State of Marketing Analytics in India: Prospects and Potential Challenges

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State of the Marketing Analytics Practice in India: Exploratory Survey on its Evolution, Prospects and Potential Challenges [1]

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Abstract

The paper provides an overview of the state of the Marketing Analytics practice in India today, its prospects and its possible challenges for future growth. A diverse set of practitioners from multiple sectors of industries that use Analytics were interviewed on their opinions that were collated, refined and inferences were made on the broad dimensions affecting their practice. The major findings were that while the need for Analytical support is growing in India, practitioners face challenges in accessing appropriate data sources to perform suitable analysis to support business decisions. Additionally, the motivation to invest in data infrastructure is somewhat moderated by high market growth that precludes the need for high end precision in decision making.

The other extreme of this challenge is noticed in the offshore space where appropriate data is in abundant supply, but analysis and policy making are still at loggerheads because of a separation in employee groups due to geography and expertise. This has led to a lack of synergy (or low levels) between the two functions, leading to some concern about achieving true expectation on service levels.

Overall, it is noticed that investment in Analytics will grow albeit in a tepid manner in the short run for domestic requirements. With increasing competition in Indian markets, and movement of Analytics talent in the global arena, more awareness about its benefits will facilitate the deployment of advanced Analytics in India spearheaded by the multinational companies. However in the short term, India probably will remain largely an attractive labor market for the overseas Analytics requirements. Based on the data collected, this paper casts doubts over some of the current euphoria in the trade that Analytics is a versatile and impactful practice in the current Indian business environment.

A survey of diverse organizations involved in analytics was conducted to record the data. The data collection was intentionally kept open ended to be sensitive to respondents' (and their organization's) varied capabilities to address questions as well as to ensure that as many new dimensions of the industry were identified.

Introduction

Analytics practice in India is projected to grow at a rapid pace. This industry (for both Business Intelligence and Analytics) is sized around INR 10 billion and is expected to grow by 22.4% to INR 26.9 billion by 2017. The major chunk of the analytics usage is stated to be in BFSI[2], Telecom Services and ITES[3], FMCG[4] and Retail. However the Small and Medium Enterprise sector is still in a nascent stage of deploying Analytics and Business Intelligence (BI) as compared to their larger counterparts, the latter contributing up to 65% of the total services utilized in the Analytics and BI market.[5]

However, to the best of our knowledge, no detailed study of the nature of investments made in Analytical processes and their effectiveness in the context of India is available. Therefore, it was felt that a survey of Indian organizations across industries was necessary to discover the state of development of the practice and also to identify the potential challenges that managers face in its evolution.

Motivation

Our primary motivation to conduct this study was to report on the state of Marketing Analytics industry today. It is a significant attempt given that there is very limited (if at all) documentation of this industry in the published domain. Also, it was necessary to validate the euphoria built in trade publications due to the rapid growth in the industry with the actual perceptions of various stakeholders in the industry.

A recent article (AIM, 2014) describes the penetration of Analytics in 15 major domestic companies of the country. In contrast, we set about studying the development of the practice across various industries in India and the potential facilitators of and challenges to the adoption process. Hopefully, in the process of this discovery, we would find reasons for seemingly lumpy development of Analytics in Indian organizations as mentioned in the previous article.

Additionally, we hoped to seek evidence, if any, of the diversity of analytic competency across organizations through this survey. In our opinion, such diversity in competency would indicate the heterogeneity in requirements and the need for better mapping of skills to business requirement in this industry. It was felt that a nascent but growing industry would depict such heterogeneity in requirements, which would complicate the development of a unified view of growth in the future.

Finally, we wanted to understand the specific concerns voiced by leaders in this industry and what were their priority areas of development in the near term. It is also be worthwhile to discuss the implications of the same for future initiatives in this industry. The same are recounted in the latter sections of this paper.

Literature Review

Literature on the Analytics industry, specifically in the context of its development in India, is sparse. We have identified relevant research papers that have delved on the following dimensions of the

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[2] Banking, Financial Service and Insurance
[3] Information Technology Enabled Services
[4] Fast Moving Consumer Goods
5 Netscribes' IT & ITeS Series Report 2013 "The Business Intelligence & Analytics Market – India 2013"

industry: a) diversity of skill requirement in the industry, b) the need for planning before deployment and, c) deployment strategies in more evolved markets. We present a summary below.

An earlier paper (Banerjee et. al. 2013), described the fusion of three basic skills (see Figure1) required for creating the right skill set for the Analytics domain, namely – Information processing capability, Data management capability and, business acumen. The paper also mentioned that the actual mix of skills may have diversity across industries in India based on the core capabilities that organizations in various industries possess from which the practice of Analytics is derived. Another paper written in a different context corroborates this view (Hauser, 2007).

Trade publications have in recent times noted challenges in adopting Analytics as part of the organizational landscape. A recent article (Arroyo, 2013) notes four dimensions to the problem, namely, a) Wrong attitude for incorporating analytics into decision-making, b) fear of integrating new technologies into existing IT architectures, c) misappropriated staff and, d) lack of innovative leadership. A Mckinsey article on similar lines (Biesdorf, et. al, 2013) emphasizes the need for a proper data planning system to ensure high levels of data productivity. A similar study co-managed by AT Kearney and the Carnegie Mellon University[6] describes a new breed of professionals who will drive analytical prowess in organization. They would have proficiency in technology, core critical thinking, analytics and the mettle to put them together.

Figure 1

Competency Mix in Analytics
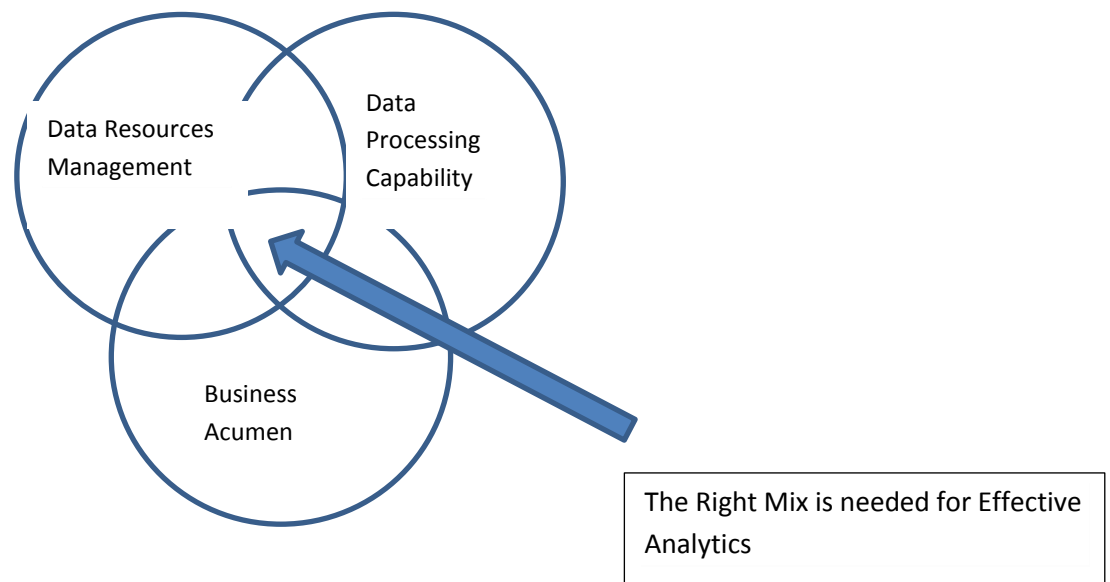
The Right Mix is needed for Effective Analytics

Analytics deployment in practice has been relatively well documented in the developed world context. At a recent practitioner-academia interaction at the Harvard Business School (Gupta, et. al, 2014), it was agreed that analytical research should be directed towards solving topical issues facing corporations including strategies to deal with intense competition, multi channel strategies and the preponderance of the internet and its impact on business transaction. Davenport (2006) in an early paper on analytics deployment talked about the need for relevant insights that can help managers in organization in the developed economy make better decisions.

Some of the more rigorous analytics researches in academia have yielded positive results in terms of relevance to industry. A notable example in the US context is the Chan4cast model (Divakar, et. al., 2005) developed in the context of consumer packaged goods using scanner data. Kappe et. al. (2014) and Ghose and Han (2014) are few more examples of rigorous use of analytics that have yielded relevant models for business decision making. An enabling factor that encourages such rigor is the intensity of competition that forces organizations to take precise action (Germann, 2012). Nevertheless, in spite of a longer history of development, there appears to be tremendous diversity in the way Analytics is used in a typical corporation (Coghlan et.al., 2010). Besides, there is a greater reliance on tactical use of Analytics compared to its usage in strategic planning and longer term decisions.

We suspect a major distinction between analytics deployment in developed markets and India may lie in the availability of organized information resources. Therefore, the issue of rigor and its consequent relevance to practice is secondary in the context of a developing market like India. Primary level problems may exist in many sectors that need more immediate resolution. Hopefully, they will be uncovered in our research.

Overview of the survey conducted

The survey conducted was exploratory in nature. As stated above, very little published literature is available on this issue. Therefore, a significant objective of this work was to develop hypotheses based on exploration which could be validated later with a close ended survey instrument. Hence, we set about conducting semi structured interviews with a cross section of industry practitioners in this domain to establish the taxonomy of issues that impact this industry.

Research methodology

We conducted a total of 21 open ended discussions over a period of three month with executives across industries. These respondents represented a diversity of functions and levels of seniority in their respective organizations. Their identities have been kept anonymous, a condition imposed by most of the respondents to agree to participate in this research. A set of guide questions were developed to initiate the discussion to ensure that most of the important dimensions of the industry were covered and the objectives of this research were met. Some of these dimensions emerged as a result of conducting our initial interviews and included in subsequent interviews as well. The guidelines are mentioned in the Appendix 1.

This work is different from most academic studies. First, it is largely exploratory and we initiated this project with practically no hypotheses. This was primarily due to our discomfort with little systematic work on this industry in India, which remains the focus of our present project.

Second, we believe this is one of the first extensive documentations of data from practitioners in the industry. Therefore, it was felt that to facilitate unfettered exploration of issues related to this industry, scientific rigor could be largely discounted to ensure that flexibility was available to discuss a diverse set of parameters based on their importance, as vocalized by the respondents. We believe this unstructured procedure has helped us identify a rich set of dimensions. In subsequent work we plan to validate our findings.

Finally, we are not in a position to make any claims about the representativeness of the sample of respondents to the industry as a whole. While this project has a significantly more extensive reach than any previous study, the state of (un)willingness of many potential respondents to share (due to their employers' restrictions on them) opinion has constrained the generalizability of the findings.

In spite of these apparent methodological differences compared to a typical positivist research, the work purports to present insights about the Analytics industry in India which hitherto has not been collated. The approach used seemingly resembles a more generalized methodology, namely grounded theory (Glaser and Strauss, 2012), but we make no claims of strictly adhering to the rules of such a methodology.

What follows next is:

a) A detailed exposition of the insights collected from diverse sources across business sectors.
b) A more focused description of the opinions gathered from executives from a sample of business sectors.
c) A summary of the key takeaways and implications.
d) Some thoughts on a follow up to the study.

Detailed Findings from the Survey

A summary of the findings from our qualitative research are presented below.

Evolution of Analytics in Organizations:

1. Analytics as an embedded support service has been a mature business process for a long time.
2. It has become a more visible process in organizations over the last 25 years due to the evolution of the IT infrastructure.
3. Better data management through technologically savvy infrastructure has naturally led to a demand for better and insightful processing.
4. The availability of trained statistical manpower has provided further impetus to this requirement.
5. Analytics leads to better (precision) decision making – necessary when confronted with higher levels of competition and where business manoeuvring has to be more precise.
6. Contrary to the above trend, serious challenges have emerged in many Indian organizations, both in terms of managing data infrastructure and ensuring openness in the organizations to scientific analyses of business data.

Expectations from Analytics

Almost all respondents interviewed in this survey agreed that there is very significant potential contribution that Analytics can make to business. However, whether it can be achieved varied across contexts. The main expectations from the Analytics practice were:

1. Replaces judgemental "sweeps" with judicious and tangible evidence
2. Enables a 360 degree view if facts exist.
3. Ensures significant opportunity to evaluate decisions rationally
4. Provides the opportunity to access information from large sources of data to facilitate the above (Hair, 2007).
5. Ensures transparency in decision making with availability of evidence
6. Complex decision environment require systematic analysis provided by this process
7. Precision in decision making is becoming the imperative (less leakage is tolerated) – this process facilitates such abilities.

Distinct sectors of Analytics Usage in India

There are three significant areas in which Analytics has developed in India. They are –

a) Offshore operations, which are largely driven by expertise, and data that are imported and function on the requirements of overseas businesses that support such operations.
b) Private sector financial institutions (primarily banks) that have started working with operational and transactional data to tailor make their operational decision making
c) Digital and Web space that generates large scale data and can be easily manipulated to provide online feed on decision changes required. But this is a fractional percentage of the total business transaction happening in India[7].
d) Apart from these three domains the rest (diverse in nature) are also there trying to catch up with limited and many times unorganized sources of data that have the potential to yield at best modest results.

We follow this up with more detailed summary of our interviews with executives of the major business sectors that we covered in our research. A table summarizing the findings is also included (see Table 1)

1. **Case of a PSU bank / PSU Insurance Company: The late start and regulated business policy and incompatible data formats**

There is a general consensus that availability of electronic data due to the bank's computerization efforts in the past 10-15 years has led to rapid increase in investment in data management (warehousing) and automated reporting (ADF), which is also somewhat prompted by the Reserve Bank of India (RBI). However, executives agreed that faith in data systems and automation takes time to develop and it is only in the past 2-3 years that automated Business Intelligence systems have started substituting for manual reports that have been traditionally created.

Higher level analytics (where in decisions are supported with insights based on statistical analysis) is not a significant requirement in this environment, partly because of the conservatism of the Indian

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[7] "Evolution of e-commerce in India", http://www.pwc.in/assets/pdfs/publications/2014/evolution-of-e-commerce-in-india.pdf, accessed on March 6, 2014, 1325 hours (IST)

banking sector and secondarily, due to the tight control by the regulator (RBI) whose policies provide little flexibility for the banks to operate independently. The bank's selection of markets for business are largely dictated by the government and overall credit decision making does not require the precision based balance between risk and reward, unlike in a more competitive and free market.

In recent times, there has been some initiation of analytics processes in some PSU banks[8] which are improving operational productivity. However, there is also a reference to the fact that the sophistication of the processes built is nowhere in comparison to the standards set in some other parts of the world.

The definition of Analytics in such environments is closer to "Analysis" where data processing is more simplistic, disparate but several small pieces of data processing intermingled with judgement. This forms the basis for synthesis of information; model based inferences are still ahead in time. Many analyses are done at a more macro level (drawing overall numbers) rather than at the micro-level (gleaning effect sizes).

However, the opinions from executives in the Insurance sector were somewhat varied. Requirement for Analytics was felt by top management since the underwriting driven profitability was low and hence required some astute selection of prospects and policy terms. But the data was not organized in a form which helped in doing consistent analysis. Given its long legacy, state run insurance corporations were saddled with data in various forms – paper based and also electronically managed data from recent cohorts and hence the chaotic organization across forms of data was proving to be difficult to manage well for consistent analysis.

Additionally, age-old practices of decision making through heuristics was creating barriers to change. This was in spite of a few identified areas in the organization where there was some opportunity to imbibe scientific ways of analysis to ensure consistency in decisions.

2. **Consumer Goods Sector: The complications of Data and its sufficiency**

In the Consumer Goods / Pharmaceutical sector, market data has been collected and used for many years now although the richness of information is limited partly due to the cost of collection (across multiple channels of distribution) and additionally due to the what was termed as "myriads of marketing initiatives" that cause complications in collections, collation and standardization of insights.

Due to such complications, the market data is often times used only for monitoring and tracking performance and its use for analytical diagnostics is somewhat limited – due to partial collection of relevant variables and its consequent impact on partial analysis which need not provide complete insights. This acts as major deterrent for use in decision making. Instead, decision makers are more comfortable with tried and tested heuristic methods and that need not be scientifically validated.

Finally, there is a perceived lack of common communication platform between the analyst and decision makers. Policy making groups are nowhere close to accepting analysts as an active part of

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[8] http://analyticsindiamag.com/analytics-in-indian-banking-sector-on-a-right-track/ accessed on March 12, 2015, 1232 hrs.

their teams. This could be a reason why communication between these two disparate groups is choppy, further deflating the true potential of Analytics in decision making.

However, respondents agreed that Analytic capability has in India in recent times improved with the global movement of talent. Also, with the industry having slowed down in recent years, the need for better planning and optimized spending of resources has influenced organizations to adopt analytical capabilities faster.

Other factors that have helped:

a) Data collection and recording has improved marginally over the past ten years, but access has improved because the client organizations' demand for insightful information has grown and they are no longer satisfied with monitoring studies.
b) Globally exposed management has led to the demand for more sophisticated analysis
3) Talent availability has improved. However, their familiarity with business imperatives remains low and is an area of concern.

3. Manufacturing Sector: Happy with a "minimalist" aspiration which has fructified

Respondents in this sector described some very specific operational analysis pertaining to their domain which required production data. According to them, such analyses were easily doable since the data were available (generated in the course of the daily operation) and technical skills to mine the data were easily available in their sector of business.

However, the big push in this domain is to educate the internal managers to start gathering and analysing numeric data and provide more consistent and reliable insights on business dimensions. That is the next big requirement according to the analytics users in engineering organizations. One respondent commented, " …have the capabilities in place, but require an organizational process to deliver more number centric monitoring systems".

Others stated that, "there are enough capabilities within the organization to help in operational and strategy planning function". One significant area of improvement that they desired was in the realm of market data. They felt that market data was sparse and building infrastructure to improve collection was a real need. A noteworthy comment made was that employing engineers in this sector ensured that processing numeric data was not going to be a challenge since they were all trained to do such processing.

4. Financial Services in the Private Sector: "Bit by bit" will facilitate the growth but rapid strides will happen only when competition heats up

Executives who responded to our survey seemed convinced about the future prospects of Analytics in driving business. However, the felt need was not as much in today's context and, hence their organizations were not investing as much in data management and analytics. This was partly due to low levels of competition in the market in certain sectors. Their current organizational setup that "facilitates closer to customer" operations has reduced the need for large scale Analytics operations.

For instance, a financer in rural markets commented that their operations were completely decentralized to their branches, which decided on almost all issues with regards to their local customers – including financing options to be offered to their customers, terms and conditions and collection policies. This decentralization was necessary since the "executive on the ground" had a better sense of the context compared to "model based" decision making process at the central office.

Some work has begun in newer businesses on a trial basis to invest in data collection architecture with the hope that it may be useful for decision making in the future. Analytics in tactical operations such as CRM has also had some (limited) success.

5. **ITES Global Outsourcing / Offshore Sector: The compensatory approach – Technology as a substitute for business acumen?**

This is perceived to be the most advanced sector in the realm of Analytics. Data processing systems are highly developed and usage of information resources (numerical data) is very high. Many decisions in this sector are dependent on analytical model based output. Being largely focussed on services rendered to the overseas (and primarily developed) economies, constraints related to data and processing infrastructure are relatively less significant. Some of the key points from the discussions are mentioned below:

a. Analytics being a relatively nascent function which has its lineage to the more ubiquitous technology function – the challenge is to determine the true metric of productivity.

b. Given its association to the "big brother" IT function, it can easily get overwhelmed by the latter's scale and configuration (process driven).

c. How to make Analytics independent of IT organization and not succumb to the process-orientation of the IT function, is a moot point.

d. The above dimensions have implications on future investments in the Analytics domain – will it replicate the IT route, i.e. build processes and reports to facilitate standard operating procedures? The fear is that its potential will remain limited if it were to follow the pure technology route to development as a process.

e. Should Analytics be a support process, or should it be fully embedded in policy making – no clear answer about the way forward in the Indian context is available.

f. Leadership in Analytics processes must have expertise in policy making – without sufficient user group experience, it may be hard to realize the true potential of this functional domain.

Experts in the offshore Analytics operations whom we spoke to caution that a consequence of such skewed leaning towards technology in the Analytics terrain may lead to the following trends:

a. A unipolar emphasis on standardization leading to product / process and efficiency building at the expense of its true potential in enhancing effective decision making in organizations.

b. The above is the easy route and lack of visionary leadership can easily push the initiative in that direction.

    c. "Fingers and Toes"[9] model which create embedded Analytics functions within business policy-making is very difficult to manage (in an offshore environment) and will be easily discarded for simpler ways. But, that is detrimental towards its long term leverage in organizations.

Overall Assessment of Analytics Process development in Indian Organizations:

Notwithstanding a fairly high aspiration among some practitioners to develop analytics capabilities in their organizations through smart use of available technology, our study based on a limited sample identifies some significant areas of concerns about its development in the Indian context. The main areas of concern "extrapolated" from our findings are:

a) **Non availability of Comprehensive Business Data:** A prerequisite for effective data science application is the availability of data. It may be structured or semi-structured (or unstructured), but the nevertheless it is important that the coverage of the available data source should be close to complete and the variety of information available is broad enough to provide a wholesome view of the business phenomenon that is studied. None of these conditions are satisfied in many organizations. A secondary concern is the unorganized state of data in many organizations which makes it difficult to develop a systematic information plan to connect to decision making processes.

External information regarding markets and environment are the most difficult to acquire simply because there are few private or government agencies involved in the collection processes. Besides, the high cost of collection of data from relatively inaccessible parts of the country (rural markets, for instance) discourages investments in such initiatives

A consequent problem due to this non-availability of data is that the impact of data and its subsequent processing and insight on decision making remains largely muted and incomplete.

b) **Internal data in multiple and incompatible formats:** A second dimension of the complication for some organizations that have quality business data and, that get generated as a part of the business operations, such as transaction data in banks and retail stores, is their availability in different formats which causes significant problems of consolidation. Take for instance the banking and financial services institutions in India. In the past decade and a half, there has been rapid development in computerization and automation of operations in most large public sector institutions. A consequence of this trend has been that recent data is available in standardized electronic formats but, their integration (or lack of it) with data available in legacy physical systems (read: paper formats) makes it difficult to apply any data science procedures reliably to glean insights for decision making.

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[9] An organization structure that clearly identifies teams having Analytics specialists and policy makers in a functional unit.

c) **Dependency on Heuristics for making decisions:** Given the above constraints, many business organizations remain steadfast on their dependency on heuristic business rules developed over long periods of experience and a firm connect "with the ground". People – driven decisions override attempts at standardization and the common refrain heard is that information is not available or incomplete to substitute the "gut feel" with the rigors of scientific models based decision support systems". A notable example of such a focus is the role of branch operations in managing business operations in the field. It is very apparent in rural markets, where the role of the local branch is important for taking both operational and at times strategic decisions. Here the lack of information is substituted by the "look and feel "of the environment, which is only possible through a decentralized branch based operations (our respondents from the banking and financial services sector corroborate with this view). A centralized process of decision making using data is therefore dispensed with and substituted by a people led decentralized organization structure.

d) **Market Growth hides the virtues of Analytics-driven precision in Decisions:** The "futility" of the analytics practice is also fuelled by the notion of the "growing market syndrome". Data scientists are supposed to extract business insights that act as a welcome succour in a highly mature and penetrated market. They are supposed to provide directions, refine decisions to hone in on the "close to the perfect" set of decisions for an environment. However, when the markets are in the expanding phase, such extraction of precise insights from past transactions is not quite relevant. In such a situation the importance of factual evidences, based on past occurrences can easily be discounted since the growth in the market overrides the leakages of a sub-optimal decision. Precision in decision making or the lack of it has little consequence on the year end performance of the organization since the overall market growth many times covers up for all such inefficiencies.

e) **Technology alone has limited potential to create impact:** Off shore operations seem to have circumvented the problem of shortage of appropriate data infrastructure, but due to their operational bases being geographically distant from policy making units, suffer from lack of "contextual relevance". It was felt that embedded organizations with policy making and analytics support working in tandem and in close coordination is necessary to ensure fructification of the true value of this domain.

The above dimensions serve as a good basis to develop specific hypotheses regarding the industry to be subjected to a more rigorous scientific validation.

Implications of our findings and directions on future investment in Analytics in India

The general findings do appear to contradict at least some of the optimism that prevails in this industry. If we refer to the zone of competencies as referenced earlier, it is clear that so far the development of the Analytics practice in India has been uneven broadly due to:

1) Geographic dislocation of specific tasks related to information processing from the business functions
2) Lack of investment in proper information infrastructure in domestic industries to support business requirements.

3) Increasing interest in Analytics, yet unsure about its role in a growing market scenario.
4) Heterogeneity in sources of data and the quality of available data reduces effectiveness of analytical output.

That appears to support the diversity in challenges across various industries in the Analytics domain.

The positive element to these somewhat subdued findings regarding the state of the Analytics industry is that they provide important leads into how to direct investment in these processes for better returns on investment. Some of the pertinent issues that are worth a consideration are:

1. Markets will eventually slow-down in India, like in other developed markets. Hence, the need for precision and efficiency will increase and therefore the importance of analytics to support decision making.

2. It may be prudent to use Analytical skills available in the market to develop plans to build relevant business data marts in organizations with an eye towards their future use. Identification of key data which may help in analysis of various future business scenarios, their probable inter-relationships and investment in their meticulous collection are important elements of this planning process. Only professionals with a keen insight about how the data may be used in future analytical processes qualify to participate in this planning process.

3. It is of course never too early to begin the Analytics journey in any organizations. Percolating the culture of using pertinent market and business information, no matter how incomplete it may be, and factoring the insights into decision making is a worthwhile step towards building long term capabilities in organizations. At least, it ensures that the organizations are ready with the right mix of capability and culture when it will be a critical differentiator for business success. A few notable examples of such efforts are being documented by the authors and will serve as a platform for future research in this area.

4. Experienced Analytics professionals can serve as useful mentors to enable organizations to equip themselves with the right capabilities for the future by a) providing inputs to the data warehousing plan, b) by educating decision makers with the appropriate way to use information based insights into decision making processes and, c) by training executives in the correct ways to process data to produce business insights.

5. For offshore operations, the key focus in the future will be to ensure that analysts gather enough domain knowledge to better connect their analytical output to the process of decision making in their client organizations. Banerjee and Williams (2009) corroborate this view as well.

While these are recommendations based on our limited observations of the state of the industry, we believe there is enough merit in initiating a review of organizational requirements based on these recommendations.

Ending remarks

This paper is a precursor to further studies on an industry which has mustered significant interest in recent times. At the same time, our research reveals that majority of the current Analytics work (up to 90% according to some) done in India is actually service for overseas markets. Domestic business

requirements are fragmented and in many ways aspirational and cannot be met for reasons mentioned in the earlier part of the paper. This is a very significant contribution of this survey. Ironically, many of our conversations with Analytics practitioners started with heightened optimism about the potential of Analytics in India. What we discovered during the course of our conversations was that this optimism is in reference to the work that India based operations may receive from overseas market in the near term. The domestic market requirements for Analytics seemed rather lumpy and basic. This may be an antithesis to the prevalent perception in many quarters that Analytics is pervasive in the Indian context.

This trend may continue for a while, and as mentioned earlier, until the market parameters in India change radically for business organizations to feel the "heat" of Analytics. This fact is corroborated by Germann et. al (2012) who find that level of competition is positively correlated with the depth of Marketing Analytics used in firms.
It is also important to highlight the fact that nowhere does the data science (processing capability) appear as a major cause of concern in our survey.

Finally, in terms of the specific objectives that we set about for this research, we have accomplished the following:

1) We have identified data availability and market conditions to be the most important dimensions that influence Analytic capability development.
2) Varied organizational contexts are highlighting different challenges to the development of capabilities. A distinct difference is between domestic industry and the offshoring sector. The capability development priorities are significantly different across these two sectors. Domestic industries require IT and data planning help, whereas the offshoring sector critically requires ramping up business domain knowledge amongst its professionals.
3) Business leaders in at least some sectors are concerned about how to grow Analytics capability in the future– embedded in policy making or a distinctly separate process. Each of these options seems to have mixed responses from respondents.

Limitations of this survey

A limitation of this study has been the sample constituents, size and, to some extent, the data collection methodology used. The primary criteria used to select respondents have been a) their qualification as a stakeholder in the Analytics industry (as a consumer of Analytics or a producer of Analytical output) and, b) their willingness to share their experiences. However, enough attention has been given to collate data from as diverse a set of industries as possible. Therefore, while the sample is small and is not representative of the entire Indian business landscape in the true sense, it does represent a fairly large canvas of industries and therefore the insights add significantly to the sparse literature existing in this domain.

 With reference to the case based methodology used to collect information in this research, we would like to emphasize that the motivation was mainly to uncover as many dimensions of the industry as possible. We suspected high diversity in parameters affecting different stakeholders and hence did not find it suitable to constrain work to a narrower set of dimensions towards ensuring scientific validity. In the spirit of discovery, we thought it was necessary to adopt this strategy. In the

future, we would like to validate our hypotheses (uncovered in this study) with a more structured enquiry process.

We must add that two significant industries remained unrepresented in the current study. They are, a) the domestic pharmaceutical sector and, b) the growing e-commerce sector in India. We plan to fill these gaps in our research in the future.

Table 1 (Summary of Findings across major Industries)

Sector	Organizations surveyed	Key Achievements	Challenges for the future
Large Public Sector banks	1	a) Electronic Data Capture is mostly complete b) Data warehousing and report generation in progress	a) Do they need sophisticated Analytics to support the banking function in a regulated market? b) Data resources is a mish-mash of electronic and old paper formats. It is very hard to organize them systematically.
Consumer Products / FMCG	3	a) High competition is compelling management to turn attention on Analytics for better planning b) Better skills available with global movement of human resource	a) Scrappy data management and collection impedes effective output b) Disconnect between Analytics processors and users of its output – don't understand each other well.
Manufacturing / Engineering	3	a) Effective Analytics capability available for focussed engineering applications b) Requisite skill set is available to support such analysis and inferencing	a) Non availability of comprehensive business databases (especially market related) hampers the true potential of activity.
ITES / Offshore consultants / Captives	4	a) Developed processes and databases b) Supporting business	a) Disconnect between Analytical prowess and Business imperatives due to

		decisioning with at least baseline support through reporting and analysis	geographic distance b) How to add value through Analytics?
Analytics Consultants for Indian Organizations	3	a) Provide analytical Services (operational) for direct mailing and customer targeting activities. b) Reporting services for digital and web-based data	a) Not enough scale in the Analytical Services space b) Not enough going on in strategic advisory through Analytics due to scattered data bases in most indigenous organizations c) Some organizations with large databases prefer to invest in an in house consulting / analytical support. d) Forced to look overseas for offshore opportunities.
Financial Services	4	a) New businesses are introducing relevant data collection architecture with the hope that they can collect relevant market information for future use. b) Some tactical level programs are support with Analytics	a) Felt need is low in organizations for Analytics as the market continues to grow. b) Data exists in various forms – electronic, paper and sometimes on in experience of employees. It is hard to put them together to run a reasonable analytical process for supporting decisioning.

Appendix 1

The basis for having a discussion with Analytics practitioners is given below. These are broad guidelines that were used to initiate the conversation and thereon flexibility was maintained to ensure that newer issues that emerged during the course of the conversation were explored further.

1. Broad categories of expectations from the "Analytics" function in your organization.
2. What is accomplished, what is desirable in terms of output, what should be the areas to improve in the next 5 years?

3. What are the immediate constraints in improving productivity of the Analytics function and, the causes of the same - why are they hard to remove?

4. In the long run, what should the industry do to overcome these constraints?

5. Describe the specialist resource available/required in this function - where is it sourced from, their experience profile, skill mix and their future progression - any possible constraints?

6. Describe the leadership role for this function - profile, capabilities, long term orientation, possible gaps in future leadership

7. What causes or, defeats a thriving Analytics function / practice in an organization - roles and responsibilities of Analytics functionaries?

8. Why Analytics is important today and why it was not so earlier?

9. What to avoid, Unreasonableness in expectations?

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