



Using Data to Unlock Your Unit Economics

No matter the size of your company

Stuffing cash under a mattress is a poor investment strategy. You can't grow it. You can't spend it. You end up with a pile of money that's not doing anything for you. But this is exactly the tactic businesses across the country use when it comes to the new currency - data.

Data has unseated cash as king of the modern economy. The businesses that do the best job of collecting it, understanding it, and shrewdly investing it in their operation will rise to the top.

Even businesses who understand this concept keep stuffing money in the mattress. They store up piles of data not doing anything for them.

Just as money means nothing if it's not spent or invested, data is pointless if it's not informing decisions.

Fortunately, a company doesn't need the resources of Amazon or Google to excel at the data game. Even small businesses collect thousands of data points. All they need is an affordable, easy-to-use process to visualize trends and transform that data into insights they can use to optimize their company.

The secrets to greater efficiency, lower spending, and more revenue lie in your business's unit economics. And data is the key to unlocking them.

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What Are Unit Economics?

To see the big picture, you have to get small. [Unit economics looks at profit and loss for each individual unit of revenue.](#)

For example, one source of revenue for a SaaS company might be annual subscriptions to a pro plan. Unit economics examines all of the input that goes into getting one subscription - developing and maintaining the software, marketing that led the customer to the plan, the channels used to reach the customer, the sales process to close the sale, the ongoing customer support for the subscriber.

In a nutshell, unit economics examines how much your company spends to make a dollar. You probably use these calculations on some fundamental level, even if the term is new to you. But many businesses just scratch the surface of what unit economics are capable of.

When you understand exactly where your revenue is coming from, priorities become clear. Tactics can be adjusted based on return on investment, not on gut feelings.

[The Point Defiance Zoo & Aquarium in Tacoma, Wash., is a prime example of how analyzing revenue and spending can impact a small business.](#) The zoo's revenue comes from online ticket sales, on-site ticket sales, and annual memberships.

Investing in data analysis gave the zoo the insights it needed to grow membership levels by 13 percent in a single quarter. Adjusting its marketing tactics to meet the trends revealed by the data, the zoo increased online ticket sales by nearly 800 percent over two years - all while continuing to set records for on-site ticket sales. At the same time, cross-referencing historical attendance data with projected weather forecasts helped the zoo more accurately predict attendance levels, leading to more efficient staffing.

To harness the power of unit economics, it's not enough to break down revenue into units. You need to see how those units change in real time. Revenue is a living, breathing, ever-changing thing. Whether it's a holiday rush or a global pandemic, consumer behavior is prone to rapid swings. Companies prepared to jump on these short-lived opportunities make millions.

The First Step to Unit Economics: Finding the Metrics

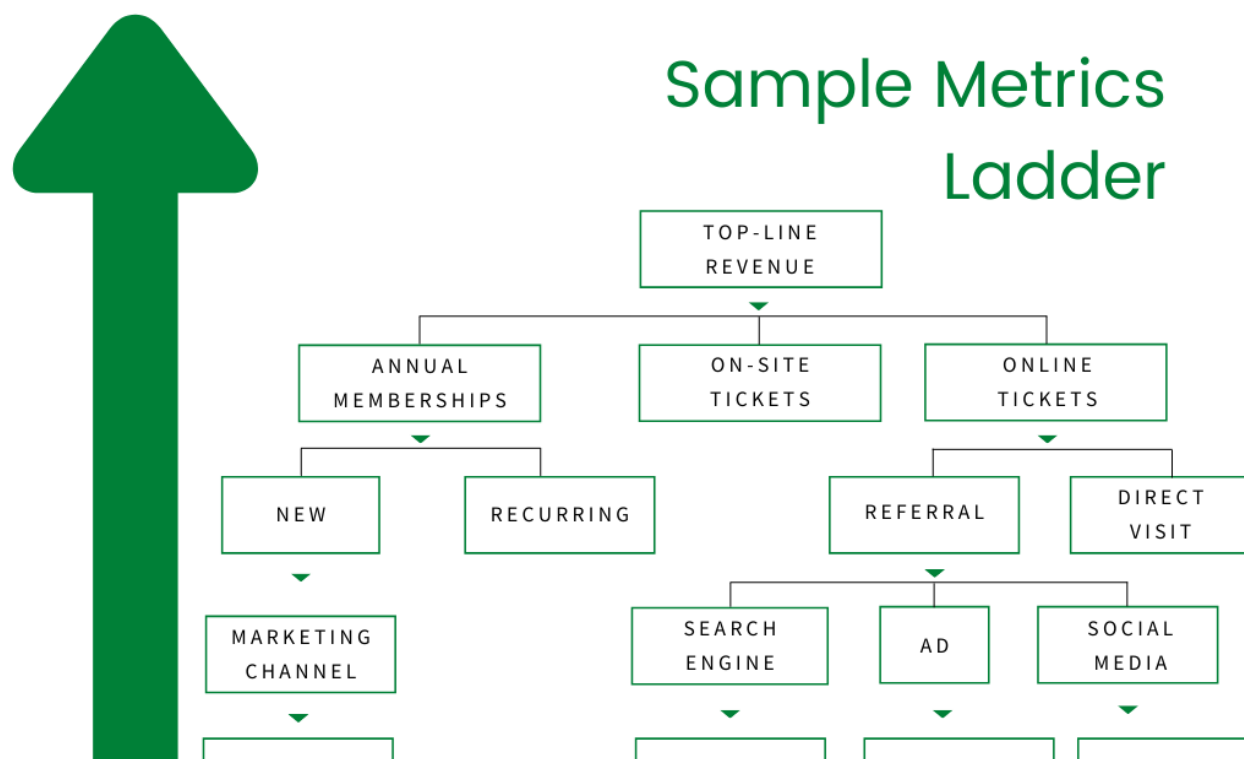
To take full advantage of your data, you have to know what metrics are important to your success. Most of the time, these metrics will be revenue based. They might include customer metrics like customer acquisition cost, lifetime value, or churn. They could also include sales metrics like average order value, average gross margin, or frequently combined products. You'll find a list of commonly referenced metrics at the end of this paper.

The easiest way to find your key metrics is by building a metrics ladder, a visual representation of what goes into your company's profits. This simple diagram shows how metrics ladder up from the top of the funnel all the way to your goals. It might look like a ladder, an organizational chart, a family tree, or a map. Whatever visual form it takes, it starts with revenue.

Where did that revenue come from? In the zoo example cited above, it comes from ticket sales and annual memberships.

Ticket sales were broken down into one-time and repeat customers. Repeat customers were further broken down by ZIP code. By identifying the ZIP codes with the largest numbers of repeat customers, the zoo was able to launch a targeted marketing campaign for annual memberships, upselling customers from repeat one-time purchases into predictable annual plans.

Ticket sales were also broken down between on-site and online. When the zoo examined the data for online ticket sales, it was able to identify the days and times people were most likely to make a purchase. It also saw the channels that were leading buyers to the site. Combining all this data made it possible to increase online conversions by launching limited-time deals on the most effective channels at the time buyers were most open to making a purchase.



The metrics ladder works backwards from the unit of revenue through each step of the sales and marketing journey. It puts hard numbers behind anecdotal beliefs about the channels and tactics that are working to make the company money.

Data-driven decision-making starts with identifying and agreeing on the key pieces of data. Every member of the executive team should know and understand the key performance indicators that go into the metrics ladder.

Anecdotal evidence is a common source of friction between departments. Marketing wants to increase the advertising budget while operations wants to invest in customer experience. [A metrics ladder puts everyone on the same page](#), so the entire team understands what's driving the bottom line and where opportunity may lie. It offers a single source of truth that eliminates the need for decision makers to "trust their gut."

The metrics ladder is a living, changing dataset. Every new system is assimilated into the model as it is added. For example, if you've been selling through Shopify and decide to add Amazon, the new channel has to be broken down and added to the ladder.

Finding the Data

Once you know the pieces that make up your revenue, you have to identify where data on those pieces lives.

If one piece of your metrics ladder is "credit card transactions," that data may live in a processing app like Square or Stripe. If "website visitors" is on your ladder, the data might be stored in Google Analytics.

The systems and apps collecting your business's data are the foundation for the technology stack that will allow you to analyze this information and use it to build a data-driven business strategy.

When to Upgrade to a Data Tech Stack

Small businesses may be intimidated by the idea of a data tech stack, but the truth is, no company is truly too small to benefit. Trying to calculate unit economics without data technology would mean a mind-boggling number of hours manually entering data into spreadsheets, exporting it into reports, and scouring it for trends. The staffing required to make that happen would be enough to push a small business out of the small business category.

By the time an opportunity has been spotted, it may have passed. And that doesn't even take into account the other drawback to manual processes: the potential for human error.

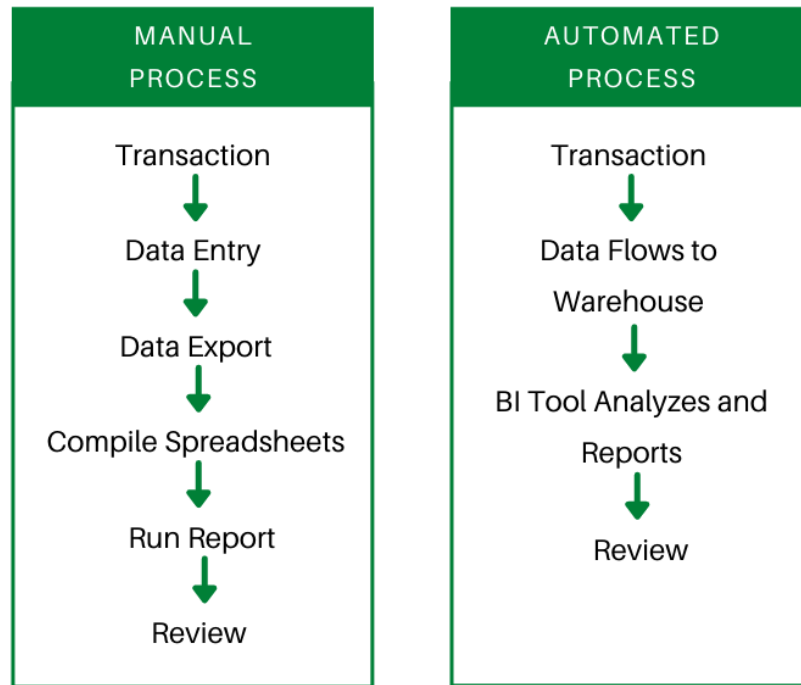
Whether you are tracking profitability manually or through a data platform, the process starts from the same place: some kind of transaction.

Someone interacts with your company in such a way that it generates a data point. This interaction could be a purchase, a sales demo, or clicking on a Facebook ad. Whatever it is, a customer or prospect has engaged.

In a manual process, an operator logs that transaction. Maybe a salesperson makes an entry in the CRM or an assistant imports the Facebook ad report into a spreadsheet. When it comes time to run a report, someone - often the CFO or someone from their team - combines data from all these various spreadsheets and databases into another spreadsheet. That data is then manually reviewed for trends and analysis.

The drawbacks to this system are clear. Manual data entry creates opportunities for errors. A single typo could ruin your entire dataset. It's also expensive in terms of manhours and can't provide insights in real time. It's slow, inaccurate, unreplicable, unscalable - and the data analysis method of choice for [more than 60 percent of organizations](#).

Tracking Metrics



When you're tracking your unit economics, it's critical you have up-to-date numbers to feed into the formulas. Over time, pieces like customer acquisition cost or lifetime customer value may fluctuate. If you aren't taking those fluctuations into account, your numbers will be off - and so will any decisions you make based on that data.

In an automated system, the transaction data feeds directly into a data warehouse, where it is sorted and stored. A business analytics tool pulls data from the warehouse, analyzes it, and presents it in a dashboard or a report. Automating data analysis allows you to react to the market as close as possible to real time - which translates into real money.

For example, a company's marketing plan may have budgeted \$10,000 a month for Facebook ads. A data analysis reveals it costs this company twice as much to acquire a customer from Facebook as it does from Instagram. Based on their purchases, the analysis also estimates the lifetime value of customers from each platform.

Armed with this information in real time, the chief marketing officer can make immediate decisions to optimize the social media plan. Waiting for a manual analysis would mean potentially losing thousands of dollars on ineffective channels.

Rather than asking if your company is big enough to need a tech stack, ask whether a tech stack could help you do business more efficiently.

[It's time to upgrade to a modern tech stack](#) when it takes all day - or all week, or all month - to answer a business question. If information is scattered across multiple platforms, requiring days of seeking out and compiling data to come up with a simple answer, your system does not work.

Upgrading a manual system of data analysis to a machine-based system can, in and of itself, have a dramatic impact on the cost of doing business. Implementing a modern data stack can eliminate hundreds of data engineering hours. This not only saves money but frees up your engineers to work on new projects that could give you a competitive edge, like building new data models.

Real-Time Analysis Matters

Many small and medium businesses run a profitability analysis only at financial close or when they need to generate a report for investors. The finance department might spend days exporting and combining data from spreadsheets to get a view of what happened in the reporting period.

For decades, that process worked. Not anymore. [Today's business environment is data driven and moves at the speed of the Internet.](#) Small businesses simply can't afford to make decisions based on month-old data.

And there's no reason why they should. The tools to provide real-time analysis are more robust, more affordable, and more user friendly than they have ever been. When you take into account the exponential revenue growth unit economics can bring, plus the savings in manhours an automated system provides, a technology upgrade often costs less than clinging to manual reporting.

As the world's most successful companies use data analysis to make their offerings ever-more targeted, smaller competitors have little choice but to try and keep up. Customers have come to expect the kind of tailored experiences offered by Google and Amazon. [The tech giants keep writing the playbook, and in order to thrive, businesses of all sizes need to be able to anticipate what's next and react in real time.](#)

Real-time unit economics track the pulse of your business. If you know how much it costs to acquire a customer and how much they are likely to spend with you over their lifetime, you can keep those numbers in balance. They can indicate the success or failure of changes you make to your strategy. They can help you predict your long-term financial health and plan for future growth.

Developing an automated process to calculate your unit economics is particularly valuable for young companies. The biggest advantage small businesses have over behemoths is their ability to pivot quickly. Knowing how changes in the marketplace are affecting your costs and revenue

is key to reacting fast and beating the competition. A startup that does this successfully can demonstrate the rapid growth investors are looking for.

Even a small company has a wealth of data at its fingertips. Engagement with social media accounts. Website visits. Online payments. [The amount of data being collected is staggering - but much of it sits untapped in silos](#). A data analysis system is the recipe that turns disparate ingredients into a feast of useful insights.

Laying the Foundation for Data Analysis

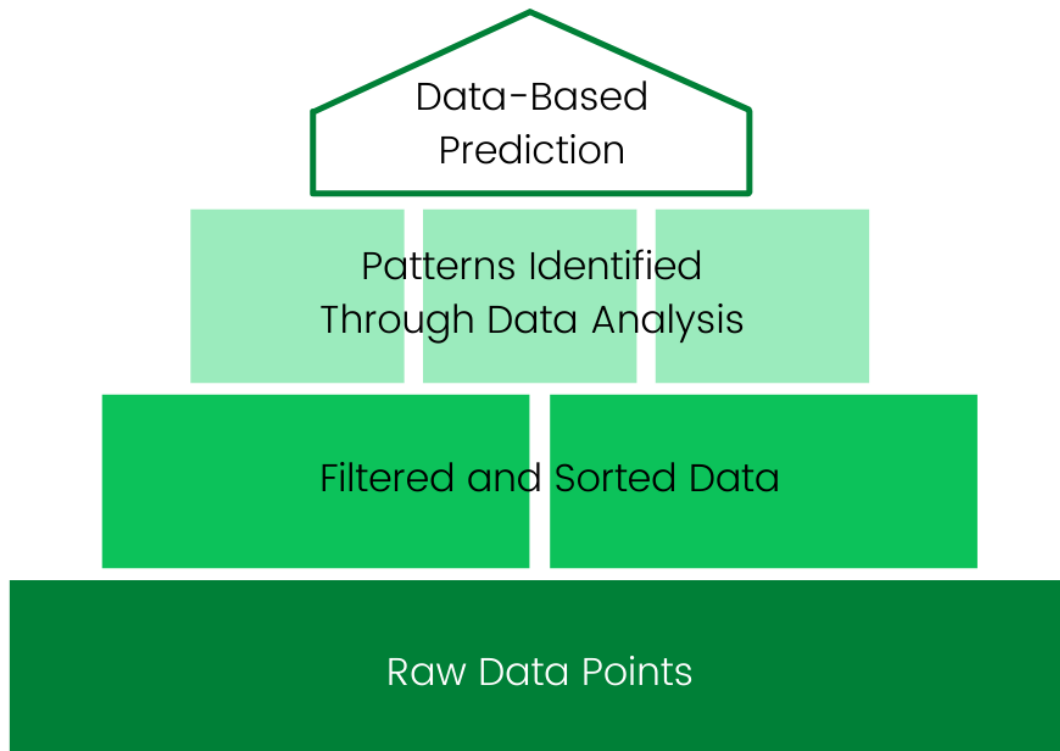
Children playing with building blocks learn pretty quickly that a tower needs a broad, solid base to stand. The same is true for data analysis.

At the base of the tower is raw data. This is the foundation for the insights that will inform your business strategy.

The next level is a data warehouse. This tool filters the raw data, sorts it, and organizes it into useful categories. When upgrading from a manual system, the data warehouse replaces all of the disconnected spreadsheets holding data in silos.

Once your data is organized, a business intelligence tool can comb through it looking for trends and patterns. It can pull data from different parts of the warehouse and combine it into useful insights. For example, the Point Defiance Zoo was able to predict attendance by combining ticket sales data with data on weather patterns.

Once this structure is in place, a business is ready to reap the benefits of data science - building complex algorithms to create predictive models.



Building a Data Tech Stack

There are literally hundreds of software options you could use to create your tech stack. [Take some time for introspection](#). Before jumping into product comparisons, think about your company and your business objectives, so you can choose the vendors most aligned with driving to your goals. To build the stack most useful to you, start with the most visible piece and work backwards.

Layer 1: Business Intelligence

Working backwards means beginning with your business intelligence, or BI, tool. Platforms like Tableau or PowerBI use artificial intelligence to analyze your data and provide you with insights in easy-to-digest dashboards and reports.

This is the tool you will use to visualize data trends that can inform strategic business decisions.

Choosing the Right BI Tool

You want to choose a platform that can serve up insights in the most useful format for you. The key factors you want to consider include:

1. How easily the tool integrates with the data warehouse you want to use
2. Whether the interface is easy to use
3. Whether you can schedule the tool to automatically run reports and notify users of changes
4. How easy it is to run ad hoc reports
5. Basic software elements like speed, performance, and responsiveness
6. Whether the tool allows analysts to share data models and code
7. The number and type of visualizations available

Layer 2: Data Warehouse

Behind your BI tool is a data warehouse like Snowflake or Amazon Redshift. This replaces that library of spreadsheets where data goes to die. When data is collected, it travels to the warehouse to be cleaned, sorted, and filed away in the proper container. The BI tool combines data from the warehouse to build its reports.

Choosing the Right Data Warehouse

The data warehouse you choose will depend on your storage needs. In general, these are the questions you need to consider:

1. Is the warehouse's data storage centralized or decentralized?
2. How quickly can the warehouse scale resources for computation and storage?
3. Can the data warehouse handle multiple queries at the same time?
4. How long does it take to complete a typical load or query?
5. Is the data warehouse secure and compliant with industry regulations?
6. Does the warehouse use the same SQL dialect your analysts are using?
7. How is data backed up, and how difficult is it to recover if something breaks?
8. How good is the data warehouse at preventing failures?
9. Does the data warehouse follow security best practices?

Layer 3: Data Integrations

The last major piece of your tech stack is the integrators, such as Aloomo or Fivetran. These are like bike messengers carrying data from the collection point to the data warehouse.

Your integration system will be very specific to your source systems. Most growth-stage companies can manage their data with only one or two integrators.

Data integration typically falls into one of two approaches - [Extract-Transform-Load \(ETL\) or Extract-Load-Transform \(ELT\)](#). ETL models data within the pipeline. This approach has been around since the 1970s and is sliding into obsolescence with the advent of ELT, which offers faster, more accurate loading of data into the data warehouse.

One of the biggest mistakes you can make at this stage is using your staff to hand-code the integrations. There are a couple of reasons companies assign an engineer to write code moving data from source application into the data warehouse, all of them misguided.

Companies may believe their system is so unique only a custom integration will do. Routine software updates in your data platform could break these custom integrations. Providers of out-of-the-box solutions maintain service-level agreements with the platforms they integrate with, so your software all updates together, protecting the integrity of your data stack.

Some hesitate to spend on another tool in the tech stack and think they can save money by assigning the task to an engineer already on the payroll. The fact is, there are a number of robust tools that are extremely affordable. Choosing a custom integration over an out-of-the-box solution wastes thousands of engineering hours.

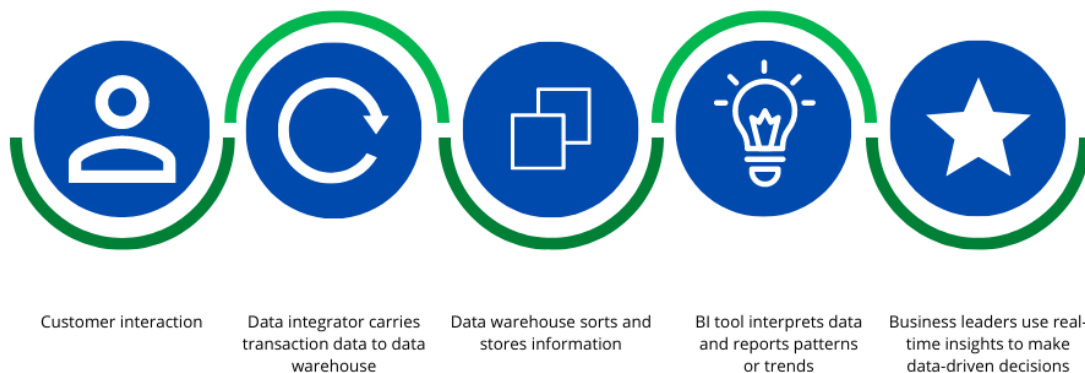
For example, [Fivetran cites a case study](#) for a client who had an existing SQL server warehouse and wanted to further centralize its data. By using an out-of-the-box data stack anchored by Fivetran and Snowflake, it cut development time for the project from an estimated two years to two months.

Choosing the Right Data Integration Tool

There is great variety among the data integration tools available, and choosing one tailored to your company's needs can be a daunting task. You may want to consult with an expert in building data pipelines to identify the key factors for you. Generally speaking, you will want to consider:

1. If the data connectors are open-source or proprietary. Open-source connectors can accommodate a wider range of data sources, but proprietary connectors tend to integrate more seamlessly with the other elements of your tech stack.
2. If the tool standardizes schemas and normalizes API data. This supports data integrity and automation.

3. If the connector uses incremental or full updates. Incremental updates allow for more frequent updates that don't interfere with business operations.
4. If the tool integrates with your data sources and your data warehouse.
5. If the tool requires configuration to integrate with your system.
6. How much of the tool is automated.
7. Whether the tool uses ETL or ELT.
8. Backup and recovery capabilities.
9. Security and compliance factors.



Building an Alliance Between Business and Data Analysts

To some, the phrase "unit economics" automatically implies the need for a business analyst. Economics, after all, is the domain of business. Others, on learning unit economics requires a "tech stack," immediately gravitate toward a technical hire - someone who understands and manages data.

To build unit economics into your business, you need both. It's unlikely you will find a single person with the acumen to both engineer the data and draw business insights from it.

Before making any hires, it's important to put the automated system in place. Most small companies don't actually need a data scientist; they need a better infrastructure to manage their data. When growth reaches a point that you do need to grow the team, make hires in a one-to-one ratio - for every business analyst, add a data engineer, and vice versa, or hire an outside consultant with a balanced team.

Glossary of Common Unit Economic Metrics

There are many ways to calculate unit economics, depending on how your business measures success. These are the most common measures you will find in a metrics ladder.

Total Revenue The total amount of income you brought in during a given period of time.

Gross Profit Total revenue minus costs.

Average Gross Margin (AGM) Gross profit divided by total revenue.

Customers The number of new customers in a given period of time.

Transactions The number of transactions over a given period of time. This might not match the number of customers, since some customers will have more frequent transactions than others.

Lifetime Value (LTV) The average amount of money a single customer spends with you over their entire relationship with your business.

Customer Acquisition Cost (CAC) The total amount you spend on sales and marketing to acquire one customer.

Churn The percentage of customers who end their relationship with you in a given period.

Retention Rate The opposite of churn: the percentage of customers who stayed with you during a given period.

Average Customer Lifetime (ACL) The length of the average customer's relationship with your company.

Average Order Value (AOV) Your total revenue divided by the number of transactions.