

Build vs. Buy

Making the right choice for your data product



The Next Generation Standard in Enterprise BI & Analytics.

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Choosing whether to build or buy analytics is one of the most complicated — and critical — choices that you can make. The choice you make now has serious implications for both your product roadmap and your budget. At Birst, we've been there before. We've been faced with those tough, almost overwhelming decisions ourselves and learned the essential elements you need to consider when deciding how to implement analytics within your product.

Can you get there from here?

It didn't used to be such a tough decision. You had smart Engineers, you needed analytics, so you built them yourself.

Easy.

Unfortunately things have changed. A lot. Where just a few years ago "online" and "interactive" were enough to win the hearts and minds of your end users, it isn't so simple anymore. Those items that were "delighters" not so long ago have now become "table stakes" as users have become more familiar with seeing analytics anywhere and everywhere. You can't just embed any analytics — you need to embed amazing analytics.

The first item you need to consider when deciding between buying and building analytics is simple: can you build good enough analytics to satisfy customer



needs? As users have become more familiar with seeing interactive analytics embedded in the applications they use on a regular basis, their expectations have risen. They expect features like drill down, filtering, sorting, and customization of analytics. They assume your application will have different modes or dashboards for various user roles and that the information provided will be near real-time. So the first question you need to ask when considering building your analytics is simple. Can we build enough functionality fast enough to meet ever increasing customer expectations?

It's a journey that never ends.

Even if you decide that you can build your analytics fast enough to meet your users' needs the next question you need to ask is: can you keep up this pace?

Consider the two strategies commonly used when creating embedded analytic products, "differentiation" and "neutralization."

In a differentiation strategy you are trying to set your product apart from the competition by developing analytic functionality that they simply cannot match. In comparison to your product, they look plain and feature-weak. In this scenario, you can't release your analytic product and stop development—you must keep up developing new functionality or the competition will catch-up. Worse still, they'll be able to learn from your efforts and the time (and money) they need to match your functionality will be less than what you needed to get ahead. Not a good situation for you.

In the neutralization strategy, it's not much prettier. Here you devote time and budget to achieving parity with a competitor who is ahead of you in the analytic space. You work hard to build the similar analytical capabilities so that you can compete in the market and... stop? Unfortunately, you can't stop once you've got the first realize of analytics in the hands of your users. If you do, your competitors will move out ahead again and all of your effort playing catch-up has been wasted. You need to keep pace with the competition, building and neutralizing what ever new functionality they develop. Essentially, your competitor—not you—dictates your analytic product roadmap. Again, not ideal.

	Core Value	Key Metric	Main Challenge
Differentiate (we're the leaders!)	Separation	Unmatchable	How far?
Neutralize (we've got BI tool)	Comparability	Good enough	How fast?

Framework adapted from *Reaching Escape Velocity*, Geoffrey Moore, 2012

When deciding if building analytical functionality yourself is the right way to go, don't just think about whether you can build it today. Consider whether you've got the budget, resources, and discipline to keep up the development pace over the years to come. If this sounds risky to you, you might be better

off buying your analytics.

Consider strategy alongside costs

Deciding between buying or building analytics often defaults to the simplest metric possible: cost. While cost is a critical consideration in your decision, it shouldn't be the only deciding factor. You need to make a balanced decision considering both monetary factors and strategic elements. The best way to do this is by considering your decision as an equation: the cost side savings have to be great enough to offset the risks associated with building your own analytics.



The cost side of the equation is easy: will it cost less to build analytics than to buy analytics? At least, it seems easy. In fact, most people forget to include many of the tasks they will need to account for when building analytics. Some items are obvious, such as:

- Buying the software to make the visuals
- Building connectors to data sources
- Creating dashboard pages
- Creating reports
- Creating charts and other visualizations

While others might not be so apparent. These include items like:

- Performing QA
- Performing transformations
- Creating data aggregations
- Creating dimensions
- Creating filters
- Building drill-down/across paths
- Building the multi-tenancy model

- Building the security model
- Create data model for targets
- Building the UI for target setting
- Building the UI for alerts
- Building user management capabilities
- Building monitoring

If it sounds like a lot to consider—you're right! Building your own analytics means that you need to plan for everything from on boarding users to maintaining security to tracking utilization and planning for future releases.

As many cost factors as there are to consider, it's usually the non-monetary components that product owners fail to address. This side of the equation represents risk. Risk of not getting to market fast enough. Risk of not building functionality



that is on-par with what users have come to expect from analytic applications. The risk of failing to keep pace with the competition as they advance their capabilities over time. And finally, the risk associated with focusing your development team on solving a problem that others have already addressed—analytics—rather than building out your core application.

The problem is that risk is much harder to quantify than cost and as a result most business leaders overlook this part of the equation. Fortunately there's an easy way to wrap the entire build vs. buy, cost vs. risk equation into a simple matrix for easier evaluation.

The matrix uses the four risk criteria of "fast enough," "good enough," "can we keep building it," and "what

else could we be doing" and assigns each score based on how well you believe you'll be able to address each factor. Think that you'll be unable to build fast enough to get out ahead of your

	Low (1 point)	Medium (3 points)	High (5 points)	Our Rating	Importance (1=low to 3=high)	TOTAL
Can we build it fast enough?	We've got a development team dedicated to analytics, fully-trained in the entire stack, and can build quickly.	We have resources, but may have trouble building quickly enough to achieve table stakes.	We don't have the resources/don't want to dedicate the resources to build analytics.	5	2	10
Can we build it good enough?	Yes – we can build all the basics plus functionality to differentiate ourselves from the competition.	Maybe – we can add some table stakes, not all. Maybe our delighters will outweigh the gaps in functionality.	Nope – we'd have trouble getting to table stakes.	5	3	15
Do we want to keep building?	Yes – this is where we will compete so we'll devote equal resources to analytics develop as our core app.	Maybe – we could add some functionality over time but it would be secondary in importance to the core app.	No – we'd prefer to use our resources on other things.	3	2	6
Could we be doing other things?	No – analytics are the app for us. We consider this to be the core of what we do.	Maybe – analytics are important and our core app roadmap is not full.	Yes – we can add more value by working on our core application.	2	3	6
GRAND TOTAL (possible 60 points)						37 points

competitors? That's a high risk and is assigned 5 points. Once you've got each of the categories evaluated, the matrix then helps you determine which of the categories is the most critical to your success and assigns a score for that as well. If building quickly is very important to your business (give it a rating of 3) AND you have determined that you can't build very quickly, the matrix highlights this as an extreme risk in building analytics.

After evaluating the importance of each category and determining the risk level, you simply add up the scores to create an overall risk factor for building your analytics platform. Of course, a number such as 37 doesn't mean much by itself — you need a way to evaluate that number and decide if the risk level is



acceptable.

Once you have your overall risk score, use the risk spectrum to help you assess exactly how risky building your analytics might be. If you have a low score—between 0 and 20—you may be well-served by building your platform. Organizations on the low side of the scale may be able to build fast enough, well enough, and keep up the pace to outperform their competitors.

However, organizations that have a high risk score—above 40—should consider whether buying analytics might be a better choice. In these cases, taking advantage of the table-stakes functionality already developed by analytics firms such as Birst and focusing instead on the core application functionality might be a more effective strategy.

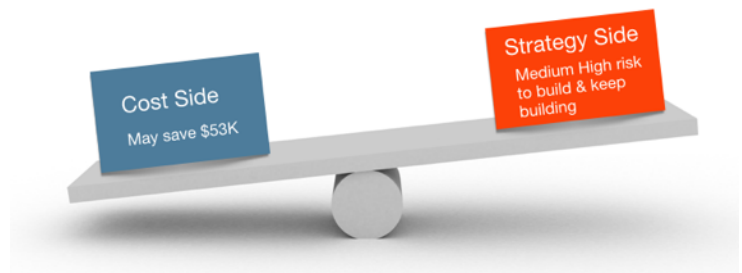
There's another alternative to be considered and that is what we call the "hybrid model." In this scenario, you might choose to build some of your analytics but buy others. For example, one company we know decided that they could build some basic operational analytics (a few bar charts inline with workflow data which didn't require extensive interactions) but that they should buy their "exploratory analytics" which allow users to drill deeply into the data.

Make a balanced decision

It all comes down to this: don't exclusively use the same criteria—cost—that most buyers of internal-facing analytics choose. While a CIO might be focused primarily on the cost per feature when

deciding to buy or build, you as a product owner face a different challenge. Of course you are concerned about cost, but you also need to consider how quickly you can build to differentiate from the competition, if the analytics you build will be good enough to create user engagement, and if you will be able to keep pace with your competitors who leveraged BI platforms instead of building themselves.

There's no single answer that fits every situation. Each company, each product is different. But you don't need to face this dilemma alone. Consider your goals, calculate your true costs to build, then weigh the risks against those costs. If you use this strategy, you aren't guaranteed the perfect answer, but you'll have performed the right analysis to reach a well-informed decision.



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