

 VIEW FROM THE TOP

The Future of Data Governance: Bridging Institutional Silos

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In today's digital world, higher education institutions collect and use more data than ever. However, institutional silos create barriers for stakeholders who need data for daily operations and strategy. This article presents a vision of a unified, collaborative future for data governance and actionable steps stakeholders can take.

As higher education institutions are evolving to operate in a digital world, institutional leaders are tasked with managing more data than ever before to foster decision-making with data analytics. Our data-rich environments necessitate a renewed focus on enterprise-wide approaches to managing institutional data in order to create equitable and inclusive institutions and support success for all students. This intentional design of effective data governance is critical to the success of higher education. Data governance of the future will be well-positioned to support strategic goals in higher education through institutional data culture, a data-empowered workforce, and integrated, institution-wide data processes.

The Relevance of Data Governance

Data analytics is an important contributor to institutional strategy and operations, but not when silos stand in the way. Effective data governance is the key to eliminating data silos. Analytics leaders need to establish

a team approach with an unrelenting expectation for collaboration across institutional areas (*e.g.*, admission, registration, student services), and with the inclusion of broadly diverse stakeholder voices (*e.g.*, faculty, students, staff, administrators). As described by Robert and Reinitz (2023, 1),

Data governance [is] the processes, policies, and goals for managing institutional data, typically including policies and standards for data access, data quality, security and privacy compliance, and retention and archiving. Data governance fosters collaboration, transparency, and communication throughout the institution. It defines roles and responsibilities for managing data and assigns accountability to specific groups or individuals within the institution.

Today, the data ecosystem of a higher education institution is larger and more complex than ever before (Raffaghelli and Sangrà 2023), including systems across a spectrum of purposes and vendors, some on premise

and some in the cloud. Remote and hybrid learning and work, AI-powered tools, and computer-automated processes are all driving increases in both supply and demand for data. As data systems proliferate, end users are finding more uses for data: student recruitment and retention, student support services, teaching and learning tools, and more. With more uses for data, the amount and diversity of end users is growing too. Data and data systems are increasingly in the hands of front-line staff and faculty who may not have formal training in data governance and analytics. Further, these stakeholders are expected to make data-informed decisions at every level, from strategic planning to daily operations (Webber and Zheng 2019). However, data analytics as a field has not reached the maturity required for insights to be consistently reliable, valid, or equitable.

In large part, barriers to effectively and equitably utilizing data insights to inform practice stem from shortfalls in data governance capabilities. As more people collect more data for more purposes, the potential for data to be misunderstood or misused is growing. Effective data governance provides careful oversight and guidelines for the data ecosystem—guardrails to ensure that data conforms to standards, is of high quality, is appropriately available to stakeholders, and is managed properly. But what will it take for higher education institutions to wield this powerful capability? Beginning with current trends in higher education and beyond, we can craft a picture of our desired future state and map the actions necessary to get there.

Current Trends in Higher Education

Preparing for the future begins with understanding the present. Current social, technological, economic, environmental, and political trends all drive change in higher education. For example, the COVID-19 pandemic triggered increased interest in remote work, learning, and even social interaction (Pelletier, *et al.* 2022). This rise in digital activity has been generating more data-rich environments, leading to increased interest in leveraging big data, improving data literacy, and enhancing cybersecurity (Reinitz, *et al.* 2022). The “fake news” era, the proliferation of pseudoscience, and

the mainstreaming of credible propaganda demonstrate the risks involved when opinions are formed or actions are taken without the use of high quality data and data insights. Concerns about such trends are provoking stakeholders to double down on calls for data-informed decision-making. Meanwhile, the Forbes Technology Council (Emini 2022) referred to the emerging field of decision intelligence as “the next digital transformation,” and technology consulting firm Gartner identified decision intelligence as one of the top strategic technology trends of 2022.

Given these global trends, it is no surprise that higher education experts have identified increasing demands for data-supported decision-making as a trend that is poised to make a significant impact on the future of higher education (Caron and Muscanell 2022, Reinitz, *et al.* 2022). These demands are exacerbating a long list of challenges data governance professionals have been grappling with for some time. There are foundational issues with the ways we collect, store, and analyze data. Existing data infrastructures are outdated and disorganized, and data governance professionals are struggling to implement data governance systems. Oftentimes, data ownership and stewardship is spread across an institution, impeding efforts to integrate data insights across long-standing silos (Caron and Smith 2023). All of these issues impact an institutions’ capacity for fostering a culture of data-informed decision-making.

Further, even when data governance systems are appropriately positioned and resourced, institutional stakeholders’ data literacy and analytics skills lag behind the rapid adoption of new data analytics techniques and processes. This need for upskilling and reskilling has become central to discussions of data governance (Reinitz, *et al.* 2022). In recent years, the gaps between what we know and what we need to know about using “big data” tools (*e.g.*, machine learning and artificial intelligence) have been illuminated by our intensified focus on creating equitable and inclusive institutions. Many big data methods reinforce social inequities, so it is essential to turn a critical eye toward processes such as training algorithms and interpreting results. However, this type of analysis takes expertise—not only in

data analytics but in educational equity and other social sciences. In a survey of higher education technology professionals (Robert 2022), more than half (53%) of respondents identified diversity, equity, and inclusion expertise across the institution as one of the key elements needed to pursue the use of analytics to advance equity goals. Again, institutional silos act as a barrier to effective institutional operations. As we look to the future, data governance emerges as a potentially unifying element of institutional operations and strategy that can help to break down those silos.

The Future of Data Governance

How will current trends, opportunities, and challenges shape the future of data governance in higher education? At EDUCAUSE, we asked a panel of data and analytics experts to sketch out their *ideal* future, one in which the higher education community works together to leverage our collective strengths and overcome our weaknesses (Robert and Reinitz 2023). Focusing on a ten-year time horizon, panelists engaged in strategic foresight exercises (Forchheimer 2022) to generate goals for the future state of data governance and the actions we can all invest in to make our ideal future a reality.

■ **Culture.** For our panelists, data governance of the future is built on institutional culture. Unifying people is paramount to any other unification efforts. Stakeholders across the institution will be collaborative, bridging institutional silos that have impeded progress for so long (Mizuta 2022). Individual members of institutions at all levels will be empowered to engage in data governance by adopting mutually-agreed-upon tools and processes. Transparency will promote trust and accountability in these collaborations (Cook 2023). As the entire higher education community takes responsibility for data, data governance will play a central role in institutional processes, from enterprise-level strategic planning and policy-making, to frontline operations.

■ **Workforce.** Panelists also described ways in which this culture might support the higher education workforce of the future. They envisioned a future in which data governance responsibilities no lon-

ger fall to only a few individuals. Instead, data governance will be integrated into all job roles at the institution, and this integration will be codified in job descriptions, roles and responsibilities, and performance evaluations. Beyond these accountability measures, individuals will be supported with the appropriate resources, such as onboarding processes and ongoing professional development, to carry out their data governance responsibilities.

■ **Processes.** Finally, panelists described how institutions of the future will take a unified approach to creating and carrying out data governance processes. Frontline processes will be aligned with higher-level institutional strategy, and this alignment will necessitate integration across individual job roles and institutional units. The landscape of third-party tools will be simplified, with national standards guiding vendor policies, institutional processes for procurement, and collaboration between vendors and institutional stakeholders.

Certainly, this vision of the future is characterized by collaboration across institutional silos, but the reality of those silos in the present is undeniable. So, how can the higher education community move past current barriers in place by fractured institutional structures? In the following sections, we explore recommendations from the Data Governance Action Plan (Robert and Reinitz 2023) and advice for creating your own action items.

Taking Action

Strategic foresight is an excellent tool for considering potential and preferred versions of the future (Wayland 2015), but the real power in such work lies in taking informed action. As data initiatives grow and mature, college and university leaders will need to choose how they allocate resources to sustain and grow analytics. Having the appropriate stakeholders participate in that conversation through a governance process is necessary for allocating resources in ways that ensure analytics initiatives address institutional needs. Not everything can be done, and determining what to do and what not to do can be difficult. For these reasons, we asked the

Data Governance Action Plan panelists to create a set of recommended actions stakeholders can take to have a positive impact on the future of data governance at their institutions. There is a range of action items listed in the *EDUCAUSE Horizon Action Plan: Data Governance* (Robert and Reinitz 2023); no matter what your role is at your institution, you can find a way to contribute to the future of data governance today.

■ **Culture.** Unsurprisingly, foundational action items are all related to shoring up institutional culture. Higher education leaders can do this by maintaining transparency about how new policies and processes align with the mission of the institution. For example, staff at Ashland University have published a website detailing the data-informed development of their strategic plan (2023). Teams working on the plan were developed from an open call for participants, providing an opportunity for the entire institutional community to participate.

Regularly tracking and communicating about the progress of data governance initiatives will create buy-in across the institution. Early and ongoing efforts will need to be situated at both the unit and enterprise level, creating cohesion in the ways individuals contribute to the bigger picture. At National Louis University, a centralized data lake is used to unify disparate data sources and university-wide strategic metrics and to provide institutional stakeholders with a single source for trusted data (2023).

Perhaps most importantly, leaders need to invest resources—time, money, and personnel—in data governance work so that faculty and staff are not expected to add more responsibilities to their existing workloads. The Data, Analytics, and Institutional Research office at the University of North Texas supports users across the institution by training them to use more than 25 analytics products (2023). The university reports that more than 1,000 users have been trained to use their tools.

■ **Workforce.** Supporting the workforce is another foundational element in strengthening data governance capabilities. All institutional lines of business and functional areas need personnel who are trained

in data stewardship, rights and responsibilities, and collaboration across units. Even though stakeholder data literacy is essential to data-informed decision-making, it is still a widely understudied construct (Yang and Li 2020). As a starting point, leaders can codify data governance responsibilities into job descriptions for any new job roles that are developed. Ideally, all job roles will eventually be reviewed and revised to include such responsibilities, and ongoing training and professional development will help personnel stay up to date on the most current data governance and data analytics practices. At the University of Queensland, staff can access online training and resources related to topics such as data governance, data ethics, working with data, cybersecurity, and more (2023).

■ **Processes.** Front line staff can make an immediate impact by reviewing the policies and processes involved in their daily work and identifying areas in which data is collected, stored, shared, or analyzed. Staff who work with data on a regular basis have the most knowledge about opportunities that can be leveraged and challenges that need to be overcome. As leaders work to revise existing policies and create new ones, they should work with staff to ensure that ground-level operations are not oversimplified or disregarded. Kent State University is currently undergoing a multiyear initiative to transform their data pipeline (2023). With a model built on data flowing bidirectionally between data sources and data users, the initiative is designed to support unified governance processes, including self-service reporting, analytics, and documenting.

Building an Action Roadmap

Strategic foresight is not meant to predict the future, nor is it meant to dictate our actions. Instead, we can leverage strategic foresight to consider potential futures informed by current data, craft a preferred future based on our own communities' needs and goals, and design an action plan to achieve our goals. Action plans and roadmaps comprise a key element of the EDUCAUSE Horizon reports. Data about current trends, technolo-

TABLE 1 ► EDUCAUSE Data Governance Resources

Resource	Co-Publishers/Supporters	Description
Change with Analytics	► Association for Institutional Research (AIR) ► National Association of College and University Business Officers (NACUBO)	Provides support for ► making an institutional commitment to analytics, ► building analytics teams, ► supporting flexibility and agility, ► investing in essential resources, ► mitigating risk, and ► taking immediate action.
Understanding and Developing a Data-Informed Culture	► Advising Success Network (ASN)	An action-oriented guide that addresses ► creating a data-informed culture, ► leveraging leadership to support data governance, ► establishing data governance as an organizing framework, ► understanding institutional data architecture, and ► selecting the right analytical strategies.
Analytics Institutional Self Assessment	n/a	Designed to help you understand your institution's current data governance and analytics capabilities. The self assessment addresses ► workforce, ► data governance, ► data management, ► leadership, and ► data-informed culture.
EDUCAUSE Connect	n/a	A professional networking platform for communities to collaborate. There, you will find community groups for topics such as ► data governance, ► IT governance, ► data strategy, ► cybersecurity, and more.
Data Governance Essentials	n/a	A four-part Learning Lab that introduces methods for creating and updating an institutional data governance structure.
Data Literacy Institute	n/a	Designed to empower higher education professionals at all levels to use data confidently. This institute provides foundational knowledge needed to facilitate effective data-informed decision-making.

gies, and practices are only useful if we translate those data into action.

To create an action roadmap for data governance at your own institution, begin by considering your stakeholders' unique needs. Connect with key stakeholders at your institution, taking care to consider the wide range of functional units and job roles responsible for data governance. Include stakeholders who are already close collaborators—people you trust to hit the ground running—but also include those who might be more cautious or skeptical. You'll need a robust team to effect meaningful change. As you and your colleagues discuss

the current and future state of data governance at your institution, note ways in which your goals align with those outlined here and ways in which your unique community requires a more tailored approach. Leverage as much as you can from existing recommendations, but don't hesitate to craft your own personalized vision of the future. At EDUCAUSE, we find that working on a ten-year time horizon allows for the right balance of data-informed foresight and personal creativity.

Finally, work backwards from your preferred future to identify actions needed to achieve your goals. What are some immediate steps you can take to gain momen-

tum and stakeholder buy-in? What longer term actions will require more planning and coordination?

You're not in this alone. You can find more support and opportunities to connect with the larger data governance community in the resources shown in Table 1, on page 7.

Summary

The current state of data governance is one of the foundational barriers institutions face when building a culture of data-informed decision-making. Weil, Kendall, and Snyder (2023) note that data for institutional analytics should be timely, consistent, trusted, relevant,

interactive, connected, accessible, and actionable. However, institutional silos commonly inhibit such practices. In the future, data governance will be key to unifying data analytics efforts across the institution. To be successful, such efforts must begin with culture. Culture shifts that make student success the responsibility of every stakeholder (Miller 2022) will promote meaningful data-informed decision-making and pave the way for unified and collaborative data governance practices. When members of the higher education workforce are empowered to contribute to a unified data governance strategy, they will be able to carry out data governance processes at every level.

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