

# Eschewing Tradition for the Non-Traditional: Analytics and the Modern University

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Every aspect of a higher education institution—from the classroom to the boardroom—can benefit immensely from the increased leveraging of data, and the impact will magnify as analytics efforts evolve from reactive to predictive. *Traditionally, higher education institutions have been anecdotal and traditional enterprises. Steeped in history, most institutions mirror the management practices and*

*guidelines established over hundreds of years, but in today's changing marketplace this adherence to the status quo is becoming increasingly difficult to maintain. Today's students expect more from their institutions, there are increasing numbers of colleges and universities competing regionally and nationally for enrollments, and institutional budgets are shrinking. The need to do more with less requires directed creativity, and that can only be accomplished by leveraging data. In this interview, Peter Smith shares his thoughts on the transformative possibilities data brings to the table when it comes to innovative institutional management.*

### **The EvoLLLution (Evo): How did the Big Data and analytics trend in higher education emerge?**

**Peter Smith (PS):** Big Data has certainly emerged in the higher education space over the last 10 years, and what's profound about it is what it can do for us that we haven't been able to do for ourselves.

Big Data and analytics has had a significant impact on institutional research and our whole concept of how we use data to ascertain quality of service, as well as student outcomes, whether they are adult, part-time, online or 18-year-olds on campus with history of low access. Somebody once asked me recently why are we doing all of this, and my response was, because we can and we couldn't before. We're only in the early stages and I anticipate it's only a matter of time before we have an e-Harmony or a Kayak or a Trivago of colleges—a Learners' GPS—that not only outlines their standards, programs, costs and effectiveness, but that's also available online and probably free. My sense is we'll have a common website or landing platform for dozens of services across the education spectrum pertaining to lifelong learning and career development.

An additional aspect of Big Data is that assessment becomes a core function, almost equivalent to what teaching has been historically. It will allow people to bring material evidence to an institution and be assessed for academic credit. I think in very short order it will be assessable for career value as well.

The third thing this data revolution paradigm shift is doing is leading to "network colleges." Historically our colleges and universities have been vertical stacks of services of all kinds—laboratories, libraries, instruction, faculty, student housing, food, and more. Increasingly, the rate of change and the cost of quality in IT and data development is so rapid and so expensive that colleges are not able to do those things for themselves. So they'll contract with a vendor to offer

key services that are reliant on innovation and technology. Future institutions are going to have to decide what are the few things they're really going to be committed to owning, developing and making the symbol of quality their brand. Everything else they're going to have to deliver through partnerships with other organizations and institutions. For the incoming student it might look exactly the same—they're coming to a place and they've got all these services available in a much more responsive way—but behind the scenes you'd see a DNA of multiple sourced services all integrated together into what it is that this student experiences.

All the things predictive analytics enables—counselling, evidence-based assessments, planning, career information and career planning—that historically have been afterthoughts to the educational process will become core functions that will help the learner and the institution make sense out of where they are, where they want to go, how they're going to get there and how long it's going to take.

**Evo: What do you think are the most significant advantages or opportunities that data analytics presents, especially when it comes to the management of postsecondary institutions?**

**PS:** Without a doubt, the single biggest advantage is the emergence of businesses and organizations working in this sector to understand how curricular design, instruction and advising impact student success. We have a much better capacity today to look back on our initiatives and determine specific strengths and weaknesses based on past performance, split across all kinds of granular levels.

Out of retrospective analytics comes predictive analytics, which can help us take that data-driven decision-making to the next level. We can identify on the fly and in real time how our students are doing. We can identify students who may be in danger of dropping out and get them the help they need, whether its moral support or a problem in the family or anything else. This level of real-time and predictive data personalizes the whole student experience.

The improved persistence and completion means the upfront investment in analytics will pay for itself pretty quickly.

**Evo: How can predictive analytics be leveraged by other parts of the institution?**

**PS:** Another example of the use of predictive analytics is the handling of transfer students. We can track the success of transfer students from a variety of community colleges, and determine which college programs produce the strongest graduates and, on the other hand, which programs' students need more help. This means we can expedite the transfer process for those stronger students—because our data shows they are very likely to succeed. Ultimately, I believe these kinds of data will change the way transfer reviews and placement are done.

Predictive analytics will also have a significant impact on financial planning. For example, let's say I'm running a master's degree program in coding and cloud computing and I enroll 10 people from a coding bootcamp. I go through a painstaking review of those 10 people and decide give them advanced standing in the master's level program, and those people all do very well. Then I know I can assign a value to that particular bootcamp and I don't have to review the next 10 or the 10 after that anywhere near the precision that I did the first test because I already know how to align that content from a third-party non-accredited entity with a placement on my degree path in my master's program.

Ultimately, with more predictive analytics we'll see a lot bureaucratic savings: time savings, money savings and time-to-degree savings. The implications of Big Data for assessment are tremendous.

**Evo: What do you consider to be some of the limits of the value of business intelligence to the effective management of a college or university?**

**PS:** This change towards effective management facilitated by business intelligence is happening so fast I don't think any one of us can see the whole picture. We're in the early stages where there's no scaffolding or structure to organize the change so that we understand it because it's still happening, so it's kind of like skiing in a snow storm with no goggles on.

Having said that, there are I think two or three areas in general that are going to be points of risk, and they all come down to knowing which tasks only people can do. The user experience will become better and better for all students, mimicking the kind of data-backed customer service Amazon provides. But learning is a social activity and you've got to have community and personal interaction, regardless of modality. The question that each of us has to ask at the

institutional, departmental or even unit level is, “What is it that we do that must have the human touch?”

The other issue is a misunderstanding of what it means to personalize the learning experience. Personalization does not mean that you have a thousand different programs for a thousand individuals. Instead, it means every learner knows why they’re doing what they’re doing, why they’re starting where they’re starting, is confident of what they know already and what they need to know to reach their goals, and understands the consequences of the goals they’re seeking after in terms of employment or satisfaction. Personalization isn’t about infinite flexibility. It is about helping people be several orders of magnitude more precise in the questions they ask and the expectations they develop.

**Evo: Is there anything you’d like to add about where analytics came from in the postsecondary space and how you expect their use to continue to evolve over the next decade?**

**PS:** It’s a little bit like moving from a handsaw, to a buzz saw, to a chainsaw. Take any escalating development and refinement of a tool, and the more you use it, the more advanced your skills with that tool become.

For example, five years ago almost none of this work with business intelligence was happening in higher education. You learn, you see something, you adapt to it, you develop it, then you do it better and better and then you see another opportunity based on the work you’ve done. The whole thing is a learning curve and I think we’re going to see some mistakes and we’re going to see some poor results.

It’s going to be a big nut to crack, but we will crack it.

*This interview has been edited for length and clarity.*

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