Teaching Tip

"One-Size-Does-Not-Fit-All": Teaching MBA Students Different ERP Implementation Strategies

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ABSTRACT

This teaching tip discusses an approach to educating MBA students regarding strategies to select, design, and implement enterprise resource planning (ERP) systems. The teaching approach presented here discusses how to teach students about different strategies based success stories from three different organizations, namely Cisco, Tektronix, and Harley-Davidson (Harvard Business School cases), in one 2 ½ hour (or two 1 ¼ hour sessions). The emphasis of the discussion will help students appreciate the need for different strategies in different organizational environments. In addition to my subjective reports of enhanced student learning, student ratings of effectiveness, efficiency, and enjoyment are presented.

Keywords: Enterprise Resource Planning (ERP) Systems, Cases

1. INTRODUCTION AND OBJECTIVE

The introduction of information technology (IT), especially enterprise systems such as enterprise resource planning (ERP) systems, is a common way of implementing organizational change today (see Markus, 2004). Such enterprise system implementations frequently comes with new software systems and business processes that substantially alter workflow and jobs (Boudreau and Robey, 2005; Markus and Tanis, 2000; Soh and Sia, 2005). While the annual investment of several billion dollars in ERP systems is staggering, estimates indicate that more than half of all implemented systems fail (Soh and Sia, 2004, 2005) and such failures have been observed even in highly successful organizations, such as Hershey and Nike (Koch, 2002, 2004). Organizations that successfully implement ERP systems, including new software and business processes, have reported enormous benefits, such as greater efficiency and effectiveness at the individual employee and organizational levels. One of the primary causes of failure is the inability of managers to effectively manage the change process (Cohen, 2005; Markus, 2004). Managers frequently fail to consider the organizational environment and culture relying, instead, on success stories of organizations like Cisco that used a big-bang strategy, an implementation strategy in which all modules of an ERP system are implemented simultaneously and in a short period time, to

manage their own change. The result can be catastrophic for firms, with consequences up to and including going out of business as a result of a failed ERP implementation (e.g., Rich-Con Steel).

Given this backdrop, it is important to teach diverse aspects of ERP implementations to make today's information systems and business management curricula relevant to organizational practice (see Antonucci et al., 2004; Johnson et al., 2004; Strong, Johnson, and Mistry, 2004). Yet, the effective integration of ERP related knowledge into curricula continues to be a challenge (Hawking, McCarthy, and Stein, 2004; Fedorowicz et al., 2004), with some suggesting that relevant knowledge should be imparted in a wide range of classes (Grenci and Hull, 2004). Of the many areas related to ERP systems, the ability of students to understand that different strategies of ERP implementation may be necessary in different scenarios is an important one, especially for those who may go on to manage such implementations.

A "one-size-does-not-fit-all" argument when it comes to ERP implementation strategies is frequently made in the popular press (see Jacobs and Whybark, 2000). Yet, mistakes and failures continue at an alarming rate. Sorely needed is a teaching approach that can open the eyes of managers, present and future, to the different strategies to ERP success, and when a particular strategy is appropriate. I discuss my teaching approach wherein I combine and discuss three cases in 2 ½ hours of class time. The cases are from Cisco,

Tektronix, and Harley-Davidson, companies that faced the need to implement ERP systems but went about it in very different ways. The use of cases for ERP education is particularly important (see Seethamraju, 2007). Each student is assigned to read only one of the three cases, lessening the total workload, but the students understand the differences in approaches and successes of ERP implementations related to all three cases.

2. OVERVIEW OF THE THREE CASES

The three ERP cases that I assign are: Cisco, Tektronix, and Harley-Davidson, with the following Harvard Business School case numbers: 9-301-099, 9-699-043, and 9-600-006. While Cisco used a big-bang approach to the implementation, Tektronix primarily used a waves (or phased) strategy, in which modules of an ERP system were implemented one after another, whereas Harley-Davidson was highly circumspect and cautious and the case discusses only their selection strategy that took over 2 years just to narrow down the potential set of vendors. Cisco's big-bang implementation took only 9 months and was an enormous success. Tektronix's phased implementation in its offices in several countries was also a success but one that took quite a bit longer. While on the surface, Harley-Davidson's outcome might seem like a failure, a discussion of the case helps students understand that any other approach would have most certainly been doomed given the culture of the organization. The teaching notes present excellent information on how to teach each of the cases and what issues to emphasize. I will not repeat those here, but will provide more information on how to teach the cases in tandem and the associated benefits.

3. TEACHING APPROACH

Here, I discuss my group organization and present the two different execution approaches.

3.1 Group Organization and Student Guidance
I have had MBA classrooms varying in size from about 20 to over 70. I have found six to be the optimal group size, give or take a person here or there to make the numbers work. I have found that the ideal case in terms of effectiveness and fostering inter-group competition is when there are 6 groups. As always, it is important to balance the groups in terms of functional backgrounds and/or work experience. Prior experience with an ERP implementation is common in part-time and executive MBA classes—it is important to balance this across groups.

3.2 Execution Approach #1: Part-time and Executive MBA Classrooms
The success of this execution approach hinges on students' familiarity with ERP systems and business process change (either based on students' backgrounds or focus of the course). If this is the focus of your course, you could also use this execution approach in a full-time MBA class (even if some students have no work experience). In the case of the part-time and executive MBA classrooms, at least one group member in every group would likely have been part of an ERP implementation; also, it does not matter as to whether those students who have the experience with an ERP implementation were part of the implementation team or were just users (of course, the ideal case would be where each group would have at least one student who was involved in the implementation per se and at least one student who was just a user).

I tell the students that because other students have not read all three cases, their aim should be to educate others about the facts of their case. Specifically, I use the hand-out shown in Table 1 to guide the students on which areas to focus in their presentations. I also tell the students that they should defend the organization's implementation approach. Students are informed that I will pick the presenting groups randomly. Each group is given 15 + 5 minutes for the presentation and a Q&A session. I usually start the presentation schedule with a Cisco group, followed by a Tektronix group, and finally, a Harley-Davidson group. During the Cisco presentation, you will see the Harley-Davidson groups get a bit wide-eyed at the dramatic implementation approach of Cisco. In contrast, when the last group presents, the Cisco groups have a hard time hiding their chuckles regarding how deliberate Harley-Davidson was. However, they start to see the point as each group defends the position of their focal organization.

In the second half of the class after a break (or in the second meeting of the week if it is two 1 ¼ hour sessions per week), I use the hand-out in Table 1 to discuss the issues outlined therein. I typically push the groups that did not present for answers. The discussion is lively with my goal being to ask the groups to contrast the different cases. This enables the students to see the stark contrasts in industry, innovation climate, organizational culture, leadership style, resource constraints, etc. I also call on the students who have had experience with ERP implementations to discuss their own organization in terms of the organizational environment and the organizational actions taken. The discussion has always yielded several mismatches that become obvious that can often help explain sub-par outcomes that the organization experienced, or the longer duration it took to get to the desired outcomes or the complete failure. Of course, on rare occasions, I have had students share very interesting stories, including those where ERP implementations have been smashing successes.

3.3 Execution Approach #2: Full-time MBA Students
The full-time MBA students I have taught vary in terms of work experience, ranging from those with a few tens of years to those who have none. The primary difference between this approach and the previous approach is that with full-time MBA students I do not have students presenting. Instead, we have a class discussion of the cases. Here, my rationale is that a group presentation might inhibit the learning of those who lack work experience. However, in a class discussion, with the benefit of the student background information, I can call upon specific students, especially those with little or no work experience, to answer questions. In this approach, I do not assign any questions up-front for discussion but tell the groups to know the facts of the case and come prepared to defend "their" organization's implementation approach. The idea of defending a focal organization's position is important

Cisco, Tektronix, and Harley Cases: Class Discussion	Your case assignment:	Other two companies:
The business and product(s)		
Spread of customer, employee, and supplier base		
What brought about the need to ERP?		
Vendor selection process (for Harley only: Who should they select and why?)		
Approach to ERP: big bang vs. waves—good or bad, why?		
People considerations (to take into account and taken into account)		
Business process and workflow change (to take into account and taken into account)		
Technology, including existing systems and associated challenges		
Change management approaches		
Corporate culture around technology implementation		
Leadership style and how key decisions were made		
Any other special steps to create success?		
Success or failure (as far as details are reported in the case…)		
Key points: Summary of your case		
Key points: Comparison of your case to other company		

Table 1: Hand-out for Class Discussion

as it forces students to think critically about all the things (leadership style, approach to change, etc.) that were right about the approach and all the circumstances (organizational culture, industry, etc.) that made these things work. I begin the class by giving students the hand-out in Table 1 and discuss the cases in parallel as outlined in the previous execution approach, but I also cold-call students (not groups) for more detail regarding each case to ensure everyone gets all the factors about all cases.

3.3 Execution Approach #2: Full-time MBA Students
The full-time MBA students I have typically taught vary in terms of work experience, ranging from those with a few tens of years to those who have none. The primary difference between this approach and the previous approach is that with full-time MBA students I do not have students presenting. Instead, we have a class discussion of the cases. Here, my rationale is that a group presentation might inhibit the learning of those who lack work experience. However, in a class discussion, with the benefit of the student background information, I can call upon specific students, especially those with little or no work experience, to answer questions. In this approach, I do not assign any questions up-front for discussion but tell the groups to know the facts of the case and come prepared to defend "their" organization's implementation approach. The idea of defending a focal organization's position is important as it forces students to think critically about all the things (leadership style, approach to change, etc.) that were right about the approach and all the circumstances (organizational culture, industry, etc.) that made these things work. I begin the class by giving students the hand-out in Table 1 and discuss the cases in parallel as outlined in the previous execution approach, but I also cold-call students (not groups) for more detail regarding each case to ensure everyone gets all the factors about all cases.

4. EVIDENCE OF SUCCESS AND SUMMARY

Students start with the goal of informing other students and also, as required, defend the focal organization's approach. By the end of the discussion, they develop a deep appreciation for the different types of challenges that will be encountered in different organizational environments—after all, unlike the "born-to-ride" tattoo, there is no "born-to-route" Cisco tattoo! The students appreciate that each of the cases is a success in its own right given the organization, thus helping them to think about success differently. I view the primary gain as being the better education of future managers. In particular, the teaching approach recommended here strengthens students' skills related to technology management, a key skill area in the context of ERP implementation (see Boyle and Strong, 2006). The dialog, exchange of ideas, and classroom environment that the combination of cases creates is a very favorable one for learning (see Leong, 2005). This approach is not only effective in terms of imparting lessons that are seldom evident in only one case, but is also time efficient in terms of student time and class-room time given that students spend time reading only one case but get a "three-for-the-price-of-one" deal on learning ERP implementation strategies; also, the approach outlined here uses only one week of class time. Table 2 shows the favorable student reactions on questions related to the effectiveness, hand-out, efficiency, and enjoyment based on my short anonymous post-class survey in different contexts. Table 3 presents the highlights of this teaching tip.

5. ACKNOWLEDGMENTS

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	U.S. PT*		U.S. FT*		Finland PT		Finland FT		China PT		India FT		Organization	
	5s**	Mean and SD	5s**	Mean and SD	5s**	Mean and SD	5s**	Mean and SD	5s**	Mean and SD	5s**	Mean and SD	5s**	Mean and SD
I felt like I learned a lot by combining all three cases in one class.	100%	5.0 and .00	93%	4.91 and .11	87%	4.77 and .21	100%	5.0 and .00	85%	4.79 and .15	90%	4.80 and .14	100%	5.0 and .00
I felt like I learned a lot by combining all three cases in one class.	100%	5.0 and .00	94%	4.93 and .07	94%	4.31 and .07	90%	4.87 and .09	90%	4.87 and .08	90%	4.80 and .14	100%	5.0 and .00
I felt like I learned a lot by combining all three cases in one class.	100%	5.0 and .00	100%	5.0 and .00	100%	5.0 and .00	100%	5.0 and .00	100%	5.0 and .00	90%	4.80 and .14	100%	5.0 and .00
I felt like I learned a lot by combining all three cases in one class.	100%	5.0 and .00	93%	4.90 and .11	93%	4.90 and .11	92%	4.88 and .09	92%	4.85 and .09	90%	4.80 and .14	100%	5.0 and .00
I felt like I learned a lot by combining all three cases in one class.	100%	5.0 and .00	100%	5.0 and .00	100%	5.0 and .00	100%	5.0 and .00	80%	4.70 and .25	90%	4.80 and .14	100%	5.0 and .00

* PT = Part-time; FT = Full-time.

** With two exceptions (in China), 100% of the respondents answered all questions with a 4 or 5.

Table 2: Student Reactions

Objective	Help students gain an appreciation of the different approaches to success in an ERP implementation—i.e., one size does not fit all.
Cases	Harvard Business School cases: Cisco (9-301-099), Tektronix (9-699-043), Harley-Davidson (9-600-006)
Group organization	• Approximately 6 students per group—distribute by functional area and prior ERP experience. • Each group is assigned one of the three cases.
Execution approach	*Part-time and executive MBA students:* • Use hand-out in Table 1 as the guide to help students focus their presentation on relevant issues (do not distribute hand-out). Students are also told to defend their organization's implementation approach. • One group per case, chosen randomly in class, will present—15+5 minutes for presentation plus Q&A (this will be the first session of the week if the class meets twice a week). • Distribute the hand-out in Table 1 after the break (or at the start of the second meeting of the week) and discuss the cases with an emphasis on the comparison. • Ask students with prior ERP experience (implementation or user) to share their organization's particular situation, both in terms of organizational environment and organizational actions. *Full-time MBA students:* • Students are asked to know the facts of the case and come prepared to defend the organization's implementation approach. • No presentation. • Use the hand-out in Table 1 to discuss details of the cases and the contrast across the approaches. • Cold-call specific students (especially those with minimal work experience).
Evidence of success	*Instructor reports:* • Effectiveness gains—appreciation for "one-size-does-not-fit-all." • Appreciation for what success means in different organizational contexts. • Efficiency—student workload is 1 case; classroom time is 2 ½ hours. *Student ratings of learning effectiveness, efficiency of time use, and enjoyment:* • Very high ratings in various contexts and different countries. • Almost always over 4.80 on a 5-point scale.

Table 3: Summary

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