

Sage Intacct: The Momentum Continues

The last week of September, I attended Sage Intacct's annual Analyst / Influencer event in Healdsburg, CA. While the red wines of Sonoma County were no doubt inspiring prior to and after the full-day briefing, I walked away from the event convinced that Sage's acquisition of Intacct two years ago continues to be on track and delivering solid value for customers and parent company Sage alike.

Business Update

Prior to our arrival, the analysts attending were notified of several key leadership changes at the unit and company. Among the many shifts are:

- Rob Reid, formerly Intacct CEO, is now Sage Chairman of Sage Midmarket Solutions (that includes both Sage Intacct and Sage People).
- Marc Linden, formerly CFO for the Sage Intacct unit was promoted to EVP, Sage Intacct, now overseeing not only Business Ops and Finance, but also leading the Marketing, Product and Engineering group.
- Aaron Harris, formerly CTO of the Sage Intacct unit is now CTO of Sage reporting to Sage CEO Steve Hare.

With two former senior Intacct leaders now on Sage's Executive Committee, this is a clear signal that the acquisition of Intacct is having a major (positive) impact on the company. As highlighted in my blog from a year ago (see [Sage Intacct: Acquisition On Track – 31Oct2018](#)), virtually the entire leadership team (and most of the employees) remain on board post acquisition – another great sign of successful integration.

While not explicitly sharing detailed financials, it was our sense that the strong momentum that the unit experienced last year post acquisition has been continued through 2019. Based on our guestimates of Sage Intacct's size last year, and its continued success, McNee Associates would not be surprised if the business unit reaches or exceeds \$200 million in revenue within the next six-to-twelve months, with margins continuing to expand.

The unit continues to be largely run as an independent business unit, although there is significant cross-sharing of enabling technology innovation across the company, both into and from Sage Intacct.

Sage Intacct's partners continue to be a huge part of its success. I really liked their focus on quality relationships over quantity of partners. In total, Sage Intacct now has 120+ VAR partners, 30 of which are on the top 100 list. While its' relationship with the AICPA continues deliver big results, it now has

297 partners in its Sage Intacct Accounting Program (SIAP), and 165 direct sales reps. Six of its top 12 partners are CPA firms. Adding up all of these direct and indirect channel resources helps put more than 2,000 people on the street for Sage Intacct. Impressive indeed.

Evolving Product Focus

Sage Intacct is clearly moving beyond its roots as a best-of-breed cloud accounting / ERP solution for small and mid-size firms. Responding to changing market demand, Sage Intacct is now beginning to provide a broader suite of (increasingly integrated) tools, delivered both by Sage and by key partners. This includes Sage People, the company's Cloud HR and people management system (deployed on Salesforce), and its fast-growing SMB-targeted FP&A budgeting and planning tool launched last year.

Aaron Harris shared some insights around current and future investments in regard to Sage's significant firm-wide commitments around AI and analytics. This has included several smaller tuck-in acquisitions which has helped bring in key talent to the organization. In regard to Sage Intacct, its AI focus seems to be around anomaly detection and predictive billing in the short run; however, there appears to be a number of initiatives in the pipeline as it moves toward an evolved positioning around the "Intelligent Organization."

International Expansion and Micro-Verticals Drive GTM

While this started some time ago, the business unit is focusing its going-to-market around targeted micro-verticals and expanding its international footprint. Whereas stand-alone Intacct was an almost exclusive a US-focused business, Sage Intacct is now investing heavily to grow its business internationally, initially targeting the UK and Australia. They have developed specific offerings that are fully compliant at the country level (in regard to tax, banking, payments, statutory reporting et al), and are providing local data residency.

It was fascinating to hear about the extensive research that they do to help identify micro-verticals to target. Greater than 75 percent of new business is now coming from micro-verticals, versus more horizontally focused marketing initiatives.

In conclusion, I walked away with a continuing sense that this has been one of the more successful application acquisitions (along with Adaptive Insights by Workday) over the past couple of years. No doubt, challenges exist, especially from a range of competitors fighting fiercely for cloud ERP market share. We hope Sage puts some marketing muscle behind its new FP&A offering in particular, as this looks like an especially ripe opportunity.

Microsoft and AWS Outpacing the Competition

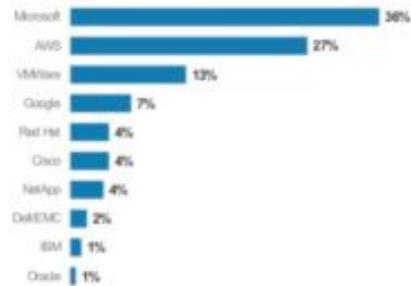
With industrial-strength cloud platforms and hybrid cloud architectures fast becoming a reality, enterprises are now beginning to put plans in place to shut down their data centers, and migrate the vast majority of their legacy application workloads to the cloud. While the market for infrastructure-as-a-service offerings has long been crowded with a bevy of options to choose from, it is becoming clear that Amazon Web Services (AWS) and Microsoft Azure are becoming the dominant choice for the vast majority of CIOs and enterprise leaders.

Research just published by Morgan Stanley shows just how strong this momentum is. Data from their most recent quarterly CIO survey indicates that Microsoft

and AWS remain at the top of the heap as it concerns vendor preference for managing hybrid cloud environments (see Exhibit 1).

Exhibit 1: Microsoft Maintains Lead as Best Positioned in Hybrid Cloud

Vendors Preferred for Managing Hybrid Cloud Environment



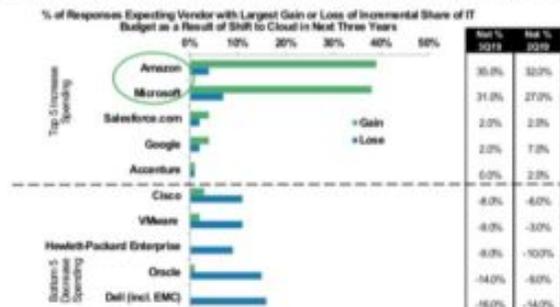
Source: AlphaWise, Morgan Stanley Research, n=100 (US and EU data)

In yet another chart, the research shows just how dominant these two providers are becoming in regards to IT spend going forward. Exhibit 5 focuses on which vendors will gain or lose IT Budget share as a result of the shift to the cloud over the next three years.

As you can see, both AWS and Microsoft Azure are blowing the field away as providers who will gain share over this time period, while providers such as Cisco, VMware, HPE, Oracle and Dell will no doubt experience significant share loss. This is especially relevant given the fact that many enterprise leaders are now hoping to get out of the data center business, and quickly migrate production / mission critical workloads to the cloud.

Morgan Stanley | RESEARCH

Exhibit 5: As workloads shift to the cloud, Amazon and Microsoft remain best positioned to gain incremental percentage of IT budgets over the next three years



Source: AlphaWise, Morgan Stanley Research, n=100 (US and EU data)

Other key insights from the research include:

- CIOs anticipate IT Budget growth to decline from 4.4% in 2019 to 3.4% in 2020, as the economy softens up a bit.
- With the shift to the cloud, Software will continue to grow the fastest among the major categories of IT spend (over Services, Comms and Hardware), although similar to overall IT Budget growth, Software growth will slow to 3.7% in 2020 from 4.7% in 2019.
- The leading spending priorities / investment themes continue to be cloud computing, AI / ML, analytics and digital transformation – all of which are heavily Software-focused.

This research very much supports recent field checks that I have been conducting at various industry events this year. One of my favorite things to do at vendor conferences I am invited to is to sit down wherever lunch is being served, and innocently chat-up senior IT and business leaders sitting nearby. Most are eager to share their experience with the vendor in question, as well as their key priorities and investment plans going forward at a high level.

Many of my most recent discussions have focused on the rapid migration of traditional production workloads to the cloud, in addition to the deployment of new apps and workloads built around next-gen analytics, and AI / ML capabilities. Next week, I head to Workday

Rising in Orlando and hope to do just that.

Workday and Adaptive Insights: Summary Notes from Rising 18

Earlier this month, I traveled west to the City of Lights (Las Vegas) to attend Workday Rising 2018. No doubt, we all missed CEO Aneel Bhusri's charismatic presence. But the show went on without a hitch for the 10,000+ who attended. This blog post summarizes some of the broader key themes, but primarily focuses on the key takeaways relative to the acquisition and integration of Adaptive Insights.

Key Growth Themes

It is very clear that Workday is pumping on all cylinders right now – with multiple growth levers driving ever higher performance across all segments of Workday's main marketing mantra of "Plan, Execute and Analyze." On the Execute front, this includes continuing to grow its core HCM and Financial Management solutions domestically, as well as a major push to expand its international presence. With 95%

retention rates, its 2,300+ customer base is fueling the expansion of a broad cross-sell strategy, with a major emphasis to further round out the “Planning” and “Analytics” segments (focused on below). Rounding out its announcements, Workday introduced what could be a significant initiative it is calling the “Skills Cloud”, as well as further investments its data-as-a-service and benchmarking offerings, its emerging set of Cloud Platform services (both native and on AWS) and future products – all of which will be additive like Lego blocks stacked on top of each other.

Throughout the event, company leaders emphasized the emergence of Workday as the “Predictive Machine.” As we have seen with other significant cloud apps players (see [Salesforce 18: And the Beat Goes On](#)), Workday is now several years into its journey to add a machine learning (ML) fabric into the core of its solutions / platform to bring a new level of intelligence and predictive power for its users.

Workday’s Leighanne Levensaler shared in her opening keynote remarks that Workday is “taking a very pragmatic approach to making predictions” – at the same time that developing predictive models in HR and Finance are “more difficult than we initially thought.” This has driven a new hiring profile for the firm that emphasizes next-gen skills, and a better pairing of its growing army of data scientists with subject-matter (business) experts to make sure that they are targeting and solving the right problems. The

net of it is that the new ML / predictive layer is clearly becoming table stakes for virtually all major Cloud apps players going forward – which will no doubt only increase customer value and customer stickiness.

Adaptive Insights

With its recent \$1.55B acquisition only months behind it (see [Workday And Adaptive Insights: A Strong Pairing](#)), it wasn't surprising that Workday's plans for Adaptive Insights were front and center at the event.

First, and foremost, it was clear from the get-go that Workday wanted to calm any fears that Adaptive Insight's existing customers may have – as it repeatedly emphasized that the product line would not be re-platformed, and Adaptive Insights would be managed as a totally separate business unit that leverages a common Workday back-office. The Adaptive Insights product and marketing teams stay intact, which will operate under the Adaptive Insights brand.

The BU is getting beefed up immediately, as the entire Workday Planning team heads over there. Best of breed capabilities and next-gen technology initiatives will be shared (both directions). It is clear that Adaptive Insights will remain a very viable, strong and independent offering for its 4,000+ customers which should help minimize deflections from its large customer base (including NetSuite customers).

As noted, Workday has multiple routes to market with Adaptive. Cross-selling Workday's HCM and Financial Management solutions into Adaptive Insights upper-mid and large enterprise customer base should yield some quick and sustainable wins. In fact, almost half within Workday's upper-mid and large-enterprise target zone (1,900 of 4,000) – and only 326 have Workday. While Workday's direct sales force will focus on these larger accounts, Adaptive Insights highly tuned digital and inside sales driven go-to-market model will continue to target small-to-medium accounts.

No doubt, Workday will begin to aggressively market the Adaptive Insights Financial Planning and Analysis (FP&A) solution to its installed base of 2,300 upper-mid and large enterprise customers. While we anticipate high long-term penetration rates, at issue, however, is how rapidly customers will adopt – as several that we talked to indicated that they will move forward, but only after a wait of at least a year (until Workday fully works out its integration plans).

Adaptive Insights Integration Plans

Workday "Power of 1" Integration Plans: Adaptive Insights		
1	Workday 32 [Spring 2019 (e)]	Workday 33 [Fall 2019 (e)]
One Source for Data	<ul style="list-style-type: none"> Native Data Integration Drill Through to Data 	<ul style="list-style-type: none"> Drill Through to Objects Plan to Execute-Job Requisitions Budgetary Control Workday Prism Analytics Data Sharing
One Security Model	<ul style="list-style-type: none"> Single Sign-On 	<ul style="list-style-type: none"> User Management Synchronization Domain Mapping to Roles and Permissions
One Experience	<ul style="list-style-type: none"> Adaptive Worklet on Workday Landing Page Business Process Framework-Workday Inbox 	<ul style="list-style-type: none"> Unified Look and Feel Predictive Planning

Source: Workday Presentations, Rising 18

In a small group meeting with the Adaptive Insights CMO, Connie DeWitt emphasized that they have already begun work on a unified UI, and within 12-18 months, will have deployed a unified data model and security model that is consistent with the "Power of 1." Just to be clear, the two offerings already had some level of data integration.

As the chart illustrates, in Workday 32 (due out in Spring 2019), the company will provide meta data integration that understands the Power of 1, and provides drill through to the data. In Workday 33 (due out next fall), it will provide drill through to objects, as well as Workday Prism Analytics data sharing and a unified look and feel.

I reached out to Ms. DeWitt after the conference to see if she could provide even greater clarity in

regards to the integration plans. She emphasized that the goal is for “Workday customers [to be able to] seamlessly share data across Workday applications including Adaptive Insights, have a single security model, and a common user experience. We will not be doing this by re-writing or re-platforming Adaptive Insights, but rather by creating the right software services connections between Adaptive Insights and Workday.”

She went on to explain: “Fortunately Workday and Adaptive Insights share similar cloud-first in-memory architectures that make this transformation easier. We currently have data integration with Workday using a professional services-led approach. As we realize our Power of One roadmap, this will become a product-led unification that is seamless for Workday customers and will not disrupt our non-Workday customers in any way.”

It was clear from the various presentations and off-line discussions that technologies will be leveraged between the development teams, and where applicable they will bring together various capabilities such as their two report writers, leveraging the best of both worlds. Look for significant cross-“pollenization” of its machine learning investments, with PRISM Analytics heavily leveraged going forward.

Workday Planning and Financial Management

Adaptive Insights is now the de facto Planning engine for the company. In fact, Workday quickly launched an Adaptive Insights version of Workday Planning (to complement what it already does around Finance) as a firm declaration of its emerging strategy going forward, although it will keep the existing Workday Planning customer whole by continue to support the product for some time to come. We would anticipate a continued aggressive expansion of Adaptive Insights land-and-expand push into other functional markets (e.g., Sales, Marketing), as it positions itself as the primary competitor to Anaplan – in what otherwise is a highly competitive market (including SAP, Oracle, IBM et al).

In regards to Workday's Financial Management suite, we gathered that it now has more than 500 customers, 60 of which are public companies that are live on the solution. Workday is likewise embedding machine learning capabilities directly into the product. They already offer solutions around expense reporting, account reconciliation and anomaly detection (in regards to payments), with plans to roll out many more in the coming months.

Lots of talk about moving toward “continuous accounting” or “continuous close” – with the advent of

the Workday Accounting Center (to launch in 2020), with its ability to bring non-Workday operational data in through as journal entries, and the ability to trace all the way back to source transactions even if not originally on Workday. We just hope that there is some meat behind the slides in these regards.

Other odds and ends:

- They made a big deal about the launch of Workday Assistant, but I didn't see a lot different than what Salesforce is doing with Einstein.
- Launched "Stories" which looked interesting.
- Last year launched Worksheets – this year adding "Live Sheets" which provides a potentially powerful real-time presentation tool.

Wrap

While Workday is still very much focused on its core "Execute" offerings in the HCM and Financial Management segments – it is clear that it has expanded its vision significantly into "Plan" and "Analysis." This provides a much bigger set of add-on opportunities into the base, but also brings with it the many sales challenges associated with a "big-bag".

With "game-on" in the competitive race to add value from emerging ML fabrics across the broad Cloud apps pantheon, we hope that Workday stays focused on providing very specific / narrow predictive solutions

across its primary functional targets, rather than general purpose capabilities.

Longer-term, we would not be surprised by additional strategic acquisitions that help accelerate market growth (especially around Supply Chain) – assuming they can find opportunities with the right cultural and architectural fit. But most we see a period of consolidation over the next 12-24 month (other than tuck-in technology acquisitions), as Workday works hard to make the most of its new go-to-market weapon to expand and grow the company.

Dreamforce 18: And the Beat Goes On



Source: Salesforce / Dreamforce

Last week, I spent several days in San Fran at Dreamforce 18, Salesforce's annual customer and partner party / gathering. While there were a total of 2,700 sessions, with many, many announcements made, two big takeaways clearly were center stage – Customer 360 and the Einstein Voice initiatives – with a broad range of 2nd tier announcements including partnerships with Apple and AWS. For me, however, the biggest takeaway was a deeper appreciation for the amazing business model that Salesforce has built, and a richer understanding of its sustainable foundations.

Time Tells a Story

Last weekend, prior to traveling to Dreamforce, I revisited my first Dreamforce in 2006, *some twelve years ago*. How things have changed, heh? (both for the company, and the enterprise software industry in general.) Luckily, I was able to find a summary research piece I co-authored back then – that highlighted that 5,000 users attended that event, with the vast majority enthusiastic Type A sales execs and leadership. *One can't forget that at that time, Salesforce was exclusively a Sales Cloud provider, with a powerful yet still emerging CRM solution* in the midst of its battle with Siebel Systems for CRM market leadership (although Siebel had been acquired by Oracle roughly 12 months prior). The big news out of

Dreamforce that year focused around Salesforce's upcoming Winter '07 release that promised expanded functionality, ease of customization and embedded mashup capabilities, AppExchange and the first release of the Apex programming language and platform. All-in-all, a lot of "stuff" – some of it very strategic long-term.

March forward a dozen years to 2018, and one can only be astounded by Salesforce's significant and consistent growth, as well as the astounding evolution of the Dreamforce event itself. During this span, Salesforce revenues have grown from \$497 million in FY07 (end of January Fiscal Year) to projected FY19 company guidance of \$13.175 billion. Registered attendance at Dreamforce this year topped 170,000 (with titles ranging from Sys Admins to F100 CEOs), with an estimated 10 million + viewing the various keynotes online. Where there was once one cloud (and a narrower portfolio of development tools and associated integration capabilities), Salesforce now focuses across four major ones (plus several minor ones), *each of which are at significant scale*: Sales (\$4.0B+), Service (\$3.6B+), Platform (\$2.5B+), and Marketing / Commerce (\$1.8B+).

Customer 360

While Salesforce does not like to think of itself as a "legacy" company per se – in many respects the

leadership is not given its due in regards to the amazing story of adaptation and evolution that has occurred over the past 20 years (since its founding). The company has transformed itself from a niche cloud-based CRM pioneer into an formidable enterprise-wide application and platform behemoth for all things related to the “customer.” Change is good, but change is hard. Keeping everybody on board with the expanding vision I am sure has not been trivial. Recruitment of additional leadership has been critical – and in this regard, I was quite impressed with the next-generation that is increasingly taking the reins.

The very success that it has had in launching all of its various clouds cuts to the very heart of why Customer 360 is so critically important. Customer 360 is Salesforce’s answer to the long sought after “holy grail” of creating a single-view-of-the-customer – connecting the various “islands of automation” that have grown up – whether it be separate systems and data repositories for sales, marketing or service. What Customer 360 provides is immediate, real-time access to data across these systems, with the ability to create a single view of the customer.

The way that it works is that Customer 360 leaves the data in its original data repository, and connects and manages all relevant customer data and profiles across Salesforce apps using a common Customer 360 ID. In this sense, Customer 360 reinforces Salesforce’s increasingly federated view of data to help create a

single view of the customer through Customer 360. No doubt, creating a 360 view should help drive significant add-on business for Salesforce (see below), as who wouldn't want to 1) better understand their customers and customer behaviors, and 2) drive more personalized sales and marketing campaigns, and connected shopping experiences. The challenge for Salesforce is that from a marketing and branding perspective, this is well worn territory, which will only heighten the need for flawless execution.

Einstein Voice and the Emergence of an AI Platform Layer

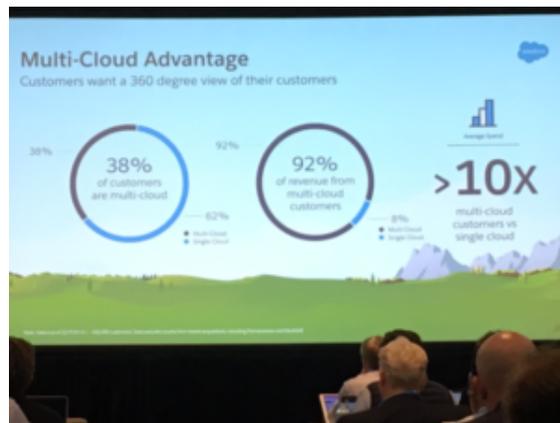
In reviewing my notes, I absolutely agreed with Bret Taylor, President and Chief Product Officer, who shared in a special Analyst Visionary session early Tuesday morning that “the platform shift to AI is one of the biggest in 10-15 years.” Einstein Voice was front and center as Salesforce's next volley in the race to the 4th Industrial Revolution. My take on it is that while Salesforce demonstrated some advanced voice recognition capabilities, the bigger impact was its ability to impact a range of business workflows, which makes it appear to be a visible winner.

More importantly however, the broader incorporation of Einstein (AI) analytic capabilities across the full

range of the Salesforce portfolio of products suggests that a new embedded AI platform layer may be emerging, and this applies not only to Salesforce but to other enterprise apps vendors as well. Rather than general purpose AI engines, these new AI platform layers will need to be very functional specific so that they truly understand the dynamics of the domain that they are supporting. I'll be pursuing this line of thinking further in future research. Stay tuned.

Resilient Revenue Model

One of the great treats of the conference was joining the Investor (Wall Street Analyst) sessions on Wednesday afternoon – as I walked away better understanding why the Salesforce train stays so mightily on its tracks, year after year. Having worked in subscription businesses for most of my professional career, I was truly impressed by how well Salesforce leverages its highly recurring subscription business model, which drives amazing P&L visibility and predictability. In fact, 80 percent of next year's revenue is already in the can, with 60 percent already visible two years out.



Source: Salesforce / Dreamforce

More importantly, the presentations helped demonstrate why Salesforce has significant upside potential on a go-forward basis. No doubt the trend toward digital enablement is part of the answer. But a big part also has to do with its strong retention model, and *how it generates incremental new revenue from the base*. While new logos have long contributed approximately 27 percent of new incremental growth each year, the revenue mix coming from the installed base is evolving significantly over time, and to Salesforce's benefit.

In FY17, 57 percent of the incremental revenue that came *from the installed base* was from selling additional seats and upgrades (all highly profitable), with the remaining 43 percent coming from new products. In FY19 (that will conclude at the end of January), new product sales will reach 51 percent – as Salesforce is having greater and greater success cross-selling its growing arsenal of functional clouds

and associated capabilities. So far, 38 percent of its customers are multi-cloud – *but more importantly, they drive 92 percent of revenue*, with these customers typically spending 10X what single cloud clients do. And clearly the longer-term trend is toward more and more customers having multi-clouds. This should translate into big bucks going forward.

What this all means is that Salesforce looks to have a continuing runway of at least 20-25 percent top-line growth ahead of itself (even with the diminishing impact of scale on growth), driven not only by adding new customer logos and selling add-on seats into the installed base, but cross-selling its multi-cloud portfolio. *In this regard, Customer 360 should be a real winner that helps create significant upside demand.*

In sum, there is growing competitive threats for Salesforce, especially in the CRM and marketing arenas, with SAP, Oracle, Microsoft and Adobe all on the march. Further, the breadth of the company's portfolio is getting very wide, which only increases operational risk. In such an environment, I wouldn't doubt some hiccups along the way, due to transitional issues – especially as senior leadership rotates to the next generation. However, the net of it is that Salesforce is a well-oiled machine – and appears well positioned to reach or exceed its FY22 goal of \$21-23B in revenue.

IBM Cloud Summit: Its All About the Data

In the emerging *Age of Insight*, or what Mike McNamara, CEO of Flex recently termed the [Age of Intelligence](#), machine learning and artificial intelligence are becoming central to effective business strategy and decision making, product design and development, and all aspects of service delivery. Unlocking the critical corporate data that support these initiatives and systems were key themes presented at the IBM Cloud Summit that I attended in New York City earlier this week (along with 60-70 other industry analysts / influencers).

No doubt, IBM is in a truly unique position with clients, given its heritage of providing world-class infrastructures to the F1000 for the past 40+ years. These systems hold vast vaults of transactional and operational data that IBM wants to help clients make available in the cloud, and to its' growing arsenal of

highly differentiated Watson



Throughout the one-day Summit, IBM demonstrated its commitment to help its clients adopt and deploy hybrid cloud strategies and environments – as they transition their huge portfolios of on-premise apps to the cloud. Byrson Koehler, CTO and General Manager, IBM Watson and Cloud Platform, kicked the session off by emphasizing that IBM is building a “rich collection of capabilities to deliver an end-to-end hyperscale cloud platform” . . . In fact, IBM Cloud now includes 450 services, 127 of which are customer-facing, with IBM committed to supporting the full range of deployment options, whether it be Public, Private or dedicated on-prem.

A big part of the day focused on IBM Cloud Private, IBMs newest hybrid cloud offering that leverages common platform-as-a-service tools and developer runtimes, as well as popular and developer-friendly technologies such as Kubernetes, Docker and CloudFoundry. IBM’s strategy is to develop and deliver (via containers) a common fabric across all three environments. IBM also announced new data cataloging

and data refining offerings for the Watson Data Platform that helps developers and data scientists analyze and prepare data for AI apps.



I especially valued the late-morning presentation by Don Rippert, CTO, IBM Industry Platform, that demonstrated how committed IBM is in building next-gen AI-based SaaS vertical solutions. As they develop their industry roadmap, beyond Banking, Healthcare and Retail (among others), IBM is clearly focused on business processes where it can help take cost out of the equation, and that can exploit the deep (and sticky) machine learning capabilities of Watson.

All in all, IBM's presentations demonstrated to me that IBM is coming into a sweet spot as it helps clients exploit the massive vaults of locked-up data and systems ripe to get redeployed to next-gen cloud(s). The biggest question is whether IBM will likewise win the hearts and minds of developers building cloud native solutions, in the increasingly

multi-cloud world (e.g., Amazon, Microsoft and Google) that is emerging.

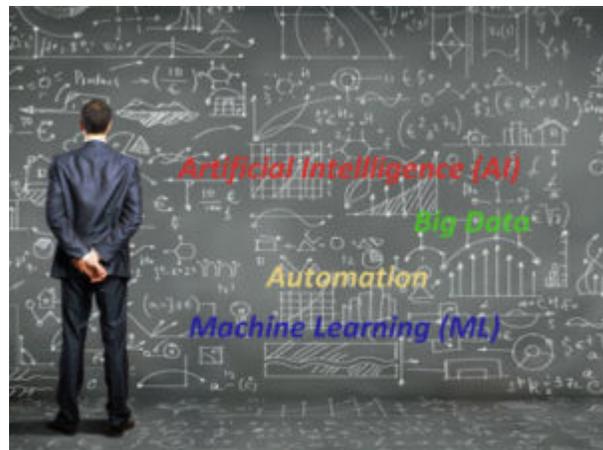
Overcoming Our AI and Automation Fears

I am an optimist; always have been. That is why I find all of the growing anxiety around the advance of technology so fascinating. No doubt, the triad of Artificial Intelligence (AI), automation and big data are driving profound changes in business (and society) given their bottom-line impacts. What I don't fully understand is the growing hysteria – often led by responsible business and scientific leaders – that suggest that AI and automation may led to WIIII ([Elon Musk](#)) and / or massive and growing economic discontinuities / inequalities ([Stephen Hawking at the recent World Economic Forum](#)).

Change is Hard

Yes, automation and AI will cause major economic dislocations, and forever change the employment landscape. *Change is hard*. Yet when has business and society been static? The range of transformative technological and scientific improvements over the

past 150 years has been staggering – regularly impacting markets profoundly, and often over a very short period of time (e.g., advent of electricity). The only issue today is that the *pace of change has accelerated*, and the technologies that are transforming business and society now are being applied to cognitive problems that previously were believed to be the endeavor of humans. Frankly, in my opinion, we are only in the early stages of the economic and employment disruptions / discontinuities that are likely to occur. *And while change is hard, change is usually good.*



Earlier this month, ServiceNow (NYSE: NOW) and Oxford Economics published a terrific new 24-page report focused on the business impact of machine learning (ML) and automation entitled [Global CIO Point of View](#), based on a survey of more than 500 CIOs in 11 countries. To net it down, the report asserts that ML is at the very heart of most CIO digital transformation efforts as they reimagine the way that their enterprises work. Some of the key findings from

the study include (lightly edited from the report):

- Almost three-quarters of CIOs surveyed (72%) are leading digitization efforts, and more than half (53%) say [AI and] machine learning is a [strategic] focus.
- Nearly 90% say greater automation will increase the accuracy and speed of decisions.
- Over two-thirds (69%) of CIOs say decisions made by machines will be more accurate than those made by humans.
- CIOs who are at the forefront of adopting machine learning recognize the need for process and talent changes, but many cite challenges – including the *need to redefine job descriptions to focus on work with intelligent machines*, and hire employees with new skill sets.
- Data quality (51%) and outdated processes (48%) are substantial barriers to adoption.
- Lack of skills to manage smart machines is cited by 41% of CIOs, and lack of budget for [the acquisition of the] new skills is cited as a challenge by 47% of those surveyed.
- A select group of CIOs, whom ServiceNow and Oxford Economics call “first movers,” is outpacing their peers in their use of machine learning.
- Roughly 80% have developed methods to monitor machine-made mistakes vs. 41% of others.
- Half of them say automating routine processes will be key to their business’s success compared

with 33% of others; more than three-quarters have redefined job descriptions to focus on work with machines, compared with 35% of others.

- Almost 90% of first movers expect decision automation to support topline growth vs. 67% of others.

The lack of skills to manage our new machine-learning driven business environment will likely continue for some time. In a recent ISG Insights report, based on a survey of more than 300 senior IT and business professionals (Automation and AI Survey 2017 – Enterprise Plans and Operating Model Impact – [click here](#) for a summary Research Alert), former ISG colleague Stanton Jones reinforced this key challenge:

“. . . as enterprises become more willing to embrace automation and AI, their number one issue will be talent – whether sourced internally or via a provider or partner ecosystem. Our research identifies data science as the most important skill set of the future and the one companies are having the least success finding and retaining.”

I found the following chart from the ServiceNow report especially revealing, as it reconfirms in my mind the fact that automation and AI / ML are mostly supportive technologies in the decision-making process, and that except for the automation of truly low-skill repetitive tasks, *they will only enhance, not replace, most decision making and job roles.*

Title: Most decisions still require human intervention



Source: ServiceNow and The Global CIO Point of View
“The New Agenda for Transformative Leadership: Reimagine Business for Machine Learning” N=500+

Fear mongering related to change is not new. I still fondly remember reading about [Thomas Malthus](#) (1766-1834) and his *systematic theory of population* in which he proposed:

“the principle that human populations grow exponentially (i.e., doubling with each cycle) while food production grows at an arithmetic rate (i.e., by the repeated addition of a uniform increment in each uniform interval of time). Thus, while food output was likely to increase in a series of twenty-five year intervals in the arithmetic progression 1, 2, 3, 4, 5, 6, 7, 8, 9, and so on, population was capable of increasing in the geometric progression 1, 2, 4, 8, 16, 32, 64, 128, 256, and so forth. This scenario of arithmetic food growth with simultaneous geometric

human population growth predicted a future when humans would have no resources to survive on” (quoted from the [AAG Center for Global Geography Education](#)).

Little understood by Malthus and his contemporaries at the time were the incredible productivity gains brought about by the 2nd Agricultural Revolution of the late 18th and early 19th centuries, that paralleled the advance of capitalism and the Industrial Revolution. More recently, agricultural yields have skyrocketed based on modern biotechnology and advanced digital technologies – with governments throughout the world often paying farmers not to farm so as to manage yields and maintain pricing stability.

Creative Destruction and Remaining Optimistic

So I remain an optimist – as today we don’t even know the new innovations and markets that will be created, at the same time that some jobs will be destroyed. Capital for labor substitution isn’t new – especially when it unleashes profoundly new and better outcomes, and innovative forces. This is what Joseph Schumpeter’s (1942) model of “[creative destruction](#)” is all about. What the current trends clearly indicate, however, is the tremendous need for labor market retraining investments, especially to help those caught with yesteryear skills become more relevant in

our emerging knowledge-based and service-oriented economy.

And I am not just talking about one-off retraining programs, but a long-term commitment to continuous training. This includes structural changes to the US economy and our educational system that helps foster technical skills [up and down the job ladder] that helps create talent suitable for the 21st century. Other countries, most notably Germany and France, do a much better job in these regards. Let's learn from our long-time partners about [dual-track vocational programs](#), and other important initiatives that are working. As I regularly tell my daughters, becoming a lifetime learner is not only fun, it will be critically important to their success and happiness.

My friends over at Cognizant Technology Solutions (NASDAQ: CTSI) are likewise optimists. This past February they provided me an early copy of their newest book, [What To Do When Machines Do Everything: How to Get Ahead in a World of AI, Algorithms, Bots and Big Data](#) (Feb 2017, Wiley), co-authored by Malcolm Frank, Paul Roehrig and Ben Pring. In the preface to the book, they tackle this issue head on:

“Will the new machines displace many current workers? Yes. However, on a larger scale, new machines will also create work that is better, more productive, more satisfying than ever before. The new machines will raise living standards and usher

in a new period of widely distributed economic growth that will be far stronger than any we've seen in the Western world during the past 50 years."

Please join me in being an optimist. We live in an amazing time, and the future is ours.

If you are not already [subscribed to my blog](#), I encourage you to do so. Next week I'll provide highlights from my trip to New York City and the IBM Cloud Analyst Summit that I'll be attending. As previously noted, my plan is to publish a blog post roughly once a week, so I won't overwhelm your inbox!

Bill McNee

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