



From data to diplomas: helping at-risk students succeed

How one university predicts
and intervenes

by Deirdre Puleo
5-minute read



Wichita State University (WSU) is so committed to its students' success that it processes over 63 million student records daily to identify at-risk individuals who need early intervention to complete their degrees.

It takes a village to guide students along the path to graduation. Of course, when a student succeeds, so does WSU, as David Wright, WSU's Chief Data Officer, explains: "The more we can help a student complete their degree, the better it is for both the student and us. One, because of a revenue stream that supports academic programs and development, but also because of the ability for that student to have an impact on their future. It's a win-win."



Part of student success stems from having good data and the right technology. WSU has a history of being a data rich- and information-rich institution. It was an early adopter of AI and established strong data management and governance practices a decade ago. It deployed IBM® Cognos® Analytics and IBM

SPSS® software to run daily audits and to gain analysis, predictive modeling and reporting capabilities. The IT environment included a student information system (SIS), more than 100 databases running on 300 virtual servers, and the protected data of the research arms of the university.

Over time, however, to keep pace with data growth, additional data repositories and an ever-increasing use of analytics, WSU needed to upgrade its data governance systems to support its analytics needs and get the most from its existing software investments. There were too many data silos, no common repository for metadata and lineage, and no true data catalog to help streamline and connect insights across the university.

Data security was also increasingly important as more compliance regulations roll out. As a research institution working on government and aerospace projects with proprietary information, WSU needed to meet these strict compliance regulations while also having access to data and safeguarding the personally identifiable information (PII) of its students.



“We didn’t have the ability to globally look at all of the systems, enterprise and non-enterprise databases we have on campus,” says Wright. “In a security environment, you need to know what data you have, where it is, who has access to it and who’s getting it. That

was paramount, and the old data system did not provide that for us.”

To continue its work of identifying at-risk students, WSU sought to consolidate its data resources and improve its overall data governance.

“All the steps we take to identify and help a student at risk means we can make that student more successful. It’s a win-win.”

David Wright, PhD, Chief Data Officer,
Wichita State University

Realized cost
savings using IBM
Data and AI

> 60%

compared with previous solution

Number of
student records
processed daily

63

million

A unified data and AI platform

WSU engaged IBM Business Partner Prolifics to modernize its infrastructure with [IBM Cloud Pak® for Data](#), [IBM DataStage® for IBM Cloud Pak](#) and [IBM Watson® Knowledge Catalog](#) technologies. Wright chose IBM because WSU was already using several IBM technologies, making the decision an obvious one.

Prolifics started the engagement by better understanding WSU's needs, ascertaining data readiness and exploring solutions. "I needed a shop that was comprehensive," explains Wright. "Prolifics stood out because they have people across a multitude of areas that we can tap into. It's a



daunting list of things that have to be changed but, fortunately, Prolifics was able to come in and meet those demands."

To avoid contract renewal fees and to maintain its analytics ability and data access, WSU had to deploy the solutions quickly. The first step was

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David Wright, PhD, Chief Data Officer,
Wichita State University

putting in place the new infrastructure: IBM Cloud Pak for Data. As a unified data and AI platform, the offering includes a suite of services and extensions that WSU can use to consolidate, organize and analyze its data and build predictive models. The platform also eliminates WSU’s former information silos by centralizing data access, including data from its network of colleges.

With the infrastructure in place, WSU focused on moving its extract, transform, and load (ETL) processes from its heritage solution to IBM DataStage on the IBM Cloud Pak for Data platform. “This would give us data validity and reliability because we’d be able to see code in one place,” adds Wright. “So if something changed that a programmer didn’t know about, we’d be able to adjust this code to accommodate that change.”

Next, to address WSU’s need for more visibility into workflow compliance and to gain a managed approach to data governance, Prolifics migrated WSU’s data to IBM Watson Knowledge Catalog technology, a data governance service on the IBM Cloud Pak for Data platform. As a data catalog, the solution also makes it easier for various users on campus to access the data. “By connecting workflow to data governance, we’ll be better able to have our voices heard across the many offices,” says Wright.

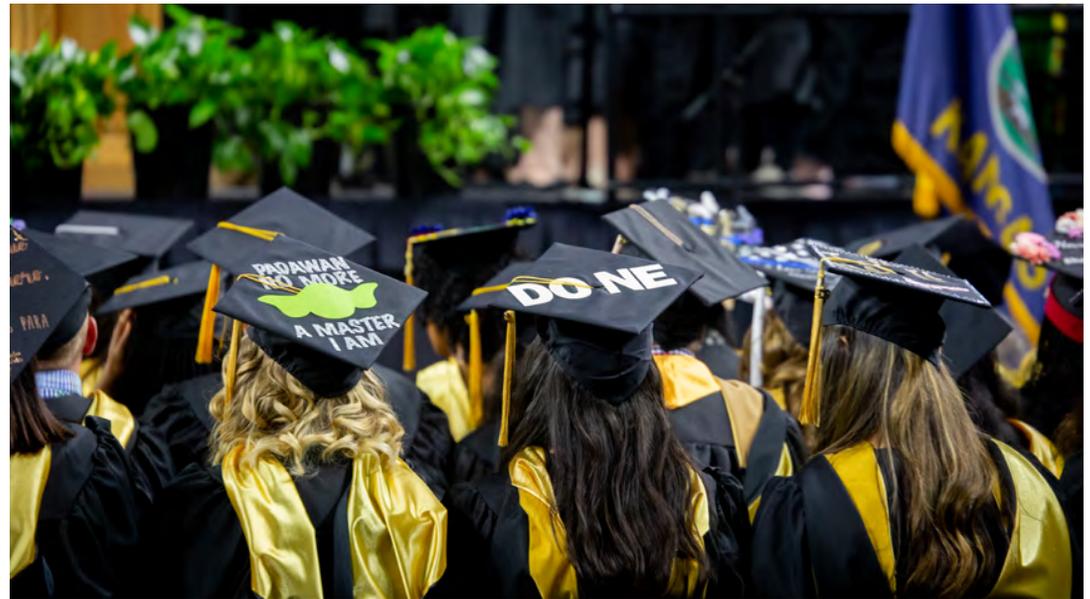
Last, to facilitate data sharing and address data security concerns, Prolifics centralized the university’s APIs—roughly 300 of them—in [IBM API Connect](#)® software.

Something wonderful is happening

WSU realized immediate cost savings.

“Cloud Pak for Data, API Connect and DataStage all came to us as a package,” says Wright. “I’m saving more than 60% by moving from our heritage solution to IBM Cloud Pak for Data. That’s a key win on the budget side.”

The new platform will boost WSU’s ability to identify students at risk of not graduating on time or struggling academically. Wright is also looking forward to being able to report on PII data for both university and compliance reasons. In the meantime, across the campus, something wonderful is happening: through



integration and breaking down data siloes, the power of data is coming to light.

“By putting good data into the system, we’re empowering our institution, we’re

changing mindsets,” says Wright. “We’re a very data-driven institution. We don’t have discussions about anything without having data in the room. So I really don’t want to call it

data—it becomes information at that point that people can use to make a course change.”

For example, WSU monitors and forecasts daily enrollment for the upcoming term. During that process, it can identify if enrollment will surpass or fall behind its goal. If performance is falling short, financial aid can step in and offer more scholarships for a particular population. Concurrently, advisors can develop campaigns to reconnect with students who have not yet returned from a gap semester. Even before students are enrolled, WSU can predict their level of risk by connecting their academic performance to its own degree requirements and other factors, and help develop a plan to get students the right prerequisites and prep.

The timing for deploying a modern infrastructure couldn't be better. When COVID-19 struck, WSU's existing data governance practices made it easier for the university to transition to a virtual work environment. But for students, virtual learning comes with less personal interaction with teachers, thereby increasing the risk of individuals falling behind or dropping out. WSU is ready to help and intervene.

“All the steps we take to identify and help a student at risk mean we can make that student more successful,” concludes Wright. “And the ability to have that kind of intervention is all dependent upon having data and information.”



About Wichita State University

[WSU](#) (external link) is a public research institution in Wichita, Kansas. More than 16,000 students attend its six colleges, its 30+ research facilities and its Innovation Campus. Students can choose from over 200 areas of study and 60 undergraduate degree programs. WSU ranks first among universities for industry-funded aeronautical research, and it collaborates with more than 200 industry and government clients and research partners.

Solution components

- IBM API Connect®
- IBM Cloud Pak® for Data
- IBM® DataStage® for IBM Cloud Pak
- IBM Watson® Knowledge Catalog

About Prolifics

IBM Business Partner [Prolifics](#) (external link) is a global digital transformation leader with expertise in cloud, data and analytics, DevOps, digital business and quality assurance. A winner of multiple IBM awards, the company also provides consulting, engineering and managed services. Prolifics was founded 1978 and now operates 13 offices in the US, Europe and India, and employs roughly 1,300 people.

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