CashAnalytics

HOW TO ADOPT DATA-DRIVEN FORECASTING IN 2022

CashAnalytics

CashAnalytics

ALL YOU NEED TO KNOW ABOUT DATA-DRIVEN CASH FORECASTING TO GET STARTED

If your top concern for 2022 is cash flow, then you're not alone. In fact, well over half of CFOs report that liquidity and cash management are their number one challenge right now.

Complicating the cash flow management problem is a lack of visibility and control over enterprises' many bank accounts. This impedes your ability to project into the future and make decisions based on what those scenarios expose.

Finance department leaders know that the answers lie within their own corporate financial data.

The bottleneck is always in accessing, interpreting, and acting on that data. In a world of data-driven decisions, here's everything you need to know to get started with data-driven cash forecasting.

SECTION 1:

DATA- DRIVEN CASH FORECASTING EXPLAINED

While data seems like an obvious component of forecasting, it's different to let it drive the whole process. Adopt a data-driven method, and you'll find that the data can actually do most of the projection work for you.

Data-driven cash flow forecasting uses organization data you already have to project future cash flow. This method will reduce manual effort, so you can focus on analysis. And, in turn, it will transform how you forecast and manage cash flow.

For instance, the head of treasury at a treasury solutions provider noted the largest con to manual cash forecasting processes — time.

"A lot of finance professionals swear by Excel. The time that you put into the output does not match the value of the output," the head of treasury explains. "It makes sense to spend less time inputting data and more time on analysis. With Excel, you spend a lot of time compiling and consolidating data and checking for errors. The value add comes from understanding the data — not from compiling it."

So, the company turned to CashAnalytics to support the data-driven cash forecasting services it provides to clients.

"It's a tool that's been specifically built for cash flow forecasting that focuses on making the input of information as easy as possible so that you can spend time on the analysis and reporting of the outputs," the head of treasury says. "A lot of companies rely on a [treasury management system] for cash forecasting, but this does not let you get into the details without exporting the data to Excel. By the time someone starts analysing the data, they need to look at forecasting again."

And they've reaped the rewards of adopting data-driven cash forecasting via CashAnalytics for their clients.

"The team can now concentrate on analysis," the head of treasury said. "The information helps position them as a more strategic partner with their clients and for someone in-house, this would be in the broader business."

AN INTRODUCTION TO CASH FORECASTING DATA

Now that you know what data-driven cash forecasting is, it's time to dive a bit more into the data sources that shape your forecasts — and the benefits they provide.

KEY CASH FLOW FORECASTING DATA SOURCES

A cash flow forecast is simply a collection of data from other systems with input and adjustments from the forecaster. Start with the data sources that contain the most up-to-date and important data and build from there. A cash forecast can be built using some or all of the following data sources and inputs.

🏦 BANK ACCOUNT

Bank portals and electronic bank account statements provide actual balance and transaction details for forecast model population and variance analysis. Data for these statements is accessible and downloadable via online bank portals. Bank account transaction and balance information can also be automatically captured from a bank using connectivity options, like application programming interfaces (API) and secure file transfer protocol (SFTP) in a variety of formats (e.g., MT940, BAI2, etc.)

PROS

» Bank account data can be refreshed in real time.
» Bank account data comes in standardized formats like MT940 and BAI2.
» If, for example, the forecast is used for treasury liquidity forecasting focused on tracking net cash movements and positions, capturing the data from the bank will suffice.

CONS

» Bank data needs to be classified into different categories to make it useful.
» Sometimes reference detail isn't available to make classification easy (e.g., a customer's name).

⬇ ENTERPRISE RESOURCE PLANNING LEDGER

Every bank account transaction is loaded onto a company's enterprise resource planning (ERP) system and then assigned to an outstanding invoice or allocated to a specific account during the bank reconciliation process. After the reconciliation process, this data is useful for actualizing the forecast model. Each company will have their own connectivity procedures around their ERP, but it will most likely be via API or SFTP.

ERP systems contain accounts payable (AP) and accounts receivable (AR) data used to create short-term forecasts. The ERP is also a source of actual cash flow data and includes longer-term planning data in some instances.

PROS

» The transaction data is pre-classified.
» No reliance on any external parties (e.g. banks) for the data.
» Data can be used for detailed customer, supplier, and working capital analysis.

CONS

» There may be a time lag due to the reconciliation process.
» The raw export formatting may need to be tidied up before use.

CashAnalytics

AP AND AR LEDGER DATA

AP and AR ledger data — typically sourced from an ERP system — is an essential component of a short-term forecast and details both outstanding and paid invoices. This data helps paint a picture of what cash the business is likely to receive from customers and pay to suppliers in the coming days and weeks. The AP and AR ledger data will help build the operating cash flow forecast for up to six weeks into the future — depending on the payment terms offered to customers and received from suppliers.

To build and drive a short-term cash flow forecast with ledger data, two data sets across both AP and AR are needed:

OUTSTANDING AP & AR

This is essentially a list of unpaid AP and AR invoices sitting on the balance sheet or ledger. As standard, the invoice data extract must contain:

» Document number, type, date

» Customer/ supplier name or ID

» Due date of invoice

» Amount

» Currency

With this information, a baseline customer- and supplier-level forecast can be created.

CLEARED/PAID AP & AR

This data outlines what's been paid since the last forecast and, in some cases, what is needed to net off against the original invoice amount to calculate outstanding balances. Required fields mirror those of outstanding AP and AR and also include:

» Payment date

» Connected invoice ref (if netting required)

Sometimes, exported ledger data may not translate into a meaningful cash flow forecast on the first try. This happens because the data set may need to be organized and transformed ahead of forecasting by:

» **Cleansing data sets:** Remove any non-cash items or irrelevant invoices ahead of forecasting that could impede accuracy.

» **Accounting for document type:** The ledger will often contain a number of document types alongside the standard invoice. Each of these different document types has a unique impact from a cash flow point of view and must be accounted for within the forecast model. For example, a credit note has the effect of reducing the amount of an expected invoice. It is difficult to calculate an outstanding customer or supplier balance without first taking into account credit notes.

OTHER SOURCES

Many other systems and data sources can flow into the cash forecast, including:

» The annual budget, which serves as the baseline for medium to longer-term cash forecasting while providing the entire forecast for recurring items such as payroll and rent.

» Customer relationship management (CRM) tools that include early-stage invoice data.

» Treasury management systems (TMS) with financing flows.

» Forecaster input that provides context that will influence the forecast. Because they're humans, forecasters are more subjective and can think critically and holistically — whereas a system cannot.

ACTUAL CASH FLOW DATA BENEFITS

Actual cash flow data is a critical component of any cash flow forecasting process. The balance and transactional data — most often sourced from ERP systems and bank statements — lets you actualize the cash flow model on an ongoing basis, which provides a range of benefits, such as:

» **Analysis of recent past:** Understanding what has happened with cash flow in the recent past is essential to building a picture of the future.

» **Building current positions:** Actual cash flow and balance data are used to calculate current cash and liquidity positions — which is the starting point of any forecast.

» **Variance analysis:** Actual versus forecast analysis is a central part of any high-value forecasting process that is reliant on up-to-date actual cash flow data.

» **Trend forecasting:** Any trend forecasting model or algorithm will require historical actual cash flow data that is frequently refreshed to create accurate forecasts.

Ill CashAnalytics

SECTION 2:

CASH FLOW FORECASTING FACTORS TO CONSIDER

> **The cash forecasting processs** involves planning and predicting a variety of different types of cash flow — from expected customer receipts to tax payments due to the government.

Unfortunately, there is no one-size-fits-all approach for most companies as the process of predicting one type of cash flow is very different from predicting that of another. For instance, forecasting customer receipts is very different from forecasting tax payments.

Other factors such as the underlying business model and how far into the future the forecast extends also determine the forecasting methods and techniques adopted. But by mapping out the forecast and analyzing it within the context of the business, you can quickly determine which data-driven forecasting methods will produce the most realistic and accurate output.

But before selecting a forecasting method and building the forecast, there are some important things to consider upfront:

KNOW THE CASH FLOW CATEGORY FOR YOUR FORECAST

You must understand the nature of and the drivers behind the type of cash flow you are trying to predict and where to source the data needed to forecast.

For example, in most businesses, the key driver of cash flow is topline customer receipts. Everything else flows from this. If customers don't pay, you won't be able to pay. Or, at the very least, if you can't predict when they will pay, it's difficult to predict the cash you'll have in the future — and, ultimately, what cash can be paid out to meet obligations.

As a starting point, it's critical to map out key cash flow categories and understand the dynamics of each. Cash forecasts are typically created at a "management reporting" level of detail, and some of the most widely used cash flow categories are:

» Customer receipts/ Cash revenue

» Supplier payments and other non salary cost of goods

» Salaries and compensation

» Rent and facilities

» Capital expenditure

» Tax

» Interest and debt payments

REMEMBER YOUR BUSINESS MODEL

A company's business model has a huge influence on what method of forecasting is chosen for each cash flow category. After all, a company that sells heavy machinery to other large businesses will have a very different method for forecasting customer receipts than an e-commerce company.

But there still may be similarities in other areas of the forecast, particularly if both companies buy raw materials or goods from other large companies. In this case, how they forecast supplier outgoing payments could look quite similar.

Other business model considerations include the payment behavior and requirements of your largest customers and suppliers — particularly if certain customers or suppliers account for large percentages of cash flow.

Leading on from this, your company's attitude to the extension of credit to customers — and under what terms — will influence how the forecast is created and what method is used.

TAKE FORECAST TIME PERIOD AND GRANULARITY INTO ACCOUNT

A forecast's granularity and time period will also help determine which forecasting method to choose. Short- and long-term forecasting for the same cash flow category typically requires different methods.

For instance, building a daily forecast for supplier payments for the next 30 days is very different from forecasting supplier payments in a nine to 12-month period. Attempting to use a single method for both won't provide satisfactory results as one is for the short term and the other is for the long term.

Knowing what granularity to forecast at and for what period in time also requires a judgment call driven by the trade-off between effort and output.

Everyone would like as much granularity as possible. But is a daily forecast for a year really necessary? How would having this level of detail help? Could you instead reduce the granularity in the longer end of the curve — reducing the effort invested?

SECTION 3:

CASH FLOW FORECASTING METHODS TO CHOOSE FROM

The number of forecasting methods available might seem infinite. When a broad range of statistical, demand, driver, and AI/ML forecasting techniques are considered, it's hard to know where to start.

However, we've found that a handful of techniques can cover most bases when mastered and adapted by the business in question. These methods include:

» Ledger unwind
» Budget modelling
» Statistical/ trend forecasting
» Driver-based forecasting

THE LEDGER UNWIND

The ledger unwind is the process of taking an AP or AR ledger — with all the outstanding invoices it contains — and "unwinding" it to points in the future based on expected invoice payment and receipt dates. This method is driven by invoice terms or based on another method, such as analysing historical payment behaviour.

This forecasting method is very much dependent on capturing necessary data from the underlying ERP system.

You may apply assumptions to invoices to give them more realistic receipt dates. For example, in customer collection forecasting, profiling the historical payment behaviour of clients and using this to predict cash receipts is a good starting point. Once the basic assumption is in place, it can be tweaked and iterated over time.

The key benefit of the ledger unwind is that the forecast and subsequent variance analysis can be backed out to the customer and supplier level of details — with recourse all the way through to the underlying invoice. For companies looking to build not only an accurate forecast but also understand what is driving their short-term cash flow, this method of forecasting is a must.

The Ledger Unwind is suitable in the following situations:

» Operational cash flow categories such as customer receipts and supplier payments
» Short term forecasting, typically 0 - 6 weeks into the future
» Business-to-business type business models with outstanding invoices of sizable value

BUDGET MODELLING

The budget is the main source of financial planning intelligence within any business. It projects all income statement and balance sheet items a number of years into the future. The FP&A team will create the budget on an annual basis and refresh it at least once during the year.

You can use the budget to create a multi-year cash flow forecast by applying the indirect method. This technique involves combining the income statement and balance sheet to derive the cash flow forecast.

It's useful for creating a long-term (one year +) forecast but not for forecasting short to medium-term cash flow. This is because it doesn't have the short-term granularity required for effective short-term forecasting, and it is only refreshed a couple of times a year. A short-term forecast, by its very nature, requires a much more frequent refresh of data and assumptions to be effective.

However, the budget, used in a slightly different way, can support short- to medium-term forecasting.

Again, this needs to be analysed on a per-cash flow category basis. But taking the sales/revenue budget for a medium-term period of, say, six weeks to six months and combining it with payment-timing assumptions is a simple way to translate an income view into a cash flow view. This budget modelling exercise is often the best way to create a medium-term cash flow forecast.

The budget can be translated one-to-one into the forecast for some cash flow categories without the need to apply any assumptions or do any data modelling. For example, stable and easily predictable items such as payroll and rent that aren't subject to credit terms can simply be copied directly into the cash flow forecast. Depending on the granularity of the forecast, they may need to be manipulated slightly to take quarterly or monthly numbers and translate them into a daily or weekly view.

In summary, the budget is useful for forecasting the following:

» Medium term sales and cost of goods items.
» Short, medium and long term fixed items that aren't subject to credit terms.

STATISTICAL & TREND FORECASTING

Most statistical and trend forecasting methods combine historical data with mathematical models. Together, they can predict data points in the future.

The amount of data required for this forecast is dependent on the variable you are forecasting and the historical data available for this variable. For example, if you are forecasting customer cash collections for the next 13 weeks — capturing an expected seasonal trend — you'll likely need a number of years' worth of data for the model to learn from similar historical periods.

Covid-19 has called into question the use of trend forecasting — particularly when a business was impacted in a profoundly positive or negative way. Using a historical data set that covers the period of most volatility in 2020 is unlikely to produce a useful trend forecast — no matter the model used.

However, as the economy normalises and businesses attempt to look through the impact of Covid, the use of historical data to build trend models becomes viable again. This is particularly true for businesses benefitting from shorter-term trends (week-on-week, month-on-month, etc.).

Of course, statistical forecasting is about more than just extrapolating a historical trend. Trend forecasting is one of the techniques most relevant to cash forecasting. Some useful statistical forecasting models include:

» **NAIVE**

A naive model is the simplest of all forecasting methods as it simply rolls historical data into a future period. It can be an excellent baseline for which assumptions are applied and for comparison instead of more involved methods to test their credentials.

» **MOVING AVERAGE**

This is a time series technique that takes the average of a historical data set — or periods within the data set — and uses these as the basis for the forecast. The moving average calculation can vary in complexity:

  » Simple moving average: Treats all historical data points equally

  » Weighted and exponential moving averages: Weighs recent data more heavily within the model

» **LINEAR TREND**

A linear trend model takes a historical data set and "fits" a line that best represents the behaviour the model represented in the data. This line then becomes the forecast which represents the historical trend.

» **OTHER TIME SERIES**

A number of other time series methods exist — notably AutoRegressive Integrated Moving Average (ARIMA) and exponential smoothing. Both of these techniques fit trend lines to data sets and use these as the basis for the forecast. But they are used in different ways in different types of data sets.

As with all other forecasting techniques, it is important to understand the nature of the data and the type of forecast being built before selecting a statistical forecasting method. Trend and statistical models should be used when:

» The past behaviour of a cash flow line item is representative of expected future behaviour.
» A meaningful amount of data is available to allow the model to learn from past trends.

DRIVER BASED FORECASTING

Driver-based forecasting ties in very closely with trend and statistical forecasting. In a driver-based model, the relationship between two variables is analysed, and the forecast of one variable is then used to "drive" the prediction of another variable.

A simple example is using a revenue forecast combined with expected future gross margins to forecast the expected cost of goods expense. Similarly, driver-based forecasting is particularly valuable to industries with exposure to and reliance on a number of key input costs, such as oil or other commodity prices. In this case, a forecast of input volume required combined with an expectation of the commodity price will produce a forecast of the required input cost. The input volume could be driven by the expected demand for the company's product. Therefore, driver-based forecasting is often multi-layered.

Driver-based forecasting is particularly useful for scenario analysis. This is because changing the input variables (such as volume or price, in this example) will cause a subsequent change in expected input costs. So if oil goes up by X, our costs go up by Y.

A number of key line items in the cash forecast can be drivers for other parts of the forecast. So, while all of your forecast may not be driver-based, some parts of it will be.

Driver-based forecasting is useful when:

» There is an established relationship between two cash flow line items or another non-cash flow input (e.g., the price of oil).
» The variables used to drive the forecast can be forecasted with a reasonable degree of accuracy.

l⊪l CashAnalytics

SECTION 4:

DATA-DRIVEN FORECASTING AUTOMATION OPPORTUNITIES

Data-driven cash flow forecasting is typically highly automated. Automated data heavy lifting and analysis are necessary to make the process sustainable.

Stats	BI	RPA	FTP	API	AI	SS	ML
Statistical Forecasting	Business Intelligence	Robotic Process Automation	File Transfer Protocol	Application Programming Interface	Artificial Intelligence	Spreadsheets	Machine Learning

Activities	Description	Technologies
Data Capture & Loading	Capturing the underlying cash flow data is the first stage in any cash flow forecasting process. This means taking the cash flow data from the source system or database and loading into the forecasting tool or system.	API RPA SFTP/ FTP
Transformation & Organisation	Next up is transforming and organising the underlying data to make it useful for forecasting and analysis. This can cover a range of activities including data cleansing, classification and restructuring.	RPA ML AI
Forecast Creation	With the data in place, it's time to create the forecast itself. This involves taking the cash flow data building the forecast using a method such as the ledger unwind or trend forecasting using historical data.	RPA AI ML Stats SS
Reporting & Analysis	Making the forecasts understandable and discoverable via intuitive reporting with back-up analytics is the final critical stage in any forecasting process. If the forecast isn't easy to understand, it won't be valuable.	RPA AI ML Stats SS

With CashAnalytics, you can automate the cash flow forecasting process to reduce manual work and reporting time by more than 90%. The tool integrates with data sources to simplify organisation-wide data collection. Use the solution to:

» Autogenerate forecasts using bank and ERP data.

» Rapidly turn budgets into cash forecasts.

» Collect data right from organisation users via centrally controlled forecast models.

» Automatically monitor company cash movements.

CashAnalytics streamlines the cash forecasting process from start to finish for the most up-to-date and accurate forecasts for your business.

||| CashAnalytics

USE CASHANALYTICS TO AUTOMATE YOUR DATA-DRIVEN FORECASTING

You now know the ins and outs of data-driven cash forecasting. And you're equipped with the knowledge on data sources, methods, and more to create a more accurate, up-to-date forecast driven by data.

But there is one more element that will make the process even easier — a tool. CashAnalytics is on a mission to help companies better understand their current and future liquidity positions.

With CashAnalytics, gone are the days of tedious manual forecasting. After all, why would you invest countless hours of work into compiling forecasts on spreadsheets when you can automate the process? This software connects with your data sources for automated data-driven forecast creation.

> "People can really spend much more time analysing the business, really understanding it and making better decisions," says Davina Bradley the Group Treasurer at CEVA Logistics. "It opens up so many new options for them. It's like... 'I was blind, now I can see.' That's the kind of feeling people get once they have used CashAnalytics."

CashAnalytics is different from other solutions in the depth of functionality and intuitive interface it provides, the speed at which they can be rolled out, and the ease with which they can integrate with existing systems. On top of that, the tool offers a high level of ongoing support to clients.

To see the software in action and the value it can help deliver, contact us to book a demo now.

About CashAnalytics

A dedicated cash forecasting and liquidity reporting software solution

Our mission is to help large companies to better understand their current and future liquidity positions.

We are differentiated from other software providers through the depth of functionality and intuitive interface of our solutions, the speed at which they can be rolled out and the ease with which they can be integrated with existing systems, as well as the high level of ongoing support we provide to clients.

We have developed a thorough yet efficient set-up process that enables quick and easy roll-out of our software. During this process, comprehensive project management with senior members of the CashAnalytics team ensures smooth collaboration across a company's business units with minimal impact on day-to-day operations.

To see our software in action, and to see the value it can help you to deliver, contact us to book a demo now.

lıl CashAnalytics

E-mail

General: info@cashanalytics.com

Sales: sales@cashanalytics.com

Support: support@cashanalytics.com

Phone

Head Office: +353 1 524 0552

UK: +44 203 773 9684

USA: +1 646 358 3451