OpenText™

The Future of Information

OpenText Release 16

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OPENTEXT CEO WHITE PAPER

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Introduction

We are all information companies. Whether we are a bank, an insurance agency, a mining company, a manufacturer, a technology company—all of our daily business operations hinge on information in its many formats. Our information is valuable. Not only does information drive business, it is also a key differentiator that will define our competitiveness in the future.

We're entering an age of digitalization. We're just in the early stages of a Digital Revolution. Disruptive technologies are changing the business models in every industry. Extreme automation and extreme connectivity are forcing the enterprise to rethink its approach to customers, markets, its business network, and operations.

The choice is simple; the journey isn't. The choice is digital or die, and the journey is a complex one. It involves the complete digitalization of all processes and information, the consolidation of information across many systems, a seamlessly integrated business network, wildly exciting customer experiences, and cognitive systems that will augment how we work and redefine our relationships with technology.

How will the enterprise get there?

With OpenText Release 16—the world's first digital platform. As a platform of fully integrated Enterprise Information Management (EIM) suites, OpenText Release 16 is the future of information.

This whitepaper has been written to describe the OpenText view of this Digital Revolution, how it is impacting us as information companies, and how EIM as the transformative technology has come of age with OpenText Release 16, featuring Suite 16 and Cloud 16—the most comprehensive, integrated digital EIM platform in the market today. OpenText Release 16 offers users and businesses 'A Better Way to Work' and contains new capabilities that set it apart from the market.

The Digital Revolution—Extreme Automation and Extreme Connectivity

This is a very exciting time to be part of the global economy. We're in the midst of a Digital Revolution. The advances and their impacts are comparable to those made in previous industrial revolutions. Like those in the past, this revolution is technology-led and based on automation and connectivity. From innovations in mechanization in the early 18th century to mass production in the late 19th century and ensuing developments in computing, two forces are causing massive change, and they are extreme automation and extreme connectivity.

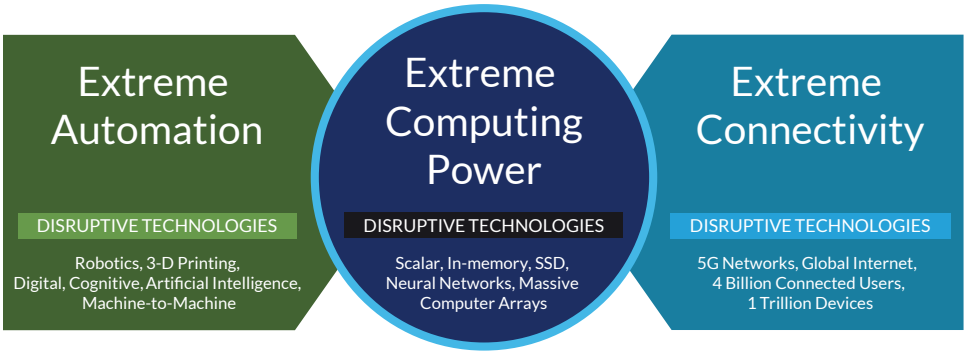


FIGURE 1:

Extreme Automation and Extreme Connectivity

Extreme automation describes an increasing reliance on robotics and Artificial Intelligence (AI) in all aspects of our lives. It includes disruptive technologies like three-dimensional (3-D) printing, the Internet of Things (IoT), machine-to-machine (M2M) communications (like sensors), and cognitive systems.

Extreme connectivity happens when all of these systems interact and communicate with each other and people in real time. It is 4 billion users connecting with 1 trillion devices across fifth generation (5G) wireless networks.

When extreme automation is combined with extreme connectivity, the power of our computing systems increases exponentially. The global Internet is being fueled by advances in connectivity and capacity. These advances aren't happening in baby steps; they are 1,000-fold gains in capacity, connections across 1 trillion devices, and from a user perspective, incredibly low latency and rapid response rates. As more people connect with more machines, we are moving closer to zero-distance connectivity with technology.

The impact of these forces—extreme automation and extreme connectivity—will be profound.

Out of extreme automation and extreme connectivity, new economies or economical structures will be born. Let's consider 3-D printing and how it will affect industrial machinery production. Because 3-D printing works with materials like titanium, steel, aluminum and copper, it will allow for faster prototyping and time-to-market for products, especially in the aerospace and auto industries.

Economies, markets, and businesses will be forced to adapt. Volumes of information—big data—will be a major byproduct of extreme automation and extreme connectivity. In order to survive disruption, organizations will need to figure out how to harness all of this data to create new opportunities for survival and growth.

So it's a time of upheaval, but also a time of significant opportunity. It's an exciting revolution to be a part of, to witness extremely automated and connected forces working with extreme computing. But it's also a very daunting time to work in any industry.

The Digital Revolution will destroy jobs.

As new economic systems and new business models emerge, a wide range of businesses that act as intermediaries will become obsolete. Automation and AI will replace many low-skill jobs and even some middle-skill, routine jobs, offsetting human capital costs. Only the organizations that embrace digitalization with the flexibility to innovate will be able to overcome barriers to business to reinvent themselves, their workforce, and their markets.

The Impact of the Digital Revolution

This Digital Revolution is not about job creation, it is about job destruction.

As many as 25 to 40 million jobs will disappear as a direct result of extreme automation and extreme connectivity. The greatest losses will occur in white-collar office and administrative roles. This loss could be partially offset by the creation of 2.1 million new jobs.[1]

We experienced similar waves of automation when Material Requirements Planning (MRP) replaced Enterprise Resource Planning (ERP), and ERP shifted to CRM, and these were replaced by e-business suites. When this happened, jobs were created, many of which were offshore. New research shows that over the next two decades, nearly half of all jobs will be susceptible to automation.[2] The combination of advances in robotics and automation, along with rising wages in developing countries, has encouraged organizations to reinvest in local manufacturing and services. The more processes are automated, the less need there is to outsource to countries with cheap labor.

The Digital Revolution will bring an increasing reliance on self-service technology, sensors, M2M communication, and artificial intelligence. These will transform the workplace as menial tasks and even non-routine jobs are digitalized through robotics and process automation. These systems will make businesses more efficient.

AI will be pervasive. Based on advances in computing, automation will include the processing of languages, images, and data. As paper is removed and processes automated, clerical work will be eliminated. In a hospital, for example, where records are digitalized, the need for clerical work will diminish. Instead, higher-skilled staff will be hired to troubleshoot and manage exceptional cases. Other jobs that will be impacted include customer services, sales, and support. Automated personal assistants like Apple's Siri, Google Now, and Amazon's EchoLike are demonstrating this automation of clerical work. They can book appointments, send notifications and alerts, and make dinner reservations.

Robotics and 3-D printing will render low- and even middle-skill-level jobs redundant. Extreme automation will make robotics more mobile, giving them a greater range of movement and functionality. Machine-to-machine communications will enable machines to process data and make decisions based on this data as we move toward more intelligent, cognitive systems. In many cases, the intelligence that these systems deliver will be more accurate, immediate, and safer than human capacity.

The labor force is not the only thing that will be displaced in the Digital Revolution. Over the next five years, executives expect digital disruption to displace four out of ten incumbents—or 40 percent of established market leaders.[3] This is a profound forecast, and it applies to all industries. Digital disruption is restructuring industries

[1] Bhanu Baweja, Paul Donovan, et al., *"Extreme automation and connectivity: The global, regional, and investment implications of the Fourth Industrial Revolution,"* UBS, January 2016.

[2] David R. Wheeler, *"Silicon Valley to millennials: Drop dead,"* CNN, March 18, 2015, *http://us.cnn.com/2015/03/18/opinions/wheeler-silicon-valley-jobs/?iid=ob_article_organicsidebar_expansion&iref=obnetwork* (accessed April 2015).

[3] *"Executives Expect Digital Disruption to Displace 4 in 10 Incumbents by Industry within Next Five Years,"* Webwire, June 24, 2015, *http://www.webwire.com/ViewPressRel.asp?aId=198501* (accessed July 2015).

faster than ever before in history. If market leaders are threatened, then no organization is untouchable.



FIGURE 2:

Its Impact will be Profound

In the Digital Revolution, the winners will be the ones who find new customers, discover new markets, and pursue new revenue streams using digital channels. The digital leaders will have competitive advantage. Companies that demonstrate digital growth demonstrate higher financial performance. On average, digital leaders are 26 percent more profitable than their less digitally mature competitors. They generate 9 percent more revenue, and 12 percent higher market valuation rates. For large traditional companies, this can equate to billions of dollars.[4]

The winners will outpace the losers who fail to reinvent themselves and miss the opportunities fueled by extreme automation and extreme connectivity. The message here is clear. It is digital or die. The organizations that embrace digitalization will thrive. The laggards will be unable to differentiate their products and services. They will be unable to compete.

Digital is playing a larger role in our economy. By 2020, 25 percent of the world's Gross Domestic Product (GDP) will not be touched by a human hand.[5] This is significant. A quarter of the world's GDP will be digital.

The economic impact of digital is vast. The Internet is one of the biggest drivers of economic growth. It has provided a platform for new business models and led to innovations for creating, accessing, delivering, and consuming goods and services. It has transformed industries, nations, and their governments. Beyond productivity, it offers opportunities to expand consumer bases and markets, as the means for new product development and innovation. As more people connect, its influence will only grow.

Internet maturity correlates with wealth creation. It is used by companies in every industry. Businesses that use the Internet tend to grow more quickly, export two times as much as those that don't, and create more than twice as many jobs.[6] Despite these statistics, many companies are off to a poor start on the journey toward digital transformation. While organizations are taking advantage of digital technologies, many economies remain digitally immature. This means that the ability to unlock the value of digital is far from being realized.

[4] Nigel Fenwick and Martin Gill, *"The Future of Business is Digital,"* Forrester Research, March 10, 2014.

[5] Mark Knickrehm, Bruno Berthon and Paul Daugherty, *"Digital Disruption: The Growth Multiplier,"* Accenture, 2016.

[6] Matthiue Pelissie du Rausas, James Manyika, et al, *"Internet Matters: The Net's sweeping impact on growth, jobs, and prosperity,"* McKinsey Global Institute, May 2011.

The Pace of Change is Accelerating

Disruptive technologies like mobility, the Cloud, the IoT, and cognitive systems are accelerating the pace of change in a Digital Revolution.

If we examine this pace of change in a larger historical context—one that looks back to our origins and the advances we've made over time—the implications on business (and society) are radical, onerous, and filled with potential.

Going right back to the beginning, the first human species appeared on the planet from 150,000 to 200,000 years ago (depending on what study you follow). It took us equally as long to progress to using movable type with the invention of Gutenberg's printing press, and to start sharing knowledge and information. Connectivity took root.

The printing press prefaced another significant era of human invention. A couple of hundred years following its invention, we embarked on the Industrial Revolution with the invention of the steam engine. Through automation, the pace of innovation increased.

Following the Industrial Revolution, it took us approximately 120 to 140 years to get to where we are today. Based on this, we can see that the pace of change has been truncated from 150,000 to 120-140 years. This becomes even more extraordinary when we consider the tremendous impact of the Internet.

The Internet revolution took only 20 years to propagate. After that time it became ubiquitous—connecting people across devices, businesses, applications, and hardware like sensors and robotics. Here we see connectivity so extreme that some analysts estimate that by 2020, 80 percent of the adult human population will be connected to the Internet. During this time, the number of mobile phones will surpass the human population. This is phenomenal when we consider that just eight years ago, iPads didn't even exist.

So far, the pace of change has accelerated from 150,000 to 140 to 20 to 8 years. The rate at which this change is occurring is exponential.

When we compare the volumes of information the printing press made available to the volumes of information we generate today, the difference highlights the accelerated pace of change. Every 48 hours, we produce the same amount of information that was created from the invention of the printing press up until about 2003. This means that the majority of the world's information has been generated in the last two years. We are all information companies, and the velocity at which every business is generating data is greater than ever, and this challenge will only be compounded.

From 150,000 years, 140 years, 20 years, 8 years—this is the speed of digital, and it's not coming—the revolution is already here.

Organizations in every industry all over the world face an increasing volume, velocity, and variety of information. This is not a trend, but the reality of doing business. From paper to fax to email to machine-to-machine communications—the digital universe is expanding.

The Digital Revolution is introducing another mass inflection and exponential change in the rate of our development. Our systems of record (ERP) were augmented by systems of engagement (social and mobile) and these will be extended by systems of insight (cognitive).

Every organization will make a transformational journey to digital, to embrace cognitive systems of insight. But we have a long way to go.

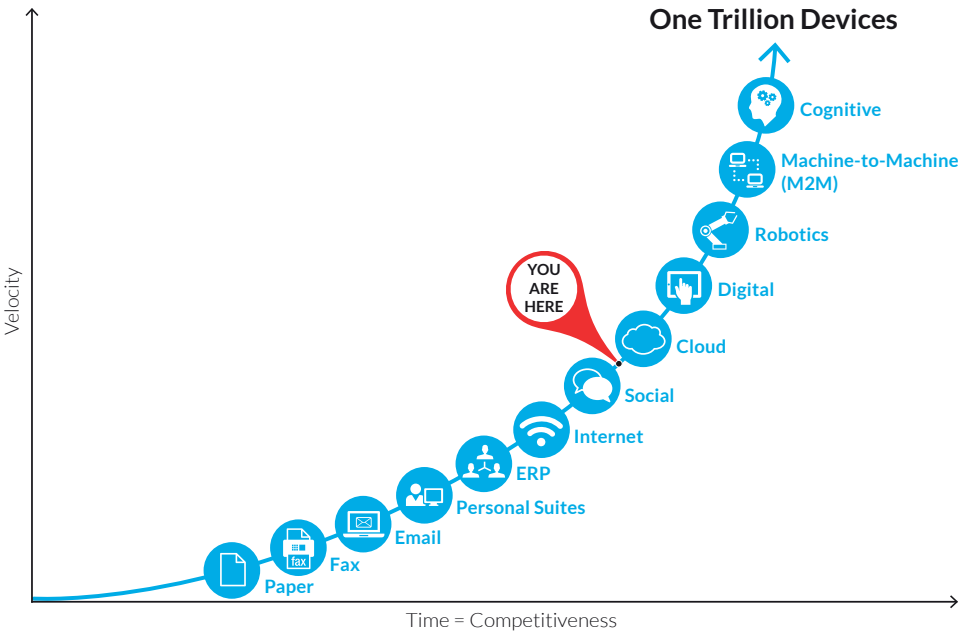


FIGURE 3:

The Race to Zero

Many organizations are struggling along this curve of technology adoption, caught between the two extremes of paper-based legacy systems and moving their business to the Cloud in a "race to zero" on IT infrastructure. This is even more challenging for the global industry leaders, who are not born digital. In fact, of the Global 2000, only around ten percent are moving their systems and data to the Cloud.

At OpenText, we have been following this evolution, watching Enterprise Information Management (EIM) overtake ERP information systems as the future of Information. In its development, EIM is following a similar trajectory to ERP. While ERP manages structured information and transactions, EIM manages unstructured information. Its functionality eclipses ERP as it provides a complete platform for digitalization, integrating with ERP to bring together structured and unstructured information inside the enterprise and across the business network. The Digital Revolution is introducing new digital formats to the enterprise that are based on robotics, machine-to-machine communications, and cognitive systems. This is where the future of EIM lies and where we will focus to help the enterprise embrace new technologies and new information formats.

Because climbing this curve is insanely hard.

The Key Disruptive Forces

Organizations will evolve or they will be disrupted. They are facing unprecedented disruptive forces as they climb the technology adoption curve on their journeys to digital transformation.

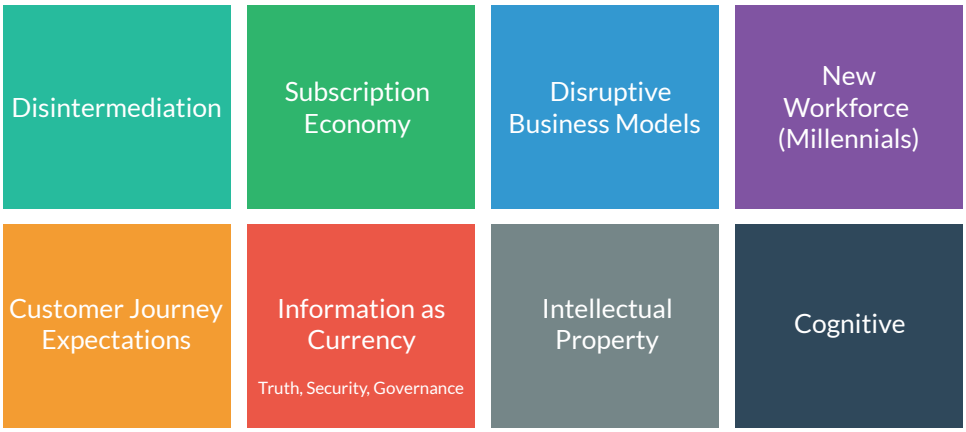


FIGURE 4:

Key Disruptive Forces

Disintermediation is one of the top forces of change in the Digital Revolution. Today's digital disruptors are using technology to disintermediate entire industries and unseat corporate giants. New nomenclature has emerged to describe this transformational process. In the Internet Era, we talked about being "amazoned". During the Digital Revolution, we are talking about being "ubered".

A common thread to digital disruption is that the middleman is gone in every industry. The relationship to the buyer is direct. In the insurance industry, the average age of an agent in the U.S. is 59. The agent is an intermediate channel between the insurance company and a customer. This channel will be completely gone in the next two years. It will be a direct relationship.

Insurance is direct. Movies are direct. Music is direct.

The business model pioneered by magazines and publishers is now everywhere. Consumers want the choice to own the asset or have access to it. A subscription model is no longer optional, the Subscription Economy is now a mainstream part of our lives. Shifting to a subscription model requires different approaches to management, marketing, and money.

Subscription models challenge the incumbent or can create a competitive barrier. Netflix challenged Blockbuster and continues to challenge the entertainment industry in Hollywood. Salesforce challenges Oracle and SAP. Apple challenges music and the mobile/telco industries. You can now subscribe to an iPhone via a new Apple service. All of these digital leaders of today have successfully fused imagination with technology to change the way consumers buy, the way companies market, and the way enterprises operationalize their businesses.

In every sector, digital technologies are introducing new business models and changing the rules of business. From completely free models of subscription (like Facebook and Google) to free access with the option to upgrade (iTunes and Skype) to a marketplace model such as eBay or Etsy, a crowdsourcing model such as Kickstarter, or an on-demand model like Spotify or Uber. There are hundreds of examples that cross all industries. In fact, it's rare to find an industry that hasn't been disrupted.

The digital innovators are more agile than the traditional incumbents. They defy economic theory. With very little capital costs, barriers to entry are minimized. Disruptors can operate and scale at a very fast pace. Many are outpacing the larger incumbent organizations that are tied to their legacy systems. There is hope for incumbents, however. With an EIM platform in place, new business models can be introduced successfully *inside* the enterprise. This is already occurring with digital marketing initiatives, e-recruiting in human resources, and digital supply chains.

As well as new business models, a new workforce is finding its way into the enterprise. In less than a decade, Millenials will overtake retiring demographics and completely reconfigure the workforce. The enterprise will have to cater to Millennials as the first "digital" generation to enter the workforce. Technology is central to the way this demographic works and plays. They take extreme connectivity for granted, functioning on the immediacy of real-time insight and action. The enterprise will need to rethink its organizational structure, its IT infrastructure, and its approach to recruiting, retaining, and motivating this workforce.

Like the Millennials, digital consumers and their expectations are impacting the enterprise. In the digital world, success is based on hyper-differentiation. The digital leaders know this. That's why they're already innovating and creating compelling experiences across all digital channels. Consumers are growing increasingly savvy and fickle, and their loyalty must be earned. They are demanding more from the brands they love, and their tolerance for poor engagement is dwindling. In just a few clicks, they can like, subscribe, share, or buy from someone else.

Digital engagement starts inside the firewall and extends all along the supply chain. To maximize engagement, organizations are digitalizing the entire customer journey, delivering a consistently branded experience on any device, consolidating customer information, and mining this to gain insights into consumer behavior to deliver exactly the right experience at the right moment. Digital delivers new ways to engage with customers and build relationships.

Customer journeys are charted by every point of contact a customer has with a brand. At each touchpoint, data accumulates and becomes more valuable. This detritus is pure gold. It is key to differentiating products and services because it can be examined and analyzed to uncover insights into buyer behavior, to reveal needs, wants, and motives at each stage of the journey.

Information is the new currency in the Digital Revolution.

New businesses and whole industries are emerging to support the digitalization of content. Google, Facebook, and Twitter have built their businesses on the economics of data. They're collecting it, analyzing it, and monetizing it at great profit. This approach can be expanded. Every business has data to monetize.

If data is the new asset class, then analytics is the next frontier in deriving value from information, uncovering "moments of truth" that empower organizations. Analytics has the power to transform facts into strategic insights that deliver intelligence for profound impact.

But where there is opportunity there is also risk. Data is vulnerable. Like money, data can be stolen. As information grows in value, so will the need to protect and manage it. The protection of corporate Intellectual Property (IP) is becoming an increasing concern for organizations as confidential information is housed in digital format. Extreme automation and extreme connectivity will give rise to virtual trade in ideas and a greater need to protect IP. This will be increasingly mandated by governments and regulatory bodies.

So information will only grow in value, and this value will be intensified by cognitive systems.

Cognitive computing is a game changer for the enterprise with its promise of extreme automation and the creation of highly intelligent cognitive products.

Current computing systems are doing a good job of processing information, programming business rules, and automating processes to increase our overall productivity and efficiency. In accordance with Moore's Law, as computers become more powerful, they become more mainstream (available to many at a lower cost). Based on more powerful microprocessors, the creation of a variety of sensors and improved analytics, our computer systems are becoming "smarter". They have evolved from automating simple tasks to becoming self-learning, AI systems. Ten percent of our computers are learning rather than processing.[7] Neural networks are being used to complete tasks like speech recognition that ordinary, rules-based programming can't solve.

As neural networks become a reality, computers will evolve to be more intelligent and human-like. Our devices can already listen to us (through speech recognition software), act as our eyes to monitor aspects of our lives (visually and otherwise) and respond to our touch. Touch screens and wearable devices have revolutionized how we interact with computers; cognitive systems will take interaction to a whole new level. They will present us with new ways to interact with technologies that we have yet to perceive. With their ability to make complex decisions quickly based on volumes of data, cognitive systems will expand our cognition, improve our efficiency, and empower us to be more innovative.

[7] Daryl C. Plummer et al, *"Gartner Top Predictions 2014: Plan for a Disruptive, but Constructive Future,"* Gartner, Inc., October 7, 2013.

Enter the Millennials

The Millennials are one of the biggest disruptors of the enterprise. They have usurped the Baby Boomers and GenXers as the largest demographic in the workplace and now account for over 25 percent of the world's population. And, at almost 2 billion strong, they are a force to be reckoned with.[8]

Digital is second nature to Millennials and plays a significant part in their lives. They believe new technology makes life easier and brings people closer together. Millennials are mobile. They are hyper-connected and always on.



1. Digital natives, born only knowing the Internet
2. Extreme Talent Management change… simultaneous with Extreme Automation, Connectivity, Computing Power
3. Key Transitions

FIGURE 5:

Enter the Millennials

Based on their love of all things digital, Millennials are introducing a whole new value system to the workplace. They eschew traditional hierarchical structures, prefer working in ways that are open, flexible and social, and are introducing new digital technologies into the enterprise, even if it means circumventing IT policy. They are multicultural, global, and believe in a work-life balance.

This demographic will soon make up 50 percent of the global workforce. As they enter the workforce, the enterprise will need to change its business models and approach to attracting and retaining this workforce.

Transitioning new employees and retiring older generations will mean shifting talent management strategies. The enterprise will have to bridge the gaps between generations to transition corporate knowledge and IP, mentoring the younger generations and preserving the knowledge of the older generations as they retire.

The shift toward jobs that are tacit and non-routine will bring a shortage of workers with the skills required to fill them.[9] The talent pool is shrinking and organizations will have to compete vigorously to attract Millennials, especially those with the skill sets needed to manage disruptive technologies.

[8] The Millennial Generation: Another Baby Boom: *http://www.newstrategist.com/store/files/AmGen6SamplePgs.pdf* (accessed October, 2015).

[9] Jeremy Rifkin, *"The Zero Marginal Cost Society,"* St. Martin's Press, 2014.

It will be critical to create a work environment that will attract and retain the right talent. Millennials will look for employment almost exclusively through social media channels and submit their resumes in video format. Once the right employees are recruited, organizations will need to offer exceptional training and career development programs to retain their top talent. Many of these programs will incorporate learning into social media, gaming, real-time feedback, and simulations.[10] Millennials want to work in an environment that caters to how they like to work, including flex hours, remote access, and BYOD or Bring-Your-Own-Device policies. Millennials are fickle; if their demands are not met, they will simply move on.

Millennials value authenticity. They want to be able to feel good about where they work because work is a reflection of these values. They expect their workplaces to be more engaging and sophisticated, bringing together different languages and cultures. The enterprise will be required to create and nurture a dynamic corporate culture.

Along with extreme automation, the Millennials will radically change the nature of work. As the promoters of technology and drivers of innovation, the enterprise will have to embrace their value systems, their diversity, and new ways of working.

[10] Jeanne C. Meister & Karie Willyerd, "*The 2020 Workplace*", HarperCollins Publishers, 2010.

Enter the Machines

As the Millennials enter the workforce, the machines will follow. And so cometh the machine.

We've explored the relationship between digital technologies and success factors, including increases in revenue and output, even in terms of economic impact and GDP.

The Internet is constantly evolving. The Internet of Things (IoT) has been identified as the next phase in the evolution of the Internet. The IoT is more than simply a technology trend, it will transform the world as we know it, creating a giant, global network of devices and machines that are connected, communicating, and exchanging information. This market will see 50 billion devices connected by 2020 and a value of $14.4 trillion.[11] Its potential impact on every industry is huge.

The rapid growth of the IoT is being driven by low-cost sensors and beacons, cloud computing, analytics, and mobility. The IoT automatically exchanges information over a network without requiring human-to-human or human-to-computer interaction. Instead, data exchange is based on machine-to-machine communications.

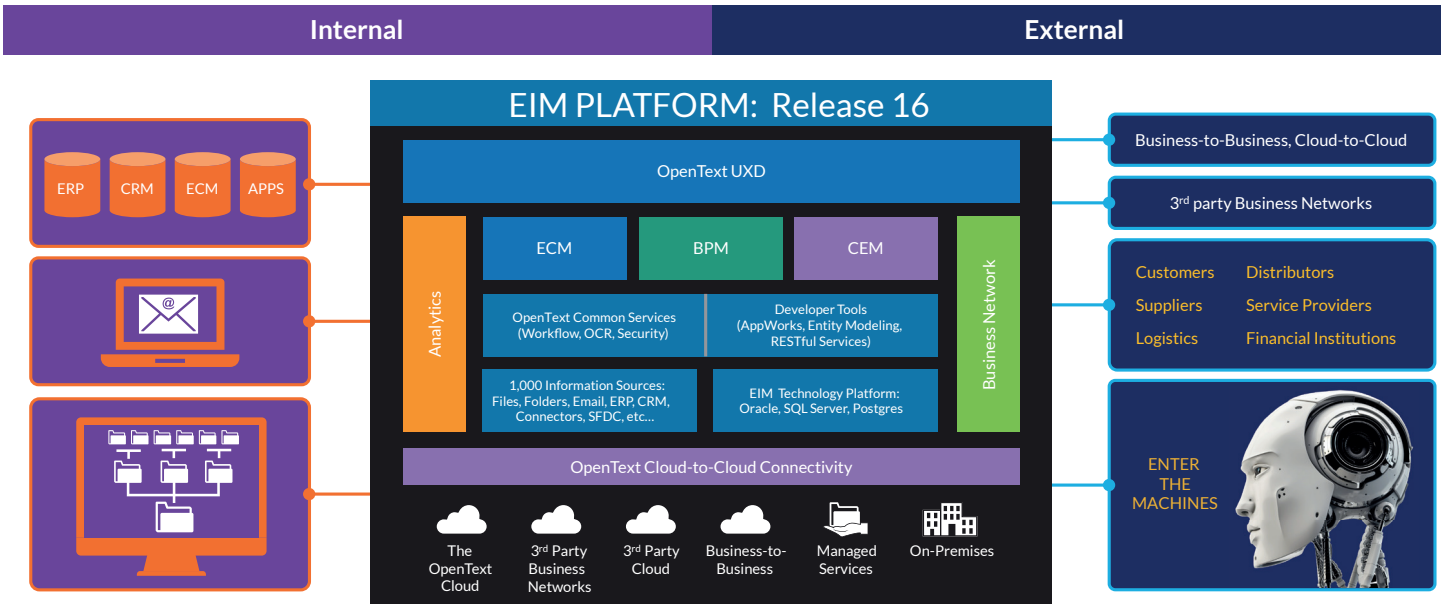
While the IoT is viewed by many as a nebulous, futuristic concept, in reality it already exists: we wear pedometers, smart watches, and cameras; our pets are micro chipped; and we drive cars with built-in sensors. Thanks to the IoT, many of our everyday appliances will soon have the ability to self-monitor and communicate with a network.

The IoT will add a whole new level of extreme automation, letting us program our homes, and even entire factory floors. Extreme automation will bring extreme efficiency. Robotics, sensors, and AI systems will continue to evolve and as they interact with the IoT.

The true promise of the IoT lies in the vast amounts of data it will exchange across billions of connected machines. Analytics will add a layer of intelligence to devices, delivering unprecedented levels of insight that will dramatically improve customer engagement and experience, optimize process automation and performance, reduce risks of fraud and non-compliance, and quicken the pace of innovation.

Companies that learn to use this information will gain competitive advantage. To capitalize on the power of the IoT and the massive volumes of data it will generate, organizations will be required to plug into their customers' digital ecosystems. To accommodate the IoT, they will need to invest in disruptive technologies, integrate emerging technologies with legacy IT infrastructure, standardize their data across systems, and create dynamic and flexible processes to support new technologies and devices. All of this is possible with an Enterprise information Management (EIM) platform.

[11] Eric Openshaw and John Hagel, *"Interoperability in the Disconnected World of Connected Things,"* Wired, February 24, 2015, *http://insights.wired.com/profiles/blogs/interoperability-in-the-disconnected-world-of-connected-things#ixzz3UBYIxPKh* (accessed March 2015).



EIM helps transform the enterprise into a digital enterprise. A digital enterprise climbs the technology curve with ease. Every transaction, every process, and all of the data that flows in between is digital—from internal systems and infrastructure to external systems in an extended business network in the Cloud. Its underlying systems are fast and configurable. It supports technologies that enhance automation, like sensors, machine-to-machine communications, and cognitive systems. When processes and data are fully integrated, predictive and prescriptive analytics can be applied to add value all across the enterprise and its supply network—to offer insights into better performance, customer behavior, and product innovation.

FIGURE 6:

EIM – Enter the Machines

The Rise of Cognitive Systems

The Digital Revolution is heralding the next great shift in the history of technology: the Cognitive Era. Based on the accelerated pace of technological change that we're experiencing today, the changes to come will deepen the relationship between humans and machines.

According to the Association of Computing Machinery (ACM), whose founding member was Alan Turing, there are three significant eras in the history of computer technology. The first era, the Tabulating Era, took place post 1900s and describes the early use of mechanical systems to tabulate calculations. The second era, the Programming Era, emerged in 1960 when scientists created computers that were dependent on the programming of processes or rules. Which brings us to our immediate future (perhaps as near as 2020) with the emergence of the Cognitive Era and the development of cognitive systems. During the Cognitive Era, computers will mature into learning systems. They will be able to understand data—or analyze, adapt, and suggest solutions based on data.

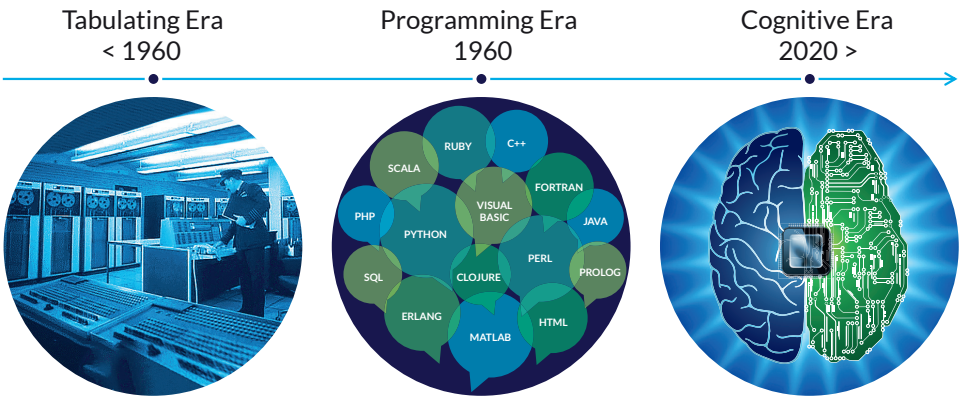


FIGURE 7:

The Three Eras of Computing

AI systems were the first cognitive systems. The terminology has evolved alongside the technology in favor of systems based on human biology and neural networks. In other words, cognitive science is not based on creating "artificial" intelligence. Cognitive computing is modeled after the human brain (as the most powerful computing system in the world) and its thought processes in a computerized model. Cognitive systems are self-learning systems that simulate the way a brain works using data mining, analytics, pattern recognition, and natural language processing to learn, interact, and make decisions.

Cognitive systems are already in place today in smart machines. In the transportation industry, smart systems like anti-lock braking systems, air bags, and crash avoidance systems are fully automated standard features. Automatic pilots and landing systems have been used for decades. While the presence of a human pilot is still preferred in planes, fully automated transit systems are common, and autonomous driverless cars, like Google's self-driving cars, are being developed. Smart cities are optimizing performance by automating traffic flow, energy use, pollution, and transit systems.

Cognitive systems transform data into smart data. Their thought processes are non-linear and they can process massive amounts of data, sometimes at a faster rate than the human brain. As big data accumulates, cognitive systems will be able to unlock the value buried in these massive data sets. Predictive and prescriptive analytics will be used to process data. Digital enterprises of the future will incorporate cognitive tools and analytics into their infrastructures. Their impact will be greater when they are combined with disruptive technologies like the Cloud, mobile devices, and the IoT.

The next two decades will see the development of next generation cognitive systems into enterprise systems, processes, and practices. These systems will power extreme automation and higher-level skilled knowledge-based roles. They will be used to amplify human capabilities, working seamlessly alongside people to uncover underlying patterns and trends, provide insights, make decisions, and prescribe actions. Cognitive computing will push the limits of what is possible with technology. They will become more powerful, smarter, and like the "HAL 9000", they will be able act autonomously, self-protect, self-monitor, self-program, and communicate with other cognitive systems. Unlike Hal, they will act as trusted advisors to us in our rapidly changing world.

At OpenText, we see cognitive computing and machine-to-machine communications as the next big technologies on the horizon. We've incorporated them into our EIM platform to help the enterprise achieve extreme automation, extreme connectivity, and extreme computing power. We've moved from data to information to knowledge and even wisdom, but we're constantly asking ourselves: "How can we apply cognition to enterprise information?" The answer lies with EIM as a single, digital platform of the truth, with information consolidated across systems, protected with information security and governance, managed, connected, and layered with insight using analytics.

The OpenText View of the World

Our customers are facing unprecedented competitive forces. Their competitors are defying Keynesian economics. They are experiencing a massively changing workforce, running a "race to zero" on infrastructure—all on a landscape of shrinking trusted partners. The world is becoming a much smaller economy based on the next generation of globalization. They must disrupt or die.

And the way to disrupt is through extreme automation and extreme connectivity—integrated and delivered through EIM in our latest release of the platform, OpenText Release 16.

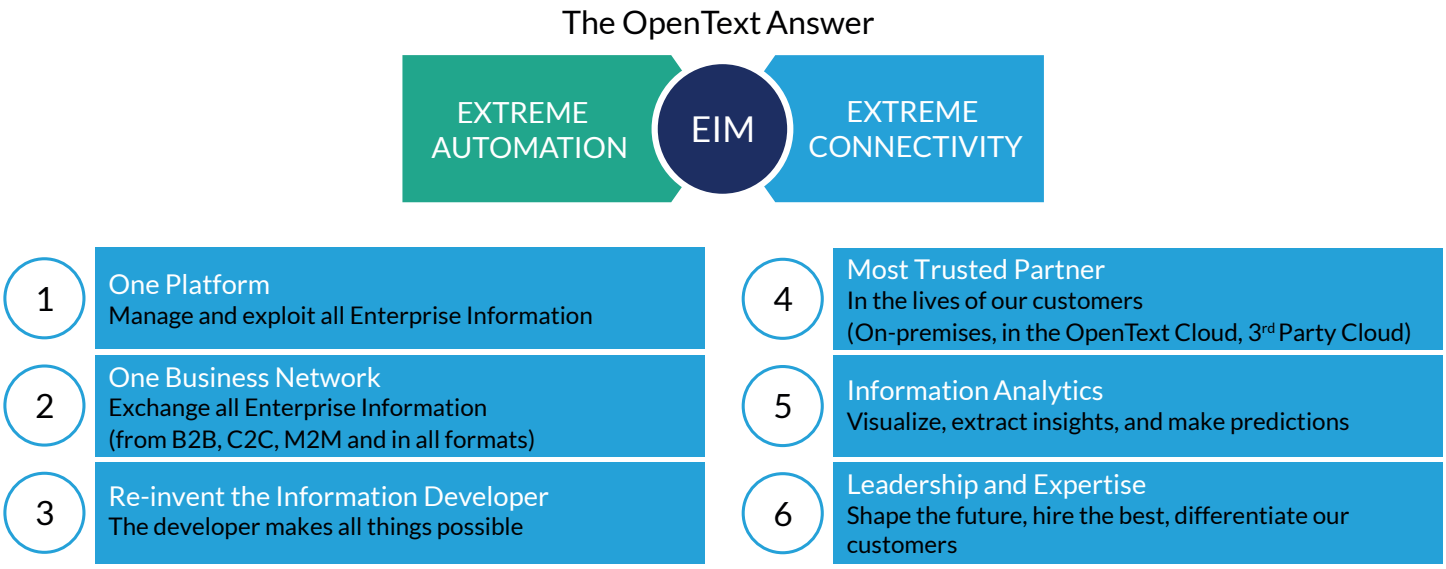


FIGURE 8:

The OpenText View of the World

This is the OpenText view of the world and it is driving our product development priorities. The following approaches are key in supporting these priorities:

1. One Platform

We truly believe in one platform. One digital platform that integrates data schema and architecture with user experience, across all the EIM functions. One platform for all information.

2. One Business Network

It is a corporate priority to continue to be the world's largest Business Network. Not just to manage and govern the information on that one platform, but to exchange the information in any format for commerce. For business-to-business, cloud-to-cloud, and ultimately, machine-to-machine. This is one of our core operating tenants that we strive to deliver against.

3. Re-invent the Information Developer

We can't build it all. And organizations have a lot to build. And so why can't they program our business network, and write an app on top of this network?

Why can't our customers build applications on top of EIM?

Why can't an information developer today have a RESTful service into EIM and simply be able to write an app—and be able to leverage all of Customer Experience Management (CEM) functionality? Leverage Business Process Management (BPM) capabilities?

This is our direction—to re-invent the information developer because: 1.) the developer makes all things possible, 2.) we can't build it all, and 3.) there is an enormous amount of lightweight applications that organizations need to write.

4. Most Trusted Partner

We're not a change order company, and we don't want to be. Our mandate is to be our customers' most trusted partner, to build strong relationships, and to make them hugely successful.

This is a goal from the top of the organization down—to be the most trusted partner, committed to organizations as they digitalize all their information and processes, as they move workloads to the Cloud, as they deliver meaningful customer experiences, and as they exchange commerce and communications all across their business networks.

5. Information Analytics

The analytics software market is expected to reach $75 billion by 2020.[12]

Our objectives move beyond one platform or one business network. We're focused on empowering the enterprise to be able to report, visualize, analyze, make what-if decisions, and ultimately, predictions from all of the information on the platform and across the business network.

6. Leadership and Expertise

There are ERP companies for sale. We're not interested.

There are other enterprise segments. We're not interested.

There are printer companies for sale. We're not interested.

What we're interested in is perfecting EIM and being singularly focused on this market. And having all the expertise and leadership required to help our customers make this transformational journey to digitalization—with extreme automation and extreme connectivity.

Welcome to OpenText Release 16, the world's first comprehensive digital EIM platform.

[12] Bhanu Baweja, Paul Donovan, et al., *"Extreme automation and connectivity: The global, regional, and investment implications of the Fourth Industrial Revolution,"* UBS, January 2016.

EIM – A Single Source of the Truth

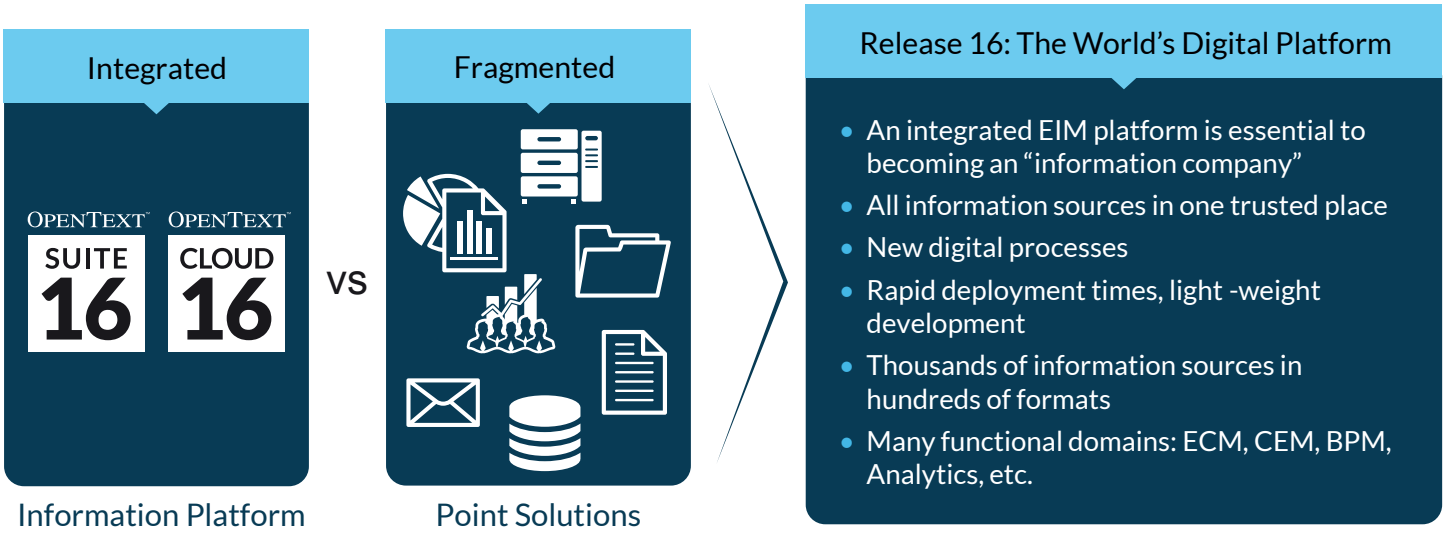


FIGURE 9:

OpenText Release 16 – A Single Source of the Truth

Every company is an information company. Data drives business, no matter what size an organization is, regardless of industry. From insurance claims to manufacturing purchase orders to contracts, company emails, strategic presentations, and e-invoices. Big or small, companies run on all kinds of information.

Structured information is data in fixed fields in a spreadsheet or a relational database that is housed in ERP systems. ERP tools share a common data model, covering operational end-to-end processes, such as those found in finance, human resources, supply chain, etc. These processes depend on large volumes of data.

Unstructured information is the conversation that forms around this data. It is the archived supplier invoice, expense report, receipts, presentations, faxes, memos, emails, social media, videos, and more. It is unsystematic, difficult to dissect, and represents a staggering 80 percent of the enterprise's data today.

But all this data, fragmented across multiple systems, is the new currency in a digital economy. For its value to be truly realized, it must be located, managed, shared, protected, and understood. This requirement is only intensified by extreme connectivity—expectations for fast and immediate access due to higher bandwidth capabilities, mobility, and other disruptive technologies.

Integrating unstructured and structured content across silos is a challenge that every organization faces. Sheer volume is impacted by the systems and departments it must flow through. An integrated EIM platform helps information flow securely and effortlessly across departments and throughout the value network to partners, suppliers, and customers—on-premises and in the Cloud. It gives every company a consolidated view of its information, its resources, its business network, and its customers.

As the world's first comprehensive digital EIM platform, OpenText Release 16 delivers a single source of the truth for the digital enterprise. All information sources reside in one centralized and trusted place. This includes thousands of information sources in hundreds of formats. The functional domains within OpenText Release 16—Enterprise Content Management (ECM), Business Process Management (BPM), Customer Experience Management (CEM), Analytics, and the Business Network direct the flow of information across digital processes in the Cloud, on-premises or across a hybrid mix of both. The back office "talks" to the front office. Rapid deployment times and lightweight development tools help to accelerate the flow of information, allowing it to move from one context to another, from need to result, from opportunity to outcome. This speed, this agility, is a key competitive differentiator.

OpenText Release 16 represents the most complete, integrated digital information platform in the market today. By providing a single source of the truth, organizations can securely embrace disruptive technologies and evolve to a better understanding, a cognition of their information. That's why OpenText Release 16 is essential to the digital transformation of an organization into a thriving, information company.

OpenText Release 16: THE Digital Platform

We're in the midst of a Digital Revolution and for every company it is digital or die. To succeed, organizations must embrace digital transformation or risk being disintermediated. Success will depend on an ability to embrace extreme automation, extreme connectivity, cognitive systems, and analytics—and bundled together in a single and integrated digital platform.

OpenText Release 16 is the world's first digital platform. It is composed of two major product components: OpenText Suite 16 and OpenText Cloud 16. Each is made up of tightly coordinated releases across all key OpenText product suites, representing the next generation of Enterprise Information Management (EIM).

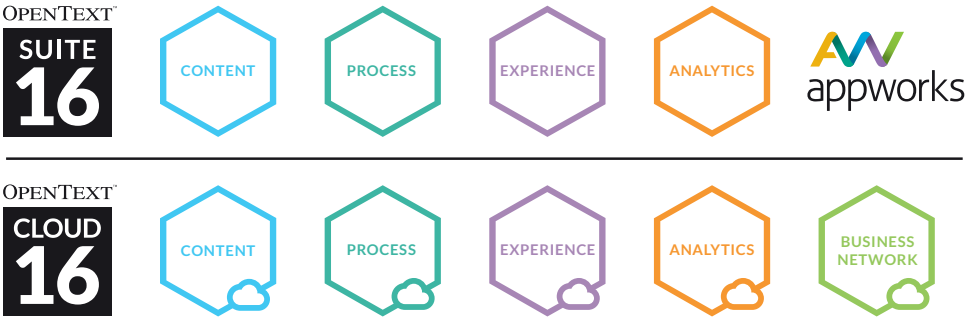


FIGURE 10:

The World's First Truly Integrated Digital Platform for EIM

EIM arms organizations with the tools and technologies they need to digitalize their operations—across any device in the Cloud, on-premises, or using a hybrid model. By providing the world's best integrated EIM platform and applications, these new offerings ensure that global organizations are able to digitally transform their operations, processes, and information to better service and interact with their customers, suppliers, and partners, and create better ways to work.

OpenText Release 16 is the most functionally and integration-complete EIM platform in the market today, offering customers a unique opportunity for a coordinated digital transformation that yields the benefits of scale and single-vendor interaction. No other product in the market offers the breadth of capability and solutions or the capacity to deliver these capabilities from a single, coordinated release and platform.

OpenText Suite 16 and OpenText Cloud 16 can help organizations more efficiently pursue strategic goals—such as addressing key areas of the user experience, machine-to-machine integration, automation and other aspects of a productive work cycle—to drive digital transformation with the following technologies:

Content Suite: Organizations need better ways to address rising concerns about information governance, regulatory compliance, and information security and privacy, but this has to be accomplished in a way that is effective and consistent and does not jeopardize other goals related to digital transformation. OpenText

Content Suite is comprised of Enterprise Content Management (ECM) solutions for managing enterprise information throughout its lifecycle—from capture through to archiving and disposition—applying secure and consistent governance policies. These applications accelerate time-to-value using search and content analytics, transforming enterprise information into valuable insights that drive innovation and power customer engagement.

Process Suite: To foster innovation, organizations need flexibility and agility to quickly respond to new requirements, discover and prioritize opportunities, rapidly test solutions, evaluate results, and implement outcomes with solutions that cut across internal boundaries and silos. OpenText Process Suite is made up of Business Process Management (BPM) solutions for flexible, agile business process automation and case management systems that enable employees, customers, and partners to collaborate, streamline operations, and work more efficiently.

Experience Suite: At the heart of digital transformation is the relentless focus on the customer. Whether those customers are external customers, employees, suppliers, or partners, effectively engaging the customer in the digital medium of their choice is how organizations are differentiating themselves. OpenText Experience Suite is made up of Customer Experience Management (CEM) solutions that deliver responsive, compelling, relevant, and intuitive user experiences across multiple channels, helping to drive revenue, customer satisfaction, and loyalty.

Analytics Suite: Behind every business goal is the ability to make well-informed decisions. Better engagement, productivity, and innovations are not possible without better insight, backed by data and the ability to derive conclusions and predictions from it. This suite includes high-performing, on-premises, and cloud solutions for big data and predictive analytics. It provides an easier way to access, blend, explore, and analyze data to better understand customers, markets, and business operations without requiring data experts or additional IT resources.

The Business Network: Digital transformation inside the enterprise can radically increase productivity through integrating business processes and applications for employees, teams, and partners across the business network. Cloud-based information exchange solutions like Business-to-Business (B2B) integration, Managed Services, and the Trading Grid™ help information companies manage the flow of complex or sensitive information quickly, securely, and reliably—within organizations or across a network of trading partners.

Both OpenText Suite 16 and OpenText Cloud 16 have been infused with analytics. Everything from Content Suite to Process Suite to the Business Network has been designed to leverage the power of analytics, bringing significantly more value to enterprise information. It's all part of the movement to systems of insight in the technology shift to cognitive systems.

This release represents the next generation of EIM, bringing customers one step closer to more intelligent systems, allowing them to realize greater benefits like lower costs, higher efficiency, greater output, and more room to innovate.

OpenText Release 16 is *the* transformative platform of choice for information companies.

Introducing OpenText Suite 16

OpenText Suite 16 is a set of four technology suites: Content Suite (ECM), Process Suite (BPM), Experience Suite (CEM), and Analytics. Each suite represents a set of integrated products that have been packaged together and can be deployed on-premises, as a subscription in the OpenText Cloud, or as a Managed Service.

OpenText can help customers with an existing implementation of any of the OpenText Suite 16 components to leverage existing OpenText product infrastructure and seamlessly move their on-premises solutions to the OpenText Cloud for increased connectivity.

With almost 1,000 customers leveraging our Managed Services—and more converting from on-premises every day—Managed Services are a strategic priority for many organizations. So we've made it as easy as possible for customers to make the shift from on-premises solutions to Managed Services. We take care of the upgrades, provide one Service Level Agreement (SLA), and take care of all the management, monitoring, and storage required.

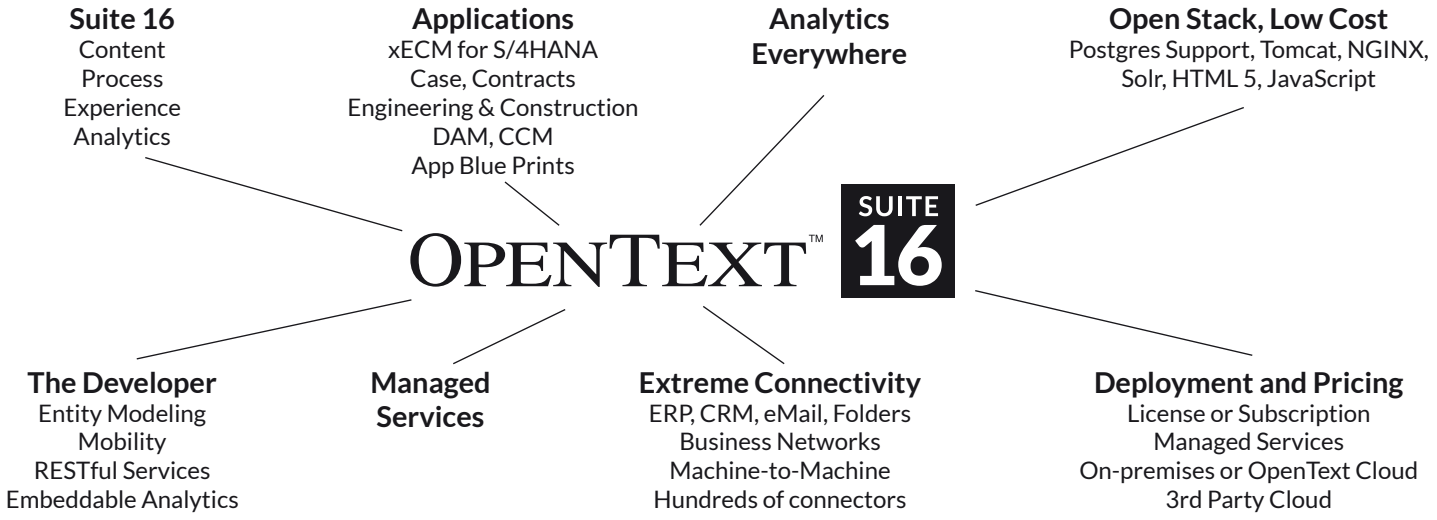


FIGURE 11:

OpenText Suite 16

As well as helping our customers move to Managed Services, we've been working for over a year to integrate analytics throughout OpenText Release 16. Users will find analytics capability in each suite for extracting valuable business insights from enterprise information. Deeper, embeddable analytics are also available as an independent suite.

In addition to the EIM suites, we've included AppWorks™—a development platform designed to speed the path from need to solution for IT organizations. To give customers a more integrated and agile solution, OpenText Release 16 supports new information flows in such as Capture-to-Disposition, Create-to-Consume, Procure-to-Pay, and Event-to-Outcome.

With more than 1,000 points of integration, OpenText Suite 16 is truly the most integrated digital EIM platform available today. Each suite can be connected to existing, non-OpenText EIM applications and solutions to maximize technology investments. Our low-cost, open stack supports a variety of commonly used database and web server technologies to significantly reduce the cost underlying software infrastructure.

OpenText Suite 16 delivers a variety of innovations of significant value to new and existing customers. The combination of cloud availability, an open stack, massive new functional capabilities, and deeper integrations make OpenText Release 16 a destination release for anyone looking to take Enterprise Information Management to the next level.

Introducing OpenText Cloud 16

Cloud is at the heart of innovation for OpenText today. We have invested greatly into our own cloud infrastructure, and all OpenText products are now available in the OpenText Cloud.

OpenText Cloud 16 is a set of five cloud-based offerings that includes Content Suite (ECM), Process Suite (BPM), Experience Suite (CEM), Business Network, and Analytics, all of which are designed exclusively for cloud deployment, spanning solutions from native Software-as-a-Service (SaaS) to suite configurations delivered as Managed Cloud Services. In addition to these suites, organizations can subscribe to Core, a cloud-based, business-ready file sharing and collaboration solution, and Archive in the Cloud.

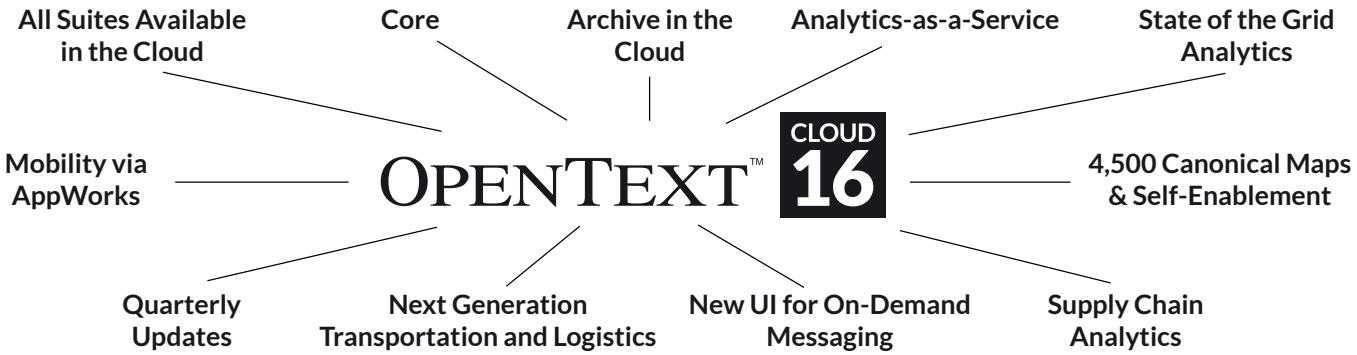


FIGURE 12:

OpenText Cloud 16

With OpenText Cloud 16, customers have the opportunity to leverage the OpenText Cloud for Managed Services, Business Network Services, and OpenText SaaS applications. The OpenText Cloud infrastructure is a global network of over 40 data centers and points of presence, providing our customers with a custom-built private cloud infrastructure and custom SLAs, disaster recovery solutions, and architectural configurations designed to optimize costs.

With 18 billion transactions per year representing $6.5 trillion in commerce, 3.5 petabytes of stored content, 600,000 integrated trading partners, and benefiting more than 64,000 customers worldwide, the OpenText Cloud provides organizations with a powerful network of customers and partners to extend their business and deepen relationships.

Additional features in this release include seamless updates for cloud offerings on a quarterly basis, a health check on the business network to ensure maximum up-time (via State of the Grid Analytics), over 4,500 canonical maps, and next generation transportation and logistics.

The Cloud is quickly becoming a business imperative. First movers with cloud technology stand to quickly gain substantial market share, displacing incumbents with new cloud-based solutions. We want our customers to have the Cloud in their arsenal, as well the option to choose a Cloud, on-premises or hybrid deployment of EIM.

Information Governance

The regulatory landscape is complex. Organizations are subject to industry-specific regulations and standards, as well as regional or national regulations. And the levels of scrutiny are only increasing.

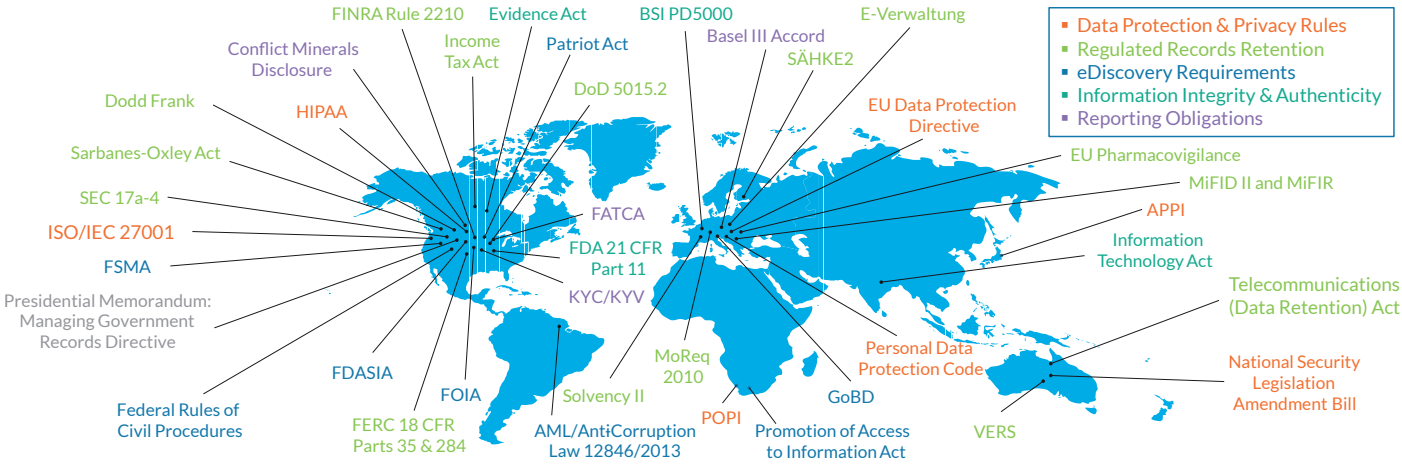


FIGURE 13:

Global Regulatory Pressures - A Complex Landscape

At the same time, digital technologies are introducing concerns about fraud, ethical behavior, and data security. With the growth of big data, social media, cloud computing, and BYOD policies around mobile device usage, information governance has become a major concern. Connecting information, people, and processes across the IoT will also present further governance and compliance challenges. In most countries, new data types will be subject to regulations. Organizations will need to determine if information is subject to privacy legislation to comply with data protection regulations.

In a global economy, the impact of regulations will have far-reaching consequences. Many organizations have minimal control over their operational systems and business processes that capture data required for compliance and litigation purposes. IT budgets will have to increase to meet future compliance requirements. But governance is about more than controlling regulatory information, it's also about enabling a better way to work. When implemented effectively as part of an EIM platform, governance helps uncover the value of information for improved operational performance.

With OpenText Release 16, we've focused on increasing governance and compliance capabilities. We've set up data zones in the OpenText Cloud according to local laws and regulations. With growing regulations and standards, we are working to help deliver compliance for every single one, from SOC 1 and SOC 2 to PCI DSS and HIPAA. This is a strategic decision we've made, and one we can make because we own our own Cloud. With Release 16, we're not just investing in infrastructure and compliance with regulations and standards, but information governance, compliance, and security within OpenText Suite 16 and OpenText Cloud 16.

Information Security

As the economy moves online, businesses are becoming more vulnerable to cyberattacks. The list of casualties grows every day, with big names falling victim to cyberbreaches. The attacks are becoming more sophisticated and harder to trace, and they're becoming more frequent.

Cybersecurity is a critical requirement for combatting trends such as nation-state backed espionage, more vulnerable service providers, big data, mobile apps, and encryption failures. The protection of corporate Intellectual Property (IP) is becoming an increasing concern for IT organizations as confidential information is housed in digital format. Threats from both inside and outside the company must be considered.

During the Digital Revolution, organizations need to assume that they are under attack every day and that the bad guys are already on their network. Ultimately, organizations need to build a moat around their most important systems.

No real risk can be mitigated to a zero percent likelihood of occurring, and some risks are 100 percent likely to happen. So how can the digital enterprise determine which risks to mitigate and what consequences to prepare for?

According to research, the average organization needs to keep one percent of its information and 69 percent of enterprise information can be thrown out without suffering negative consequences.[13] Keeping everything means higher storage and infrastructure costs. In instances of litigation, the cost of investigation increases as content is searched, examined, and reviewed across many sources. With today's dramatic growth in content volume, this approach is not tenable.

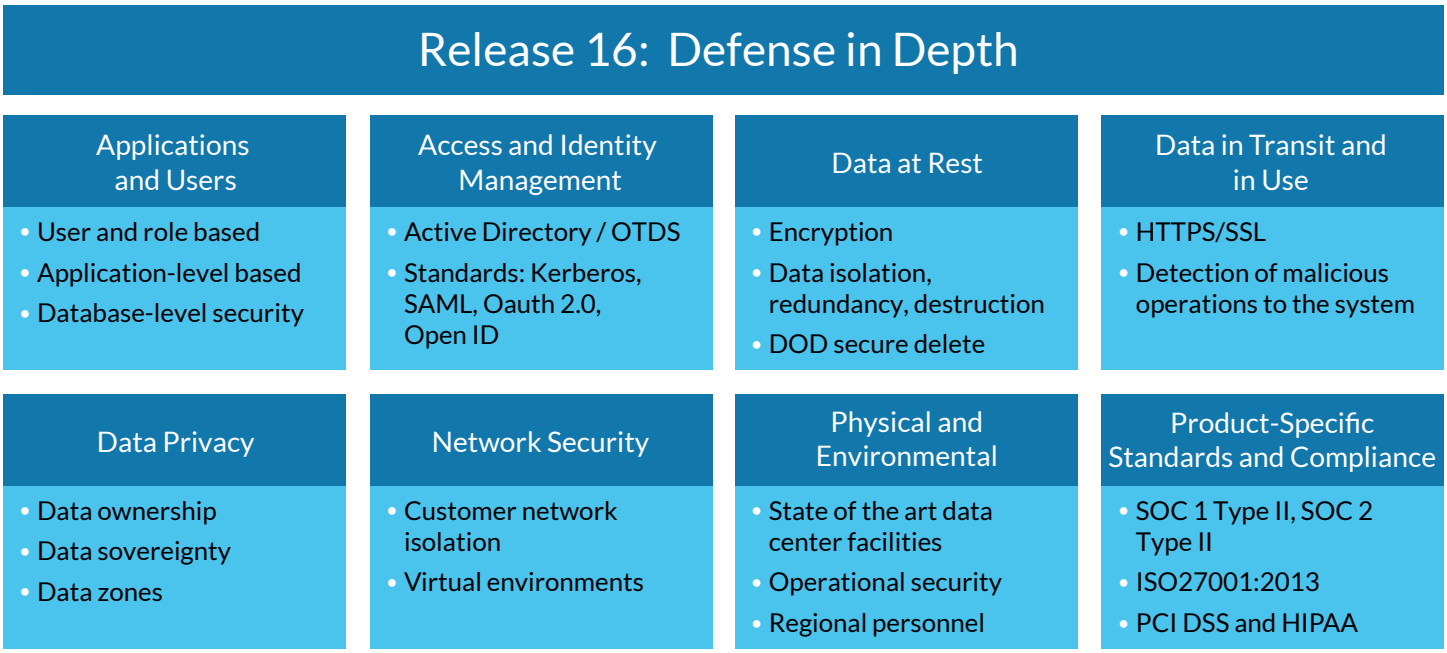
Not all information is created equally, and not all information exposes an organization to the same risk. EIM permits secure access to information on a "need to know" basis, while preserving an archive of information.

Obviously, the more data an organization stores and manages, the greater the risks for security breaches and non-compliance. To protect their data, organizations need to practice the fundamentals really well. Most companies forget that security is all about "back to basics":

1. Employees need education. Fifty percent of all cybersecurity issues are caused by a lack of education and "naive" employee actions.
2. The next 25 percent comes from hardware or software assets that are not up to date. Are they running an outdated email client, for example, that has known vulnerabilities?
3. Is the perimeter defined and protected, or were the gates left open? The response time on shutting the gates is critically important.

These basics will make organizations 95 percent secure. Along with investment in an EIM platform.

[13] Lorrie Luellig, *"A Modern Governance Strategy for Data Disposal,"* CIO Insight, *http://www.cioinsight.com/it-management/inside-the-c-suite/amodern-governance-strategy-for-data-disposal.html/* (accessed 12 Jul 2013).



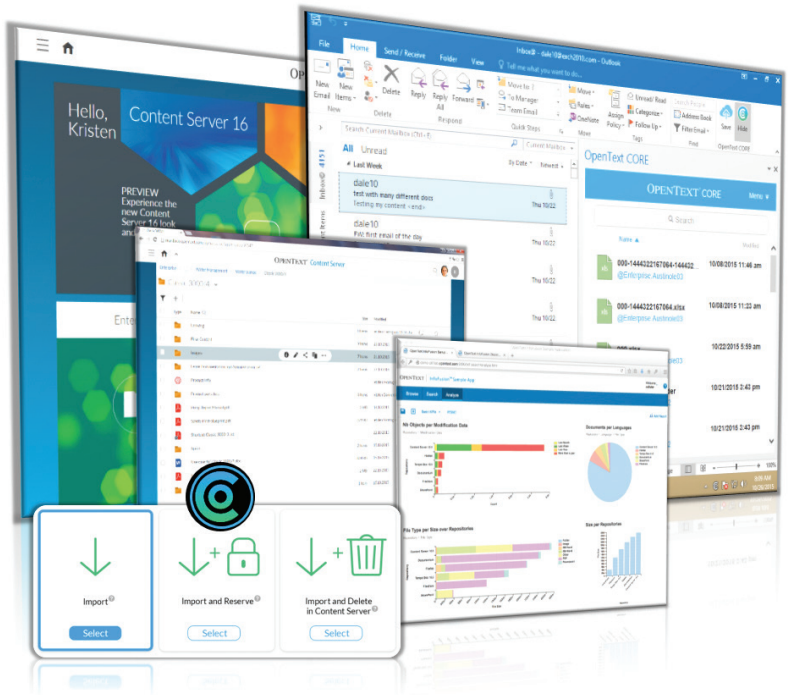
EIM is designed to protect information where it is used: at the point of interaction in the application itself, offering security mechanisms such as access and permissions, information audit capabilities, and secure information exchange built right into the system. In OpenText Release 16, our latest EIM platform, we've taken security up a notch. User- and role-based security happens at the application level. To help ensure privacy, enhanced access and identity management are available through active directory and upgrades to directory services. Both data at rest and data in transit are protected. We provide network security, operational security based on our state-of-the-art data centers, and help our customers manage many standards for compliance.

FIGURE 14:

OpenText Release 16 - Defense in Depth

It's Time to Rethink ECM

ECM has evolved. It's about more than just information governance. A new way to work means that ECM should foster collaboration, increase productivity, and deliver insights based on enterprise information. With new capabilities and improved features, OpenText Content Suite 16 is ECM reimagined.



- Connected Workspaces
- Deeper Email Support
- Enterprise Search
- Deep ERP Integration
- Developer Support
- Engineering, Case and Contract Management
- Analytics Integration
- Managed Services and Cloud Solutions
- Easy-to-use, Responsive UXD
- Lower Cost of Ownership

FIGURE 15:

Rethinking ECM

We've added new capabilities to OpenText Content Suite 16, including:

- **Connected Workspaces:** Workspaces connect content management to business process and fundamentally change the way ECM is planned, resulting in unified information silos and better collaboration for true connectivity gains. Collaboration templates ensure folders, metadata, Records Management, and permissions are created and applied in the background.
- **New Content Server User Interface (UI):** A new intuitive UI for OpenText Content Suite and Extended ECM has responsive capabilities, role-based views, access to most recent documents, and many more new features to make users more productive and collaborative. Our new UI delivers deeper engagement with connected and consistent experiences and increased security via role-based access to information.
- **Analytics Integration:** Suite-wide integration of analytics for real-time query or batch download of data from OpenText ECM solutions results in cognitive abilities for richer layers of business insight.

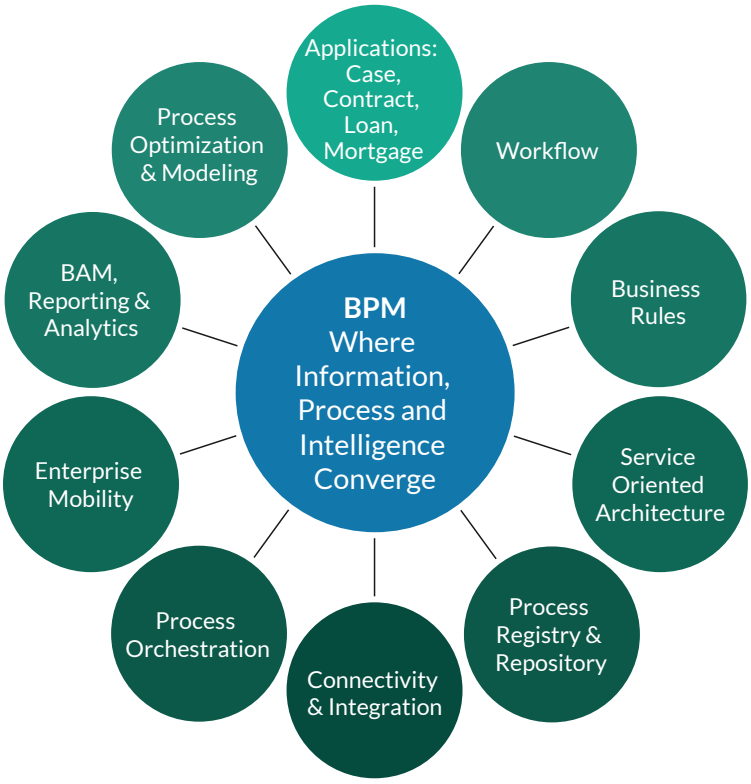
- **Integrated Social Capabilities:** End-to-end lifecycle management of new disruptive content formats (like social) with added capabilities for users to interact with content improves collaboration and enriches search, deepening engagement and helping to ensure the security and protection of corporate IP/information.
- **Enterprise search with InfoFusion:** Conduct scalable, secure, permissions-based searches for content from multiple enterprise systems by leveraging content analytics and Personally Identifiable Information (PII) identification. The combination of enterprise search with InfoFusion helps organizations discover, analyze and act on their content to improve performance and agility, while reducing risk and cost.

Additional features and capabilities in this release of OpenText Content Suite include auto classification for massive archiving projects, a built-in HTML 5 viewer, drop-and-drag email support, dashboard reporting, enhanced compliance and security, and integration with OpenText CORE, making file sharing and external collaboration in the Cloud a natural extension of the OpenText Content Suite environment.

It's time to rethink ECM. OpenText Content Suite 16 offers so much more above and beyond robust information governance. With enterprise search, deep ERP and analytics integration, and availability in the Cloud, organizations will be able to increase productivity while lowering costs. OpenText Content Suite 16 has everything an information company needs to transform information into valuable insights that drive innovation and power customer engagement.

BPM: Creating Digital Business Processes

Information lies at the core of interactions, processes, transactions, and experiences. The emergence of new technologies are presenting organizations with new ways to use this business information. When information is harnessed, organizations can reach maximum levels of efficiency, impact, and value. But in order take advantage of these new opportunities, organizations must digitalize their processes. Only when processes are digitalized can organizations truly realize the benefits of extreme connectivity and extreme automation.



- Lightweight Application Development with Entity Modeling
- Contract Management
- Case Management
- Orchestration Engine
- Integrated Capture and Rights Management
- Analytics Integration
- Deep Integration into Content Suite

OpenText Process Suite 16 offers a single, multi-tenant, web-based platform that supports information-rich processes, enabling organizations to rapidly analyze, build, and automate business processes that run on multiple devices. OpenText Process Suite is available as an on-premises solution or a cloud solution (deployed in either a private cloud or the OpenText Cloud).

FIGURE 16:

Creating Digital Business Processes with BPM

New features in this release include:

- **Entity Modeling:** A new low-code application development approach for the rapid and agile development of processes with case management capabilities. Processes can easily be tailored by "citizen developers" to suit business needs without requiring development resources.
- **Case Management:** Provides the flexibility for organizations to manage unstructured and complex processes or cases from a single platform. Organizations can relate independent business documents across the enterprise into a single virtual folder (or 'case'), gaining control over a case whether it's a defined or *ad hoc* process, or a combination of both.
- **Contract Management:** This release of Contract Center provides an integrated solution for all types of contracts. An out-of-the-box solution, it supports all aspects of contract processing, from initiation and request, to authoring, negotiation, approval, execution, management, and renewal. Organizations can accelerate cycle times, while still adhering to standards and regulations when managing contracts.
- **Analytics Integration:** Analytics integration into OpenText reporting solutions delivers dashboards that increase visibility into processes, enabling better measurement and ultimately, smarter business decisions. More than simply executing processes, organizations have complete visibility to their people and processes so they always know the status of all tasks, processes, and business objectives.

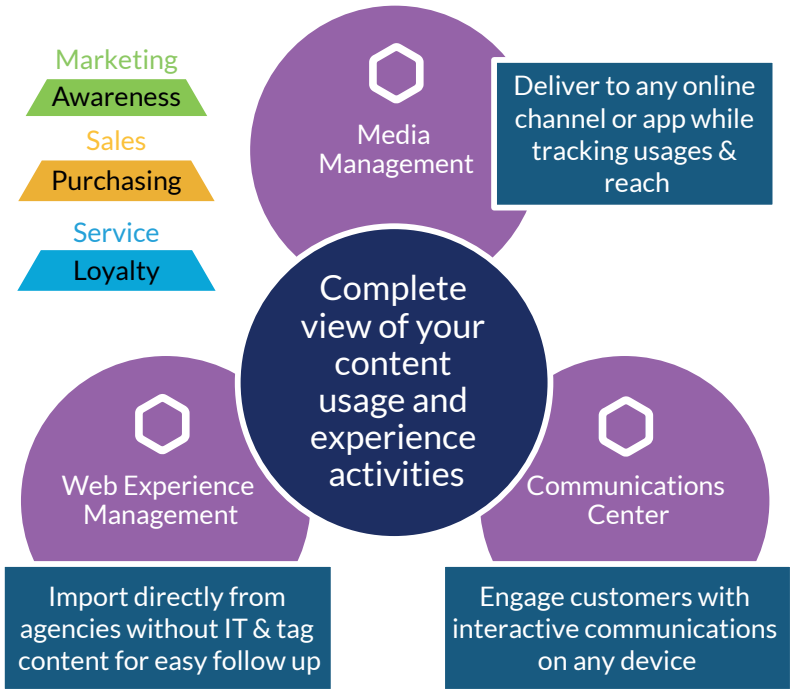
OpenText Process Suite 16 is a comprehensive suite that addresses every information company's needs, from workflow, business rules, connectivity, process orchestration, and enterprise mobility all the way through to building and deploying lightweight applications that integrate deeply into enterprise systems.

CEM Delivers the Full Customer Journey

Customer experience is the sum of all experiences over the duration of a relationship between a consumer and an organization. The ideal outcome is a consistent experience that delivers relevant content, products, and services across multiple touchpoints. In this time of intense disruption and competition, delivering a satisfying customer experience is more critical than ever.

A consistent experience is based on unified customer data. This helps present a consistent style, tone, voice, and visuals—and keeps brand(s) intact. As customers become more mobile, it is vital to maintain consistency in look, functionality, and content for continuity of experience. The experience must look and feel the same regardless of channel or device, and it must be tailored, reflecting a knowledge or insights about the customer to deliver an experience that exceeds customer expectations. In the battle for market share, customer experience is a key differentiator.

We've designed OpenText Experience Suite 16 to address the complexities and speed that organizations need to streamline and digitalize the entire customer journey with applications for media management, web experience management, and customer communications.



- Communications Center
- Analytics Integration
  - Asset Lifecycle
  - Audit and Usage
- Round-trip SAP Hybris Marketing Integration
- Updated Commerce Framework
- 3rd Party Translation Framework
- New Template Tools for WEM and CCM
- Drag & Drop WEM Components for Content Suite

FIGURE 17:

Delivering the Full Customer Journey with CEM

OpenText Experience Suite 16 gives organizations unprecedented insight and control into the customer journey—at any point, involving any asset. It provides tools that help improve time-to-market by giving customers, employees, and channel partners rich, personalized, and engaging experiences.

OpenText Experience Suite innovations include:

- **Embedded Analytics for Web Experience Management (WEM), OpenText Media Management (OTMM), and Customer Communications Management (CCM):** Dashboards that track user activity to gain insight on content, assets, or events used across different channels, devices, or applications, to provide intelligence on users and help optimize and tailor their experiences.
- **Communications Center and interoperability:** With a newly refreshed UI and enriched CCM functionality, organizations can experience even greater integration with cloud-based Customer Relationship Management (CRM) applications. Extreme connectivity, at all stages of the customer journey and across all correspondences, helps organizations to maximize and customize not only customer experiences but also vendor and employee experiences.
- **Adaptive Media Delivery:** A responsive approach for media delivery across formats (web, kiosk, table, mobile devices, etc.) that ensures consistency. The delivery of a consistently branded, multi-channel experience deepens engagement while protecting and strengthening an organization's brand.
- **Embeddable Widgets in WEM and OTMM:** Assets are updated automatically when tethered or included in other applications. Assets and folders can appear in other applications by simply copying an embed code, ensuring on-brand, consistent experiences.
- **ECM Integration with Communication Center CRM:** Web-based document generation which uses front-end CRM data from Salesforce and business data from Content Server and SAP, all executed seamlessly with OpenText software. The integration of key enterprise systems provides organizations with a single source of the truth.
- **Improved UI for better productivity:** With a customizable home page and a redesigned responsive HTML5-based UI, users can create tailored environments that meet their needs and adapt to their devices for an engaging digital experience.

Additional improvements include expanded e-commerce connectors, new label features and alerts, unified styling capabilities, and single-sign for OpenText applications.

To succeed in the digital world, it's not enough to think mobile first. Organizations must think *users* first. OpenText Experience Suite helps organizations create a digital presence and deliver the correspondence to augment their online marketing strategy, manage global brands, embrace social business, and produce effective customer communications every time, all while keeping the user top of mind.

Analytics Everywhere

In addition to being available as a discrete offering, we've infused analytics throughout all of our OpenText suites, including the Business Network, to deliver leading edge capabilities for information companies to mine, extract, and present the true value of their business data.

OpenText Analytics Suite provides an easier way to access, blend, explore, and analyze big data to better understand customers, markets, and business operations. We recognize that not every organization has the in-house data scientists, IT resources, or technology infrastructure to support big data analytics solutions, so in addition to being available as an on-premises solution, OpenText Analytics Suite is also available in the OpenText Cloud.

As illustrated in the figure below, analytics solutions offer a range of capabilities. The lower on the curve, the more basic and less valuable insights tend to be. Whereas, the higher on the curve, the more complex and closer to cognitive analytics solutions are, resulting in higher-value, actionable business insights.

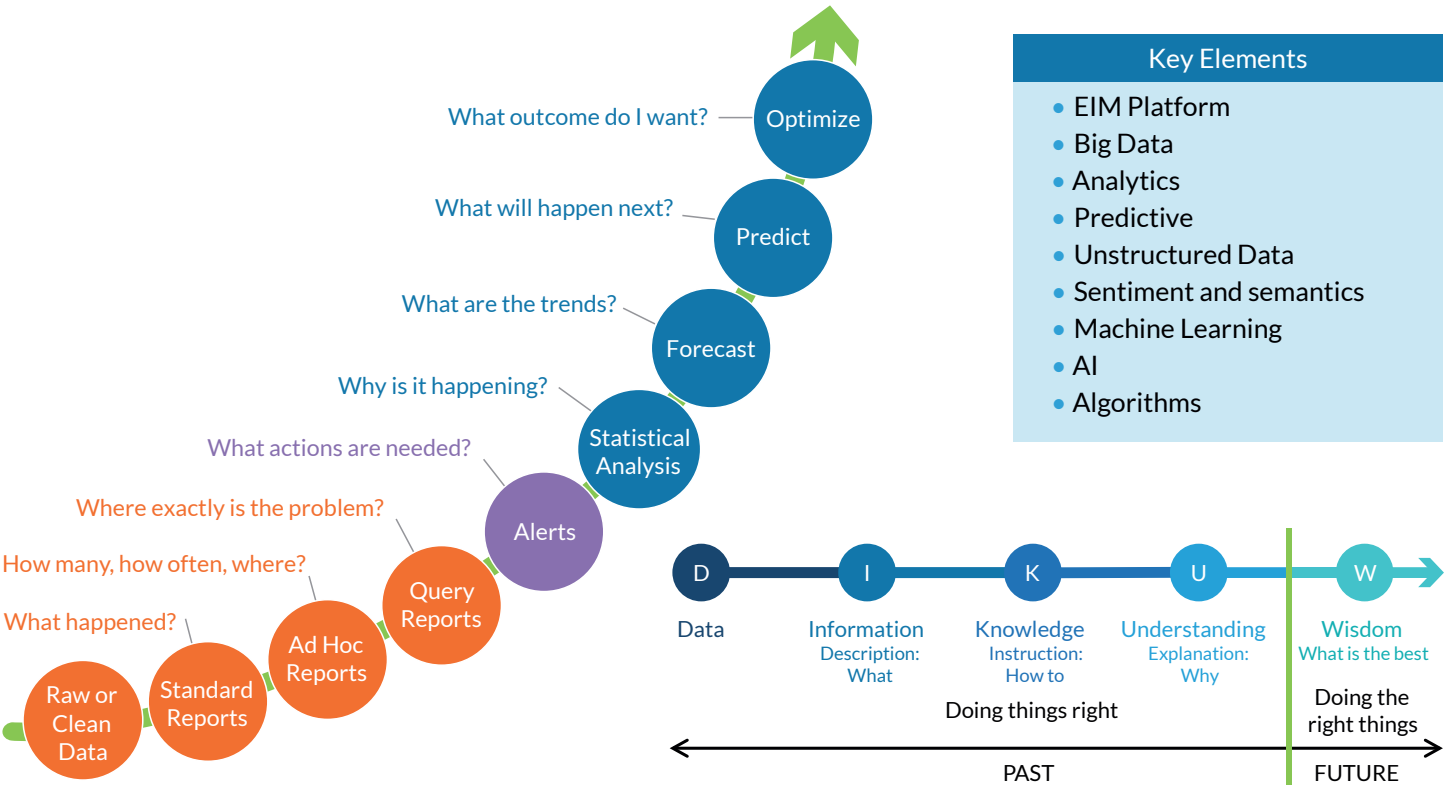


FIGURE 18:

Analytics Everywhere

Most organizations currently employ some form of basic analytics (illustrated in orange and purple in Figure 18). While these insights can be helpful in discovering what has happened and why, they often lack the sophistication that allows companies to reveal what will happen and what should be done. These insights come from the deployment of more powerful, predictive and prescriptive analytics.

And that's where the real value lies in OpenText Analytics Suite. Using predictive analytics, OpenText Analytics Suite provides insight into what is likely to happen based on business data and determines which actions an organization should take. The possible implications of each action are based on business data and rules, optimization, and simulation. Connected technologies like machine-to-machine communications will help information companies to progress along the technology curve toward cognitive systems by automating not only data processing, but also the execution of business actions.

With OpenText Release 16 we've removed the complexity of integrating analytics within the enterprise. We've built a lightweight development tool that easily embeds analytics capabilities in both internal- and external-facing applications. We've also expanded our out-of-the-box connectivity to work with over a dozen sources—from Apache to XML to Salesforce—providing more ways to integrate analytics into the enterprise systems.

Additional noteworthy OpenText Analytics Suite features include:

- **iHub and Big Data Analytics combined:** Available on-premises and as a managed service, with this combination of OpenText products organizations can access, blend, explore, and analyze big data gathered from interactive web applications and personalized reports for enhanced insight and decision making.
- **Integration with other OpenText products:** The seamless integration of iHub with OpenText products helps organizations transform complex data—from analytics, ad hoc reports, customer-facing applications, report statements, etc.—into advanced visualizations that can be translated into business actions.
- **Big Data Analytics:** New features (like fault tolerance capabilities, an improved user experience, and interactive dashboards) and enhancements (such as additional algorithms support) make our Big Data Analytics solution more powerful than ever, delivering the insights organizations need to improve their performance, optimize their supply chain, and know their customers better—all while making them more agile and competitive.

While the volume and variety of information may vary from industry to industry and organization to organization, one thing holds true: we are all information companies. The availability of big data has unleashed huge potential in terms of gaining customer insight to inform marketing, product development, and service delivery. Whether deployed on-premises or in the Cloud, OpenText Analytics Suite allows organizations to uncover information that helps to differentiate products and services for increased satisfaction and market share. With plans to infuse analytics across all of the OpenText Release 16 suites and the Business Network, we've applied cognitive capabilities to OpenText Suite 16.

OpenText Release 16 Introduces Cognitive Systems

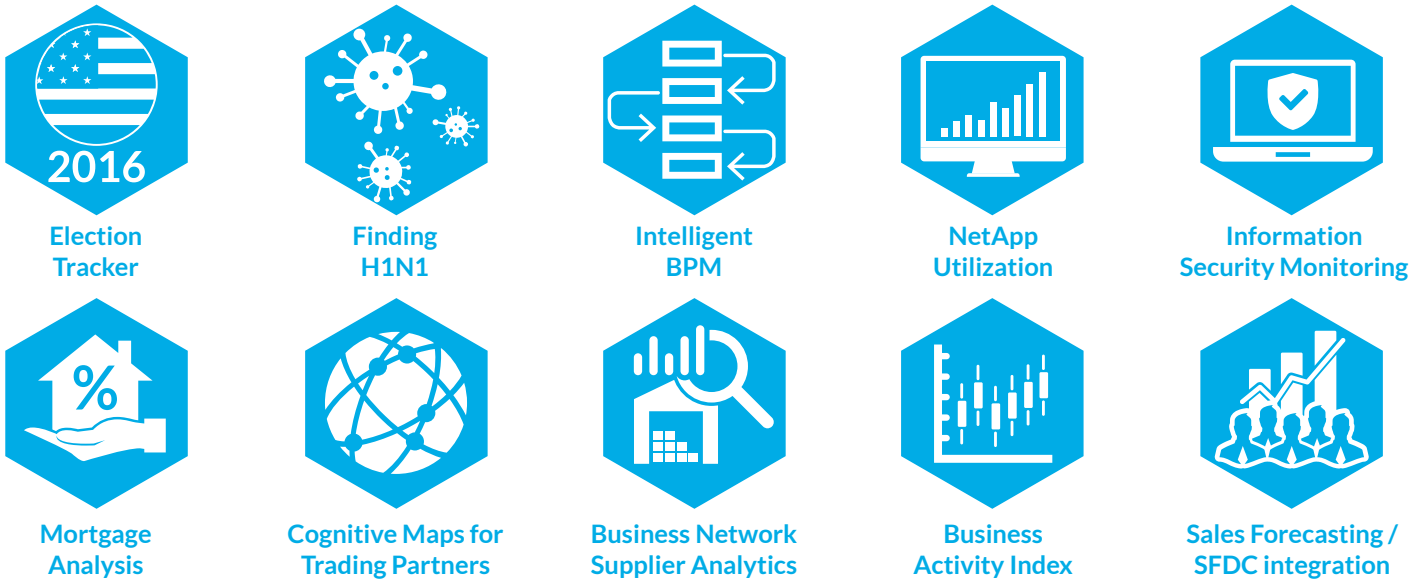


FIGURE 19:

Cognitive Applied with OpenText Release 16

With OpenText Release 16, we've applied cognitive capabilities to provide our customers with deeper levels of insight and understanding into their enterprise information. And we've done this using our analytics technologies, moving them beyond predictive analytics (with reporting and visualizations) into the Cognitive Era with prescriptive analytics like semantics and reasoning analysis.

We're designing our EIM platform to be more cognitive. We already have smart meters embedded into our Business Network, supporting machine-to-machine communications across millions of transactions every month. First responders in the healthcare industry are capturing real-time videos and uploading this into our content server repository. In engineering and construction, we're working with companies that are deploying drones at construction sites for greater reach, portability, and capabilities. They're capturing video and telemetry data which is then being stored in an EIM system. In OpenText Release 16, the machines are waking up, and they're talking to each other. As illustrated in the following applications, when analytics are applied to unstructured information in a secure EIM repository, the information becomes much more valuable and insightful—or cognitive, if you will.

Election Tracker '16

To demonstrate the power of our semantic and sentiment analysis engines, we built Election Tracker '16. And we built it in three days. Election Tracker '16 (electiontracker.us) is an online application tool for users who want to monitor, compare, and gain insights into the 2016 U.S. Presidential election.

Powered by OpenText Release 16, this lightweight information-based app provides deep insights into candidate information, revealing much more than traditional polling data. It automatically scans and reads hundreds of top online media publications around the world, capitalizing on the knowledge buried in the unstructured information. This information is analyzed daily to determine sentiment and extract additional information. It's then translated into visual summaries and embedded into the election app where it can be accessed using interactive dashboards and reports. Hundreds of websites, a billion words, processed, stored and visualized, in real time to show trends and sentiment changes. The result is a holistic view of how candidates are performing based on media sentiment. Election Tracker '16 is built using OpenText Release 16, combining Content Suite and Analytics Suite to bring unstructured data to life.

Finding H1N1

A Canadian public health agency scans a few hundred newspapers, blogs, tweets, and social media, in a handful of countries every day looking for early warnings of disease outbreak. The system crawls all of this information—unstructured information—publicly over the web and brings it back into the OpenText Content Server where a cognitive engine is applied to the data to produce a report. It processes up to 20,000 articles a day. Thousands of threats are monitored—from H1N1 to bush fires in California to pestilence outbreaks in Africa. The system produces eight different reports, three times a day. It would be impossible to track this data without the right cognitive technology in place. The system helps the agency identify, count, and track instances of possible threats. It's an early warning system based on keywords and semantic analysis that saves lives.

Intelligent BPM

Cognitive capabilities applied to Business Process Management creates intelligent BPM. Tens of thousands of processes that are running at any given time can be examined to find processes that are stalled, locate bottlenecks, elevate priority processes, or identify processes that are good candidates for automation. There are many examples of how cognitive can be applied to BPM for extreme automation and efficiency gains.

Sales Forecasting

EIM combines applications like Salesforce.com with a secure content repository and analytics to complete, for example, a sales forecast. A connected workspace shows real time access to Salesforce.com data. It might hold warehouse data, product release info, and reseller information by folder. Using analytics, key trends and performance indicators can be explored and visualized. The solution is integrated and pulls data in real time. Reports can be run based on annual sales by channel, average cost by product line, campaign performance, and annual sales by product line. All of this connects to a content repository where managers, for example, can drill down to find out more information about a product release based on documents, projects, and workflows. The app is lightweight, analytics are embedded, and the systems are communicating in real time.

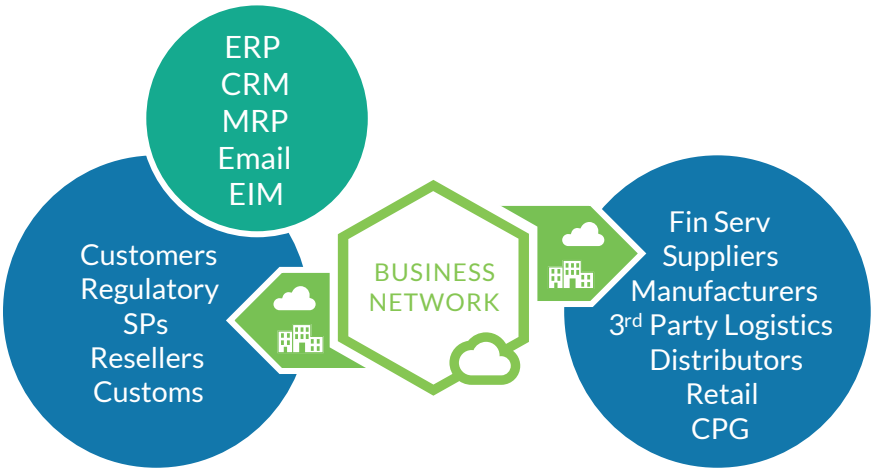
There are many examples of how cognitive systems are enriching enterprise information in OpenText Release 16 for effective business outcomes: A leading European bank runs our predictive analytics engine against its 1.2 million mortgages to run risk analysis; cognitive maps allow users like retailers, for example, to cluster relevant partners across a network of 600,000 partners; and embedded Business Intelligence (BI) and analytics allows for greater intelligence, quality control and traceability throughout the manufacturing process to create "smart" factories.

Our next step will be to look beyond analytics to cognitive learning and AI, and to open up our EIM platform to third-party algorithms that can be applied to the platform. These will be applied to unstructured information to provide a greater understanding of all the big data that resides on the platform. We're looking beyond a single digital platform, and this is already in motion with OpenText Release 16.

Business Network: Extreme Connectivity

Traditionally, information has been exchanged in an ad hoc arrangement of fragmented systems that don't talk to each other. The silos increase business costs and security risks while slowing down transactions and productivity. Connected systems support business conversations that occur internally among employees and externally with customers and partners—from electronic faxes and cloud services to large managed file transfers. Organizations that incorporate extreme connectivity into their business strategy are able to support accelerated business transactions with anyone, anywhere, in any format, securely.

Information exchange helps organizations control how information is delivered across a business network. Data integrity and security are built in to protect against threats of internal information leaks and external cyberattacks. Organizations can execute transactions and share information in ways that are fast and secure to drive value and competitive advantage. More and more organizations are turning to cloud-based data exchanged solutions, like electronic fax and Managed File Transfer (MFT), as a means to securely and compliantly manage their corporate communications while reducing costs.



- Procure-to-Pay Automation
- Active Applications
  - Orders and Intelligence
  - Catalogue and Community
  - Invoices and Compliance
- Secure Messaging (MFT and Secure Mail)
- Fax to EDI
- Logistics Track & Trace
- On-Demand Messaging
- Trading Partner Self-Enablement
- Analytics Integration (Managed Services and Active Applications)
- Global Trading Grid

OpenText Business Network is a set of cloud-based solutions within EIM that facilitates efficient, secure, and compliant exchange of information between organizations. It's a combination of Business-to-Business (B2B) integration software, the OpenText Trading Grid, and Managed Services. The latest release of the OpenText Business Network represents the next step in the evolution of information exchange.

FIGURE 20:

The Business Network

We've made a number of improvements and additions to the OpenText Business Network, including:

- **B2B Integration with Active Applications for Procure-to-Pay:** This release features Logistics Track & Trace to follow the physical movement of goods for improved end-to-end supply chain visibility. Organizations can calculate new arrival times for in-transit products with Dynamic Pipeline Calculation. In addition, Deductions Management helps U.S. retailers identify and remove duplicate deductions, resulting in fewer disputes.
- **Trading Grid Analytics:** The integration of Trading Grid analytics for Managed Services and Active Applications provides added insight into operational and supply chain performance.
- **Active Order Supplier KPIs:** Tracking supplier Key Performance Indicators (KPIs) for otherwise non-EDI enabled trading partners helps organizations monitor the performance of order fill rate, line fill rate, unit fill rate, value fill rate, Advanced Shipping Notification (ASN) timeliness, delivery timeliness, and invoice accuracy.
- **Fax2EDI & Email2EDI:** The integration of Fax2Mail/Notifications platform expands the ability to capture standard trading partner information to include paper and transport on the Trading Grid. Email2EDI also takes in emails and their associated attachments. Expanded trading partner enablers ensure that all B2B transactions are captured regardless of origin type and that no trading partner is left behind. These upgrades and integrations facilitate better coordination of the flow of goods, communication, and commerce across the Trading Grid.
- **On-Demand Messaging:** A new UI makes it easier to send and receive secure notifications from SAP with confirmation reports. A single portal experience for Fax2Mail Cloud fax and Notification offerings provides a unified place for messaging analytics and adds greater usability for customers. Additionally, emails can be delivered as SMS notifications. With Healthcare Direct support, outgoing faxes are converted to a structured document and sent as Direct Messages—ensuring compliance with U.S. healthcare industry standards.

This release brings together the right combination of services and technologies, helping information companies connect and exchange critical business data in a secure, reliable, and scalable environment. Organizations can operate more efficiently through increased productivity, shortened transaction cycles, and improved customer service, while reducing complexity and risk. This is extreme connectivity in action, powering information companies with deeper business process support and rich analytics across the extended trading ecosystem.

The OpenText Cloud

The Cloud is quickly becoming a business imperative. It is predicted that by 2017 over half of all enterprises will use some combination of private and public cloud, and that 50 percent of an organization's business data will reside outside the data center walls.[14]

What used to be discussed as a potential option for managing IT budgets, is now a strategic direction that drives competitive positioning, product innovation, business agility, and cost management. With a higher quality of service and lower cost, the OpenText Cloud and Managed Services provide a simpler, more efficient way of doing business.

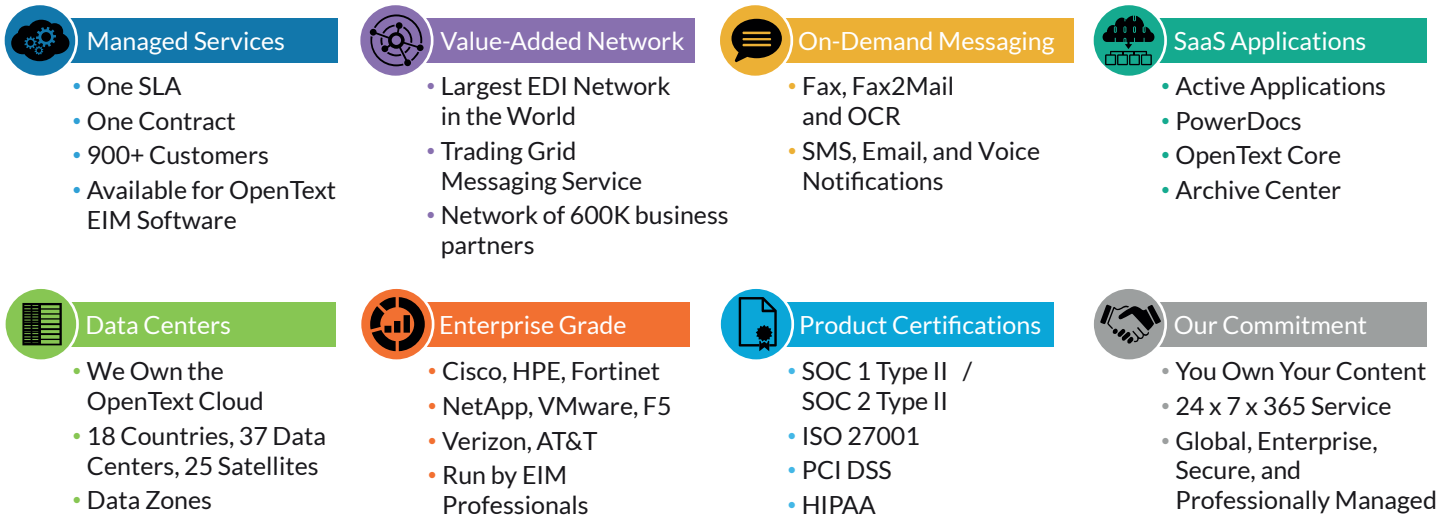


FIGURE 21:

The OpenText Cloud

The OpenText Cloud is a purpose-built cloud environment that spans Information Management, Compliance, and B2B Integration. Supported by a global, scalable, and secure infrastructure, the OpenText Cloud consists of a foundational platform of technology services and packaged business applications for industry and business processes, supported by comprehensive Managed Services in the Cloud.

The OpenText Cloud is owned and managed by OpenText. This means that we are more agile to help customers fulfill data sovereignty requirements and regional directives and help customers ensure their data and systems are safe and compliant. We guarantee that we won't sell our customers' data. We can do this because we own our Cloud.

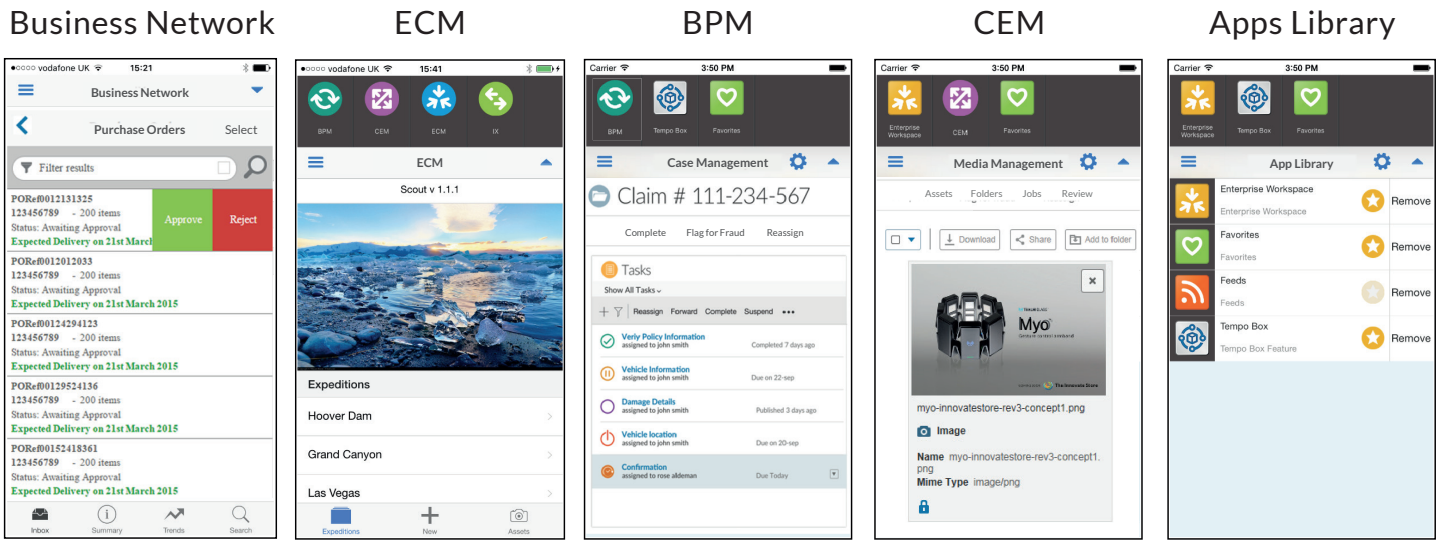
[14] Thomas J. Bittman, *"Private Cloud Matures, Hybrid Cloud Is Next,"* Gartner, Inc., September 6, 2013.

With our flexible cloud models for public, private, or hybrid deployments, organizations can protect and manage information while adhering to governance rules and compliance regulations. We also offer multi-tenant SaaS applications and 'public cloud' solutions with applications such as OpenText Core and OpenText Communications Center CRM Edition. From all-inclusive to customized services, we offer a complete set of Managed Services to ensure transitioning business in the Cloud is accurate, easy, and secure.

The Cloud is a strategic imperative for organizations as they advance on their journey toward digitalization. With decades of experience working in the Cloud, delivering applications that drive cost efficiency, improve speed-to-market, and support business transformation, our Cloud expertise is proven.

Mobility with AppWorks

The digital enterprise is fueled by unrestricted access to information from within the enterprise and across the business network. AppWorks is an EIM technology designed to help streamline information flows across the enterprise. It is a common development platform for the creation of information applications from any EIM core technology, making it available on a desktop, web interface, or mobile device. Development options are endless, limited only by business requirements and the imaginations of developers.



Full Support for Native Push Notifications | Document Sharing Between Native Apps | Redesigned iOS and Android Clients

New Developer Tools – Gateway SDK, AppWorks Templates | Secure Offline Storage, Caching and Auto Resume

Enterprise applications can be built simply and easily using web technologies (HTML5, CSS3, and JavaScript), written once but deployed on any platform, and managed securely from a centralized location. Using AppWorks, organizations can deliver push notifications to enterprise applications, deliver seamless application updates, collect usage reporting, and more. AppWorks makes it easy to manage and use enterprise information securely and conveniently in ways that accelerate innovation and drive business forward.

This release of AppWorks features full support for native push notifications, document sharing between native applications, a redesigned experience for iOS and Android clients, secure offline storage, caching and auto-resume, and new developer tools (like a Gateway software developer kit and templates).

AppWorks makes it easy for organizations to maximize their EIM investments by quickly creating new, highly focused solutions for users or by modernizing existing applications across our suites to extend to mobile devices.

FIGURE 22:

Mobility with AppWorks

The Information Developer

The Digital Revolution has introduced many new technologies and systems into the enterprise. The advent of these of new, more powerful, and user-friendly technologies has given rise to the "citizen developer" (or information developer). These technologies are making it possible for almost anyone to build and deploy enterprise applications.

Each organization has unique and constantly changing requirements and, while we strive to address those requirements with OpenText Release 16, we realize that many organizations may need to build some of their own customized applications. But not every organization has the technical resources to build application solutions from the ground up.

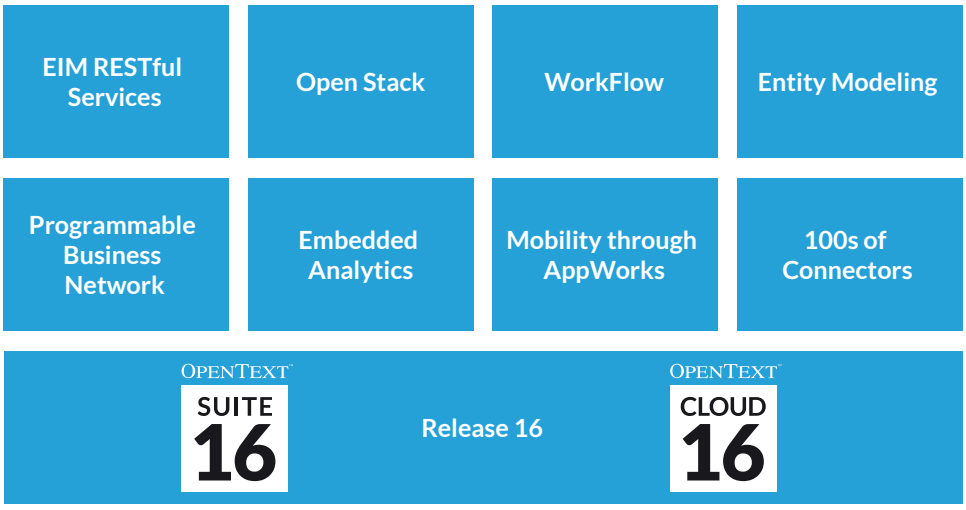


FIGURE 23:

The Information Developer

Our goal is to make it as easy as possible for organizations to build applications on top of the OpenText EIM stack, so we've designed AppWorks using a low-code application development approach to accommodate the information developer.

We have tutorials for employees and the customer-base to get users started. Developers have access to code samples and templates that can be copied to accelerate the development of enterprise applications. They also have access to the references for the OpenText Common API, so they can build applications and experiences on top of the OpenText EIM platform. The RESTful API is accompanied by services to further accelerate integrated application development (such as authentication, audience management, feeds, notifications, and favorites).

This release of AppWorks equips the information developer with the knowledge and tools required to develop compelling, integrated, mobile enterprise applications that are flexible enough to respond to changing business needs, drive productivity and modernization, and maximize the investment in OpenText technologies.

Architecture Matters

OpenText Release 16 has been designed for the end-user—be it an information developer, a partner, or a customer.

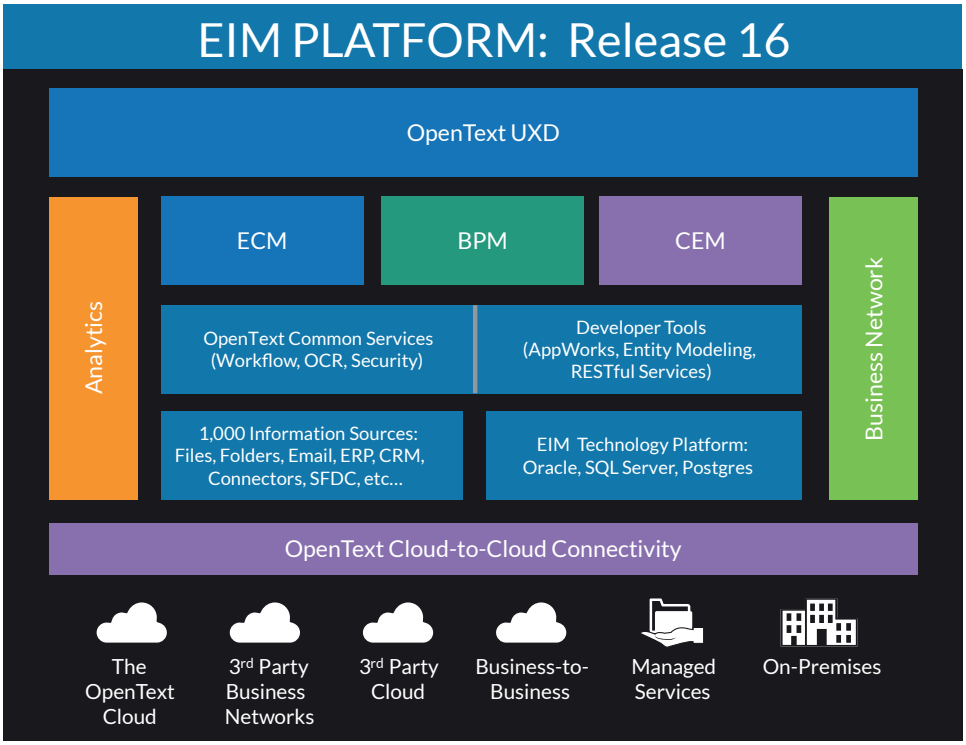


FIGURE 24:

Architecture Matters

Delivering tightly coordinated releases of ECM, BPM, CEM, Analytics Suite, and the Business Network gives organizations the option to deploy our EIM suites as needed. With over 1,000 points of integration, each suite can be connected with many existing EIM technologies and platforms out of the box. Rich analytics capabilities will be infused throughout each suite. Using AppWorks, information developers can quickly build secure, purpose-specific enterprise applications to drive productivity. Each suite also shares a common set of OpenText services (like workflow, Optical Character Recognition (OCR), and security) to optimize the flow of information and processes across the enterprise. A variety of deployment options—ranging from on-premises to third-party cloud to OpenText Cloud to Managed Services or hybrid—are available on a suite-by-suite basis to meet each organization's unique needs.

Our goal is to provide the EIM solutions and services required to build a cohesive information management strategy. One that leverages existing assets, meets urgent and changing business needs, establishes a fast path to the future, and ultimately, transforms the enterprise into an agile, efficient, and digitalized information company.

OpenText Suite 16—The Future of Information

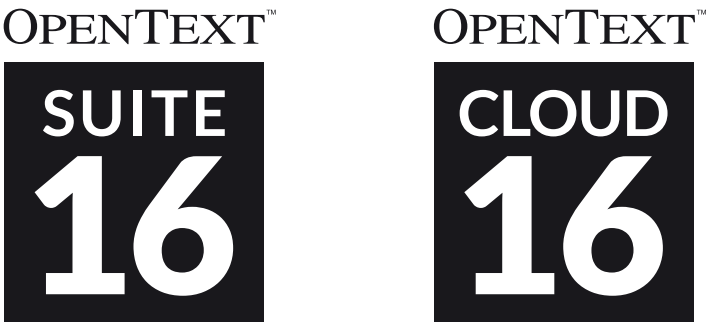


FIGURE 25:

OpenText Suite 16 and OpenText Cloud 16

In the age of digital disruption, organizations are experiencing fundamental changes to the way they work, interact with their customers, and approach business processes. Because of the essential shift towards digitalization, competitors in every industry are taking advantage of new platforms, tools, and integrations to challenge incumbents. The only way to compete is to evolve, transform and fully embrace digital technologies.

Welcome to OpenText Release 16, the world's first comprehensive digital EIM platform. As a platform of fully integrated EIM suites, OpenText Release 16 is the future of information.

We are all information companies. OpenText Release 16 helps organizations make the digital journey to succeed as an information company.

For more information, visit www.opentext.com/16.

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