Reverse ETL Explained

Closing the Loop with Qlik Application Automation

Qlik

Isolated systems are bad for business.

An offer for a credit card you already own. An email promoting a SaaS subscription you just purchased. Or a warranty discount for something you no longer lease. Chances are high that you've been on the receiving end of a blunder like these, when a business treats you like a random prospect instead of an engaged customer. And while you may not immediately jump ship, you've probably registered the annoyance. Those annoyances add up over time – especially across thousands of customers – and for a business, they increase the risk of churn.

Why do these misfires happen? Not because the company doesn't have the data from your interactions. They do. The problem is that their isolated systems don't have the right data to drive the right outcomes at the right time. As a result, marketing systems don't properly target, finance systems apply discount rules across the board, and customer support systems treat every client with the same indifference.

"**Data is enterprises' gateway to understanding customers and catering to them in a world where customization is the rule, not the exception.**"[1]

FORTUNE

Solving the disconnect with Reverse ETL.

There's a way to avoid these customer-interaction blunders, and it involves a method of processing data called Reverse ETL. As the name implies, Reverse ETL changes the flow of data, which typically runs from source to data warehouse. Instead, it moves data from the warehouse back to the source applications – especially to the applications that govern your customer interactions.

In this eBook, you'll learn how Reverse ETL enables your teams to take customer-facing action based on the very latest data. You'll also discover how Qlik Application Automation® enables you to use Reverse ETL to build these workflows, sending data from your warehouse and lakes into your business applications – where they can be immediately used by your teams to take the actions that promote loyalty, increase satisfaction, and boost revenue.
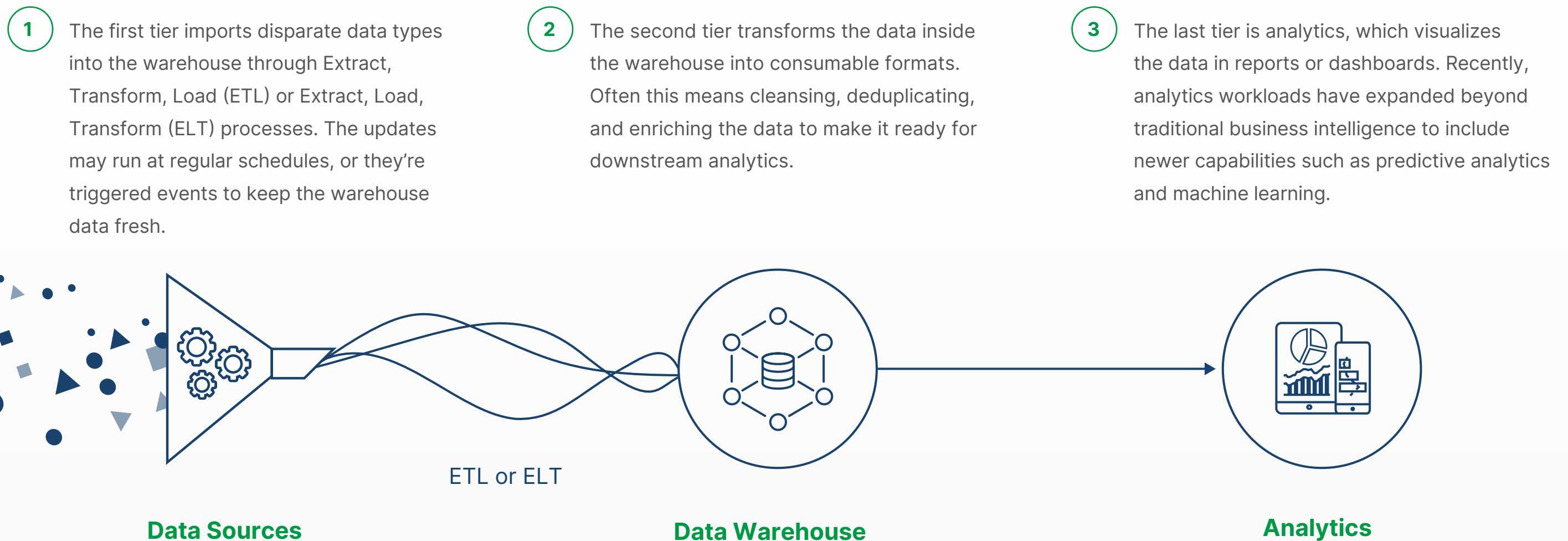
**REVERSE ETL:
ENABLING OPERATIONAL ANALYTICS.**

Reverse ETL is a data-processing method that reverses the typical data flow from source to repository, moving data from repository (the analytics storage layer) and back into your source applications – where you can use it to trigger new business workflows.
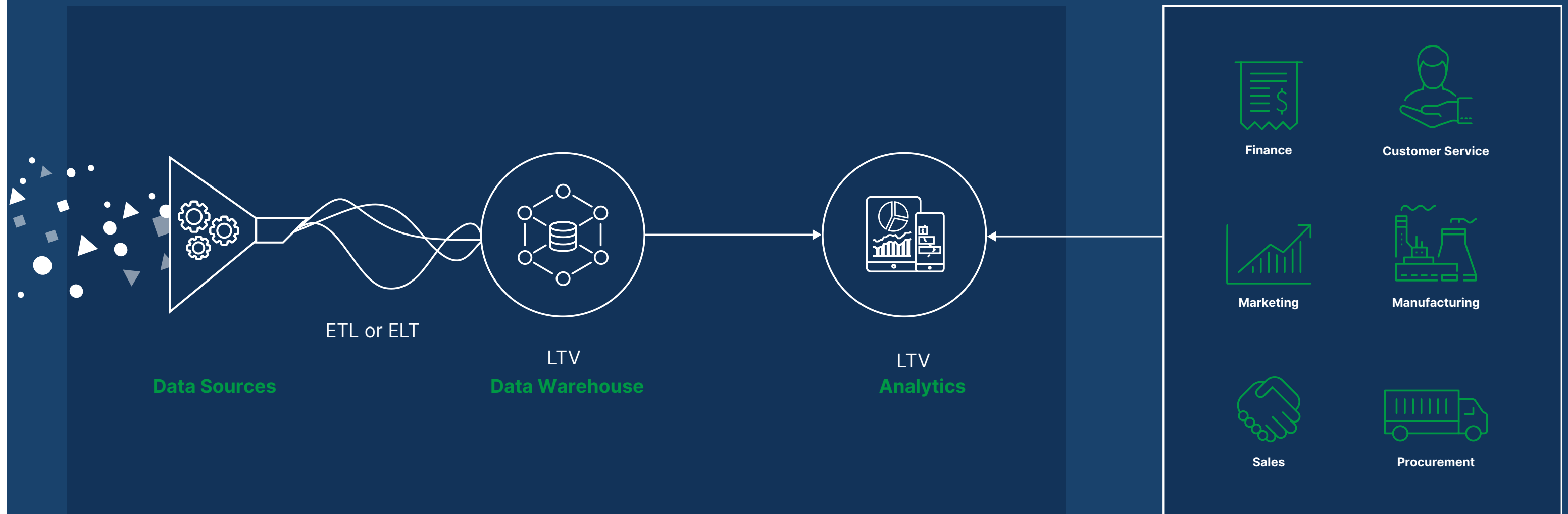
The beauty of the data warehouse.

Fortunately, the problem of siloed data systems has already been solved. Most companies deploy a data warehouse to act as the central repository for operational analytics, and they do it as part of a three-tiered architecture:

1 The first tier imports disparate data types into the warehouse through Extract, Transform, Load (ETL) or Extract, Load, Transform (ELT) processes. The updates may run at regular schedules, or they're triggered events to keep the warehouse data fresh.

2 The second tier transforms the data inside the warehouse into consumable formats. Often this means cleansing, deduplicating, and enriching the data to make it ready for downstream analytics.

3 The last tier is analytics, which visualizes the data in reports or dashboards. Recently, analytics workloads have expanded beyond traditional business intelligence to include newer capabilities such as predictive analytics and machine learning.

ETL or ELT

Data Sources   **Data Warehouse**   **Analytics**

Getting your KPIs to your MVPs.

The main benefit of this three-tiered architecture is that every department in the business can base their decisions on insights gained from the same well-governed data set. In this diagram, for example, you can see that the **customer lifetime value** (LTV) KPI is calculated and stored in the data warehouse, making it easily accessible by every department.

ETL or ELT

Data Sources

LTV
Data Warehouse

LTV
Analytics

Finance

Customer Service

Marketing

Manufacturing

Sales

Procurement

Danger:
Right data, wrong time.

Unfortunately, even when using this three-tiered data architecture, there's still a danger of driving the wrong action – like sending your customer a mistargeted email – because critical KPIs are trapped in the data warehouse.

Let's return to the LTV example. Most enterprises periodically calculate this metric for every customer and update the values stored in their data warehouse. But whatever the computation frequency, if the LTV score remains in the data warehouse, then chances are, it won't be accessible to your other systems in time to matter.

To enable your teams to act on LTV when it counts, it's much more effective to share the updated score with your frontline applications like CRM, e-commerce, and cloud applications. When you do that, your sales, marketing, manufacturing, and support teams will use the same updated score whenever business processes require it. **The process of moving your LTV score from your data warehouse into your frontline applications is Reverse ETL.**
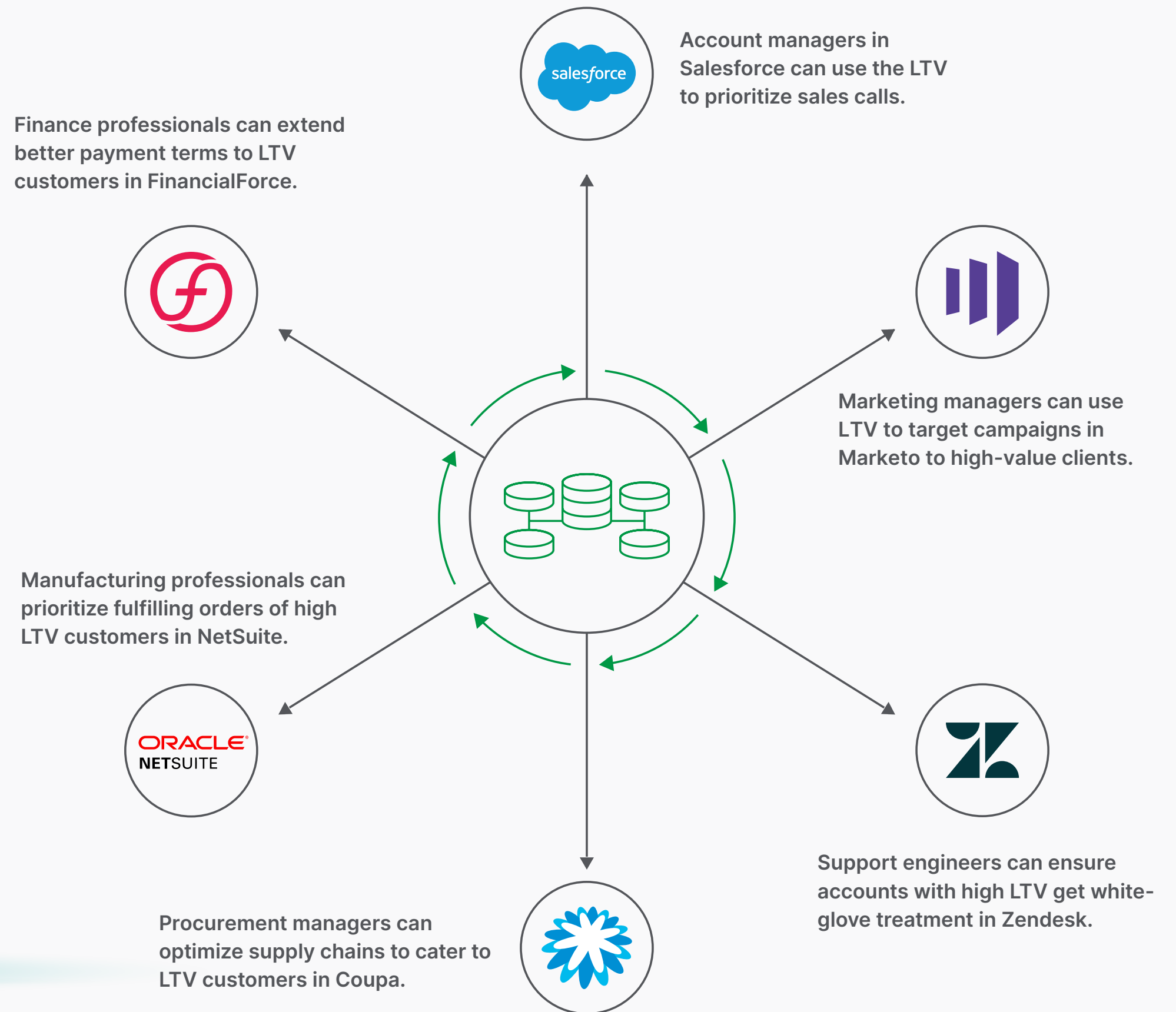
REVERSE ETL: A DRIVER OF DATA-INFORMED ACTION.

With Reverse ETL sales, marketing, growth, and analytics teams can analyze and act upon the same, consistent, and reliable data – enabling continuity across the business regardless of SaaS product.

How Reverse ETL works.

When the LTV metric is pushed from the data warehouse to your productivity apps with Reverse ETL, your line-of-business teams don't have to toggle into your analytics app to access it.

Instead, the latest data automatically appears in the apps they're already using. So not only are they much more likely to use the metric, they also always have the latest value.

Account managers in Salesforce can use the LTV to prioritize sales calls.

Finance professionals can extend better payment terms to LTV customers in FinancialForce.

Marketing managers can use LTV to target campaigns in Marketo to high-value clients.

Manufacturing professionals can prioritize fulfilling orders of high LTV customers in NetSuite.

Support engineers can ensure accounts with high LTV get white-glove treatment in Zendesk.

**Procurement managers can optimize supply chains to cater to LTV customers in Coupa.**

The top benefits of Reverse ETL.

Reverse ETL furnishes teams with the insights they need as they're taking action, and it enables data-driven automations that enrich experiences and streamline workflows. As a result, it empowers your oranization to:
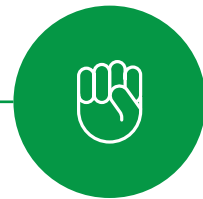
BUILD BETTER CUSTOMER EXPERIENCES

When correct customer data is always available, interactions can be customized and personalized to improve the customer experience.
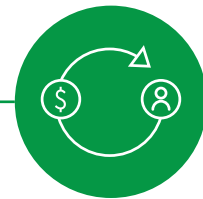
MAKE FASTER, SMARTER, BUSINESS MOVES

Insights at the speed of business are needed for agility in today's markets. The sooner information is available, the sooner an organization can act on that information – and gain an edge over the competition.

UNLEASH AGILITY AND PRODUCTIVITY

Instead of having to toggle among apps to get insights – and try to find the relevant information in a sea of data – employees simply click on a tab, button, or link within their everyday tools to find the insights they need.

BOOST DATA CONFIDENCE

When workers can access insights in their everyday apps, they gain more than time and efficiency. They gain confidence – in their data, decisions, and actions – with the knowledge that they're using the right information in the right way at the right time.

Enabling Reverse ETL with Qlik Application Automation.

Qlik Application Automation can be used to effectively build and run Reverse ETL flows.

Let's look at an example. A major manufacturing company uses Snowflake as its data warehouse, Salesforce as its CRM, and Qlik® as its data integration and analytics platform. The operations team built an analytics application that enables executives to perform customer LTV analysis as part of strategic account planning. With Qlik Application Automation and Reverse ETL, the team can push those insights into Salesforce for account managers to act on.

Qlik makes this whole loop relatively easy. First, our Data Integration solution creates data pipelines that continually load Snowflake with enterprise data. Next, our Data Analytics platform creates in-the-moment analyses to model and calculate LTV. Finally, an update can be triggered via Qlik Application Automation to push that intelligence into the Salesforce application, where it's available for Salesforce users to consume and act on.

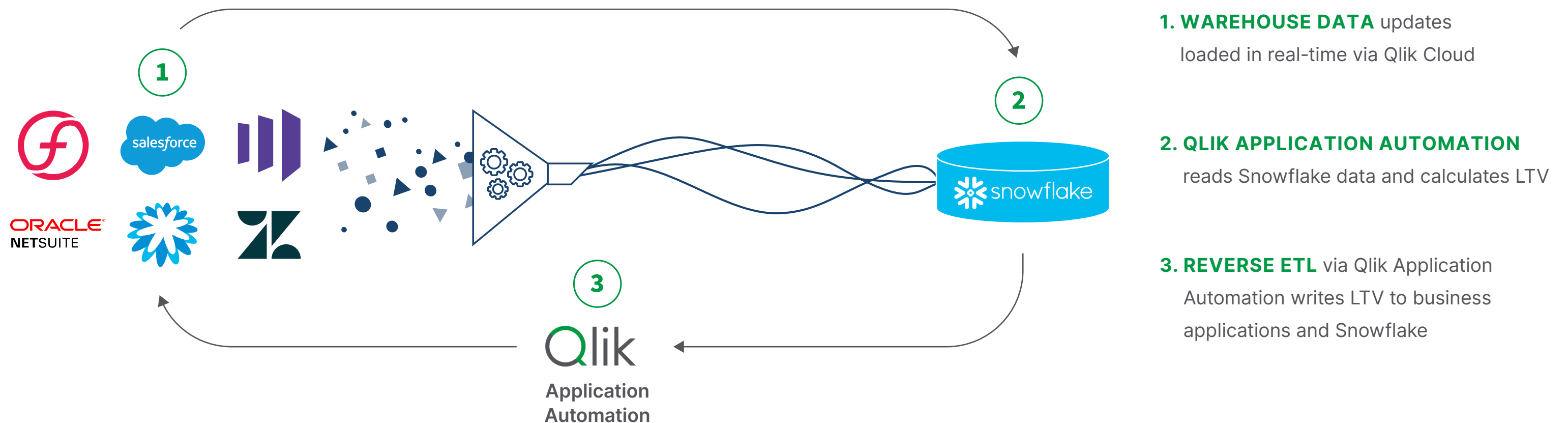For a diagram of the architecture in this example, see the following page.

"**Qlik Application Automation is changing how we approach application development. If we had realized how powerful the tool was earlier, we would have utilized it sooner."**

MICHAEL LAVERICK
Fenwick

Qlik in action:
Closing the loop with Reverse ETL.

Qlik Application Automation's powerful features – including a visual designer, ubiquitous SaaS application connectivity, and Qlik Cloud® integration – make designing Reverse ETL workflows extremely easy. For example, with rich Snowflake support, it's as simple as validating the Snowflake credentials, dragging the appropriate blocks onto the canvas, and executing the automation. And Qlik Application Automation provides connectivity to dozens of Saas applications, with more being added each month.

1. WAREHOUSE DATA updates loaded in real-time via Qlik Cloud

2. QLIK APPLICATION AUTOMATION reads Snowflake data and calculates LTV

3. REVERSE ETL via Qlik Application Automation writes LTV to business applications and Snowflake

Qlik
Application Automation

The right customer interaction. Every time.

How can you avoid missteps with your customers and offer the best possible experiences? Not by collecting more information but by making better use of the data you already have. That's exactly what Reverse ETL makes possible, by copying consolidated KPI data from your data warehouse into your frontline applications, where it can drive optimized business processes that result in better outcomes.

Qlik is here to help, by making it fast and easy to add Reverse ETL to your data strategy. With a no-code interface, broad SaaS connectivity, native Qlik Cloud Integration, and centralized management, Qlik Application Automation makes it easy to get data out of your warehouse and into your workflows. And Qlik Application Automation is only one component of the Qlik's portfolio.

Ready to see what Reverse ETL and Qlik Application Automation can do for your business?

Start Exploring

About Qlik

Qlik transforms complex data landscapes into actionable insights, driving strategic business outcomes. Serving over 40,000 global customers, our portfolio leverages advanced, enterprise-grade AI/ML and pervasive data quality. We excel in data integration and governance, offering comprehensive solutions that work with diverse data sources. Intuitive and real-time analytics from Qlik uncover hidden patterns, empowering teams to address complex challenges and seize new opportunities. Our AI/ML tools, both practical and scalable, lead to better decisions, faster. As strategic partners, our platform-agnostic technology and expertise make our customers more competitive.

qlik.com

[1] Alex Holt and Mark Gibson, *Fortune*, "The Data Imperative: How companies can capitalize on the data they've collected during COVID," February 7, 2022, https://fortune.com/2022/02/07/data-imperative-analytics-technology-media-telecoms-customer-service-kpmg/.