst you should be able to use the system – and derive real value from it – straight away.

Out-of-the-Box Analyses

The majority of learning practitioners are not inherently programming whiz kids. Thus, a system that is not pre-configured to provide the analyses you need is barely half a solution.

Your learning analytics system should be built around "subject areas," making it easy to find the answer to common business questions rapidly. Each subject area, in turn, should include a set of pre-defined "analyses", designed to answer a wide range of business questions. Within each subject area, users would therefore view a standard analysis, drill up and down, change dimensions and filters, and, where selected, chart information.

While it is impossible to project all the analysis needs of every learning organization, the following subject areas should be available as a default:

- **Catalog Utilization:** use to understand the usage levels of learning offerings; to identify areas where additional investment is justified and where current costs are not; and to generate action plans to improve the efficiency of catalog offerings
- **Learning Activity:** use to evaluate lines of business that use learning and those that do not; to identify areas of the business where results are clearly supported by learning consumption; and to generate action plans that increase the effectiveness of learning interventions
- **Certification and Compliance:** use to evaluate achievements and risks in the organization's regulatory compliance program; to assess areas of the business (lines of business, territories, etc.) that have greater or lesser exposure; and to generate action plans to mitigate compliance risk
- **Resource Utilization:** use to evaluate the efficiency of resource use, and to identify both most and least useful resources; to identify trends in resource usage; and to generate action plans to raise usage efficiency
- **Financial Analysis:** use to assess the cost of learning offerings relative to areas of the business (lines of business, territories, etc.); to identify the true total cost of the program; and to generate action plans to ensure usage and budget allocation are matched for the organization as a whole
- **Vendor Analysis:** use to assess the level of usage of particular vendors' offerings; to evaluate the value of purchased content (say, cost per use spread across total users); and to generate action plans to standardize acceptable costs
- **E-Learning Analysis:** use to evaluate the extent to which the use of e-learning is saving money versus instructor-led training; to assess the effectiveness of particular e-learning events; and to generate an action plan for matching e-learning based cost savings with overall program quality

To make your analyses even more powerful, you should be able to create subscriptions so that your line of business managers, directors, and executives can monitor operations directly from their email inbox. A subscription in this context is defined as "a saved analysis, which is automatically refreshed, and sent to a pre-defined set of users at a specified time". These subscriptions should arrive with the intended user by email or other natural delivery medium, and must be sufficiently easy to comprehend as to require no upfront training. Users who receive subscriptions should not need to be users of the learning analytics system, and the subscribed and delivered analyses should be viewable offline.

Subscriptions represent a highly valuable and effective way to go beyond operational description and to create action. Once an organization has established a set of metrics to manage, subscriptions might, for instance, be sent to line managers or directors so they have direct access to learning-related information, enabling learning programs to drive an action-focused business relationship. By co-opting these non-learning focused managers into the process, organizations should be able to see marked improvements in areas such as certification compliance, training completion, and learning budget compliance. More importantly, these involved business leaders will have a simple interface to recognize the causal relationship between the learning interventions to which they commit their teams and the business results they are able to produce.

Enterprise-Scalable Architecture

As previously explained, the primary benefit of any analytics system is its ability to distill vast quantities of data into usable information. As a result, it is clear that a credible learning analytics system must itself be scalable to an enterprise level; limitations on the amount of data that may be used fundamentally limit the value of the system.

In general terms, an effective learning analytics system must be based upon a data warehousing paradigm, in which data is extracted from active systems into a data mart, organized into a standard star schema, and accessed through an internet-enabled OLAP tool that provides for swift and intuitive drill-up and drill-down capabilities.

It is worth noting that this scalability should not come at too high a price. Remember, the analytics system is being put in place to aid in creating efficiencies, thus the investment must be substantially lower than the increased productivity driven by its use. Seek a solution that keeps per user prices down to well under the cost of the original LMS, and avoid the temptation to contract directly with non learning-focused business intelligence vendors whose business model presupposes a per-user cost in the hundreds of dollars.

The truth is that most companies have very little idea of the impact of learning on the core goals toward which they strive. Traditional reporting systems tell you what happened, but only if you know what to look for. With a learning analytics system, you should not only know what happened, you should also know why it happened, and what action you can take to create continuous improvement in your organization.

With a learning analytics system you can close the loop. It provides immediate access to the information to improve training operations, reduce costs, better negotiate vendor agreements, and improve business impact. More vitally, this information should be in a form that is clearly and credibly valuable to line of business managers and executives who now have the link they need between learning and ultimate organizational success.

CREATING ACTIONABLE INFORMATION

Having once identified, purchased and implemented your learning analytics system, what is the immediate output? As the title of this white paper implies the comprehension of the economics of learning is exactly what you are seeking. You are also, however, looking to use it to improve the results of your organization. In other words, your goal is to start with the input of raw data, and create the output of actionable information.

An example of the result you should seek follows:

You want to analyze compliance relative to a new Security Certification program, which you have rolled out to all your manufacturing plants. More than 10,000 individuals must comply by the end of next quarter. You view a "Certification Compliance by Manager" analysis and see that Joe Smith, the Plant Manager for the Phoenix Arizona plant, has only 32% of his people in the completed status; his peers are each more than 80% complete. You click on Joe Smith's name, and you see the compliance statistics for each of his directors. You see that one particular group has made no progress at all. This group has either chosen to ignore the certification rule or perhaps is not even aware of the company mandate. You send this manager an email or call him on the phone and you are back on track. Note, that by using a 'drillable' analysis rather than a static report, you were able to find the true root cause of the problem and were able to turn this knowledge into an action.

After viewing this analysis, you realize that this program is important enough to warrant a weekly status report. So you use the "create a chart" function to visually show the completion percentage by manager. You save the chart and create a subscription, which tells the system to send a copy of this chart to each manager once a week, showing the compliance percentage relative to his or her peers. Every week, these managers receive an email, which shows the latest week's results for this particular analysis. The managers can immediately take action on this information to improve their performance relative to their peers or relative to the company goals. By using the subscription you have extended the value and impact of your action plan to the business leaders most closely associated to organizational objectives and re-connected the efforts of your learning program to the strategic intent of the organization.

CONCLUSION

The time for analytics is now. Companies have invested time and effort to capture detailed information about their corporate learning, enabling analytics to unleash this information and drive business impact.

You can now understand the financial efficiency, effectiveness and business impact of your training investment. Use this actionable information to increase sales, improve compliance, reduce turnover and improve your company's responsiveness to change.