Digital Value Institute

INFORMATION GOVERNANCE ROADMAP

PREPARED AND PRESENTED BY

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THE DIGITAL VALUE INSTITUTE
- A CXO THINK-TANK TO FAST-TRACK THE DIGITAL LEARNING CURVE

INTRODUCTION

Executives are surprisingly uninformed about corporate knowledge – what needs to be known, what is actually known, and the processes whereby knowledge is created, managed/protected and applied. There is a magic relationship between knowledge and value/success that executives should embrace.

In 2020, the Digital Value Institute hopes to migrate our understanding of value creating knowledge from the hit-and-miss mists of magic to the replicable rigor of scientific discipline.

We begin with the hypothesis that organizations seeking to sustainably create value with knowledge will have to master Information Governance. Effective customer engagement, business operations, and compliance relies on information availability, completeness, and trustworthiness. Information Governance seeks to meet the needs of the total organization (line of business, IT, and Compliance) with optimized information management practices.

"Hot mess" is a vernacular phrase referring to "a person or thing that is spectacularly unsuccessful or disordered." Information management today fits that definition perfectly. Despite a robust array of solution providers, a massive – bordering on infinite array of tools, technologies, and techniques, and a centuries old body of knowledge regarding appropriate practice, information management remains a growth area for many organizations.

Our world is replete with "information technology." Many universities are home to accomplished Schools of Information Science. We live in an "information age" and commerce operates via a "knowledge economy." And yet the language of information management is varied, acronym-rich and sometimes incomprehensible.

Information Governance is – but is not often recognized as being - a big part of modern existence. Basic questions such as who owns the information or where is the information to be stored and for how long are complicated by rapidly changing cloud technologies and evolving regulations. There are issues of scale, version control and performance.

"*When companies buy software as a service, the only lasting asset to manage is the information*" - **Atle Skjekkeland, President of the Digital Value Institute**

The Digital Value Institute is a think-tank for identifying how technology is transforming industries and how leaders and organizations can respond. The institute has, together with the following executives, developed this information governance roadmap.

Kim Bartley
CMO
White Castle

Paul Gaffney
CTO
Kohl's

Brian Shield
VP IT
Boston Red Sox

John Crooks
IT Division Chair
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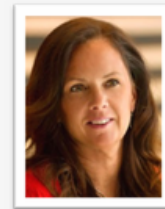**Tom Murphy**
CIO
University of Pennsylvania

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Yuri Aguiar
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Ogilvy

Curtis A. Carver
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The University of Alabama at Birmingham

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Robert Hoyle Brown
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Javier Cabrerizo
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Information is structured or unstructured data that has meaning to people. Our use of the term Information governance encompasses, therefore, both data and content. The analyst Gartner defines information governance as the specification of decision rights and an accountability framework to ensure appropriate behavior in the valuation, creation, storage, use, archiving and deletion of information. It includes the processes, roles and policies, standards and metrics that ensure the effective and efficient use of information in enabling an organization to achieve its goals. Software is therefore not a silver bullet for information governance.

Good information governance depends on good data governance. Accurate and trustworthy data is key to any organization, but also to ensure access and control of unstructured content such as reports, plans, budgets, etc. With poor data governance we end up with poor information governance.

The Institute would like to thank AvePoint, Cognizant, and Infotechtion for their input and recommendations. These companies are in the forefront of data and information management and have helped the institute develop this information governance roadmap.

Yours truly,

Atle Skjekkeland   Thornton A. May
President, The Digital Value Institute   Council Chair, The Digital Value Institute
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WHY INFORMATION GOVERNANCE?

"I am a fan of the data lake metaphor where the fish is data and the report writers are fishermen and women. Now some of the fish in this data lake live in a secure, highly regulated reserve where all the fish are validated as to be safe to consume and we know a lot about these fish. In fact, we have dictionaries about these fish and tools to validate the truth about these fish (data validation and data dictionaries). There are some fish nearby that are interesting and we know something about them. They are probably safe to consume but they are not as regulated. You might say they are of interest to be moved into the secure regulated space. And then we have a lot of fish that we don't regulate and may kill you but you can fish them at your own risk. You can add fish to the lake if you want but not directly to the secure reserve. By the way, it is way too expensive to put all the fish in the reserve. So we need at least the three previously mentioned areas of the lake.

As for the fisher women and men, we recommend some fishing poles (reporting tools) but it really isn't our place to make you use just one. Fisher women and men are known for their independent streak and peculiar discipline specific fishing habits so while we centralize some of them to work with the reserve, we allow decentralized organizations to hire other fishermen/women to address their unique taste in fish. We don't allow everyone to have a personal lake but everyone can have a home on the lake and fish. Occasionally the fisher men and women get together and have social gatherings and inevitably the topic turns to fish after they have discussed the weather, fishing rods, and boats in that order. As they discuss fish, they build some rules so they can all enjoy the lake and its fish. This is kind of important so we don't have fishing by dynamite, fish wars, or red tide (fish integrity issues). We also want to protect the fish so that only registered fishers can access the fish and only the right folks can change fish in the lake. The good news is we can expand the lake if needed to accommodate new fishers as needed so there is no need for a separate lake. One of the exciting developments for youngsters is new virtual lakes that can seamlessly merge with your on premise physical lake. Folks seem to enjoy this lake expansion technique but it can get unruly and brawls break out if you are not careful. Trust me, you don't want to be involved in fishers' brawls as you could lose your job!" - **Curtis Carver, VP & CIO, University of Alabama at Birmingham**

Companies need to understand that information is an asset (like fish), a resource that is fundamental to their existence and their future (people relying on the fish as food). They must treat it as such. Invest in information governance (it's not an option); invest in information analytics; invest in information security. Closely manage who has access to your information, where it rests and how it is used. Understand that water and fish can enter and leave your lake through rivers and other sources that also need to be understood and governed. For too long information has been an afterthought with little investment in the required infrastructure or human related management components. Regulators, investors, employees, customers, business partners all rely on accurate, timely, complete and accessible information. All the talk about predictive analytics or leveraging AI for efficiency or growth is a non-starter without good information. You don't put a brand new roof on a house with crumbling walls and a poor foundation. Fix the fundamentals. Invest in information and data literacy throughout the organization (from front desk to the Board). Hire behavioral economists. Hire process experts. Invest in R&D. The businesses that will succeed in the future are the ones that believe information and data management is a competitive advantage, not an expense.

THE BUSINESS BENEFITS OF INFORMATION GOVERNANCE

Information governance is about better managing information assets and ensuring compliance. Since assets are not static, it is also about how information is created, organized, retained, investigated, discovered, collaborated, processed and disposed of. Information assets are converted to business value at several levels.

STRATEGIC BENEFITS

Effective customer engagement, business operations, and compliance all rely on one thing: effective information management. Below are some of the strategic benefits of information governance.

- **Establish a foundation for digital transformation** - open up access to data and content by linking them together with data lakes, content management platforms, and standard APIs. Define master data and use this as metadata for unstructured information. This enables you to connect information across your organization, and it will then be easier to start business transformation initiatives. Information Governance brings the authority and responsibility to the right people to make this happen.
- **Align strategic investment** - know exactly how and why incremental spend on the management of information assets supports (or threatens) strategic direction and goals.
- **Add value** - better connecting people, information, and knowledge will improve customer engagement and create a more effective workforce. The results of this could be increased sales (McKinsey claims that 35% of Amazon's revenue comes from recommendations) and/or increased workforce productivity (e.g 5%+).
- **Identify new opportunities** - historic information may be used to predict - and change - the future. This could be estimating when a customer may decide to cancel their subscription, when crime will happen, when a student may decide to drop out of college, etc.
- **Minimize risks** - it could take 10 years to establish your company as a solid brand, but only 10 minutes to destroy it if sensitive information is lost or misplaced.

OPERATIONAL BENEFITS

Improving information availability, trustworthiness, and completeness will improve workforce effectiveness. It also creates opportunities for reducing operational costs by replacing and sunsetting legacy content management systems with secure and compliant cloud platforms . Benefits to consider:

- **Improve search and find** - better access to clean information will reduce the time knowledge workers have to spend looking for information for project startups, Subject Access Requests, FOIA responses, disaster recovery, and mergers and divestitures.
- **Improve information re-use and knowledge sharing** - better control of your sensitive information means you can open up access to non-sensitive information.
- **Ensure information is fit for purpose** - better control means you can meet the business needs for different views - different levels of granularity, aggregation, timeliness
- **Single source of the truth** - better information governance means knowledge workers can trust the information they find. They know it is the right file, right version, etc.
- **Improve business continuity** - better information governance means that information assets are locked and protected. As an example, you are only able to recover deleted or old versions for 90 days with the Microsoft E3 license (365 days with the E5 license), and you avoid this being an issue with record labels in Office 365.
- **Improve information security** - knowledge workers collaborate with people both inside and outside your organization. better information governance means that sensitive information is protected wherever it may go (e.g. automatic encryption), or you can stop it from leaving your organization.
- **Reduce operational costs** - replace expensive data and content silos with secure and compliant platforms.

LEGAL BENEFITS

Information governance will ensure compliance with company and legal regulatory requirements for security, privacy, retention, and disposition. By properly classifying information, you can protect it appropriately at rest, in use and in motion. Benefits to consider:

- **Ensure regulatory compliance** - a global enterprise needs to comply with over ten thousand requirements impacting how you manage information. As privacy regulations increase pressure, the time to respond to data subjects and regulators decreases. Knowing where your data is (and isn't) increases accuracy, credibility, and compliance. Better information governance will ensure your legal requirements.
- **Follow fair information principles** - The United States Federal Trade Commission's fair information practice principles (FIPPs) are guidelines that represent widely accepted concepts concerning fair information practice in an electronic marketplace. Ensure compliance with the way you collect and use and safeguard personal information.
- **Reduce eDiscovery costs** - research by CGOC some years ago found that 68% of information kept by organizations is ROT - redundant, trivial, and outdated. Better information governance allows you to automate the deletion of ROT, which will significantly reduce your eDiscovery costs.

"Any business function that brings compliance criteria (laws, regulations, best practices, policies, standards) to the table, stands to benefit from good information governance in the name of the organization." - **Brian Tuemmler, Partner, Infotechtion**

Below are our recommended steps for establishing an information governance program.

STEP 1: DEFINE OUTCOMES AND CAPABILITIES

Without a clear vision of what strategic business outcomes are being sought, an information governance program is likely to be off target. Get clarity on the goals first and then build the program to meet the goals. Remember that information governance should reflect the goals, criteria and benefits of a number of stakeholders in your organization, including legal, compliance, records, risk, technologies and the business. These stakeholders will not always agree and negotiations may be required.

Identifying the Master Data elements which are most important to the business line and setting standards for them, communicating those standards, and then enacting processes to verify the data and keep it 'clean' at the point of entry will allow the organization to focus its first initiatives. Learning from this phase will help inform the organization on how mature/prepared the teams are to advance quickly, or identify if a strong change management campaign is necessary. From there, measuring their data standards adherence and expanding the data elements included in their master data strategy should create the ongoing awareness of the importance and value of 'clean' data. This applies to both structured data and unstructured content.

Organizations should be cautious not to be overly optimistic if just initiating this journey. It is amazing how our people, processes and systems allow individuals to 'by-pass' rules which leaders may think are obvious and important for information quality. By way of example, how many different ways can a data entry member enter Multiple Last Name entries – with a space, a dash, no space, comma.

STEP 2: SAVE SPACE FOR SERENDIPITY

Balancing the point above, while a structured approach with specific aims is key to being able to deliver value, information governance programs should strive to have outcomes where the resulting tools, data and procedures are flexible enough to be applied to new problems and give unexpected insights. Much of the long-term value of good information and good information governance can't be accurately predicted before the program is in place and producing unexpected innovations.Information

Governance is therefore a journey. In addition to communicating the importance of 'clean' data, especially for digital use (time to validate and cleanse data limits greatly the ability of digital data/apps/system delivery), organizations should understand this will be an ongoing evolving endeavor. Clearly delineate between information "owners," "stewards," and "users". Identifying evangelists who can help create the drive to gain the hearts and souls of the front line managers and staff (leaders are a given), will be a critical first step. Creating an oversight/governance structure with the authority to ensure processes and decisions around information are approved/endorsed by this structure is also critical.

STEP 3: HAVE A SPECIFIC PLAN TO DRIVE PARTICIPATION

Depending on the organization, more carrots or more sticks might be involved, but without participation from information owners and information users even well-designed information governance will not have good outcomes. Success is 80% about people, 15% about processes, and 5% about the technology

- The first and sometimes one of the most difficult to implement is standardizing the data terms and definitions, often from disparate systems that don't communicate. It is difficult if not impossible to maximize the benefit of technology including the newer ones (like blockchain and AI) without a framework that includes a standards-based data model. Vendors tend to be resistant (the "secret sauce" philosophy) to standardizing data (as basic as common terms and definitions), but customers (the owners, occupiers and investors in real estate) are finding their voice and becoming more vocal about the interoperability they want across vendors and platforms, without much manual human effort and the high cost of repetitive custom programming. Many vendors are exhibiting a significant level of resistance to this approach.
- Establish who owns the information, who contributes to the information, who can modify the information, and who's accountable for the information that's driving major decisions affecting the business, and the smart ones are taking action to resolve the questions. Siloed systems and their managers still rule in many organizations. Try to find common ground and an open and consistent line of communication between IT and the business units remains challenging. Before you get to change management, you need some change leadership at the top of the house.
- Determine the KPIs critical to assess performance. Again terms and definitions are key here, or the organization ends up gathering apples and oranges and calling it a new fruit. Many organizations look to benchmarking to provide an indicator of how well they're performing, yet some platforms don't enforce uniformity in the data submitted. What's the real business value of what is reported then?
- Commitment of resources and acknowledgement of the critical importance of effective information governance practices and the benefits, i.e., improved transparency, consistency of information and information quality to name a few from the C-suite. Some still don't quite get it. Ethical considerations are just starting to be explored and need to be addressed.

STEP 4: BUILD COMPREHENSIVE GOVERNANCE

Governance implies having procedures, tools and rules to encourage desired outcomes with strategic oversight to set the appropriate direction and pick which outcomes are desired. To be successful, both are needed. And for strategic oversight to be successful, it cannot be seen or executed as an IT issue. Real involvement from business leaders to set direction is a must.

Similarly, the more tactical side of information governance can mean having processes in place to get high quality, accurate information, or having shared definitions and understandings allowing that information to be used, or even having structured, secure technology and procedures in place to allow only authorized individuals to access information. Ensuring that all necessary facets are being covered by an appropriate set of activities can go a long way to making sure an overly narrow approach doesn't undermine the effectiveness of the program.

Implement practical security and defense in depth. By practical security, we mean security that actually makes a difference and the normal employee can do. We really have lost our way with throwing technology and policy at some of these security issues instead of taking a human-centric design approach to how and why we deploy security systems. More is not better. Action-oriented security is better. Accountable security is better. Click on 14 training phishing attacks in a row and you should be fired. Better practical security is better. Additionally, you need a balanced defense in depth. Some attacks can be defeated on the edge or network and others are best defeated on the client. Balance is the key to a long and prosperous life or security program. Train staff on information literacy and information security sensitivity - people can't value something they don't understand.

There are excellent governing bodies which provide processes by which information should be managed, e.g. Data Protection Standards 2.0 from the ISO organization. It details the maturing of data protection processes and outlines when data should be encrypted (at rest and in motion) and methods for accomplishing this protection. Other resources worth checking out may be EDRM Information Governance Reference Model, ARMA, Global Privacy and Security by Design, and IEEE initiative on ethics of autonomous and intelligent systems.

Consider the following to secure and protect your sensitive information:

- **Data Mapping**: It can be extremely difficult to manage information if you don't know what information you have. Similar to an "Electronically Stored Information" (ESI) data map (critical for litigation response efforts), an inventory of what needs to be managed is a necessity. Although not specifically required in privacy regulations, it is often mentioned as an important first step. Don't think of a data map as a document you keep on your shelf. A true data map should be as interactive and rich as what you find on a phone or computer. It should meet the needs of all of your data stakeholders and be able to organize and present data to meet the needs of a myriad of use cases. As an example, one major oil and gas company used Infotection's holistic approach to index governed (O365) and ungoverned data to map content for records, litigation, and privacy regulatory compliance all together.

- **Automated Governance or SaaS Management Solution**: The native functionality of cloud productivity solutions, such as Office 365 or G Suite, don't always fully satisfy organizations' governance requirements. A governance or SaaS management solution can provide enhanced visibility and control over the provisioning, management and expiration of the virtual workspaces (or containers) within these collaboration environments. This can help ensure the correct settings are always in place and not modified by users; content classification and memberships are appropriate; the collaboration environment stays organized and critical business data is not expired inappropriately. A Microsoft Teams governance solution is more critical than ever as remote work has led to a usage surge. This can result in sprawl impacting productivity, security and compliance. As an example, Prudential Financial therefore implemented AvePoint to get control over Microsoft Teams and site sprawl, mitigate the IT burden, and ensure quick reports on Group ownership and permissions

- **Threat Modeling**: There is a whole universe of security controls that can be deployed to protect information. In order to select the right approach, it is critical to consider what outcomes you are working to avoid, what threat actors might cause those outcomes and how they might cause those outcomes. For most organizations, constraints on resources mean that only some risks will be defended against optimally. Be sure those risks are your most important risks and be sure they are realistic risks. A focus on interesting and newsworthy risks is a waste of time if you are not well defended against dangerous things that happen so often they have become mundane.

- **Risk Appetite and Risk Ownership**: Define a clear risk appetite for the organization and clear ownership of risk in order to align your team's actions to your organization's goals. Without defining an acceptable amount of risk in a measurable, useful way, teams will come to their own definition that may not align to your organization's needs leading to overly conservative or risk tolerant approaches. The decisions made by individuals will often treat the outcomes for the organization as secondary to outcomes for the individual, leading to misalignment of the factors driving decisions to the actual outcomes. Similarly, without defined risk ownership, individuals will manage their own risk in ways that do not align with the optimal management of the organization's risks. Solid risk ownership procedures on the other hand make individuals accountable for the outcomes of the individual's decisions and how well those outcomes align with the organization's goals. Usually a flexible approach is required in order to accommodate typical information security risk dynamics like the right decision being one that costs money for many years and that can never prove the costs that were prevented. This is where having both a defined risk appetite and a solid approach to risk ownership rely on each other to be effective.

- **Staffing Over Tools**: Typical information security programs are chronically over capitalized and tend to have more tools deployed than they can effectively use based on their staffing level. Programs like this rarely achieve their objectives. Align budgets to allow for appropriate staffing levels, or at a minimum save money by not buying more tools when staff is not available to support them.

Consider the following to ensure compliance with changing regulations:

- **Set a Moral Compass First**: Organizations where leadership sets a moral direction first will always have an easier time with compliance obligations because they are building on a sound foundation that employees can intuitively align to. This approach lowers the cost of compliance by better aligning employees to their obligations and because fines and penalties for non-compliance are often lighter for organizations where a real effort was made to comply with the spirit of the law as compared to those where compliance was done under a technicality-first approach. That said, this approach is not advisable for organizations with inherently predatory business models. Employees will readily sense the disconnect and it would be better to simply enforce rules for the sake of rules than spend time on a veneer of respectability.
- **Regulation Monitoring**: If there is not a visible, empowered person or team responsible for monitoring compliance with regulations, then it is unlikely that regulatory compliance will succeed. In terms of helping that person manage the scope of international requirements, most international organizations cannot successfully monitor for regulatory changes in every locality they operate in without outside assistance. Subscription services that provide for this capability are growing in popularity and can be very helpful, e.g. Virgo from Access Corporation.
- **Solve Regulations Broadly**: Complying with regulations narrowly, by limiting compliance actions to the locality, population or data the regulation affects will always be an effective solution to expensive or onerous requirements. However, being overly specific about applying controls can result in a balkanized approach to regulatory compliance where extra costs are incurred. These costs can come from economy of scale breaking down due to inconsistent procedures and tools for areas under different regulatory requirements. Similarly, costs can be higher because compliance efforts are narrowly scoped and then must be repeated when new regulations apply similar requirements to another area.

As example, a data breach reporting process in the United States must accommodate fifty different state laws. Rather than having a procedure for each state, it is more efficient to have a procedure that applies everywhere and have a step of that procedure to take into account any of the locally required differences that are extreme. The standard procedure can gain a lot of efficiency by rounding up all the local requirements to a procedure that meets most state laws even though this means a more rigorous compliance effort than is legally required will be in place for some areas.

This approach also has the advantage of managing consumer expectations better as consumers often have expectations that differ widely from actual legal requirements. Rounding up regulatory requirements tends to better approximate those expectations while also yielding the efficiency of a more consistent approach across areas.

STEP 5: SET THE RIGHT FOUNDATIONS

Different applications, different data, different content, different use cases and different jurisdictions are going to require differing approaches and solutions. Firms need a coherent information governance strategy. They need a good data inventory and clear information governance principles and practices. Invest in data standards - use industry standard reference models, etc. Invest in good metadata management - so you can understand the content you have (where it came from); how it should be used and when it can be disposed of.

Advanced information security capacities can be easily undone with sloppy behaviors. Implement logical and physical security with well thought out access controls. Implement VPNs, two-factor authentication, appropriate information architectures and patch, update and upgrade continually. Understand the legal and regulatory environments you operate in and rise to the challenge, don't implement mere compliance. Make sure you have a records retention schedule and follow it.

Develop or hire a regulatory monitoring team. Understand the policy and practical implications of legal and regulatory requirements and changes. Create a regulatory transformation office with input from all relevant stakeholders (business, IT, compliance, legal, communications/change management). Join industry associations for best practices. Hire 3rd parties to undertake compliance audits. Invest in compliance software.

Information governance in the absence of the right tools and skills cannot meet a modern organization's needs. Target a common infrastructure rather than fragmented adoption of different platforms in different areas, and ensure that the platform is a modern, extensible platform that allows for privacy and security by design. As an example, Office 365 has for many organizations become the new platform for collaboration, but how do you ensure excellent information search and compliance-by-design? Infotechtion experts recommends organizations to achieve this by implementing a metadata model in Office 365 SharePoint Online sites using master data, ensuring that all information stored in Office 365 sites automatically inherent relevant metadata (business area, process, country, etc), configuring search to allow for progressive filtering using metadata, and automating records management based on document type and document status (draft vs final).

Alongside the tools needed, people who are skilled in using those tools are required. Given the tight marketplace for expert labor in this area, consider investing in people you already have to build your own information and data experts.

Leverage many layers of security across your Wide Area Network as well as your endpoint devices. Leverage tools which are 'world class' in identifying and releasing known issue remediation in a format which can be quickly disseminated across a large scale enterprise is important to protecting your data.

SUMMARY

Good information practices require top down commitment, investment and dedicated resources. There are a few ways to manage information well and lots of ways to do it badly. Don't try to do this quickly, cheaply or without expert support. Amateurish information management is like performing dentistry on yourself – best to be avoided as the worst case scenario is so bad and the best case is that your mistakes can be corrected by a professional.

The information governance journey is a marathon not a sprint - but experience has shown that marathons are being finished ever faster as we learn and train better. However it's a journey that will never end if it is not begun.

The Digital Value Institute

A CXO think-tank to fast-track the digital learning curve

NEXT STEPS

TASK

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ABOUT THE AUTHORS:

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Thornton May is a futurist, author and educator. At Dartmouth College, Keio University [Tokyo] and the Center for Japanese Studies at the University of Michigan, Thornton studied Japanese technology policies and practices during the Meiji Restoration [1868 through 1912], post-World War II and 1970s. Living in Tokyo Thornton worked at a series of global Japanese companies assisting managing "emerging technology" investments.

Thornton was hired by noted futurist Alvin Toffler [Future Shock, Third Wave, Power Shift and Revolutionary Wealth] to assist the "technology futures" program for Toffler Associates. Toffler Associates designed and delivered the strategic plans for South Korea [President Kim Dae-Jung] and Singapore [Minister of Finance Lew Kuan Yew]. These plans specified the technology investments necessary to sustain economic dominance in the twenty-first century.

Thornton returned to America to lead technology research at the Nolan Norton Institute. His research team is credited for coining the phrase "Chief Information Officer" in 1981. Thornton pioneered the multi-client research program designed to discover strategic and operating insights associated with emerging technologies.

His work as a futurist and anthropologist position him as part Paul Revere [the one to sound the alarm] and part Arnold Toynbee/Edward Gibbon [the one who explains what has happened/what is happening].

Thornton has taught at four major universities, written columns on technology for multiple leading publications [25 plus years at Computerworld], advises major organizations and government agencies on how to think differently about technology, all the while conducting seminal anthropological field research into technology-use behaviors of the various tribes comprising modern society.

Thornton began his career as an anthropologist studying tribal behavior in the modern Japanese corporation. He received a bachelor's degree from Dartmouth College, a master's degree from Carnegie Mellon University, and did post-graduate work in Japanese Studies at the University of Michigan. At five feet, seven inches, he played professional basketball in Japan.

Thornton brings a scholar's patience for empirical research, a second-to-none gift for storytelling and a stand-up comedian's sense of humor to his audiences. His book, The New Know: Innovation Powered by Analytics examines the intersection of the analytic and executive tribes.

The editors at eWeek honored Thornton, including him on their list of 'Top 100 Most Influential People in IT.' The editors at Fast Company labeled him 'one of the top 50 brains in technology today.' Thornton is a founding member of the Internet of Things World Forum.

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Atle is a digital business explorer and evangelist. His interest in the business impact of cloud, social, mobile, IoT, and artificial intelligence has made him a frequent keynoter and workshop facilitator at events across the world.

Atle has a MSc in Economics and Business Administration from the Norwegian School of Economics with a specialization in business strategy and marketing. He has since 1996 spent his career in IT and Information Management, with a focus on how information can be used to add value, reduce costs, manage risks, and/or create new opportunities. This has made him into a leading information management innovator and educator.

From 2004 to 2018, he worked as VP, COO, and SVP at AIIM – a global association for intelligent information management. While at AIIM, he founded the AIIM annual conference, online community, certification, and training programs with over 30,000 students. He also served several years as the General Secretary of the DLM Forum for the European Commission, responsible for creating standards for electronic records management and digital archiving.

Atle led for almost a decade AIIM´s information management think-tank in EMEA and NA with a focus on identifying the future and impact of cloud, mobile, social, AI, etc. He also participated in several task-forces about the future of Enterprise IT with industry experts like Geoffrey Moore [best-selling author of Crossing the Chasm] and Andrew McAfee [best-selling author of Race Against the Machine]. The task-force with Geoffrey Moore introduced the concept Systems of Record vs Systems of Engagement, and a Forbes blogger named this the best social media idea of 2011. While at AIIM, he also developed and delivered custom information management programs for several large organizations like Chevron, European Central Bank, HP, Konica Minolta, and Oracle.

ABOUT THE TECHNOLOGY PARTNERS:

AvePoint accelerates your digital transformation success. Over 16,000 companies and 6 million Office 365 users worldwide trust AvePoint software and services for their data migration, management, and protection needs in the cloud, on-premises and hybrid environments. AvePoint is a Microsoft Global ISV Partner and four-time Microsoft Partner of the Year Award winner. Founded in 2001, AvePoint is privately held and headquartered in Jersey City, NJ.

ABOUT THE TECHNOLOGY PARTNERS:

Cognizant

Cognizant (NASDAQ-100: CTSH) is one of the world's leading professional services companies, transforming clients' business, operating and technology models for the digital era. Our unique industry-based, consultative approach helps many of the best-known organizations in every industry and geography envision, build and run more innovative and efficient businesses.

ABOUT THE TECHNOLOGY PARTNERS:

Infotechtion

Infotechtion is a vendor independent and global consulting firm specializing in holistic governance practices: mapping, understanding, remedying, improving and automating information protection and governance across the enterprise, and critically in Office 365. Most customers have already invested in Office 365 products; we provide strategic consulting and business enablement services on integrating business information with information governance requirements. We do not sell any software or licenses, which allows us to focus exclusively on the maximization of the value for our clients.

We are based in Europe, UK, and the US with global clients in highly regulated industries with up to 300,000 employees. Many of them are now using new Office 365 features and functions to better protect information with in-place records management. This ensure compliance while reducing operational, legal, and reputational risks, but also allow for sunsetting of legacy content management systems to reduce costs.