Building Industry-Academia Partnerships that Foster Organizational Learning Models

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Abstract

Corporations often adopt learning models based on their needs for professional development, which are closely tied to their current or future strategic initiatives. Also, to maintain competitive advantage, organizations must remain flexible and nimble in their training strategy that would quickly change their learning models based on immediate business needs. Partnering academic institutions should also carefully analyze and understand the strategic initiatives of these organizations before and during the training, and thus contribute to the partners' growth and prosperity. For the past 37 years, the University of Kansas has been partnering with major national and international corporations to deliver customized professional engineering and management trainings. In this paper, the authors discuss the strategies they have used in (1) understanding an organization's strategic initiatives that strengthens its competitive advantage, (2) developing tailored curriculum based on the organizational learning needs and an organization's existing and future projects, and (3) modifying the training portfolio and technology-enhanced delivery methods as corporate learning strategies changed with globalization. Three long-standing collaborations with three organizations -- an engineering, consulting and construction company, an aircraft manufacturer and a flight control components manufacturer -- with different organizational learning models are used as examples with special focus on simultaneous delivery of customized training to globally distributed teams.

Introduction

In implementing continuing professional education for their employees, executives of global organizations often ask the chief learning officers four key questions: (1) Will this training be conducive to organizational growth? (2) What are the short-term results and what will be the long-term pay-offs? (3) Will this training provide a competitive edge to this organization? (4) How can you demonstrate that it provides value to this organization?

While systematic growth is critical to an organization's survival, the short and long-term results that establish an organization's competitive edge through innovation and help achieve the strategic goals drive the learning needs. Today's learning directors are asked to either develop in-house training or buy standard or customized training from university or other external providers to help succeed in critical projects that will either fulfill a contract requirement or develop a product or service. On the surface, the above is true for most organizations. However, in our observation as a university training provider to large engineering organizations, we have found that the learning models in each company differ from the others. In this paper, we report such observations with three different organizations.

The University of Kansas has been providing technical training to large aerospace and construction engineering organizations for the past 37 years. In its portfolio, the University has standard aerospace design, manufacturing, flight control system design and analysis, flight

test and engineering management courses amongst others. It provides standard courses in open enrollment setting, both standard and customized courses for in-house presentations and standard and customized online courses. Among the many organizations it has served, three were chosen for this analysis due to the consistency in their training requests from the University and the available information on these organizations' learning strategies in public domain. Neither did these organizations sponsor this research nor were/are they responsible for our observations about the training. Books, journal articles and web articles were the major sources for public domain research. The three organizations whose *observed* learning strategies will be discussed are:

- An aerospace design and manufacturing company: The Boeing Company (Let us call it *Company A)*
- A construction and consulting company: Black & Veatch Corporation (*Company B*), and
- A flight control system designer and manufacturing company: Rockwell Collins, Inc. (*Company C*)

All three organizations are remarkably strong in developing robust business strategy and invest heavily on learning, especially on technical training that provides a competitive edge. However, the organizations act differently when it comes to the types of the learning events they hold. Our hypothesis is that these organizations have different learning and development concepts to train their employees and these concepts are deeply embedded in their values, vision, mission, goals, initiatives and resulting project plans. Collectively this maybe called "strategic learning" for our use. We must clarify that "strategic learning" here does not have the same meaning as it is used in developing evaluation-based business strategy. Instead, this means planned learning process based on organizational strategy. In this paper, we will first explain what we think is the core concept in strategic learning of the organizations and how each of the above-mentioned organizations has adopted the core concept and modified it to fit its values and beliefs. For simplicity, we will only examine the cases where universities are considered providers of (and partners in) training in the organizations.

The Core Concept

In a very simple way, universities provide training only when organizations have a need, as depicted in Figure 1. But, what drives this need? While Return on Learning Investment (ROLI) models describe the relationship of company profitability with human capital development[1], the simplicity of understanding the learning need is expressed by the former chief learning officer of Rockwell Collins, Cliff Purington[2], in the following quote, "Once a company hardwires its learning to the business goals and attaches all curricula design to the eventual training delivery measurements, the return on investment of learning becomes obvious." We, too, think that the learning need stems from the vision that a company sets for its future, the current strategic initiatives that it has taken and the strategic initiatives set for long-term projects that must deliver short-term results. These projects must then determine what learning needs the employees associated with these projects have. The companies then choose the right university providers who must deliver appropriate training so that these needs are met, the projects are completed and a competitive edge of the company is established. Figure 2 depicts this concept.

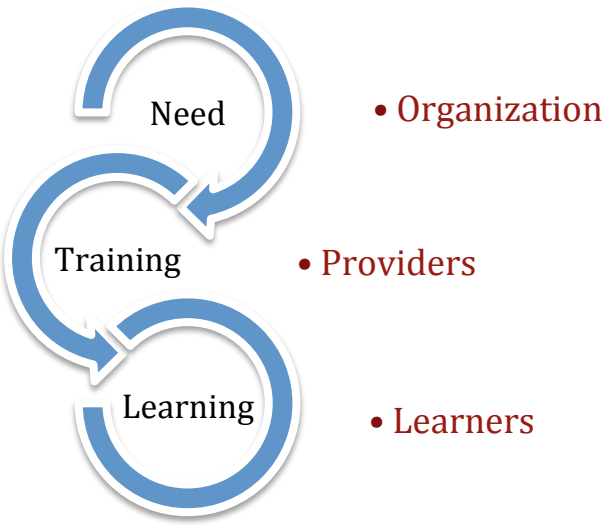

Figure 1: The Basic Structure of University-Industry Training Collaboration

Figure 2. The Core Concept

The Difference

The question now is that do we see a difference in training requests when organizations get engaged in new projects? Do they ask for new customized trainings? Or, do they ask for exactly the same training? We researched the differences in the training request from the above organizations in an attempt to search for the roots of the actual learning needs. The differences were substantial when we compared these organizations (*Companies A, B and C*), as shown in Figure 3.

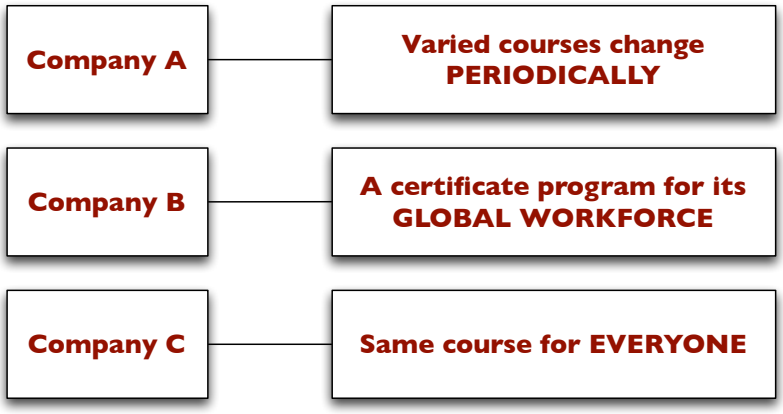

Figure 3. Three companies, three different training needs

Figure 4. In *Company A*, educational services depend primarily on the projects.

Analysis of the Training Requests from *Company A*

One of the largest aircraft manufacturers in the world, *Company A*, never settled with one type of course or a course series. When a major aircraft was being designed, the company requested mostly aircraft design-related courses. Later, before going for flight tests and compliance certification, the same company requested courses related to those subject matters. *Company A* is global; however, the teaching was primarily done in North America, therefore no specific cross-cultural communication was needed in preparation. But the mode of delivery in recent years frequently changed from face to face to live, web-based delivery that suited simultaneous training in several North American locations. The organization has systematically designed employee training on an aerospace career model[3] that describes how learning, unlearning and relearning take place for an aerospace professional in a 30-year span of career after K-12 and

higher education. Interestingly, in this model where an aerospace professional works on 10 distinct jobs in their careers[4], the learning process evolves on "programs" and "assignments" that emphasize the unlearning and relearning process. This is in agreement with our (the provider's) observation in the training requests from the organization.

A question arises that whether there is any methodology for the learning measurement that this organization uses. Our observations indicate that both qualitative and quantitative post-event assessments of ROLI are used where an employee's performance and behavior are measured, his/her contribution to the strategic and business direction of the company is observed and the amount of money saved during a project due to training is assessed. Post-event assessments also show that the use of "providers" results in a reduction of costs in design, development and delivery of a new training course associated with a project.

Analysis of the Training Requests from *Company B*

Company B is an almost 100-year old engineering company with a workforce of over 8,600 at more than 100 offices worldwide. In 2003 *Company B* started a corporate university to provide technical training to their employees. Each of the seven divisions of the company subsequently opened a college within the corporate university. In 2005, one of the colleges felt the need to develop concentrated engineering management courses to support career development of the employees, expedite growth of the company, and facilitate succession planning.

To tailor the curriculum to the organization's needs, *Company B* and the University reviewed the content of more than twenty classes within the University's Engineering Management master's degree curriculum. *Company B* decided that their employees needed training to lead people and manage projects, with the focus being on classes that were not common in their employees' undergraduate engineering education: finance for engineers, business relationships and selling skills for engineers, and law for engineers. Further discussion about curriculum revealed a need for training in construction management, an area not covered in the University's Engineering Management degree. The final result was a 40-week program, consisting of six modules: project management, finance and accounting, people management, marketing and sales, law for engineers, and construction management.

As the organization's strategic initiatives and learning needs have changed over the eight years of the program, the University has adapted the curriculum to best meet those changes. To best fulfill *Company B*'s need for succession planning, a change was made in the second year so that half of each three hour session could now taught by a *Company B* subject matter expert, who presented *Company B* examples to apply the theory presented by the University instructor. It is still followed. Of course, this team teaching requires good communication and coordination between the two instructors. More recently, the program schedule and content have been altered to reflect the timeline of a typical construction project. The classes now follow the project lifecycle: from selling, to contracting, to financing, to executing.

During this eight-year partnership, there have also been changes in technology and related delivery. From the beginning the classes have been recorded so that attendees who are not

available for the live session can still participate. In addition, since the program's inception, attendees from remote offices have participated in the live sessions. Since *Company B*'s instructors often share proprietary information, the company uses its own internet conferencing system to allow two-way communication with attendees in remote offices and to make recordings for those who cannot attend live.

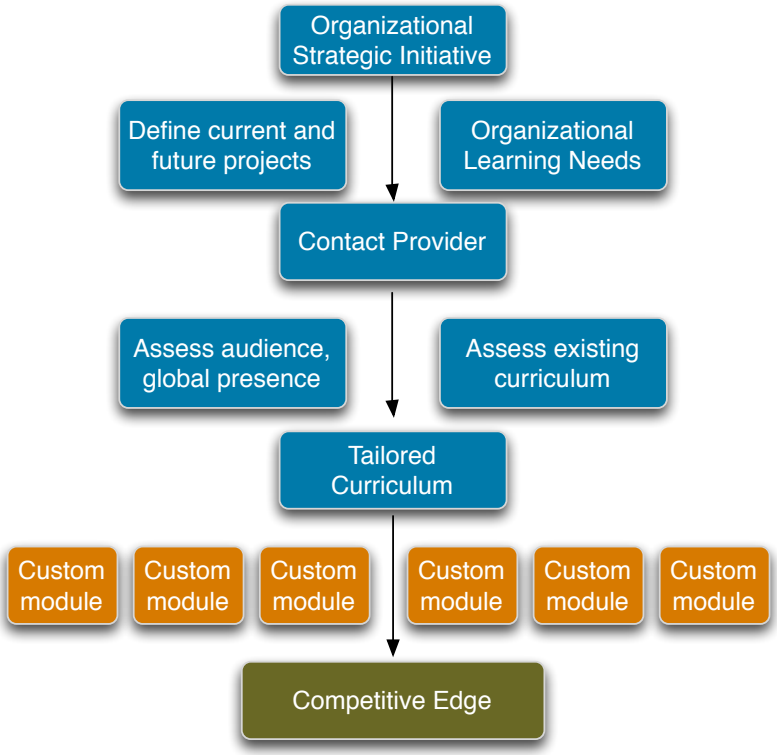

Figure 5. *Company B* is always involved in a global workforce development

In the fifth year of the program, a unique participant profile gave the University an opportunity to serve the students by using technology in a different manner. That year there were no participants from the United States. The class was delivered only to employees in Johannesburg, South Africa; Pune, India; Bangkok, Thailand; and Beijing, China. The time zone difference within this group of countries was six hours, and the group had an eight to fourteen hour time difference with the home office. The differences in students' languages and English proficiency also provided the impetus to use the technology differently. The solution was to use the University's Adobe Connect presentation system to flip the class. Instructors recorded their lecture sessions ahead of time, and the students could watch from work or home for up to four days before the live meetings. This gave students the opportunity to pause, rewind, or watch a recording multiple times. The instructor would often give the students a very brief assignment and collect and organize the responses to share during the live session. The live follow-up sessions were held at 6:00 a.m. U.S. Central Time to try to accommodate all the time zones involved. The instructor would share the compiled homework, lead a discussion, and take

questions from the students, who could chose to communicate via microphone or by texting. Student evaluations showed that they did take advantage of the ability to rewind the recorded lectures to aid with comprehension. They also liked the opportunity for two-way communication in the live sessions, and said those sessions were more interesting.

Analysis of the Training Requests from *Company C*

Company C is headquartered in North America but its supplier chain is located worldwide. It manufactures avionic hardware and is one of the largest manufacturers of flight control systems in the world. Interestingly, it has "bought" the same standard course, Fundamental Avionics, from the University of Kansas for the past 25 years, sometimes five-times-a-year. Recognized for being a learning organization, *Company C* clarifies its business goals and tied learning with those goals during its early process of vendor determination. It has mapped its vendor capabilities and matched them with its learning needs. It, therefore, chooses the same vendor for the same educational services unless there is an issue. It also mandates its suppliers to use the same educational vendors so that "the suppliers speak the same language" and understand the specifications. *Company C* is unique amongst many companies in that they have made the strategic determination that employees from many departments of the company, beyond just engineers, receive the Fundamental Avionics training. This is so that employees in various facets of the company have some level of understanding and respect for what has made the company successful.

While the training in *Company C* has increasingly become more online and virtual, and internal instruction has increased, the approaches to ROLI is primarily seen from qualitative standpoint. Connecting training and professional development to the corporate vision and strategy is the key piece of ROLI information in *Company C*.

Conclusion and Future Thoughts

As noticed above, the learning models in each organization vary despite having the same core concept. University educational providers must understand the strategic vision of the client organizations, their past and new strategic initiatives and any changes they are emphasizing in near future. Each company have different learning needs, expectations and future plans, and providers should not assume that they know what product a company needs and wants. The providers also should diligently follow the projects in these organizations and make adequate changes even in the curriculum of the standard courses or certificates. As new learning systems are available, it is also the providers' responsibility to incorporate those in the course delivery.

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