

# Enterprise BI Essentials: The Convergence of Self-Service Autonomy and Enterprise Scalability

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## What You Need To Know

The resurgence of the self-service analytics paradigm has revolutionized the world of Business Intelligence and data analytics. However, as enterprises have developed solutions in response, Blue Hill believes that we are currently in a new generation of enterprise business intelligence (BI) and analytics that brings enterprise scope and self-service discovery together.

Today, as end users begin to demand solutions that do not compromise on agility *or* scalability, a middle ground is developing in enterprise Business Intelligence offerings. This hybrid approach blends self-service autonomy with the governance, control, and collaboration required for true enterprise deployments. This paper examines the evolving perspective of BI tools and outlines a framework that decision makers should follow to invest in an enterprise-wide self-service BI solution that is right for their organization.

## Blind Spots Within the Self-Service Resurgence

To understand how self-service discovery solutions have fallen short, consider the evolution of enterprise analytics. The success of early pioneers such as Cognos Powerplay and individual tools such as Microsoft Excel proved the value of on-demand access to insights. These tools set the stage for enterprise Business Intelligence solutions to rise to prominence. BI then moved to the cloud, which accelerated access to scale and performance. From here, a new wave of business analyst-centric innovations inspired a generation of self-service data discovery offerings that forced massive market disruption. In response, established enterprise players providing governance and deep functionality have been pushed to evolve, innovate, and launch their own product lines to provide an easy-to-use user experience in today's world of enterprise BI.

## AT A GLANCE

### Audience

Business Intelligence and analytics decision-makers

### Summary

The traditional black and white comparison of self-service vendors vs. enterprise scale vendors is quickly breaking down. A convergence of capabilities means that decision-makers no longer need to compromise enterprise scalability and governance to achieve individual business user agility.

### Solution Consideration

This paper examines IBM's investment in its IBM Cognos Analytics and IBM Watson Analytics products in terms of addressing modern enterprise BI needs.

The value proposition for self-service analytics and discovery is clear: allow organizations to democratize insights from data. Rather than wait for a monolithic IT department to process a deluge of requests, decision-makers can have on-demand access to the information they need at their fingertips. The enthusiasm for such innovations is rightfully deserved, but organizations cannot overlook inherent challenges that are incumbent to this wave of self-service innovation. The self-service resurgence successfully improved individual agility but, as a consequence, gave less consideration to areas of governance, collaboration, and scalability.

This most recent self-service analytics revolution has already asserted itself and left an indelible mark on the software landscape as new entrants to the market were quick to characterize large incumbents as ‘legacy’ and ‘monolithic’. In recent times, these established vendors have all responded by releasing massive refreshes of their existing products, such as IBM Cognos Analytics and MicroStrategy 10, or new products, such as SAP Lumira and IBM Watson Analytics. Each has firmly responded to the changing market conditions and invested heavily in meeting this demand. There is no dispute that end-user agility through the self-service access is now table stakes in the enterprise analytics conversation.

However, there are inherent tension points associated with this wave of the self-service revolution. In pursuit of individual agility, self-service solutions initially provided individualized workspaces through desktop applications. This helped to enable fast response times and a more accessible means for line-of-business analysts to directly interact with data (in a superior way than what they could achieve with Excel), but it did little to ensure scalability and governance. For instance, if individual analysts are each working on a desktop-based solution, they are very likely creating data extracts unique to their own analysis. Without shared business logic of how data are defined or a common environment in which the data are drawn from, each analyst would effectively be working from their own silo of data.

As an example, consider an instance where two analysts are asked to investigate the impact of advertising on revenue. If one analyst uses ‘recognized revenue’ while the other uses ‘bookings,’ their findings may yield conflicting results because these analysts face the danger of not maintaining consistent business logic. Moreover, if each analyst is their own data silo, organizations are placed in a difficult situation if they wish to ensure that a new data source is effectively disseminated for use throughout the organization. Similar difficulties arise if organizations wish to avoid duplication of work by publishing applications, dashboards, or curated data sets to a broader team. Desktop-only solutions make such needs fundamentally difficult by making data governance effectively impossible to fully enforce and can negatively impact overall decision-making and alignment.

Most important of all is that this onslaught of self-service data discovery solutions addressed a distinctly different challenge than the foundational core BI use cases of dashboards and reporting. The vast majority of the insights that organizations glean from data, whether it is the C-suite or department managers, come in the form of scheduled reports or dashboards. In contrast, the initial generation of self-service discovery solutions set out to solve a different challenge of data accessibility and individual discovery. As such, a clear divide developed in the marketplace; incumbent legacy providers were far better suited at building reports and dashboards at enterprise scales, while self-service discovery solutions poorly addressed these issues. They instead focused on agility and

providing on-demand insights. The result was a marketplace in which an organization could not choose a single solution to address both their self-service discovery needs and still achieve enterprise scalability.

However, this division of individual exploration vs. organizational consistency is no longer the case. Vendors from both sides of the equation have moved towards a hybrid approach. Leading vendors now balance self-service autonomy and flexibility with the required governance and collaboration capabilities to enable enterprise-wide support.

### A Third Way: The Best of Both Worlds

Blue Hill Research observes that a new hybrid paradigm has emerged that blends the flexibility of self-service analytics with the robustness at scale of enterprise-grade BI solutions. Figure 1 details the changing paradigms within the broader BI marketplace. Blue Hill Research suggests that readers evaluate their current solutions and prospective solutions with the following table as a guideline.

*Table 1: The Emergence of a New Enterprise Analytics Paradigm*

Dimension	Factors for Consideration	Centralized IT Paradigm	Self-Service Paradigm	Hybrid Paradigm – Self-Service at Enterprise Scale
<b>Governance</b>	<ul style="list-style-type: none"> <li>Assurance of meeting data security and privacy protocols and legislation</li> <li>Permission and accessibility of data to different segments of relevant stakeholders</li> <li>Data consistency across all analytic applications</li> </ul>	Locked-down and monolithic	Decentralized and inconsistent across user population	Bi-directional governance allows leadership from centralized IT, but effectively adapts to decentralized input. Allows for a dynamic spectrum of access and permissions that evolves based on changing business requirements.
<b>Data Modeling</b>	<ul style="list-style-type: none"> <li>Efficiency and speed of analytic creation</li> <li>Ability to re-use existing data for future workflows</li> </ul>	IT-driven models and data structures	Analyst-built models	Support for analyst-built models and IT-built models. Ease of leveraging models for future analysis across different teams.

Dimension	Factors for Consideration	Centralized IT Paradigm	Self-Service Paradigm	Hybrid Paradigm – Self-Service at Enterprise Scale
<b>Data Enrichment</b>	<ul style="list-style-type: none"> <li>Ability to integrate external and third-party data sources</li> <li>Opportunity to cleanse and parse complex and unstructured data</li> <li>Metadata integration</li> </ul>	IT-developed and reactive to business needs	One-off introduction of relevant data sources	IT and line-of-business collaboration to fluidly introduce IT-sanctioned data sources and join with existing sources.
<b>Analysis</b>	<ul style="list-style-type: none"> <li>Ability to identify causal drivers of business outcomes</li> <li>Opportunity for predicting future performance</li> <li>Visibility into operations and ease of drilling down into underlying data points</li> </ul>	Model-based analysis	Freeform and natural language	In addition to model-based analysis with both freeform and natural-language exploration. Includes graduated user experiences that match level of expertise and analysis objectives of different users from basic to advanced analytics.
<b>User Experience</b>	<ul style="list-style-type: none"> <li>Amount of training required before performing value-added analysis</li> <li>Ease of collaboration between technical and non-technical consultants</li> </ul>	Requires significant customization	Dependent on partnerships with other providers to fully manage flow of data from source to insight	Consolidated user interface across full stack of data lifecycle, including source, preparation, analysis, and visualization.

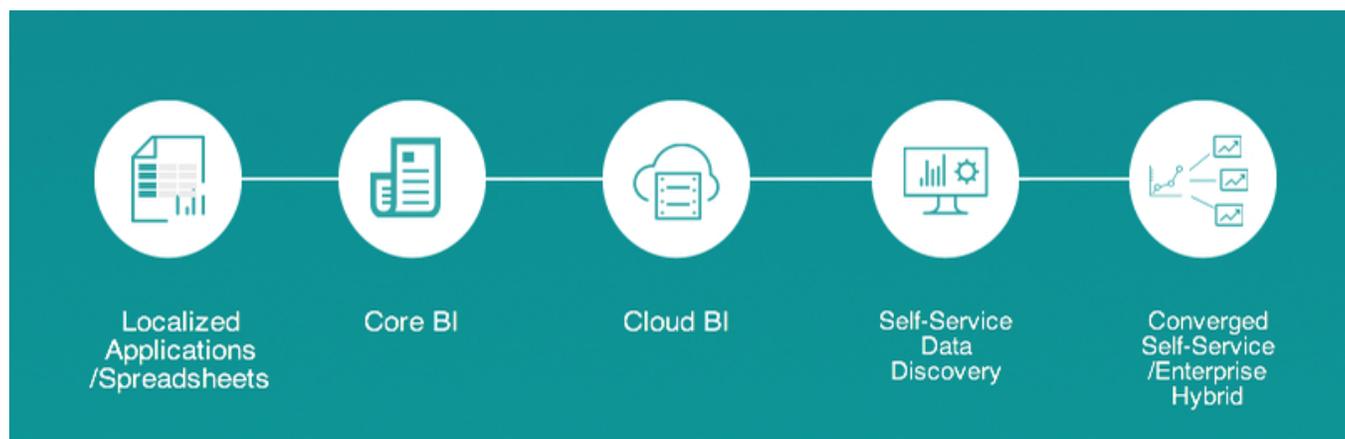
Source: Blue Hill Research, June 2016

## Market Landscape: The Evolution of Analytic Capabilities

Although the marketplace has hundreds of data and analytics software vendors, only a subsection of the market offers a blend of self-service agility and enterprise scalability somewhere along the spectrum as outlined in Figure 1. In general, top players that offer a hybrid approach to enterprise analytics can be segmented into three groups.

Either they (1) had to evolve from core BI functionality to introduce agile self-service capabilities; (2) came to market first as a self-service discovery tool and have had to evolve into a broader enterprise-grade- platform, or (3) have more recently come to market and were built originally within this hybrid paradigm. Blue Hill observes, that most frequently the groupings of top offerings are a function of when the product was introduced to the market. The older the company, the more stages of evolution they have necessarily gone through. Figure 1 outlines a general evolutionary path that Blue Hill Research has observed in the BI and analytics marketplace.

*Figure 1: Evolution of Business Intelligence and Analytics Marketplace*



Source: Blue Hill Research, June 2016

Blue Hill believes that evaluating appropriate BI solutions for various business decision-makers is best done by assessing the landscape within the context of the aforementioned evolutionary buckets. Each group brings with it a set of characteristics that inform its overall value proposition.

To gain market share, the newest offerings from traditional BI vendors have had to keep pace with the fast-moving marketplace and fight off new entrants that led the way with innovation in cloud connectivity, mobile access, the self-service revolution, and consumer-grade user experiences. These market leaders were not always the leading charge of spearheading innovation in these areas, since they also had to support a large quantity of enterprise BI customers. But still, those who have been able to achieve continued success in the marketplace have proven the resiliency of their core strengths and ability to keep pace with market trends.

Blue Hill Research offers the growth and evolution of established enterprise analytics player IBM as an example of the new enterprise BI paradigm. IBM's roots extend back to the first wave of self-service tools with offerings such as Cognos Powerplay and Impromptu. Since then, IBM has evolved through the centralized BI paradigm focusing on key aspects of IT-centric deployments such as data governance, security, and scalability. Now IBM has successfully transitioned again into the new era of hybrid enterprise grade cloud and self-service offerings.

## Evaluating IBM Cognos and IBM Watson Analytics

IBM has had a major presence in the enterprise analytics space through a number of its products, including most prominently IBM Cognos Analytics, and IBM SPSS. More recently, in September of 2014, IBM announced IBM Watson Analytics. As decision makers evaluate the capabilities of IBM, they should consider Cognos Analytics and Watson Analytics as separate, although complementary, solutions.

Cognos Analytics has long been an industry staple deployed in many large organizations in a centralized and IT-centric manner. Recently, IBM has introduced a series of enhancements to push forward innovation as market and customer needs evolved. In December 2015, IBM announced a substantial refresh of IBM Cognos that brought about a simplified and guided user interface and made self-service accessibility more prominent for authoring, data modeling, and consumption. IBM stresses areas such as bi-directional governance and end-user autonomy that ultimately move the offering within the new self-service hybrid paradigm.

Decision-makers should note that IBM Watson Analytics, a cloud-based service, is offered as both as a standalone solution and as a complementary purchase in conjunction with Cognos Analytics. As a standalone deployment, IBM Watson Analytics has a freemium pricing model for standalone deployments and is available through professional licensing for use with Cognos Analytics.

The offering has a graduated user experience that is intended to augment individual's efforts through smart suggestions and automatic identification of patterns within data sets. The graduated user experience provides varying levels of accessibility and analytics sophistication depending on the objectives and persona of the user. This means Watson Analytics is able to provide agile self-service analytic access across a spectrum of users whether they are a data scientist, power user, or an inexperienced casual user. Readers should be aware that IBM has introduced connectors to bring data from Cognos Analytics into the Watson Analytics environments and integration points designed to facilitate collaboration between the comparative strengths of each offering. This integration is designed to promote workflows that identify patterns within their data and to isolate drivers of business outcomes based on recommendations from Watson Analytics to. Once these insights are identified, Cognos Analytics can operationalize this information and disseminate insights in a more formalized way through mechanisms such as monitoring alerts or scheduled reports.

## Conclusion

The popular narrative that has developed in the marketplace today is one in which extremes of the analytics spectrum are pitted against one another. Younger, upstart organizations are quick to point out that incumbent vendors are too IT-centric and monolithic to provide businesses with adequate analytic agility. Conversely, more established vendors are quick to call into question the enterprise readiness of younger more business-centric competition. However, among top players, this is largely a false dichotomy as a convergence is occurring from both sides of the spectrum. Business decision makers evaluating the best option for their organization's environment must know that scalability compromises do not need to be made as they seek solutions that allow for flexible business user led exploration of data.

Because every major entrenched BI and analytics vendor has taken steps towards this new convergence of self-service and enterprise capabilities, Blue Hill Research recommends that companies using established products for core BI use cases investigate the self-service capabilities that their current vendors have developed. The opportunity to extend analytic access to a more distributed and agile approach while remaining continuity of provider, data, and established functionality, potentially represents financial and efficiency gains as compared to patch-working together multiple solution providers.

In understanding how BI and analytics vendors fit into the marketplace, it is important to be aware of their evolutionary origins. The path that solutions follow as they mature into their current offerings is a good indicator of where solutions are likely to have market-leading functionality and where their capabilities are designed to achieve market parity. As such, Blue Hill Research's audience should understand the larger macro shifts in the enterprise BI and analytics marketplace and assess the opportunity to address core organizational challenges that they face. For organizations to turn data into actionable insights at an organizational scale, they must balance competing forces of control and agility. Today's top vendors have come to market with hybrid offerings that bridge this gap and present an opportunity for greater success in their data initiatives.

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James Haight is a research analyst at Blue Hill Research, focusing on analytics and emerging enterprise technologies. His primary research includes exploring the business case development and solution assessment for data warehousing, data integration, advanced analytics, and business intelligence applications. He also hosts Blue Hill's Emerging Tech Roundup Podcast, which features interviews with industry leaders and CEOs on the forefront of a variety of emerging technologies. Prior to Blue Hill Research, James worked in Radford Consulting's Executive and Board of Director Compensation practice, specializing in the high tech and life sciences industries. Currently, he serves on the strategic advisory board of the Bentley Microfinance Group, a 501(c)(3) non-profit organization dedicated to community development through funding and consulting entrepreneurs in the Greater Boston area.



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