

Embedding AI-powered analytics into your application



Things change. Know why.



How Embedding AI-powered analytics into your application gives you a competitive advantage

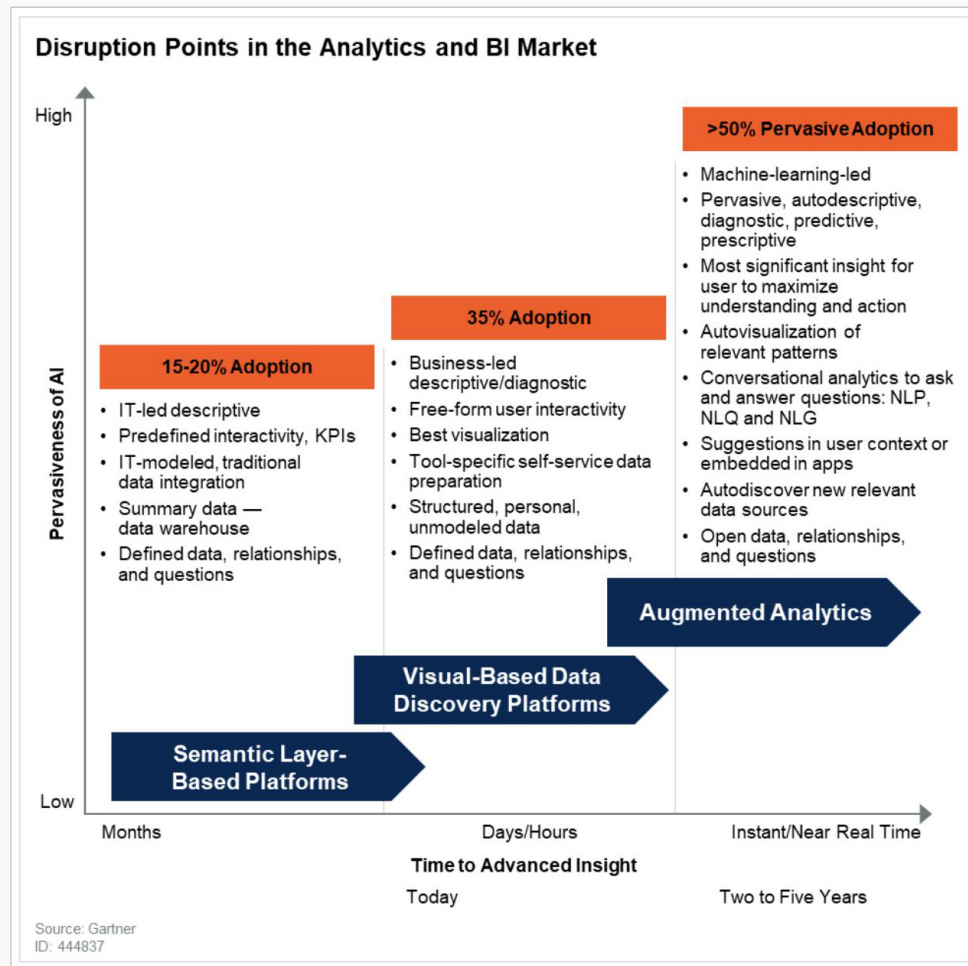
Executive Summary

Artificial intelligence (AI) is a term that we're hearing applied to applications more often nowadays, and many have been quick to try and jump on the 'AI' bandwagon. In this paper we'll discuss leveraging this type of technology to power analytics in your software platform. This is not about adding a chatbot so you can use the term 'AI' in your marketing materials. AI, within the context of analytics today, is primarily about automating what was previously manual and using the computer power of the machine that was not possible before. It provides an opportunity for you to add real value to your customers and a point of differentiation for your application.

More commonly known as 'augmented analytics', automation is the most recent of three key disruption points in the BI industry.



The industry is going through these three phases of BI and analytics:



Gartner, "Augmented Analytics Is the Future of Analytics", Rita Sallam, Carlie Idoine, 30 October 2019

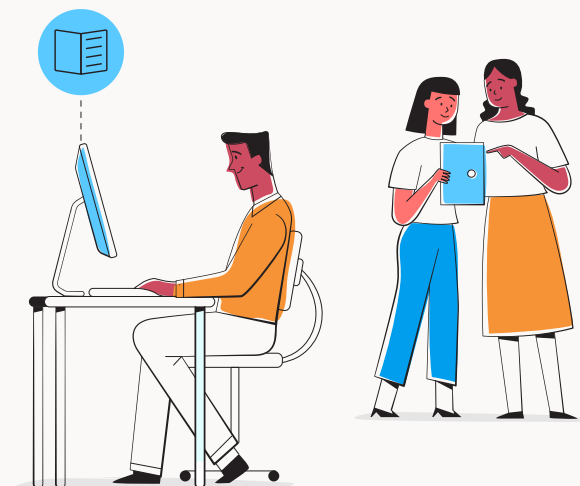
The first disruption in the BI industry, which emerged in the 90s, was the creation of semantic layer-based platforms. Many of these, like MicroStrategy and SAP BusinessObjects, are still in existence today.

The second phase came in the mid '00s with visual-based data discovery platforms like Qlik and Tableau Software. However, over the next five years, we'll see more applications shift to and leverage augmented analytics technology.

By embedding augmented analytics into your software application you have the opportunity to:

- Create a better customer experience
- Increase market share
- Gain competitive edge
- Improve customer loyalty
- Increase revenue streams
- Find new ways to monetize data
- Legitimately market the value you provide

While some of these benefits can be derived from embedding 'traditional' analytics, in this paper we'll explain how AI-powered analytics can accelerate these opportunities. We will also look at what factors you need to consider when selecting an analytics platform and embedding this technology into your application.

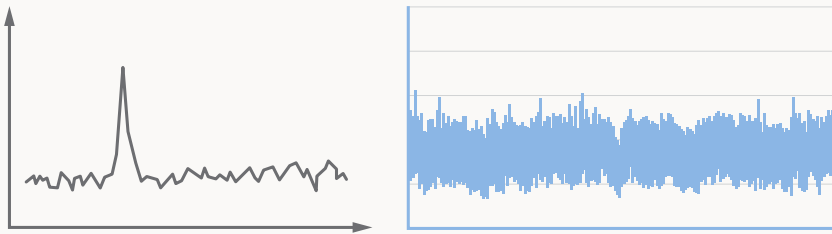


What does AI-powered analytics mean for your customers?

Gartner calls augmented analytics [the next wave of disruption in BI](#). It's an approach that automates insights by using algorithms and machine learning and can make use of natural-language generation. This means that organizations can do new things such as automatically perform analysis, surface unknowns, reduce the number of steps in a process, and accelerate time to value.

1. Perform vast analysis and surface unknowns

Each day, 2.5 quintillion bytes of data are created. It's impossible for humans to consume this much data so, to be able to leverage it, we have to use machines to do the heavy lifting. While your application may only contribute to a fraction of this data, it potentially possesses a lot of value that may not be being utilized. By teaching machines to sift through data, find patterns, and analyze data, we can leverage computing power at scale. This not only completes tasks much quicker than humans but also has the potential to uncover things that we can't. With so much more data available, spotting an issue can sometimes be like trying to find a needle in a haystack.



Consider these two charts - imagine that they're both showing you sales spikes. The first one shows you sales transactions in a bricks and mortar retail outlet over the course of a day and you can clearly see a spike at a particular time in the day. The action from this is that you will know when to call in extra staff to deal with this increase.

The second graph shows sales traffic at a busy ecommerce site. With high volumes of transactions, it can be virtually impossible to manually identify the significant spikes and troughs. Therefore, you may not realize when you need additional resources on your

website servers. Knowing this helps you deliver the same type of outcome as the first example - giving your customers the best experience at peak times.

The computing power we have today allows us to leverage technologies to search for those nuggets of gold at scale. As machines can automate manual tasks, they can process data more efficiently and on a much larger scale. This allows them to sift through more data than a human could to discover insights much more quickly or find insights that would be nearly impossible for a person to find on their own.

This type of augmented analytics could potentially identify new revenue opportunities or identify issues quickly. This type of insight may look like identifying patterns of risk before they lead to an SLA (service level agreement) breach or uncovering transactions that are outside the norm. So when thinking about your application's data, ask:

- Does my data contain high volumes and high frequency?
- Would my customers benefit from us identifying key patterns immediately?

2. Automate what was once manual

Those of a certain age will remember that when we were driving somewhere new we would look up a destination in a book of maps, find the page, plan the route, and start driving. If there was a traffic jam, we would have to stop the car, find a new route from our maps, and then start driving again. Today, we just open our GPS, enter the destination, and drive. If there's a traffic jam, the GPS recalculates your route and redirects you on the spot. To be able to do this, your GPS is processing thousands (or even millions) of data points so that it can optimize your route in real-time.

A similar process occurs when completing almost any analytical task that was previously done manually. Previously, if your customers wanted to ask a question beyond what was presented in an initial set of reports or dashboards, they would have to:

- Request a technical member of their team or yours to answer the question and perform additional analysis.
- If they had the skills, manually perform the data discovery themselves.
- Leave the question unanswered or guess.

AI-Powered technology has the ability to automatically perform the analysis. By

applying specific algorithms based on the analysis needed and using the underlying compute power of the machine, the technology can do the ‘heavy lifting’. That may be comparing data for different time periods, changes in volatility, automatically surfacing the data points that contributed to a spike or a drop etc.

These algorithms often don’t need to be ‘set up’. Algorithms that perform common analysis can already be baked into the technology interface so your customers can achieve this via a couple of clicks (see examples in the next section).

Reducing the number of steps and time in that process can mean huge efficiency gains for your customers, provide a much greater analytical experience and insight that they otherwise wouldn’t have been able to, or had the time to gain.

3. Accelerate time to value

As AI-powered technology can automate tasks and reduce the number of steps involved in processing data, it also reduces the amount of time it takes to analyze the data and uncover insights. This accelerates the time that it takes you to identify the value in your data and the value to your customers.

Going back to our retail sales example, imagine you run a marketing analytics platform and you find that there’s a sales spike for a specific product and the time at which the spike occurs correlates to a certain social media campaign in that same period. If the increased demand is positive, then alerting your customers immediately will allow them to take action in the form of more spend across that particular campaign and extending that across multiple social channels, meaning greater ROI. Similarly, if the data can show you quickly that your customer’s marketing spend isn’t having the impact they’d hoped, then they can reduce spend immediately rather than waiting days or weeks for a summary report - an immediate, tangible saving.

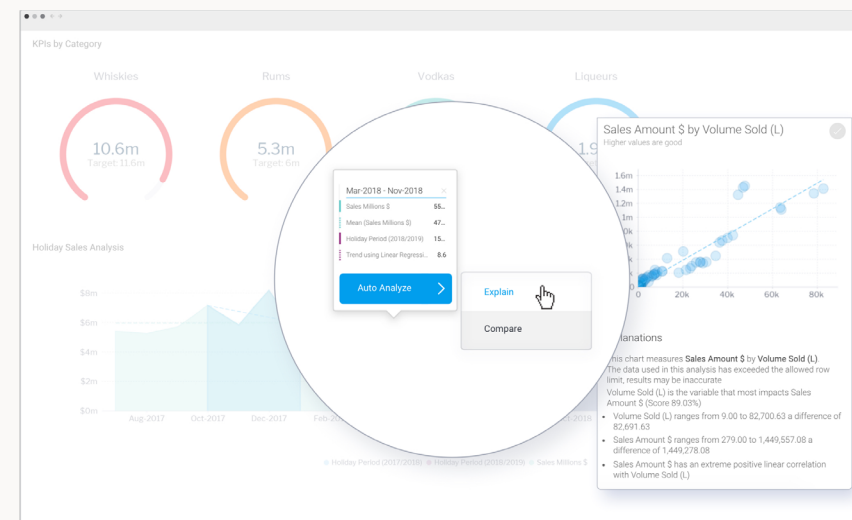
How to leverage AI-powered analytics in your application

If your software platform already has some form of analytics, then you may already provide your users with a set of reports and dashboards or even given them the ability to filter, slice, and dice the content that you provide.

With technology like augmented analytics, you can now enhance the type of analytics that you provide to your customers. The features that you offer them can even be tiered depending on the analytical experience you want to create and the capabilities of your customers. Here are examples of three types of AI-powered analytical features that you could offer your customers today - features that would provide gains for the casual to the more sophisticated user.

1. Machine assisted insights for the dashboard user

Machine assisted insights would be for users to whom you may already be providing some form of analysis or that would be comfortable with a dashboard. Machine assisted insights allow your customers to ask a ‘question’ of the data and the analytics application can assist in finding an answer.



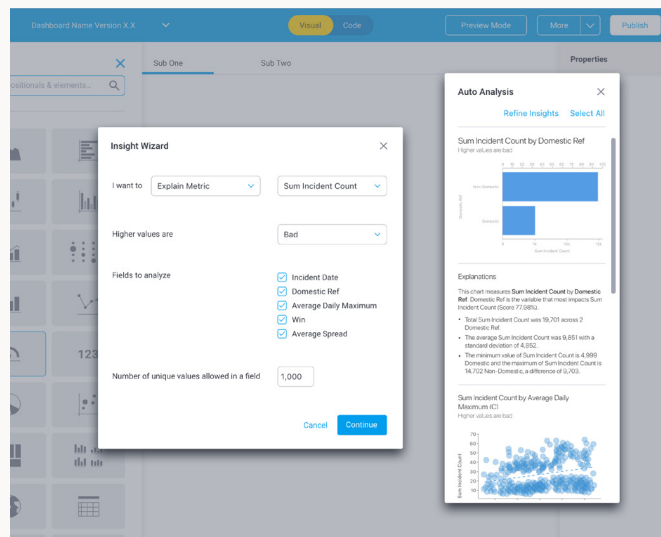
A user can click on a spike on their dashboard and request an explanation or comparison. The technology will process that query and, for an explanation query, explain the reason for that spike by way of automatically generated visualizations and the natural language narrative. In this example, your users can get an instant answer to explain why the spike has occurred or compare that spike to another point in time (a common analytical question).

You're providing your customers with the ability to immediately answer questions they have of the data. It saves time because they no longer need to dig through the data themselves or ask a data analyst or technical administrator of your application to do the analysis for them. If the insight also provides a natural language generated description of what they are seeing, this will also assist in data literacy, meaning your users can more easily understand what they are being presented with.

This enriches your customers' experience of both the analytics and your software platform. In a nutshell, your customers can derive greater value from their data and gain actionable insights much faster.

2. Assisted data discovery and self-service

Assisted data discovery is ideal for those customers who have a bit more experience working with analytics. Rather than having to ask an analyst to create a report for them, they can leverage self-service reporting that is enhanced with this technology. Most self-service reporting today gives users the ability to create their own reports and visualizations, build their own calculations, and perform their own data discovery using a drag and drop interface. Using automated data discovery features, those tasks can now be automated so your customers have all or part of their analysis performed for them.



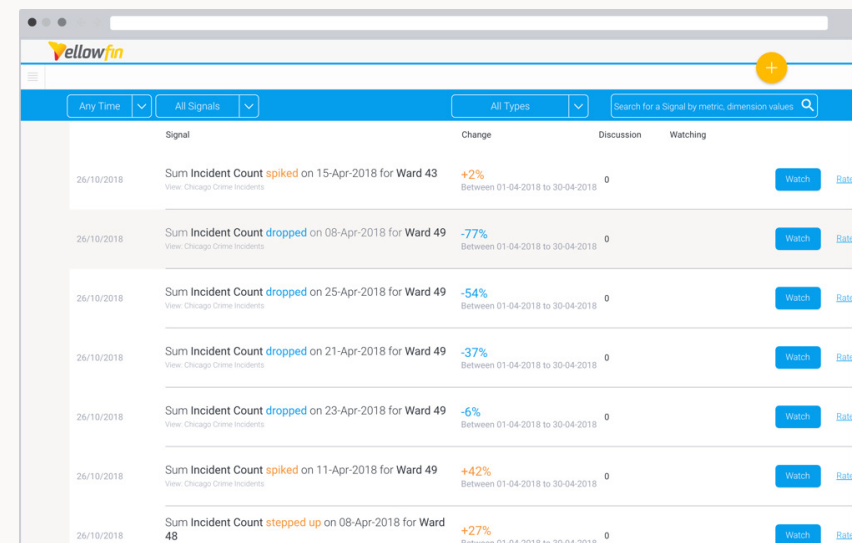
Text or menu interfaces can enable your customers to select the type of analysis they want to perform, and the analytics platform can automatically perform the analysis for them. It can also automatically create complex calculations and conduct variance analysis and then build the best-fit visualization along with a natural language explanation of the results.

You are providing technology that does the work for your customers and surfaces insights that they may not be able to surface themselves, giving them an enriched analytical experience. At the very least, it gives them a head start in performing data discovery and allows them to change or amend existing analysis.

3. Automated alerts

Your customers may already get scheduled reports and alerts. These will be based on thresholds with alerts broadcasted to users if certain criteria are met, for example if marketing leads are below this month's target. These alerts are based on known factors and are often aggregated business KPIs.

Automated time series analysis can now provide alerts that are smarter. Rather than waiting for a threshold to be reached, this technology can be running all the time and automatically searches for and surfaces any statistical changes as they happen.



The platform is automatically alerting your users to any significant change in their data as it happens. The alerts are also showing the other factors that may have contributed to that change to assist your customers in understanding why it occurred so they can take relevant action immediately

This technology is tailored to individual users based on their security profile (determining what data can be accessed) and the content with which they engage. Over time, the automated alerts become smarter and more relevant to your customers' needs. This creates significant value for customers, alerts them to potentially significant change immediately, dramatically reduces the steps needed to perform analysis, and delivers insights they would have never considered.

In these ways, AI-powered analytics can save your customers time and money, add significant value to your core applications, and provide answers to analytical questions your customers wouldn't have been able to find before.

Three questions to ask before selecting an analytics platform

Prior to determining which analytics platform is right for your application, there are three questions to ask.

1. Should you buy or build?

Before the Augmented Analytics era and if you had a dedicated analytics development team, it may have made sense to build the functionality you need directly within your application. But technology has advanced considerably and the rate of development in this technology wave is only increasing. This makes it difficult to build it yourself without specific expertise because, like with any software, there are nuances to analytics that specialists vendors develop over many years. Rather than diverting your resources to build something outside your core competencies, it's more cost-effective to embed AI-powered analytics from a provider with domain experience.

2. Can you integrate the technology?

For new technology to be effective, it needs to be able to integrate with your existing systems. For analytics software in particular, there are three types of integration that are important:

1. **Data integration:** This ensures your analytics tool can connect to your application's data source directly or via the use of APIs.

2. **Application integration:** Your analytics software should support integration via web connectors, JavaScript, and custom web services.

3. **Security integration:** By providing integration with common directories used for access control like LDAP, active directory, and custom authentication models, you can maintain security over your data.

3. Does the software meet your long-term success factors?

Beyond your initial license purchase, there are several factors that will ensure the long-term success of your analytics software. These include:

- **Flexible business and cost models:** Trying to force an analytics vendor's pricing onto your customers can negatively affect their purchasing experience. Try to make this seamless for the customer, with vendors that support a more flexible model.
- **Comprehensive services:** To ensure the success of your analytics software, ensure you have access to a complete set of services that range from initial planning right through to iteration and support post launch. Particularly if you're looking to incorporate 'AI' capabilities, having a partner with experience in implementing them is vital.
- **Brand clarity:** Determine whether you want the brand of the analytics vendor to be visible to your customers or hidden (white-labelling) and ensure that option is available to you.

Taking this new technology to market

Marketing this technology is not about adding an AI sticker to everything you do. Ultimately, it is the value that the technology brings to your customers that should drive the messages in your marketing, sales enablement, and customer pitch.

When thinking about your marketing messages, look at how your customers' lives will be different with this technology. For example, they will:

- Get more answers faster
- Find answers they wouldn't have found before
- Reduce time to identify the source of an issue or error

- Accurately identify patterns quickly that may point to an issue
- Predict issues to improve productivity or quality
- Save time and cost in searching data for issues

By focusing on these benefits specific to the data in your application, you can demonstrate to your customers the value that AI-powered analytics adds to your product.

In taking this technology to market, there are three things that are important to focus on.

1. Know your customer's capability

When you're looking at adding any analytics capability to your platform, it's important to think about your audience. Whatever analytical technology you embed in your platform should match the capability of your customers. There's no use giving your customers a better and faster way to build reports if they're not savvy enough to perform self-service. If your audience is C-level executives who consume content but don't create it, then you need to consider how you can enhance their experience with this technology.

If you think about the three types of AI-powered analytics we previously mentioned, these provide a useful way of looking at your customer's capabilities so you can create a product that suits them. Customers that have limited experience with analytics may find assisted insights useful, while someone who wants to dig further into the insights and conduct their own analysis may value assisted data discovery as well. Customers that have more advanced capabilities and are highly data-driven are likely to see the value in receiving automated alerts so they can see insights in real-time and react to them quickly.

Regardless of your audience, they often don't really care what technology sits under the hood. Most don't want to know if you're using k-means clustering powered by machine learning algorithms to give them the ability to segment their customer base better. What your customers care about is that they now have more accurate segmentation tools so their campaigns can be more effective and they can achieve a greater ROI. So focus on showing them the value of this technology through your application.

2. Price your product appropriately

When taking your new embedded analytics application to market, think about how you will price it. There are multiple approaches to consider. Here are several options:

- **Modular pricing:** Where you charge extra for the analytics app
- **Base pricing:** Bundle the analytics app into your product and increase the base fee
- **Free:** Bundle the analytics app but absorb the cost
- **Functional split:** Charge multiple fees for each component of the analytics app, there may be an opportunity to offer 'AI' features at an increased price.
- **Data split:** Charge customers only for the type of data they access. If your machine driven technology is crunching through large volumes of data, this split may be logical to your customers.
- **Content split:** Charge customers only for the content they use

The key is to make it simple for your customers to understand the value and how you price for that value. To determine what works best for you, you may include monitoring things like your customer's usage, their feedback, and what your competitors are doing.

3. Make sure you're sales ready

How your salespeople sell this new technology is something that you shouldn't underestimate. It can take time to understand how to market, sell, and really understand the value.

Selling analytics may also be a very different beast to your software. This type of technology is a leap from traditional reporting. You can't assume that your salespeople will be able to sell it in the same way as your core application, so ensure you invest in enablement across your team.

Conclusion

Embedding AI-powered analytics into your application has the potential to give you a true competitive advantage. It does this by helping your customers find valuable insights about their processes or product that they haven't been able to access or surface before. These insights may allow them to identify issues so that they can be corrected quickly or surface new opportunities to improve their business. Because manual analysis is no longer required, the technology can also save time and money. But the process of choosing the right analytics vendor, embedding their software, and taking it to market isn't simple.

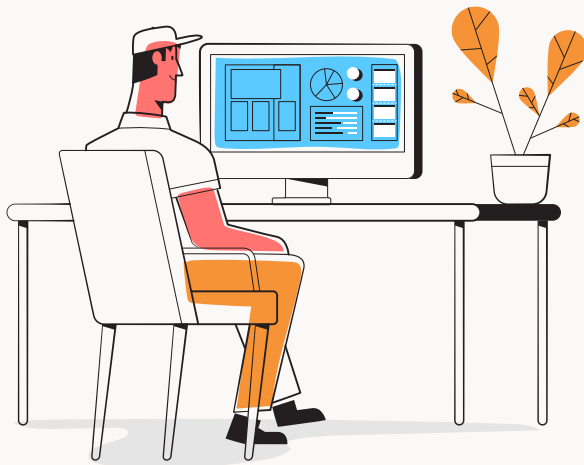
It's important to carefully consider whether the application is right for your product and your objectives as well as for your customers. Even once you've chosen an analytics platform, you'll need to consider how your customers will use it and ensure that your sales team is equipped to sell it effectively in the market.

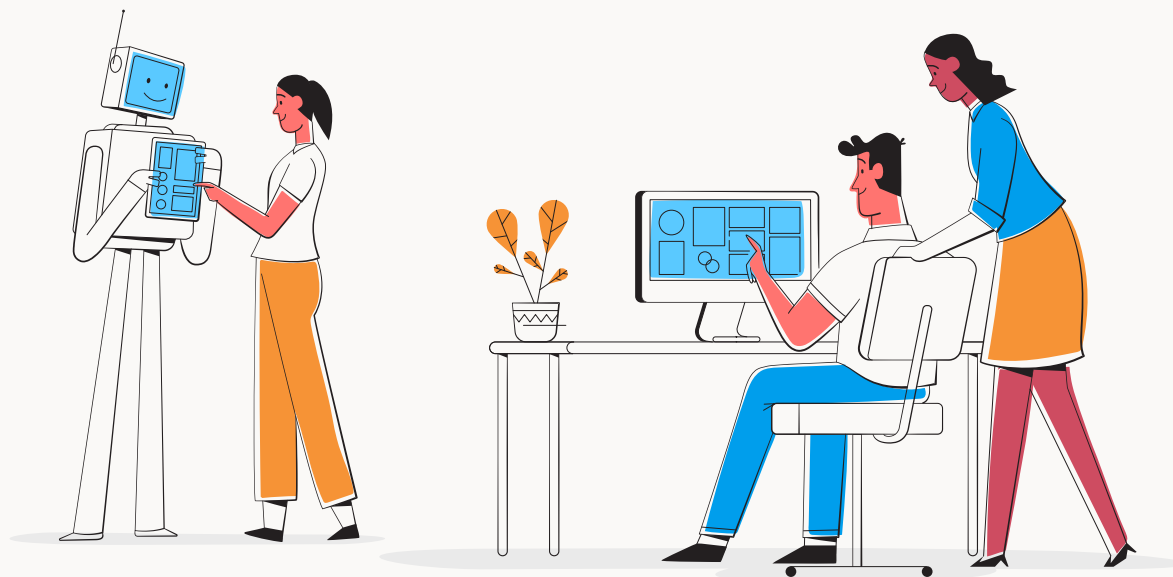
By taking each of these into consideration, you can ensure that your customers not only see the benefits of this new feature in your application but that they can also realize the value.

At Yellowfin, we've helped hundreds of software partners deliver more revenue and increase the stickiness of their products with analytics. We have recently been named as a 'Visionary' in the 2020 Gartner Magic Quadrant for BI and Analytics. We understand that successfully embedding analytics into your product doesn't end with us selling you our software. We partner with you to ensure your customers can maximize the value they receive from the analytics embedded in your application.

Source : Gartner, Magic Quadrant for Analytics and Business Intelligence Platforms, James Richardson et al., 11 February 2020

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