INTO THE RIVER:

HOW BIG DATA, THE LONG TAIL, AND SITUATED COGNITION ARE CHANGING THE WORLD OF MARKET INSIGHTS FOREVER

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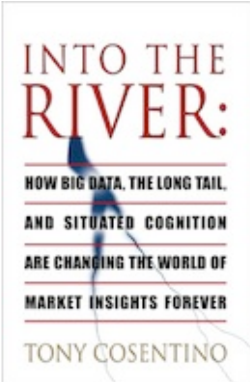

Based on first-hand knowledge of many of the world's leading corporate insights departments and insights suppliers, ***Into The River*** *gives the reader a straight-forward perspective into the important and changing market research and insights industry. More importantly, it provides ideas on how companies, suppliers, and individuals can deal with these industry shifting trends.*

Into The River

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Introduction- The Empty Chair at the Table

> You could not step twice into the same river; for other waters are ever flowing on to you.
>
> **- Heraclitus**

Joe, the COO, and soon to be CEO of the telecommunications provider, US Telco[2], sits at his desk and considers what to do about the bleeding. Churn rates have increased dramatically over the past six months as more and more customers drop off the network. What's worse is that he cannot pinpoint exactly why this is happening. Mike, his right hand in the organization, tells him it's because of network coverage and that the cell towers need to be closer together. He points to a significant correlation between dropped calls and customer churn.

Joe thinks to himself…*That's a huge infrastructure investment not certain to solve our problem.*

Lucas, the head of marketing, shows Joe a model that predicts share stabilization if they roll out fresh service plan structures and new pricing. Of course, this would need to be followed up with an aggressive media campaign. While Joe believes the projections, he remains unconvinced.

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[2] This story is fictional.

Joe noodles the idea…*While new pricing may stabilize share, how is this going to change our longer term prospects? Specifically, how will it impact the profile of our customer base and impact our brand? The street certainly won't like it; lower margins and a brand promise of being cheap. It's like putting a Band-Aid on this wide open wound. It's not good enough.*

Joe considers how the decisions were made in the past. Usually a prioritized list based on the leading impacts to their customer loyalty index (CLI) helped to sort through different scenarios. The company looked at big competitive tracking studies, listened to what people said they were going to do, and took the guidance seriously.

Joe considers these studies*…It seems to me that people don't always know what they want, and they sometimes act differently then what they say.*

Then Joe thinks about the idea brought to him by the head of information technology, Gabrielle. The suggestion is to look at behavioral profiles of the customer base and see which behaviors are most closely linked to churn. In particular, one idea is to look at the relationship between the individual's own call network and churn. It would be something of a social-graph analysis. If they can determine linkages, they may be able modify behavior through appropriate micro-marketing strategies.

Joe is intrigued by this somewhat tactical, but low risk approach…*Why not give it a go?*

Two months later, the results of the pilot are impressive. It turns out that when people drop off the network, the probability of their social contacts also dropping off the network increases dramatically. This is a much stronger predictor than any of the

other data the COO has, and even more impressive than that, there is some specificity in what can be done to address the problem. Based on the pilot, micro-marketing tactics are triggered as soon as a particular type of customer drops off the network, and promotional messages including a new phone subsidy or an invoice credit are sent to some or all the people within the churned customer's network. At the end of the comparative study, the rate of churn where these tactics were applied versus the control group is significantly lower. The results are so profound that Joe decides to roll the program out companywide.

Soon, the company churn rates are stabilized, and the company is even beginning to gain back share. Joe sits back in his chair, no longer feeling so embattled. He thinks about how much is being spent on the large loyalty tracking study…

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It used to be that the Market Research industry was like the movie *Ground Hog Day* where one wakes up, day after day, and everything is exactly the same as it was the day before. Industry conferences focused on repackaged statistical techniques or data collection, and the untold truth of "what is old is new again" went on for many years. While this conservative approach has provided the industry with consistent single digit growth rates for a long time, it is now a problematic posture. For a traditional Market Research firm whose position is neither strategic nor inexpensive, it is a compromised existence and one very different than the past. This is because there is disruptive change occurring, and for those who sit and wait for the change, the outcome will likely be brutish. For those that embrace the change, and make moves now to capitalize, good fortunes are likely in store.

One foundational issue for the Market Research industry is that the very label of "Market Research" implies a focus on process and data, rather than on decision making. This focus has put the industry into a comfortable state of self-absorption where researchers take pride in their esoteric knowledge about analytical techniques and the pros and cons of various scales. In fact, the definition of Market Research has nothing to do with actual extraction of value or strategic guidance within the organization and the focus on things such as instrument design, data collection, and analytics add no value in-and-of themselves. Certainly, these things are important, but they must be put into the context of the critical business questions for which the information flows. Researchers are often dancing on the head of a pin. The point is missed that if decision makers are not listening to the answer, techniques and scales used in the process really have no meaning.

Corporate executives see Market Research as a stepping stone and young professionals often fall into the function rather than aspiring to it**.** The perception of Market Research as a back room administrative function is a self-fulfilling prophecy. What's even clearer is that many researchers have happily retreated into this domain, and to their dismay, are then left out of organizational decision making. A typical scenario in the past is where an executive comes to the researcher and asks advice about the direction of the business. The researcher, running from project to project administering research specifications, is woefully unprepared to answer and defensively starts talking about the data itself. This response reinforces the idea that the researcher has no business taking part in management discussions since the researcher is caught up in providing data, not *guidance*. The high ranking manager returns to the executive suite with his original understanding reinforced that the Market Researcher is nothing more than a fact-checker.

This situation is not always the fault of the researcher. The messages that are sent to the research department are often contradictory. The function is told to provide deep thought that can guide the organization to a position of competitive advantage, but at the same time it is told to provide more data, more quickly, and at a lower price point. And while great lip service is paid to the independence of the data, if a high ranking executive has already made a decision based on intuition, then the information provided better agree with his direction or it will likely be attacked. In this dualistic environment, the perception that Market Research is a complex process requiring a certain level of expertise and a 'hands off' approach has allowed research professionals some measure of independence and assurance of data integrity. On the other hand, it has kept the research team in something of an academic vacuum, never traveling too far off campus into the real world.

If executive management is serious about giving the research function a seat at the table, they need to bring the research professional in at the earliest stages of the initiative process. It isn't fair for management to expect instantaneous deep thinking around a business issue to which the researcher previously had no real exposure. The bigger issue for many organizations is that the maturity of their insights function has not progressed from a pure research function to one of true insights and guidance.

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The Market Research industry is facing disruptive change and, similar to the changes in media and advertising, the primary driver is technology. In the past, a company would survey people in order to collect attitudinal and behavioral information, and then analyze this data alongside other ‘desk research’ in order to figure out how to service a customer or decide on what new products to bring to market. While this is still the basic foundation of the Market Insights function, so much demographic, attitudinal, and behavioral data is being collected on-line, and the latest-generation business intelligence (BI) and artificial intelligence (AI) systems are so much better equipped to make sense of it all, that certain survey-based research data is becoming relatively less valuable. The world is pushing in a direction that focuses more on the tangible nature of behavioral analytics and revealed preferences, rather than stated attitudes and behavioral intent. Where there is still a need to collect attitudinal and behavioral-intent data, such as in strategic foresight situations and innovation environments, social-network feeds and on-line communities are providing platforms to efficiently generate this information. The software, often called an Enterprise-Feedback-Management (EFM) system, disrupts another key part of the insights industry which is based on the complexities of data collection. As if these changes were not enough, advances in cognitive science and behavioral economics challenge the contextual underpinnings of the decision making process itself. The changes invite broad questions regarding the specific role of Market Research in the future of the organization, as well as the impact of increasingly large networks of data created from e-commerce transactions, search behavior, and social networks. Indeed, these latter forces are reshaping not only the Market Research function, but the very nature of commerce itself.

Consider the purchase experience of today's buyers who are bombarded by various influence streams increasingly customized with respect to their demographic profile, past behaviors, and stated or implied preferences. As the buyer engages, he or she seamlessly enters a consideration phase and is able to assess the product or service, directly ask questions, consider the opinions of important others, and choose a configuration within budget. The three stages of awareness, consideration, and purchase are blurred as information flows freely back and forth between company and consumer. This empowered, but increasingly overwhelmed buyer now makes a much more informed (though not necessarily better) purchase decision after having established exactly what brand and features they want, and how much they are willing to pay. In essence, the formation of consumer attitudes and the resultant buying behavior has changed as a result of the internet and social media.

These disruptive changes in how people make brand decisions have great implications for the enterprise. For instance, some organizations now rely less on influencing the buyer at the point of sale and place more emphasis on knowing and influencing the customer's frame of reference prior to the point of sale. The ‘no negotiation, no hassle’ approach from the auto dealership is an example. That is, the skills of the salesperson at the time of transaction are less important than the analytics and insight used to set expectations and know the buyer’s wants and needs[3] prior to the sale. For the enterprise, the consumption of mass-marketed brands becomes the expression of the individual’s ego and the extension of the consumer’s own brand. The internet and social media has inverted the traditional brand communication models and spending on media is becoming much more of a shotgun approach. In many ways, it’s the individual at the center of a narcissistic internet culture, which creates the corporate brand identity. People still join certain social clubs and avoid others, drive a particular car, wear particular clothing, and live in a particular city, but now such behavior may be seen as a sign of mass individualism rather than conformist. The Apple brand provides a great example of this paradoxical phenomenon. Affinity with the Apple brand holds the promise of being a

[3] It’s important to make a distinction between strategic sales and transactional sales since we are speaking more in terms of the latter than the former. Generally speaking, transactional sales involve a purchase of a commoditized product that is relatively easy to compare. Strategic sales are more aligned with a complex product or service that is often associated with an ongoing relationship. Some of the characteristics of the strategic sale are smaller volume of customers, larger deal sizes, longer sales cycle, multi-step sales process, and team decision making. An example of a strategic sale is a large consulting engagement in a B2B environment, whereas the classic transactional sale is that of a car or a household appliance.

unique expression of the individual, but at the same time, it represents entry into the class of the modern-day bourgeoisie.

This unique expression of an individual's brand is publicly advertised through Facebook, and other on-line and off-line channels, and success for the brand is comprised of metrics such as site hits and number and status of on-line friends. In aggregate, these individuals morph into powerful tribes that can often determine the success or failure of the overall corporate brand or particular franchise. Today when a corporation thinks about the influence of *important others* in the brand decision process, they must abide by the fact that consumers will often pay more attention to an aggregate of reviewers on the web, than to traditional mass media, a salesman, or potentially even a spouse or a neighbor.

Given this backdrop, the latest generation of Business Intelligence systems is converging with Market Research to become the organizational lighthouse. Rather than decisions being made on managers' gut feel, evidence-based management guides the organization; and those most familiar with the data and its implications will gain a significant professional edge. These analysts will have the ear of the powerful CFO, CIO, COO, or CMO, and be a critical ally for everyone in the organization. Of course, this new model threatens the traditional Market Research function as behavioral and social network data now regularly encroach onto its territory, and new models of gathering information substitute automated software applications for data collection services (the former bread and butter of the industry).

Information technology, fundamental shifts in how companies look at markets, and attacks on traditional decision theory are serving to disrupt the previously insulated and tranquil Market Research industry. Exploring these foundational shifts and looking at how the industry leaders and companies are dealing with these shifts, is the crux of this book.

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Part One of the book looks into three general trends and the impacts of each on the industry. Since technological change underpins two of the three trends discussed, it has been incorporated directly into the topics. The first topic is Big Data and by extension, Business Intelligence systems. Behavioral data is becoming so prolific and predictive modeling is so powerful that the impact of these systems cannot be ignored. The second chapter looks at the impact of the Long Tail and the idea of crowdsourcing. End-user participation in everything from product development to advertising fundamentally changes the world of research. The final chapter in the first section is entitled Situated Cognition. Leading thinkers in the world of decision-making argue that reason and emotion cannot be analyzed in a modular fashion; and this has a critical impact on the collection and use of data.

Part Two of the book shifts to the industry players including the corporate insights department, the insights supplier, and the insights professional. Given the game-changing trends in the industry, individuals as well as companies are struggling with their next move. For the corporation, the emphasis must be on tearing down the walls between information systems and the insights department. Only when the insights department can seamlessly access *all* available data, will the function provide real competitive advantage for the broader organization. The anatomy of such a department as well as the process for getting there is discussed in Chapter Four. For the insights supplier, it is a very challenging time and this is especially true for the strategic partner business model. Upstream entries from management consultancies and information technology consultancies create a more crowded space than ever; but given that this ground defines the future of the organization, it is worth the fight. Beyond those few firms that can establish a trusted advisor relationship in the new order of things, niche software and low-cost service models will also have a space. Each of these models, as well as different go-to-market approaches are discussed, in turn, in Chapter Five. Chapter Six explores the role and critical skill sets of tomorrow's insights professional. Because of the expansive nature of the skillset and the multi-faceted role that tomorrow's insights professional plays in the organization, this person is referred to as an *uberanalyst* throughout the book. Indeed, such an analyst may be as likely to come from the database side of the house as the traditional research department, but what's important is that the person has an interdisciplinary approach to analysis.

Part I: The Changing World of Market Insights

Chapter 1 –Big Data

> In the era of big data, more isn't just more. More is different.
>
> **- Chris Anderson, Wired Magazine**

Tim, the Vice President of Market Research for US Telco, can't quite put it all together. His boss Lucas just told him that his budget may be cut 20% even though revenue and profit are stabilizing. At the same time, he's heard through the grapevine that Gabrielle's IT budget is increasing. Furthermore, she's being consulted on marketing analysis issues which has traditionally been Tim's domain.

Tim calls Sanjit, one of his most trusted Directors, into his office and asks about the analytics that Gabrielle's team is doing. Sanjit tells him about the predictive modeling and the subsequent micro-marketing campaign that was able to stem the churn issue. Tim knew about the effort, but he didn't realize it was going to get this kind of traction. Tim tries to make sense of it all.

The churn work his group has been doing is actually some of the most sophisticated he has ever done. He thinks about how far the analysis has come since the time he spent with a boutique loyalty research firm in Palo Alto in the late-1990s. He recalls a study his firm did in partnership with the consulting firm Hoopers & Lyber that showed a correlation between company revenue and

customer satisfaction. He remembers the initial roll-out presentation because he asked if there was a causal relationship. The answer had come back that it was not a causal relationship per se, but there was a strong correlation. He takes pride in knowing that the work his group is doing on the retail study is actually showing a causal relationship. Since US Telco has so much data, they are able to control for just about everything including things like trade area, store volume, and seasonality. It turns out the there is a causal relationship between customer delight and profitability. He knows this is powerful stuff and another example of how Big Data is changing things.

Tim's real challenge is trying to move the needle on customer delight; and this is an entirely different story. Tim thinks to himself… ***I finally have real linkage between customer attitude and profitability in the loyalty study, but I still can't seem to do anything about it. It's such a Herculean task to change the customer-service behavior of people in the organization; and that's what it's going to take to improve the customer delight metric. A flip of a switch apparently implemented the micro-marketing campaign that solved much of the churn issue. I know these are really different things and we need to focus on both issues, but how do I compete with those kinds of immediate results? One thing is certain: Predictive models are driving all of this, and I really need to get more involved with these BI tools…***

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Big Data is one of these terms that means different things to different people. It's generally accepted that Big Data refers to all data that we can put into an on-line environment. This includes the overwhelming amount of demographic, behavioral and attitudinal data that is being produced from consumer-based-on-line activities; it includes massive amounts of off-line data that is being put into an on-line environment; and it includes what is called meta-data, or data about data. When we think of information aggregators such as the US Government, Facebook, Amazon, Google, and others, it's the data created by data, also called data 'exhaust', which is a store of enormous value; and in turn, valuations. Generally speaking, the idea of Big Data includes the notion that the amount of data being considered surpasses our ability to effectively organize, store, and manage it[4]. (For instance, as companies start getting into very large data sets, traditional relational databases have a hard time scaling due to their underlying organization of data and how they access and process the data. Massively-Parallel Processing (MPP) and cloud computing are maturing technologies that promise the ability to harness the power of Big Data.) For the purposes of this book, Big Data can simply be thought of as the deluge of information available to the organization.

In a blue sky sense, Big Data has the potential to change the way the world of discovery works by replacing deductive models with a more exploratory approach. For Market Insights and, more broadly in science, it's been a confirmatory or hypothesis driven approach that has dominated. With Big Data,

[4] Footnote: While beyond the scope of this book, the world of business software has consumed much of itself with the challenge of Big Data. Many of the major software companies have invested to take advantage of this expanding market.

we can take more inductive approaches to discovery and prediction. That is, instead of formulating a hypothesis on our own and then testing and revising the hypothesis, the data will present many directions from which we can choose to explore further. Through machine learning and massive data crunching, patterns present themselves to the trained eye (i.e. those with the knowledge of what to look for in the data), and instead of coming up with a potential outcome and trying to figure out the why, we are guided by data patterns and their inherent predictive power to suggest outcomes. Such an approach can be much less laborious than the incremental processes of traditional sciences. The new challenge is that of knowing exactly what to look for in the data.

The Impacts of Big Data on the Market Insights Function:

An Increase in the Importance of the Market Insights Function

The move from a deductive approach to an inductive approach runs parallel to the move from hunch-based management to evidence-based management. In the past, managers who came up with the best story and convinced people of their hypothesis, regardless of what the data said, created action in the organization. More and more, such a situation is being replaced by evidence-based management where decisions are driven by true market information and mere hunches lose their importance. Given this trend, the well positioned Market Insights function becomes the brain of the organization.

As we achieve truly integrated data sets and there is an ability to look at systems both internally and externally in a coherent fashion, executives are provided with one sheet of music and competing scores are dismissed. The time spent arguing about which data is correct, is instead used to process the information and make better business decisions. As this occurs, the basis of management decision-making changes from 80% gut feel and 20% information, to 80% information and 20% gut feel. In this context, information becomes the new currency, and as long as the Market Insights function positions itself as the information synthesizer and puts itself at the center of the information tools being used, its value will rise accordingly.

A Cannibalization of some Primary Quantitative Research

As multiple data sources are integrated across silos in the organization and analysis tools become more sophisticated, the substituting of certain primary research data with Big Data will become more pronounced. Take Google's Price Index (GPI) as an example. The GPI is data exhaust that is ready for Google at the touch of a button. In contrast, the Federal Reserve must literally go out into the real world and collect prices on a city-by-city, store-by-store, and item-by-item basis, to provide the Consumer Price Index (CPI). Another example is connected to the fundamental movement into digital media marketing. As expenditures move away from traditional vertical channels and digital media becomes a greater part of the portfolio, behavior-based analytics become the gold standard for projecting campaign success. Comscore's web analytics or Google's' powerful toolset married with panel-based tracking can measure and predict the success of advertising campaigns and other marketing expenditures across various platforms. There are plenty of other examples where Big Data can act as a 'close enough' surrogate for expensive primary research. One well known uberanalyst sites an example of where the Department of Health and Human Services could get certain statistics from already existing government records rather than commissioning a multi-million dollar survey research project. Other such opportunities start to multiply quickly as Big Data increases.

Especially pertinent to the Market Research industry are trends around social network data, a subset of Big Data. Suppliers are already marketing such data as an alternative to expensive research studies and corporations are testing the waters. Recent examples in the news include a Consumer Packaged Goods (CPG) company including the most popular on-line recipes to help forecast their sales and an automotive company formally tracking customer satisfaction through aggregate on-line consumer sentiment. Such activity is becoming more prominent as companies gain market advantage by combining social media data with the power of web crawling, and artificial intelligence to collect and analyze consumer feedback. Detractors suggest that social networking data is, by its nature, contextually-based information and until we improve the machine's ability to frame, filter, and interpret semantic content, there are still underlying data integrity concerns[5]. While IBM's Watson may have won on Jeopardy, our computer overlord cannot yet fully frame the discussion

[5] Footnote: See Sidebar discussion <u>Web Scraping and Sources of Error.</u>

nor comprehend the contextual complexity of human sentiment. That said, the speed and cost factors of social media analysis are just right for many of today's organizations.

Sidebar Discussion: ***<u>Web Scraping and Sources of Error</u>***

There is a lot of attention being paid to social media and the opinion information that is produced through web scraping tools (a.k.a. contextual inquiry tools, etc.) While it is hard to argue with the qualitative information produced and the contextual value it provides, the quantitative value of such data is still suspect. Myriad supplier-companies are putting together social media offerings that do everything from forecasting sales to measuring brand equity, but they are having a difficult time convincing the information-savvy corporation. The challenge is that the data suffers from critical sources of error.

For example, <u>Non-response error</u> is an issue for social media data. We might think of non-response as the silent majority *of those on the internet whom are only passive participants in social media. Similarly, <u>coverage error</u> is* *something to be concerned about when discussing social media data. While there certainly may be a high percentage of the Internet Generation on-line, people in under developed countries and elderly people are prime examples of underrepresented populations. For this reason, social-media data may be much less relevant for a car targeted at baby boomers than one targeted at the Internet Generation. Finally, measurement error is an area of concern when analyzing social media data. There is no structured approach to how the data is collected (i.e. no common instrument), and a herd mentality exists in every corner of the social media universe (i.e. no true sample independence); thus, in some ways, it is hard to objectively assess such information separately from the marketing function itself.*

A Move towards Data-Driven Storytelling

Given the overwhelming amount of information and the competition for attention in today's organization, insights managers need to care as much about the story itself as they do about things like statistical significance or the integrity of the data collection methodology. It isn't to say that the soundness of the data is not important, but it's quickly turning into table-stakes and is only important in as much as there is a level of trust of the data quality[6]. That is, the data must be a high enough quality that it is defensible if attacked, but it's the data-driven story that creates a compelling case that drives action in the organization. And action is the reason business research is commissioned.

An Increase in Mixed Methodology Research

As focus shifts from data collection to storytelling and higher quality insights, the multiple sources of information available is leading to mixed methodological approaches. That is, information converges to answer the specific business question. A study that artfully and scientifically marries internal and external databases, web listening, and a mixed-mode 'quali-quant' approach may be seen as the gold standard for an important initiative.

An Emergence of Information-Integration-And-Quality-Control Departments

Mixed methodology research brings a new set of challenges. As multiple tributaries flow into the larger river of information, several questions arise such as the underlying pollution level of the water (i.e. information quality) and how the tributaries should be damned (i.e. how information should be weighted.) As the number and sources of information increase, quality control and the processes that surround

[6] Footnote: See section below*: An emergence of information-integration-and-quality-control departments*.

information integration will likely become its own domain. That is, an information-integration-and-quality-control function will likely emerge in some organizations; and certain supplier firms will come in to fill this niche. In this department, technology and research expertise will again converge.

An Increase in Some Types of Qualitative Research

Alongside of the storytelling trend, there is an increasing appetite for deep-dive qualitative methods that provide in-depth attitudinal profiles of interesting markets and segments. While data itself can be dull and often easily ignored, deep dive qualitative research can tell a great story and communicate significant customer understanding. There are a number of different techniques and none of them need take place in traditional focus group facilities. Ethnography, where someone is observed in their natural environment, is becoming more important, as are projective techniques and other creative ways to elicit ideas[7]. On-line bulletin boards where teams of people help develop ideas in an iterative and immersive format is as adaptation of yesterday's face-to-face Delphi methods. As mobile and other technologies progress, other traditional methods such as diary research are moving on-line with subjects providing mobile video diaries. All of these deep-dive techniques can be used to bring to life ideas and thoughts that would otherwise remain latent in the market.

Of course, the outcome is just as important as the techniques themselves and this is where deep-dive qualitative

[7] Also see the discussion of ideation and metaphor elicitation trends in the following chapter.

research can really shine. From the pain a healthcare patient feels as they try to navigate the complexities of the health care system, to the emotions of a new mother wrestling with the needs of a new born baby, customer perspective is brought to life in different and exciting ways.

A Decrease in Others Types of Qualitative Research

Web listening is replacing some of the exploratory qualitative research on the front-end of projects and some of the contextual qualitative research on the back-end of projects. Before web listening became the norm, a company might use a focus group or a series of focus groups to determine specific questions to ask on a quantitative study or to determine specific answer lists. Similarly, on the back-end of a project, groups or follow-up executive interviews were once more commonly used to further explore the quantitative research outcomes, add color to the study's conclusions, or to sort through recommendations. While these techniques are still of use in certain circumstances, social media can often provide the necessary information without commissioning additional qualitative research.

An Increase in Info Graphics, Data Visualization, and Videography

In parallel with the rise in data driven storytelling, info graphics and data visualization are becoming a much more important part of the insights function. Managers lament the uselessness of endless reams of data and instead look to represent entire bodies of integrated knowledge through visual representation. The story will need to come to life in order for the message to be heard above the other noise in the organization. Much like in the advertising and messaging world, data analytics and Market Insights will come to depend more on the concepts of visualizing and storyboarding their big ideas. If a picture is worth a thousand words, then a knowledge-driven graphic or a video example of the big idea must be worth a million static bars of data.