Leveling the Playing Field

with Cloud BI & Analytics

sigma

Make Data Your Startup's Competitive Advantage

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Introduction

If you run a startup or a small enterprise in any industry, you probably already know the following:

Cloud services are great

Platforms like Salesforce, Hubspot, and G Suite keep your organization running. You love the flexibility of not having to depend on on-premises and internal IT resources.

You need to leverage data to scale

While you have found success making decisions based on individual app data, you know you'll need more interconnectedness to draw more meaningful insights.

Team members with interdisciplinary skills are valuable

You save time and money when domain experts are able to analyze data and make sound business decisions based on that information.

With that said, how do you make the leap into being a truly data-driven organization? It seems like the most well-known success stories come out of large enterprises with the resources to manage on-prem data warehouses and hire an army of IT talent and skilled SQL analysts.

So how can a startup compete when it only has one data engineer, maybe a SQL analyst or two, and definitely no budget for an on-prem BI program?

Luckily, we're in an exciting time in the world of data warehousing and analytics. A growing number of providers offer every level of the BI stack (ELT/data warehouses/analytics) in the cloud. With these modern solutions, you can compete with large enterprises in a way that is affordable and scalable.

We've put this guide together to show you how a cloud BI stack allows you to use data for growth opportunities, while continuing to focus on your strengths.

Read on and learn:

1. How cloud BI helps you overcome common analytics hurdles
2. The components of BI in the cloud
3. How cloud analytics fits into overall organizational goals and strategy

Analytics Hurdles & Cloud Solutions

Hurdle 1: Disjointed Data Sources

Where are you getting your data?

According to one SaaS management vendor, the average SMB uses 20 paid SaaS products. Each of those SaaS applications probably generates data that is critical to at least one department in an organization.

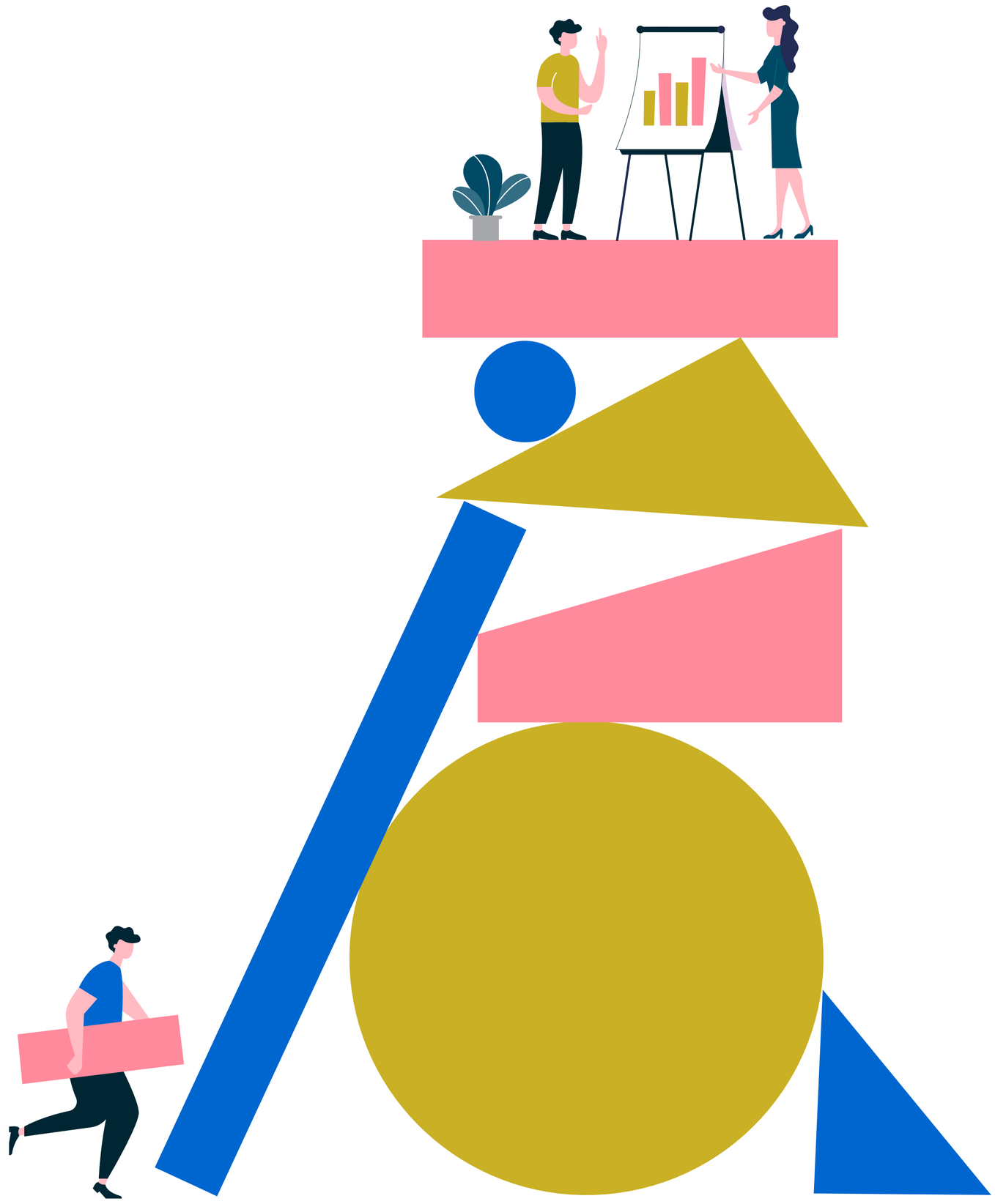
If you're a technology startup, then there's also the data generated from the product itself. Information about reliability and customer usage probably guides your decision-making process. There's also data directly related to your company's bottom line from payments and financial sources.

While SaaS apps are affordable and provide the flexibility that many startups need, they leave much to be desired in the reporting and analytics department. In some cases the only way to view a report is within an app's own system.

So what do you do when you want to build a model based on data from two, three, four, or 20 applications, in addition to your internal data sources? Depending on the tools that you already have at your company, one of your resourceful analysts would probably do something like this:

1. Download multiple CSV files
2. Designate a primary key and join tables with SQL
3. View and perform basic analysis in Excel or an on-prem analytics tool

The above process assumes that all of your data sources are organized in a relational schema and there is no unstructured data to deal with. As we generate more IoT and mobile app data, this scenario becomes less and less likely.



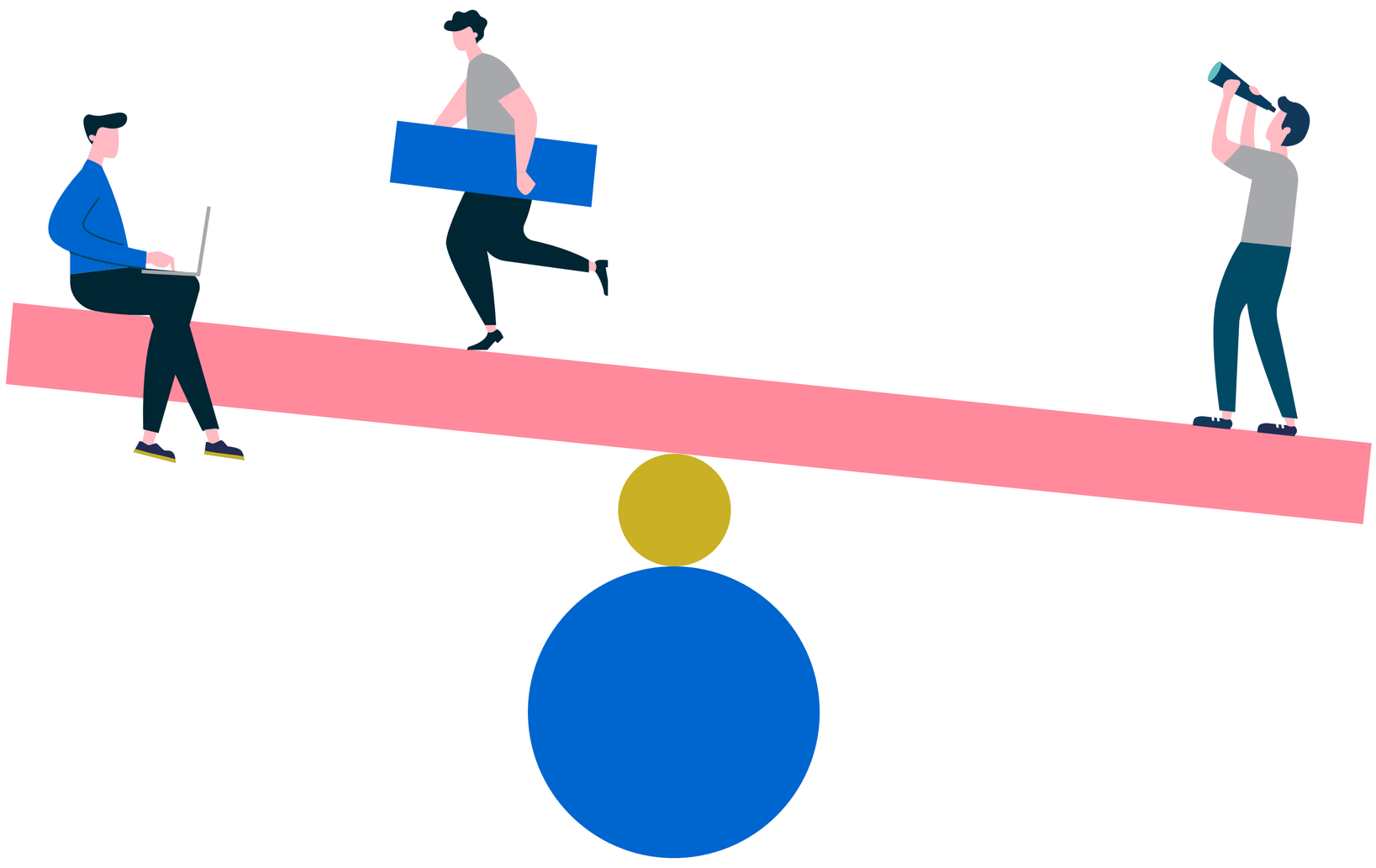
Solution 1: Cloud ETL & ELT

To overcome this hurdle, you need a cloud ETL provider that's connected to a cloud datawarehouse (more on cloud data warehouses in a bit).

ETL (Extract, Transform, Load) is the process of moving data from a source like a database into a data warehouse where it can be analyzed. Some cloud ETL vendors also support ELT (Extract, Load, Transform) in which data is converted into analyzable form after it is already in the data warehouse.

Why cloud versus on-prem? Before the rise of SaaS applications ETL meant an engineer manually sending internal sources to the on-prem data warehouse. Now, SaaS application data sources now outnumber on-prem data sources. SaaS vendors send data to their customers in real time via API. Cloud ETL products are designed to handle the constant stream of information coming in from SaaS applications. Cloud vendors also give you the flexibility to support structured and unstructured data.

With cloud ETL you can streamline the process of creating one central source of information and give analysts the ability to more easily conduct complex analyses.



Hurdle 2: Outdated Data

That real-time data coming in from SaaS applications is only useful if you can also analyze it in real time.

What could be a useful business question one day could be irrelevant or out-of-date the next. Many analytics teams can't move as quickly as the business is changing because they have to wait for data to be routed into a data warehouse. This lag can create a competitive disadvantage as a company can be constantly behind their competitors when analyzing and processing information.

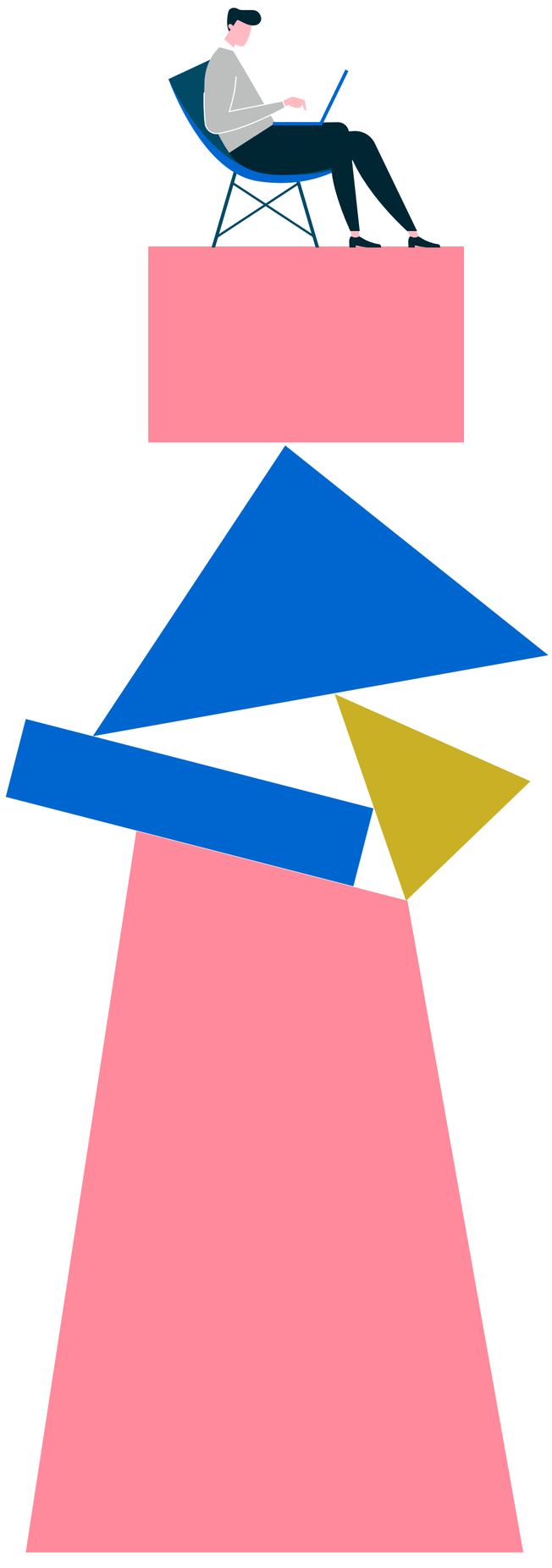
Solution 2: Cloud Data Warehouses & Data Lakes

After cloud ETL comes cloud data warehousing.

Data warehouses are the centralized hub from where you can access and analyze information coming in from different sources. In addition to a data warehouse, some organizations also utilize data lakes as a place to store non-relational data from sources like IoT or mobile devices.

Gartner calls on-premises data warehouses the “new legacy.” This is hardly a revelation as on-prem options require a large upfront financial investment. In addition they require dedicated IT and data engineering resources to maintain software and scale the system up and down depending on usage and company needs. Cloud data warehouses can scale elastically, don’t require an upfront infrastructure investment, and can manage structured and unstructured data. Cloud data warehouses allow engineering and IT resources to stay focused on more core business projects.

With all of the data in a dynamic warehouse, analysts can quickly develop up-to-date dashboards, reports, and worksheets based on what is happening now, not five minutes ago, or 12 hours ago.



Hurdle 3: Hard-to-Use BI Tools

Business users at startups sometimes find themselves in a difficult situation.

They want a simple question answered, or a simple analysis conducted, but the company's analysts don't have the bandwidth to deal with it quickly.

So, the business user decides to take matters into their own hands, but they face a couple of obstacles.

First, they simply don't have access to company's BI tools because:

1. It's cost prohibitive to grant licenses to employees outside of the core data team
2. The company doesn't feel comfortable granting access to everyone in the organization
3. The business user hasn't gone through the tool's training program

Or, they simply don't feel comfortable using the company's analytics tool especially if it requires some advanced SQL knowledge. So what do they do? Turn to a spreadsheet program like Microsoft Excel or Google Sheets.

One obvious problem with using spreadsheets to analyze large data sets is the limitation on rows and columns. It's possible that the business user would not see the full picture and make a decision based on incomplete information.

There is also the problem of security. According to a PwC analysis, current employees are the top source of security incidents. Most of these employees aren't behaving maliciously, rather they're inadvertently exposing proprietary and personal information by downloading a spreadsheet on to their machine, or worse, sending it to the wrong person.

Employees shouldn't be driven to risky behavior because they want to seek information beyond what is provided to them in a static dashboard.

Solution 3: Cloud Analytics Tools

A company's analytics solution is how most individuals within an organization interact with data.

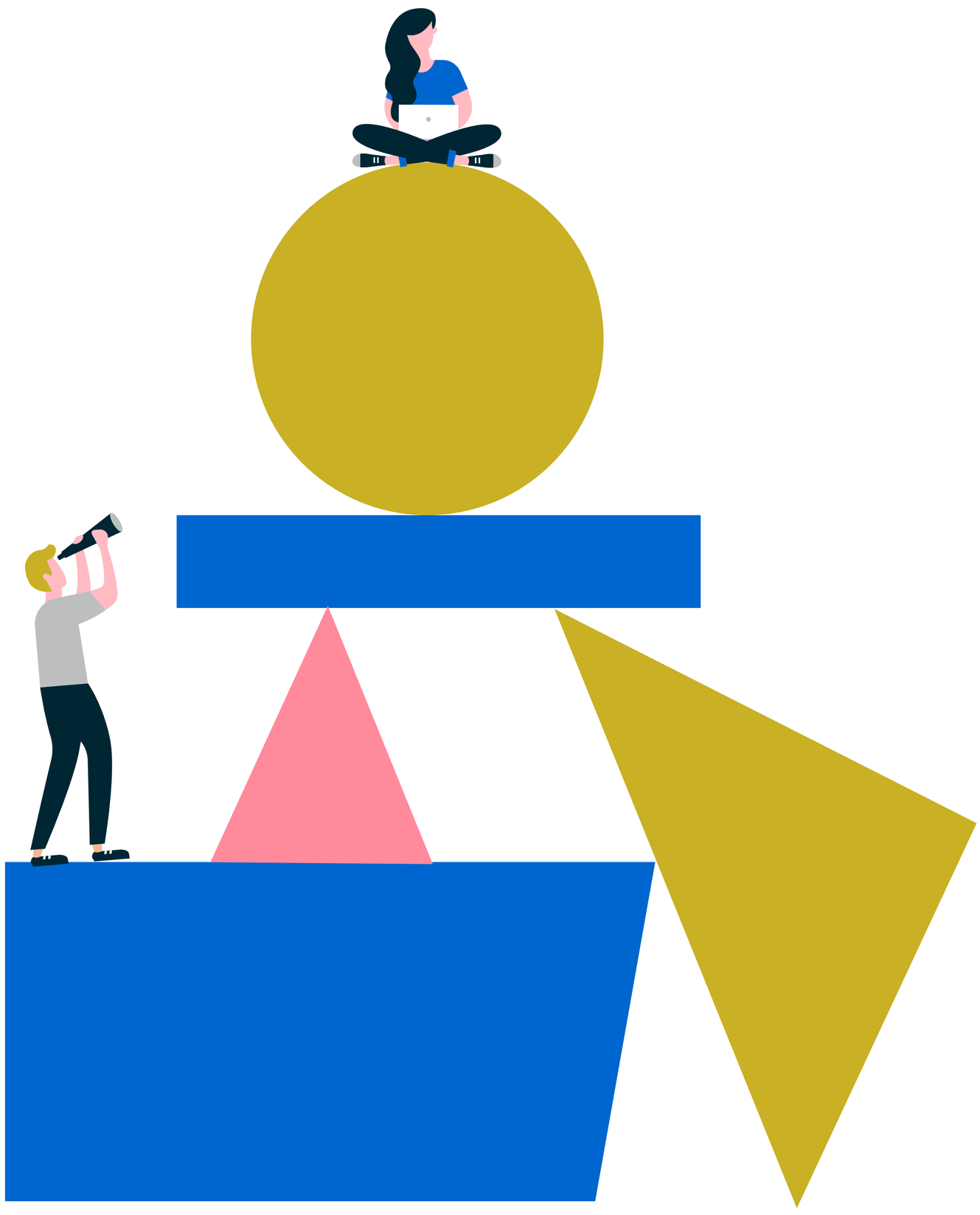
Sometimes this involves multiple tools with varying levels of complexity. There are, however, an increasing number of tools that can be set up to fit the needs of individuals with varying technical backgrounds.

Most analytics solutions on the market already offer some sort of cloud version. The problem with these hybrid solutions is that they are not really made to analyze cloud-based data sources like those generated from SaaS applications. Cloud-first analytics solutions offer unique real-time data access and information sharing within an organization.

Cloud analytics tools help to solve the problems detailed earlier. First, they draw data from a cloud warehouse, so all relevant information is available to those who need it. Next, modern analytics tools are built with the needs of all kinds of users in mind. Spreadsheet-like interfaces along with drag-and-drop components allow anyone to conduct advanced queries.

Security risks are reduced because a cloud analytics tool connect directly to the cloud data warehouse. There is no additional router that stores data and moves it from one place to another.

Finally, because all of this analysis can be done in a browser, there is no need to save data locally. Cloud analytics tools like Sigma eliminate the need to download spreadsheet files to local PCs or email documents. Every worksheet can be accessed in Sigma and shared in team workspaces.



Analytics in the Cloud

Here are some unique features of the cloud Analytics stack that make it ideal for data-driven startups:

Security

We are living in an era of constant data breaches.

Often these breaches are not the result of external attackers, but from lax security policies within an organization—like the "rogue" spreadsheet issue mentioned earlier or the tolerance of shadow IT.

In the startup space, it's common for employees to subscribe to new apps or services without waiting or even asking for IT input. While this is often done in the spirit of innovation and moving fast, this will become less acceptable in the age of GDPR and similar privacy laws.

One of the first steps companies need to take to come into compliance with the privacy regulations is performing a data audit. IT and security teams need to be able to answer questions like:

1. What data is the company collecting?
2. Where is it stored?
3. Who has access to it?

The safest place for your BI stack is in the cloud. Cloud providers have the resources to remain in compliance with security standards and regulations. They also still allow employees to access information quickly, reducing the appeal of using unauthorized applications.

Cloud providers are also able to proactively search for threats, patch vulnerabilities, and send out updates. You benefit from enterprise-grade data security while staying focused on your core business.

Scalability

Your analytics needs will only increase as your company grows.

The amount of historical data that you have will continue to accumulate and it is likely that you will receive data from a growing number of SaaS applications.

On-premises analytics solutions are not built with a rapidly-changing future in mind. Cloud-native tools are designed to scale and support an increased number of users and data types.

Scalability also offers the benefit of saved time. First, you don't have to deal with a long set-up time after you make a change with the help of data connectors, and low-management cloud data warehouses.

In addition, bringing new users up to speed can be done quickly and internally. Cloud BI tools are meant to be accessible to any member of an organization who needs them. Taking cues from consumer products like visual website and mobile app builders, they have moved from enterprise utilitarian to more intuitive cloud interfaces. Employees feel like they are using the products they would use outside of the workplace. You don't have to spend time and money sending batches of employees to offsite vendor trainings.

Costs

So how much is all of this is going to cost?

If you've worked with SaaS vendors in the past, you've probably seen how their pricing models are competitive against legacy and on-premises options. Cloud-native BI tools keep costs low by eliminating unneeded expenses of maintaining on-prem hardware.

Some cloud BI vendors have pricing structures that are meant to meet your companies needs now and remain affordable as your needs change in the future. Here is a general overview of service pricing within the data stack:

ETL/ELT

The most common pricing mechanisms in the ETL space are integration-based or row-based pricing. In the former, the number of sources from which you draw data determines the price, while the latter is based on the number of rows of data extracted. A less common pricing model is based on the actual volume of data that is pushed per month.

Data warehouse

Cloud data warehouses and data lakes typically charge on a pay-as-you-go basis. The actual unit varies by provider and could be based on time, storage, or a pre-negotiated flat rate. In any case, you won't have to predict your warehouse needs far into the future as is required by an on-prem option.

Analytics

The ideal cloud analytics vendor has a pricing model that enables a company to affordably deploy analytics organization wide. This is done by basing pricing on the number of active users who perform actual analyses against the data warehouse. Companies do not have to pay for licenses for employees who simply want to access dashboards and worksheets.

Cloud Analytics & Organizational Strategy

Instilling a Data-Driven Culture

Instilling a data-driven culture begins with visibility. Ask yourself the following questions:

1. Which departments are using SaaS and internal data sources for decision making?
2. Why?
3. Are there other departments that would benefit from this information?
4. Do they have access to it?

When groups within a company either intentionally or unintentionally fail to offer any visibility into their analysis and decision making they create missed opportunities for collaboration. Employees should be given the resources to connect the dots, follow journeys across departments, and work to develop insights that drive growth.

The cloud BI stack makes this goal a reality by uniting data sources and making them easy to access in a central location for all users. But uniting data is just the beginning.

Before analytics becomes a tenet of your company culture, you must instill the idea that data drives every decision. This is easier said than done—but don't fret, many organizations accomplish this everyday.

Providing employees with access to company data is a major blocker, so start there. Next comes adoption. What good is data if it's not being used regularly to inform strategy or make decisions? You'll need a combination of the right tools and attitudes for this to take off within your organization. It may take time, but as you build out a deeper connection to data employees will start to think with a data-driven mindset. They'll start asking more questions, seeking more information, and using it at every level of decision-making.

Building Better Relationships Among Roles

In addition to the data stack, there is also a "stack" of individuals who use and see data in different ways.

First there are data engineers, who are accessing and transforming the raw data they *think* analysts need for their work. Next, analysts build dashboards that they *think* are answering the questions of domain experts. Finally domain experts are driving the direction of the company based on information that they trust is relevant and accurate.

A problem with this hierarchy is that the individuals with the closest understanding of how data will be used are completely left out of the data modeling conversation. Data cannot be used to drive business strategy if groups are not speaking the same language. As Foster Provost and Tom Fawcett write in Data Science for Business:

> Just as we can’t expect a manager necessarily to have deep expertise in data science, we can’t expect a data scientist necessarily to have deep expertise in business solutions. However, an effective data science team involves collaboration between the two, and each needs to have some understanding of the fundamentals of the others area of responsibility.
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> **Foster Provost and Tom Fawcett**

The cloud BI stack enables business teams and data teams to have actual two-way conversations. With visual modeling tools domain experts can build off of verified sources created by analysts. They can join tables and integrate new information (without needing to know underlying SQL statements) and share this work seamlessly with the data team. The organization can stay on the same page about what data is most relevant with business strategy.

How Sigma Levels the Playing Field

While cloud ELT/ETL and data warehouse options continue to grow, there are few cloud-native analytics platforms built specifically to work with this technology. Sigma is a cloud BI and analytics tool that takes advantage of the benefits provided by the modern cloud data warehouse. Here's how Sigma allows startups to have the same capabilities as large enterprises with on-prem analytics operations:

Accesible to All Users

Business users need to be able to access and analyze data freely and not be restricted to out-of-date and static dashboards.

Sigma understands that not everyone has the coding skills and knowledge of SQL to conduct complex analyses. Sigma's codeless data model provides a way for users to explore data in a visual interface similar to the spreadsheets many people are accustomed to working in. Users more comfortable with SQL are still free to write queries in the traditional way.

Collaborative

Gleaning insights in a silo is inefficient.

Team members are often looking for answers to the same questions, so it's likely that someone has already done an analysis that might benefit someone else in an organization. Sigma reduces the need to do repetitive work by giving users the ability to create shared organizational or department-level workspaces.

This collaborative model also gives data teams insight into the kinds of questions business users are seeking answers to. They can use this information to inform their future reporting practices and better serve the company.

Secure

Other BI solutions create unnecessary vulnerabilities by storing your data. Sigma does not.

Whenever you are using Sigma, you are directly accessing your cloud data warehouse. In addition to being secure, the data is always fresh and you don't need to worry about making decisions based on out-of-date information.

Sigma has achieved SOC 2 Type II compliance. We along with your data warehouse vendor provide world-class IT teams who keep the latest security protocols in place and updated, and assist if/when a breach or issue does occur, to resolve it quickly.

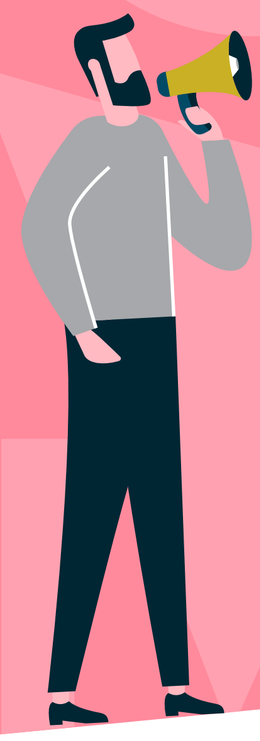
Fast

One of your biggest concerns about investing in a cloud BI platform may be the time it takes to get up and running.

It's no secret that many on-prem BI tools take months to get integrated into an organization's systems. After that, most users require many hours of training before they can effectively use the tool. Sigma doesn't require any of that. Once you're connected to the data warehouse, your users are ready to get to work. And because the software is easy to use, there's no long training time.

Your SQL pros may wonder how a visual tool is supposed to save them time. In Sigma analysts can move between worksheet and SQL interfaces. If they (or a business user) have forgotten or want to add a transformation to a query, the analyst can model it visually instead of writing the statement again. And let's not forget how fraught with errors a long and complicated SQL statement can sometimes be. Getting the query right on the first try is necessary in a competitive business environment.

Are You Ready to Compete?



Despite the success stories and analyst recommendations that all organizations become data-driven organizations, BI adoption remains at

30%

for all employees.

Data remains inaccessible in many organizations because of outdated systems, overworked BI teams, or beliefs that only highly-technical employees should have access to it.

Data shouldn't be kept behind walls. Sigma's goal is to break down the barriers to data adoption and bring the remaining 70% of employees into the data conversation. We envision a world where curiosity is encouraged and business intelligence is a collaborative platform for data discovery.

Are you interested in discovering what your organization can accomplish with Sigma?

Get Started