# Achieving Value through Business Analytics

A Three-Part Series

scottmadden
MANAGEMENT CONSULTANTS


2015
2016
2017
2018
2019
2020

## Contents Include:

# 01

# BUSINESS ANALYTICS

## How to Bridge the Gap between Knowledge and Results

### INTRODUCTION

Business analytics and its potential value to organizations have been a frequent topic of discussion across industries over the last several years. Organizations have spent significant time and money installing and stabilizing Enterprise Resource Planning (ERP) systems, data warehouses, and Business Intelligence (BI) tools in an effort to more accurately capture operational data and use it to predict future business performance. The age of social media has spawned a whole new focus on "unstructured data" and how to analyze such information, while advances in digital and mobile technology have allowed us to collect data for almost anything. As a result, companies are finding themselves awash in data—about their employees' skills sets and experiences, customers' preferences and habits, supply chain throughput and costs, and industry and market trends, etc. With this availability of data has come the obvious question—what should we do with all this information and how do we use it to our advantage?

**ScottMadden believes that, while predictive business analytics is only going to expand, the two primary obstacles to using analytics effectively are the lack of technology integration and the inability to secure the right talent.**

ScottMadden believes that business analytics is here to stay. Organizations have come to realize that tools exist to make fact-based decisions with less reliance on "gut" instincts. Predictive analytic techniques combined with real-time data updates enable dynamic decision-making, and companies have accepted that this has real value. However, inherent struggles remain from bridging the gap between where most organizations are today to the efficient world of tomorrow where such business analytics is in place. Organizations have bought into the concept, but many are still unsure how to "make it happen" for them.

While the topic of business analytics has been around for some time, only a few companies have been able to take advantage of analytics and see its benefits. This lack of adoption is indicative of the level of effort required to achieve the benefits and of the fact that this space is still an emerging capability. Companies are becoming aware of the data available to them but have yet to turn the corner in determining how to proactively use it to manage their business. To reach the desired end state often requires investment in expensive technologies, a focus on data integration of current information, and active recruiting and development of specialized knowledge and skills in the employee base.

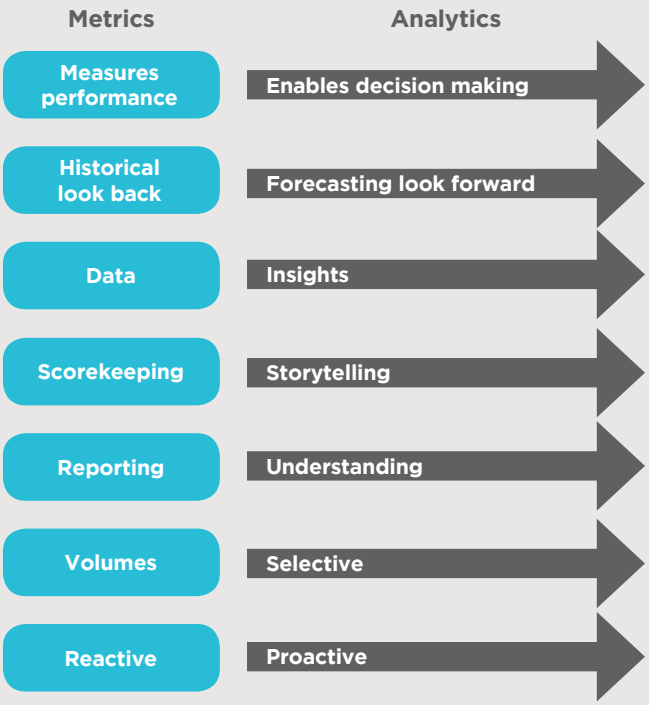
### DEFINING ANALYTICS

SAS, a leader in BI and predictive analysis tools, previously defined analytics as "a wide range of techniques and processes for collecting, classifying, and interpreting data to reveal patterns, forecasts, anomalies, key variables, and relationships. The goal is to derive new insights that drive better decisions and more effective operational processes."

More simply put, ScottMadden believes analytics defines the process by which we attempt to bridge the gap between knowledge (data) and action and how we seek to ensure future actions reflect these data-driven insights. Analytics is not simply capturing the monitoring of metrics; it focuses on driving insight and action from past, and even current, behaviors and information.

Analytics helps us (1) discover what has changed, (2) anticipate what will change, and (3) become more proactive making business operations decisions. For example, in the retail industry, sifting through

Figure 1: Differences between Metrics and Analytics




historical purchasing data and social media buzz (via Twitter trending and Facebook likes) allows an organization to anticipate that a historically hot product is about to lose interest. They can then quickly use this information to change their shelving plans for the product, replacing it with a new "up-and-coming" product and communicate to their suppliers to cut back on overall production. As detailed in this example, the use of analytics enables organizations to get ahead of the game by giving executives the ability to make sound business decisions more quickly.

## THE CASE FOR ANALYTICS

Analytics isn't simply a buzzword—a multitude of studies show that organizations are investing, or planning to invest, in developing their analytical capabilities. Companies are starting to realize the competitive advantage that exists with analytics. The organizations that have been early adopters confirm the belief that analytics gives them a competitive advantage and allows them to be more nimble in the marketplace.

According to APQC's 2019 Trends in Data and Analytics Survey, 73% of organizations increased their investment in data and analytics over the past three years. 42% of organizations have an independent, standalone department to manage analytics programs. 56% of organizations consider their data and analytics program to be effective or very effective. The 2018 Data & Analytics Global Executive Study and Research Report by MIT Sloan Management Review finds that more than half (59%) of managers say their company is using analytics to gain a competitive advantage. Organizations that demonstrate higher levels of analytical maturity saw a marked advantage in their customer relationships. The most analytically mature organizations are twice as likely to report strong customer engagement as the least analytically mature organizations. The analytics arms race may have begun, and if organizations are not using analytics to support business decisions, some data suggest they may ultimately lose their competitive edge.

**Analytics helps us (1) discover what has changed, (2) anticipate what will change, and (3) become more proactive making business operations decisions.**

The case for analytics is further supported by the growth in data available to companies. IDC predicts that the collective sum of the world's data will grow from 33 zettabytes in 2019 to 175 zettabytes by 2025, for a compounded annual growth rate of 61%. Installation of ERP, customer relationship management, and BI tools has increased the available data and provided a giant statistical sample for enterprises to mine and analyze.

However, while organizations anticipate their data volumes to grow, the majority is not yet certain how they will manage such large amounts of data nor whether they can distill key insights from such data in the speed necessary to inform business decisions.

## THE CHALLENGES FACING ANALYTICS

Unfortunately, challenges continue to exist for companies trying to leverage data and incorporate analytics into their strategic and operational decision-making. From ScottMadden's perspective, the two biggest challenges facing organizations today reside in the integration of technology and the changing demands on their talent pool that analytics demands.

Poor data literacy, culture challenges to accept change, and lack of relevant skills or staff are the biggest internal roadblocks to success and business growth, as ranked by respondents to Gartner's third annual CDO survey. According to TDWI, barriers to improving the use of data and analytics to drive decisions include executive support, difficulty accessing and integrating all relevant data, lack of skills to build out BI/analytics, insufficient data quality, and data governance and security concerns.

**The past decade has seen an investment by organizations in a variety of technologies and tools to help their business, from ERPs to BI tools. It is the integration of such tools that can enhance the use of predictive analytics.**

Data integration is critical because it affects both the quality and the speed by which data can be assimilated, analyzed, and digested. It helps drive the cross-functional views and enables a better understanding of the overall business. However, integration by itself is not the only issue. Knowing how to use and translate data into insight and action is one of the biggest hurdles facing companies on their path to leveraging predictive analytics. According to Gartner's A Data and Analytics Leader's Guide to Data Literacy report, an information language barrier exists within majority organizations, rooted in ineffective communication across a wide range of diverse stakeholders. As a result, data and analytics leaders struggle to get their message across and information assets are underutilized.

This lack of analytics skill sets is forcing companies to recruit differently and reskill their resources, as well as creating specialized departments to focus on such recruitment and development activities. Gartner predicts that by 2020, 50% of organizations will lack sufficient AI and data skills to achieve business value. NewVantage Partners' 2019 Big Data and AI Executive Survey shows that 95% of business analytics adoption challenges are attributable to people and organization issues. This needs to change if they want to stay competitive. Data transformation is forcing companies to change who they are staffing in corporate roles—analytical mindsets and a focus on insight generation and storytelling are becoming a premium.

Figure 2: TDWI Best Practice Report: What It Takes to Be Data-Driven, 2018

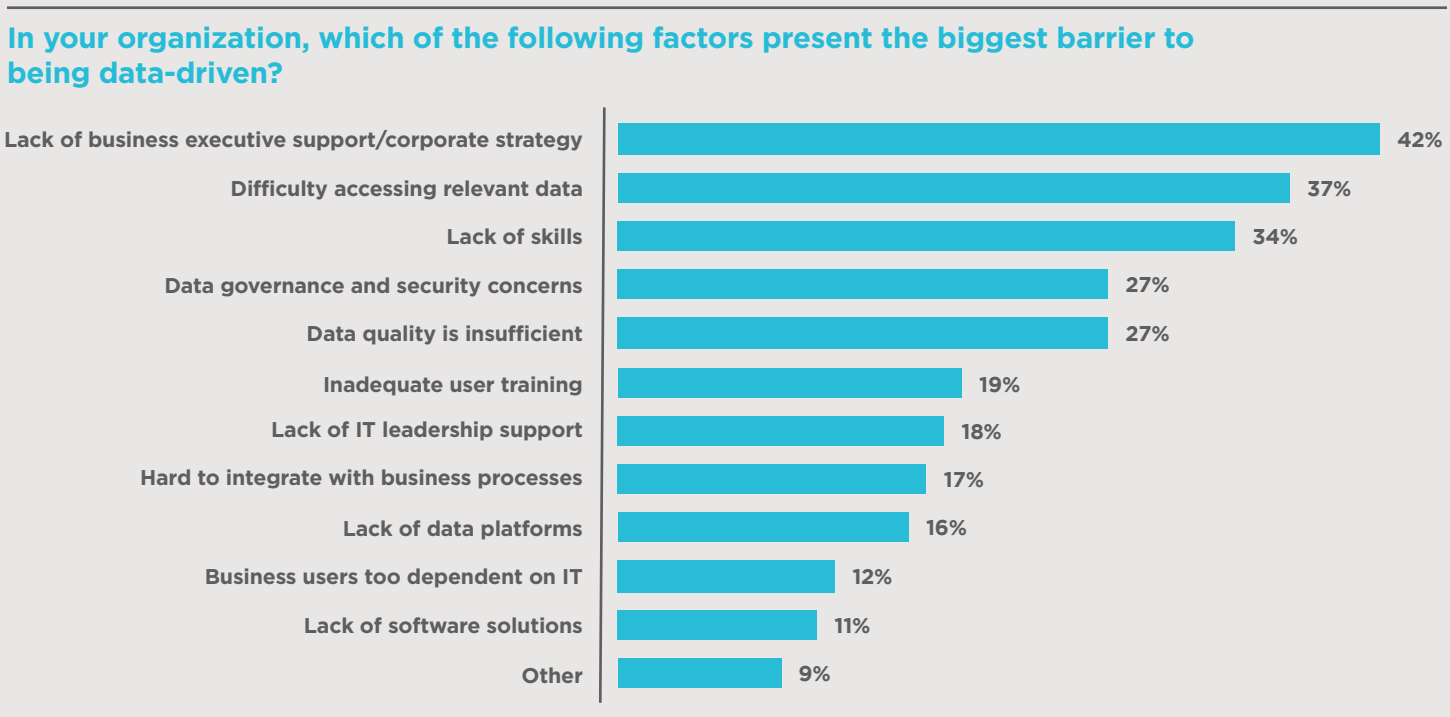


Figure 3: NewVantage Partners, Big Data and AI Executive Survey 2019

| Principle Challenge to Becoming Data-Driven | 2018 | 2019 |
|---|---|---|
| **People** | 48.5% | 62.5% |
| **Process** | 32.4% | 30.0% |
| **Technology** | 19.1% | 7.5% |
| **Biggest Challenge to Business Adoption** | **2018** | **2019** |
| **Lack of organizational alignment/agility** | 25.0% | 40.3% |
| **Cultural resistance** | 32.5% | 23.6% |
| **Understanding data as an asset** | 30.0% | 13.9% |
| **Executive leadership** | 7.5% | 7.0% |
| **Technology solutions** | 5.0% | 5.0% |

However, if organizations are willing to focus their efforts on overcoming these obstacles, the end state so often described is not an unrealistic outcome. As the three examples below show, companies are integrating technologies and pooling resources together to help bring insight and drive value through the use of analytics. Such investments can pay off if the appropriate investments are made.

## 01 Integrating Technology: Procter & Gamble

Procter & Gamble (P&G) CEO has been on a "mission to 'digitize' the companies processes from end to end" and has been developing and building its analytics since 2009 with the launch of its business sufficiency program.

The program leverages a series of analytical models helping executives interact with the data to predict market share and other key performance indicators 6 to 12 months into the future.

The models focus on exception, are predictive, allow for scenario planning, and aggregate data from across P&G. The result is the pace of decisions has increased, and data has moved out of silos.

## 02 Focusing on Analytical Skills: The Dow Chemical Company

The Dow Chemical Company has an advanced analytics group that conducts analytics for the organization at large in a variety of areas.

In a 2011 example, the group leveraged a large amount of historical data from within their supply chain and the external market to better understand the statistically significant drivers of their raw material prices.

The analysis was unique for Dow's supply chain, and it led to better anticipated pricing and improved supply chain cost predictions.

## 03 Leveraging Technology and Resources: Hewlett Packard's Global Business Services

Hewlett Packard's (HP) Global Business Services (GBS) has been at the forefront of analytics in a shared services environment. Having delivered on the more traditional, multi-function shared services for the company over 10 years, GBS had to expand the focus from simply cost efficiency and tight operations management to more value creation and transformation. Two examples showcase such efforts:

- Customer intelligence analytics – Partnering with marketing and strategy, GBS provided analysis of the customer base to identify optimal targets for technology refreshes, potentials for re-sale or up-sale, etc.
- Early renewal reporting – Monthly analytical reporting services to the sales function identified service contracts that were expiring but had not yet been followed up on for renewal

# CONCLUSION

The investments in technology and talent that companies need to make to achieve the benefits of business analytics are not insignificant. However, as shown by several companies already leveraging business analytics, the value of such analysis can provide a competitive advantage. The key question for organizations now is how to make the necessary technology and talent investments work best for them in order to help position themselves competitively. ScottMadden believes the pursuit of, and need for, expensive technologies and specialized skills leads to sharing analytical services across corporate functions. In many ways, shared services may provide the best vehicle to overcome the biggest obstacles facing a company's goal of implementing business analytics. For more detail on shared services' role in business analytics, please read ScottMadden's paper titled "Business Analytics: The Next Wave of Value for Shared Services."

# 02

# BUSINESS ANALYTICS MATURIY

## Evolution of Business Analytics for You

### INTRODUCTION

Many articles and papers have been written about the benefits and value of analytics. Over the last several years, leaders have realized the impact effective analytics can have on their organizations. As these leaders attest, the benefits are indeed real. However, the process to achieve effective and comprehensive predictive analytics capabilities is a journey. And, as with any journey, the best way to understand where you would like to go is by first knowing where you are.

### OUR PERSPECTIVE

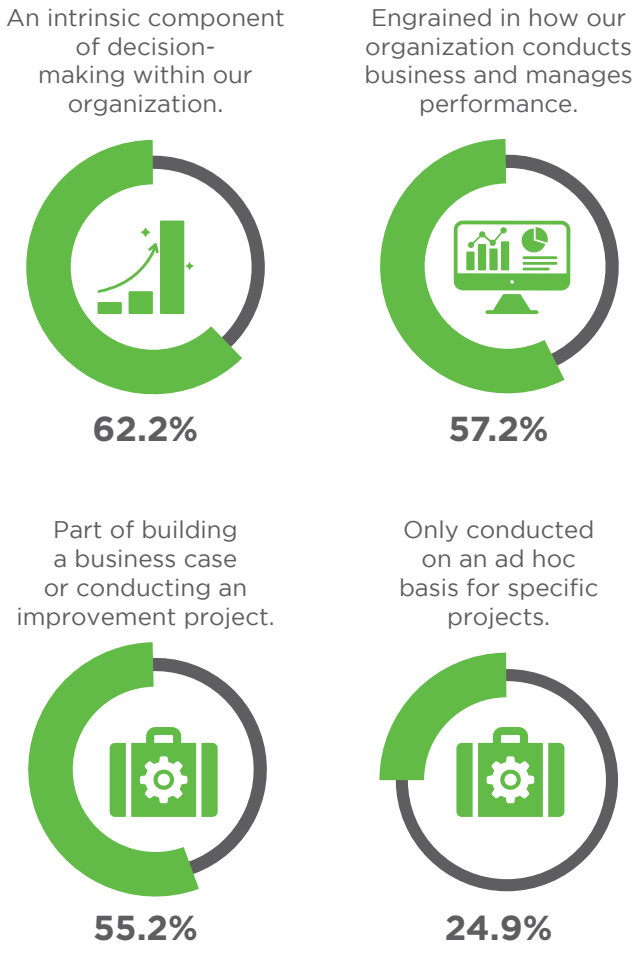
The process for developing the leading-edge analytics capability typically involves four key stages of maturity described in detail in the ScottMadden Analytics Maturity Model shown on subsequent pages. Each stage has defined characteristics and organizational behaviors that highlight where an organization is in its journey. Each stage provides a foundation for the next (i.e., it is hard to skip a stage in the evolution of analytics capabilities in your organization). This model can provide your organization a roadmap to enhance your current analytics capabilities.

### THE EVOLUTION OF ANALYTICS

APQC's 2019 survey on data and analytics trends indicated that for nearly two-thirds of organizations, analytics is an intrinsic component of decision-making, while more than half say that analytics is integral to a range of business-critical tasks. According to Gartner, by 2023, 90% of corporate strategies will explicitly mention information as a critical enterprise asset and analytics as an essential competency. 30% of chief data officers will partner with their CFO to formally value the organization's information assets for improved information management and benefits. For six consecutive years, NewVantage Partners has conducted an annual survey on how executives in large corporations view data. It has always involved a high proportion of C-level executives responsible for data, but this year chief data officers are 56% of the respondents, up from 32% last year. Only 12% of firms in the 2012 survey had appointed a chief data officer.

While companies consistently report that data analytics is a high priority, adoption remains elusive to many. In fact, TDWI research indicates that if users stuck to their plans for advanced analytics adoption, adoption would be at 75%-80% even though adoption is only 35%-40% currently. ScottMadden's Analytics Maturity Model can help organizations assess where they are and provide a roadmap for further development.

### ROLE OF ANALYTICS IN THE ORGANIZATION




*Source: APQC, Trends in Data and Analytics Survey, 2019*

# THE SCOTTMADDEN ANALYTICS MATURITY MODEL

This table describes the stages of the ScottMadden Analytics Maturity Model:

| Stage | Novices | Users | Leaders | Masters |
|---|---|---|---|---|
| Questions Answered | • What?<br>• Where? | • What?<br>• Where?<br>• Why? | • What?<br>• Where?<br>• Why? | • What?<br>• Where?<br>• Why?<br>• What's next?<br>• Changes based on anticipated future? |
| Management Focus | • Data accuracy<br>• Reports<br>• Metrics | • How data and metrics relate (correlations)<br>• Growing demand for insight (data structure / profiles) | • What is driving the changes in results (data-driven forecasts)<br>• Growing demand for actions based on insight<br>• Pilots / some integration of prescriptive analytics in processes | • Growing demand for greater strategic partnership<br>• Cultural shift to DevOps with analytics |
| Data Characteristics | • Historical data<br>• Data from discrete systems<br>• Data is poor quality; requires massaging and transformation<br>• Focus on reporting and metrics; limited analysis | • Data pulled from multiple systems and functions with automated feeds from transaction to analytics systems<br>• Data warehousing provides cleaner, more accessible data | • Data is on-demand and available<br>• Dashboards are user-oriented and dynamic<br>• Predictive models create scenario-based data | • Data is on-demand and available<br>• Dashboards are user-oriented and dynamic<br>• Predictive models are incorporated into processes and continuously fine-tuned |
| Technology Leveraged | • Spreadsheets and ad hoc databases<br>• Some functional data warehouses or business intelligence tools | • Cross-functional use of data warehouse<br>• Experimentation with business intelligence tools | • Fit-for-purpose data warehouse<br>• Business intelligence tools<br>• Predictive analytical tools<br>• Experiments with Cloud computing resources, including AI and MLaaS | • Enterprise-wide data warehouse<br>• Business intelligence tools<br>• Predictive analytical tools<br>• Cloud computing and containerization<br>• Unstructured data analysis |
| Talent Pool | • Experience on developing standard reporting tools<br>• "Scorekeepers" not "storytellers"<br>• Functionally silo-ed experience only | • Learning to ask "why" about the data<br>• Building cross-functional understanding and expertise<br>• Some "storytellers" but mostly "scorekeepers" | • Experts in root-cause analysis<br>• Majority have cross-functional experience<br>• Majority are "storytellers"<br>• Focus is on the future and predicting the changes in results | • Analytical experts<br>• Majority are knowledgeable about the whole business<br>• Strategic partners with the business |
| Organization | • Business analysts | Novice plus:<br>• Data analysts<br>• Data architects / engineers | User plus:<br>• Data scientists<br>• Chief analytics officer | Leader organization at scale |

## A RETAIL EXAMPLE – WALKING THROUGH THE MATURITY MODEL

The illustration below provides a walk-through example to help identify the potential progression predictive analytics may have as an organization goes from being a "novice" to a "master."

| Stage | Novices | Users | Leaders | Masters |
|---|---|---|---|---|
| Example | • Pro-forma reports by store are created in Excel for prior month's activities and forecasts for this month<br>• Material is put together by a finance reporting team<br>• Reviewed in the finance silo and (possibly) the operations managers<br>• Focus is on profit margin assessment and verbal explanations of last month's performance | • Pro-forma financials are produced through a business intelligence tool; included in the reports are employee engagement levels at each store as well as product lead times from factory to shelves<br>• Material is put together by a cross-functional reporting team<br>• Reviewed by a cross-functional team, including finance, operations, HR, and supply chain<br>• Focus is on correlating the data and seeing if there are patterns to understand why certain stores are performing better | • Financials, HR metrics, and supply chain metrics are all available via one dashboard<br>• Data is forecasted into the future using predictive models rather than senior management "belief"<br>• Dashboard and underlying data is maintained and driven by analytics "experts" in the company – technical experts to ensure data is integrated and analytics experts to interpret the data and correlations<br>• Reviewed by a cross-functional team, including finance, operations, HR, and supply chain<br>• "What if" scenarios can be done in almost real-time<br>• Focus is on determining which stores will likely perform better next month | • Financials, HR metrics, and supply chain metrics are all available via one dashboard<br>• Data is forecasted into the future using predictive models rather than senior management "belief"<br>• Facebook "likes" and trending of comments/ product reviews are included by store as part of the dashboard<br>• Dashboard and underlying data is maintained and driven by analytics "experts" in the company<br>• Reviewed by a cross-functional team, including finance, operations, HR, and supply chain<br>• Focus is on determining exactly how a proposed change in approach will impact a store's performance next month |

Upon reading this roadmap and the example, are you able to gauge where your company is in analytics maturity? Can you determine where you want to be and by what timeline?

If you are in the early stages, you are not alone. According to a 2018 survey by Gartner, more than 87% of organizations have low business intelligence and analytics maturity. APQC says the vast majority of organizations rely predominantly on descriptive analytics for their business needs. They tend to use predictive analytics for customer-focused functions like marketing, product development, and sales. Only a quarter of organizations have extended the scope of their data and analytics efforts to include prescriptive analytics.

It is clear that the majority of companies are still in the early stages of developing and incorporating robust analytics into their strategic and operational decision-making processes. However, many organizations are accelerating their investments in this area. These organizations can use the maturity model to develop a roadmap for growth, further accelerating their journeys.

**According to a 2018 survey by Gartner, more than 87% of organizations have low business intelligence and analytics maturity.**

# 03

# SHARED SERVICES AND BUSINESS ANALYTICS

## The Next Wave of Value for Shared Services Operations

### INTRODUCTION

More than ever organizations understand the value effective analytics can have on their businesses. Most organizations face two primary obstacles in realizing the value of analytics: the lack of technology integration and the inability to secure and develop the right talent. Many companies are investing in predictive analytics capabilities, but they are still in the early stages of maturity. We found that only a few companies have been able to make the necessary investments to successfully overcome these obstacles and reach the end-state benefits so often attributed to effective use of predictive analytics.

### OUR PERSPECTIVE

ScottMadden believes Shared Service Organizations (SSOs) can accelerate the development of analytics capabilities within companies. SSOs can provide the ideal structure to climb the value curve from simple metrics reporting to actionable insight that managers and leaders need. Multi-function SSOs have greater access to the cross-functional data required to conduct multi-variant analyses. Often, they have invested in foundational reporting platforms that can support a quicker transition to more complex analytical tools and infrastructure required to support effective analytics. Finally, SSOs can afford the scale and focus to acquire highly skilled resources required to formulate and test various business hypotheses. By installing these experts in SSOs, businesses spread the cost of making these services affordable. We believe the SSOs provide the optimum structures within companies to build and provide analytics services.

### WHY LEVERAGE AN SSO?

SSOs that provide HR, finance, IT, procurement, facilities, and/or other services in their portfolios can consolidate information which can facilitate cross-functional analyses. This ability to use data from various functions supports effective multi-variant analyses, and it enhances business decision-making by evaluating options and impacts across functions rather than within silo-ed functions/departments. Thus, SSOs can provide value-added insight to businesses across functions/departments (e.g., impact of employee turnover on profit margin ratios).

In addition, many SSOs have developed a robust reporting foundation to provide transactional reporting services to businesses, while also enabling SSO operational transparency in support of service level agreements and charge-back methods. This reporting bench strength can serve as a mechanism for elevating performance, shifting SSOs from providing metrics to strategic analytics. ScottMadden believes SSOs could pilot workforce planning within HR or an order-to-cash analytics within finance as starting points.

Beyond the reporting bench strength, the technical interfaces and integration that is required to drive the evolution can also be supported via SSOs. With many SSOs including IT in their portfolios, they can influence the technical architecture and define the integration strategy of disparate technology and data sources. As examples, effective analytics require enterprise data warehouses EDWs/data marts, analytics software, or other strong Business Intelligence (BI) tools that can interface with multiple platforms and other technologies to support analyses of structured and "unstructured" data (e.g., comments/reviews on Facebook, product reviews via Twitter, etc.). These efforts to integrate technology can benefit from a consistent vision and planning of the IT architecture to enable the success of analytics. SSOs, by virtue of their ability to influence IT and understand the business needs, are uniquely positioned to encourage such technology integration efforts.

## A CONCEPTUAL MODEL OF ANALYTICS SERVICES IN SHARED SERVICES

ScottMadden views the conceptual end-state model for analytics as a series of tiered services ranging from the simple, standard metrics reporting to simple analytics to the more complex, predictive analytics.

Metrics reporting and analytics would be consumed by the organization as services from the SSO. The delivery model would follow a tiered structure similar to the one described below:

- **Tier 0 and Tier 1** – Simple, standard metrics reporting and pre-configured analytical tools would be available and managed through self-service portals (links, dashboards, and analytical tools) and via "generalist" support for such queries.

- **Tier 2** – Queries requiring more complex analyses, including predictive analyses, would be supported by analytical "specialists" within the SSO, as these queries would require greater skill with BI tools as well as deeper experience in analytics, hypotheses formulation, and analytical storytelling. These "specialists" would support business units and departments and be cross-functionally focused to ensure analytics leveraged insights from across the business. Only a few would focus on specialty areas as needed by the business, both functional (e.g., Human Resources Information Systems – HRIS) and technical (e.g., BI Online Analytical Processing – OLAP).

- **Tier 3** – A Center of Expertise (COE) would establish the direction of predictive analytics in the organization and enable the SSO to adapt the tools and skills to meet the changing analytical demands of the organization, acting as a strategic partner for the company. In addition to an analytics COE, additional policy-making bodies would be required to ensure the overall IT architecture and data management strategy were defined and supported to enable effective analytics.

Such a conceptual model is shown in Figure 1 with a highlight of key responsibilities at each tiered level of service.

## WHERE TO GO FROM HERE

Organizations are currently at various stages of analytical maturity. Several may have already started down a path of improvement without leveraging their SSOs. ScottMadden believes, however, that there is a role for SSOs to play at every stage of the maturity curve, and SSOs can accelerate the rate of evolution for organizations.

Figure 2 shows ScottMadden's perspective on how SSOs can help drive analytics expertise in their organizations using the ScottMadden Analytics Maturity Model stages as reference points.

While the roadmap to achieve increasing levels of analytics capabilities can help, there is still a long way to go for most companies. As most organizations start on this journey, there are a few key activities SSOs can begin to work on now to position themselves appropriately:

- **Pilot analytically driven initiatives that leverage your current SSO functional expertise.** Identify an opportunity to showcase how your SSO can effectively support analytics for the rest of the organization via a pilot (e.g., workforce planning in HR).

- **Start development of analytically minded individuals in your organization.** Leverage the reporting teams in your SSO to identify those employees most able to move beyond "scorekeeping" and into "storytelling."

- **Recruit analytic groups from within the organization.** Sell the benefits of a centrally managed analytics "COE" in your organization and begin to pull these groups into your SSO.

- **Identify one to two technology integration points for your organization.** Influence and identify one to two technology platforms whose integration will dramatically increase cross-functional analytic capabilities. Focus on targeted activities that can help integrate data (e.g., via EDW) rather than long-term integrations (e.g., combining multiple enterprise resource plans).

- **Invest in robust, platform-agnostic BI tools.** Leverage current SSO reporting requirements to further advance the need for robust BI tools, which will support future analytic capabilities.

*Figure 1: Shared Services and Business Analytics Conceptual Model*

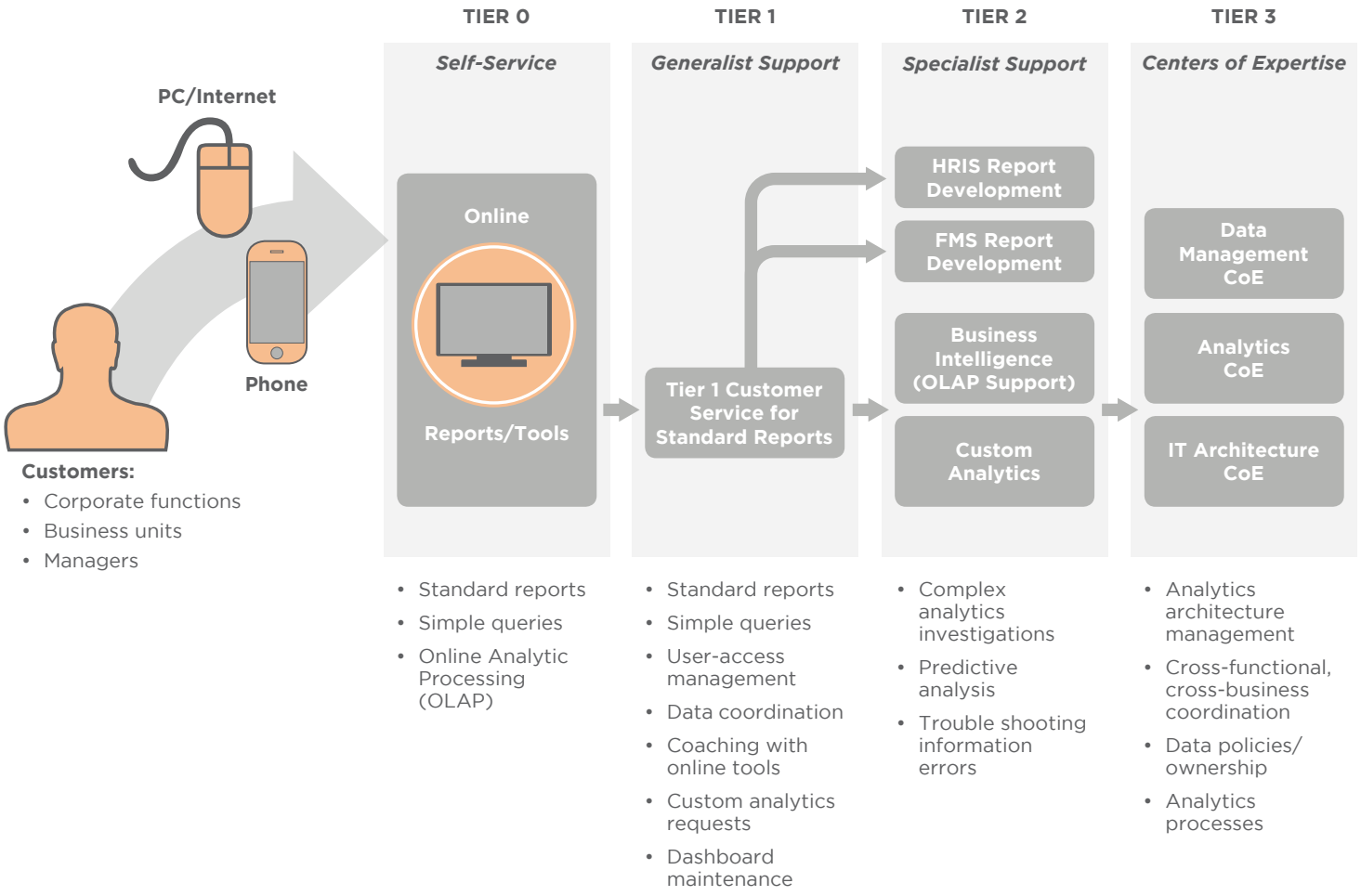
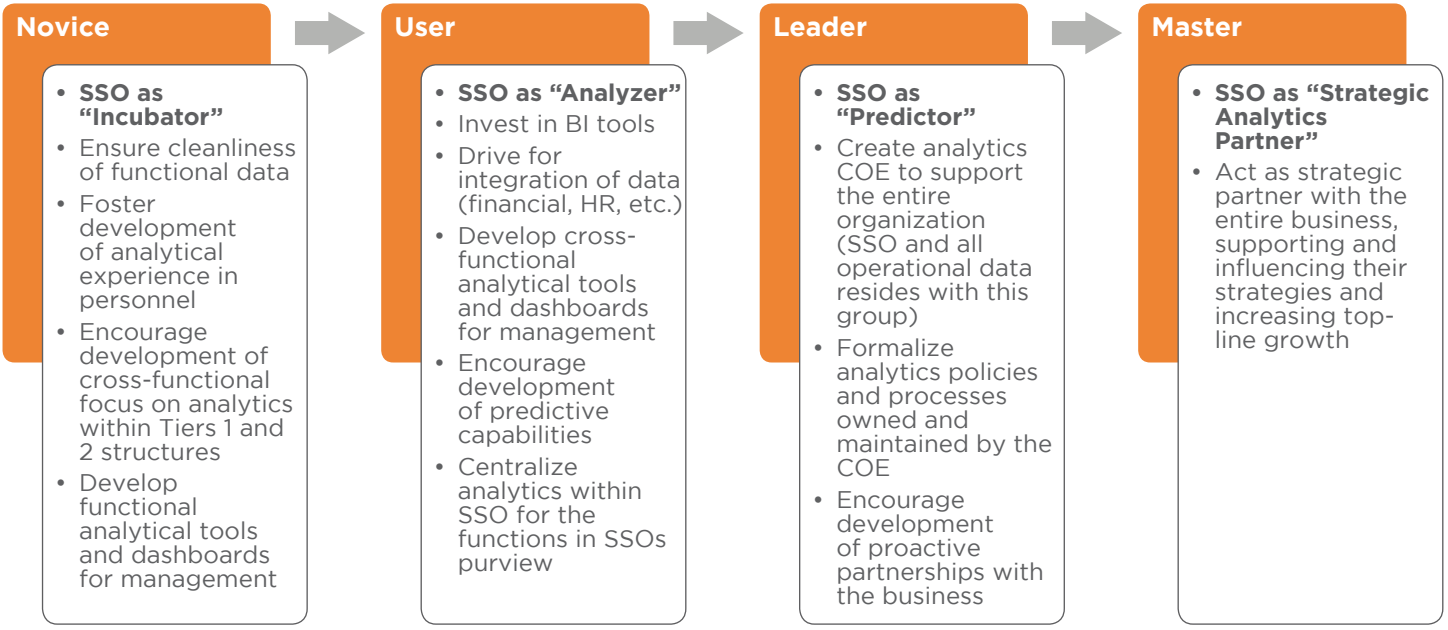


*Figure 2: ScottMadden Analytics Maturity Model*




ScottMadden believes there is a great opportunity for companies, and SSOs in particular, to drive and improve their analytics capabilities. With more and more organizations believing that analytics can provide them with improvements in productivity and profitability, and with greater availability of data from all sorts of sources, the time to make analytics a competitive advantage for you may indeed be now.

# ABOUT SCOTTMADDEN'S CORPORATE & SHARED SERVICES PRACTICE

ScottMadden has been a recognized leader in corporate and shared services since the practice began decades ago. Our Corporate & Shared Services practice has completed more than 1,900 projects since the early 90s, including hundreds of large, multi-year implementations. Our clients span a variety of industries from energy to healthcare to higher education to retail. Examples of our projects include service delivery strategy and business case development, corporate services assessment and improvement, shared services design, shared services build and implementation, and shared services improvement.

To learn more, visit **www.scottmadden.com** | **Twitter** | **Facebook** | **LinkedIn**

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How to Bridge the Gap between Knowledge and Results

- **Adithya Mathai**, Director

**Business Analytics Maturity:**
Evolution of Business Analytics for You

- **Trey Robinson**, Partner
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**Shared Services and Business Analytics:**
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