NUCLEUS RESEARCH

TOP TEN PREDICTIONS 2016

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THE BOTTOM LINE

Nucleus's top 10 predictions (and one bonus prediction) for 2016 look at the market forces and application evolutions shaping the way organizations leverage technology for maximized value. With the death of big data and changes in analytics topping the list, we note shifts in supply chain (look for easonomics), human capital management (HCM), content management (going embedded), customer relationship management (CRM goes predictive) and infrastructure that will drive changes in the way customers achieve – and demand – value from their vendors in 2016 and beyond.

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THE DEATH OF BIG DATA

In 2012, we predicted that BI adoption would double for 2013 because of improved usability and lower costs as a result of the cloud, and that big data would continue to take off. Technology marketers agreed, and in the past two years everyone and their dog seems to have launched a big data solution of some kind. It's time for the shiny object syndrome to stop. With accessibility up and costs down, the line between big data analysis and good old business analytics is blurring, and the same users are incorporating big data techniques, often without moving from their current solutions.

These two factors have increased the accessibility of analytics solutions, and, over the last two years, our expectation has been confirmed. Since 2013, we have seen an increasing convergence of analytical tools and methods. Now, with analytics pervasive in nearly every organization, these same users are incorporating big data techniques, often without moving from their current solutions.

A few vendors currently allow the entry level user to be able to analyze multi-terabyte and petabyte stores of data without batting an eye, which is evidence for the democratization of big data. Moving forward, we see that vendors are continuing to build for customers' increasing demands for accommodating datasets from databases such as MongoDB or Cloudera. In 2016, Nucleus predicts that these capabilities will exponentially grow and big data will be dead. Instead of attacking the monolithic and daunting task of big data analysis, users will approach and access it like any data. This is the next step in the democratization of data movement and will bring advanced capabilities into the hands non-technical analysts. Soon there will be nothing special about big data.

RETHINKING MODERN BUSINESS APPS

As many existing enterprise applications reach maturity or near the end of usefulness, companies are considering their next big enterprise applications step. The old process meant identifying vendors whose products had the best fit to existing processes, reviewing requirements documents and customization plans, and, ultimately, deciding how to wrap ERP around existing processes without disrupting them. Although more enlightened thinkers after 2000 looked at minimizing customizations, that often meant workarounds for users. Today, however, this is nobody's first rodeo, and the technology and data is there to show not just what industry best practices are, but how they impact key factors in performance, such as days to close the books or retention rates of high performers. Modern ERP practices require an ounce of technology and a pound of change management, and, moving forward, those that see ERP as an opportunity to drastically change existing processes will take a giant leap ahead of those who continue to just go through the motions.

THE RISE OF THE DISPOSABLE APP

As more and more vendors move to the cloud and provide business users with cloud platforms for rapidly spinning up mobile applications, the old "set it and forget it" mindset for building mobile apps will fall by the wayside. Today business architects – and even business users – can leverage componentized mobile app platforms to rapidly develop and deliver new applications to business users, review their initial adoption and use, and rapidly iterate to make those apps more effective. This has implications for the application value curve of mobile applications, but also the risk – and payback – associated with spinning up new purpose-driven apps for events, new initiatives, or even ad-hoc group demands. When the cost barrier for delivering

every new incremental mobile app drops to nearly zero, the payback – and need for longevity – of an app drops as well.

THE RISING SMB OPPORTUNITY

The old adage "on the Internet, no one knows you're a dog" is only amplified by the capabilities of cloud technologies to lower the barriers to presenting a professional image in customer interaction, from e-commerce to customer service. In the cloud, no one knows whether you have 2 employees or 2000 – provided you present a professional image and professional processes in the way you interact with customers and suppliers. That all comes down to data, and leveraging the power and low-cost to entry of cloud applications and analytics to empower every employee to act like the CEO – and, in some cases, making the CEO the service agent.

EXCEL MEETS ITS MATCH WITH VISUALIZATION

For many years now, Microsoft Excel has been the tool of choice for business analysts because it's free (for Office users), it's easy to use, and it enabled ad-hoc workarounds that rigid applications didn't support. However, its legacy on the desktop is increasingly threatened by data visualization tools that are increasingly free (or freemium), easy to use, and more prescriptive than a spreadsheet. IBM, for example, has announced more than 500,000 adopters of Watson Analytics since its launch just over a year ago and, given its visually appealing nature, we expect that 7 in 10 college graduates will have used a data visualization tool such as Watson or Tableau (Tableau, specifically, has pushed its adoption in higher education). Although Excel won't disappear from the desktop, expect Power BI and others to continue to edge out the spreadsheet as the ad-hoc analysis tool of choice.

RETAILERS WITHOUT CONTROL TOWERS ON 5-YEAR DEATH MARCH

Earlier this year, Amazon replaced Walmart as the number one retailer in America and the online shopping giant will continue to press brick-and-mortar retailers to come up with a successful omnichannel strategy. Not only do retailers have to master balancing inventory with demand for both online and store sales, they have to deal with increasing customer demands for more personalized product. Personalization means more rather than less stock keeping units (SKUs) and the

preponderance of SKUs only makes it harder for retailers to figure out the type and amount of inventory needed for supporting two sales channels. While retailers are trying to get their arms around that issue, Amazon continues to up the ante for customer service, offering one-day delivery of online ordered merchandise in select cities and working on building its own private delivery fleet.

What are retailers to do? They'll have to deploy more sophisticated solutions for demand sensing and demand pattern recognition, as well as those for inventory optimization and advanced analytics. Ultimately, they'll need to run supply chain control towers to ensure that they have the right items in stock to compete with Amazon in a volatile marketplace. Retailers who don't set up control towers can expect to shutter their doors in five years.

THE NEW SC MANTRA: EASEONOMICS

Going forward, the driver for supply chain software purchases will be what Nucleus calls "easonomics" - ease of use in working with an application to maximize productivity while reducing worker strain. With companies continuing to hold the line on hiring, or even reducing headcount, they will select tools that require less training, are more intuitive to use and come with built-in report visualization and analytics.

Most mature software tools today offer a requisite degree of functionality; therefore, easonomics becomes the differentiating factor in purchasing supply chain tools, especially for small and medium-sized companies. Pressed for time and resources, supply chain managers won't have the time to spend hours mastering the intricacy of a software tool to run their supply chains. They'll look for tools that they can operate intuitively like an iPhone and when companies realize that expanded usability produces a quicker ROI, they'll select easonomic vendors in purchasing new supply chain software.

FAREWELL TO THE ANNUAL PERFORMANCE REVIEW

Nucleus bids farewell to online-facilitated classroom learning, too. Organizations may cling to convention, but trigger points are transforming performance management and learning, and employees and their employers will be better off for it.

Most vendors of human capital management (HCM) technology now have standard-issue user interfaces that mimic consumer-grade social media feeds. These features, coupled with the resulting real-time data and advanced analytics, will lead employers to abandon annual reviews and traditional training for a model that is much more fluid, reactive, and context-rich. In a trigger-based world, a manager is alerted to a particular pattern of behavior or visible skills gap for an employee, and can reach out in the moment with relevant coaching or training recommendations.

Within the next three years, the old ways of doing things in performance management and learning will become relics of the past. Employers may still conduct annual reviews as a way of arming themselves with paper trails that steel them against terminated employees' potential lawsuits, but the more context-rich electronic trails that are created by social collaboration in the context of talent management will trump any one-off (and often artificial) performance review. Industries that must keep their staff accredited and licensed will continue to subject employees to lecture-style training online. Online-facilitated classroom learning and the annual performance review will survive only where they absolutely must.

TALENT MANAGEMENT FINALLY JOINS THE BAND

Solo artists in technology for talent management will find it increasingly difficult to find an audience. That's because vendors of end-to-end HCM suites are doubling down on building out their offerings here too, and the argument for employers to seek this functionality elsewhere is diminishing.

Some end-to-end HCM technology providers have already caught up on their talent management functionality; others are fast on their way. Even talent management functionality from broader-suite vendors that's simply good enough will sway users to stray from pure-play vendors of talent management. Employers will be hard-pressed, after all, not to consider these broader-suite vendors for all of their HCM needs. The many other benefits of housing all of HCM under one vendor's product are clear. If a vendor offers a sound solution to comply with the Affordable Care Act (ACA), for instance, plus viable functionality in talent management, one-stop shopping begins to become a foregone conclusion. Vendors of technology solely or mostly for talent management can combat this by developing adequate capabilities at the epicenter of HCM -- payroll, core HR, and workforce management (WFM). The strongest players operating at the outer edges of talent management, namely in talent acquisition, will weather the onslaught best as they succeed in eluding large-scope vendors' traditional reach.

ECM'S FINAL FRONTIER: EMBEDDED CONTENT MANAGEMENT

The ECM market's cloud trends will result in customers requiring faster data capture and, as part of that, embedded content management will become an essential part of all major ECM deployments. Embedded content management will become a staple of successful deployments across core business application areas as products move away from reliance on external services for embedding, and offer the features themselves.

Adhering to the Dark Cockpit principles of focus and simplification, embedded content management will streamline the essential features needed by ECM customers (Nucleus Research, *n167 – Enterprise software must adopt the principles of dark cockpit*, November 2013). Moreover, the level of adherence to those principles will differentiate vendors from each other. The streamlining done by embedded content management products will be accomplished while relying on key partnership support.

Given the push to streamline not just ECM processes but the automatic removal of useless accrued data as well, the most successful systems will also address data bloat. Important for addressing data bloat will be the introduction of machine learning and intelligent agents for the purpose of automating the data bloat detection and deletion process. Accordingly, data ranking will be more of a focus in systems that will nominate data for deletion and rank data based on importance.

SECURITY – THE ADULTS TAKE OVER

For far too long, the CSO hasn't had to play by the same game as other business groups when it comes to IT budgeting, because ranting that the sky is falling has been reinforced by highly publicized security breaches. However, as Nucleus has explored security further, we've found that while many companies spend big bucks on security technologies and systems, it's the human factors – processes and procedures – that are overlooked. The lack of consistent secure processes for decommissioning drives, separating physical and logical access to applications and systems, and granting and revoking credentials are but a few examples of practices that cost little or nothing but are lacking in many companies' data center strategies. We also see a blurring of the lines between infrastructure and security purchases as security becomes an underlying requirement for infrastructure. While investments in areas like encryption will continue to grow, we expect security budgets will be reined in as CFOs get real about expected risk and the cost of a loss.

BONUS PREDICTION: CRM GOES PREDICTIVE

We've all heard "data science" creep into the CRM conversation over the past few quarters, but mostly as it relates to marketing. Although marketing was the first area to get predictive, the future for all three pillars (sales, marketing, and service) of CRM is predictive – taking advantage of the intelligence of the software to look forward, not just track progress. Some of the most interesting opportunities are in customer service, where better data about customer's habits and the products and services they use can be used to proactively support them (think predictive maintenance of automobiles, for example). The concerns about customer data are less prevalent on the service front than in sales and marketing because they tend to opt in. The challenge for companies will be in addressing the human barriers to adopting process changes driven by more predictive and proactive CRM.