



WHITE PAPER

Hidden Costs Unveiled: Exploring the Pitfalls of DIY Multifamily Business Intelligence



Shedding Light on The Hidden Costs of DIY BI

This white paper sheds light on the hidden costs and challenges associated with building a do-it-yourself (DIY) business intelligence (BI) platform for multifamily organizations.

While the allure of customizability and control may be enticing, this paper highlights the potential drawbacks and long-term implications of pursuing a DIY approach. By understanding the hidden costs, decision-makers can make informed choices that maximize efficiency, minimize risks and ultimately drive success in the multifamily industry's data-driven landscape.

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01. Introduction

In today's data-driven world, multifamily organizations are increasingly recognizing the importance of business intelligence (BI) to drive informed decision-making and gain a competitive edge in the marketplace. As these organizations strive to leverage data for insights and strategic planning, a critical question arises: should they build their own BI platform in-house or invest in an existing solution? This white paper aims to provide multifamily decision-makers with a comprehensive understanding of the considerations and trade-offs involved in this decision.

The allure of building a customized BI platform in-house lies in the potential for bespoke solutions that precisely align with an organization's unique needs, workflows and critical success factors. By opting for an in-house approach, owners and operators can exercise complete control over the design, features and functionality of their BI platform. This level of customization offers the opportunity to gain a competitive advantage by delivering unique insights and analytics capabilities that differentiate the organization in the marketplace.

However, the decision to build in-house comes with its own set of challenges and costs, some very obvious and some hidden. While customization and control may be appealing, organizations must carefully evaluate factors such as development time, costs, technical expertise and ongoing maintenance and support. It is crucial to consider whether the benefits of customization outweigh

the potential drawbacks and trade-offs associated with building and maintaining a proprietary BI platform.

On the other hand, there's a growing set of new multifamily housing business intelligence options answering the crying need for better data – BI platforms built with the industry's data needs in mind versus bundled in with a PMS. These new BI options use more modern technology platforms, allow more systems of record data to be loaded in and give bespoke-like dashboard and report customization functionality without the time, expense and effort of building custom systems. Investing in an existing commercial BI platform offers multifamily organizations access to out-of-the-box solutions with established features, functionality and support. You get the data you want, when you need it, formatted how you want it and can drive better performance across your organization, faster.

02. The Advantages of DIY BI



Multifamily organizations may opt to build a BI platform in-house for several reasons:

CUSTOMIZATION AND CONTROL

Building a BI platform in-house allows companies to tailor the solution to their specific needs, processes and workflows. They have complete control over the design, features and functionality, enabling them to create a system that aligns precisely with their unique requirements.

UNIQUE DATA REQUIREMENTS

Multifamily organizations may have specialized data sources or data formats that require a customized approach. By developing a BI platform in-house, they can integrate and analyze data from diverse sources, including property management systems, financial databases and tenant information, without limitations imposed by pre-existing solutions.

COMPETITIVE ADVANTAGE

Creating a proprietary BI platform can provide a competitive edge in the market. Organizations can differentiate themselves by offering unique insights and analytics capabilities, delivering enhanced value to stakeholders such as property owners, investors and residents.

DATA OWNERSHIP AND SECURITY

By building a BI platform in-house, organizations have full ownership of their data and greater control over security and compliance measures. They can implement robust security protocols and ensure compliance with industry regulations, providing peace of mind to stakeholders concerned about data privacy and protection.

SCALABILITY AND FUTURE GROWTH

In-house development offers the flexibility to design a BI platform that is scalable and can accommodate future growth. Multifamily organizations can architect the system to handle increasing data volumes, new reporting requirements and evolving business needs without relying on external vendors for updates or expansions.

ORGANIZATIONAL LEARNING AND KNOWLEDGE RETENTION

Building a BI platform internally allows organizations to develop in-house expertise and knowledge. The process of designing, implementing and maintaining a BI solution fosters a deeper understanding of data analytics within the organization, creating opportunities for continuous improvement and innovation.

While these reasons may make building a BI platform in-house an attractive option, it is crucial for multifamily organizations to carefully evaluate the associated costs, resource requirements, risks and long-term implications before making a decision.

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03. The Disadvantages of DIY BI

While the advantages of building your own BI solution are based on valid considerations, they should be carefully evaluated against the challenges that come with DIY.

RECREATING THE WHEEL

The organization has to define, model and code for occupancy, availability, rents, etc. – all things that have already been done before by multifamily industry experts and could be leveraged by a good purchased solution.

CUSTOMIZATION AND CONTROL

With this “advantage” comes the requirement for specific expertise, organizational resources and long-term commitment to continued maintenance and support. DIY also makes it more difficult to benefit from ideas and advancements elsewhere in the industry as development is dependent solely on internal associate knowledge and capabilities.

TIME TO MARKET

DIY BI requires a significant investment of time before realizing business value. Projects of this type typically take 2-3 years to get to a v1, delaying the availability of critical business insights compared to an existing solution that is ready to use. (See our section on BI Development Timeline below).

COST CONSIDERATIONS

It is easy to perceive that the upfront cost of development will more than pay off with the lack of ongoing fees that would be paid to a vendor. Projects always seem easier and cheaper when planning them than they turn out to be. Once into the project, operators become aware of a myriad of hidden costs they didn't initially consider, as the aptly named "Hidden Costs" section below covers in more detail.

COMPLEXITY AND CUSTOMIZATION

Building a robust BI solution involves various technical aspects such as data integration, data modeling and dashboard development. It requires technical expertise in programming languages, database management and data visualization tools and a deep understanding of the organization's needs to deliver a tailored solution effectively. Few operation or asset management organizations have that capability.

RISK OF INACCURATE ANALYSIS

Without proper expertise, there is a risk of errors in data analysis resulting in incorrect insights and decision-making. DIY BI may lack the advanced algorithms and optimization techniques that existing solutions offer.

MAINTENANCE AND SUPPORT

DIY BI solutions require ongoing maintenance, updates and technical support. Businesses must allocate time and resources to address any issues, bug fixes or improvements that may arise or outsource the problem (at cost) if their internal teams cannot identify and fix the problem.

DATA SECURITY AND COMPLIANCE

DIY BI requires implementing robust security measures, complying with industry regulations and keeping up with evolving security practices. The "control" that DIY provides can quickly become an albatross around the organization's neck.

COMPETITIVE ADVANTAGE

The notion of competitive advantage can be quite alluring. However, with commercially available business intelligence solutions already offering comparable or superior features, this competitive advantage rapidly disappears.



04. DIY BI Development Timeline

The timeline for building a bespoke BI platform can vary depending on the complexity of the project, the scope of requirements, available resources, and the organization's level of expertise in BI development. Having been involved in half a dozen large custom BI builds, we know this typically involves a 2–3-year project.

DIY development timelines almost always take longer than originally planned due to a variety of factors, including:

REQUIREMENT GATHERING AND ANALYSIS

This phase involves understanding the organization's data sources, analytics needs, reporting requirements and desired functionalities. The need to involve multiple business stakeholders to ensure meeting all the organization's needs means this stage alone takes months or quarters, not weeks.

DATA MODELING AND ETL (EXTRACT, TRANSFORM, LOAD) PROCESSES

Designing the data model and then establishing the ETL processes to extract data from various sources, transform it into a suitable format and load it into the BI platform always takes longer than anticipated as the team runs into the complexity and volume of data involved.

FRONT-END DEVELOPMENT AND VISUALIZATION

Creating interactive dashboards, reports and visualizations requires user interface design, coding and integra-

tion with the underlying data model. This development phase is contingent on the complexity of the visualizations and the desired level of interactivity. Inevitably, this phase involves more iterations than initially scheduled as each stakeholder has their own particular set of requests and methods by which they prefer to consume data. Something as simple as agreeing upon which data elements should be in a particular chart or table, whether the presentation should be a bar chart vs a line chart or preferences on size and color can take weeks.

TESTING AND QUALITY ASSURANCE

Ensuring the accuracy, reliability and performance of the BI platform involves thorough testing and quality assurance. Having engaged team members and stakeholder buy-in helps in this phase as the quality of your data depends on the inputs. No developments are bug-free. In our experience, it's quite usual to see DIY teams underestimate both the non-technical resources

(i.e. people and time) needed to perform testing and the number of bugs that get uncovered.

DEPLOYMENT AND USER TRAINING

Once the development and testing are complete, you'll deploy the BI platform and start training users on its functionalities. The size of the user base, the permissions and access controls and users' familiarity with BI tools will all need to be factored into this stage.

When it comes to BI, Gartner's stats indicate that 70%-80% of data initiatives fail due to a reliance on old technology, an overall poor understanding of BI, a bad user experience and a lack of buy-in and support across the organization. Organizations should therefore allocate sufficient time for planning, development, testing and training to ensure the successful implementation of a bespoke BI platform. Based on our experience, take whatever the initial timeline is and double it!

BI Development Timeline

Year 1



..... **REQUIREMENT GATHERING AND ANALYSIS**



..... **DATA MODELING AND ETL (EXTRACT, TRANSFORM, LOAD) PROCESSES**



..... **FRONT-END DEVELOPMENT AND VISUALIZATION**



..... **TESTING AND QUALITY ASSURANCE**



..... **DEPLOYMENT AND USER TRAINING**

Year 3



05. The Hidden Cost of DIY BI

While building a BI solution in-house can deliver sophisticated capabilities, it comes at a great cost. The half dozen bespoke systems we've built over the past two decades each ran \$2-3 million just to get to a working first version—and that's before taking into account the cost and executive overhead of maintaining and enhancing the system in the ensuing years!

DIY BI also has a much higher failure rate due to key person risk. Key person risk refers to the potential negative impact on an organization when a key individual or a small group of individuals with unique skills, knowledge or expertise are unable to perform their roles or leave the organization. Below is a list of how and what organizations often overlook or underestimate about costs:

FOCUS ON DEVELOPMENT COSTS

People tend to focus primarily on visible costs, such as hiring developers or investing in technology infrastruc-

ture. As a result, they may overlook the less apparent ongoing costs and challenges that arise during and after development.

EXTERNAL VS INTERNAL COSTS

People tend to feel an exaggerated "pain" from writing a check to an external vendor and virtually ignore the cost of internal resources. Internal resources are not free! At the least, their time on one project represents an opportunity cost from their not working on another project; at most, it represents salary that doesn't have to be paid. A dollar

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of payroll is the same as a dollar paid to a vendor—actually more since taxes and benefits have to be added to the former.

UNDERESTIMATING TECHNICAL EXPERTISE

Organizations may underestimate the technical expertise required, assuming that their existing resources can handle the development process. However, acquiring or developing the necessary skills within the organization can be time-consuming and costly; and it can be hard to hold onto skilled resource since real estate companies have narrower and fewer career paths for developers and data engineers than tech companies.

TIME AND EXTENDED DEVELOPMENT

The complexity of the development process, challenges in data integration and learning curves associated with building from scratch can lead to extended timelines. The additional time required can result in delays, and time is money.

ONGOING MAINTENANCE AND SUPPORT

The ongoing maintenance and support of an in-house BI platform can be a significant hidden cost. Failure to account for these ongoing maintenance needs can result in increased costs and potential disruptions in system functionality.

INTEGRATION CHALLENGES

Integrating a DIY BI platform with existing systems and data sources within the organization can be complex and time-consuming. Data inconsistencies, compatibility issues, and the need for data transformations can lead to additional development efforts and hidden costs.

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Lessons Learned: A DIY BI Short Story

In his former role as Vice President, Business Solutions for a 20,000-unit multifamily portfolio, **REBA Chief Technology Officer, Jason Whittington**, made the decision to build his organization's BI solution in-house because the only solutions that existed on the market at the time were bundled in with a PMS. He shared the lessons he learned along the way:

1. Lack of BI Sophistication

This limited their ability to make changes because the model was purpose-built for their unique business and not extensible. When the business changed its mind about how/what it wanted to measure, it was time-consuming, disruptive and expensive to adapt.

2. Vendor-Controlled Data

Some of the vendors who controlled access to the organization's data didn't prioritize working with them or asked for a material investment to develop a "custom" integration for them to access their data.

3. Underestimated Maintenance

They significantly underestimated the time, money, and disruption that came along with maintaining their data pipelines. While they anticipated being able to do this in-house, they eventually entered into a maintenance agreement with a third party to do it on their behalf. This was less than ideal because the third-party vendor often lacked the sense of urgency that was expected and cost more than was originally budgeted using an internal resource.

4. Lack of Internal Trust in the Platform

With a custom-built solution, it took much longer to instill confidence from the organization in the solution. This resulted in a general mistrust of the data when it reflected poorly on the business, which not only produced a lot of tension but also resulted in the data and analytics team spending an incredible amount of time in proving that the data was correct.

When asked, Jason revealed that if given the opportunity to make the decision again, he would choose to buy an existing BI platform built with the multifamily industry's data needs in mind and benefit from the time savings, the labor costs and gain a higher ROI with a smaller investment.

Conclusion

In conclusion, while building a DIY BI platform may offer appealing benefits that have multifamily teams considering this over existing BI solutions, organizations must recognize the challenges and potential drawbacks all the while remaining laser-focused on their identity as an organization—that of real estate operator.

DIY BI projects entail significant upfront costs, extended development timelines and ongoing maintenance and support requirements. Organizations must invest in technical expertise, allocate resources for development and testing and account for the hidden costs associated with integration challenges and lack of specialized features.

Key person risk must also be considered, as reliance on one or a few individuals can pose a substantial risk to the project's long-term success.

Multifamily industry organizations must also recognize their primary focus and identity of being leading real estate players. As stated by Meredith Wright, Mission Rock Residential, LLC President, “We are an operator of real estate not a technology company.

In the end, the decision to build or buy a BI platform should be based on a comprehensive evaluation of the organization's requirements, resources, budgets and strategy. Existing commercial BI platforms offer reliable solutions to organizations that remain steadfast in their commitment to their expertise in real estate and don't liken themselves a technology company. Seeking expert advice, evaluating multifamily proptech vendor offerings and considering the experiences of other organizations can further assist in making an informed decision.

**We are an operator of real estate
not a technology company.**

MEREDITH WRIGHT, MISSION ROCK RESIDENTIAL, LLC

ABOUT THE AUTHORS



Chris Brust is REBA's Chief Product Officer and has been creating pioneering business analytics solutions for more than 23 years. Chris is a leading expert on data modeling, data visualization and predictive analytics. He enjoyed a 15-year career at Archstone holding various roles in operations, pricing & revenue management and business intelligence before co-founding ReLuminous LLC in 2013 to provide BI consulting and professional services to the multifamily industry for companies such as AvalonBay, Irvine Apartments, Invitation Homes and Progress Residential. Prior to joining Archstone, Chris served as an Army officer in the Corps of Engineers. Chris earned an MBA from the University of Colorado and a BS in Civil Engineering from the University of Michigan.



Jason Whittington is the Chief Technology Officer for REBA in charge of leading the company's technology strategy & driving the delivery of innovative solutions to REBA's customers. He has more than 20 years of multifamily experience and deep knowledge in tech applications, data analytics, information technology, and multifamily operations. His former roles include Vice President – Business Solutions at Gene B. Glick Company and Partner at Freehauf Consulting. Jason is an Indiana native where he lives with his wife and sons. He holds a bachelor's degree in Accounting from Hillsdale College and served in the U.S. Army as a Tank Commander.

ABOUT REBA

Real Estate Business Analytics is a data analytics company on a mission to change how the multifamily industry uses data. REBA helps leaders ask insightful questions about their business by giving them access to all their data in one central location. We do this by offering a suite of business intelligence, budgeting and pricing & revenue management solutions that gather data & deliver insights so you can make better decisions, faster. With REBA, you can eliminate Excel hell, bad data, excess cost, and analysis paralysis with tools built by multifamily for multifamily.

