Setting Up the Organization for Analytics

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Abstract

The heightened attention to everything data has many aspiring to do everything bigger and better with analytics. However, the effectiveness of data and analytics initiatives has varied widely despite the general recognition of their strategic importance; the prevalence of failure to meet expectations in data and analytics continues to be an often-cited phenomenon.

Whether analytics is one of the core activities of the organization (e.g. consulting companies) or exists to support its non-analytics core activities, analytical capability development tends to focus on hard and soft skills, tools, and technologies. Unfortunately, those alone do not solve the fundamental challenge of how to develop an organization that operationalizes and/or monetizes analytics effectively. Specifically, relatively little attention is paid to the organizational aspects of the analytical capability development. We explain some of the key organizational considerations for building an enterprise ecosystem for analytics, which among others include organizational structure, organizational culture, and cross-functional business processes, and discuss best practices and challenges in its implementation.

Key Words: Data, Analytics, Organizational Design, Organizational Culture, ROI, business process

1. Introduction

For better or worse, we live in a world that is hyper-attentive to data and analytics. There are a handful of organizations who have mastered data and analytics, others who have succeeded to various degrees, and others who aspire to succeed. Yet we continue to debate how and why a large portion of business intelligence and data analytics projects fail to meet expectations. Even with much effort and investment in the best tools and resources, conflicts and silos are all still too commonplace in data and analytics.

There is general awareness that impact from analytics is realized only when it is used to make a business/research decision, and analytics professionals recognize the importance of collaboration with non-analytics professionals. We talk about how to better understand each other, perhaps more than we have in the past. Despite that, there are persistent views that analytics professionals and non-analytics professionals do not understand, or worse, are incapable of understanding, each other. In reality, this gap continues to be a struggle, and organizations are trying to figure out how to best leverage data and analytics against this backdrop.

The intended end users of analytical outputs are commonly viewed as internal or external clients, or as collaborators, in recognition that someone should receive those outputs. However, it may be more constructive to think of them as consumers who drive demand.

We can think of examples from our everyday world in which consumers are willingly engaged with a product. People line up with excitement for a launch of a new smartphone without being coerced to buy the latest model. A new coaching staff of a sports team re-engages the fan base by connecting with the fans so successfully that the attendance triples; the fans are eager to experience the new product without ever being asked. How much more data-informed would your organization be if everyone in it were as enthused consumers of analytics as the consumers of the hottest technology or as the most fanatic of the fans?

1.1 The "Supply and Demand" of Analytically Derived Insights

The fact that there are people who produce insights and those who use those insights explicitly or implicitly, suggests that this is first an economics problem. We can think in terms of classic supply and demand, in which the analytics professionals supply insights and the users generate the demand for the insights. At one extreme of no demand, no one uses insights, while at the other extreme of no supply, there are no insights to be used; either way, analytics has no impact. Obviously, these are the extreme cases—there are many gradients in between, and even relatively mature organizations at times see analytics capabilities that go underutilized. How many elegant analytical models sit on the shelf unused, never to see the light of the day?

If we accept the notion that analytics is an economics problem, it is a relatively small stretch to put it into the context of the consumer market. Since a market is where sellers and buyers (voluntarily) exchange things, a market for insights exists between the analytics professionals and the business users of the insights. Although the things being exchanged are intangible and may not naturally lend to the idea of an exchange at first, it is clear there would be no business reason for analytics without those consuming analytically derived insights. It can further be argued that analytics adoption reflects the degree to which business users are willing to consume the insights (except in the context of regulatory compliance or other mandate, in which it may reflect more the degree to which they are obligated to consume). The analytics market thrives when insights are consumed extensively by conscious or subconscious consumer demand, creating an ecosystem that drives decisions throughout the organization.

1.2 Development of the Analytical Ecosystem as a Marketing Problem

The development of organizational maturity in data and analytics, then, becomes a marketing problem for the managers of the organization. The consumer marketing framework is not only immediately recognizable from the business perspective, but also provides a context to which many of us can relate as consumers. In terms of the four Ps of marketing, the product is the analytically derived insight that informs the user in making decisions, the price (what the consumer puts into the exchange) is what the user must do to obtain and leverage the insight, and the place (i.e. the distribution channel) is typically the organization and/or the management. Interestingly, it quickly becomes evident that "promotion" is a gap—it is not well defined when it comes to marketing the idea of analytics.

Producers do not survive without the end consumers. The buyers need to want to buy for a product to be successful in a consumer-oriented market. Similarly, the consumers of insights need to want to, and be motivated to, consume in exchange for or despite of impacts to them—to their behaviors, routines, tasks, or even ownership and pride. We must keep in mind that it is the buyer who determines the value of a product, not the producer

or the distributors, and analytically derived insights are no different from any other products.

Details may differ depending on whether analytics supports the enterprise core capabilities or is itself an enterprise core offering. The direct consumers of the insights are internal to the organization in the former case, external in the latter. However, these are simply differences in the target market and in the distribution; they have little impact to the framework, commercial and legal implications aside.

2. Organizational Considerations

What is unique about our case in data and analytics, however, is that the market usually exists in an organizational context—not an attribute of a typical consumer market. Some key organizational considerations are organizational change management and organizational design.

The organization must become ready to leverage the insights produced by the analytical resources. Unfortunately, this does not happen naturally; it requires deliberate and concerted strategies, but so does any marketing initiative to be successful. This is a challenge for the management rather than for the analytical professionals—organizational design and development are not within the natural skill sets of analytical professionals.

2.1 Need for Appropriate Organizational Design

Among W. Edwards Deming's well-known quotes is the following: "a bad system will beat a good person every time" (quotes.deming.org/10091). If we recognize that an organization is a system of people, and that an analytical ecosystem happens in the context of an organization, the system in which it exists must be appropriately designed for it to work. To analytics professionals, however, an organization is often something that simply exists for them to occupy. A bad organizational design will beat the good resources in it every time; it requires to be well-designed as a system, and leaders need to run and manage this system.

2.1.1 Considerations for the Analytics Distribution Channel

The primary distribution channel (i.e. "place") is the organization as mentioned earlier, and this includes the functional structure, business processes, methodologies, and effective governance, among others, specifically and collectively designed at the enterprise level for data and analytics. The prospective consumers of insights are less likely to be engaged if they do not understand what the organization is trying to accomplish with analytics; to complicate the matter, neither analytics itself nor insights derived from it are tangible on their own. The tools-and-skills-first mentality is difficult to discard, and this only makes analytics and insights harder to sell. The day-to-day business consumers of analytically derived insights need to be engaged with the understanding of a bigger purpose, and the organizational design must encourage such understanding and engagement.

2.1.2 Aligning the Organizational Design to the Information Value Chain

It is interesting to observe that data is often organizationally framed as an adjacency to technology. Recent high-profile data breaches and new regulations have forced information risk management into one of the top priorities, and consequently many organizations are addressing information management and governance primarily from the technology perspective, with a heavy focus on risk and compliance. While the need for risk management and compliance is unquestionable, the currently prevailing approach does this

outside of the context of the business need for information, or even completely independently of value of the information to the business; that is, it only addresses the need to manage the information supply chain and not information *value* chain.

While no analogy is perfect, we can find a pretty good one in something we may all appreciate: cookies. Consider the following:

- Data are the ingredients to the insights, as the flour, the butter, etc. are the ingredients to the cookies.
- Analytical development results in how to formulate the explanations that lead to insights from the data, just as recipe development results in how to formulate cookies from the ingredients.
- Technology stores, transports, and provides the tools to transform the data into insights, just as appliances and vessels store, transport, and provide the tools to mix and bake the ingredients to produce cookies.
- The business user consumes the insights, just as the consumer (buys and) eats the cookies.

The cookie value chain is complete when the cookie is consumed; without consumption of cookies, the value chain and its components have no reasons to exist other than for intellectual reasons. With cookies, this is intuitive to most of us. When it comes to data, however, the focus continues to lean heavily toward storing, transporting, and accessing data—about the appliances, vessels, and tools. Cookie producers certainly have risks to manage (e.g. fire) and compliance to address (e.g. health regulations), but we also understand that bad ingredients do not turn into great cookies, and undesirable cookies do not sell well.

To ensure that the value chain generates the desired value, the responsibility of each component must be owned by those who understand the impact of their expertise to the end consumer. As consumers, we understand that while the butter and eggs are stored in refrigerators, manufacturers and operators of refrigerators are not experts on butter and eggs, and we understand that cookies are baked in an oven does not make oven engineers experts on recipe development.

In contrast, the data responsibilities and even analytics responsibilities often fall under IT. On the surface this seems reasonable since technology often generates the data as well as provide key capabilities in tools and environment. However, there are at least two challenges with this approach: first, it assumes custody means expertise, and second, it is designed to manage only the information supply chain, stopping short of managing the value, and dual roles are rarely as effective in practice as intended in a value chain.

The line is somewhat blurrier between data and analytics. Recipe developers should have a good understanding of the ingredients, especially about quality of the ingredients. However, their primary activities revolve around the development of the recipes and not the sourcing and the management of the ingredients; they may carry out those activities simply in support of their primary activities. Just as cookie manufacturers would consider strategies for the ingredients vs. its secret formula two interrelated but different things, data strategy and analytics strategy are two interrelated but different things. In practice, it is very tricky for a single person to be accountable for two different areas of responsibility equally, because we are all humans.

In smaller organizations, or in organizations at the beginning stages of information value chain management, one person may own multiple areas. In fact, this is often necessary for financial efficiency—some organizations cannot make the business case for funding three separate roles, and it would be irresponsible to insist otherwise when it does not make sense. In this case, managers need to ensure that each area of responsibility is protected and given proper amount of attention.

That said, multi-functional roles generally do not satisfy the needs of the larger and/or more mature organizations, even though the commonalities among the three areas intuitively lend well to the idea of synergy. It is not uncommon for a single person to be competent in multiple areas, but we need to be careful not to confuse subject matter competency with the level of attention given, the latter of which is influenced by many factors. While it is theoretically possible—for example, data and analytics are sometimes combined under a single umbrella—in practice, dual roles routinely result in one area getting the short end of the stick. Unfortunately, invariably it is data that receives the least amount of attention, perhaps because it is the least glamorous among the three, but also because it is usually the farthest removed from any revenue or expense. Even in the case of a dual role in data and analytics, the natural focus is on the sexier analytics over data, however well-intentioned he or she may be.

The key is to clarify subject matter ownership, responsibilities, and general rules of engagement, rather than to implement detailed structures, rules, or tools. It is also important to understand that a change in responsibilities and ownership does not necessarily mean a change in organizational reporting structure. Clearly defining functional ownership and responsibilities and protecting those roles are far more important than the actual reporting structure. Of course, all this needs to be done in the way that best suits the organization and its business goals, and the Human Resources function should play an important part. However, it does not have to be complicated; in fact, far too often the fundamentals become lost in the focus on implementing the details of information management.

Finally, none of this means that the information supply chain does not need to be managed; rather, information risk management, compliance, and the general supply chain management must be an integral part of the larger strategy and management of the information value chain. After all, what is the importance of the tightly managed appliances that do not fail or of the perfectly timed cookie shipment if no cookies are consumed?

2.2 Need for Organizational Change Management
It is important to note that this ultimately involves a change or a transformation in organizational culture. The consumers have a price to pay, which may include fears and uncertainty from changes in behaviors, in processes, in roles and responsibilities, and/or in structure, not to mention the fear of losing one's job due to automation—however unrealistic and irrational that may be. Furthermore, changes tend to be more fundamental in the earlier stages of data and analytics maturity.

Addressing these issues requires "promotion" in marketing terms; as pointed out earlier, this is rarely very well defined in the context of data and analytics. Analytics adoption is often erroneously expected to be achieved through the skills of the analytics professionals; rather, this is an organizational matter, and the skills required to implement the necessary changes are outside of the typical skill set of analytics professionals. Again, the Human Resources function should be heavily involved.

3. In Closing

To be successful in deploying data and analytics to improve business requires solving what is really a marketing and an organizational design problem. This means that analytics evangelists at any level must think like marketers and HR professionals. Tailoring this framework to the particularities of data and analytics while incorporating organizational considerations is not straightforward and presents a challenge for the managers. It is important to recognize that the problem is rarely with data and analytics themselves, but with the readiness of the organization to consume analytically derived insights and how prepared the managers are to develop that readiness.