



# Information Revolution in Education

## Lean practices and new technologies improve information management and governance

**E**ducational institutions, from K-12 to higher ed, are under pressure to improve information management and governance processes, practices, and workflows. They must:

- **Manage rapidly increasing volumes of information:** As an educational institution's data volume grows exponentially, failure to manage vast amounts of manual and digital information could risk responsiveness, impair services to students and their families, and constrain information workflows for administrators and faculty.
- **Effectively store, access, use, and update information to enhance learning and educator-student relationships:** Without processes and technologies to efficiently manage data, timely delivery of services may be compromised and deteriorate the quality of the learning experience.
- **Comply with regulatory requirements:** Information management practices must help educational institutions efficiently meet regulatory obligations, such as compliance with the Family Education Rights and Privacy Act (FERPA).
- **Secure information:** Safe management of student and employee information not only reduces risk of data breaches, but also helps to protect the reputations of institutions as trusted guardians of privacy and confidentiality.

Which information management and governance challenges face your organization, and how will you address them?

Many industries have turned to lean management methods to improve operations. Fortunately, these same practices can be applied to information management and governance within educational institutions, providing operational benefits for administrators and educators, while also enhancing the value they create for students, their families, and the organization. Why? Because lean principles help organizations focus only on work that creates value. Improving productivity can remove or minimize time wasted on non-value-added activities, helping to drive increases in the value delivered to students.



**Information management practices must help educational institutions efficiently meet regulatory obligations, such as compliance with the Family Education Rights and Privacy Act (FERPA).**



Value-stream mapping and other lean tools, which help teams and individuals to identify non-value-added activities, are now being applied to information management and governance practices. Mapping has been used to improve learning-delivery processes, and it can also track the progress of data streams as they enter and move through an organization. Mapping helps to identify bottlenecks, which reduce productivity, as well as detect unsafe practices that put student information at risk.

Lean methods typically begin by assessing the current state, as is done with mapping, and proceed to future-state planning and identification of gaps between the current and future states. Lean problem-solving techniques are then deployed to find root causes for these problems, leading to the development of standardized solutions (e.g., new processes, technologies, and workstreams) that keep these issues from recurring. As solutions are embedded into the institution, productivity and quality increase and costs decline. (Unfortunately, only 16 percent of institutions report that all sites and programs on campus follow the same standardized information management and governance processes and procedures.)

Lean solutions, such as standardization, can help educational institutions in addressing many of the top problems they encounter, as identified by *The Lean Information Management and Governance Study*:<sup>1</sup>

- Waiting for information (35 percent report as a “significant problem”)
- Lack of information quality control/assurance (29 percent report as a “significant problem”)
- Multiple information formats, sources, and repositories (26 percent report as a “significant problem”)
- Multiple information systems (26 percent report as a “significant problem”)



Standardized information systems and practices make it possible to design, develop, and deploy common information workflows throughout an institution, giving all faculty and staff a common information framework in which to work. Standardized systems also eliminate time spent waiting for information and the time and effort spent by faculty and administrators developing documents that no one uses.

**Unfortunately, only 16 percent of institutions report that all sites and programs on campus follow the same standardized information management and governance processes and procedures.**

<sup>1</sup> All data in this report from *The Lean Information Management and Governance Study*, Canon USA, 2019.

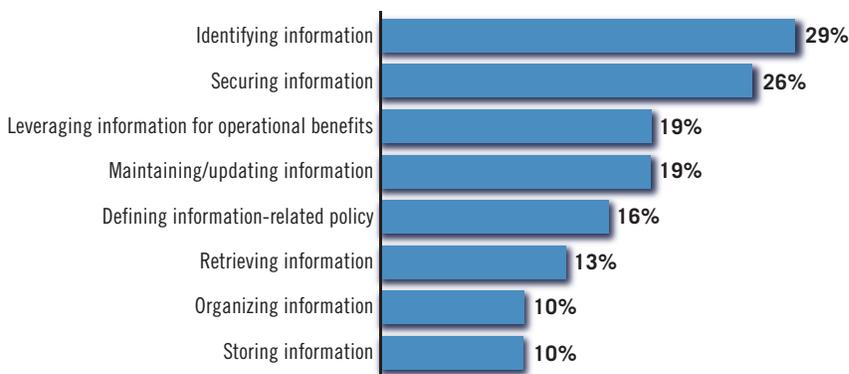
## Lean Strategy Sets Path for Improvement

A lean approach to information management and governance doesn't happen without a strategy. *The Lean Information Management and Governance Study* finds that some educational institutions are headed in the right direction but others struggle: just 39 percent of institutions have an information management and governance strategy defined, with aligned policies and tactics disseminated across the entire organization.

Most institutions are challenged in achieving results from information strategies, policies, and tactics. For example, educational institutions are most effective at identifying information and securing information. But this occurs at just 29 percent and 26 percent of institutions, respectively; other information management and governance activities are even less likely to have been executed effectively (*Figure 1*).



**Figure 1. Extremely effective execution of information management and governance strategy (% of educational institutions)**



Manual classification of information by faculty and staff adds effort and expense — and potentially damages accuracy.

Why are these percentages so low? In part because many institutions have departments and functions that don't collaborate well on information practices (just 26 percent report "extensive collaboration"). This failure to collaborate also impairs the adoption of many best practices, including:

- **Information management** — Information management/governance training and cross-functional collaboration for managing information are in place at 55 percent of institutions — but 55 percent don't have automated classification tools to catalog, store, and protect information. Manual classification of information by faculty and staff adds effort and expense—and potentially damages accuracy.
- **Information systems** — Information-access authorizations are in use at 58 percent of institutions, but 74 percent don't have automated information-usage tracking. Authorized access is a good start, but if an organization can't control how faculty and staff use the information they access, they're at risk of disclosing confidential student data.



- **Methods to improve information management** — Periodic review of information workstreams and policies are in use at 55 percent of institutions, but 52 percent don't map information workstreams. Institutions that don't map information flows risk gaps, leaks, and divergent destinations outside of their control — and an out-of-control process does not minimize liability or reduce risk.

Another issue is that while education information management and systems are often focused on security and risk management, 71 percent of educational institutions haven't evaluated the value of organizational content against a risk management matrix. That's a problem: risk matrices help organizations in prioritizing preventive actions by estimating both the likelihood and the consequences of an adverse event, and by influencing the design of a response framework to improve uptime and incident response.



In addition to standardization, collaboration, and application of best practices, successful information management and governance also depends upon effective, up-to-date systems and technologies. Yet many organizations have aging hardware and software: 39 percent have copiers more than five years old; 32 percent have multifunction printers more than five years old; and 39 percent have education-specific applications — such as learning management systems (LMS) and student information systems (SIS) — more than five years old. Security threats and regulatory compliance have evolved dramatically over the last five years, and legacy hardware can represent a liability if systems can't meet current requirements. Just because an institution's technology is still functional doesn't mean it's a practical solution for the current environment.

Legacy technologies make it difficult to manage a combination of physical and digital documents, or to move toward full digitization. Not surprisingly, few institutions report that their education processes are fully digitized (i.e., electronic) or even close:

- **Registration:** 31 percent report 100 percent digitized and 27 percent report 75-99 percent digitized
- **Assessment:** 25 percent report 100 percent digitized and 14 percent report 75-99 percent digitized
- **Admissions:** 19 percent report 100 percent digitized and 32 percent report 75-99 percent digitized
- **Curriculum:** 19 percent report 100 percent digitized and 23 percent report 75-99 percent digitized
- **Advising:** 6 percent report 100 percent digitized and 5 percent report 75-99 percent digitized

Given the growing dependence on digital interfaces for communications — with students, families, educators, administrators, government entities — limited or missing digital workflows can impair an organization’s ability to efficiently deliver learning; frustrate students and their families; and damage the institution’s reputation.

State-of-the-art technologies also can help to improve two key measures of effective of information management and governance where better performance is needed:

- **Data reliability:** 52 percent of educational institutions report that more than 10 percent of information is out of date and should be purged. Old information imposes risk through both liability *and* expense; massive effort is typically required to store and retrieve information in varying formats throughout a catalog of files. Taking a “digital first” approach can help institutions address this challenge by redirecting the flow of information into a digital channel early in a workflow, reducing the growth of non-digital materials.
- **Data security:** 58 percent of institutions have had more than two information security breaches (i.e., unauthorized access of data, systems, applications, or networks) in the past two years. Public knowledge of a breach is a competitive liability. Institutions could also be subject to Department of Education penalties if they don’t respond properly to breaches, further damaging their reputations for being unable to secure confidential information.

## Improve Your Information Processes

How effective is your institution in dealing with information management and governance? More importantly, are you investing effort and resources to improve them? Approximately 71 percent of educational institutions spent 5 percent or more of revenues on equipment, hardware, and software for information management and governance in the past year. Yet another 16 percent spent two percent or less.

Which group resembles your organization?



How effective  
is your  
organization  
in dealing with  
information  
management  
and  
governance?  
More impor-  
tantly, are  
you investing  
effort and  
resources to  
improve them?



Improving information management and governance can boost operational capabilities (e.g., educator productivity), automate workstreams, reduce costs associated with compliance requirements, and help leaders and administrators leverage information for analytics. These changes also help to minimize liabilities, improve learning, and deliver more value to students.

Leading institutions are achieving these results via lean improvement work that:

1. Develops an organization-wide information management and governance strategy
2. Works with experienced partners that help to navigate roadblocks to improvement
3. Conducts honest, unbiased assessments of current processes that are realistic in scope, expanding the effort as resources allow
4. Ensures audits of all information channels, including educators, support functions, third-party vendors, etc.
5. Engages stakeholders early to ensure collaboration in mapping information environments and planning realistic improvements (i.e., redesigning workstreams with those who work within them).

When will your institution get started?

For more information,  
visit [www.usa.canon.com/advancedsolutionsforeducation](http://www.usa.canon.com/advancedsolutionsforeducation)



Canon U.S.A. does not provide legal counsel or regulatory compliance consultancy, including without limitation, Sarbanes-Oxley, HIPAA, GLBA, Check 21 or the USA Patriot Act. Each customer must have its own qualified counsel determine the advisability of a particular solution as it relates to regulatory and statutory compliance.

Canon products offer certain security features, yet many variables can impact the security of your devices and data. Canon does not warrant that use of its features will prevent security issues. Nothing herein should be construed as legal or regulatory advice concerning applicable laws; customers must have their own qualified counsel determine the feasibility of a solution as it relates to regulatory and statutory compliance.

Some security features may impact functionality/performance. Consult your systems administration experts for testing requirements prior to implementation.