



Building Sustainable Competitive Advantage with Advanced Analytics

Executive Summary

Four major forces are at play across industries, advancing the need to seriously consider how and where analytics should be strategically deployed. They include consumer deleveraging, persistent consumer frugality, increased regulatory scrutiny on banking and financial services firms and the surfeit of “big data,” a trend accompanied by the increased maturity of analytics software.

Following the Great Recession, many businesses were forced to cut costs as consumers focused on less expensive goods and services. Banking and financial services firms were then hit by tremendous regulatory pressures, coupled with depressed projections of return on equity, while retailers and consumer goods companies grappled with a significant global economic downturn that caused consumer demand to plummet.

Simultaneously, a torrent of data began inundating all companies across industries. With this growing volume of data came the need to first analyze and then leverage it for more informed decision-making. Many experts see analytics as an overarching strategy to spark top-line growth and stimulate improvements in productivity and efficiency, which can drive healthier bottom lines.

The good news – along with the increased availability of data – is that analytics has evolved from static batch reporting, to advanced real-time

techniques for content analysis and predictive analytics. Though analytics was traditionally a function performed by in-house experts, some companies have embraced a new model, in which they turn to partners that can supplement internal capabilities with data analytics expertise. With the estimated demand for skilled experts likely to outpace supply in the developed world,¹ a new model of knowledge process outsourcing (KPO) has become a reality.

Organizations across industries such as retail, banking and consumer goods stand to benefit immensely from analytics’ promise of reduced costs and increased revenue. Taken together, the emergence of people/process virtualization and cloud computing (which is powering the drive toward software as a service and business process as a service) offers a compelling way for CFOs to convert capital expenditures (Cap-Ex) into more manageable operational expenditures (Op-Ex). Applying analytics to business problems with globally sourced talent, working in a virtualized environment, will be a defining point for winning firms.

Business Drivers for Analytics

Consumer deleveraging, persistent consumer frugality and the impact of more stringent regulations offers businesses a compelling case for using analytics to bolster their top and bottom lines and build long-term competitive advantage

Forces Driving Advanced Analytics

Force	Implication	Impact	Application of Analytics
Consumer deleveraging	Declining consumer debt levels, higher savings rates, lower consumption.	Depressed revenues	Bolster top line
Persistent consumer frugality	Consumers trading down (moving away from premium brands), opting for lower priced alternatives, deferring discretionary spend.	Crimped profitability and margins	Bolster bottom line
Increased regulations	Depressed lending environment and increased regulatory costs.	Lower estimated return on equity	Improve compliance
Surfeit of data	Explosion of data from traditional and new sources, such as mobile computing and social media.	Opportunity to mine data	Generate better insights for decision-making

Source: Cognizant Research Center

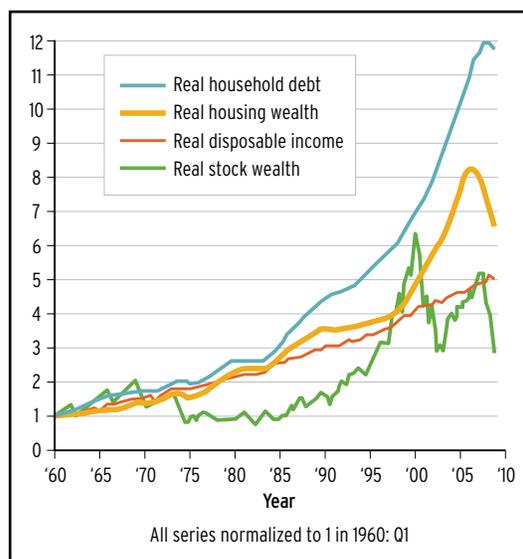
Figure 1

(see Figure 1). Before the global financial melt-down, product innovation and evolution led to increased access to easy credit, which resulted in unprecedented growth in household debt in the U.S., outpacing disposable income and household wealth (see Figure 2).

Following the financial crisis and subsequent recession, there has been a huge reduction in consumer consumption (see Figures 3 and 4). This led to a steep drop in revenues and profitability across most consumer-facing industries. Interestingly, the U.S. savings rate, which has hovered around zero for the last few decades, has now begun to increase.

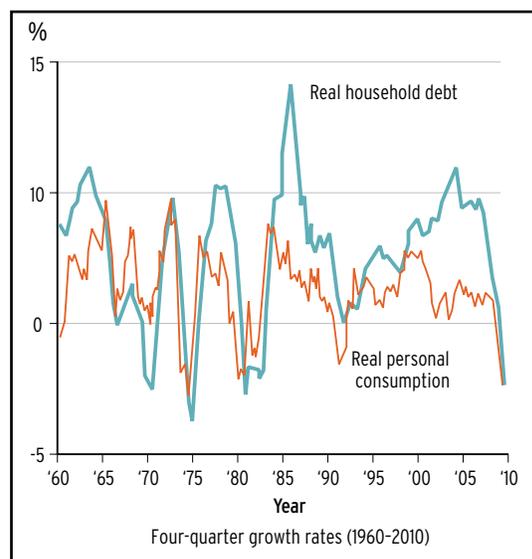
The second driver for analytics is consumer frugality. Due to deleveraging and declining disposable incomes, consumers began “trading down” – replacing premium brands with cheaper alternatives. Increased visits to less expensive restaurants, postponement of new car purchases and consumption of lower end goods are all indicators of the new frugal consumer mindset. Lindt & Sprungli, a high-end chocolate brand, for example, closed 50 of its 80 stores in 2009. These shifts in consumer behavior are testimony to the waning enthusiasm and budget for premium brands, a trend that is likely to persist.³ This slowdown in U.S. consumption is hurting many companies in the export-led Asian markets, as well.

U.S. Real Household Debt, Wealth and Income



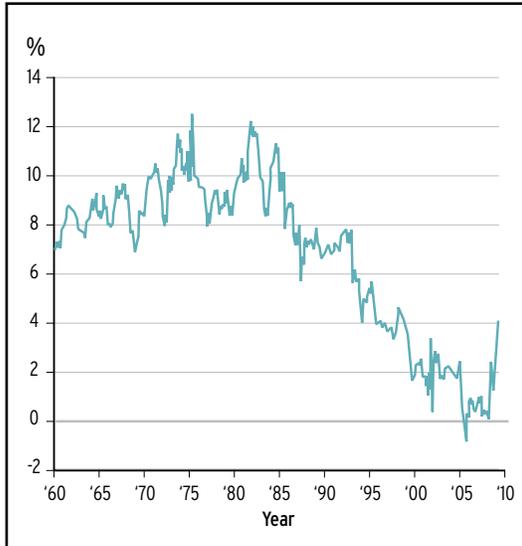
Source: Federal Reserve Bank of San Francisco²
Figure 2

U.S. Consumption and Debt Growth



Source: Federal Reserve Bank of San Francisco
Figure 3

U.S. Personal Savings Rate



Source: Federal Reserve Bank of San Francisco
Figure 4

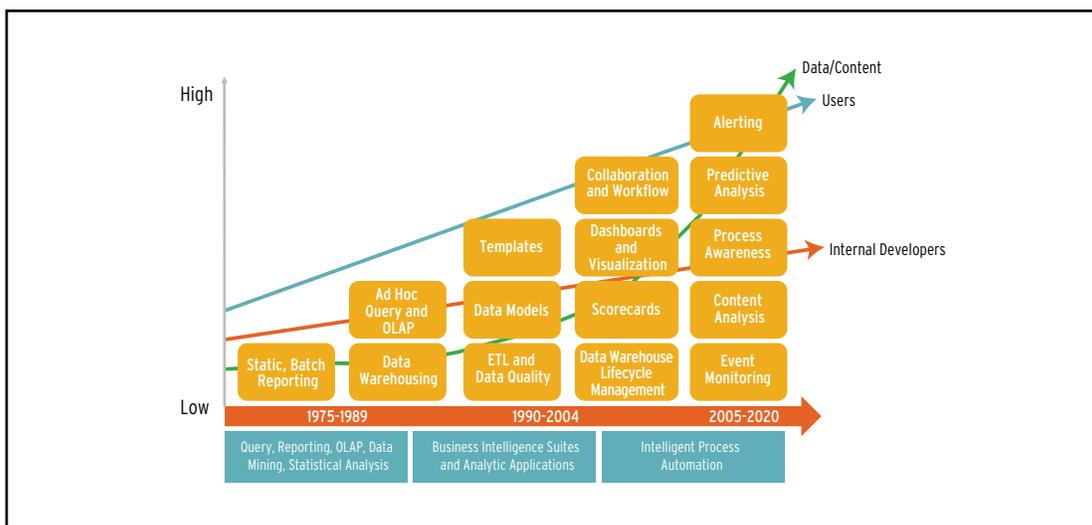
The third post-recession driver is the impact of increased regulatory scrutiny on banks. The new regulatory environment enforces more stringent lending requirements, slowing down credit uptake. New banking regulations have a potential to crimp return on equity (RoE) across the banking and financial services industry. A 2011 survey by RBC Dexia, "Outsourcing Opportunities and Strategies: Global Fund Manager Survey," clearly highlights the somber mood of asset managers on the RoE front, with 59% of respondents

projecting an RoE of less than 15%. To stay competitive in the depressed growth environment, banks are looking for innovative approaches to build greater efficiencies, products and enhanced customer experience. They can do this by using spend analytics and compliance analytics, as explained later in this report.

The next driver is the torrent of data generated across industries. There were five billion mobile users globally in 2010, generating data about their location, the Web sites they visit and the products and services they buy through their mobile phones. Approximately 30 billion pieces of content are shared on Facebook every month. The projected growth in global data generated annually from 2011 to 2015 is 40%.⁴ With the volume of data increasing, analytics has evolved from mere reporting, to predictive analytics (see Figure 5).

Organizations would do well to deploy analytics to build differentiating capabilities in an environment where new technologies are rapidly emulated and breakthrough innovations in products and services are becoming rare. According to a study published by the *MIT Sloan Management Review*, top performers place a greater premium on focusing analytics on innovation than lower-performing organizations.⁵ The survey showed that top performers were three times as likely to use sophisticated analytics as laggards. Capital One is a case in point. It has achieved 20% growth in earnings per share every year since it became a

Business Intelligence and Analytics Market Trends



Source: IDC, 2009
Figure 5

public company, due in part to its use of analytics. For such organizations, “analytics as a strategy” is championed by top leadership and then instilled in decision makers at every level of the organization. Using analytics improves top- and bottom-line performance (see Figure 6).

Organizations would do well to deploy analytics to build differentiating capabilities in an environment where new technologies are rapidly emulated and breakthrough innovations in products and services are becoming rare.

Analytics Use in Three Industries

Retailers, banks and consumer goods industries are emerging as the poster boys of effective use of analytics. These industries are flooded with overwhelming data about customers and are among the companies most affected by the recent recession.

Retail

Analytics is impacting the retail industry in a big way. As data proliferates and analytics tools become *de rigueur*, retailers are looking to apply more timely and relevant business insights in the following ways:

- **Clienteling analytics:** Brooks Brothers and Nordstrom analyze past purchases and suggest future products or recommend a marketing or sales approach to associates that could yield more revenue from particular customers.

- **Real-time offers:** With better real-time availability of shopping cart information, and with automated rule engines or rapid scoring of purchase behavior, it is possible to offer product promotions and discounts in real time.
- **Sentiment analysis:** This can be used to better understand what customers are thinking about a particular product. Qualitative analysis of consumer behavior on Web pages, blogs and social media can help determine customer attitudes toward particular products.
- **Video analytics:** This is used to summarize patterns and activities in video images and to create alerts for particularly undesirable (or desirable) behavior where human viewing would be required.

Banking

The recent recession took many banking executives by surprise, who did not fully understand how their banks were making money, what their risk exposure was (relative to a dizzying array of novel and more complex financial instruments) and how the evolving global credit crisis would impact them. “Part of fixing that is to have better data, better access to data and better information about the business, says Gwenn Bezar, research director of Aite Group, in an article.⁶ “Across institutions, we see a drive toward better access to data to better understand their business, which means more investment in analytics.”

Impact of Analytics on Financial Performance

Organization	Industry	Benefits Attributed to Analytics	Impact
Capital One	Financial Services	Retention of customers increased by 87%. Cost of acquiring a new account lowered by 83%.	Reduced costs
Progressive Insurance	Insurance	Lower claims and expenses ratios vis-à-vis competition.	Reduced costs
Deere & Co.	Manufacturing	Saved the company \$1.2 billion in inventory costs over a five-year period (2000 to 2005).	Reduced costs
Procter & Gamble	Consumer Goods	Saved the company \$200 million in costs.	Reduced costs
Kroger	Retail	40% redemption rate from analytically targeted coupons vs. industry average of 2%. Overall sales increased by 5%.	Top-line improvements
CVS	Retail	Views its analytics capability as a nine-figure profit center.	Top-line improvements

Sources: Thomas H. Davenport and Jeanne G. Harris, *Competing on Analytics: The New Science of Winning*, Harvard Business School Press, 2007; Thomas H. Davenport, “Realizing the Potential of Retail Analytics: Plenty of Food for Those with the Appetite,” Babson Working Knowledge Research Center, co-sponsored by SAS and Teradata, 2009.

Figure 6

The following are among the important analytics tools available to banks:

- **Social media analytics:** With the help of these tools, many retail banks are listening to conversations on social media sites such as Facebook, Twitter and LinkedIn and gleaning more granular information about their customers. It's a great indicator of "word of mouth" in the minds of many experts.
- **Spend analytics:** These tools are used to convert corporate data into spend intelligence. The data is captured from procurement and transactions, and spend is extracted from internal and external sources. The data is then validated to ensure accuracy and completeness; cleansed to eliminate errors and discrepancies; classified to a standard schema with repeatable rules; and enriched with related business information. The analysis is conducted for the vendor, cost center and category. The actionable reports that are generated include bypass spend, supplier diversity and business unit spend variance. There are filters that can be used for sourcing history, spending trends, price benchmarking, supplier industry changes, company-specific perspectives and baseline size. For example, at one large multinational bank, consulting expenses were consistently rising, outpacing the growth of other expense lines. A business partner was able to analyze and resolve the situation, using spend analytics (see sidebar, "Spend Analytics in Action").
- **Compliance analytics:** These tools offer financial and risk reporting solutions related to financial statements and/or compliance and risk management, monitoring and regulatory reporting.

Consumer Goods

Consumer goods companies are positioned to harness the power of analytics to build their competitive strategies around data-driven insights. Doing so allows them to identify more profitable customers, accelerate product innovation, optimize supply chains and pricing and identify the true drivers of financial performance. The following are among the analytics techniques useful to consumer goods companies:

- **Supply chain analytics:**⁷ Historical algorithms and supply chain management models based on past demand, supply and business cycles may prove partially insufficient in today's

Spend Analytics in Action

Objective: Consulting expenses at a large multinational bank had been growing steadily for two years, outpacing the rate of growth of other expense lines.

Solution:

- Global invoice analysis of all consulting spend.
- Mapping of multiple databases.
- Increased understanding of "true" consulting baseline spend.
- Examination of current process to identify potential process gaps.
- Optimization of consulting spend through "process governance," "effective utilization" and "vendor management."

Benefits:

- Savings of \$6 million to \$8 million.
- Modified spend approval process to ensure compliance with global cost commitment policies.

environment, but they will be completely inadequate tomorrow. For all companies, regardless of industry, speed of business is outpacing the level of insight into ever-changing dynamics of the supply chain. Historical insights no longer matter as much as the capacity to predict the future. Speed-to-analysis is more important than ever. Individual silos within the supply chain, suppliers, procurement, operations, sales, the customer and consumer must be torn down, and a single, broader supply chain should emerge.

- **Segmentation analytics:** By creating accurate customer segments, consumer goods companies can personalize promotions and create more effective marketing messages for a targeted segment.

Analytics as a Service: The Next Frontier

Analytics has traditionally been an in-house endeavor. Typically, companies established an entire department with highly skilled staff who could make sense out of vast quantities of data and help management make better decisions. As in-house analytics took hold, many organizations

soon realized they faced a growing shortage of skilled manpower to carry on these activities. A recent McKinsey report estimates that the gap between demand and supply of professionals with deep analytics talent in the U.S. will be between 140,000 to 190,000 by 2018. In addition, 1.5 million more data savvy managers are needed to take full advantage of data availability in the U.S. This dearth of skilled manpower is a supply-side constraint.

This situation, coupled with the growing pool of skilled talent available in countries such as India and China, has fueled the decision to globally source more and more analytics capabilities. In 2010, China produced 600,000 graduates with four-year engineering degrees. India produced 350,000, whereas the U.S. produced 70,000.⁸ As a result, global sourcing of analytics talent has become a reality and will be even more pronounced in the coming decade to meet the growing demand for these services. This is driving a new business model known as knowledge process outsourcing (KPO), which builds on the proven advantages of global sourcing to not only drive cost savings but also provide access to more highly skilled resources (a concept known as “intellectual arbitrage”). Analytics is a key component of KPO, which is characterized by niche offerings, highly skilled staff and relatively small scale.

The KPO industry is valued between USD \$10 billion and \$17 billion, according to a recent study by the Associated Chambers of Commerce and Industry

of India (ASSOCHAM). Banking and financial services firms are among the leading adopters of KPO services, with the goal of improving their top lines. A report by KPMG⁹ states that the expectation of increased top-line revenue benefits from KPO activity was a prominent factor for globally sourcing across the financial services sector.

Alongside KPO is the rapid emergence of virtualization, cloud computing and business process as a service¹⁰ (BpaaS). Collectively, these computing models are a compelling way for CFOs to save precious capital, by shifting expensive procurements of hardware, software and networking gear to more manageable pay-as-you-go models. Under a BpaaS scenario, for example, analytics (applications, infrastructure and people) can be rented on a variable pricing model (i.e., number of users served), with very limited upfront Cap-Ex. BpaaS is emerging to be a BPO game changer. “The pillars that built and supported legacy outsourcing are under severe pressure,” says Robert McNeill, Vice President for Saugatuck Technology, in an article.¹¹ “Labor arbitrage, old technologies and traditional business models limit effectiveness. Businesses are looking for more flexibility, innovation and responsiveness from their outsourcers. BPaaS is providing that alternative.”

We foresee that applying analytics to business problems with globally sourced talent, working in a virtualized environment, will be the defining point for winning firms.

Footnotes

- ¹ “Big Data: The Next Frontier for Innovation, Competition and Productivity,” McKinsey Global Institute, May 2011, http://www.mckinsey.com/mgi/publications/big_data/
- ² “FRBSF Economic Letter,” Federal Reserve Bank of San Francisco, May 15, 2009, <http://www.frbsf.org/publications/economics/letter/2009/el2009-16.html>
- ³ “Forever Frugal? 2010 U.S. Consumer Survey Confirms Persistent Frugality,” Booz & Co., 2010, http://www.booz.com/media/uploads/Forever_Frugal.pdf
- ⁴ “Big Data,” McKinsey Global Institute.
- ⁵ “Analytics: The New Path to Value,” *MIT Sloan Management Review* and IBM Institute for Business Value, Oct. 24, 2010, <http://sloanreview.mit.edu/feature/report-analytics-the-new-path-to-value/>
- ⁶ Penny Crosman, “Three of Banking’s Most Unusual Analytics Deployments,” *Bank Systems & Technology*, Nov. 24, 2010, <http://www.3vr.com/news/bank-systems-and-technology-3-bankings-most-unusual-analytics-deployments>
- ⁷ Jerry O’Dwyer and Ryan Renner, “The Promise of Advanced Supply Chain Analytics,” *Supply Chain Management Review*, January 4, 2010, http://www.scmr.com/article/the_promise_of_advanced_supply_chain_analytics/

⁸ "The Future of Work: A New Approach to Productivity and Competitive Advantage," Cognizant Technology Solutions, 2010.

⁹ "Knowledge Process Outsourcing: Unlocking Top-Line Growth by Outsourcing the Core," KPMG International, 2008, <http://www.in.kpmg.com/pdf/KPO.pdf>

¹⁰ BpaaS refers to the provision of business services encompassing the underlying IT infrastructure, platform and skilled manpower, to run specific business processes in a virtual, globalized and distributed operating model.

¹¹ Bruce McCracken, "Business Process as a Service: The Next Wave of BPO," Outsourcing Center.com, Feb. 1, 2011, <http://www.outsourcing-center.com/2011-02-business-process-as-a-service-the-next-wave-of-bpo-delivery-article-42948.html>

Author and Research Analyst

Dr. Sanjay Fuloria, Cognizant Research Center

Subject Matter Expert

Krishnan Iyer, Vice President, Banking & Financial Services BPO, Cognizant Technology Solutions

About Cognizant

Cognizant (NASDAQ: CTSH) is a leading provider of information technology, consulting, and business process outsourcing services, dedicated to helping the world's leading companies build stronger businesses. Headquartered in Teaneck, New Jersey (U.S.), Cognizant combines a passion for client satisfaction, technology innovation, deep industry and business process expertise, and a global, collaborative workforce that embodies the future of work. With over 50 delivery centers worldwide and approximately 111,000 employees as of March 31, 2011, Cognizant is a member of the NASDAQ-100, the 500, the Forbes Global 2000, and the Fortune 500 and is ranked among the top performing and fastest growing companies in the world. Visit us online at www.cognizant.com or follow us on Twitter: Cognizant.



World Headquarters

500 Frank W. Burr Blvd.
Teaneck, NJ 07666 USA
Phone: +1 201 801 0233
Fax: +1 201 801 0243
Toll Free: +1 888 937 3277
Email: inquiry@cognizant.com

Singapore Office

80 Anson Road
#27-02/03 Fuji Xerox Towers
Singapore-079907
Ph: +65 6324 6672,
Fax: +65 6324 4383
Email: inquirysingapore@cognizant.com

India Operations Headquarters

#5/535, Old Mahabalipuram Road
Okkiyam Pettai, Thoraipakkam
Chennai, 600 096 India
Phone: +91 (0) 44 4209 6000
Fax: +91 (0) 44 4209 6060
Email: inquiryindia@cognizant.com