

## Lean in Higher Education

*The time is right for higher education administrators, faculty, and staff to begin applying Lean management to their business. The consequences of not doing so could be fatal.*

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Most U.S. colleges and universities face a never-ending struggle to deliver valuable educational services while at the same time maintaining a viable financial position. The normal route for doing both is simply to raise more money from donors and pass cost increases along to customers – not only students (or their parents or companies that students work for), but also to the companies, state, and federal agencies that fund research.

This inexorable rise in prices – often at rates that greatly exceed the rate of inflation – places unwanted burdens on those who must pay the costs of education and research. This can't go on forever. Surely factors will emerge in the near future that force a change in current pricing practices and value propositions.

University administrators, faculty, and staff have a choice. They can change voluntarily, in an orderly manner while the opportunity still exists to do so, or be forced to change when power inevitably shifts to those who pay the bills. Every institution will be affected in some way – even the top-ranked ones – and the shift could occur very rapidly as the cost to deliver information and knowledge drops.

As the population of college-aged students begins to decline in some regions of the U.S. after 2010, administrators will face new challenges that they are not yet prepared to address. A likely scenario is:

- Oversupply of capable higher educational service providers
- Degree programs that are not differentiated between competitors
- Growth of for-profit educational service providers
- Growth of the distance education market via the Internet
- Having to compete on the basis of price

In addition, education standards have become increasingly uniform across the globe, aided by international accreditation bodies such as AACSB International for business schools or ABET for engineering schools<sup>[1]</sup>. This means that undergraduate engineering or graduate business degree programs in U.S. schools are substantially the same as those offered by schools in Canada or Germany, or by schools in developing nations such as China or Poland (and also taught in English).

If most undergraduate and graduate degree programs are substantially the same (either in reality or perception), then wouldn't most senior corporate executives seek labor that provides the needed capability at the lowest price? Indeed, we are now witnessing the early stages of offshore outsourcing of white-collar "knowledge worker" jobs in information technology, human resources, finance, engineering, and medicine. The pace of offshoring white-collar jobs is certain to increase in the coming years and further build the global labor market. In addition to significant job losses, this will also depress the salaries of U.S.-based knowledge workers lucky enough to retain their jobs.

If it does not pay to obtain an undergraduate or graduate degree, then some potential students will migrate to jobs that can't be outsourced offshore such as emergency medical technician, nurse, plumber, carpenter, electrician, hotel and restaurant services, etc. – honorable trades, to be sure. However, enrollment in degree programs will decline more quickly as potential students seek alternatives, and

make a bad situation even worse. As a result, some schools will go out of business, some will merge with other schools, and others will exist for a period of time as zombie (half-dead, half-alive) schools.

University administrators – even those at top-tier U.S. schools – should be alarmed, because what could happen to higher education is no different than what has already happened to the U.S. steel, electronics, automotive, furniture, and textile industries. And the same thing is now happening to service industries such as customer support, financial analysis, and drug research. While it is true that market dynamics often provide a useful and necessary culling of the weak players, it also offers compelling opportunities to improve and become even stronger.

It seems that conditions are forming which could drastically alter the business of higher education as we know it today. Managing through this new phase will be an unpleasant task. So how can institutions willing to face this new reality adapt? One way they can is to do what managers usually do: they lay people off, discontinue certain programs, reduce some services, close branch campuses, etc. These worn-out solutions will lead to unhappy customers and higher levels of job dissatisfaction among those left to carry out the teaching and provide student services – and also hasten the school's demise.

Is there a better way to deal with this situation? Of course there is. We need only to reflect on what some managers do when confronted with major upheaval in their industry. They begin to implement Lean management as the way to reduce costs, improve quality, simplify processes, gain market share, stabilize or grow employment, and better satisfy customers.

The question is, will college and university administrators, faculty, and staff wait until the crisis lands upon them, or will they act now to improve?

Professors have written dozens of scholarly papers in recent years illustrating the application of Lean principles and practices to higher education, including: quality function deployment, hoshin kanri, and kaizen. They know there is waste in higher education.

So there are many people out there who want to improve, and are willing to lead the way. And it's not just faculty. Some administrators and most staff personnel also know there is much room for improvement in the delivery degree programs and related student services. But great ideas are not so great until they are transformed into broad-based action.

Inevitably, however, people in service businesses must overcome the common bias that Lean is a "manufacturing thing," and understand that there are many more similarities than differences between manufacturing and service businesses. Administrators, faculty, and staff must avoid the trap of viewing higher education as a special case where Lean does not apply.

People that are not encumbered by mistaken views, and also accept that students are customers – in balance with the mission of higher education – will want to participate in kaizen to improve individual courses, degree programs, and student services. This will lead to multiple characteristics that clearly differentiate one school from others as seen by customers and lead to positive outcomes.

I think it is relevant to mention my own experience with Lean management in manufacturing and service industries. With the help of extensive training by Shingijutsu consultants in the mid-1990's, we learned and applied Lean management principles and practices in the manufacturing shop and later in supply chains.

Our teams achieved remarkable results, even though our understanding of Lean at that time was somewhat limited by our manufacturing shop floor focus. But we learned many important things about process improvement that laid the foundation for understanding how to improve non-manufacturing processes.

Upon becoming a university professor in the fall of 1999, it was clear that there was an enormous amount of waste in all facets of higher education – admissions process, advising, individual courses, degree programs, student services, etc. So I did four things: 1) led efforts to reduce confusion and rework by simplifying the school's programs and requirements; 2) conducted seminars for faculty on Lean management and important tools such as root cause analysis; 3) applied Lean principles and practices to the courses I taught<sup>[2]</sup> (with great success!); and 4) gained the participation of faculty, staff, alumni, and senior managers to improve a graduate M.S. in management degree program using kaizen<sup>[3]</sup>.

The rationale for improvement and related implementation efforts are described in recent papers that I have written (see footnotes 2 and 3). To make a long story short, Lean principles and practices can be successfully applied to higher education – which should be no surprise. We used improvement processes that were either exactly the same or very close to those long used in industrial manufacturing settings.

Another opportunity is to include Lean principles and practices in all courses – not just in operations management courses. This will result in curricula that teach students how to continuously improve any process and utilize human resources in ways that demonstrate respect for people<sup>[4]</sup>. It will produce graduates with clearly identifiable value-adding knowledge and capabilities such as creating innovative products or services and improving productivity through fundamental process improvement<sup>[5]</sup>.

Further, students educated in Lean principles and practices – understanding waste, value stream mapping, kaizen, respect for people, balance, etc. – will be much more highly valued by corporate managers because applying this knowledge leads to better outcomes for all key stakeholders. Plus, it will be harder to outsource their capabilities. And it will also clearly differentiate the programs offered by some U.S. colleges and universities.

But is important to be totally consistent: educators can't just teach Lean principles and practices, they must also apply it to their business.

By the way, another thing that U.S. college and university personnel will have to worry about is non-U.S. institutions of higher education adopting Lean principles and practices first, thus making both their schools and graduates more desirable than U.S. schools and its graduates.

So the message is: Don't miss this golden opportunity to apply Lean to university management, and also to teach Lean principles and practices to students across a variety of disciplines including arts, sciences, engineering, management, medicine, etc.

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