IRON MOUNTAIN®

# DERIVING COMPETITIVE ADVANTAGE THROUGH KNOWLEDGE MANAGEMENT, INFORMATION GOVERNANCE & DATA ANALYTICS

2016 LAW FIRM INFORMATION GOVERNANCE SYMPOSIUM

# CONTENTS

# EXECUTIVE SUMMARY

This paper is written for strategic leaders including chief operating officers, chief information officers, chief information governance officers, chief marketing officers and anyone else looking to define a roadmap for developing a robust Knowledge Management (KM) and Information Governance (IG) program over the next three to five years. It explores practical use cases for leveraging data analytics and cites relevant case studies to help promote KM, IG and data analytics to the executive management team/ board of directors within a law firm.

Effective knowledge management, the sharing of organizational knowledge, is dependent on sound information governance practices. Data analytics allows a firm to understand its intellectual assets and find the hidden gems that may be buried deep within the organization's knowledge collections. The goal is to ensure that content is searchable and available, yet properly managed.

A well-designed knowledge management strategy built on demonstrated information governance principles provides a foundation for intelligent decision making and the optimization of firm resources. Information governance initiatives reap the benefits of the collaborative and integrated aspects of data analytics and knowledge management by engaging participation and adoption of everyone throughout the firm.

Appendix A contains links to case studies and additional reading materials.

## SYMPOSIUM STEERING COMMITTEE

**BRIANNE AUL, CRM**
Firmwide Records
Senior Manager
Reed Smith LLP

**BRIAN DONATO**
CIO
Vorys, Sater, Seymour
and Pease LLP

**LEIGH ISAACS, IGP, CIP**
Director, Records &
Information Governance
White & Case LLP

**RUDY MOLIERE**
Director of Information
Governance
Morgan, Lewis & Bockius LLP

**CHARLENE WACENSKE**
Senior Manager Records and
Information Governance
Morrison & Foerster LLP

## DERIVING COMPETITIVE ADVANTAGE THROUGH KNOWLEDGE MANAGEMENT, INFORMATION GOVERNANCE & DATA ANALYTICS TASK FORCE

**KAREN ALLEN**
Manager, Information
Governance Technologies
Morgan, Lewis & Bockius LLP

**GALINA DATSKOVSKY ***
CEO
Vaporstream

**MAUREEN A. DURACK, CPA**
Director of Operations
VedderPrice

**CHAD ERGUN**
Director, Global Practice Services
and Business Intelligence
Gibson, Dunn & Crutcher LLP

**STACEY FIORILLO**
Director of Records Management
and Information Governance
eSentio Technologies

**PATRICIA FITZPATRICK**
Director of Information
Governance & Compliance
Katten Muchin Rosenman LLP

**LEIGH ISAACS, IGP, CIP**
Director, Records &
Information Governance
White & Case LLP

**DEBORAH LOGAN**
Vice President & Gartner Fellow
Gartner

**RUDY MOLIERE**
Director of Information
Governance
Morgan, Lewis & Bockius LLP

**ALEXANDRA PROPHETE**
KM Operations Manager
Cleary Gottlieb Steen
& Hamilton LLP

**JOHAN WIDJAJA**
Assistant Director Records
& Information
Morgan, Lewis & Bockius LLP

****Task Force Leader***

## IRON MOUNTAIN WOULD LIKE TO THANK THE FOLLOWING INDIVIDUALS FOR PARTICIPATING IN THE PEER REVIEW SESSIONS OF THE 2016 SYMPOSIUM EVENT AND FOR SHARING THEIR PERSPECTIVES AND EXPERTISE DURING THE CREATION OF THIS TASK FORCE REPORT.

**ANGELA AKPAPUNAM, IGP**
Director, Information Governance and Records
WilmerHale

**KAREN ALLEN**
Manager, IG Technology
Morgan, Lewis & Bockius LLP

**DERICK ARTHUR**
Firmwide IG Operations Manager
Cooley LLP

**BRIANNE AUL**
Firmwide Records Senior Manager
Reed Smith LLP

**MAUREEN BABCOCK**
IT Business Operations Manager
Snell & Wilmer LLP

**BRYN BOWEN**
Director of Information Services
Schulte Roth & Zabel LLP

**SCOTT CHRISTENSEN**
Senior Associate
Olenick & Associates

**TERRENCE COAN**
Senior Director
HBR Consulting

**GALINA DATSKOVSKY**
CEO
Vaporstream, Inc.

**BRIAN DONATO**
CIO
Vorys, Sater Seymour and Pease LLP

**BETH FAIRCLOTH**
Director of Risk Management
Seyfarth Shaw LLP

**STACEY FIORILLO**
Managing Director
Information Governance Consulting Group

**PATRICIA FITZPATRICK**
Director of Information Governance & Compliance
Katten Muchin Rosenman LLP

**LEIGH ISAACS**
Director of Records and Information Governance
White & Case LLP

**NORMA KNUDSON**
Director of Compliance Support & Space Planning
Faegre Baker Daniels LLP

**SAMANTHA LOFTON**
Chief Risk and Information Governance Officer
Ice Miller LLP

**FARON LYONS**
Director of Enterprise Sales
Zia Consulting

**LISA MARKEY**
Director, Information Security
Shearman and Sterling LLP

**RUDY MOLIERE**
Director of Information Governance
Morgan, Lewis & Bockius LLP

**RANDY OPPENBORN**
Director, Information Governance
Foley Lardner LLP

**ALEXANDRA PROPHETE**
KM Operations Manager
Cleary Gottlieb Steen & Hamilton LLP

**DEBORAH ROBBINS**
Records and Conflicts Coordinator
Jones Walker, LLP

**SUNNY SANGHANI**
Associate Director
Robert Half Legal, eDiscovery, Managed Review and Consulting Services

**JILL STERBAKOV**
Manager of Information Governance Compliance
Morgan, Lewis & Bockius LLP

**SUE TROMBLEY**
Managing Director, Thought Leadership
Iron Mountain

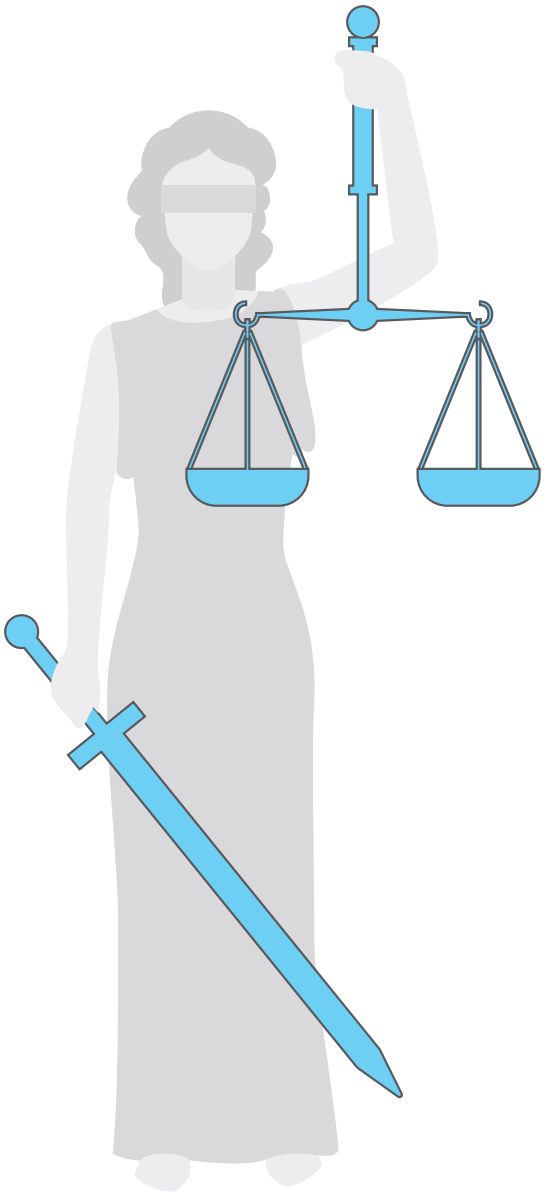
**CHARLENE WACENSKE**
Senior Manager Records and Information Governance
Morrison & Foerster LLP

**ROBERT WEAVER**
Director of Information Security
Blank Rome LLP

**JOHAN WIDJAJA**
Assistant Director Records and Information
Morgan, Lewis & Bockius LLP

**JOEL WUESTHOFF**
Senior Director
Robert Half Legal Consulting

# INTRODUCTION



Lady Justice is the iconic symbol of law and legal systems throughout the world. Her image is displayed at almost every courthouse on all seven continents. Her scales of justice are most commonly known to represent fairness in evaluating the claims of each side. Her sword represents enforcement measures and her readiness to gain respect for the decisions that she makes. The blindfold represents objectivity and her impartial decisions.[1]

Each of Lady Justice's classic symbols can be extended further and directly applied to the principles of IG and KM within a law firm. Any administrator working in the legal industry inevitably encounters situations where he or she has to "balance" the needs of the legal practitioner to preserve prior work product for future re-use against client expectations to properly secure, protect and manage their information. The administrator is expected to make informed and objective decisions surrounding access controls, data retention and disposition. Policies, procedures and technology including data analytics are used to enforce the decisions that are made. This paper provides a framework to help firms achieve such a balance within their own organization.

There are tremendous benefits to be reaped by taking a strategic approach to leveraging information assets by balancing information governance principles with knowledge management fundamentals. Building upon that, knowledge management and data analytics are enablers for broader initiatives in correlating disparate data.

[1] The Lady Justice Story, Fountain at the Bexar County Courthouse, San Antonio, Texas, Gilbert E. Barrera, Sculptor/Author

Information governance allows firms to understand what data they have and where it resides. Analytics provides the ability to glean insights into the value and meaning of information that can aid in making key business decisions, building efficient processes and implementing fluent workflows.

In the article "Knowledge Management is Dependent on Effective Information Governance," Bill Tolson states, "The creation and dissemination of knowledge within an organization is impossible without the ability to create, store and share useful information while disposing of useless information."[2] A strategy for using big data and analytics can help us finally break the historic tug-of-war between the "save-everything" culture and those promoting defensible disposition and compliance within a law firm.

Effective IG places three characteristics on information assets: value, risk and cost. When choosing a technology, it is important to balance the priority of each characteristic with the intended goals and outcomes that a firm wants to achieve. Throughout this paper, reference is made to various specific technologies merely as examples and not as an endorsement for any particular product. The intent is to provide awareness of the type of technology available to perform targeted research, conduct independent analysis and select the product best suited for a firm's business needs.

Like any other initiative that requires adoption, participation and change across the organization, the way in which new IG concepts are introduced can be the differentiator between success and failure. Proper planning and preparation must take place before any action is taken. Starting small and identifying areas in need of change helps demonstrate tangible, measurable results that create a clear illustration of the bigger picture. Regardless of firm size, starting with small initiatives is a sound rationale that not only promotes success for the initiative itself, but aids in building a springboard to launch larger initiatives.



[2]Knowledge Management is Dependent on Effective Information Governance, September 24, 2012, Bill Tolson.

# HOW WE GOT HERE: A BRIEF RECAP

The legal profession is in the midst of a paradigm shift. It began in 2006 when the United States Federal Rules of Civil Procedure (FRCP) changed to include electronic records in discovery and continued through the Great Recession of 2008 when an unprecedented number of law firm employees lost their jobs. Law school enrollment has been declining since 2010 and many predict that the number of lawyers hired by law firms will never fully recover to pre-recession levels. Within corporate legal departments, employment has grown, but not enough to compensate for the job losses in the law firm sector. Meanwhile, corporate legal departments have been focused on cutting costs associated with outside counsel and other legal services as never before.

Another more pervasive driver of change has been the adoption of technology. The so-called information age has had a profound effect on both the work that lawyers do and the way that they do it. Information and knowledge are both the drivers and the object of the legal enterprise. The adoption of technology-enabled business processes has led to a vast increase in the amount of information and data that people consume, along with an acceleration of the business processes that technology now supports. We are in the age of Big Data, which is characterized by ever increasing volumes of data in a larger variety and an acceleration in the velocity at which data is created, shared and used.

The legal profession, along with the service and software providers that support it, has had to respond to these changes. Some level of technical expertise and understanding is now a non-negotiable area of proficiency for most lawyers. In fact, in 2012 the American Bar Association changed its definition of competency in Model Rule 1.1 Comment [8] Maintaining Competence. It now states, to maintain the requisite knowledge and skills, a lawyer should keep abreast of changes in the law and its practice, including the benefits and risks associated with relevant technology, engage in continuing study and education and comply with all continuing legal education requirements to which the lawyer is subject.[3] Most states have adopted some form of this Model Rule change.

The daily business of corporations and governments generates vast amounts of data which must be understood, made secure and controlled. The practice of law itself is now dependent on electronic sources of knowledge and expertise, along with software that helps practitioners organize, protect and make decisions about their work. The legal domain has long been the focus of automated decision making: artificial intelligence (AI) and law has been an area of academic focus for over 25 years. The new generation of AI, so-called smart machines such as IBM's Watson, are being trained on the automation of legal decision making and expertise. At a practical level, the sheer volume of information that must be considered and analyzed in even moderately complex legal proceedings requires some level of machine analysis, if only to try and focus the human legal experts on the 'right' documents when engaged in the finding of facts.

In order to cope with these changes effectively, law firms, as well as corporate and government legal departments, must re-focus on how data, information and knowledge are created, captured, organized, accessed, used, shared, made secure and stored. It is time to re-visit the two foundational legal information disciplines of IG and KM in order to move away from the traditional document-based practices which rely on a great deal of manual intervention and into the era of big data, smart machines and cognitive analytics.

[3] Model Rules of Professional Conduct

## DEFINING INFORMATION GOVERNANCE AND KNOWLEDGE MANAGEMENT

In order to develop a common understanding of terms used in this paper, industry standard definitions developed by Gartner, a leading technology research and advisory firm, have been adopted.

Gartner defines "information governance" as the specification of decision rights, and the use of an accountability framework to encourage desirable behavior in the valuation, creation, storage, use, archiving and deletion of information. It includes the processes, roles, standards and metrics that ensure effective and efficient use of information, so that an organization can achieve its business goals.

Gartner defines "knowledge management" as a practiced view of organizational knowledge in the context of regular activity. Knowledge management not only formalizes the enterprise's intellectual assets. it also enables effective action through their use. Knowledge management as a practice promotes collaborative and integrative approaches to the creation, capture and organization of enterprise intelligence – including what is known but not necessarily documented.

## THE RELATIONSHIP BETWEEN INFORMATION GOVERNANCE AND KNOWLEDGE MANAGEMENT

Information governance is the unifying or umbrella concept. All information, no matter what its category or form, must be governed. In other words, it must be valued, created, stored, used, shared, protected, archived and deleted or in rare cases, preserved in perpetuity.

A word of caution here: it does not matter how a firm classifies data, records, information or knowledge. There are no hard and fast rules for making these distinctions. The idea of 'tacit and explicit' is a useful one, with tacit knowledge being that which resides in the heads of people and explicit being that which is captured externally in some form. Not all tacit knowledge can or should be captured explicitly, but tacit knowledge can always be shared between people, a principle which is the foundation of all teaching and learning. It is not worth spending a lot of time making these distinctions. Instead of defining these terms, focus on how important the intellectual property is to the business, how many or few people have access to it in some form and how easy or difficult it is to capture, share and use.

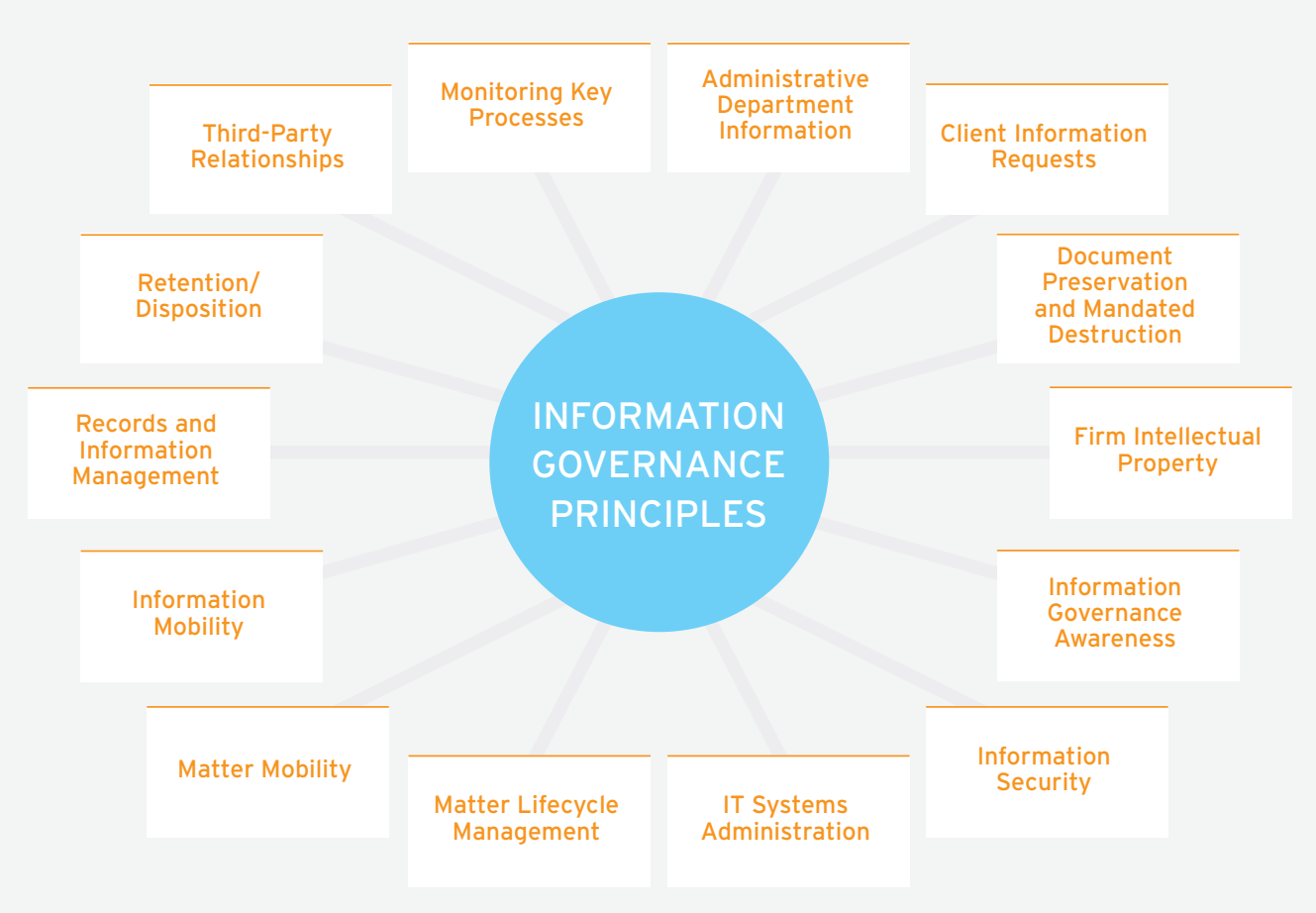
## BUILDING BLOCKS THAT ADVANCE INFORMATION GOVERNANCE AND KNOWLEDGE MANAGEMENT

Both IG and KM should be regarded as programs, i.e., an ongoing set of tasks, carried out by accountable and responsible individuals who are measured on the business outcome of the tasks. It is necessary to distinguish programs from projects. The former are on-going and permanent, the latter have a beginning, middle and end.

The following "MOVES" are required to advance IG or KM :

- Metrics
  how progress or success is measured
- Organization and Roles
  who carries out the tasks
- Vision
  why the program exists and the desired outcome
- Enabling Infrastructure
  technology that supports the program
- Strategy
  what needs to happen to realize the vision

## THE FIGURE BELOW ILLUSTRATES THE REQUIREMENTS OF A SUCCESSFUL IG PROGRAM WHICH IN TURN LEADS TO GOOD KM.



# OPERATIONAL GOVERNANCE

## POLICIES

A critical success factor in IG initiatives is specifying policy for, at a minimum, information confidentiality, integrity and availability. This list is not exhaustive, nor is it in any order of priority. The types of policies a firm adopts and in which order is entirely dependent on its vision for a governance program. At a high level, a firm must examine the need for each of the following types of policies:

- **Confidentiality**
  including data privacy (i.e., HIPAA and PII), sensitivity, security and access control
- **Integrity**
  data or information quality, including authenticity, completeness, accuracy, timeliness, veracity and elimination of redundancy
- **Availability**
  just in time access, lifecycle management, backup for disaster recovery retention and eventual disposition

## ROLES AND RESPONSIBILITIES

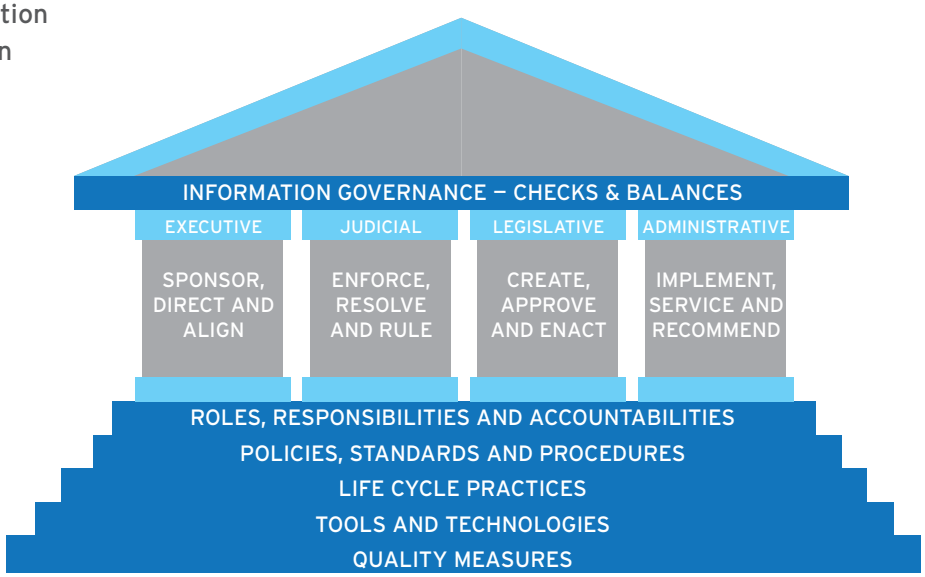
Roles and responsibilities are necessary for the success of both IG and KM. The following structure, modelled after branches of the U.S. federal government, is one that can be adapted to most IG and KM programs to ensure accountability for success:

- **Executive**
  To sponsor, align and direct IG and KM efforts and to decide where effort should be focused and to allocate resources for programs
- **Legislative**
  to create, approve and enact specific IG policies
- **Judicial**
  to interpret, enforce, resolve and rule on policies and especially when conflicts arise as a result of those policies
- **Administrative**
  to implement, service and make recommendations about policies

For example, the Executive branch can be equated to the office of the managing partner or board of directors or executive committee. The heads of IG and the chief information officer or the IG committee can be considered as the Legislative branch, while the Administrative branch is their respective staff. The Judicial branch in this scenario is the office of the general counsel.

Ensuring that each branch is fully engaged helps secure the successful implementation and adoption of good IG and KM practices in a firm.

> GOVERNANCE IS NOT ABOUT DOING THINGS RIGHT, IT IS ABOUT DOING THE RIGHT THINGS



## INFORMATION GOVERNANCE PRINCIPLES

A solid IG program is a necessary foundation for KM. When designing a program, it is helpful to consider the ARMA Information Governance Principles.[4] They are:

- **Accountability**
  assignment of an executive sponsor for the program
- **Protection**
  security and privacy are mandatory considerations for all information
- **Availability**
  information must be available to those who need it as quickly as possible
- **Compliance**
  in providing and storing information compliance with internal policies, client expectations and applicable regulations must be considered
- **Transparency**
  information must be kept in a transparent fashion for those who need to know, and the program itself needs to be transparent to those who need to know as well.
- **Integrity**
  information must be protected to ensure integrity and preserve the chain of custody. authenticity of information is critical
- **Retention**
  information must be retained for an appropriate period of time as required by law and in order to support the needs of the business
- **Disposition**
  information must be disposed of appropriately, in accordance with schedules and Firm policy. Disposition often implies destruction but may also require the return of information to a client.

In the LFIG's inaugural paper, A Proposed Law Firm Information Governance Framework, the task force defined a set of similar principles and aligned them specifically to the legal profession.[5]

## IG, KM AND COMPETITIVE DIFFERENTIATION

Good IG drives good KM. Done in tandem, each is easier and more effective. In the legal sector, good IG is fast becoming table stakes. Indeed, many firms have added IG as an official practice area, offering advice to their corporate clients, who have become increasingly concerned with their own governance, risk and compliance practices. Credibility in this growing practice area is predicated upon sound internal practices.

What a firm does with information very much depends on how valuable it is, how it is used, how much time goes into its creation and (like it or not) the system in which it is stored (or not, if it is tacit).

[4] ARMA Information Governance Principles
[5] Law Firm Information Governance Webcast Series

The internal and external drivers for a sound KM program in the legal sector include:

- The need to capture legal expertise that is 'walking out the door' as the baby boom generation retires and is not necessarily replaced due to the very different economic conditions of the early 21st century
- The reuse of valuable procedural knowledge for new hires or people in new roles including those that are replacing the prior generation of lawyers
- A desire to stop reinventing the wheel and to reuse documents and parts of documents that are standardized and used across practices
- Using best practices to improve consistency and quality of legal work product
- Making better decisions that take effective action as quickly as possible
- Allowing firms to develop more competitive pricing models and achieve higher profits with efficient service delivery
- Improved client satisfaction and retention.

At the beginning of this century, conventional wisdom in the legal profession was that a high degree of automation in the practice of law was inconceivable. The last 15 years have begun to see that belief undermined by trends such as technology assisted review, predictive coding, content analytics and meta-tagging, automatic taxonomy creation and other tasks formerly done exclusively by trained subject matter experts. In fact, that belief has been turned on its head: legal discovery now routinely involves corpuses of material so large that it would be impossible to analyze the facts of the case without the assistance of sophisticated legal discovery software. The volume, variety and velocity of information has increased in all areas of legal practice and KM in conjunction with data analytics is now being used in non-traditional areas such as analyzing the profitability of practice areas, individual clients and even fee earners. Law firms are using social network analysis and other analytic techniques to understand relationships between individuals and projects in order to try and predict the likelihood of a project's success or failure. Knowledge management has gone from a limited, nice to have status to something that is essential for success in the current competitive legal marketplace.

Knowledge management can no longer be successful without good information governance practices. In order to utilize and analyze knowledge in the best possible way, information has to be accurate, authentic, secure and available just in time to those who need it when they need it. Now, more than ever, IG and KM are a perfect pair.

# INTERSECTION OF KM, IG AND BIG DATA

## BIG DATA DEFINED

Gartner's definition of big data is high-volume, high-velocity and high-variety information assets that demand cost-effective, innovative forms of information processing for enhanced insight and decision making.[6]

With big data analytics, data analysts, scientists and others can process and interpret huge volumes of data that conventional analytics and business intelligence solutions cannot handle.

## CURRENT TRENDS/ AREAS OF FOCUS FOR BIG DATA ANALYTICS

As the value of these insights from data analytics has become more apparent, organizations in a wide range of industries have struggled with how to harness big data's power and leverage its benefits for everything from improving internal business processes to acquiring new clients and retaining current clients. Amidst all of these various endeavors, a few trends have emerged in the way that organizations, including law firms, are beginning to look at and utilize data analytics.

## CUSTOMER EXPERIENCE

Organizations with a strong emphasis on both acquiring new business and creating long lasting relationships with their customers have a genuine and constant need to ensure that every aspect of the customer experience is as impactful as possible:

"The biggest focus that we have at TFS [Toyota Financial Services] immediately is to leverage data analytics for the business, around the customer experience: making the customer experience the most positive one so we can attract them as well as retain them in the family with us for as long as possible."[7]

The idea of changing or augmenting the customer experience seems obvious enough and certainly there are countless ways to do so from industry to industry. The application of this as it pertains to law, however, may be a different story depending on the definition of "customer." While the practice of law is a client-focused effort, knowledge management has traditionally held more of an internal focus with the attorneys themselves as the consumers, or customers, of the product: knowledge. Finding new and effective ways to leverage analytics to shift the focus from internal use to external opportunities to enhance client services and discover new revenue streams and clients is one of the greater hurdles to overcome in identifying the most impactful intersection of big data and knowledge management.

## MONETIZATION

With any new advancement in technology that gains momentum and notoriety at the speed and scale with which data analytics has done, there is a natural desire to understand how leveraging technology impacts profitability.

> THE POTENTIAL OF DATA AS AN ASSET IS SO GREAT THAT SOME COMPANIES ARE REBUILDING THEIR STRATEGIES AROUND THIS ASSET.[8]

In the midst of trying to grasp and even master the processes for collecting, storing and accessing their big data, organizations are now faced with a new wrinkle: big data may actually be a thing of the past. That does not imply that organizations will not be dealing with tremendous data sets, but rather that the focus has shifted away from the data itself to its actual use via algorithms. In fact, Gartner has stated that 2016 will see the emergence of the Algorithm Economy, where the focus is on "how you do

[6] Big Data and What it Means to Your Firm, Iron Mountain Law Firm Information Governance Symposium Task Force (July 2013)
[7] Big Data & Analytics Heroes: Farouk Ferchichi, Chief Data Officer & Head of Business Intelligence at Toyota Financial Services
[8] Analytics Trends 2015: A below-the-surface look, Deloitte

something with data, not just what you do with it."[9]

To date, theories about how to monetize big data have been limited to the data itself, but industry trends indicate that the true value lies in the novelty and complexity of the algorithms used, as well as their ability to drive or even define actions and business decisions. Focusing on KM in law firms, algorithms developed around classification, ranking and even natural language modeling are likely the most practical, but not necessarily transformative in their impact. For significant impact, the organization should look to predictive and cognitive analytics and semantic technologies as a means to develop a powerful, broader solution.

> SEMANTIC TECHNOLOGIES, ENCODE MEANING INTO CONTENT AND DATA TO ENABLE A COMPUTER SYSTEM TO PROCESS HUMAN-LIKE UNDERSTANDING AND REASONING.[10]

This concept is explored further in the section below.

## PREDICTIVE & COGNITIVE ANALYTICS

In most organizations, data can reside in a plethora of locations and in a variety of formats. At first glance it may appear that the sheer scale and "hyper-distributed" nature of the data is the primary hurdle to overcome as there is an increased desire to address business needs and problems using the information locked within these various silos. Rather than aiming to reduce the number of silos or eliminate them all together, current trends instead suggest focusing energy on bringing this data together in meaningful ways that allow for enhanced and even real time decision making. Predictive and cognitive analytics, as well as semantic technologies, are key to this undertaking.

"Cognitive analytics is an extension of cognitive computing, which is made up of three components: machine learning, natural language processing and an advanced analytics infrastructure. Cognitive analytics is the application of these technologies to enhance human decisions."[11]

The extent to which an organization's big data provides benefits from a monetization or decision making perspective is dependent on how they are able to wield that data to give them critical insights that they would normally be unable to derive. Cognitive analytics have the power to unveil relationships and correlations that can provide a competitive edge and inform strategy.

Predictive analytics takes this one step further. Once trends are identified or insights revealed, predictive analytics can actually provide the ability to forecast potential outcomes.

"While traditional forms of business intelligence available today can provide a high degree of predictability, big data has volume and variety that provides a tapestry of data points never before explored."[12]

With access to so much more information, the correlations, insights and trends that can be identified increase exponentially, particularly when the work is being done via highly sophisticated algorithms. Interestingly enough, the utility of this information does not stop with the use of predictive analytics. Cognitive and predictive analytics coupled with semantic technologies make for an incredibly powerful combination.

For example, semantic technologies can intuitively "tag" data with certain attributes so they can later be related to other items from different sources with the same tag. The ability for a technology to proactively identify these categorizations and deduce relationships and identify trends without assistance, demonstrates how, with the use of the right algorithms, big data can be transformative in how an organization does business or views its vast well of information.

[9] Big Data Fades to the Algorithm Economy, Peter Sondergaard Gartner, Inc. (August 2015)
[10] Semantic technology: is it the next big thing or just another buzzword?, Business Cloud News (September 2015)
[11] Analytics Trends 2015: A below-the-surface look, Deloitte
[12] Trends in Data Management: Unlock the True Value Proposition of Big Data, Oracle PROFIT (January 2015)

## SECURITY

While trends such as customer experience, monetization, and predictive and cognitive analytics are obvious, the expected outcomes from the flurry of activity in this space over the past several years has elevated data security to the level of a "super trend" based on some very large, very public and very embarrassing data breaches in recent years.

"With the volumes of data being captured and managed by organizations today, analytics is the first and last line of defense for data security. Getting it right requires the convergence of innovation, analytics, digital connectivity and technology – all integrated into a more seamless approach with fewer holes."[13]

In order to address a "seamless approach" it is valuable to look at the ways in which security is currently implemented in various organizations and what needs to change in order to more effectively protect the data. Current advancements in automated intelligence and information sharing allow for the creation of security systems and solutions that are adaptable.

"Based on contextual awareness, situational awareness... [security systems] continuously inform each other of new detected threats and adapt their behavior in real time."[14]

The notion that security systems could communicate and potentially warn one another about potential threats and subsequently take action to protect against the impending threat, all without manual intervention, is one that re-establishes a level of confidence in the ability of organization to protect data. Considering that law firms have been singled out as particularly vulnerable to malicious attacks, technology such as this seems like a natural progression toward assuring clients that firms have taken all possible precautions to protect their data.

Understanding the trends in the big data analytics landscape across industries is merely a starting point. The ability to adapt each of these trends and leverage industry approaches in a law firm setting, particularly in the knowledge management space, presents a unique set of challenges and opportunities.

## APPLICATION OF DATA ANALYTICS AT LAW FIRMS

The practical application of various analytics strategies in a law firm can take one of two forms: reactive or proactive.

Reactive: in this category, business intelligence (BI) provides standard business and ad hoc reports, including alerts and notifications, based on analytics that look at the static past, which has its purpose in a limited number of situations.

Law firms have traditionally operated from a reactive position when it comes to technology and analytics, maintaining a comfortable distance from the position taken by other industries in the effort to mitigate risk. Changes in the legal landscape are beginning to drive firms out of the comfort zone and into the realm of the proactive.

Proactive: by using data analytics a firm can extract only relevant information from its massive repositories and analyze it to transform business decisions. Becoming proactive with data analytics is not a one-time endeavor; it is more of a culture change – a new way of gaining ground by freeing the analysts and decision makers to meet the future with sound knowledge and insight.

According to Yuan, Yoon and Helendar, knowledge areas are classified into four types, collectively referred to as M-H-T-P: market knowledge, human knowledge technology knowledge, and procedural knowledge. Based on these four knowledge areas, the table below depicts the mapping with elements of big data in the product development process.[15]

[15] Qiu Yuan Fu, Yoon Ping Chui, Martin G. Helander, (2006) "Knowledge identification and management in product design", Journal of Knowledge Management, Vol. 10 Iss: 6, pp.50 - 63

[13] Analytics Trends 2015: A below-the-surface look, Deloitte

[14] Big Data: Cyber Security's Silver Bullet?, Forbes (November 2014)

| KNOWLEDGE TYPE | VOLUME | VELOCITY | VARIETY | VALUE |
|---|---|---|---|---|
| Market Knowledge | • Customer Data<br>• Competitor Data | • Direct Interactions<br>• Social Media<br>• Surveys | • Market Analysis<br>• Demographic Data<br>• Benchmarking Data<br>• Trends | • High Value<br>• Customer Data<br>• Competitor Data |
| Human Knowledge | • Experience Based<br>• Collaborative | • Real time decision making | • Skill Based<br>• Experience Based<br>• Tacit Knowledge | • Heuristic |
| Technology Knowledge | • Standards<br>• Usage<br>• Materials<br>• Field Data | • Safety<br>• Real Time Data Acquisition | • Cost<br>• Reliability<br>• Packaging<br>• Ergonomics, etc. | • Patents |
| Procedural Knowledge | • Design Kowledge<br>• Analysis<br>• Materials Std.<br>• Verification, Testing and Validation Knowledge | • Design Knowledge<br>• Std. Materials Library | • Design<br>• CAD/CAM/CAE<br>• Analysis<br>• Manufacturing | • CAD/CAM/CAEData<br>• Best Practices<br>• Test and Validation<br>• Service Data<br>• Manufacturing Process Data |

KNOWLEDGE AREAS MAPPED TO ELEMENTS OF BIG DATA

## EXAMPLES

Law firms can utilize big data and KM in several areas: legal research, eDiscovery, competitive intelligence, business and practice development, budgeting and financial planning.

- Learn from past practices – firms can make use of the historic data they possess, often in undigitized form. Scanning legacy paper case documents, notes and records may open up a world of potential data for analysis, giving added depth to the firm's understanding of typical matters.
- Determine the level of client satisfaction - email is probably the largest form of unstructured data in a firm. Data analytics of email correspondence can be used to extrapolate client reactions. According to Aderant, data analytics could identify emotional responses to client communications, identifying "words or phrases" that negatively impact "clients' acceptance of bills."
- Speedup eDiscovery - many firms tout the use of data analytics for improving eDiscovery. Computer assisted discovery is already the norm. Adding data analytics tools could make the process even more efficient by increasing the accuracy of predicting responsive documents and other means.
- Enhance Legal Research - legal research and knowledge management tasks are ideal candidates for data analytics.

The true value of analytics tools can be measured by introducing metrics to capture reactive and proactive legal research. Research fed by big data, internal KM repositories and third party content can easily provide a proactive platform to address fee-earners' needs. A good example is a product called Ross[16] which is being built by an independent third party on the IBM Watson platform. When lawyers ask Ross a question it sifts through thousands of legal documents, statutes and cases to provide an answer. Ross's responses include legal citations, suggested articles for further reading, and the program even calculates a confidence rating to help



[16] Ross Intelligence

lawyers prepare for cases. Because Ross is a cognitive computing platform, it learns from past interactions, meaning that its responses become more accurate as lawyers continue to use the system.

Law firms can use algorithms that offer predictions on certain cases based on how similar cases fared in the same jurisdiction and give a prediction on how new cases are likely to resolve. The small California law firm, Dummit, Buchholz & Trapp, uses this type of technology, developed by LexisNexis, to determine whether a case is worth taking on or not. Dummit reports that they typically have a result from the analytics within 20 minutes.[17]

Littler Mendelson P.C., one of the world's largest employment and labor law practices representing management, has hired its first national director of data analytics and launched its Littler Data Center. Both developments are part of its strategic initiative to provide clients with "Big Data strategies and analytics resources designed to benchmark and analyze HR and litigation strategies," Littler explained in a press release.[18]



[17] Lexis Advance MedMal Navigator

[18] Littler Hires Its First National Director Data Analytics and Launches Data

# ACCESS RESTRICTIONS TO DATA AND INFORMATION OVERVIEW

It is clear that trends in data analytics can be applied to the data and information that reside within a law firm to provide valuable insights. However, an important issue to consider in designing a tool or process for data analysis is whether data or information is restricted. It is safe to say that law firm culture is currently dominated by risk considerations. A firm's highest priority is the duty to protect its client's interests and meet its ethical obligations to its clients which extends to data.

Data and information may be restricted for a variety of reasons, such as protection client details. This has an effect on the downstream data mining or information sharing for purposes of KM or data analytics initiatives. The threat of a cyber-attack on a firm is very real and constantly looming. As such, it makes sense to secure silos of information only to those who need access to it. In addition to security threats, law firms need to take into consideration additional restrictions on access to certain data and information. It is important to realize what impact these restrictions have on data mining and other alternative uses of that information, which may dictate various possible solutions, such as scrubbing or anonymizing it.

## REGULATORY IMPACT

Law firms must follow industry specific models and regulations pertaining to security and privacy, which could restrict access to certain information. For example, two industries affected by such regulations are healthcare and finance. HIPAA extends to law firms when a client is a health care provider, a health plan or a health care clearinghouse and such client transfers to records which contain protected health information. Under the HIPAA Omnibus Rule, business associates are held liable for any non-compliance and significant fines can be incurred. Within a law firm, this means that both paper and electronic information that contains HIPAA protected documents must be secured and accessed only by those who need it. Additionally, third party vendors, including consultants who help implement and support the systems in which this data resides, may be held to the same standard and required by a law firm to sign a HIPAA Subcontractor Agreement acknowledging their duty to comply. Law firms themselves may also hold business records that contain PHI (Private Health Information) if they administer their own medical insurance program rather than using a third-party administrator. These records contain details about individual health claims and are regulated under HIPAA.

Additional regulations in the financial industry affect all entities where a financial institution's data is stored. New York's department of financial services released a report showing security vulnerabilities in third party vendors used by the banks, including law firms. The financial services department representative stated that "[a] bank's cyber security is often only as good as the cyber security of its vendors. Unfortunately, those third-party firms can provide a backdoor entrance to hackers who are seeking to steal sensitive bank customer data. We will move forward quickly, together with the banks we regulate, to address this urgent matter."[19] Many firms have been under pressure to try to follow the regulatory atmosphere in the financial industry, with the emphasis on restricting access and adopting a closed environment.

Healthcare and financial services are only two examples of such regulated clients. Many other industries have regulations that apply to third party contractors. This must be taken into account when IG and KM strategies are implemented.

## CONFLICTS OF INTEREST

A law firm's ethical rules provide that there should not be any conflicts of interest caused by confidences shared between clients and their attorneys. Moreover, such confidences are imputed across all attorneys within a firm. When a firm makes a lateral hire, it conducts a conflicts of interest check. A potential conflict exists if the lateral hire has represented a client that has conflicting interests with clients of the hiring firm. In such a case, an ethical wall or screen is put in place which prevents sharing of confidential information with the individuals that are "screened off." The ethical screen should extend to all data and information pertaining to the matter in question and could affect any downstream data access, analysis or applications. A well-constructed KM program anticipates this type of situation and defines a method by which users who are screened can still access valuable information without violating ethical considerations.

## CLIENT EXPECTATIONS (OUTSIDE COUNSEL GUIDELINES)

Client expectations in the form of Outside Counsel Guidelines (OCGs) can cover many areas of IG including data security, privacy, confidentiality, records retention and disposal. For more information on the management of OCGs, refer to the LFIG report *Staying in Compliance with Client Conditions*.[20] Requirements and restrictions defined in OCGs influence how a law firm defines and implements its KM strategy in the following ways:

- Financial
  client limitations on reimbursement for legal research



[19] NYDFS Report Shows Need to Tighten Cyber Security at Banks' Third Party Vendors

[20] Emerging Trends Task Force Report

increase a firm's need to practice good KM habits

- **Staffing**
  if a client imposes limitations that only certain individuals can access its matters, and one or more of those individuals working on the matter is unavailable, then their body of knowledge should still be available as a resource to the other individuals working on the matter

- **Privacy and Security**
  client restrictions and regulatory requirements can cause issues with knowledge that is available via the KM program. Clients may impose restrictions on where data is stored. For example, some clients do not allow their data to be stored with any cloud provider or access across specific geographic borders.

- **Business Codes and Statutory Compliance**
  demands for compliance with a client's code of conduct or operating guidelines and local data privacy laws (including international considerations)

- **Conflicts**
  OCGs that prohibit work for a client's competitors can limit what information is available as reusable work product

- **Knowledge of Guidelines**
  since OCGs trump any other agreements with a firm, including engagement letters, firm management and all timekeepers working on a matter must be aware of provisions in the guidelines pertaining to security and privacy of a client's data

- **Retention**
  clients may impose longer or shorter retention periods for their data and demand that specific communication protocols be followed before any disposition occurs.

## FIRM POLICY

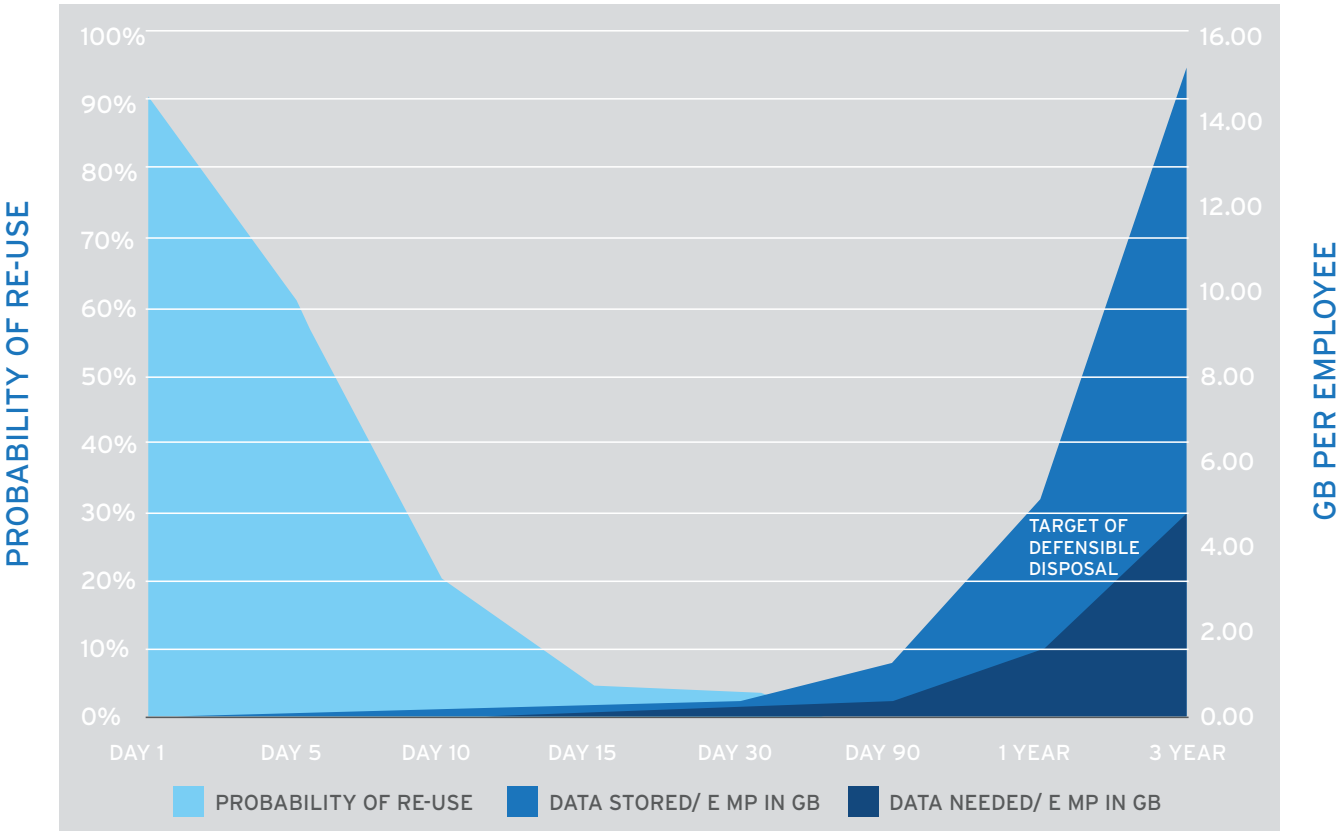
Firm policy can also affect where IG and KM programs intersect. Firms need to evaluate whether their document management system (DMS) is open or closed, and analyze how their users are storing and using data. While a closed DMS is beneficial to the firm for complying with regulatory, ethical and OCG requirements, it does not lend itself well to supporting a robust KM program. Alternatively, an open DMS can provide more content for re-use but hampers the firm's ability to comply with those same requirements. In addition, a closed DMS can lead to users working around the DMS, keeping large amounts of data locally on their workstations, removable media or in cloud accounts, causing headaches for both the firm's IG and KM programs. (For a detailed discussion of open vs. closed DMS systems, please refer to this symposium report.)[21]



[21] Transitioning from an Open Environment to a Closed Environment Task Force Report

Firm policy regarding retention and disposition should also be considered. As shown in the figure below, the probability of re-use, and therefore its value, shrinks rapidly as information ages. Given that the data involved can be anything from a holiday card template to an inspection report of a nuclear power plant, the intersection of good IG and good KM needs to address how different information assets are handled and the level of the firm's risk tolerance. Firms need to determine how they can get to where the valuable data resides, as shown in the green section of the figure. This is difficult when working in a climate or culture where users do not want to get rid of anything because "they might need it someday."

## THE LIFECYCLE OF INFORMATION VALUE




Source: Tolson Communications 2015
According to a 2012 CGOC survey, up to 69% of data (area shaded in medium blue) could be disposed of without affecting litigation, compliance, or the value of business information.

## CULTURE

Firm culture plays a large role in the effectiveness of both IG and KM programs. Firms must consider their programs in the context of overall strategic objectives and individual practice areas. Communications from the CEO and/or managing partner(s) that support IG and KM initiatives build momentum for the program and raise awareness amongst its main proponents: lawyers and staff. In addition, as per the ARMA principles[22] cited earlier in this report, accountability must be assigned to meet the KM and IG initiatives of the firm. Firms that lack a culture of collaboration can face significant challenges in these efforts. An effort needs to be made to shift the focus from the details of the data to the actual knowledge to be shared. The goal should be to make the knowledge widely available for re-use and learning, while balancing the needs of the governance program.



[22] The Principles Executive Summaries

# ANALYTICS FOR MATTER PROFITABILITY, MARKETING & BUSINESS DEVELOPMENT

Law firms can empower themselves to make better decisions about matter profitability with better data. Data helps to reveal revenues and costs allowing better assessment of matter profitability for the purpose of drawing conclusions about efficiency and future matter performance. By gathering data, in a logical and consistent way, firms can determine whether each matter's revenues exceed relevant costs and what the contribution of each matter is to the overall profitability of the firm.

In the end, firms that develop processes to provide better business analysis with less risk are in the best position to leverage data in a way that is not threatening and in the best interest of themselves and their clients. However, this requires that firms focus not only on data inherent in documents and document metadata, but also on data that can be harvested from internal processes and business applications.

Bennett B. Borden, chief data scientist, and co-chair of the Information Governance and eDiscovery Group at DrinkerBiddle recently reinforced this approach. He stated: "Law firms historically have not understood clearly the inputs required for any particular legal project in sufficient detail to help accurately predict the cost of the project to the firm or to the client, for whom this is a point of extreme frustration. It also makes it very difficult to formulate alternative fee arrangements at a competitive price that maintains effective profit margins, as well to manage labor inputs so the most cost effective resource is matched with the appropriate task. Managing the basic inputs to a product (legal or otherwise) is fundamental to effective business management, and law firms aren't very good at this.

Firms can use analytics to gain better insight into the inputs and costs for each legal project, making it easier to put together competitive bids and to manage costs to budget. This can be done through the use and analysis of task codes for each labor input, but it can take two or three years to gather enough data once task codes are implemented. To speed up this process, firms can use text mining and analysis on past bills to categorize tasks and gain insight into how projects were staffed, what the labor costs were, and predict what similar projects will cost in the future."[23]

## TECHNOLOGY CONSIDERATIONS

Over the past 5 - 10 years, firms have invested in business intelligence systems, dashboards and financial reporting systems at the practice or firm level. These products typically use data limited to financial systems to measure profitability during or after the matter is complete; they are not used to project future matter profitability.

Today's expectations are driving the adoption of more flexible pricing models and some firms are making greater efforts to determine profitability at the matter level. In order to budget a matter, it is most helpful to have data to support the predictions that a budget requires. As firms become larger and better leveraged, "guestimates" become less acceptable and the requirement for data becomes imperative.

In response, systems are becoming more sophisticated in their ability to project matter profitability. Newer tools promote their capabilities as budget aids and use data to predict net margin as a profitability measure. They leverage data gathered about similar proposed matters to determine how a new matter should be priced. For effective use in this analysis, data should be classified by area of law, case descriptions or



[23] LFIGS task force telephone conference with Bennett Borden on November 19, 2015; summarized with his permission

categories and other metadata that can capture the business meaning of a task during time entry for a matter.

At the big data level, systems are being developed to allow for analysis of a potential matter against a broad set of anonymized data gathered from many firms, rather than using only data specific to a single firm. By analyzing vast amounts of data categorized by work types (task codes, activity codes, etc.) using algorithms that allow for cost estimates, the activities within a matter can help estimate a matter's budget. These codes can become nearly universal, given broader firm participation, and could work to influence law firms that do not participate in matter profitability analysis to feel compelled to participate.

Vendors and law firms currently pursuing analysis of matter profitability have encountered significant challenges. Firms that have historically measured profitability at the firm level or practice area find it challenging when the measurement moves deeper into the matter level. For some firms, this becomes more personal as the measurement can indicate issues or errors made by partners concerning strategy, timing, staffing and related decisions, particularly if the matter is not profitable. Firms should recognize the cultural issues that they may need to resolve ahead of significant investment in systems and associated consulting support in order to minimize the risk of rejection that can diminish the value of the data and viability of the system.

## DATA MAPPING

Once a firm has decided to measure and understand profitability at the matter level, it can take up to several years to get the right data strategy to allow for reliable predictions when proposing new work or budgeting new matters. Whether conducting profitability analysis at the firm-wide or matter level, well-structured data is mandatory for accurate results. An established IG program supports proper matter life cycle management, including an effort to consistently capture client and matter data organized by areas of law, practice group and other matter type definitions. Systems engaged in the marketing, new business intake, accounting and time/billing, as well as records management, are critical gateways for gathering and structuring meaningful data. Firms must consider not only how viable their current and "go-forward" data is, but also how important historical data is in serving their objectives. It may be necessary to "clean up" legacy data that was gathered for a purpose other than matter profitability in order to achieve the desired outcome. The creation of a data map is the first step in understanding where data resides across a firm along with its custodians and owners who in turn can help identify its relevance, value and potential risk.

Beyond data mapping, people familiar with matter profitability analytics suggest the development of a simple master that maps existing matters and re-defines any relevant historical data, as required. Today this is a very manual process that requires coding guidance, training and staffing. In medium to large firms, this effort can require several years to complete depending upon the corpus of matter data to be included in the analysis.

Some firms use task codes on individual time entries as a method by which to classify the time worked on a matter into meaningful segments that can allow for comparison and evaluation of staffing, budgeting, analyzing profitability or defining alternative fee arrangements for a matter. While helpful, this is a very manual and burdensome effort. As big data algorithms are applied with more frequency, these tasks should become simpler in the future.

With the emergence of big data and related analytics comes the possibility of deriving value from both structured and unstructured data and less reliance on time-consuming and potentially flawed tagging and classification processes. The future of determining matter profitability in an efficient and effective way relies on systems that identify relevant information in all selected data quickly and provide relevant information to solve the problem at hand.

As with most challenging problems, the devil is in the details and analyzing matter profitability is no different. While firms increasingly desire to manage profit margins at the matter level, they must rely on solid IG practices to drive consistency of data to ensure reliable analysis outcomes. The truth behind the numbers is critical, both in motivating firms to undertake matter profitability analysis and to promote good data governance.

# INFORMATION VALUE: BENEFITS OF MODEL DOCUMENTS

According to a recent paper by Iron Mountain, "Information governance is no longer an option for organizations. It is an enabler that clarifies the values and ground rules for the management and use of information. If the values and rules are not clear, it is impossible to advance and enforce best practices that amplify value, reduce risk and engender trust."[24] Definitions of IG, including Gartner's, highlight its objective of maximizing information use and value. KM and model documents fit squarely in this framework; however, the business case in law firms has not been consistently embraced.

The use of model documents has numerous benefits for law firms. They include:

- Efficiency and consistency of client work. Use of model documents reduces the amount of time required to reinvent the wheel and allows more time for substantive legal work
- Standardization and improvement in the quality of client work
- More efficient and effective budgeting, and over time, an increased ability to measure and anticipate costs and related fees for client work, resulting in higher profits
- Different fee structures can be explored as firms consistently re-use their information assets
- Firms can leverage lawyer and legal support staff more effectively
- Firms can reduce risk by using the best quality templates and standardized work product
- Junior attorneys can be more productive by drawing on the vast knowledge base of their peers
- Proper management of model documents allows firms to comply with IG requirements for security, privacy, retention and disposition.

In many instances, law firms have an ad hoc model document identification process typically driven by practice groups or individual lawyers rather than a firm initiative. In the past, when paper was the format with which business was conducted, a set of model documents could

[24] Iron Mountain Thought Leadership "Redefining the Role of Health Information Management in the New World of Information Governance" January 13, 2016.

be maintained by placing a paper copy of a document in a file. Now, due to the volume and complexity of data, properly identifying and managing model documents requires significant planning, time and effort. Therefore, firms should strive to define a process that utilizes technology to help identify model documents and templates that meet defined standards and have a demonstrable pattern of use. Doing so minimizes the human involvement that is required to potentially pour through thousands of documents. That said, there is still a requirement for lawyer involvement to make final decisions about the relevancy of model documents.

The utilization of model documents is complicated by several factors:

- The proliferation of information in recent years creates a wealth of opportunity for model documents, while at the same time making it more difficult to develop a cohesive strategy.
- More data makes it more difficult to find valuable and reusable documents. Firms attempt to define official repositories for client matter files, but there is often inconsistent compliance among lawyers. Some documents may be filed into the DMS (the designated official repository), while other documents may be filed in file shares, locally, in cloud stores or eRooms.
- Pressures to reduce staff and administrative spending directly competes with the ability to focus on KM, let alone develop sophisticated processes for use and maintenance of model documents.
- Client pressures to maintain ownership of documents created for them in the course of representation can complicate a firm's decisions around model documents and the use of exemplars. Clients are also putting more pressure on firms to maintain their files in a "closed" environment, which further complicates the firm-wide availability of exemplar documents.
- Firms struggle to define the business case for the use of templates and model documents, thereby justifying related expenses and staffing. Innovative firms approach their effort by tying the use of templates to lawyer efficiency, which results in lower fees to client, which ultimately results in more business and increased profitability.
- There is an ongoing struggle between consistent records disposition and lawyers' desires to retain files just in case a certain exemplar document or template might be useful in the future.

Clients are also putting more pressure on law firms to dispose of content in a timely manner. In the absence of a good plan and program for managing exemplars and model documents, firms will continue to struggle with over-retention. This is squarely in opposition to the IG goal of consistently executing retention schedules and disposition.

## EFFECTIVE IG SUPPORTS MODEL DOCUMENT MANAGEMENT

Well-defined IG policies and procedures, along with official repositories and defined classification and data storage methodologies, can help ensure that model documents are accessed when required. It is worth restating that an important component of an IG program is proper management of retention and disposition. Good retention processes dictate that model documents are stored separately from the client file so the retention schedule can be properly executed on the client document with impacting the model document. Good disposition processes reduce the risk of using stale model documents and also reduce the risk of relying on outdated exemplar documents. Conversely, a well-defined plan for managing model documents supports IG goals of consistently applying disposition.

As mentioned previously, security and client requirements are critical components of IG programs. Model documents that contain client identifying

information must be redacted and metadata scrubbed so that client confidences are maintained.

## TECHNOLOGY CONSIDERATIONS

Emerging technology can assist firms with the search for and identification of model documents by identification of frequently used clauses and provisions in contracts and other legal documents. This can result in significant time-savings as it limits the amount of time for human intervention to identify and tag model documents.

Once model documents are identified, templates can be built. To meet the IG requirement to remove any reference to clients, redaction tools can be used on individually identified documents flagged for re-use. Examples of these applications include; Adobe Acrobat X Pro, Appligent Redax, IBM InfoSphere Guardium Data Redaction, Intellidact, OpenText Redact-It and Rapid Redact.

Another important technology consideration is having a proper delivery system for lawyers to retrieve model documents accurately, knowing that the integrity of the model document is retained. Depending upon the sensitivity of model documents, and expertise required for a particular legal practice, firms may opt to impose security controls on model documents to prevent unauthorized usage or data leakage. As firms build their model document collections and exemplar documents, technology must be in place to honor the firm and client security requirements.

## DESIGN AND PLANNING CONSIDERATIONS

The first and most important challenge is for a firm to make the commitment to use and maintain model documents based on their business drivers. This requires involvement from leadership to commit staff, time and money to launch the initiative. A good KM program capitalizes on information value and IG facilitates the availability of the right information at the right time. The orderly definition of policies and procedures for firm-wide information is absolutely essential before firms and organizations can take advantage of information. Identifying a KM attorney in each practice area is one approach, along with firm-wide KM staff to support the capture, delivery and management of model documents and all other KM initiatives.

When contemplating the future of law firms, "... Bernard Burk and David McGowan maintained that large law firms' organization and growth are explained in part in terms of relational capital, that is, that the firm and its growth serve as internal referral networks for partners with excess human capital, as well as an arena in which they can mine their own capital with the help of worker bee attorneys." As discussed above in this paper, law firms struggle with increasing revenue growth and greater pressure to contain costs. Leveraging prior work has always been the norm in law firms, but not always in a systematic way. Solid IG and KM practices provide the foundation for firms to capitalize on the value of their information, and the re-use of model documents is one way to do so. Given the pressures to contain costs, firms that aggressively take advantage of organized processes and technology to identify and re-use model documents ultimately have a competitive advantage.

# EXPERIENCE MANAGEMENT

Our discussion of the interplay between IG and KM would not be complete without at least a mention of the promise that machine- based learning and data analytics is likely to have on tracking experience within the law firm.

Traditionally, firms that have tried to capture their experience relied on manual and labor intensive collection efforts. Most common approaches start at matter intake and include populating key fields of information such as case type, area of law or practice code, industry of the matter, jurisdiction and venue into a matter profile. This profile is often reviewed and maintained by a team of practice support leaders (PSLs) or business development managers (BDMs) that follow the matter throughout its lifecycle and add information to the profile as the matter progresses. A post-closing checklist may be populated to identify all the various services that were provided as part of the representation. Some firms have built integration routines to pass key elements from various firm systems into the experience database. For example, passing the name of opposing counsel and the judge from the docket database into the experience database as well as tracking the outcome of the case in the experience database allows the firm to run analytics against how successful the firm was against the opposition and helps predict the expected outcome of future cases against them.

Many firms have also begun to develop deal tracking databases which provide a snapshot of key deal terms and outcomes as a quick reference resource when pitching new clients, responding to RFPs or pricing similar engagements. Not all matters are significant enough to warrant tracking in an experience database. Some firms defer making a decision about whether or not to track a matter until it hits a pre-defined threshold.

Not only do firms need to track experience on matters but they also need to track the skills and experiences of their timekeepers. This requires capturing and tracking credentials such as bar licensure, court admittance, languages and specific technical lawyering skills relevant to the firm's lines of business. Typically, this data is distributed across multiple repositories including the human resources database, the attorney biography on the firm's web-site, the time and billing system and the contact management database. It is often very difficult to quickly identify who possesses the right skills to pitch to a client or staff a matter.

Fortunately, advances in technologies do not require data to be normalized in order to search for all relevant results even when abbreviations are used. Smart technologies rely on embedded synonym tables, natural language searching and other artificial intelligence techniques to produce meaningful and relevant results. Systems that are candidates for experience mining include those that have traditionally been relied on for manual data collection efforts (e.g. time & billing, proposal generation and RFP tracking, deal tracking worksheets, in-house experience databases, attorney biographies and contact management systems) as well as unstructured repositories (e.g. the content in the document management system and on files shares). Tapping into these treasure troves of information revolutionizes a firm's ability to quantify its experience without extensive manual intervention and follow-up interviews. These tools make it much easier for firms to identify the most qualified individuals with relevant practice experience to put in front of the client.

As this technology continues to evolve and be implemented, firms will need to anticipate how to capture and store relevant skills, experience and knowledge, being mindful of Records Retention Schedule requirements and eventual defensible disposition.

# MOVING FORWARD WITH IG, KM AND DATA ANALYTICS

The universe of information is vast. The responsibilities, and opportunities, for a law firm to manage information for its own needs and its clients can be overwhelming. When considering implementation of an IG, KM or data analytics project as suggested in this paper, starting small is often best. While there is no steadfast rule, begin by reviewing your firm's overall business strategy and identifying opportunities that support it. Identify projects that are highly visible and driven by a real business need. This approach can facilitate obtaining executive buy-in.

Prior to launching an information-related pilot, a firm should identify areas of potential impact for the firm and clients (efficiencies, cost savings, increased profitability and/or decreased risk); looking for opportunities where the change or improvement can be tested in its own environment and culture. Often, successful pilot projects can be found in areas of repetitive volume, inefficient workflow or silo information stores (where knowledge has high value and needs to be transferred and shared with other individuals).

Some of the value propositions include competitive advantage, increased revenue, faster responsiveness to client needs, ability to deliver vast quality experience, innovation, widening of client base and capacity building.

In addition to having executive level support, time must be invested in identifying other supporters and participants in the firm who are innovators, enthusiasts and thought leaders. Recruiting people who are already trying to improve performance can help expedite the pilot. The individual or group providing executive support needs to be at a high enough level to set an agenda for change and promote the program through various communication channels within the firm.

When strategizing on the design and execution of a pilot, remember that each firm's culture is different. If a firm already has tried and true strategies for implementing new initiatives, it should leverage what is known and plan the pilot accordingly. Roles should be clearly defined and project plan developed with action items, target dates and assigned

accountability. The definition of success should be well-defined and documented. If the pilot requires a significant change in the way a firm operates, it should be communicated clearly. A plan should be created to provide adequate change management support throughout the pilot phase and eventual implementation. The results of the pilot should be quantifiable with a baseline figure established and goals set for measureable improvement. Lastly, progress should be communicated to senior leaders throughout the project with recognition given to early adopters to build momentum.

Other considerations when undertaking an IG, KM or data analytics pilot are:

- Understand what technology is involved and identify any supplemental tools that may be helpful or necessary to meet your objectives
- Engage system owners to ensure the appropriate subject matter experts are recruited to support the pilot and help maximize the functionality of the tool
- Coordinate with IT or other departments to understand whether any existing tools can be leveraged or repurposed to meet any unique requirements
- Establish a formal cadence by which to continue to monitor and measure results throughout the project.

If on conclusion of a pilot the agreed-on criteria for success have been met, the results should be formally presented to key stakeholders providing stories, anecdotes and evidence to articulate how the initiative helps improve the business. The pilot experience and its results can be used to raise awareness of the initiative and inspire, or mandate, firm-wide change.

# CONCLUSION

As discussed throughout this paper, effective KM is dependent on good IG. Sound IG practices lie at the heart of sharing organizational knowledge. Data analytics allows a firm to understand its intellectual assets and find the hidden gems that may be buried deep within its organization. The goal is to ensure that content is searchable and available, yet properly managed.

A well-designed KM strategy built on demonstrated IG principles provides a foundation for sound decision making and the optimization of firm resources. Information governance initiatives reap the benefits of the collaborative and integrated aspects of KM by engaging the participation and adoption of everyone throughout a firm. If a firm is weak in any one of these areas, the recommendations presented in this paper should be leveraged to raise awareness and initiate change.

In combination, IG, KM and data analytics can make a significant impact on the viability of a law firm.

# APPENDIX A: ADDITIONAL RESOURCES

How Big Data Can Improve the Practice of Law – covers data storage, spending/billing, evidence, use in HR with specific law firms cited

How Lawyers are Mining the Information Mother Lode for Practice, Practice Tips, and Predictions – lists different services and how they are being used; references a few names of places using big data

Law Firm Launches Big Data Analytics Service to Benchmark, Analyze HR and Litigation Strategies – specifically about Littler hiring a national director of data analytics

Law Firm Counts on Analytics for Profitability – describes how Bryan Cave LLP is utilizing analytics and hiring people for that purpose

# SOME ADDITIONAL DEFINITIONS: THE DIMENSIONS OF BIG DATA

Big Data is defined by four dimensions as volume, velocity, variety and value. These four Vs may be elaborated further as follows:

- **Volume**
  Machine-generated data is produced in much larger quantities than non-traditional data

- **Velocity**
  This refers to the speed of data processing, or the low latency rate at which analytics must be applied to the data, and looped back to the original sources to action. Social media data streams produce a large influx of unstructured and disparate information valuable to customer relationship management

- **Variety**
  This refers to the large variety of input data (customer insights, competitive intelligence, trends, benchmarking data, standards, materials, etc.) which in turn generates a large variety of data as output.

- **Value**
  Here we revisit the trend of monetization and must keep in mind that the economic value of different data vary significantly depending upon both the source and its end use. As we mentioned in the earlier sections, the last two decades have resulted in many organizations sitting on enormous amount of data. The emerging challenge for organizations is to derive meaningful insights from available data and re-apply it intelligently. Knowledge management plays a crucial role in efficiently managing this data and delivering it to the end users to aid in the product development process. This involves collection of data from direct and indirect sources, analyzing and synthesizing it along with relevant enterprise data, to derive meaningful information and intelligence, converting it into a useful knowledge base, storing it and finally delivering it for practical use.