The Cure for Ailing Self-Service Business Intelligence

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Abstract

Many self-service business intelligence models falter shortly after they are deployed. The underlying reasons are based on the same factors that discourage us from performing other do-it-yourself tasks to accomplish important outcomes. These include lack of know-how, the inability to access the right tools, time constraints, the need for professional quality, and a lack of patience. By understanding these failure points, organizations can take steps to improve the results and longevity of self-service BI.

This article expands on the reasons for failure and suggests how do-it-yourself models can be made more successful through implementation of a centralized approach. The centralized approach offers service and support that directly address the common failure points of self-service BI. By centralizing the approach and backing it with IT support, standardized and customized BI models can be developed, validated, and deployed in a trusted and timely manner. Organizational benefits include cost-effectiveness, validated results, ease of use, and sustainability for the information that fuels decision making.

Introduction

What do lawn care and self-service business intelligence (BI) have in common? The answers may surprise you, but the results fall right in line with why self-service BI models are prone to failure.

Whether a beautiful lawn was grown from seed or is installed from sod, the greenskeepers, homeowners, and professionals who painstakingly manicure each blade will testify to the importance of a thoughtful design and regular maintenance. New homeowners are often left to their own devices in determining how best to care for their lawn. The greenskeeping tasks that seemed a good

idea initially quickly become unmanageable as the home owner realizes that a lawn requires special equipment and time to maintain. As a result, they may experience frustration, discouragement, and be overwhelmed by the tasks associated with lawn care.

For precisely the same reasons, those finding themselves in charge of a self-service BI model may find themselves experiencing the same challenges as our homeowner. In exploring the cause of this phenomenon, we can garner a great deal of information by studying general self-service models, including lawn care.

According to research published in 2013, by Harris International for the Professional Landcare Network (PLANET), the top five reasons people hire lawn care professionals to manage various aspects of their lawn care include a combination of:

- Lack of knowledge, skills, or physical capability
- Lack of proper equipment
- Lack of time or patience
- Poor quality result

The results of the Harris survey can be directly applied to other self-service decisions that we make daily. For the same reasons that we might choose to hire a lawn service, we also hire professional service providers to change the oil in the car, dry clean our clothing, or create our favorite latte. With the right supplies, tools, and expertise, we likely could choose to perform many of these activities ourselves, but we make the conscious decision not to for the same reasons we hire someone to maintain the lawn. The truth is that although we live in a self-service world, in many cases self-service doesn't make the best sense for us when we weigh the opportunity costs.

The Intention of Self-Service BI

The self-service BI model is designed to enable people from across the organization to generate reports and perform analytical queries based on parameters they themselves define. To accomplish this, individuals must apply their knowledge of the information available and where it is stored to the process that decision makers within the organization will use to draw conclusions from it. The success of this methodology is dependent on the individual's intellectual capacity to understand how to apply a variety of technologies, tools, and parameters.

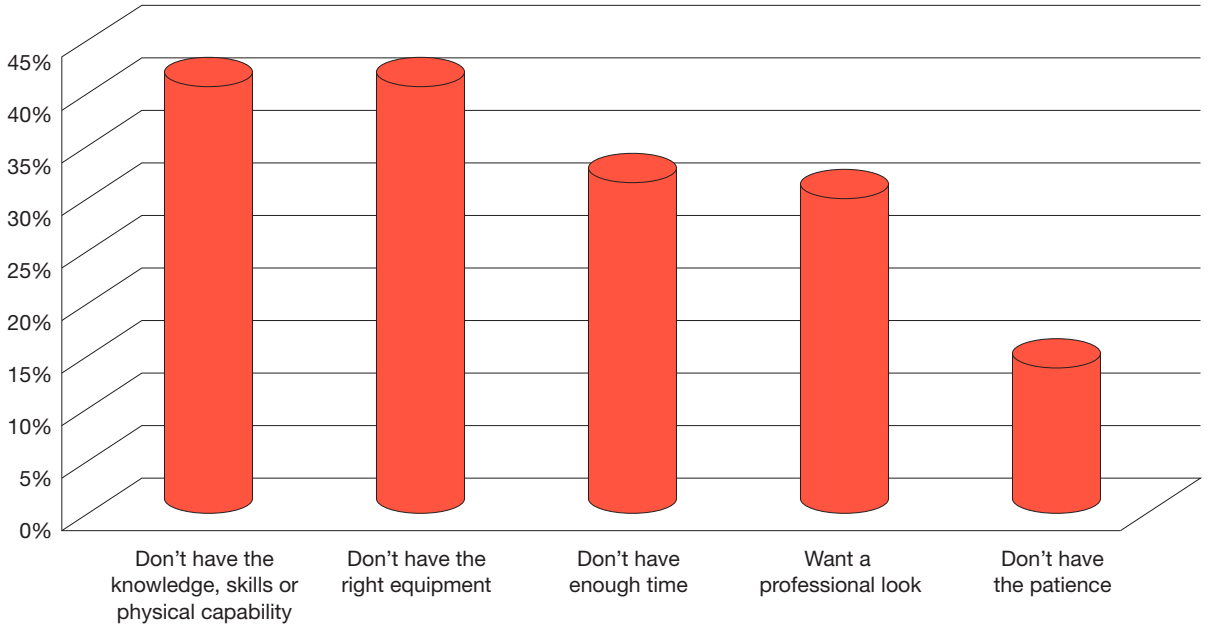

Figure 1. Top five reasons people hire lawn care professionals. Source: Harris Interactive research survey on behalf of Professional Landcare Network (PLANET) to support *National Survey on Consumer Spending on Landscape Services*, 2013.

In addition, staff with the responsibility of implementing BI models must be able to comprehend the data available from within the organization's warehouses of information, and they must be able to apply appropriate parameters to extract certain information and deliver it in a context that will be used for decision making. When executed properly, the outcome should be a sustainable model that produces reliable, secure, and sustainable information on demand for actionable decision making.

Self-service BI is the future in the application of data analytics, where it is expected to be used by organizations to make key decisions. Business leaders are often eager to implement self-service BI, particularly after buying into promises that it will deliver real-time data to enable strategic and operational decision making.

However, once implemented, the model can begin to falter when maintenance conditions aren't aligned with management's expectations. That is to say, the people who consume it are not likely to be the ones who are given the responsibility to maintain it.

How Self-Service BI Falters

An organization's decision to pursue self-service BI is often based on the assumptions that it will save money and improve the speed at which data is delivered. Many organizations find that after its initial implementation, the upkeep of their self-service BI model becomes too complex and cumbersome. There are four primary reasons.

1. The lost opportunity cost for the people trying to cleanse and maintain data so it can be used in the self-service model becomes too great in terms of time needed to support higher-level tasks.

2. Processes and governance are not in place to validate the model's underlying data.

3. The application selected as the platform for the BI model does not align with architectural standards for sustainability and life cycle management.

4. The individual's intellectual skills for understanding the data does not align with how the data must be presented to enable decision making.

We choose not to perform tasks ourselves when we want the outcome to be of a higher quality or more timely than we could have produced ourselves.

As the cracks in its upkeep begin to form, confidence in the self-service model falters and the enterprise's future investment in BI can rest on shaky ground.

Let's look at each of these reasons in greater detail.

Lost Opportunity Costs

Recall from Harris' research that the reasons we hire someone else to provide us with a service or product include our lack of the necessary knowledge, equipment, time, or patience to perform the task. We also choose not to perform tasks ourselves when we want the outcome to be of a higher quality or more timely than we could have produced ourselves.

With these factors in mind, does it make sense for physicists to spend time developing their own BI models? They very likely understand how to interpret and validate the information available from within the organization's data warehouse. Likewise, they will have access to the necessary tools and knowledge. They may even have an interest in creating the model themselves to ensure that it meets their expectations in terms of quality and timeliness. However, as with other self-service decisions that we make daily, there are trade-offs between the resources at our disposal and the opportunity costs of other projects.

In this case, the research that the scientist is expected to carry out undoubtedly has a higher value to the organization than if that same individual produces a functioning

BI model instead. In other words, the potential lost opportunity when this individual spends time developing a BI model instead of researching profitable discoveries is too high to be practical.

Regardless of the reasons for a less-than-effective self-service implementation, there is a cost-effective cure for what ails most self-service BI models.

Even when the responsibility for developing the BI model is transferred to someone else in an effort to adjust for opportunity costs, additional issues arise that may lead to the failure of the model in its entirety. Such issues can include lack of emphasis on data validation, insufficient business acumen, or poor life cycle planning. The details that follow provide further insight into self-service BI's failure points.

Lack of Data Validation

The importance of initial and ongoing data validation is crucial to the continuing reliability of a functioning BI model. Lack of data validation may occur even when the individual or team that developed the model possesses strong skills in their areas of expertise. Staff members who are unfamiliar with the tasks of developing and testing data may not fully comprehend the importance of validation.

When the data is properly vetted on a continuous basis, the output becomes a trusted source of information for the organization's decision making because the likelihood of errors or inconsistent results will be greatly reduced. Similarly, a lack of data validation will result in decisions that are based on inaccuracies with the potential to impact the business, reputation, and safety of the organization.

Sustainability Risks

Despite applying data validation mechanisms and presenting information in a format tailored for consumption by decision makers, there remains the potential to expose the organization to significant security and financial risks.

For any BI model to remain sustainable, it must be designed and built using a platform that is architecturally sound. Individuals or teams responsible for developing a self-service model may lack insight into the organization's strategy and governance policies for technology sustainability. If a nonstandard platform is developed or selected, the outcome will inevitably include higher life cycle costs and significant security vulnerabilities. Such vulnerabilities can place the company's intellectual property—the information that is often considered its most valuable asset—at risk for exploit.

Any of these scenarios may occur individually even when the other self-service BI criteria are simultaneously met. As a result, the failed BI model will likely be set aside. The organization's decision makers, stung or embarrassed by the results, will become wary of future investments in automating information and analysis.

Poor Presentation

Even the most experienced staff member may not possess the strategic insight to understand how information is applied by other members of the organization to make decisions. In the absence of strategic insight and lacking the appropriate analytics skill set, the individual's narrow focus may prevent them from understanding how the data must be presented in order to be consumed. As a result, when decision makers attempt to decipher the output produced through BI, they are offered a lackluster presentation that is not in context and from which they can't readily understand or extract details.

A Cure for the Ailing Self-Service Model

Take heart, though. Regardless of the reasons for a less-than-effective self-service implementation, there is a cost-effective cure for what ails most self-service BI models. This comes in the form of a midtier solution consisting of hand-picked individuals who understand

where information resides, possess the skills to validate it, can tailor the results for consumption, and can apply the organization's governance policies for technology sustainability to the platforms on which BI models are produced.

This type of excellence in BI modeling is typically built from within rather than acquired, at least initially. When considering this "make-buy" decision, it is important to understand the maturity of the marketplace and its ability to understand your business, secure your solutions, and maintain cost-effectiveness in delivery.

An admitted drawback of the decision to outsource is that the individuals responsible for performing the work will likely lack the legacy knowledge and strategic insight that exists with in-house teams. This may cost time spent defining requirements in a more formal and regimented manner than if the work were performed in-house, which may result in the apparent benefit of reducing opportunity costs by utilizing an outside entity being lost in bureaucracy.

Attributes to consider when identifying the right individuals for BI modeling include their level of legacy knowledge, attention to detail, business acumen, technical abilities, and their ability to learn and adapt quickly.

You may find them in support roles within IT, accounting, project management, or in research areas. They will likely be on the fringe of where innovative or intricate technology solutions are being developed, tested, applied, or acquired. Often they act as translators between those responsible for maintaining the technology and those who need to understand what it does in business terms, rather than "tech speak."

When these individuals come together with a guided purpose and are provided appropriate technical training and architectural governance, they will succeed in forming your organization's BI center of excellence.

Determining how big or how small the initial endeavor to centralize BI modeling should be depends on the architectural maturity of the organization. A mature organization should possess a strategy that includes expectations for the sustainability and security of the organization's technology and its data.

Though scalability is important, the size of an initial midtier BI modeling effort will depend on how much information can be maintained.

Though scalability is important, the size of an initial midtier BI modeling effort will depend on how much information can be maintained in a secure and sustainable manner. The more data that can be validated and made to comply with the organization's architectural standards, the faster demand for BI modeling is likely to grow.

Benefits of this Midtier Solution

Even if your organization's self-service BI model is working, there is always room for improvement. With any self-service solution, it is important not to lose sight of professional priorities, roles, and capabilities, despite the availability of technology and tools.

The midtier BI modeling solution is the perfect mechanism to provide researchers and decision makers with service and support that maximize opportunity, assure quality, bridge skill gaps, and secure the organization's data.

- Engaging midtier service providers enables more highly skilled staff to perform the tasks for which they were hired.
- With the backing of IT architectural standards, data utilized in BI modeling across the organization is validated as reliable and supported right at its source, thus avoiding secondary data and multiple sources of the truth.
- Information delivered through BI models is designed with its consumer in mind and can therefore easily

be applied to the organization's strategy for decision making.

- The midtier solution is scalable and capable of adjusting to changes in demand.
- Viewable output possesses an inherently professional-looking user interface that can include organizational branding.
- The midtier solution utilizes sustainable platforms that align with organizational investment in technology, assuring sustainability and protecting data from threats and vulnerabilities.

Recall that self-service models fail when people lack the skills, don't have the right tools, don't have time, want professional results, or lack the fortitude to do the work themselves. The midtier solution easily resolves the first four.

Skills: Individuals involved in staffing the midtier solution possess the knowledge, skills, and acumen to generate sustainable BI models that can be maintained either internally or by the individual requiring the information.

Tools: The tools and applications on which BI models are built use technology platforms that are part of the organization's architectural strategy.

Time: Opportunity costs are maximized as employees perform the work they were hired to do utilizing improved tools with validated outcomes.

Results: The BI interface possesses a professional look and can be immediately utilized for business purposes such as marketing and sales presentations.

Remember also that we often reject self-service because we lack the patience to perform the work ourselves. Though the aforementioned benefits of implementing a midtier solution are quickly realized by scientists, researchers, and other staff, it is management that benefits most when the issue of patience is resolved.

Managers are frequently faced with significant time constraints and pressure to make decisions. They have a tendency to grow impatient waiting for information, notwithstanding the time required for designing, developing, and deploying their own self-service BI model. A midtier solution alleviates the frustration that accompanies impatience by making standard information models available in a timely manner and customizing them to meet the specific needs of management.

In order to succeed, the solution must be staffed and organized to enable innovation, adhere to governance, and assure timely delivery.

For these reasons, the implementation of a midtier center of excellence for BI modeling is the very salvation of self-service BI.

The BI Center of Excellence Is Born

The concept behind setting up a BI center of excellence is that the IT department then assumes responsibility for the organization's implementation of self-service BI. This includes providing the capabilities necessary to design, develop, validate, test, and maintain BI solutions that consistently deliver professional output. In order to succeed, the solution must be staffed and organized to enable innovation, adhere to governance, and assure timely delivery. Achieving these results requires a staffing model that consists of a strategic core accompanied by one or more technical support tiers.

At the core of a BI center of excellence are individuals who have been hand-selected to perform strategic tasks such as requirements gathering, design, and functionality testing. The strategic skillset is very specific. IT must be able to identify and attract individuals with exceptional business acumen. In *Building Business Acumen*, published in 2009, Drs. Raymond and Gregory Reilly state, "Business acumen provides frameworks and direction to

organizing one's thoughts and deciding how to allocate attention to the most important issues." Specifically, the individuals included in BI modeling at this level need to possess professional insight enabling them to identify and understand how information will be viewed and applied by decision makers.

These individuals must also be able to apply their technical skills to address the organization's business needs and apply common sense to the individualization of analytics. In short, they must identify, extract, and deliver the right information to decision makers in a form that is easy to understand and apply. Those who possess these skills will form the strategic core for the center of excellence, combining logical thought processes with the ability to merge information for decision making regardless of the technology platform being used.

They and the rest of the organization would be supported by an operational team responsible for development, data validation, operational testing, and tiered technical support. Scalability in this solution likely comes in the form of outsourcing all or part of the operational tasks associated with supporting some or all of the BI modeling efforts.

As the organization experiences changes in demand for BI models and support, the number of operational resources performing specific technical tasks can be scaled up or down. The beauty of this model is that the scaled approach to operational staffing enables the organization to achieve success in meeting its analytical needs without a large capital outlay.

Recommended Initial Service Offerings

To inoculate against the common ailments of user-maintained self-service BI solutions, the BI center of excellence must offer a suite of solutions that mature with the organization's demand for information and its technology road map. As the center is deployed, the offering can be simplistic and yet still deliver value to the organization. As the organization's acceptance of BI matures as it applies simple BI models, business needs will be better understood, thus enabling more robust models to be placed into production.

The following service offerings, delivered using a scalable approach and ordered in terms of complexity, will address most applications for self-service and full-service BI.

- **Standard models:** These are reusable and allow individuals from the organization to access new information in a recognized format. Once the initial framework is developed, they can be deployed for various data sets across the entire organization within a couple of hours.

- **Common queries:** As part of standard modeling, common queries are repeatable and assure data quality. Ownership for building and validating the queries belongs to IT staff, with the user of the information collaborating to define analytical capabilities.

- **Help desk support:** For simple queries, help desk support may not be necessary, but more complicated needs can benefit from appropriate tier support and knowledge based on guidelines for staff use of IT's BI modeling expertise.

- **Process integration:** This combines the standard models with approaches that are tailored to the specific needs of decision makers and aids their ability to interpret results.

- **Custom models:** For this product, models built according to the requester's principles and practices are designed to suit a single purpose, which must be absolutely clear (for example, "a dashboard that allows senior management to access budget variances within 15 seconds").

- **Predictive modeling:** As predictive models are built, they will become part of the center's standard offering. Although it is the most difficult form of modeling (due to issues of correlation validation), predictive capability adds the most value to the organization.

- **Comprehension tools:** IT develops and validates these tools, ensures ease of use, and applies the appropriate limitations to preclude end users from inadvertently altering source data.

These types of service offerings from IT will enable the organization to successfully deploy and rely on BI models that engage users in effective decision making.

Benefits to Centralizing Self-Service BI

A faltering self-service BI model can be remedied through centralizing the underlying expertise and technology to provide a variety of standardized and customized BI solutions. By making the skills, tools, time, acumen, and fortitude available to produce quality output, the midtier BI center of excellence provides the organization with key decision-making capabilities that address head-on the primary reasons individuals reject self-service in the first place.

IT engagement and facilitation assure that the organization's opportunity costs are optimized, data is validated, output is easy to apply to decision making, and data remains secure and sustainable.

Providing the organization with a variety of scalable service options for the delivery of information allows end users to determine their own level of participation in maintaining decision-making tools.

Where costs are concerned, a centralized approach leveraging standard models and technologies avoids the cost of recreating models across the organization that unknowingly generate the same or similar results. Centralization also enables the organization to adapt quickly to changes in technology platforms and ensures sustainability of data and technology. The BI center of excellence pays for itself over time as the organization avoids lost research opportunities and the costs associated with supporting multiple BI platforms.

Through the implementation of a BI center of excellence, the organization will address the common issues that lead to the failure of the self-service approach. In addition, it ensures that advances in technology and the changing needs of the business never outpace one another. The entire organization will benefit from an IT service that delivers information with the knowledge, tools, availability, professionalism, and reliability to drive effective decision making. ■

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