

THE
AGENT
& CONNECTOR
PRISE

Mark J. 

The Intelligent and Connected Enterprise

Mark J. Barrenechea

OpenText CEO

Barrenechea, Mark J.

THE INTELLIGENT AND CONNECTED ENTERPRISE

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275 Frank Tompa Drive

Waterloo, Ontario, Canada

N2L 0A1

(519) 888-7111

info@opentext.com

www.opentext.com

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Mark J. Barrenechea

Mark J. Barrenechea joined OpenText as President and Chief Executive Officer

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#1

The Intelligent and Connected Enterprise

Technology is pushing human limits. There are more machines than humans on the planet. Over half of the jobs we do will be automated, and every company will become a software company. The challenge will be to master the fine art of blending human intelligence with machine-enabled insights. For the Intelligent and Connected Enterprise, this is not science fiction, but the opportunity to reimagine business.

It is a new world. The Latin term for this is *Quarta Revolutio*.

In this *Quarta Revolutio*, industries are facing a series of challenging macro-trends. The demands of a Millennial workforce, the relentless threat of cyberattack, new ways to work, and complex regulatory environments are changing the ways that businesses operate. Industry 4.0 has introduced new business models, created cyber-currencies, and impacted the nature of conflict, society and security.

In fact, Augmented Intelligence is automating decisions and transforming our relationship with technology. The outcome of humans plus machines will be increased opportunities to change the world for good – something I like to call Augmented Humanity.

For organizations in all industries, technological changes are unstoppable. Digital makes running a glob12 (b)30 (l/P)48 (b12 (b)30 (l/P

To succeed, organizations must use new technologies to unlock the power of information, become more intelligent and connected, and drive engagement with customers, partners and employees.

Software will enable digital transformation and the rise of the Intelligent and Connected Enterprise.

The Intelligent and Connected Enterprise will leverage agile development to build apps in the cloud, automate processes and menial tasks to optimize efficiency, and explore data lakes for sophisticated insights and better decision making. Together, the cloud and edge computing will offer the benefits of agility and savings, while providing the infrastructure the enterprise needs to become part of the ever-expanding IoT universe. Every company will transform into a software company.



EN

OpenText Cloud

These capabilities bring together information from both humans and machines, where it can be securely managed, stored, accessed and mined with analytics for actionable insights.

EIM follows the big data that is all of an organization's Intellectual Property (IP). It manages the unstructured content, from customer case files to employee records to data from transactions along the supply chain. EIM can also be used to manage information from assets such as planes, trains, automobiles, nuclear power plants, oil rigs, as well as from industry accelerators like IT and innovation platforms.

In the Intelligent and Connected Enterprise, EIM combines digital applications with an information platform, bringing together Content Services, Security, the Business Network, the IoT, and the Developer for optimized customer experience, employee engagement, asset utilization and supply chain efficiency.

Furthermore, EIM drives intelligent automation. Tens of thousands of processes running at any given time can be examined to find projects that are stalled, avoid costly bottlenecks, elevate priority processes or identify processes that are good candidates for automation.

Along with automation, the Intelligent and Connected Enterprise uses a cloud-based IoT platform to dynamically integrate supply chain communities and build solutions for greater efficiency, agility and new value-added services. Robust content services mean that information from any machine is supported, whether it is a smart machine, industrial machinery, or an automotive or medical device.

#2

An Information-Infused Future

Computing has changed, and we must think differently about how we write and deliver software. This is based on pertinent, evolving dynamics in the world, including four billion connected humans, a new Gen Y/Z workforce, 25 million developers and one trillion machines. When these forces combine, the amount of data produced will number in the yottabytes. How will the Intelligent and Connected Enterprise navigate, nurture and protect this information?

Humans are more connected to technology than ever before.

Twenty-five million developers are fueling the digital economy around the globe, designing software solutions and apps with emerging technologies. Over the next ten years, there will be four billion connected users on one high-speed, highly reliable network: The Internet. One trillion machines will also connect using this network: everything from our personal devices (wearable, implanted or otherwise) to health equipment, automobiles, thermostats, appliances and more. Humans will connect to each other, machines and business networks in a global ecosystem.

Another dynamic that is fueling the technological boom is our global and fluid workforce. Millennials (Generations Y and Z) are entering the workforce and phasing out Baby Boomers. They are the new guard. They have grown up using computers and mobile devices, and they are changing the way technology is being

Algorithms run our lives. They are not new, but our reliance on them is unprecedented. It is driven by the need to understand and process the huge amounts of data we're generating. Most of us are not even aware of algorithms when we use them. Almost magically, they make things happen.

Basically, whenever you use computers, you are relying on algorithms.

Every time, you complete a web search, algorithms are working behind the scenes to determine your results in a fraction of a second. Algorithms power sites like TripAdvisor to find you the best ticket price or vacation packages available. When you purchase a book on Amazon, algorithms make additional recommendations or tell you what your colleagues are reading. Netflix knows exactly what the next show you want to watch will be.

Based on predicative software and the ability to process information in microseconds, algorithmic trading is driving many investment decisions. Algorithms make sure the pilot who flies your plane follows the best possible flight path, getting hundreds of planes where they need to go. And they boost security at airports, using facial recognition software.

Algorithms also simplify the complexity in our daily lives. They make us more efficient, and in some cases, safer. And all of this is happening without human intervention. The power of algorithms lies within the data and its many applications.

Every day, our interactions, transactions and connections are producing over 2.5 quintillion bytes of data.¹ As both consumers and professionals, we have to sift through a lot of digital “noise” to find meaning. Technologies like AI and analytics can help us to eliminate the noise and get to what we need.

The Intelligent and Connected Enterprise transforms its data into valuable information using AI and analytics-based algorithms by leveraging EIM. With increasing volumes of information, organizations will be required to comply with regulations to safeguard data, and particularly, personal information. OpenText EIM enables organizations to gain insight through market-leading information management solutions, on-premises or in the cloud. Innovative and automated tools like Information Lifecycle Management, Records Management, eDiscovery, AI, IoT, and Collaborative platforms help the enterprise to unlock the value of its information to differentiate itself from others and to compete with agility.

Ultimately, information is at the center of everything we do – from interactions, transactions and processes to our everyday digital experiences. It is shaping our lives across the planet and driving businesses, no matter what size an organization is and regardless of industry. For the Intelligent and Connected Enterprise, information is a strategic asset. The application of

#3

Amazing Things are Happening

It is an amazing time to be a Citizen of the World. Breakthroughs in technology are having a profound effect on our lives. Gene editing is redefining the prevention of disease and extending our life expectancy, quantum computing is available in the cloud, 3D metal printing could replace mass production and new techniques in AI are giving computers imagination and automating many aspects of our lives. CAVU: Ceiling and Visibility Unlimited.

I have been in the software industry for over 30 years and I've never seen changes like the ones that are happening today. Last year, the digital economy grew six times more than the growth of the total economy. Technology is pushing the limits on our abilities to impact our lives (mostly) for the good. Here are just a few examples of awe-inspiring technological advances that could change our lives in dramatic ways.

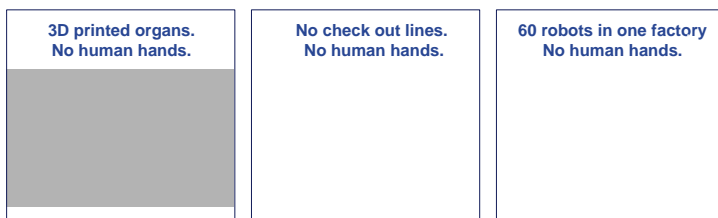


Figure 4: Impacting our Lives in Varied and Dramatic Ways

We are experiencing a global shortage of organs available for lifesaving transplants.² The concept of bio-printing, or the ability to three-dimensionally (3D) print living tissue and organs could save hundreds of thousands of lives every year. A startup in the U.S. is working on a way to print 3D hearts using an MRI scan of the patient's heart and a blood sample. Blood cells are converted into heart cells and fed into a 3D printer. Once the heart has been printed, it is placed in a bioreactor until it begins to beat.³ The 3D printed heart mimics the structure, property, and look and feel of a "normal" heart. Liver tissue is being reproduced in a similar fashion. Entire human organs will soon be available for transplant, built entirely from scratch by a 3D printer.

In manufacturing, 3D metal printing will change how we manufacture goods. Print-on-demand of large parts could become a reality, replacing mass production and reducing the requirement for factories to keep large inventories. Along with the ability to reproduce parts for less money, 3D metal printing also has the potential to produce more intricate, complex and higher performing, customized parts. As 3D metal printing becomes more common, software is already being developed to generate 3D print-ready designs.⁴

Over the last year, there have been breakthroughs in CRISPR (a technology for targeted gene editing) and CAR T-cell therapy to help combat diseases like Acute Lymphoblastic Leukemia (ALL) and advanced lymphomas. Over the next decade, technologies like these will help us live longer, healthier and happier lives. Research has been driven by supercomputers, clinical trials and clinical research, and these technologies are laying a path to cure everything from influenza to cancers, including leukemia.

Any discussion around technological breakthrough must include at least one reference to Artificial Intelligence, or AI. While it is currently the preoccupation of technology giants and research firms, advances in machine learning are currently trending (a

“Dueling neural networks” of AI are being developed with the ability to spar with each other. Simplified mathematical models of the human brain square off in a game that gives AI the ability to imagine and then generate images. Because it is an example of AI making sense of the world around it, this has been hailed as one of the most promising advances in AI in the past decade.⁶

On the consumer front, Amazon announced the opening of its first physical grocery store, Amazon Go, in January 2018. The shopping experience is fully AI-powered and automated.

Shoppers scan the (f AI m)24 (r)18 (o)24 7t6Bolt0.5 45 t(f(f A1 t8 (h (t d

robots. This resulted in a fivefold reduction in errors along with a 250% increase in production.⁹

These are all snapshots of the amazing places that technology can take us. I, for one, am optimistic about how we can use technology for the good (more on that later).

At the same time, however, technology can also be used to do bad (and stranger) things.

#4

... So Are Bad and Stranger Things

Every 39 seconds a company in the U.S. is hacked and one in three people are affected. Cyberspace is the new battlefield. Bits, bytes and botnets are the weapons of choice. From stolen Intellectual Property to personal accounts being compromised to ransomware Wannacry, all data is vulnerable. Can our social (media) status be as easily compromised? In the digital age, what does it mean to be a good digital citizen?

With the good, there is always the bad – and sometimes there is strange.

Cyberattacks and information breaches are happening every day, from influencing the outcomes of elections to bringing down businesses to massive data breaches of personal information. In

Each year, the World Economic Forum releases its *Global Risks Report* to identify and analyze the most pressing risks that the world faces. In the 2018 report, the experts and decision makers surveyed were most concerned about the environment and cyberthreats over the next decade, along with geopolitical tensions. In short, in their view, future risk will be created by either “Acts of God” or machines.¹²

Malware is another example of a cyberbreach. A state-owned oil company was attacked through a phishing email scam that infected tens of thousands of workstations. As much as 75% of the infrastructure in the company was affected, and it shut the company down for two months.¹³

Not only are companies in danger, people's lives can also be threatened. WannaCry, the biggest ransomware attack in history, infected 300,000 computers across more than 150 countries. WannaCry's impact was particularly pronounced at hospitals in the U.K., where more than 19,000 appointments were cancelled and computers at 600 emergency departments were locked down. It was later discovered that with basic IT security, the attack could have been prevented.¹⁴

But not all breaches are a result of cyber espionage or hacking. Many are inadvertent and are the result of insider privilege and misuse. A series of cyberattacks have occurred using the SWIFT banking networks. In just hours, unknown hackers siphoned off \$81 million in funds. They used the SWIFT credentials of a bank to send fraudulent money transfers to be made to bank accounts in the Philippines, Sri Lanka and other parts of Asia. In this attack, the bad actor was an employee who knew the codes, what files to use, and how to request the transfers.¹⁵

There are many other examples of cyberbreaches.

Technologies like AI will make cyberthreats more targeted and creative. Take image recognition, for example, used for identity theft. Over the past five years, AI has improved from correctly categorizing images with 70% accuracy to 98% (near perfect categorization), which exceeds the human benchmark of 95%.¹⁶

From the bad, there is the downright strange.

Our social media data determines our social status, or, at least, a portion of it. What happens when your social data can no longer be trusted as an accurate representation of yourself as a “good citizen” in society?

In Shanghai, for example, a government-backed company has legally collected data on every citizen. Honest Shanghai, a rating app for citizens, is one of many social credit systems run by local governments. It is part of China’s goal to establish a nationwide social credit system by 2020.¹⁷

Scores are very good, good or bad. Those with a very good score enjoy more government services or perks, like discounted flights or lower interest rates for loans.

If you want to go to college, your application is ranked based on your social score. If you want to travel outside of Shanghai, whether you can get a ticket or class service is determined by your social credit.

There are skeptics. If the government is watching everyone else, who is watching the government?

And on an even stranger note, to illustrate how data can truly be manipulated by technology today, researchers from the University of Washington have perfected a facial recognition algorithm and a mouth movement algorithm to precisely model how someone speaks. Using this technique with a video of President Barack Obama, they can literally put words into his mouth.¹⁸

In another example, Emma Gonzalez, Parkland shooting survivor, fell victim to the same kind of media manipulation when fake news published a tampered image of her tearing up the U.S. Constitution on social media sites.¹⁹

Welcome to the world of digital, as we sit on the cusp of the cognitive era, where good things, bad things and stranger things are happening.

And most of these are occurring at the intersection of technology and data.

#5

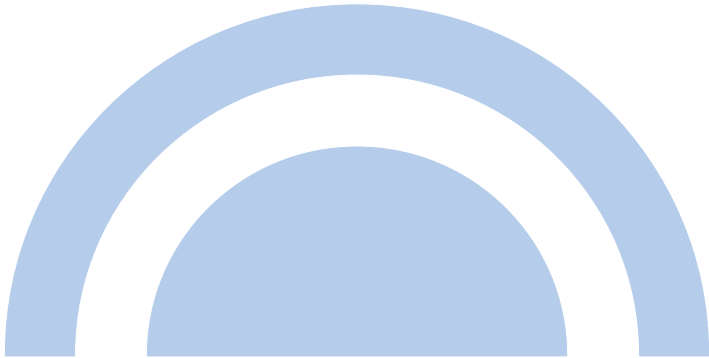
Information is At the Heart of Your Business

Even in the digital age, the world of business is document-centric. What sets the Intelligent and Connected Enterprise apart is a ready adoption of the tools and technologies needed to mine, model and analyze its data. And a cultural shift that values information as an asset. Together, these facets enable the nimble transformation of raw data into intelligent action.

Even though digital information is evolving at a rapid pace, the world is still document centric.

Documents, whether created by a human or generated by a machine, underpin every operation, communication exchange and innovation in the Intelligent and Connected Enterprise. What is changing, however, is how they are created, their levels of complexity and their collaborative nature.

Consider all the business documents that need to be managed, from invoices, payments, contracts, waybills, orders, etc., along with their differing formats: video, voice, JPGs, smartphone images, PDFs and more. OpenText has spent 20 years understanding all these formats and how to break them down effectively into metadata and other components.



The vast majority of business information relates to employees, customers, suppliers, assets and products. But, for this information to provide business value, the Intelligent and Connected Enterprise must be able to engage with it in meaningful ways to uncover insights.

To help businesses connect with their information and unlock its potential, regardless of whether it resides behind the firewall or in the cloud, OpenText is continually developing information-based enterprise applications. These include departmental applications like accounts payable, case management and invoice management; industry-specific applications like claims processing and regulated documents; as well as active applications for supply chains.

These applications give the Intelligent and Connected Enterprise real-time access to information that has been enriched with analytics and AI. With the right, intelligence-infused information, users can make informed decisions. That same information can also be used to identify new opportunities, such as ways to optimize processes, improve products or services, or monetize data.

To rise to the challenges of a digital economy, organizations must digitize their business processes. This goes beyond converting paper records to electronic or automating process steps. Ideally, organizations should digitize core business processes from end-to-end, in their entirety.

The benefits of digitizing information-intensive processes are numerous. Costs can be reduced by up to 90%.²⁰ Errors can be minimized. New channels and new routes to the customer can be leveraged. Replacing manual paper-based processes with digitized processes and documents allows businesses to collect data to better understand process performance, costs, and risk factors.

When processes and data are fully integrated, analytics and AI can be applied to add value across the enterprise.

Analytics will be a mainstay in organizations of the future. Insights based on analyzing information empower businesses to act on this information and automate their decision-making processes. Applying advanced analytics provides a better understanding of transactions and interactions and can help improve outcomes.

Data lakes include information from every connected device and all this information (both structured and unstructured) can be remotely connected to an IoT platform. Organizations can leverage this information in different ways to help drive IoT-enabled processes and greater visibility. Deciding which systems

#6

Security is Job 1: Machines vs. Machines

According to business mogul Warren Buffett, cyberattacks are the biggest threat to humankind, even more so than nuclear weapons. Digital is redi

Digital is redefining cybercrime and cyberwarfare.

Cyberattacks today are multi-stage, hard to discover and highly targeted. Some security threats are accidental, stemming from unauthorized employee access. As much as 38% of attacks come from internal breaches.²¹

In other instances, hackers test perimeters, phish, penetrate and lurk (sometimes with a dwell time of up to 100 days), locate weak information policies, procedures and systems, or breach the network laterally. Once inside, information can be leaked out slowly or exploited en masse.

You must assume the bad actors are already inside your network. What are these bad actors after? The most valuable enterprise resource: information.

For the Intelligent and Connected Enterprise, information security is Job 1.



Firewalls and other traditional security measures are no longer enough to secure enterprise information. Vulnerabilities

Information lies at the heart of these attacks. This includes everything from customer information to employee information, product designs, payments, orders, invoices, machine-to-machine or IoT data and more.

As the lifeblood of business, information needs to be protected. Enterprise Information Management (EIM) is a digital platform that helps to ensure the integrity, accuracy, compliance and protection of information throughout its lifecycle – whether it is design documents for a fighter jet, trading partner information in a SWIFT network, payment information in a bank or employee information in a government database.

Statistics show that data breaches will continue to accelerate. In the first half of 2017 alone, there were nearly 2 billion records lost or stolen in a breach.²²

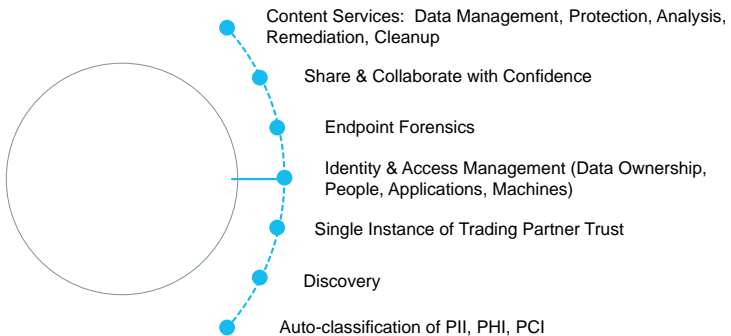


Figure 10: Total Security - The Immune System for Business

Information, security and compliance requirements are merging into a single challenge that must be fought on multiple fronts.

Comprehensive information security is the immune system for business. EIM arms the Intelligent and Connected Enterprise with the security tools and approaches it needs to discover and recover from information breaches.

As a critical aspect of a complete security platform, endpoint forensics collect information, monitor behavior, send notifications and help to automate incident response to minimize risk.

As digital extends business into a global ecosystem, the need to manage and protect multiple systems, relationships and identities is growing. An Identity and Access Management (IAM) platform enables organizations to centrally manage the entire identity lifecycle of their users, as well as their access to critical resources across their business ecosystems.

Discovery solutions deliver the gold-standard of digital forensics and unstructured data analytics for searching, collecting and investigating enterprise data to manage legal obligations and risk.

New regulations will require new ways to classify data. Auto-Classification is the next-generation solution that combines industry-leading records management with semantic capabilities for classification of content.

As the immune system for business, EIM ensures that Security is Job 1 for the Intelligent and Connected Enterprise. It helps organizations all over the world to manage data, IP and the explosion of digital identities and endpoints associated with connected technologies.

#7

We All Have an Endpoint Responsibility

The IoT will push the number of endpoints into the trillions. As the size and complexity of endpoint environments grow, how can the Intelligent and Connected Enterprise subdue the juggernaut of cyberattack? By securing all the endpoints – laptops, smartphones, printers, POS terminals, medical devices, smart sensors, etc. Information is everywhere; we all have an endpoint responsibility to protect it.

A day in the life of the modern workforce is technologically complex.

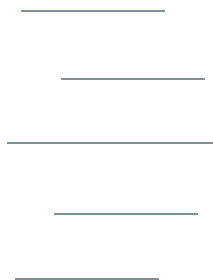
Globalization necessitates that digital assets and resources, once secure behind firewalls, need to be made accessible to a distributed workforce. This information extends to an ecosystem made up of suppliers, distributors, logistics providers and other partners. Information is extended across firewalls, networks and borders.

These endpoints can expose confidential information contained in nuclear power plant designs, an employee's personnel file or the software program that a developer is writing to control an autonomous car.

While we will have greater capabilities to collect this data, analyze it for insights and create a range of new services based on it, an increase in connections means that more endpoints, identities and data need to be protected.

As the size and complexity of endpoint environments grow, we all have a responsibility to protect the endpoints.

Just as every company will become a software company, every company needs to be a security expert in the digital economy.



As part of the OpenText EIM platform, IAM protects 35 million endpoints, with support for more than 26,000 mobile device profiles. It collects information, monitors behavior, sends notifications, uses advanced analytics and machine learning to detect abnormalities and feed them into our AI platform Magellan for detection, resolution and learning.

We have moved beyond our focus on human-generated data to incorporate machine-generated data, bringing together structured and unstructured information.

EIM secures intelligent endpoints. It helps organizations all over the world to manage data, IP and the explosion of digital

to information from multiple sources, empowering them to work in lead applications (like SAP and Salesforce) and access relevant information when they need it.

To successfully transform their business operations, organizations need unparalleled access to business insights. AI brings new information onstream along with the ability to analyze it. Release 16 EP5 increases the machine-learning power of OpenText Magellan, our analytics and AI platform.

OpenText combines leading EIM platforms with applications that inl55 Tm(r

OpenText Discovery is the gold-standard in legal technology designed for eDiscovery, forensic data collection, contract analysis, and legal knowledge and process management. It helps organizations protect data, comply with regulations, perform discovery when required and speed time from detection to resolution and learning.

Along with discovery, OpenText Security protects the Intelligent and Connected Enterprise's most sensitive information. Release 16 is a multifaceted platform that offers multi-level security, on premises or in the OpenText Enterprise Cloud. Advanced AI and Security integration helps organizations build threat-hunting dashboards and other visualizations to maintain a focus on Security as Job 1.

New innovations in EP5 enable agentless, cloud-based, multi-disciplined threat detection as well as the detection of internal security breaches. A combination of EnCase EndPoint Security and Logical Imaging delivers continuous monitoring and detection capabilities.

Release 16 EP5 enables the Connected Enterprise.

Our latest EIM platform combines structured and unstructured information to enable tighter connections. Humans and machines come together on a secure system to automate information-infused processes.

The OpenText Business Network powers the seamless, secure flow of information across an extended business ecosystem of people, systems, and things. Enterprises use it to simplify inherent B2B complexities and gain insights to drive efficiencies and speed time-to-revenue.

OpenText Business Network, Cloud 16, makes it easier than ever to connect any trading partner, regardless of their technical capabilities. The EP5 release features extended predictive metrics, priority transaction processing, expanded self-service capabilities, high volume notifications and improved usability, as well as support for direct connect outsourcing. Upgrades to Identity and Access Management (IAM) help to ensure the exchange of information and transactions that occur in the cloud network are secure.

Deeper integration allows for better end user experiences. Release 16 EP5 offers a richer, end-user experience with enhanced developer controls and self-service capabilities. Advancements include the ability to interact with workspaces using a mobile device, a unified dashboard to simplify content mining with Magellan, and integration with OpenText Documentum.

OpenText Experience empowers marketing, line of business users and developers to transform and optimize customer experiences. Release 16 EP5 includes customer journey mappings to orchestrate customer interactions across every touchpoint. Along with multi-channel content publishing, this enables the Intelligent and Connected Enterprise to digitize the customer journey from end to end for a more consistent brand experience.

To unlock the potential of their information, intelligent enterprises are automating complex business processes. OpenText AppWorks provides a single platform for process automation, case management and low-code application development.

#9

The OpenText Enterprise Cloud

It is a hybrid world. Businesses should be able to choose where they want to run their information-based applications: off-cloud, in the private cloud, in public clouds, as managed services or Software-as-a-Service (SaaS). As aviators say, Ceiling and Visibility Unlimited (CAVU) and this is what our hybrid, hyper-scale cloud infrastructure offers the Intelligent and Connected Enterprise – increased visibility and unlimited potential and options to perform, innovate and succeed.

Everything is more efficient in the cloud. It keeps overhead lean and storage requirements even leaner. It has given us the foundation for new business models and whole economies (like the subscription economy).

The cloud offers the benefits of flexibility and savings, while providing the infrastructure required to support transformation, along with emerging technologies like mobile devices and the IoT.

To optimize performance, the Intelligent and Connected Enterprise needs flexible options for public, private, or hybrid

Keeping up with the evolution of technology, plus the skills required to manage it, can drive up cost and uncertainty. A managed service procured via subscription and delivered by experts reduces the burden on IT staff, so that they can focus on more strategic initiatives.

Supported by a global, scalable, and secure infrastructure, the OpenText Cloud includes a foundational platform of technology services and packaged business applications for industry and business processes, with comprehensive OpenText Managed Services at its core.

Approximately 2,000 organizations are using our managed services to secure their information. With one contract and one SLA, they will never have to upgrade again. Business continuity is guaranteed, along with faster implementation and rollout, while overall risk and cost of ownership is reduced.

A key benefit of outsourcing is scale. OpenText Anywhere delivers hyper-scale hosting functionality, giving our customers the flexibility to manage their information securely at planetary scale. This “run anywhere” approach enables businesses to run their workloads in any cloud, whether it’s the OpenText Cloud, Google Cloud, Amazon Web Services or Microsoft Azure. Our partnership with Google Cloud demonstrates our commitment to offering our EIM solutions on public cloud infrastructures.

The cloud has introduced new complexities in technology investment. Inside the Intelligent and Connected Enterprise, lines of business are empowered to buy their own solutions while

There are many opportunities to extend processes and workflows to employees, customers and partners using cloud services. While we have been developing applications in the cloud to deliver on these use cases, we are also making more applications available with our next-generation, hybrid platform, OpenText OT2.

Developing applications on OT2 (such as OpenText Legal Center and OpenText Quality Center) extends the value of our customers' investment in key OpenText platforms. This approach gives our customers a graceful path to the cloud.

OpenText is helping the world's largest businesses reinvent themselves with powerful business information applications on any cloud infrastructure for optimized customer experience, operational excellence and transformational business models.

Like cloud computing, AI gives organizations the ability to innovate and compete with agility in an information-infused future.

As the next frontier in the evolution of the Intelligent and Connected Enterprise, the impact of AI on business will be significant.

#10

AI – Four Key Ingredients

I like to say that autonomy is the mother of AI. There are four essential AI ingredients that every enterprise needs. Here is the recipe for AI success: Combine digital maturity with data ecosystems, add a good quantity of tools and techniques, and infuse with a rich array of use case scenarios. Mix well (by mainstreaming your machines and data). Now you are ready to build out key algorithms for your business.

Artificial intelligence is the great hope of software today: it can do everything.

At OpenText, we have developed a low cost, easy to use AI tool called OpenText Magellan. We want to make its application practical, so that it adds value instantly.

There are four key ingredients required for AI to add real business value: digital maturity, data ecosystems, tools and techniques and use case scenarios.

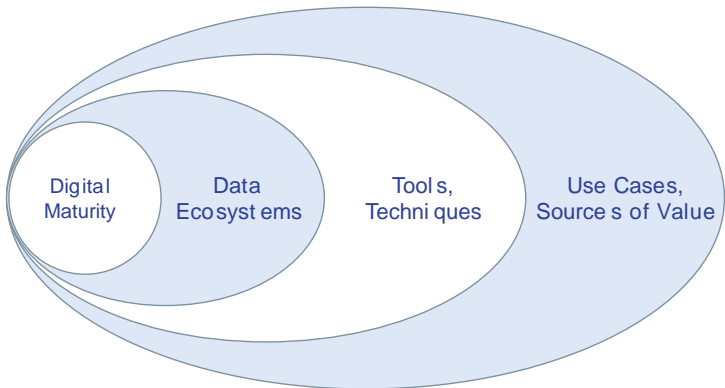


Figure 18: AI – Four Key Ingredients

The first ingredient is digital maturity, and this is wholly dependent on having mature processes. If the process is mature,

With digital maturity in place, the next key requirement is

We have a public-sector customer with 100,000 employees, and they get fined if they fail to respond to an employee case in an allotted period of time. In fact, in the past, they have been fined \$15M a year. They are using Magellan to prioritize employee cases. Their goal is to avoid these charges by applying an algorithm based on employee complaints to a content system that is integrated with Magellan.

Another example is a global wine company with 6,000 employees and \$2B in revenue. They have standardized on Magellan to analyze their brand. Because of multi-tier distribution, the company often loses sight of the customer or where their product ends up. They may get some feedback from their website but ultimately, they lose control. As a result, the company cannot complete sales forecasting because they are unable to determine where customer demand comes from. The company is using Magellan to better understand the customer experience all the way along their distribution chain. Based on this, they can complete more accurate sales forecasting which will result in better Manufacturing Resource Planning (MRP).

The outcomes of AI platforms like Magellan will be significant. Better efficiencies and performances. Hundreds of thousands of dollars in cost savings. More innovative products and services. Smart homes, factories and cities. Improved health. Lives saved. A higher quality of living. Based on these, I encourage every company to place a no-regrets bet on AI and start today on the journey to becoming an Intelligent and Connected Enterprise.

The outcomes of AI are also creating new ways to work.

#11

New Ways to Work

The average Gen Z'er has the attention span of about eight seconds. I'll let that sink in (for a few more seconds). As the Digital Elite, Generation

Say goodbye to the 9-to-5 workday.

In the Gig Economy, every company will be a software company. Every employee will work as a data scientist. Work will be less permanent and more flexible. Co-bots (AI-driven robots) will infiltrate the workforce. The Intelligent and Connected Enterprise will draw on niche experiences, broad-based knowledge and content curation in the human cloud.

The employment landscape is in flux, impacted by forces that are transforming the workplace and introducing new ways to work. The most powerful of these forces? Shifting demographics in the workplace, digital technology and globalization.



Figure 19: Forces Are Transforming the Employment Landscape

For the first time in history, there are five demographics in the workforce: Traditionalists, Baby Boomers, Gen X, Gen Y and Gen Z. We are at a tipping point where in the next three to five years, the workforce will be predominantly made up of Millennials (Gen Y and Gen Z).

Millennials are reshaping the workplace. They have expectations and entitlements that are radically different to their predecessors. They march to the beat of a different drum, and the enterprise will have to embrace their work habits.

Together, these demographics form the “digital elite.”

Gen Z’ers multitask across at least five screens a day and spend 41% of their free time on computers or mobile devices.²⁵

They expect to use the same tools in the office that they use in their leisure time, like social media, mobile connectivity, gesture-based interfaces and wearable devices.

Mobility and flexibility guide this workforce. Self-reliance and personal freedom are non-negotiable. Gen Z’ers are attracted to organizations that are entrepreneurial in nature or function like a startup with more freedom and much less control.

Organizations will need to support diversity and equality to stimulate productivity as well as a highly evolving and inclusive workforce.

The new infrastructure will be fluid, dynamic, global and diverse.

In the workplace, hierarchies will flatten, organizational structures will decentralize, and the work environment will be collaborative and highly social.

Employees will expect easy and open access to information, knowledge and expertise. Large volumes of data will lead to greater insights. Information will drive intelligent action in the enterprise.

As mobile “eats the world,” offices and physical workplaces will disappear. Many employees will work remotely.

No matter what their occupation is, chances are good that future generations will work longer hours.

With growing life expectancy, we may even see the end of retirement. For those who cannot work past a certain age, this could lead to a loss of economic security.

As our work personas move out of the private sphere and into the public, our personal data will become more exposed. In the future, we could be more closely monitored in the workplace and rated using advanced technologies like wearables and AI.

The Intelligent and Connected Enterprise will need to embrace the forces transforming the workplace and create an infrastructure that supports connectivity, collaboration and compliance. There will be a critical requirement for organizations and governments to protect our personal data and use information for the good.

#12

Information is for the Good

I would like to change the narrative that information is bad. It is not inherently bad. In fact, it has the power to change the way we think, work, give back and live. Inspiring applications are being developed to address some of the most important global social and economic issues, such as disease, starvation, refugee displacement and poverty. It is time to focus on using information for the good.

1 in every 113 people on earth is an asylum-seeker,
internally displaced or a refugee



Using information for good is also present in building the world's best businesses and can be leveraged to help companies develop talent, build great products, as well as improve quality, safety and efficiencies for their customers.

Our customer deployments of EIM are advancing this concept every day.

A not-for-profit organization and advocate for the ocean is using an EIM digital asset management system to manage all information associated with the yearly International Coastal Cleanup. The repository provides secure storage of all images of marine debris – an index that ultimately becomes a report shared with the public, industry and government officials to help advance awareness and protect marine life.

A leading international humanitarian organization is connecting an employee base of 10,000+ across 90 countries to enable its rapid response team to share information on the ground in the first 24 hours of a crisis. Critical information is fed back into the organization in real time, enabling them to develop collaborative solutions efficiently and refocus on better serving their key beneficiaries.

The world's top manufacturer of braking systems for rail and commercial vehicles, such as freight trucks and metro lines, is using big data analytics to help ensure safety for millions of

#13

Why I Am an Optimist

Our common purpose is humanity. Together, we can achieve great things. We are already making great strides in creating a safer and healthier planet. Children are living longer and healthier lives, and more women and children are going to school. Education and literacy rates are rising while extreme poverty is declining. There is cause for optimism rooted in these positive global trends. And the tremendous promise of technology to transform our world, using information for the good.

We are just at the beginning of the Fourth Industrial Revolution. Few things have the power to transform our world as rapidly and radically as digital technology.

This makes me an optimist.

One of the world's most important achievements to date is the decline in child mortality.

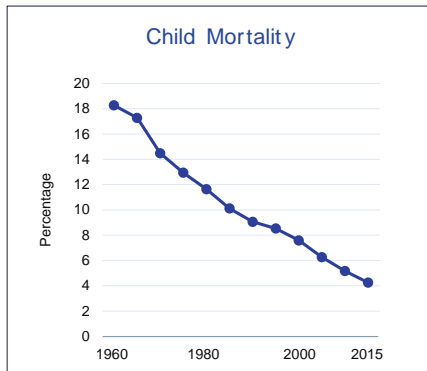


Figure 21: Decline in Child Mortality

In just over 50 years, the rate has decreased from 18% to 4%, despite the population growth in developing regions. Since 1990, the number of children who die each year has been cut in half and is still declining.³⁰

The United Nations (UN) launch of the 17 Sustainable Development Goals (SDGs) have been critical in putting effective strategies, resources and policies in place to combat the causes of child mortality. These development goals were made possible through the efforts of Child Hunger and Undernutrition (REACH), World Health Organization (WHO), World Food Programme (WFP) and UNICEF, under the directive of UN's Millennium Development Goals.³¹

The eradication of diseases like measles, smallpox and polio through vaccinations has been credited for rapidly reducing deaths. The measles vaccination helped prevent over 15 million deaths between 2000 and 2013, inciting a 67 percent decline in the reported cases of measles globally.³²

Along with the decline in child mortality, we are living longer lives. This is another reason to be optimistic.

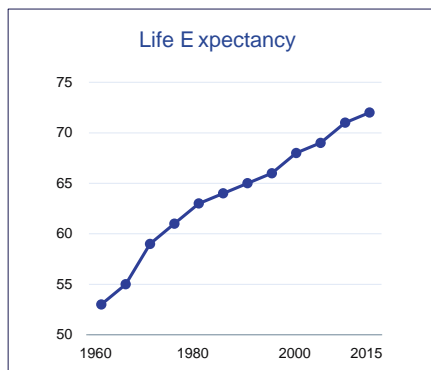


Figure 22: Increase in Life Expectancy

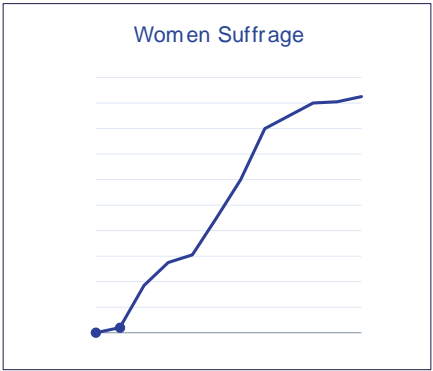
Our life expectancy has been on an upward trend. Better living conditions caused the average lifespan to cross the 70-year mark in the 21st century. Over the last 55 years, global life expectancy has risen by almost 20 years.³³

While the average North American might expect to live to be 80, many of our children will live to see 100. Advanced medical technologies are helping us live longer without experiencing prolonged physical and mental decline. We are not just increasing lifespans; we are increasing “health spans” as well.

Despite these figures, millions of people have been given greater access to water, electricity and sanitation since 1990. Great progress has been made on improving access to water: 91% of the global population has access to better quality water (that is protected from contamination), up from 76% in 1990. Last year, UNICEF's efforts provided nearly 14 million people with clean

Access to basic education is perceived as a right provided and protected by the government in many countries. A higher quality of education results in lower levels of poverty (through higher individual income) and helps to build social capital and long-term economic growth.

Despite these worldwide improvements, in some countries, the



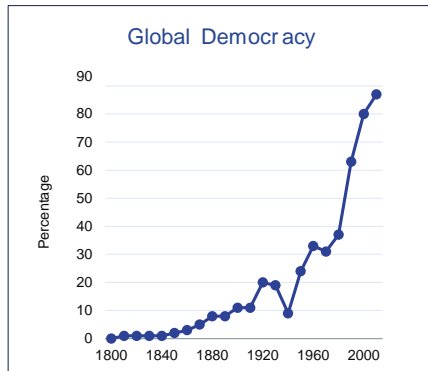


Figure 27: Number of Democracies Worldwide is Growing

Democratic countries are typically more open, healthier, have higher educational attainment and human rights are better protected.

A democratic world is a very recent achievement. While there is much room for improvement, democracy overall has made significant progress over the last 40 years. Based on current trends, the rates of economic growth in the poorer countries of the world give hope for further democratization around the world.

It has been rumored that French economist Claude-Frédéric Bastiat once said, “When goods don’t cross borders, soldiers will.”⁴⁹ International trade has followed an exponential growth path in the years between 1800 and 2010, with a rising proportion of goods and services (rather than soldiers) crossing borders.⁵⁰

A presence in the global market creates opportunities for growth

using it to produce fuel.⁵⁹ At a general level, automation is giving major retailers the ability to cut billions of tons of carbon dioxide from their global supply chain – more than the annual emissions of Germany.⁶⁰ All these endeavors contribute to preserving our planet.

One of the UN's SDGs is to halve global food waste and reduce food losses along production and supply chains by 2030. To achieve this, they plan to help developing countries strengthen their scientific and technological capacity to move them toward more sustainable consumption and production.

The Fourth Industrial Revolution is changing how we grow, buy and choose what we eat. In 2017, a robotic farm in the U.K. harvested its first fully machine-operated crop.⁶¹ Five tons of barley were sown, fertilized and harvested by autonomous vehicles. In the next two-to-three years, digital technologies in agriculture will have a sizeable market coverage around the world.⁶²

Advances in IoT-related technologies can help eliminate key causes of food waste. Using sensor data, AI and analytics, the IoT can improve the yield from both harvesting and storage and streamline distribution networks. As a 24/7 monitoring system of perishable and sensitive foods, the IoT extends the shelf life of produce and enables surplus foods to be shared.⁶³ Information related to consumption and waste can be collected, monitored and analyzed for optimized agriculture systems that help eliminate food waste and combat world hunger.

In context of these technological advances, humanity is our greatest enterprise. The word “enterprise” by definition means a great undertaking or project. One that is important or difficult and requires a great boldness of energy. The achievements I discuss in this chapter are based on a tremendous enterprise of spirit.

An enterprise also describes a company typically organized to fulfill a specific purpose. The Intelligent and Connected Enterprise of the future has a significant role to play in helping to eradicate disease, poverty and suffering.

It is up to all of us to take responsibility – as individuals, corporations and nations – to be a driving force for change. To promote prosperity. And protect each other and earth’s great bounty.

At OpenText, we share a common conviction rooted in universal principles to create a more stable and inclusive global market, and to help build prosperous, thriving societies where citizens can succeed.

Our Enterprise Information Management (EIM) solutions will continue to equip the Intelligent and Connected Enterprise to use information for the good – to create the world’s best businesses, design and market lifechanging products, fuel top talent and empowerment, and improve health, safety and quality of life.

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- ¹³ Jose Pagliery, *CNNtech*, August 5, 2015, [http://www.cnn.com/2015/08/05/tech/ai/index.html](#). (accessed June 2018).
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- ¹⁵ Kim Zetter,

³³ Life Expectancy: <https://www.worldometers.info/life-expectancy/> / (accessed September 2018).

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⁴⁸ Max Roser, <https://ourworldindata.org>, 2018, <https://ourworldindata.org> (accessed September 2018).

⁴⁹ Online Library of Liberty: <https://oll.libertyclassical.org/> (accessed September 2018).

⁵⁰ Esteban Ortiz-Ospina and Max Roser, <https://ourworldindata.org>, (accessed September 2018).

⁵¹ Tari Ellis, Alan FitzGerald, Nadia Te

- ⁶¹ Tereza Pultarova, *How to Measure the Impact of a Crisis on the Real Economy*, Live Science, September 29, 2017, <https://www.livescience.com/6056-how-to-measure-the-impact-of-a-crisis-on-the-real-economy.html> (accessed November 2018).
- ⁶² Oliver Lofink, *How to Measure the Impact of a Crisis on the Real Economy*, PA, 2015, <https://www.pa.gov/2015/01/15/how-to-measure-the-impact-of-a-crisis-on-the-real-economy/> (accessed November 2018).
- ⁶³ Sukamal Banerjee, *How to Measure the Impact of a Crisis on the Real Economy*, World Economic Forum, January 15, 2018, <https://www.weforum.org/agenda/2018/01/how-to-measure-the-impact-of-a-crisis-on-the-real-economy/> (accessed November 2018).

