Analytics Demystified
The Business of Higher Education

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The Business of Higher Education

Higher education is primed for disruption. With costs spiraling out of control and more competition for less students, institutions are facing serious challenges to stay viable.

Institutions can no longer afford to rely on tradition or their brand to recruit students or remain complacent, following business as usual. To survive and thrive the next decade, your institution needs to rethink the business of education to remain relevant and viable.

One way to make a fundamental transformation at your institution is to change the way you make decisions. We are in the middle of a data revolution and institutions are collecting data on everything from learning management systems to card swipes. You already have a rich repository of data on students and on your institution. In fact, higher ed is one of the most data rich industries. However, this richness has largely been squandered, lingering in a variety of silos throughout the institution. With new technology, those siloes of data are now readily available to be compiled, processed, and analyzed, making it easier for leaders to make data-driven decisions.

Analytics plays an important role in facilitating data-driven decision making which helps you evolve in the coming years. In this primer, we demystify the terminology, processes and challenges of data analytics so that you can increase institutional success through evidence based measures.

The popularity of analytics in the corporate world is huge.

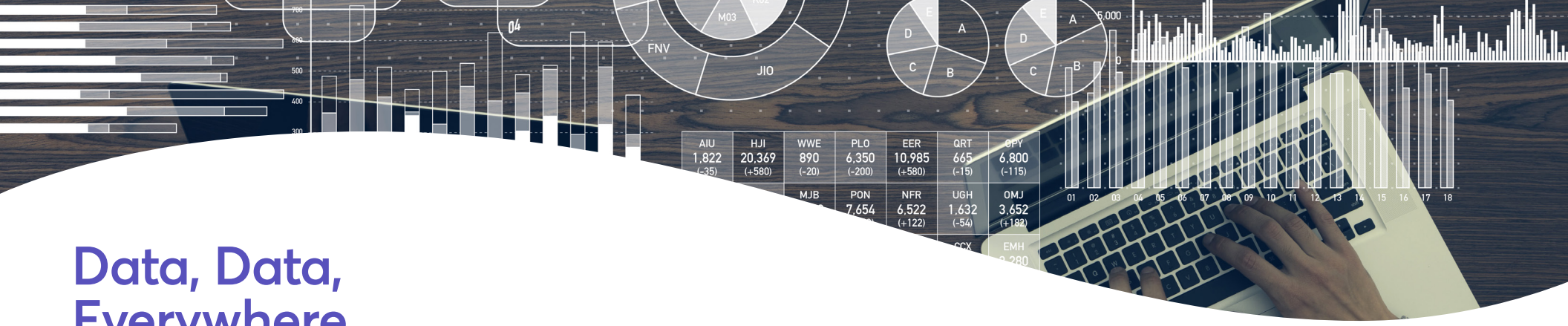
Worldwide revenues for big data and business analytics software are projected to reach $260 billion by 2022, according to IDC.

Although widely adopted in business, analytics is still in its infancy in higher education, however, that is about to change.

Ovum predicts that between 40% and 60% of all institutions are planning or trialing new capabilities in 2019.

The benefits of data and analytics are quickly becoming critical for both student and institutional success.

In an increasingly disruptive higher education environment where you need to do more for less, institutions are under immense pressure to manage escalating costs, find new revenue streams, and compete against non-traditional educators. Data analysis provides the big picture of trends and patterns that higher education leadership can use to evaluate and streamline processes, create efficiencies, and improve the overall student experience.



Data, Data, Everywhere

You have a mountain of data residing in your systems. The bad news is that it is likely siloed in different departments that makes it hard to use and subject to departmental agendas. However, properly mined and analyzed, your data can be used in almost every aspect of operations to increase agility, improve overall performance, and even identify new revenue opportunities.

To be effective, data needs to thought of as a valuable asset and used to underpin your strategy. Data-driven decisions gives you specific answers and quantification to questions about your students and operations that previously were guesswork. For example, when/if seeking to improve enrollment, once you understand who your best-fit students are, you can

- Improve recruitment costs by narrowing down outreach channels and maximizing efforts
- Increase yield by knowing the right touchpoints for your best-fit students
- Target your marketing to best-fit students
- Develop focused programs to help students succeed

Having an improved understanding of the profile of your students helps your institution become more aware, more responsive and more proactive in all aspects of achieving your mission.

Put Your Data to Work

What does it mean to make "data-driven decisions?"

Data-driven decision-making, also known as evidence-based decision making, helps you cut through the clutter of differing opinions and departmental agendas. It provides a factual look at the past, a snapshot of what exists today, and predicts what will happen in the future. Organizations use this data to make better, more informed decisions and to more efficiently allocate resources.

Organizations that adopt data-driven decision-making achieve:

- **Better operational performance** – Data helps identify patterns and opportunities to cut costs and streamline operations.
- **Increased agility** – Decisions based on facts and data dramatically increases the speed of decision-making enabling institutions to be more nimble and adjust to market changes.
- **Higher student success** – Gaining deeper insights into the needs of students gives you a chance to intervene before a moment of crisis. For example, you may uncover a pattern of a group of students having trouble with a particular course, stalling their progress or forcing them out of college altogether.

A slight change in teaching methods, or the sequence of when the course is offered to these students may make the difference in their success or failure.

What are Analytics?

There is confusion in the market about the terms associated this new and emerging technology. You've probably heard the phrase "reporting and analytics" tossed around. These terms are often used interchangeably however they perform two very different functions. The same is true for the terms data, information, insights, and dashboards.

Data – Data is the information that you collect from students, operations, learning systems, social media, and other sources. Data is the raw unprocessed facts and it is very difficult to make sense of individual data points.

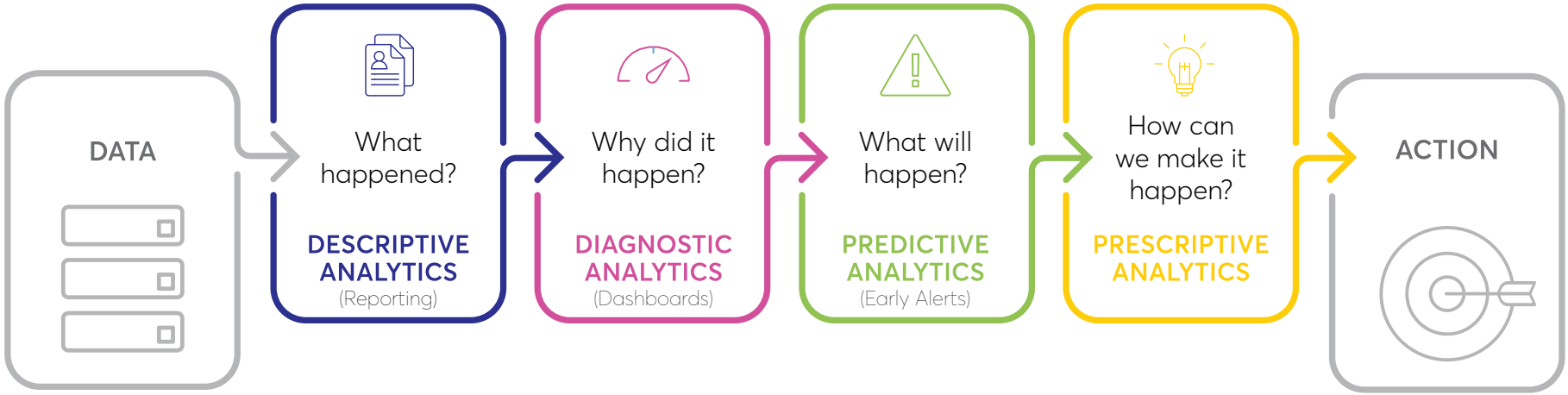
Information – Information is data that is processed, organized, structured or presented in a given context to make it useful.

Insights – Insights are the value extracted from the data and information. It is what you have learned from the data and the conclusion once have reviewed and analyzed the information

Analytics – Analytics is the process of exploring data and reports in order to extract meaningful insights, which is used to better understand and improve business performance. (Source: Adobe)

Reporting – Reporting is the process of organizing data into informational summaries in order to monitor how different areas of a business are performing. (Source: Adobe)

Dashboards – A dashboard is a set of data visualization tools that aggregate and displays information at a high level. It summarizes key performance indicators (KPIs) and important data at-a-glance.



Four Types of Analytics

Once data has been processed and formatted for analysis, there are four types of analytics that each offer a different insight; descriptive, diagnostic, predictive, and prescriptive. The simplest is descriptive analytics and the most complex is prescriptive analytics.

Two of the categories look at the past while the other two categories look at the future. Let's take a closer look.

Descriptive Analytics – Descriptive analytics look at the past and answer the question what happened. It looks at historical data points and lets you know that something is either working or not working. For example, it could tell you that you are losing your higher achieving students after your freshman year at a greater rate that the students you assumed to be at risk.

Diagnostic Analytics – Diagnostic analytics also looks at the past and helps you answer the question why did it happen by enabling you to drill down into information to determine the root cause of a problem. Building on the previous example, you may learn that many of these students transferred to programs at competitive institutions because they never felt your institution was their first choice or best fit and were not academically engaged.

Predictive Analytics – Predictive analytics look at the future and determines what will likely happen. It looks at the information derived from descriptive and diagnostic analytics and predicts trend and forecasts. For example, you may find a particular combination of student entry characteristics, scholarship packages, and course of study result in an increased chance of departure. This model helps institutions identify students at risk of departure so they can undertake additional efforts to retain those students.

Prescriptive Analytics – Prescriptive analytics is very complex and still in its infancy. It looks at the future and recommends what action to take to rectify a future problem or take full advantage of a promising trend. In the previous example, this could mean recommending increased gift aid, additional mentorship programs, or an enhanced honors program to keep students engaged.

Most institutions have some form of descriptive and/or diagnostic-level analytics at least on a departmental level. Predictive analytics is the next step in the journey and it can be powerful and transformative. It begins by asking a big question and requires a level of analytics maturity within the organization to derive true value.

The importance of data storytelling

Data storytelling is a necessary skill within your organization if your goal is to drive a data-driven decision making culture. It is one of the best communication techniques to help all stakeholders understand the results of analyses.

According to SearchCIO, data storytelling is the process of translating data analyses into layman's terms in order to influence a business decision or action. The idea is to connect the dots between sophisticated data analyses and decision makers, who may not have the ability to interpret the data.

Stand-alone data is just not as memorable as a story. And visuals have little meaning without context. That is why data and dashboards cannot be the primary tools for communicating insights and value. By combining data, visuals, and narrative, you create a compelling and trustworthy story that can be remembered and repeated throughout the organization.

Data storytelling begins with a question and ends with an insight. It combines data, visuals, and narrative to provide context and interpretation of the data. Using this technique, you will have a better chance of engaging your audience, driving consensus among stakeholders, and motivating them to take the appropriate action.

Examples of Data Driven Decision Making in Higher Ed

Chances are you are likely have a mountain of data residing in your systems. Having organized and automated analytics is important for any institution to improve productivity, make operations more efficient, and to change the culture of how decisions are made within the organization.

Let's take a closer look at a few examples of how institutions are using analytics.

Recruit your best-fit student – Competition for the best students is tough, and your peer institutions are aggressively recruiting prospective students. You can use analytics to find the characteristics and behaviors of successful students at your institution and focus your marketing efforts on students that meet similar criteria during recruitment, to improve yield and get ROI on your investment.

Identify at-risk students for improved retention – Many factors contribute to student retention. If you are only looking at GPA, test scores, and academic performance, you are not seeing the complete picture. With analytics, you can aggregate student information from disparate academic and administrative systems across your campus to create comprehensive student profiles. The result is a 360-degree view of each student—from academic performance and extracurricular engagement to financial aid and behavioral and demographic information—providing you with deep insights into potential risk factors and probabilities of success.

Generate More Donations – With limited resources and growing pressure to increase fundraising goals, strengthening your advancement initiatives is more important than ever. Analytics can examine alumni data, identify those who have a high propensity for giving so that you spend time cultivating those relationships, and identify those that are not likely to donate.

Examples of Data Driven Decision Making in Higher Ed (cont.)

Improve financial and operational performance – Monitor your composite financial index (CFI) score to quickly pinpoint areas for improvement with your primary reserve ratio, the viability ratio, the return on net assets ratio, and the net operating revenues ratio. Analytics uncovers areas for modernizing administrative processes, and forecasting and managing physical and staffing resources.

Evaluate curriculum – Data analytics can alert educators and administrators when there are spikes in dropout or failure rates in a particular course of study. With this information, changes can be made to pedagogy, course sequencing, or change in professor.

Develop new business models – Identify new revenue streams as the market changes. For example, Southern New Hampshire University (SNHU) capitalized on the fact that student demographics were changing and added online learning. Today, SNHU has transformed from a small traditional college into an online powerhouse with more than 80,000 students enrolled in online learning programs.

Improved decision-making – Without data analysis, you're making a decision based on intuition, opinions, or anecdotal information. McKinsey Global Institute reports that data-driven organizations are now 23 times more likely to acquire customers, 6 times as likely to retain customers, and 19 times as likely to be profitable as a result.

Challenges Getting Started

There are a number of challenges facing institutions in building an analytics initiative. This transformation isn't easy but the payoff is significant. Here are seven challenges that you will encounter when starting a data analytics program.

Data-driven culture – Senior leaders must make analytics a strategic directive, create a culture of data-driven decision-making and view analytics as a core resource for innovation and economics in every aspect of the institution.

Strategy with clearly defined business priorities – You can only improve what you can measure. Successful analytics initiatives incorporate analytics capabilities into their core businesses and establish metrics to measure their progress. Without a strategy, clearly defined goals, and measurable key performance indicators (KPIs), a new analytics program will likely fail. Examples of measurable goals include decreasing expenses through operational cost efficiencies by 10%, establishing a data-driven culture in 18 months, and increasing your CFI score from 1.8 to 2.8.

Access disparate data – You will need to be able to deal with the 3V's of data - volume, variety and velocity of data. You will need to understand how you will store the volumes of data that you have access to; hot to transform the wide variety of data into usable forms for analysis; and how to automate the processing the lightning-fast velocity of how fast data is coming in. Because software has traditionally been purchased to meet the specific needs of a particular department and without the view of the needs of the entire organization, data is likely siloed in various departments throughout the institution. Data-driven decision-making is a discipline that's difficult if not impossible to master when your data is stored in disparate systems that can't communicate with each other. Aggregating data from internal siloes as well as external sources is one of the biggest challenges facing higher ed institutions today.

Skills Gap – There is a significant skills shortage at all levels in data analytics. According to IBM, by 2020, the number of jobs for all US data professionals will increase by 364,000 openings to 2,720,000. Because of this gap, salaries are skyrocketing therefore increasing the costs of mining your data.

Infrastructure – You will need a flexible, scalable and secure infrastructure to store and process your data. Is it possible to do it in-house? Sure, but storing, processing and analyzing high volumes of data on-premises is not the most agile or cost-effective solution. In the cloud, all the data processing and analytics setup, and redundancy is done for you, and you can start gaining data-driven insights to make more informed operational decisions immediately.

Security – Collecting all that student data poses security challenges. Most big data breaches happen with on-premises systems, which often do not have the same security robustness as cloud services. Reported data breaches against cloud-based analytics services have been much lower than on-premises systems.

Data governance – Data governance is a collection of practices and processes that help to ensure the formal management of data assets within an organization. It defines the policies on data acquisition, data management and data archiving to ensure the quality and validity of the data across the organization.

Before You Buy: A Checklist for Evaluating Your Analytics Partner

Developing a comprehensive analytics program is a huge undertaking and challenging to do on your own. Chances are you will want to collaborate with a savvy business partner that can help you navigate the complexities of data management. Here are seven questions to ask when selecting a partner.

1. ☐ **Do they know your business and industry best practices?**
You want to find a partner that has deep analytics skills, as well as deep knowledge of your business and the industry sector you're in. These vendors can even help you identify relevant business cases for your projects because they already understand the needs of your industry.

2. ☐ **Do they have a long-term vision of the market and technology?**
Make sure your partner has vision. It is important that your partner understand your current and future market dynamics so that value is delivered. In addition, technology is changing so rapidly that you don't want to invest in something that will be outdated in a short period of time.

3. ☐ **Do they offer scalable solutions and costs?**
This journey can be costly and overwhelming. Find a partner that can start small and scale as your organization evolves.

4. ☐ **Is their solution secure?**
As more data is processed, data security and privacy are top priorities. Your partner should be knowledgeable about your industry regulations, infrastructure security and best practices around privacy.

5. ☐ **Do they understand industry-specific best practices?**
Your vendor should be able to address questions such as how do you compare to your peers and what are the best practices when it comes to higher education analytics.

6. ☐ **How long does it take before you derive value?**
Determine up front if your project is going to take days, weeks, or months before you see value. How long is it going to take to onboard and access all the required data? How long before you start gleaming insights?

7. ☐ **Do they offer managed and professional services?**
Does your partner have knowledge and services that you don't have? Can you outsource part or all of the project? Are they willing to provide a skills transfer?

The process of choosing a partner should be approached carefully and thoughtfully. In addition to selecting the right solution for your needs, you want a partner that will be there when projects encounter difficulty and you need vendor support.

Make Decisions with Confidence

Jenzabar Analytics

Jenzabar Analytics is a portfolio of descriptive, diagnostic, and predictive analytics tools that give you the strategic insight you need to increase agility, improve performance, and identify new avenues for success. Jenzabar Analytics reveals what happened, why it happened, and how to make the right things happen.

Jenzabar Analytics transforms your data into a strategic resource. Intuitive data models equip you to quickly spot relevant trends, make accurate projections, and discover hidden opportunities. Harness the power of your data to ensure institutional success. Confidently and easily make strategic decisions.

The Jenzabar Solution includes the following modules and services:

- Program Insights Model
- Financial Health Model
- Data Cloud

Learn more at www.jenzabar.com/analytics

Jenzabar®
TRANSCENDING EDUCATION

About Jenzabar

Created out of a passion for education and a vision for technology, Jenzabar offers disruptive, innovative software solutions and services that empower students' success and helps higher education institutions meet the demands of the modern student. Over 1,350 higher educational campuses harness Jenzabar solutions for improved performance across campus and a more personalized and connected experience for the student.

For further information, please visit jenzabar.com or on twitter @Jenzabar or LinkedIn.

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