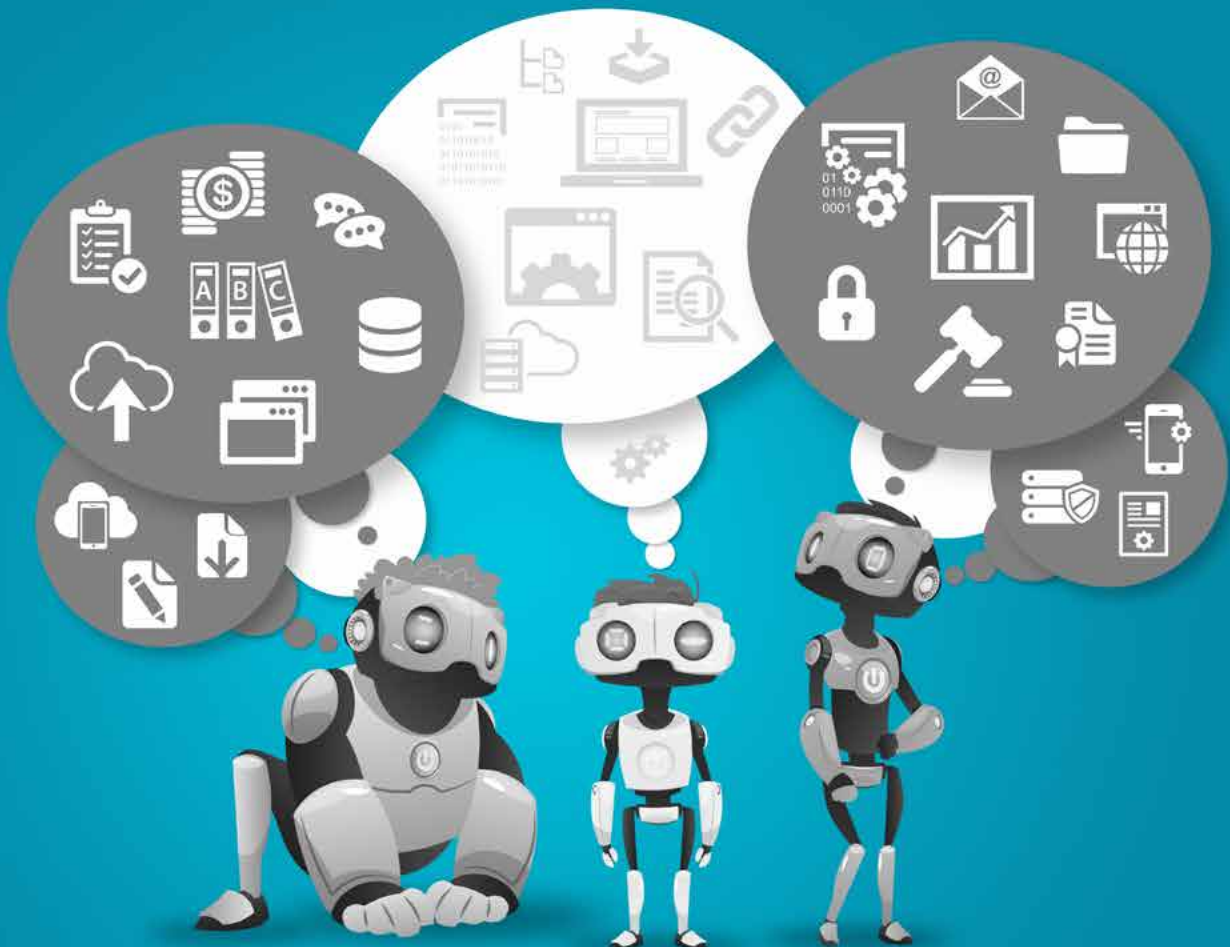


Intelligent Information Management:

DEFINING A NEW AGE



By Peggy Winton, President/CEO, AIIM



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Introduction

When the Executive Leadership Council (ELC) met at the end of 2016, it was amid heated discussion about the impact of Gartner's introduction of a new term for what has been known as Enterprise Content Management (ECM): Content Services.

Since that time, AIIM has introduced what we believe is a term better suited to describe the new world of content management and its potential for transforming business: Intelligent Information Management (IIM). The IIM concepts were presented at the annual AIIM Conference in March, 2017 and further developed in a report, "The Next Wave: Moving from ECM to Intelligent Information Management" released in partnership with several ELC members in June, 2017.

While the terminology and labelling may be debatable, the limits of traditional ECM and the need for change are not. The goal of the June ELC summits in the US and UK was twofold:

- 1 **To further vet the paper's key findings among a broader audience of users and suppliers** with a view to identifying and prioritizing where AIIM and the industry should fill specific knowledge and capability gaps; and
- 2 **To challenge those perceptions with debate over new applications of information** in the workplace, the next big innovation waves, and the impact that both will have on the future of information management.

Leading the discussion were:

- | | |
|---|---|
| ■ Laurence Brewer, Chief Records Officer, NARA | ■ Connie Moore, Senior Vice President Research, Digital Clarity |
| ■ Andrea Chiappe, Director of Innovation and Strategy, Systemware | ■ John Newton, Co-Founder and CTO, Alfresco |
| ■ Martyn Christian, Founder, UNDRSTND Group | ■ George Parapadakis, Director of Business Solutions Strategy, Alfresco |
| ■ Sonny Hashmi, Managing Director, Box | ■ Alan Pelz-Sharpe, Industry Analyst, Deep Analysis |
| ■ Rich Howarth, Vice President of Engineering, IBM | ■ Theo Priestley, VP - Global Evangelist, SAP |
| ■ Robert Kahn, Founder and President, Corporation for National Research Initiatives | ■ Johan Raedemaeker, Senior Manager, Delaware Consulting |
| ■ John Kaufhold, Managing Partner and Data Scientist, Deep Learning Analytics | ■ Abed Shaheen, CEO, InfoFort |
| ■ Greg Milliken, VP of Marketing, M-Files | ■ Suresh Shenoy, EVP, Alyx Technologies |
| | ■ Henry Sienkiewicz, CEO, OTS |
| | ■ Harvey Spencer, President, HSA, Inc |
| | ■ Ian Story, Principal Program Manager, Microsoft |



ELC Summit XI, June 2017

We are grateful to the discussion between the leaders and all of the ELC participants and for their insights and perspectives. The distillation of those insights and consolidation of comments into the six key findings that follow is the product of AIIM.

Key Findings

- 1 **Artificial Intelligence** is one of today's most misunderstood terms, but it will ultimately become the primary driver for the next wave of innovation.
- 2 **Blockchain** is still on the edges of records and governance innovation, but leaders are already using it to build "ECM-like" systems, particularly in the Financial Services field.
- 3 **In a cloud and virtualized information environment**, increased cyber warfare and privacy concerns will give rise to increased cyber sovereignty and nationalism.
- 4 **The growing gap between traditional paper-based approaches and the all-digital world of Artificial Intelligence is creating big winners and big losers** when it comes to competition on both the buy side and the sell side. Low-code process platforms will be increasingly critical to rapid process iteration.
- 5 **Organizations need to rethink the "value" they provide** in the new intelligent information ecosystem.
- 6 **Content is still real**, and it is an important element of the digital transformation equation. But, it does not exist in isolation and there isn't a different set of rules for content versus data.



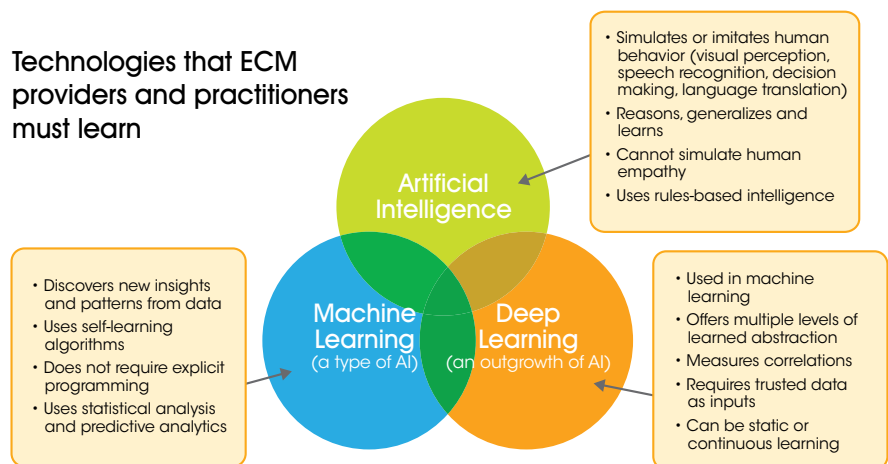


Finding 1: Artificial Intelligence is one of today's most misunderstood terms, but it will ultimately become the primary driver for the next wave of innovation.

Examples of Artificial Intelligence (AI) already at work – and play – abound, from virtual personal assistants to service robots. Because AI can refer to a simple and single-task algorithm or complex and multi-task services assembled on-the-fly, it is one of the most misunderstood terms in the market today. Comprising deep learning and machine learning, AI takes what was one of the biggest challenges of internet-generated information – the size of the data set – and leverages it for massive computing power.



Technologies that ECM providers and practitioners must learn



[Diagram source: Connie Moore, Senior Vice President Research, Digital Clarity Group - www.digitalclaritygroup.com]

As Connie Moore, Senior Vice President Research, Digital Clarity Group, points out, AI has already become part of our customer service experience, especially in the consumer world, without our even realizing it:



- 1 **Voice recognition** – think Siri and Alexa
- 2 **Credit card validation** – authentication and authorization conducted at the swipe point
- 3 **eCommerce and news feeds** – personalized and individualized web content according to browsing habits
- 4 **Call and contact centers** – marrying AI and predictive analytics to determine “best next steps”
- 5 **Loan processing/management** – identifying and preventing defaults, fraud, and criminal activity



This is an ideal opportunity for traditional ECM vendors to integrate AI and cognitive services into their platform. “An ECM system is typically set up to collect a lot of knowledge; cognitive services can exploit that knowledge, extract new insights and increase the value of your information,” adds Johan Raedemaeker, Senior Manager, Delaware Consulting.

John Kaufhold, Managing Partner and Data Scientist, Deep Learning Analysis, believes that it is the ability to create a “digital twin” of your customers that makes AI such an enormous commercial game-changer. “There will be a complete resequencing of competitive leading firms, and companies that have fully adopted AI will shift the market – at a pace we’re not yet prepared for,” he says.

Certainly, Deep Learning can find patterns that have immense commercial and social value/remedies, but it can also be an imitator of bad habits and biases. Rich Howarth, Vice President of Engineering, IBM, contends that, because vital and life-changing decisions like mortgage approval and terms of parole are being made using AI, the ethics of deep learning – and the issue of bias – is a critical issue to address. As a result, efforts are underway to “train” systems to stop repeating bad habits. Alan Pelz-Sharpe, Founder and President, Deep Analysis, agrees: “With AI, it’s not your code. You’re going to have to own the decision that your system made.”

“When it comes to AI, cleaner data is often better than more data.”

***John Kaufhold, Managing Partner and Data Scientist,
Deep Learning Analysis***

Where is the opportunity for AI in content management?

Sonny Hashmi, Managing Director, Box, asserts that highly complex content is more prevalent than any other kind of information. As such, organizations can add AI functionality into their content management tools so that massive amounts of discrete and disparate information become readily available to drive user-driven processes on demand. Greg Milliken, Vice President of Marketing, M-Files, adds, “By applying AI to detect patterns, we can truly let the user determine how to use the data; after all, the user is the one that knows best. By having description-based metadata attached to business content and integrating AI text recognition and searching capabilities into the process, location no longer matters.”



Where's the learning curve when it comes to AI for IM professionals?

"Don't worry," says Hashmi. "It's not an app that we are going to need to learn; it's going to be baked in to what we buy and use. That may give us single-task AI capability at the start, but the multi-task AI is obviously more difficult. You need to have a stable of the mission-specific AI tools and stitch them together to truly transform the business. We aren't at the point where we can make a self-learning brain, but in the near future, we'll likely tap into the best 'brains' for a particular use case: IBM (health), Google (images), Microsoft (documents)."



“ Don't think of AI as a discrete thing. The value to the organization will come from combining AI technologies with other information management technologies to support cross-functional, digital processes. Take the big picture perspective. ”

**Connie Moore, Senior Vice President Research,
Digital Clarity Group**





Finding 2: Blockchain is still on the edges of records and governance innovation – but leaders are already using it to build “ECM-like” systems, particularly in the Financial Services field.

While Bitcoin is the only blockchain protocol in widespread use, it has been the inspiration for other applications. With its immutable connections between systems, Blockchain allows users to get an information object from anywhere as long as they have the identifiers to use it as they want. Its impact on records management is significant because of its ability to secure and authenticate. Providing an indisputable chain of what happened is something that the information management industry has struggled with. And, because a blockchain database isn’t stored in any single location, the records contained therein are essentially available to anyone on the internet. And yet, its decentralized state makes it less prone to hacking.

“ The blockchain is an incorruptible digital ledger of economic transactions that can be programmed to record, not just financial transactions, but virtually everything of value. ”

***Don & Alex Tapscott, authors of
Blockchain Revolution (2016)***

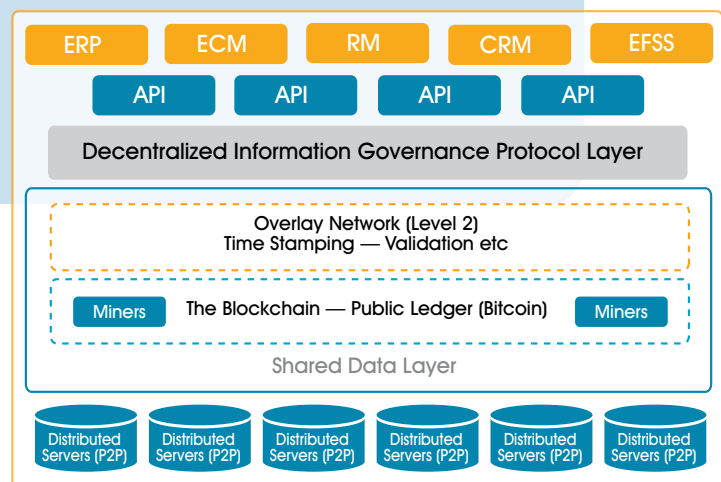
Pelz-Sharpe warns about the hype surrounding Blockchain and cautions us to keep it in perspective saying, “Blockchain is one of the most disruptive technologies we have encountered in a long time – its value, though, is limited right now. What it does do is provide an immutable and secure governance trail to transactional activities, for example, changes to a contract. That alone opens the door to many new applications that can be built leveraging the blockchain.” George Parapadakis, Director Business Solutions Strategy, Alfresco, agrees: “There is still a lot to be discovered about how we use Blockchain. We may not see a lot of value yet, but the potential could be huge for things like management of medical history.”



Make no mistake, though. Companies and government entities are building ECM-like systems on Blockchain because they view it as relatively easy and inexpensive. Pelz-Sharpe says that the financial services industry may say that Blockchain is terrible, but they are investing in it. He personally knows a mortgage services company that is building a paper-free application on Blockchain because its prospective financial institution clients are demanding it, and its potential for private equity funding for development depends on it.

When it comes to exchanging sensitive information between parties, Blockchain's ability to address security, privacy, and compliance makes it ideally suited for citizen self-service applications. Johan Raedemaeker cites a few examples of government adoption of Blockchain for this purpose including United Arab Emirates and Estonia.

The Blockchain



[Diagram source: Alan Pelz-Sharpe, Founder, Deep Analysis - www.deep-analysis.net]





Finding 3: In a cloud and virtualized information environment, increased cyber warfare and privacy concerns will give rise to increased cyber sovereignty and nationalism.

The new extended enterprise derives its power from the constant movement of information to be shared with, and repurposed by any number of internal and external entities to drive innovation and rich experiences. The growth and development of cloud computing has been made possible by the aspiration of a free and open internet.

However, as we try to understand our new information environment, we must remember that the world is constructed in a different way. In a software-defined-everything world, every piece of data we own could have value. And that makes it susceptible to theft.

Expanding regulatory and compliance demands from laws like GDPR are the natural result. There is understandable interest in protecting customer data. One can't have security without privacy and vice versa. But many of these regulations are beginning to smack of nationalism as governments attempt to rein in the cross-border flow of all data. Henry Sienkeiwicz, CEO, OTS, believes that we are seeing a re-entrenchment of the Westphalian element where the conflict is not over bits and pieces; it's an environmental conflict with concurring sets of military and law enforcement theories.

In a 2017 Huffington Post article on the US-China internet tensions, Lu Wei states that the deep integration of trade across the internet is based on an element of confidence but that recent disagreements are due to lack of trust. He adds, "Confidence without trust is the unavoidable issue of the current China-U.S. Internet relations."

The growth of cyber sovereignty is not limited to certain countries or regions. As thousands of organizations strive toward digitization, the threat of cyber-attacks and malicious intent will likely give rise to internet balkanization and/or inadequate rules for getting at virtual information. A new respect for metadata competency may result.



Finding 4: The growing gap between traditional paper-based approaches and the all-digital world of Artificial Intelligence is creating big winners and big losers when it comes to competition on both the buy side and the sell side. Low-code process platforms will be increasingly critical to rapid process iteration.

While organizations appreciate the need to invest in technology and systems that foster growth and innovation, traditional ECM has often been a hindrance rather than an enabler. Alan Pelz-Sharpe agrees: “There’s a big disconnect between buyers and sellers. Users are tired of old systems.”

That conflict is readily apparent in attempting to deploy large-scale records management in an all-digital world. “The file cabinet metaphor doesn’t work in the digital world,” insists Rich Howarth. Laurence Brewer, Chief Records Officer, NARA, candidly agrees: “Our traditional approaches to identifying, appraising, and scheduling records and information, including electronic records, doesn’t work on big data. Today, our mission is less about the ‘archival’ artifact and more about the technology and tools needed to manage records in context. We want to get to a place where there are tools and technologies that allow people to focus on mission, not on managing their information and records for retention.”

In debating NARA’s Capstone approach to managing federal agency records, the very notion of ‘permanent records’ gets flipped on its head. If records now enter many dimensions beyond mobile, is the Capstone-defined ‘permanent’ – largely based on time – really the gold standard any longer? Or, is there potentially greater value for dynamic and transient information that AI can assemble and leverage on-the-fly? Theo Priestley, Vice President, Global Evangelist, SAP, believes there is, and warns of a likely byproduct: “AI does almost all of those traditional records management functions. As a result, there will be deep displacement of humans.” John Kaufhold concurs and adds, “We will need to deal with displaced labor at some point; we haven’t dealt socially with that aspect yet.”





Similar soul searching is happening on the sell side of the equation. The cumbersome ECM suites of the past are gradually being replaced by flexible content services platforms. It is Pelz-Sharpe's opinion that the traditional ECM industry is not growing, but the potential for what ECM can do, is. "The industry overall is growing but the growth isn't coming from companies that call themselves ECM. They don't put a label at the top; they talk about the information-driven problem they are trying to solve. Startups like Factom, Ripcord, and Keeex don't even realize that there is a content management industry at all," he says.

Pelz-Sharpe also suggests that our industry has been very good at digging in our heels and saying, "This has worked for us for a long time; why change it?" He contends that the only means of survival for those firms that won't change is to get private equity firms in and strip out certain pieces. He reports that forty-five mergers and acquisitions have taken place among providers in this space over the past eighteen months.

Martyn Christian, Founder, UNDRSTND Group, believes that a key differentiator for solution providers is agility and stability as a platform. They have to be quickly developed and designed to drive toward enhancing customer experience and better decision-making. "That's why solution providers in this space need to have a sustainable business model – and be able to provide one for their customers. We've always suffered from a lack of solutions marketing people. Instead, we tend to focus on meeting quarter to quarter quotas," he says.





Finding 5: Organizations need to rethink the “value” they provide in the new information ecosystem as well as the skills required to extract it.

According to John Newton, Cofounder and CTO, Alfresco, it’s a time for investing in new technologies and rethinking the business that we’re in. He believes that CIOs just want to get out of being a data center and that the front office/back office divide goes away now. The business needs to drive the requirement but IT needs to orchestrate the integration. George Parapadakis agrees, but suggests that most IT departments can’t respond quickly enough. “We need to give them the tools to allow them to quickly respond to cloud, mobile, and other business-driven demands,” he says. “And we need to plan our platforms for scale – more viciously than we can imagine,” adds Hashmi.



“ Stop thinking of things as things; think of them as information systems. A thermostat, for example. If you can capture that information, you can interrogate it in myriad ways. ”

**Robert Kahn, Founder and President,
Corporation for National Research Initiatives**

Greg Milliken challenges business to rethink the “product” they are producing. “We used to focus on the bottom up approach – power to the people. Let me say that I think consumerism has come and gone; it’s time to move to the next phase. The fastest growing companies I know are being challenged by the CEO to do more of what they do really well. I know traditional bricks and mortar banks saying ‘let’s become APIs and develop apps’ as the real value they provide.”





Harvey Spencer, President, HAS, is already seeing this with capture services that sit on top of content services, providing value-adding knowledge from unstructured and semi-structured sources, and are completely integrated into a specific business process. In many cases, it involves multiple vendors. “I see this as a ‘lego kit’ for building things. The components will make calls to multiple sources and users will only pay for what they need when they need it. As a result, the value of your IP will diminish, and you don’t have to buy it when you can rent it. Instead, you should spend the money on the application areas, with integration and macro services to become your own API,” he advises.

Andrea Chiappe, Director of Innovation and Strategy, Systemware, refers to the new paradigm as “Internet on the Edge of Everything” where the overall ecosystem will traverse firewalls. “Nothing is tied to format anymore; instead, it’s the information – data will exist across systems, and can be pulled out in snippets of discrete assets, assembled according to users on demand. The folks to lead this effort are the ones who can figure out how to curate that to deliver more rich experiences,” she believes. Theo Priestley adds that a core competency lies in being able to visualize information, encouraging you to ask, “How can I render that and do something great with it?”



Pelz-Sharpe suggests that Artificial Intelligence is really “artificial cleverness” that requires uniquely skilled people to put the policy, technology, and processes in place that let people take advantage of having these capabilities baked into the platforms and systems on which to build. Wim De Maertelaere, Business Developer, Moonoia, agrees, and cautions that AI is not an out-of-the-box solution. “It takes expertise to select the most efficient algorithms and to conduct the initial training of neural networks,” he adds.





Finding 6 and Conclusion: Content is still real, and it is an important element of the digital transformation equation. But, it doesn't exist in isolation and there isn't a different set of rules for content versus data.

In an AI world where deep learning completely shrinks the development time while amping up the computing power, do content management capabilities become irrelevant and obsolete? Certainly the industry's long-lived obsession with the type of content being managed – and where it is stored – must end. However, you still have to have a place to store information and a mechanism for moving it. Ian Story, Principal Program Manager, Microsoft, agrees. "In this new world, it's about democratizing the idea of content management, records management, and workflow."

The industry has long struggled with the word "content". Milliken believes that if you can focus on the context, and why you need that information, then you've nailed the future. The key is how to do that dynamically. "We think the dynamic metadata approach is the future [of ECM]. It's not about where it is; the user doesn't care about that," he says.



“ Let's make [ECM] fun again. ”

**John Newton, Co-founder and CTO,
Alfresco**

Newton agrees: "It's really about content in motion where the process is really important. I see apps that sit on top as serving those specific business process purposes." He believes that it has got to be easy for people to build on the platform, even if what that platform supports isn't always exciting. "It's the granularity of the content and elements of control that are still very important," he adds.

Ultimately, it's the point of impact that will win out. Organizations are going to "play" in the system that has more impact on their work and what people will use, even if it's just good enough. When we refer to "big platforms," they might actually be small, comprised of multiple services in an ecosystem. Today, the value is in connecting systems in context with a user-first mentality.

"That might be right," says Parapadakis. "However, the elephant in the room is that our community still represents the full spectrum from systems of record to a stateless system of apps. Open API is where we bridge the gap, but not everyone thinks that way. I think AIIM can do a lot to help define the cultural changes and mindsets that need to occur."





Peggy Winton,
President/CEO, AIIM

About Peggy Winton

With over 30 years of organizational and business development experience, Peggy Winton is responsible for the strategic, technical, and customer growth direction of AIIM.

Winton joined AIIM in January, 2002 directly from Computer Sciences Corporation (CSC), where she served as Business Developer and strategist for the Consulting Group. Prior to CSC, Winton was Vice President and Chief Operating Officer for TTM, Inc., an international firm specializing in web-based and cooperative marketing programs for tourism development.

An accomplished writer and speaker, she has authored numerous articles, strategic plans, and presentations for the Association. Winton speaks regularly at AIIM and AIIM partner conferences on buyer trends, customer intelligence, and information-driven business processes. She holds a Master of Science in Management degree from the University of Maryland.





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About AIIM's Executive Leadership Council

In 2012, AIIM formed a think tank to define, discuss and offer directives on today's emerging issues in information management. This think tank is the **Executive Leadership Council (ELC)**.

The ELC brings together top thinkers, high performance practitioners and leaders in information management for two theme-centric summits annually. Each summit creates a shared space for dynamic conversations to determine the role of the information management industry in a new era of business.

Want to Participate?

Details of the 2017 summit themes can be found at www.aiim.org/elc. Should you be interested in learning more about participating in the Executive Leadership Council, please contact Jessica Lombardo at jlombardo@aiim.org