

# Streamlining Enterprise Records Management with Lean Six Sigma

Process created by manufacturing can be applied to records management with substantial results

Charles Brett and Patrick Queen, CRM, CDIA

As corporations toil to manage ever-increasing volumes of enterprise records, growing forces such as risk mitigation, changing legislation, and corporate governance are creating the need to manage information in a timely fashion. For some organizations, getting better control of paper- and electronic-based information processes and enterprise records management (RM) starts with Lean Six Sigma.

Lean Six Sigma is the latest evolutionary step in the history of manufacturing that marries Henry Ford's Lean Flow manufacturing process of the early 1900s with the Six Sigma process created by Motorola Corp. in the 1980s. Both practices have enabled businesses to operate efficiently and effectively for decades. [See Sidebar on page 61.]

By itself, Lean Flow centers on using the minimum amount of resources – people, materials, and capital – to produce solutions and deliver them on time

to customers. The Lean Flow process, however, does not have the discipline to deliver results predictably.

In some cases, Lean Flow implementation involves an informal investigation into an organization's workflow, which is typically followed by an immediate rearrangement of processes. While this approach produces change quickly, it cannot be relied upon to yield desired results consistently. On the other end of the spectrum, Lean Flow implementa-

tion can involve extremely thorough data collection and analysis, which produces expected results but takes years before any change occurs.

In his book, *Lean Six Sigma and High Performance Organizations*, Tom Devane writes that Six Sigma, on the other hand, is designed to improve quality by enhancing knowledge-generating processes. Six Sigma is a statistically based method aimed at reducing variation and eliminating defects in a process – whether that process is producing hard goods or answering customer inquiries. In banking, for example, the goal might be to process one check perfectly, then repeat it millions of times. Six Sigma also focuses on the need to identify things considered “critical to quality” (known as CTQs). The Six Sigma metric states that processes affecting customers should have as little variation as possible. In many cases, this leads to slow, deliberate, change-intolerant practices.

## At the Core

This article

- ▶ Describes how Lean Flow manufacturing and the Six Sigma process are combined to produce Lean Six Sigma
- ▶ Explains the applicability of the process to records managers
- ▶ Outlines the “DMAIC” process in regards to records management

By “nesting” the Lean Flow methodology within the Six Sigma methodology, a synergy can be attained that provides results that are much more significant than the results of the individual approaches. When Lean is added to Six Sigma, slow processes are challenged and replaced with more streamlined workflows. Additionally, the data gathered during Lean Flow implementation helps iden-

Document-related Lean Six Sigma follows a work process that can benefit from quality and waste reduction.

Like manufacturing processes, document and records management processes consume resources and require the management of changes and additions. Improvements to document and records and information management (RIM) processes can provide quantifiable bene-

**Lean Six Sigma is the application of lean techniques to increase speed and reduce waste and process complexity, while employing processes to improve quality and focus on the voice of the customer.**

tify the highest-impact Six Sigma opportunities. When Six Sigma is added to Lean Flow, a much-needed structure is provided that makes it easier to consistently achieve optimum flow. The two methodologies work so well together that a new, integrated, Lean Six Sigma approach, with its own unique characteristics, has been defined and used by several leading organizations, including Xerox Corporation, General Electric Company, Johnson & Johnson, and Dell Inc.

Lean Six Sigma is the application of lean techniques to increase speed and reduce waste and process complexity, while employing processes to improve quality and focus on the voice of the customer. Lean Six Sigma means doing it right the first time and implementing changes that generate value while acting quickly and efficiently.

### Beyond Manufacturing

Lean Six Sigma is not limited to the manufacturing arena. The ideals of improving quality and reducing waste can be attached to virtually any process. Lean Six Sigma can be used to help customers obtain vast improvements in the way they produce, store, and distribute both paper and electronic documents and records.

fits similar to those of manufacturing process improvements, that is, greater efficiency, faster response, enhanced customer service, reduced costs, and increased quality.

In response to the current regulatory and litigation landscape, many organizations have issued policies that direct employees to apply paper-based records management controls to electronic records. Without understanding the processes that create both hard copy and electronic records, it is difficult – approaching impossible – for organizations to manage their electronic records.

Control of electronic records is often assigned to the IT department where electronic data files are traditionally managed based on transaction volume and storage requirements. IT departments often implement solutions without understanding the requirement to identify and retain specific records. A typical solution for retention of e-mail records is to automatically delete messages after 60 days; the same approach deletes electronic records after a period of inactivity. Both of these solutions circumvent established hard copy records management controls and place the credibility of the records management program at risk.

### Lean Six Sigma and Records Management

Lean Six Sigma methodology has been used to streamline records management processes and to improve the ways information flows into, through, and out of organizations. DMAIC (pronounced duh-may-ick) – an acronym for define, measure, analyze, improve, and control – is a key principle of Six Sigma. Its use in information projects can be summarized as:

- Define what must be improved.
- Measure what is currently being done.
- Analyze the data and develop an improvement plan.
- Improve current processes and measures of success.
- Control the gains and repeat the processes.

DMAIC is a path to gaining greater knowledge and insight on records processes so that they can be effectively changed and controlled for the organization's benefit and, significantly, so that benefits can be measured over time. DMAIC can be applied to RIM in the following ways:

#### Define

The define phase is vital to the overall success of any Lean Six Sigma project. This is the phase where the current situation, problem, and desired outcome are assessed and documented.

One common finding in the define phase is the fact that many organizations do not address the simultaneous, multimedia nature of records and treat electronic documents – web, e-mail, and fax output from enterprise applications like ERP and CRM – separately from paper. In other instances, organizations focus only on the paper document production process and ignore the need for electronic document integration.

An internal assessment is completed to determine which records are being kept both in paper and electronic form. The assessment addresses and quantifies

several baseline enterprise RM requirements, for example: 1) existing policies and procedures for records creation and recordkeeping; 2) existing schedules and inventories, centralized controls, or RM systems in use by specific departments, divisions, and subsidiaries; 3) if systems do exist, whether file plans, life-cycle controls, storage, and disposition management are in place; and 4) formulating an inventory of systems and controls and determining the laws and regulations that apply to records created and/or contained within them.

The problem statement developed in the define phase will be refined as the project progresses and more information is collected in subsequent phases.

### Measure

During the measure phase, quantitative and qualitative data is gathered to gain a clear view of the current situation. This serves as a baseline to evaluate potential solutions and typically involves interviews with process owners, mapping of key business processes, and gathering data relating to current performance (time, volume, frequency, impact, etc.). For example, if the organization has voiced concern over electronic records under management, this would be an area of acute focus.

Once the information is collected, the next step is to prepare the organization for change. To ensure success, it is important to require participation throughout the organizational hierarchy from administrative to senior executive levels. Activities at this point include determining and delegating individual responsibilities required by applicable compliance requirements, providing detailed explanations of the project plan, and reviewing training requirements.

### Analyze

In the analyze phase, information gathered in the measure phase is studied to pinpoint bottlenecks and identify opportunities where non-value-added tasks can be removed. A business case is developed to determine if potential

## When Lean Flow Met Six Sigma

Ford likened his Lean Flow process, which has also been called Lean Manufacturing, Continuous Flow, and more recently, Just-In-Time Manufacturing, to a river that flowed continuously: Anything that disrupted the flow was a waste that must be eliminated. Using this methodology, Ford Motor Company could start and finish a Model T in just over 30 hours.

In the late 1940s, Toyota Motor Corporation based its production system on the Lean Flow process. Toyota expanded on Ford's concepts, which were methodical and streamlined, but highly inflexible. Toyota's Lean Flow linked the production system with real-time customer demands and material replenishment requirements, so that only the exact quantity of products needed were produced at any specific point in time. This is similar to the Just-In-Time Manufacturing paradigm that changed the traditional "supply-and-demand" model to a more efficient, responsive "demand-then-supply" model.

Toyota management recognized that to be effective, Lean Flow must be inwardly focused on eliminating waste (reducing inventory, costs, etc.) but outwardly focused on meeting customer demand (i.e., providing the car in the desired color, with the desired options, etc.). Flexibility became the cornerstone for Toyota's Lean Flow process.

Less about speed and more about defects, engineers at Motorola discovered the mathematically derived point where the cost of eliminating a defect is greater than the cost of living with (and repairing) the defect. That is, there is an acceptable point of imperfection, and any quality improvement made beyond that point is more expensive than the expected cost savings of fixing the imperfection.

Bill Smith, one of Motorola's engineers, explained the acceptable level of imperfection for Motorola was Six Sigma, which equates to 3.4 defects per million units. This discovery forced Motorola to assess quality levels by measuring defects in millions rather than thousands, which had been the traditional method.

This change enabled a vast improvement in the ability to assess and improve quality levels. Six Sigma enabled Motorola to perform defect-free more than 90 percent of the time, resulting in a savings of \$16 billion to date.

process improvements are cost-effective and worthwhile. The business case takes into account not only hard costs but also intangible benefits such as user productivity and satisfaction.

Moving forward, technological recommendations are provided including

immediate actions that focus on vital, compliance-, regulatory-, or litigation-related records. At this point, engaging IT resources responsible for infrastructure, messaging, disaster recovery, business continuity, and storage is required. Further, securing senior management

sponsorship of the program and instituting stewardship over training and learning are critical checkpoints at this stage.

associated with current enterprise RM practices. Overlaps and “territorial” line of business interest will arise at this step,

ment, enhancement, expansion, and auditing should be initiated, including quantifying value in the form of reduced risks, increased discovery and production, and cost avoidance of fines and penalties. Audits should be performed against all groups participating in enterprise RM, and evaluations should address redundancies, inefficiencies, and complementary technologies.

The next step is to place the necessary controls to ensure that improvements are maintained for the long term. This involves monitoring and publicizing the key process metrics to promote continuous improvement and to guard against regression. In many cases, it is wise to revisit the implementation after three to six months to review key metrics and evaluate if the initial progress has been sustained. A common practice is to put key metrics, including hard cost savings and achievement of pre-defined metrics into service-level agreements. These are kept in full view to provide continuous feedback to the organization and enable decision-makers to assess the level of success as the project moves forward.

Managing records has become an enterprise endeavor, with diverse teams formed to work on structures and solutions. Coming from backgrounds as varied as legal, finance, human resources, information technology, auditing, and records management, team members need a standard approach or model that can be understood and applied in a systematic way. Lean Six Sigma may provide just such an approach. ■

**Audits should be performed against all groups participating in enterprise RM, and evaluations should address redundancies, inefficiencies, and complementary technologies.**

### Improve

During the improve phase, the recommended solutions are implemented. A project plan is developed and put into action, beginning with a pilot program and culminating in full-scale, enterprise-wide deployment. Where appropriate, new technology is implemented, workflows are streamlined, paper-based processes are eliminated and consulting services are initiated. Key factors of success during this phase include involvement of the IT organization, acceptance by end users, and enterprise-wide change without any degradation of current productivity levels.

Once requirements, awareness, and sponsorship are secured, vendor selection can begin. As the majority of enterprise records content is in both physical and electronic formats, the selection of a single-vendor, integrated solution is highly recommended, though specialized “point” solutions may be required to address specific requirements not offered by the integrated solution. Involvement of the IT organization (e.g., those involved with server, network, storage, security, and e-mail infrastructure components) is a de facto requirement at this stage.

An initial pilot implementation, based on work done in previous phases, should focus on business areas that are most exposed, subject to immediate compliance mandates, or seeking to minimize risks

since much corporate content is created, accessed, managed, and reused across many parts of the organization. The organization should expect to spend time working with end users on system ergonomics (e.g., interfaces, procedures) and the creation of indices and taxonomies established for enterprise-wide usage.

### Control

At the point of enterprise-wide implementation, collaboration with the organization’s multiple lines of business and affected subsidiaries is necessary, and the organization should address other existing enterprise content applications such as imaging, document management, enterprise resource planning, etc. Further, any new content-related initiatives must include input from enterprise records management.

Once enterprise RM processes are developed and implemented, their refine-

*Charles Brett is managing principal for Xerox Global Services where he helps clients find more efficient ways to secure, access and control their most critical information. He was formerly vice president for technology research services at META Group, a research and advisory firm providing guidance, strategy, and decision support for information technology. He may be contacted at [charles.brett@xerox.com](mailto:charles.brett@xerox.com).*

*Patrick Queen, CRM, CDIA, is a principal for Enterprise Records Management at Xerox Global Services with 25 years of experience. Prior to joining Xerox, Queen developed and deployed records management programs and document management systems for several Fortune 500 companies. He may be contacted at [patrick.queen@xerox.com](mailto:patrick.queen@xerox.com).*