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Big Data: From Abstract to Application

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For subscription-based companies, Big Data needs to solve a business problem, one that is important, tangible and substantial.

So much has been made of Big Data that it is often challenging to view the forest from the trees. Many have noted the challenges in Big Data: it can be time consuming and expensive to implement with an uncertain payoff. Further, because Big Data can be used in a myriad number of ways, it does not lend itself to a simple concrete distillation like, for example, an investment in hard physical assets that one can see and touch. As a result, many executives are unable to articulate exactly what Big Data is, or do not have an intuitive understanding as to what problems Big Data can solve.

Thus, it is instructive to address the concept of Big Data from three perspectives, starting with the most abstract and ending with the most concrete. By doing so, it is hoped that it can bring clarity to those who may not view Big Data for what it actually is: a new, critical solution.

1. *Most Abstract: What exactly is Big Data and how (and why) is it different from previous strategy planning tools and approaches?*
2. *Less Abstract/More Concrete: What are the specific problems in the planning efforts at subscription-based companies and how can Big Data solve those problems?*
3. *Most Concrete: What are some specific applications that can be undertaken only with Big Data – applications that provide tangible, quantifiable improvements to a subscription-based company's bottom line?*

Before we attempt to answer these three questions, realize that the forest is this: for subscription-based companies, Big Data needs to solve a business problem, one that is important, tangible and substantial. Otherwise, Big Data is an interesting intellectual exercise but nothing more.

Most Abstract: What exactly is Big Data and how(and why) is it different from previous strategy planning tools and approaches?

Big Data is such a misused term that if 100 executives were put into a room, 100 different definitions of Big Data would result. At Impact Consultancy, Big Data is an analytical approach that possesses the following unique characteristics:

- Extremely large data sets that were *previously* too cumbersome to manage and manipulate with any ease or consistency;
- An ability to drill down much more easily and deeply than *previously* into a large number (often 100 or more) of micro-targeted market segments;
- Timely (including real-time) updates at a similar level of detail to facilitate much more rapid changes in strategy than was *previously* possible;

- Sufficient integration of each of these characteristics to identify, pursue and capture new opportunities more quickly than was *previously* feasible.

You might have noticed the word "previously" appears in all four characteristics. This is by design, as this definition implicitly addresses one of the most common questions asked by those trying to wrap their brain around Big Data: Why is Big Data different from prior planning and analytical tools? Why did the term "Big Data" originate only recently? Did the business world not have data and computers previously to tackle Big Data?

Yes, those things existed, and there were certain instances where very large data sets could be manipulated at very low levels of granularity. However, the combination of drastically greater computing power and internet-based access to a plethora of new and increasing data streams eliminated two key technological hurdles that, until the last decade, prevented Big Data from becoming a broadly used, institutionalized tool.

Less Abstract/More Concrete: What are the specific strategy planning problems at subscription-based companies and how can Big Data solve those problems?

As already admitted, the definition above skews toward the abstract rather than the concrete. However, given the multitude of applications for Big Data (discussed later,) such a broad definition is required to encompass such diversity. Thus, it is useful to take the next step in detail and specificity, which is to describe Big Data in terms of what types of problems it can address in business planning processes.

Based on our experience with many subscription-based news media companies, when it comes to allocating marketing resources, most planning processes suffer from three important, inter-related problems:

Problem #1: At most news media companies, 50%-90% of the total value of a circulation department's non-core (i.e., new and at-risk) subscribers is concentrated in a small percentage of that circulation. Yet most companies do not know which is which because they have not done the proper analysis.

Problem #2: Without the right data or analysis, most news media companies set subscription goals without really understanding their true economic impact at the right level, making it impossible for that company to have any chance at assembling an integrated and optimized strategy & budget.

Each of these problems can be overcome only through a formal program that relies on the power of Big Data to parse very large data sets into dozens of micro-targeted segments in a timely way.

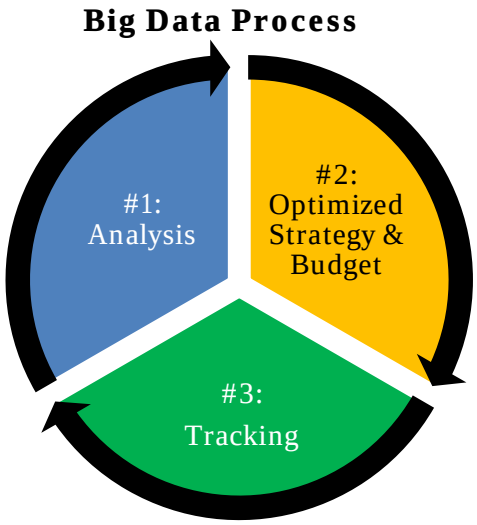
Problem #3: Most news media companies are unsuccessful in tracking the effectiveness of any strategy or new initiative at the optimal level of detail at the optimal frequency. As a result, no

fine-tuning of any implemented strategy is feasible, even if the original strategy goal was correct.

Each of these problems can be overcome only through a formal program that relies on the power of Big Data to parse very large data sets into dozens (and sometimes hundreds) of micro-targeted segments in a timely way. To fully understand what is meant by this, let's revisit each of the three problems outlined above and how Big Data tackles each with a compelling solution:

Solution #1: Analysis

Data is collected (often from the Tracking module described below) to perform analysis at the right level of detail to understand the true economic sources of underperformance, which guides future goals, optimal strategies and budgets.



Solution #2: Strategy & Budget

Using insights generated from the Analysis module implemented at the aforementioned level of 100 or more micro-targeted segments, an optimal strategy can be identified and translated into an explicit investment or marketing budget, which will subsequently be tracked against actual future performance.

Solution #3: Tracking

Using the milestones and goals generated from the Strategy & Budget module, actual performance can be tracked and compared at the same level of detail, at which point discrepancies can be identified and analyzed at that micro-targeted level.

Taken collectively, these three solutions combine to create a mutually reinforcing, cyclical solution. All three solutions are required, as each step helps to inform and improve the effectiveness of the other two solutions. In total, Big Data is able to address each of the major shortcomings in historical strategy and resource allocation planning, which in turn can identify opportunities that would not have been uncovered otherwise.

Most Concrete: What are some specific applications that can be undertaken only with Big Data – applications that provide tangible, quantifiable improvements to a subscription-based company's bottom line?

Everything just described probably makes complete intuitive sense. However, without actionable tactics and initiatives that add tangible incremental value to a business, Big Data, or any other analytical approach, does not matter.

As a result, we at Impact Consultancy want to share a handful of specific applications that have been used at one or more news media companies over the past five years, each of which represented a six or seven figure performance improvement opportunity annually. Note that this list is nowhere close

to exhaustive – while all of these applications are from the area of subscriber acquisition and marketing, such an approach works equally well in practically any business function where data resides.

It is important to note that none of these applications could have been undertaken in any meaningful way without an explicit Big Data approach. Using Big Data, our news media clients were successful in the following initiatives:

1. Identified programs within certain acquisition channels with costs per order that were so high that an adequate rate of return could never be generated. Those programs were terminated and marketing dollars redeployed to more profitable acquisition channels.

2. Expanded online starts program, which boosted overall rate of return and generated substantial starts growth with no discernible impact on starts from offline channels.

3. Pinpointed zip codes with the greatest "headroom" for increased growth, which allowed for a $5-$20 increase in commissions paid to motivate more sales from specific vendors while still retaining a positive rate of return for those starts.

4. Reduced emphasis on certain subsets of highly unprofitable direct mail subscribers, shifting those dollars to greater incentives for other types of direct mail starts and campaigns.

5. Isolated developing delivery routes that were subsidized by newspaper yet were performing at or above agreed upon levels, which allowed newspaper to curtail unnecessary subsidy payments and redeploy to more needy routes.

6. Identified acquisition vendors that were consistently generating under-performing starts. Shared this analysis with these vendors to explain their underperformance, make them more accountable and negotiate for better terms.

7. Quantified the impact of printing facility's economies of scale and its impact on how much management should be willing to spend in acquisition cost in order to secure marginal subscribers that do not generate an adequate rate of return on their own.

8. Forecasted how much extra top-line revenue and bottom-line cash flow would be earned (or lost) if the marketing budget was raised or reduced 10%, 20%, etc. This allowed for the selection of an optimal acquisition spend based on maximizing total returns.

None of these applications could have been undertaken in any meaningful way without an explicit Big Data approach.

To summarize the differences between Big Data and prior analytical planning tools, consider the following graphic.

	Prior Tools	Big Data
IT Systems (from which data is collected)	1	10+
Segments Easily Managed	10	100+
Frequency	4	365
Increase in Granularity	**40 : 365,000 or 1 : 9,125**	

Based on the viable increases in IT systems used (from which data is regularly extracted,) the number of segments explicitly managed and the frequency at which this analysis can be iterated and completed, we estimate that a Big Data approach is close to 10,000 times more granular than prior analytical approaches.

In reality, this estimate is understated. While this simplified graphic focuses on just three dimensions that are improved in a Big Data environment, there are many other dimensions along which a Big Data approach enhances the solution, which multiplies the degree of granularity and the benefits that are produced from it.

Thus, it is no surprise that Big Data is more than just an academic exercise. Instead, it is a real solution with a much greater capacity to solve real business problems.

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