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## **The Coming Revolution in Web Analytics**

How third-generation digital analytics tools will change your business forever – digital measurement thought leadership from Web Analytics Demystified

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**This white paper was written by Eric T. Peterson, CEO and Principal Consultant at Web Analytics Demystified, and sponsored by SAS. The author welcomes your feedback on this white paper.**

#### **About the Author**

Eric T. Peterson, CEO and Principal Consultant at Web Analytics Demystified, has worked in Web analytics since the late 1990s in a variety of roles including practitioner, consultant and analyst for several market-leading companies. He is the author of three best-selling books on the subject, *Web Analytics Demystified*, *Web Site Measurement Hacks* and *The Big Book of Key Performance Indicators*, as well as one of the most popular Web analytics bloggers at [www.Webanalyticsdemystified.com](http://www.Webanalyticsdemystified.com). Mr. Peterson has committed much of his life to the betterment of the Web analytics community, so much so that Jim Sterne, President and co-founder of the Web Analytics Association, says, "Eric's leadership in the industry is unparalleled, his devotion to the community is legendary and his years of experience translate immediately into strategic and tactical competitive advantage for everybody who works with him."

#### **Web Analytics Demystified**

Web Analytics Demystified, founded in 2007 by internationally known author and former Jupiter Research analyst Eric T. Peterson, provides objective strategic guidance to companies striving to realize the full potential of their investment in Web analytics. By bridging the gap between measurement technology and business strategy, Web Analytics Demystified has provided guidance to hundreds of companies around the world, including many of the best-known retailers, financial services institutions and media properties on the Internet.

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## Executive Summary

Forrester Research estimates the market for Web analytics will be roughly US \$431 million in the US in 2009, growing at a rate of 17 percent between now and 2014. Gartner reports that the global market for analytics applications, performance management and business intelligence solutions was US \$8.7 billion in 2008 – roughly 20 times the global investment in Web analytics. Among their three top corporate initiatives, most companies are focusing their efforts online, expanding their digital efforts Internet to increase the organization's presence in the least expensive, fastest growing channel.

Today, a majority of companies are dramatically under-invested in analyzing data flowing from digital channels. Even when business managers have committed money to measurement technology, they usually fail to apply commensurate resources and effort to make the technology work for their business. Instead, most organizations focus too much on generating reports and too little on producing true insights and recommendations, opting for what is easy, not for what is valuable to the business.

Web Analytics Demystified believes this situation is exacerbated by the inherent limitations found in first- and second-generation digital measurement and optimization solutions. Provided by a host of companies primarily focused on short-term gains in the digital realm, not long-term opportunities for the whole business and their customers. Historically these companies worked to differentiate themselves from traditional business and customer intelligence, focusing on the needs of digital marketers. Unfortunately, as the need for whole business analysis increases, many of these vendors are playing catch-up and forced to bolt-on data collection and processing technology as an afterthought.

The current state of digital analytics is untenable over time, and Web Analytics Demystified believes that companies that persist in treating online and offline as “separate and different” will begin to cede ground to competitors who are willing to invest in the creation and use of a strategic, whole-business data asset. These organizations are using *third-generation* digital analytics tools to effectively blur the lines between online and offline data—tools that bridge the gap between historical direct marketing and market research techniques and Internet generated data, affording their users unprecedented visibility into insights and opportunities.

This white paper describes the impending revolution in digital analytics, one that has the potential to change both the Web analytics and business intelligence fields forever. We make the case for a new approach toward customer intelligence that leverages *all* available data, not just that data that is most convenient given the available tools. We make this case not because we believe there is anything wrong with today's tools when used appropriately, but because we believe digital analytics should take a greater role in business decision making in the future.

## The Coming Revolution in Digital Analytics

Analyzing the data you produce in an effort to increase profitability is a practice as old as commerce itself, and business owners must pay close attention to what the “bean counters” have to say. Whether you do yield management, examine the productivity of your employees, or simply decide how to spend your advertising budget based on the measurable return, you are conducting analysis to improve your business. Historically business owners have analyzed their efforts by using whatever data was available. Sometimes this was a complete set of data—as is often the case in financial analysis—and sometimes this set was incomplete—as is often the case when trying to understand “why people buy.” Yield managers have long had access to a surprisingly complete set of data describing how travelers purchase hotel rooms, airline seats and rental cars at varying price points, whereas direct marketers have long been accustomed to working from samples and demographic profiles.

Regardless of how much data you have had in the past, you now have more thanks to the Internet. Our “wired world” has changed the rules of analytics by augmenting nearly every piece of information collected offline with a dozen new data points. Every credit card transaction recorded offline now has click-stream, e-mail response, banner impression, bid management, customer satisfaction, transaction performance and offer variant data collected online via dozens of different vendors.

Collectively, new sources of data are being created that describe our likes and dislikes at the level of the individual. And while our computers may not be as personal as our credit cards, more and more these data sources are tied to some type of unique identifier. This “digital ID” can be used to tie our behaviors together, giving businesses the ability to create an integrated view of visitors and customers’ crossing over communication channels.

What’s more, thanks in part to the explosion of interest into next-generation wireless devices, the online channel is becoming “unwired,” and increasingly our electronic signatures can be augmented with data flowing from global positioning systems (GPS) recording our movement throughout the day. For example, a GPS signature that starts the day in Oregon, makes a brief stop in New Jersey and then ends the day in Italy, suggests travel. Even if your credit cards don’t log any transactions, your digital signature gives you away. This profile can then be augmented with click-stream, credit card and demographic data to develop an incredibly accurate profile of the individual that can be leveraged in a variety of ways.

The availability of this data, coupled with an organization’s increasing willingness to mine the information for insights, is leading to an analytical revolution. Soon companies that historically relied on small samples, third-party data and gut feel will have access to huge data stores of information about their customers. This data will span the analog and digital realm and, in Web Analytics Demystified’s opinion, power new businesses, new business models and entirely new relationships between businesses and the customers that support them.

## The Privacy Implications of the Electronic Signature

While many people have a negative reaction to these changes given the profound privacy implications, Web Analytics Demystified believes that this type of data combination is inevitable. Despite the occasional flare-up from the “privacy police” complaining about the implications of browser cookies, and given what our credit card companies, mortgage lenders, banks and government institutions already know about our collective lives, the most likely outcome is that the vast majority of consumers will willingly surrender their digital footprint as part of a *reasonable value exchange*.

For example, ask yourself if you would allow your Internet provider to collect data about the sites you visit *in exchange for free Internet service*? Would you allow your mobile phone company to collect data about your movement *in exchange for free mobile phone service*? Would you let the sites you visit share your behavioral data with other sites *in exchange for a discount on purchases*? What if all connectivity to the Internet—mobile or otherwise—was completely free, and all you had to give up to get this free service was “data?” Or, given the real value of this data to businesses, what if you could actually *get paid to provide this information*?

## Proof that Consumers Will Surrender this Data: Google

At Web Analytics Demystified we firmly believe the only thing keeping businesses from having access to the most robust consumer data set ever conceived is a lack of vision on the part of *most* businesses. We say *most* because one company has already demonstrated that they understand this value proposition: Google. Google makes a wide array of tools available to the world entirely for free—their search engine, e-mail (Gmail), calendars, spreadsheets, a messaging platform (Gtalk), an advertising and behavioral targeting network, analytics, various social networks and the list goes on and on.

What does Google get in return for their benevolence? Knowledge about how we use the Internet. And few clichés are more true than “knowledge is power.” Google is most visible among a handful of online companies that have learned that data about the transaction is as valuable as the transaction itself. And while some may respond that “Google is limited in what they can do with our information,” the reality is they are not. If Google wants to start using our data in a way they believe will create more value for Google, all they need to do is offer us something in return.

The best evidence, at least from an analytics perspective, is Google Analytics Benchmark feature. In 2008, long after Google Analytics had achieved total global dominance in the tag-based data collection market with over one million rumored deployments, the company launched a data benchmarking service. This service would provide coveted data about similar sites in the Google Analytics interface, and all anyone had to do to use the service was agree to allow Google to use their collected Google Analytics data for other internal projects.

On one-hand, businesses using Google Analytics had a valuable offering that would augment their measurement efforts, and all they had to do to get it was agree to let Google use data about their visitors and customers to build better products. On the other hand, Google was getting explicit access to an unknown quantity of data about consumer behavior on the Internet, and all they had to do was provide some simple aggregated views of data they already had. Regardless of how many companies took Google up on their offer, Google wins.

Google and companies sharing their view on the value of data—Amazon, Harrahs, CapitalOne, Nokia and Expedia all come to mind—have already amassed significant stores of information about consumer behavior that they are clearly using to their advantage. And while few doubt the greatness of these companies, their advantage is not that they *have* data, it is that they are *actively using* data. These companies have decided to be digital analytical competitors.

### Competing on Analytics in the Online World

The difference between *having* and *using* data is analogous to the difference between having and using money. Having money in the bank is clearly a good thing, providing stability and a small but steady return. Using money, on the other hand, by putting it to work investing in financial markets, property, or other investments is the only way to produce substantial returns. Having money is low-risk but low-reward; using money is high-risk but has the potential to be high-reward.

Competing on analytics works the same way. Until companies are willing to assume some risk and put forth some effort, their returns will be relatively small. Fortunately the requirements to use data to create a competitive advantage have been described quite well by respected authors and researchers like Tom Davenport and Ian Ayres in the books *Competing on Analytics* and *Super Crunchers* respectively. Both gentlemen have made an exceptionally compelling case for the creation and use of a strategic data asset inside the organization, one that can be leveraged in a myriad of ways for the betterment of the overall business. And the foundation of both author's work is a structured analytics practice, one well supported by management and well understood by stakeholders throughout the business.

Analytics is hardly a new concept within the business—accounting, human resources, direct marketing, merchandising and business planning are all tasked with evaluating the *status quo* and mining for opportunity. Unfortunately the concept of “digital analytics”—analysis focused primarily on data generated in the online channel—is often found to be lacking, especially when compared to analysis in the offline world. We find this situation ironic given the tremendous amount of data flowing from the online channel. Despite the fact that the customers being tracked *are the exact same customers we analyze in the offline world*, few companies have given nearly enough thought to the integration of online and offline data and instead treat their analytical efforts as independent, run in silos, focusing on a single aspect of the business, instead of squarely on customers and prospects.

Thanks to the generous sponsorship of SAS, in the balance of this white paper Web Analytics Demystified will summarize the *status quo* for digital analytics today and outline a vision for the future of analytic competition. Our vision is based on interviews with true digital analytics competitors, our own work and the work of analytical giants like Davenport, Ayres and others.

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## Digital Analytics Today: A Rear-View Mirror

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The history of digital analytics is largely a story of glorified reporting interfaces that helped businesses parse, process and present the details of visitor click-streams. From the early days of WebTrends—one of the original log file processing applications—through to the emergence of Omniture and Google as market leaders in the paid and free sectors respectively, first generation Web and digital analytics applications do little more than aggregate and summarize trillions of online interactions.

To be fair, most companies find value in this aggregation and summary as a source of information regarding their ongoing site development, marketing and advertising efforts. Knowing the popularity of a page or particular area of the site has the potential to change the entire focus of an online effort, as does having volumetric information regarding consumer response to a particular online marketing campaign. What's more, in the right hands this data can have a profoundly transformative effect on a business's approach to digital media as evidenced by a rich body of case studies published by vendors describing operational savings and incremental revenue attributed to their customers.

Even so, too many companies have achieved some level of competency using these first-generation tools but have stopped pushing the envelope. At Web Analytics Demystified, we believe this is incredibly dangerous given the rapid rate of change observed in the digital marketplace. Companies that stalled-out using first-generation tools are doomed to spend their time “looking backwards” at what they have accomplished. But the real opportunity lies in developing the capability to *do something* with the data—reflecting on gains and losses, while always keeping an eye on future opportunities. It is this point—the creation of strategic data assets and business processes—that Tom Davenport cites in *Competing on Analytics* as one of the “last remaining points of differentiation” in an increasingly competitive world.

## An Eye Toward the Future: Second-Generation Digital Analytics

Two tools that have enhanced the digital analysts' toolkit in recent years are *ad hoc* reporting interfaces and multivariate testing tools. The former typically supports the visualization of click-stream and other very granular data in an effort to create a nuanced understanding of visitor behavior. *Ad hoc* reporting interfaces are typically promoted as "deep-dive analytical tools" but this moniker is a euphemism in Web Analytics Demystified's opinion: *granularity of data is a precursor to analysis, not analysis itself*. This is not to denigrate the value of these applications to the business—they have repeatedly been shown to surface insights not previously uncovered using summarized data—but rather to be more precise in the language used to differentiate reporting and analysis applications.

The latter set of applications enhancing digital analytics today—multivariate testing tools—is far more interesting and valuable. These tools provide a structured framework against which controlled experiments can be run, leveraging basic statistical methods to determine the significance of changes in behavior. Provided by a variety of vendors including Omniture, Interwoven, SiteSpect and Google, testing platforms are the primary conduit for companies working to actively leverage their investment in digital measurement tools.

To put these tools in context, first-generation tools are typically used to identify opportunities for improvement in digital media. In an experienced operator's hands, these reports can be translated into a target-list of improvements that, if executed, will improve the online experience (and hence the financial measures affected by the experience.) Second-generation tools are used to ensure that the opportunity is real as well as to measure the impact of changes made. "Drill-down" tools are employed to better understand the potential impact on specific audience segments and testing tools are then used to render alternative designs and measure the response to these variants to prove the value of the recommended changes.

## How these Technologies Fail Us Today

First- and second-generation digital analytics tools fail most businesses today primarily because of ill-formed expectations. Simply put: digital analytics is hard, far harder than most vendor sales people and even many consultants have historically made it out to be. The assumption that "simply implementing reporting will change the business" turned out to be fallacious at best and financially disastrous at worst. Companies across the globe have put too much faith in the power of reporting systems and not enough focus on the process of mining those systems for insights.

Even when companies have considered how people, process and technology need to be coordinated toward an ongoing program of incremental improvement, first- and second-generation tools still fail to provide the level of insight that most mature businesses desire. Consider Figure 1 from *Competing on Analytics* in which Tom Davenport and Jeanne Harris describe the type of reporting technologies and analytics tools leveraged by analytical competitors today.

**Analytics**

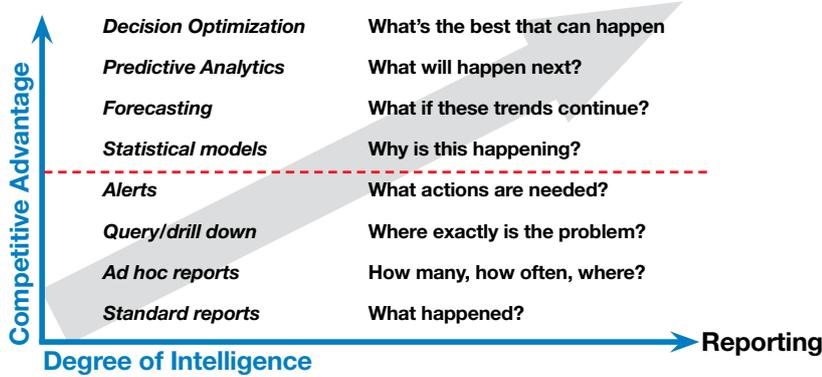


Figure 1: Reporting and Analytics Tools and Capabilities, taken from *Competing on Analytics* (Davenport and Harris, 2007.)

According to Davenport and Harris, analytical competitors like CapitalOne, Harrah's Casinos, Google, Netflix, Amazon.com and others are leveraging this complete set of tools in their quest to create and sustain a competitive advantage in their respective markets. The authors note that *all* of these capabilities are required—even those providing a low-degree of intelligence and little competitive advantage. They devote most of their work to describing how analytical competitors are leveraging statistical models, forecasting, predictive analytics and decision optimization against their strategic data assets to drive innovation and maintain their competitive advantage.

Unfortunately, the digital analytics toolset today looks more like Figure 2:

**Analytics**

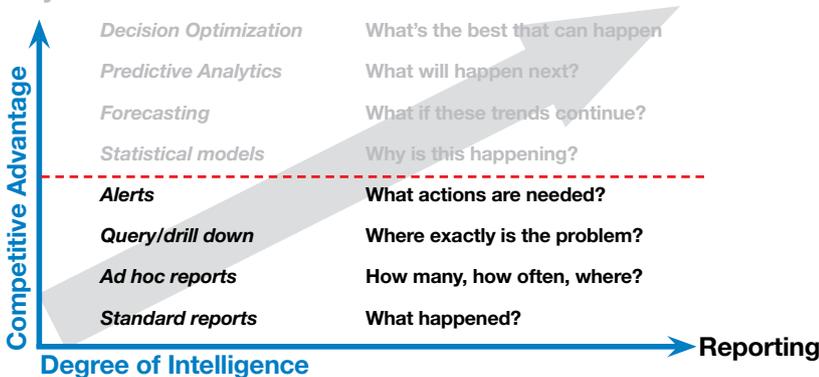


Figure 2: Author's adaptation of Davenport and Harris's work highlighting the lack of true analytical capabilities found in Web and digital analytics offerings today.

Of all the high-competitive advantage/high-degree of intelligence tools required for analytical competition, statistical models are typically present *only in second-generation testing and optimization applications*. While *Web Analytics Demystified* does not debate the inherent value associated with reporting tools, we firmly believe that simple reporting tools are incapable of delivering the type of deep insights and support for business-changing recommendations required today. As organizational focus continues to shift into the digital realm, businesses must recognize that a revolution is upon us and begin to plan now for the creation and use of a third-generation digital analytics strategy.

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### **The Coming Revolution: Third-Generation Digital Analytics**

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Gil Scott-Heron said “The revolution will not be televised.”, In regard to use of online data by the Enterprise, he could not have been more right. The use of advanced digital analytical tools is, for the most part, a back-room affair performed by data junkies and “Super-Quants” that have made the leap from “data for data’s sake” to “data for the business’s sake.” Third-generation analytics tools are not always pretty. They don’t necessarily provide the same “Ooohhhh” factor that applications like Google Analytics and Omniture SiteCatalyst have used to convert legions of users. It turns out, however, that “pretty” is over-rated, especially when compared to “powerful” and “flexible.”

In many cases the technology required has already been deployed and is staffed by analysts who haven’t looked at online data simply because *nobody has asked them to!* Armies of statisticians and SAS analysts have been deployed across the globe, integration and modeling expertise exists among hundreds if not thousands of consultants, and most importantly, the necessary statistical techniques are *well understood* and taught in most colleges today.

Furthermore, there is a general belief that a new breed of “Super-Quant” will emerge in the near future having both the necessary statistical acumen *and* the required knowledge of interactive marketing. They will accelerate the ability of businesses to bridge the gap between “what we have always analyzed” and “what we need to analyze in an increasingly digital world.” This type of operator will further drive the need for powerful tools to combine, process, transform and analyze data from multiple channels into an effort to generate whole-business insights and recommendations.

## Business Intelligence 2.0

Initially, third-generation analytics sounds like business and customer intelligence—the practice leverages many of the same tools, techniques and resources. And at face value there are few differences, yet those few differences are very important: traditional BI/CI practices have done *very little* to incorporate the volumes of Web-based data described in the first section of this paper. In our opinion, to neglect Web data in an increasingly digital world and continue to try and understand our multichannel customers using mono-channel data sources is a mistake that prevents true analytical competition.

For third-generation analytics to take hold, Web Analytics Demystified believes traditional BI/CI vendors and practice leaders need to adopt the best aspects of the first- and second-generation Web analytics tools: rapid data processing, easy-to-learn user interfaces and APIs to facilitate automation between Web and marketing applications. More importantly, analytics practice leaders must recognize that sometimes business decisions need to be made in “real time” and that the historical “ask a question, get your answer three weeks later” approach is inappropriate in our increasingly frenetic online world.

Web Analytics Demystified is not advocating throwing out either the existing tools in our digital measurement arsenal or the BI/CI infrastructure many companies have spent millions to deploy and maintain. Rather we are highlighting the fallacy of treating online and offline customer interactions as different simply because different tools exist to measure them—*our customers and prospects are the same regardless of the channel they choose to engage us in*. The time has come to reconcile our use of measurement and analytics technology, to cease historical turf battles over data ownership and instead, *leverage the data flowing into the enterprise as a strategic business asset focused on the customer*, not the business.

If today’s business leaders want to take advantage of this treasure trove of intelligence about customers and prospects, a new approach is required. First- and second-generation analytic vendors are good at what they do, but mining for correlation and causation within massive, disparate online and offline data sets is simply not what they do. To take the next step, business owners need to explicitly recognize the inherent limitations in these systems and augment them with appropriate systems that are built to extract, transform, load and analyze data regardless of the source.

## Third-Generation Analytics in Action

While some will dismiss our description of the use of these tools, true digital analytical competitors have already cobbled together their own third-generation solutions using a variety of existing technology. Various kinds of work being done today using the third-generation approach include:

- The use of modeling capabilities to predict the traffic and revenue impact associated with changing an investment in branded and non-branded search engine keywords in Pay-Per-Click marketing efforts, rather than making changes and observing the financial impact in real-time.
- The use of statistical models to determine the level of confidence obtained during complex behavioral segmentation efforts, rather than assuming that every segmented population is statistically relevant and appropriate for analysis and decision making.
- The use of forecasting algorithms fed historical data from digital and nondigital channels to estimate sales based on changing customer behavior, rather than assuming some level of linear or cyclical growth that does not account for a changing environment.
- The mining of huge paid search marketing datasets that combine online and offline data to mine for keyword buying opportunities in the “long-tail” based on multivariate cluster analysis and predicted lifetime customer value, rather than spending time evaluating hundreds of thousands of keywords manually.
- The use of modeling capabilities and marketing mix analysis to understand the relationship between different marketing channels, both online and off, rather than assuming independence and potentially making costly mistakes in marketing resource allocation.
- The use of decision optimization to determine which products or content to present in combination or sequence online to maximize levels of visitor engagement and sales, rather than making assumptions or decisions based solely on inventory or management opinion.
- The use of statistical models to better understand the real impact of design changes, different pages and new technologies on the consumer experience online, rather than assuming that “new is better.”
- The use of decision optimization and data from online and offline channels to understand how explicit consumer behaviors online such as search and navigation can be leveraged to improve layout in catalogs and physical retail outlets, rather than ignoring the treasure-trove of online data detailing evolving consumer interests.

The number of companies taking advantage of third-generation tools in this way is still very small. But the very fact that the majority of companies interviewed for this white paper requested to remain anonymous to protect their competitive advantage speaks volumes to the opportunity and potential. Fortunately for those organizations ready to consider becoming digital analytical competitors, the work involved is often little more than application of well-understood techniques to new sources of data.

## Applying Old Techniques to New Technology

One particularly outstanding company interviewed—a financial services firm with a long-standing reputation for being customer focused—leapt ahead of their competition by integrating Web data into their Enterprise customer data warehouse. The goal of the integration was simply to add more relevant data to an analysis designed to discover new opportunities for customer acquisition. Despite years of effort and investment in first- and second-generation Web analytics tools, it was clear to management that a more radical approach would be required to further differentiate the company in a very competitive direct-to-consumer market.

Given the tremendous volume of data produced in the firm's online channel, the first hurdle faced was transforming raw Web data into a format that could be integrated into the data warehouse on a visitor-by-visitor basis without losing information and at a reasonable cost. Early tests found that attempts to keep “all data” resulted in poor system performance and added little incremental value commensurate with costs. Additionally, it was discovered that while the company's Web analytics vendor did offer a packaged data extract, the service was simply too slow at producing a useful data source.

The final approach taken was to extract raw Web logs and transform them into a format that summarized visitor-level interactions. The loss of data was negligible, especially in the context of their existing approach toward first- and second-generation analytics. The result was a single, Enterprise-wide data set with customer-level visibility across retail, phone and online channels. When analyzed using SAS, the Web data proved to be an extremely valuable addition to the company's customer acquisition model, providing a high level of predictive power.

Rather than examining customer and prospect behavior in independent silos, by leveraging little more than data and systems already in place, this analytical competitor is starting to take a more holistic view toward a demonstrably multichannel relationship. More importantly, rather than simply providing information and insights generated exclusively in the online channel, the analytics group is able to make data-based and analysis-driven recommendations to management detailing *future opportunities*, not just past results.

## **The Inevitable Outcome: Analytics-Driven Automation**

Undoubtedly, third-generation analytics can be particularly resource-intensive, especially at the onset. The right assumptions need to be made and tested, the right models need to be proposed and evaluated, not to mention the need to create an integrated data set through defined ETL (extract, transform, load) processes. There is no short-cut that can be taken during early phases. The organization needs to be committed from executive level on down to dedicate the time, resources and finances to the creation and use of the asset and tools.

Over time, the goal should be a higher level of automation driven by analytics. While the technology to power automation is largely lacking today, Web Analytics Demystified expects that continued expansion of use of data communication protocols such as ODBC, SOAP and REST combined with increased use in these third-generation tools will yield integrated environments capable of:

- Modeling changes in visitor behavior based on marketing response and clickstream data in real-time and communicating the changes back to content management systems to modify subsequently delivered content.
- Modeling changes in marketing response data based on real-time cost and click-through data from search engines and using updated models to modify bid-management strategies throughout the day.
- Modeling changes in shopper behavior and inventory levels to automatically adjust product assortment for promotion and cross-selling opportunities.
- Mining past visitor behavior to make real-time determinations about products, promotions and even site functionality that should be offered.

At the end of the day, the goal of third-generation digital analytics is to bring rigor and mathematical precision to a practice that has otherwise been somewhat sloppy and imprecise. By recognizing that a complete census of the data is unnecessary and in most instances a statistically valid sample will suffice, by trusting that decades of mathematical research into population distribution and number theory can be directly applied to online data sets, and by being willing to examine how the analytical platforms most companies already have in place can be leveraged to create a more complete view of prospects, customers and opportunities, companies will finally be able to advance their level of knowledge into the realm of true analytical competitors.

## Conclusions

Despite a decade of investment, the vast majority of companies that have made an investment in first-generation digital analytics technology still dramatically underutilize that investment for online decision-making and customer relationship optimization. That observation, combined with the best-guess estimate that fewer than 20 percent of online businesses have adopted second-generation *ad hoc* reporting and multivariate testing tools, suggests that the ideas presented in this document may be well ahead of their time.

Perhaps.

At Web Analytics Demystified, we strongly believe that the best analytical competitors are those possessing a well-defined strategy, not just describing how they compete today but how they will compete in the future. Given widespread belief that digital channels will only increase in importance over time, we believe it behooves forward-thinking companies to start considering the data and systems they will need to run their businesses well into the future. Especially as the data businesses have at their disposal becomes more granular, and as the knowledge of our likes, dislikes and preferences as individuals becomes more easily obtained, the need for a new analytical model becomes paramount.

The only thing worse than not having data, *is having data and not being able to use it.*

The counter argument for the shift described in this white paper is that businesses will place *less importance* on the careful analysis of business data and that company owners will *rely more heavily* on gut-feel decision-making. We believe that the notion that smart businessmen and women will turn their back on the seemingly infinite pool of data about their customers, products, brands and companies is highly unlikely. Rather, there is a strong desire to take a *more analytical approach toward business*, not less, especially in economically uncertain times.

None of the ideas we have presented are easy to execute or particularly inexpensive. The software, people and the time and energy required to transform the businesses use of data all come at a cost, both in opportunity and in hard dollars. But as Davenport, Harris and Ayres have all shown: new analytical competitors are emerging and, more importantly, their analytical efforts are paying off. The new digital analytical competitors of the world have harnessed online and offline data to optimize interaction models and drive value back into the business by improving the entire customer experience.

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## About SAS

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SAS is the leader in business analytics software and services, and the largest independent vendor in the business intelligence market. Through innovative solutions delivered within an integrated framework, SAS helps customers at more than 45,000 sites improve performance and deliver value by making better decisions faster. Since 1976 SAS has been giving customers around the world The Power to Know® .



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