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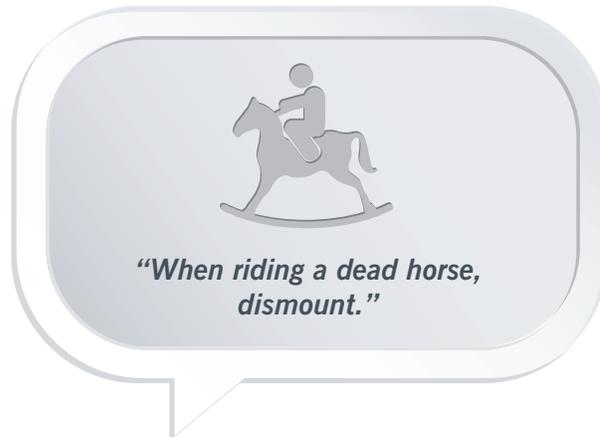
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EXECUTIVE SUMMARY

The forecast for 2020: ECM as we know it will be gone.

Content will be everywhere and in everything, but Content Management will be increasingly invisible. We pose these conclusions about the Content Management landscape in 2020 as we look back at content's evolution. Specifically:

- *The challenge of managing the intersection of people, processes, and information is not a new one.*
- *There have been five eras of managing the people/process/information intersection.*
- *We are now transitioning to a sixth era in managing this intersection.*
- *Organizations are hungry for best practices amidst the chaos of the emerging sixth era.*
- *A new industry label is needed.*



THE CONTENT MANAGEMENT 2020 TRENDSCAPE

In December 2014, we posed 18 hypotheses/trends about the future of content and information management to 56 senior information management executives from Europe and North America. These individuals represent organizations that both provide technology solutions and use those solutions. We asked them to review these content management hypotheses/trends against two criteria:

- *How significant is the potential impact of this hypothesis/trend likely to be for end-user organizations?*
- *How likely is it that this hypothesis/trend will become a reality by 2020?*

All of these hypotheses/trends are important in their own right; the purpose of the AIIM Trendscape is to highlight those that are relatively more important and more likely than the rest. The result is a relative set of priorities, allowing organizations to set strategies and build roadmaps for the future.

We rank ordered the results into 3 clusters:

- Those hypotheses that have a high potential impact and a high likelihood -- organizations need to focus on these (noted in **GREEN**).
- Those hypotheses that are both low impact and low likelihood -- organizations should spend their time elsewhere (noted in **BLUE**).
- Those hypotheses in which the impact/likelihood story is mixed -- organizations should selectively evaluate these in the context of their particular business.

Hypothesis/trend	North American ranking	European ranking
The proportion of effort the enterprise has to spend on ensuring privacy and security will increase.	1	1
There will be more country-specific regulations and restrictions related to the cloud and privacy than there are now (i.e., governments will become more national and less global in their approach to the cloud).	2	8
The central role of content management solutions will be to: 1) Determine the human user's current situation; 2) Understand precisely what the person wants; and 3) Use powerful analytical ability to make highly focused and insightful suggestions.	4	1
Corporations rely on knowledge workers, in partnership with IT staff, to identify new technology that can improve business operations.	6	4
90% of the world will have broadband access equivalent to today's best Wi-Fi.	3	6
The procurement model goes from large up-front investments to freemium subscriptions.	7	3
The core skills of world-class IT departments will shift from people focused on operations, to people with skills at the intersection between business analyst and IT designer.	5	7
The percentage of workers telecommuting some hours per week will double (currently 24% for US workers).	11	5
The percentage of the workforce now defined as knowledge worker will increase from circa 40% to more than 75%.	8	11
The business currently controls 35% of technology spending, but this will grow to 90% by 2020.	10	10
Knowledge workers are encouraged to bring in new apps (BYOA), not only devices (BYOD).	9	13
95% of all workplace information and content will now be stored in the cloud.	12	9
25% of the workforce in Europe and North America will work as "free agents" or will form into clusters of small-to-midsize businesses (SMBs).	15	12
No one will care about information governance and records management because our systems will use analytics to manage this.	13	14
The ratio of full-time employees to contracted specialists will shift dramatically.	14	15
Password-based security will be a thing of the past	16	16
Intelligent robots that sense the environment, make decisions, and learn will be used in 30% of households	17	17
The major player in content management decisions will be the CMO.	18	18

THE CONTENT MANAGEMENT 2020 TRENDSCAPE -- WHAT DOES IT MEAN?

The Trendscape and the accompanying discussions in both Europe and North American suggest the following core conclusions about the Content Management landscape in 2020.

- *The challenge of managing the intersection of people, processes, and information is not a new one. The business challenge of managing people, processes, and information does not change. However, the technologies and the timeframes that we use to manage this intersection DO, and we are currently in the middle of a phase of high disruption and uncertainty.*
- *The five eras of managing the people/process/information intersection. There have been five distinct technology waves or eras in dealing with the challenge of managing the people, process, and information intersection -- Paper, Micrographics, ERP, Document Management/Workflow, and ECM.*
- *We are now transitioning to a sixth era in managing people, processes, and information.*
- *Organizations are hungry for best practices amidst the chaos of the emerging sixth era. Three major disruptive forces are accelerating the pace of change and driving organizations into information chaos -- 1) consumerization; 2) cloud and mobile; and 3) The Internet of Things. Organizations are struggling with best practices and norms as they make the transition to this sixth era dominated by Mobile, Analytics, Cloud, and Collaborative (MACC) technologies.*
- *A new industry label is needed. A new industry label is needed to describe the emerging new set of technologies and capabilities driven by the MACC Stack.*

1 -- The challenge of managing the intersection of people, processes, and information is not a new one.

The industry that has been described for the past decade as “Enterprise Content Management”, or “ECM,” has its roots in a business challenge that is as old as business itself:

How do we manage the intersection of people, processes, and information to:

- ◆ *Improve business processes to produce optimal business results; and*
- ◆ *Document or record those results and the information associated with them.*

Organizations have dealt with the challenge associated with the intersection of people, processes, and information through a series of technology waves. In each wave or era, it took some time for norms and best practices and standards to emerge. Ultimately these norms did -- generating a period of widespread adoption of that particular technology -- only to be disrupted by the next wave of technology innovation.

A couple of things are constants during periods of transition:

- *In between eras, the technologies that ultimately become dominant in the next era struggle for an identity and a label. Ultimately an “industry” of key players emerge, and once this happens, the chaos that was characteristic of the time between eras is forgotten.*
- *In the early stages of each era, early adopters struggle with an absence of clear rules and best practices on how to best proceed. Again, these ultimately emerge, but not without a great deal of confusion during the interim.*

2 -- The five eras of managing the people/process/information intersection.

- **The Paper Era:** *For hundreds of years, the technology that fueled the intersection of people, processes and information was paper.*
- **The Micrographics Era:** *During the 1950s, paper began to be replaced -- especially for the task of documenting and recording -- by microfilm and the Micrographics Industry was born. But, paper still remained the primary technology governing the first part of the equation.*
- **The ERP Era:** *In the 1960s, 1970s and into 80s, the first great wave of enterprise IT spending replaced ledgers with data, automated a significant portion of our core back-end business processes, and gave birth to the ERP Industry. However, amidst this automation, paper still retained its dominant role as the vehicle by which most business was conducted -- it remained the primary means to convey information -- and was the primary way that business was documented on a daily basis.*
- **The Document Management and Workflow Era:** *In the 1980s and 1990s, we replaced some of this paper -- mostly the high-volume kind -- in selected, mission-critical processes (like new drug applications in pharmaceuticals or claims processing in insurance). We used closed local area networks to move these new electronic documents around among a limited number of specialized workers within the four walls of the enterprise. Document Management/Workflow emerged as the label we used to describe this era of people, processes and information.*
- **The ECM Era:** *The emergence of the internet and the maturation of core document management and imaging technologies ushered in the Enterprise Content Management Era in the early 2000s. . AIIM embraced and evangelized “Enterprise Content Management”, or “ECM”, as a label to describe this emerging industry. Never a perfect industry label -- and probably more accurately a verb (something you do) than a noun (something you buy) -- “ECM” nonetheless served as a useful umbrella term for a decade. ECM described a cluster of capabilities and technologies that organizations used to capture, store, manage, deliver, and preserve the “content” (mostly images and documents) associated with processes that were 1) document intensive; and 2) mission-critical.*

3 -- We are now beginning the transition to a sixth era in managing people, processes, and information.

The combined impact of consumerization, cloud and mobile, and the Internet of Things are rapidly signaling the end of the ECM Era. Organizations are struggling with best practices and norms as they make the transition to this sixth era dominated by Mobile, Analytics, Cloud, and Collaborative (MACC) technologies, and the solution providers that are part of this change are struggling with their identity as an industry. We at the cusp of a sixth era, still to be defined.

Three major disruptive forces are accelerating the pace of change and driving organizations into information chaos:

- **CONSUMERIZATION** is transforming what users expect from applications and how we deliver them. We are now in the era of user-centric IT.
- **CLOUD AND MOBILE** are creating an expectation of anywhere, anytime access and transforming how we engage with customers and employees.
- **THE INTERNET OF THINGS** is generating massive amounts of new data and information, creating enormous new challenges and opportunities.

The 2020 Trendscape reinforces the dramatic changes that are occurring and the likely scenario that will exist in 2020:

- ◆ *New approaches to privacy and security*
- ◆ *Ubiquitous broadband connectivity*
- ◆ *Bottom up rather than top down innovation*
- ◆ *Lots more virtual and distributed work*
- ◆ *A shortage of “connective” and analytic skills*
- ◆ *An OPEX vs. CAPEX procurement model*
- ◆ *Increased regulation of the cloud by national governments.*

The good news is that organizations are waking up to the need for strategies and systems to handle the information assets of the organization that are just as robust as those used to handle its financial, physical, and human assets. The bad news is that organizations are struggling with how to do so in a period of radical change. Organizations of all sizes say, “Our processes are broken, we are buried in information and it is killing our ability to satisfy our customers.”

The challenges on the cusp of the sixth era are no longer isolated among a few specialized “document” workers. They reach to the very heart of the digital workplace and are reflected in these quotes:

- ◆ *Process workers -- “Quit making us enter the same information in five different spreadsheets.”*
- ◆ *Knowledge workers -- “We’re drowning in information but thirsty for knowledge.”*
- ◆ *Security officers -- “Information is leaking out of the organization at every turn.”*
- ◆ *Records managers and lawyers -- “The volume of information that is beyond our ability to control is increasing business risk and exposure.”*

- ◆ *IT people* -- “We can’t keep up with the demands of the business and they are working around us rather than with us.”
- ◆ *The Business* -- “Productivity is declining because of our inability to automate our core processes.”
- ◆ *The C-Suite* -- “We are spending so much effort just keeping the lights on that we are afraid we will miss the next wave of technology and be left behind.”

“We are now in the Everything Everywhere Era,” says Michael Coleman, SVP & CIO at [Comporium Communications](#). “We have all the issues we had in the previous eras -- ranging from paper to images to electronic documents. But add to that Box, Dropbox, Google Drive, Evernote, and a host of other collaborative sources of content outside the firewall -- content that is impossible to physically ingest and index, correlate, and apply policies -- and you get a sense of the enormous change before us.”

4 -- Organizations are hungry for best practices amidst the chaos of the emerging sixth era.

Organizations are struggling with a lack of best practices and norms as they make the transition to the sixth era. “Put simply, IT is in transition from information management to making information super useful,” notes Karen Green, CIO of [Brooks Rehabilitation](#), “and the rules for how to do so are changing all around us.” There is a need for best practices in 3 key areas:

A -- New Risk Models: How can organizations calibrate information-related risk at a time when nothing is stable and all the old assumptions no longer apply?

One thing is clear: organizations have yet to work through the “control” equation for information assets in the sixth era.

Some have decided, given the volume, velocity, and variety of information, that the path to risk minimization is to refocus around the core. “Deciding where to let go is a key element in managing overall risk,” notes Michael Coleman. “You need to decide what parts of the information to which we are exposed are actually corporate assets, and push processes to make sure they live in a specific place. There are not enough people to manage the volume. Make sure you get that foundational layer right.”

John Leggate, Managing Partner of [Quintal Partners](#) (formerly CIO of BP) echoes this need to move beyond old control paradigms. “All this data is like the junk in the back of your garage. You might spend one day a year working on it, but you’re not going to make it your life’s work. Decide how much time and money you are going to spend per year to mitigate critical risks and move on. There are always going to be half empty paint cans in the back of the garage.”

Others fear that the very act of letting go will set in motion further balkanization of our core systems. Per [IBM’s](#) Toby Bell, “We live in an era of information anarchy. If your teams are putting information into new silos rather than testing extension of systems which you’ve already invested in, there are business risks and technical problems. This is irresponsible to ignore.”

Our old underlying assumptions about “control” (largely built upon managing devices) are no longer relevant, and new guiding practices have yet to emerge.

B -- New Success Models: How can organizations move from information chaos to information opportunity?

As we enter the sixth era, the demands put upon our information management systems are accelerating, and they are focused more on cost control. “Information is at the heart of the transformation we are trying to make, and we need to constantly balance regulatory and compliance requirements with this transformation,” notes Karen Green. “As a health care provider, we are striving to make a D-I-K-W migration. We need to go from just collecting DATA (vital signs) to providing INFORMATION (viewing a serial set of vital signs/ data in context) to KNOWLEDGE (recognizing patterns in the data) to WISDOM (validating the accuracy of our information syntheses).”

“Leadership and digital leadership are becoming one and the same, and most organizations have a digital leadership deficit,” notes Sanjiv Gossain, Vice President and General Manager at [CSC](#), UK. “Many of my customers are more worried about new entrants than traditional competitors. All of our customers are facing significant change because of emerging technologies. We now have four generations working side by side in organizations -- each with vastly different devices and ways of using information -- creating a need for new norms and best practices in the digital workplace.”

C -- New Uncertainty Models: How can organizations better prepare for the future?

Are we delivering what users are asking for? Are we delivering search, findability, deliverability? Ed Gough, CTO & Chief Scientist, [Centre for Maritime Research and Experimentation](#) said, “When we’re talking to our customers and we can show them these analytics applied to their problems, they get pretty excited.”

Greg Keeling, Senior Compliance Officer at the [BMO Financial Group](#), notes that established organizations face the constant possibility of technology-driven disintermediation from brand new players (like the impact of [ApplePay](#) on the financial services industry). “All of the new payment options we face have emerged from outside the industry. This is disrupting the financial sector. If your disruptor can come from so far outside your sector, how do you plan for that? There are now 400 different digital currencies around the world -- all totally unregulated.”

“Highly disruptive moments are increasingly impossible to predict. Who could ever have predicted the emergence of the extensive use of social media by global terrorist groups?” notes John Leggate. “The CIO’s dilemma is profound: Legacy systems kill budgets and drain creativity, most C-Suite players just don’t get it. Our workforce is demanding Apple grade functionality and ease of use along with the service levels and uptime expectations set by Amazon or Facebook. And at the corporate level the increasing concern is that compliance authorities now have truly global reach and draconian powers potentially putting key executives at personal risk.” In the face of all of this, corporate organizations need to take a new approach to enterprise IT and Digital services – which pushes harder on cost down curve – while delivering ever higher levels of service and staying within compliance and with the ever rising tide of regulation – a tough circle to square for the Corporate CIO. With regard to corporations with antique infrastructure and aged and crumbling software – the most apt motto seems to be “When riding a dead horse, dismount.”

5 -- A new industry label is needed.

The term “ECM” is past its prime as a description of the revolution that is being driven by Mobile, Analytics, Cloud and Collaborative technologies. A new industry label is needed to describe the emerging set of sixth-era technologies and capabilities at the intersection of people, information, and processes.

“Every organization, every executive, every individual, every object is on a digital journey and content is at the heart of that journey,” notes futurist Thornton May. “Content is ubiquitous and critical, but ECM is rapidly becoming invisible.”

The problem is not that ECM is no longer relevant. It IS a good description of the set of capabilities that evolved from document management and workflow, and a good label for the technologies and capabilities needed to automate relatively static, document-intensive, mission-critical processes. However, “ECM” has problems on three fronts: 1) we have tended to use it as a noun rather than a verb (something you buy and plug-in, rather than a strategy that you pursue); 2) it no longer works as an umbrella for the content and information-centric technologies that are at the core of the Mobile, Analytics, Cloud, and Collaborative era; 3) it is almost exclusively associated with cost reduction and people reduction.

Automation and people reduction are how “ECM” has been sold over the past decade -- and particularly in bad economic times. We’re coming to the end of that cycle; we’ve pretty much automated what we can automate.

A new “umbrella” term is needed. ECM needs to become PART of the puzzle, rather than the puzzle itself. There will be many pieces to this puzzle in 2020 -- Content Management, Information Governance, Smart Process Applications, Collaboration and Social Technologies, Taxonomy and Metadata, Scanning and Capture, Content Analytics, Customer Engagement, and Search -- and the lines between “unstructured” and “structured” information will further blur. Organizations must combine analytics, collaboration, governance and processes to manage and leverage information assets more intelligently.

Content management is increasingly everywhere, yet also increasingly invisible. As organizations deal with the two most profound challenges of the next five years -- security and analytics -- content management will become an increasingly important discipline. But it won’t be content management in the old sense of transactionally-centric ECM. And it won’t be as narrow as “information governance” or records management. And it won’t be as simplistic as just bringing Facebook-like social tools into the enterprise.

As organizations think about the new intersection of people, process, and technology, and reassess this intersection in light of enormous security concerns and analytics-driven opportunity, how we deal with “content” -- in all of its forms and manifestation -- needs to be a core piece of the puzzle.

About John Mancini



John Mancini is an author, speaker and respected leader of the AIIM global community of information professionals. He believes that in the next 5 years, a wave of Digital Transformation will sweep through businesses and organizations, and that organizations now face a fundamental choice between Information Opportunity and Information Chaos.

As a frequent keynote speaker, John offers his expertise on Digital Transformation and the struggle to overcome Information Chaos. He blogs under the title “Digital Landfill” and has almost 10,000 Twitter followers and a Klout score in the 60s. He has published seven e-book titles including “Information Chaos v. Information Opportunity: The Business Challenge for the Next Decade” (<http://www.aiim.org/infochaos>), “#OccupyIT — A Technology Manifesto for Cloud, Mobile and Social Era” and the popular “8 Things You Need to Know About” e-book series.

He is the author of “Mancini’s Law”:

- ◆ *Organizations are systems of information networks. They only operate effectively when there are clear and predictable information flows within and between these networks.*
- ◆ *50% annual growth in the volume of digital information means that these networks – and especially the points of connection between them – will become increasingly unstable.*
- ◆ *Without intervention, the resulting #infochaos will threaten the viability of the entire system.*

John can be found on Twitter, LinkedIn and Facebook as [jmancini77](#)

About Thornton May



Thornton May is Futurist, Executive Director, and Dean of the IT Leadership Academy. His extensive experience researching and consulting on the role and behaviors of boards of directors and “C”-level executives in creating value with information technology has won him an unquestioned place on the short list of serious thinkers on this topic. Thornton combines a scholar’s patience for empirical research, a stand-up comic’s capacity for pattern recognition, and a second-to-none gift for storytelling to the information technology management problems facing executives.

Thornton has established a reputation for innovation in time-compressed, collaborative problem solving pioneering the Lyceum (an intense learning experience designed to keep “C”-level executives abreast of emerging technology trends); the Directors’ Institute (a forum for Board members to increase their awareness of technology management issues); and the Controller’s Institute (arena for European Chief Financial Officers to fine tune processes associated with making technology investments). Thornton designs the curriculum that enables the mental models that allow organizations to outperform competitors, delight customers, and extract maximum value from tools and suppliers.

Thornton’s insights have appeared in the Harvard Business Review (on IT strategy), The Financial Times (on IT value creation), The Wall Street Journal (on the future of the computer industry), the M.I.T. Sloan Management Review (on the future of marketing), American Demographics (on the evolving demographics of Electronic Commerce), USA Today (on the future of the consumer electronics industry), Business Week (on the future of CEO direct reports), and on National Public Radio (debating the future practice of strategy with Professor Michael Porter). Thornton is a columnist at Computerworld, CIO Decisions and has served as an advisor to the Founding Editors of Fast Company Magazine.

Thornton May
Futurist & Executive Director
IT Leadership Academy

Follow Thornton on Twitter: @deanitla

About the Research



As the non-profit association dedicated to nurturing, growing, and supporting the information management and social business community, AIIM is proud to provide this research at no charge. In this way, the entire community can leverage the education, thought leadership, and direction provided by our work.

We would like this research to be as widely distributed as possible. Feel free to use this research in presentations and publications with the attribution – © AIIM 2015, www.aiim.org

Rather than redistribute a copy of this report to your colleagues, we would prefer that you direct them to <http://info.aiim.org/futureofecm> for a free download of their own.

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 2015 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

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AIIM

1100 Wayne Avenue, Suite 1100
Silver Spring, MD 20910
+1 301.587.8202
www.aiim.org

AIIM Europe

The IT Centre, Lowesmoor Wharf
Worcester, WR1 2RR, UK
+44 (0)1905.727.600
www.aiim.org