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Build vs. buy: which shipping platform is best for your business?

Contents

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Introduction

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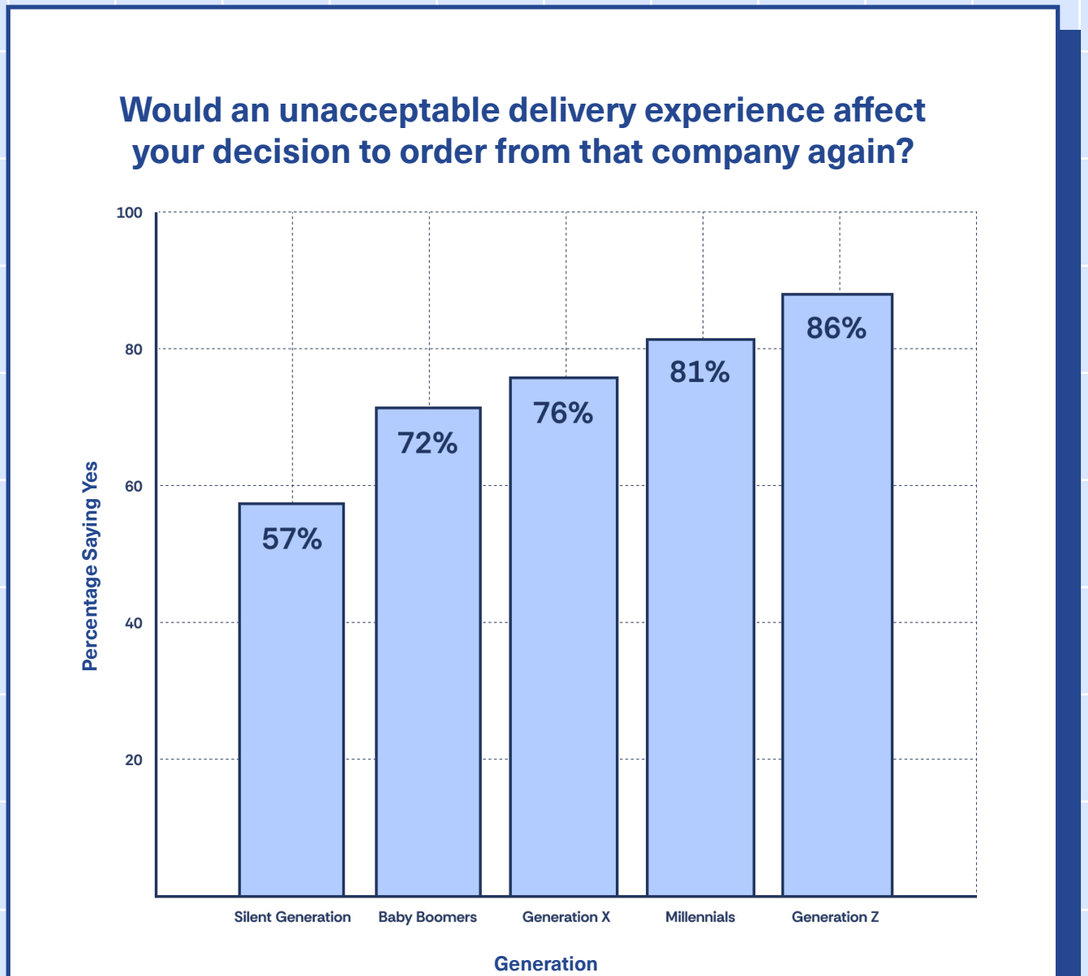
With 41% of revenue[(1)] coming from an e-commerce brand's top 8% of customers, it's mission critical for brands to provide an exceptional customer experience to drive loyalty and repeat purchases.

For e-commerce orders, much of that experience revolves around shipping.

In fact, the majority of consumers[(2)] said that an unacceptable delivery experience would strongly or somewhat affect their decision to order from that company again—and that percentage increased for younger generations.



What constitutes an acceptable delivery experience?

- Fast shipping: 62% of shoppers[(3)] expect their order to arrive in less than 3 business days when choosing free shipping.
- Affordable shipping: 48% of shoppers[(4)] abandoned their cart because the extra costs (including shipping) were too high.
- Real-time communication: More than 80% of consumers[(5)] expect to receive regular updates about the status of their products, from the time the order is placed until it arrives in their hands. This includes notifications for purchase confirmation, initial shipment notification, and delivery.

Yet, providing a great post-purchase experience can be challenging for brands and their 3PL partners.

- Shipping is expensive: Fulfillment costs account for 12-20%[(6)] of e-commerce revenues.
- Carrier connectivity is hard: To improve shipping rates, brands and their 3PL providers diversify their carrier and service level mix. But, carrier diversification adds complexity that is time consuming to manage and hard to streamline for a great customer experience.

This is where a shipping platform becomes essential. The right platform enables brands and 3PLs to integrate their shipping technology, orchestrate shipping processes more efficiently, deliver an exceptional customer experience, and ultimately, reduce costs.

There are two common paths to optimize the shipping process: build an in-house solution and support team or leverage a third-party shipping platform.

Should brands build their own homegrown solution or partner with a technology provider, like Shippo, to optimize their shipping mix and processes? Let's explore the scope of a DIY shipping tech stack, and the benefits of partnering with a best-in-class shipping platform instead.

80%+

of consumers expect to receive regular updates about the status of their products, from order placement to arrival

Identify your goals: why do you need a shipping platform?

Identify your goals

For e-commerce brands and their 3PL partners, having shipping functionality is table stakes. However, it’s important to understand the unique needs of your business to make sure you’re building the most scalable process that will help you be successful and achieve your company’s objectives.

Some of the most common reasons to invest in a new shipping process:

Shipping technology will **increase profits** by reducing parcel costs; expanding carrier & service level options; & more.

With a seamless & reliable shipping process, brands & 3PLs can **deliver an exceptional customer experience.**

Operational teams can achieve **supply chain resilience**, with the flexibility to adapt their shipping program to meet evolving market needs without sacrificing reliability.

Brands & 3PLs can i**ncrease operational efficiency & visibility**, orchestrating their shipping process from a single platform & understanding total spend, performance, etc. in one place.

Operators will **reduce errors** related to address validation, service level selection, order fulfillment priority, exception management, & more.

3PLs or brands need to **fix a broken system** or one that no longer works with their tech stack, so the investment is important to make their overall infrastructure efficiently integrated.

Brands & their partners are growing quickly & looking for **software that scales** with them.

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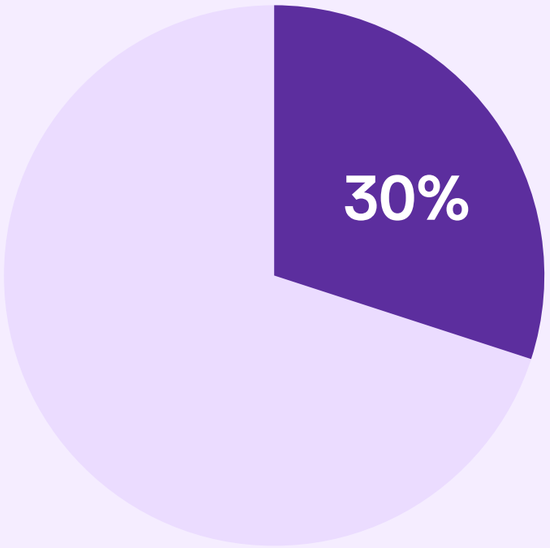
Understand the project scope

Understand the project scope

The scope and resources required are key considerations in the “build vs. buy” discussion.

Before opting to build your shipping software in-house, make sure to have a thorough plan in place. Without a clear understanding of the project, only 30%[(7)] of digital transformation projects succeed (meaning they fully meet their intended business goals). Other estimates show that 31.1%[(8)] of software projects will be canceled before they ever get completed.

Once you understand your goals and the scope involved, you can make an informed decision on how best to move forward.



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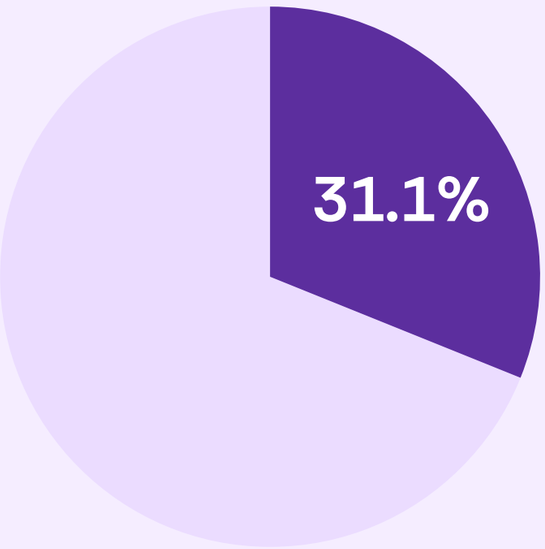

of software projects will be canceled before they ever get completed

The integrations required

You want to make sure your shipping solution supports the following integrations.

- **Carrier integrations.** High-volume brands and 3PLs leverage multiple carrier accounts—including global, national, and regional carriers—to support their parcel delivery. For operators and technical teams, that means managing the unique integration and compliance for each of these to access real-time rates, purchase parcel labels, pass tracking data, create documentation, and more.
- **Tech stack integrations.** You want your shipping software to fit in seamlessly with the rest of your e-commerce tech stack to streamline your fulfillment process and improve customer communication. Ensure your shipping tech integrates with your:
  - B2B and DTC sales channels, such as your e-commerce website; social selling platforms like Instagram; retail stores like Target or Walmart; online marketplaces like Amazon; and more. You'll want to pull orders from all of these sales channels into one place, and create and prioritize parcel labels for all relevant orders in a single queue.
  - E-commerce website to surface an accurate estimated delivery date (EDD) on your product pages, setting proper delivery expectations with customers.
  - Fulfillment tech to mark orders as shipped in your order management system (OMS), warehouse management system (WMS), etc. to have an accurate order status, estimated delivery date, fulfillment facility, package location, and more throughout the fulfillment process and the ability to communicate those statuses to customers.
  - Marketing and communications platforms to pass through package tracking information for accurate and timely customer notifications and updates.
  - Enterprise resource planning (ERP) or other financial planning solution to monitor parcel spend.
  - Customer support ticketing system to provide agents with easy access to order status and package tracking information.

The functionality required

Of course, you'll want to make sure your new shipping process can power the following functionality—all needed to run your shipping operations effectively and efficiently.

- **Packaging and popular order selection.** High-volume brands and 3PLs need to automate and streamline as much of their fulfillment process as possible. By having the ability to select package information (box size, weight, etc.) and popular order configurations from a drop-down menu, operators can increase fulfillment efficiency and throughput.
- **Rules-based rate selection.** Similarly, you want to implement rules to streamline label selection and reduce manual errors, with the ability to create rules by package weight, delivery distance (or zone), HAZMAT, geographic regions (for leveraging regional carriers), etc.
- **Package tracking notifications and landing pages.** The ability to automatically send package tracking notifications to customers upon order placement, carrier scans, and more is crucial to achieving high customer satisfaction.
- **Customizations.** Finally, you need the ability to personalize your shipping process to fit your company's parcel and

fulfillment needs. For example, you may want to add facility operating days and times; carrier volume limits; zone skipping automation; label editing; and more to reduce costs, decrease headache, and improve the delivery experience.

The cost and resources required

The unfortunate reality is that one in six IT projects have a cost overrun of 200%[9] and a schedule overrun of almost 70%. To make sure you budget for the project appropriately, you'll want to fully understand the costs and resources required. This will also come in handy when you run a cost-benefit analysis to decide whether to build or buy.

The following costs are required to build and maintain a best-in-class shipping solution.

- **Staffing costs.** A shipping API solution will require the following headcount:
  - **Software engineer(s)** to build and maintain a reliable shipping API solution. By Shippo estimates, this will require at least four engineers. With the national average salary of $105,047 per year[10], this can cost your business more than $400,000 per year.

    For example, implementing a single carrier integration from scratch could take a full-time engineer 12-16 weeks to complete, per Shippo analysis. If you leverage five carrier accounts, for example, this could potentially take one engineer an entire year to complete, in addition to the other integrations and functionality needed to be built.
  - **Site Reliability Engineering (SRE) support** will need to increase during peak season as your API reliability will be at its greatest risk. Even if you are with a cloud provider, someone should be on-call for scaling, monitoring, notifying, and reacting to alerts, plus adjusting for high-volume holidays like Black Friday and Cyber Monday.
  - **Carrier partnerships manager(s)** may also be necessary to manage your carrier relationships. These individuals can be responsible for negotiating terms for carrier contracts, ensuring your engineering team stays compliant with any carrier requirements, and managing any projects involving carriers.

One in six IT projects have a cost overrun of 200% and 70% schedule overrun[9]

- **Cost of building and maintaining your tools and tech stack.** Labor is only one side of the equation as you'll still need to host your shipping API and pay for tools that your dev team will need in order to maintain it. For example, using AWS for hosting could cost just a few thousand dollars for businesses printing a few hundred thousand labels a year. But, this cost could climb to hundreds of thousands of dollars for enterprise-level businesses producing over a million shipments a year. Plus, other tools used for monitoring bugs and writing code will also add to ongoing annual costs.
- **Cost of regulatory compliance.** Since shipping software handles personal information, such as residential addresses and contact information, you'll need to maintain and store Personal Identifiable Information (PII) data for your customers/partners.

  By doing so, you can stay compliant with regulatory requirements such as the California Consumer Privacy Act (CCPA) or the General Data Protection Regulation (GDPR) that is imposed in the European Union (EU). Staying compliant will require both labor and software costs. Failure to do so can open up your business to serious legal liabilities that will have even greater long-term costs for your business.
- **Postage fees.** If you opt to build your own shipping API solution, you'll likely be reliant on the carrier rates you've negotiated yourself. To maximize your leverage with a carrier, you'll need to send a high volume of shipments through their network. That often results in discounts with only one carrier if you don't have enough shipments with other carriers to gain leverage in those negotiations.

With all of this in mind, it's easy to see how an in-house shipping API solution could cost your business over half a million dollars a year alone—just one line item on top of other fulfillment costs for picking, packing, and shipping orders.

Build vs. buy cost analysis examples

The three main factors that will affect spend–whether you build or buy your solution—are: the number of shipping labels generated per year, hosting costs (i.e., AWS), and the number of carrier partners. Let's explore some examples based on the following inputs:

14 weeks
Implementation time for a new carrier

8 weeks/year
Maintenance time for a non-Big 3 carrier

17-23 weeks/year
Maintenance time for a Big 3 carrier

$200K annually
Average U.S. FTE engineering salary

$0.02/label
AWS

Example #1

An e-commerce business shipping about 200,000 packages a year and looking to integrate two carriers.

	Build*
Setup/integration costs	$100,000
Annual maintenance costs	$150,000

**All approximations.*

Example #2

A large 3PL business printing nearly five million labels a year and looking to integrate five carriers.

	Build*
Setup/integration costs	$200,000
Annual maintenance costs	$325,000 ($27K / mo)

**All approximations.*

Example #3

An e-commerce platform shipping nearly five million orders per year with five carrier integrations.

	Build*
Setup/integration costs	$270,000
Annual maintenance costs	$380,000 ($32K / mo)

**All approximations.*

The timeline required

When determining your timeline, understand that the possibility of a schedule overrun is significant. A McKinsey study showed that the average schedule overrun for software projects was 33%[(11)].

Yet, having a reliable shipping solution can't be delayed. The longer you wait to implement a solution the more you risk customers choosing a competitor instead due to poor performance and experience with your brand.

Here are the factors or considerations that can impact the timing to be fully operational.

- **More carriers = more time required.** Completing each carrier integration requires a full-time engineer to work roughly 12-16 weeks, per Shippo analysis. Naturally, the more carriers you seek to implement, the longer the build will take to finish.
- **Shipping volume.** Many providers often use shipping volume as a quick guide to predict overall organizational complexity. Typically, as volume grows, more integrations, more carrier service levels, and more functionality are required to support it.
- **Other priorities and projects.** As a growing e-commerce brand, shipping may be one of many aspects of scaling your business. You may also look to upgrade or overhaul your website storefront to accommodate the growing number of visitors and customers which will also take time for your internal teams to complete. In other instances, if you're running an e-commerce platform you may be looking to add more features to retain your current merchants which will also take time for your engineering staff to complete. Competing internal priorities and projects can take away from the precious resources you've devoted to this undertaking.

The upkeep required

Do-it-yourself shipping software is not a technology you can simply set and forget. Given the ever-changing nature of carrier rates and surcharges, popularity in new sales channels, and more, you'll also want to consider the upkeep required in maintaining a best-in-class shipping platform on your own.

For example, be sure to consider the technical expertise required to support:

- **Adding new carriers and service levels.** It can be time consuming to frequently add new service levels or carriers, especially as a 3PL with multiple clients looking to diversify their mix at the same time (like right before peak season). Like we mentioned above, you may need a single engineer to devote an entire year to building new carrier integrations.

  By partnering with a shipping platform that has easy-to-use integrations, implementations are completed much faster, freeing up your team to focus on the company's main priorities.
- **Ensuring and maintaining carrier certification and compliance.** Depending on the number of carrier integrations, you may need to hire a full-time developer to manage carrier certifications and compliance year round after implementation is complete.

  Shippo estimates 12-20 weeks per year for a full-time engineer to manage maintenance for just one of the Big 3 carriers (USPS, FedEx, or UPS). As an example, USPS

compliance for HAZMAT shipping changed in the summer of 2023. For businesses that were not prepared, this derailed existing projects as resources were moved to support the changes. Carriers can announce changes at a moment's notice so you'll have to be ready throughout the year

Further, many carriers expect comprehensive compliance, so even if you only plan to use a handful of service levels and functionality, you're required to certify for the carrier's full suite of features and services. Unfortunately, this can cause a significant resource drain and prevents your team from focusing on their core competencies.

Rather, shipping software manages all maintenance and compliance on your behalf, so development teams do not have to devote any resources to upkeep.

- **Adding new sales channels.** High-growth brands are adding new sales channels at a rapid rate. For example, brand owners sell via an average of 1.3 sales channels; comparatively, growth leaders—defined as having achieved more than 25% growth in the past year—have an average of 3.1 sales channels[(12)]. As new sales channels are introduced, operators and their technical teams need to ensure orders from these sales channels will flow to the shipping platform for fulfillment. The best shipping solutions have pre-built integrations for nearly all of the popular sales channels, streamlining the onboarding process for your team.
- **Modifying business rules for new products, new facilities, etc.** As businesses grow, so does their shipping complexity. You'll want to make sure your software can easily add new products and packaging to its database. And, if growth requires you to open additional facilities, you want to make sure you can easily add new origin addresses and other business rules to support multi-facility order routing.
- **Adding international audiences.** If your business has plans to expand internationally, make sure you're considering the impact on your shipping software. Each country has its own national carriers and service levels, required documentation, etc. that will need to be integrated with your tech stack. You'll also want to keep in mind whether you'll be shipping domestically or internationally. If you're shipping cross-border, make sure your shipping software can support the completion of all required customs documentation.
- **Maintaining a modern tech stack.** When brands and operators develop their own software, it can easily become cumbersome, outdated, and clunky to manipulate or change. Given competing priorities and responsibilities, teams rarely have the resources to make the technical changes and updates they desire.

  With third-party shipping software, brands can rely on a modern, agile tech stack to support their operations. Shippo, for example, recently modernized its tech stack by migrating from Python 2.7 to 3.9 and updating Django from 1.6 to 3.x, effectively boosting performance across the board by 20%.
- **Having knowledgeable support available.** Having timely support when building a solution in-house is subject to the number of staffers you have on hand to work on fixing the issue. It is also subject to competing projects or other issues occupying your engineers at that time.

The contingency plan

Finally, as you decide whether to build or buy a shipping software to power your parcel delivery, have a plan for what you'll do if there's an unforeseen outage. What safeguards do you have in place to ensure your operations don't come to a halt if a carrier goes offline temporarily?

If a carrier experiences downtime, it can cause significant strain to an operation:

- Brands struggle to meet their key metrics, including orders fulfilled on-time, in-full (OTIF), orders fulfilled per hour (OPH), and more.
- 3PL vendors risk missing their contractual SLAs, causing painful financial loss.
- Labor efficiency plummets, as warehouse associates struggle to be productive.
- Support teams see an influx of customer tickets and "Where is My Order?" (WISMO) queries.

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The opportunity cost of a DIY approach: big impact requires big data

The opportunity cost of a DIY approach

By working with a third-party shipping platform, there's so much you can achieve that's next to impossible with your own technology, simply because you're limited to the data that passes through your system. Since third-party shipping providers have massive amounts of data, once you partner with one you can access deep historical insights, industry and category benchmarking, delivery time predictions, pricing and rate simulators, and more to gain greater visibility into your operations, optimize your processes and costs, and sell your products or services effectively.

Consider the possibilities if you have access to insights based on hundreds of thousands of shipping data points:

Optimize your shipping efficiency with advanced simulations

Unlock the full potential of your shipping operations by leveraging detailed simulations of your parcel data. Analyze key metrics such as spend, package details, delivery performance, and more to ensure maximum efficiency. Simulations allow you to improve carrier performance, minimize days in transit, optimize rates, and make data-driven decisions. For example, you can answer critical questions like:

- Am I optimizing my per-order parcel spend for better cost efficiency?
- How can I improve carrier delivery performance to meet business needs?
- Are my package sizes and weights impacting costs more than necessary?

Additionally, you can run "what-if" scenarios to forecast how changes in volumes, carrier accounts, or diversification will affect pricing. This empowers 3PL sales teams to streamline modeling, negotiate better rates, and forecast growth.

Access historic data to optimize variable costs like surcharge spend

Surcharges can account for up to 30% of shipping spend[13], yet they often remain elusive and confusing for many brands. By utilizing shipping software rich in surcharge data, brands can gain clearer insights into their monthly surcharge invoices, recover revenue lost to errors, and optimize their shipping strategies to minimize surcharges.

Additionally, mapping surcharge fees to individual SKUs enables brands to more accurately forecast shipping costs and, if needed, adjust product pricing. By automating surcharge identification, brands can swiftly recover unnecessary costs, ultimately boosting their bottom line.

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The benefits of choosing a best-in-class shipping software

The benefits of choosing a best-in-class shipping software

Rather than devote significant resources to building and maintaining a shipping platform, you can leverage a best-in-class, third-party shipping solution and benefit from:

- Minimal headcount needs: Supply chain leaders typically manage the provider relationship as a small part of their ongoing responsibilities.
- Hosting and maintenance savings: Hosting and maintenance costs for your tech stack are fully covered and managed as part of your agreement.
- Regulatory compliance: Ensure your customers' data is securely protected, and the tools and processes required for compliance are managed for you.
- Postage savings: Access pre-negotiated discounted rates across multiple carriers with a multi-carrier shipping API, giving your business versatility, cost savings, and the ability to better serve customer needs.
- Faster integration: Third-party shipping APIs can often be integrated and live in under 30 days, reducing time-to-market.
- Carrier issue resolution: You benefit from direct lines of communication with all prominent carriers, ensuring that if an issue arises from a carrier API, it can be quickly addressed and resolved on your behalf.

Here’s a look at how some of these key considerations compare when building vs. buying your new shipping software.

	Build Your Own	Buy a Solution
Timeline	12–16 weeks per carrier integration	Go live in under 30 days with Shippo
Staffing	Requires 4+ software engineers, SREs, carrier managers	Minimal headcount needs; managed for you
Cost	Over $400,000 annually in staffing costs	Pre-built integrations, savings on hosting
Carrier Integrations	Requires ongoing maintenance, certification, & compliance	40+ pre-negotiated carrier rates & full compliance management
Maintenance	Continuous updates & on-call support during peak seasons	Managed maintenance, no downtime during outages

Conclusion

Conclusion

Only you know the unique needs of your business. By arming yourself with a thorough understanding of the scope of a DIY shipping software, you can make the right decision for you.

	Build	Buy
Required FTEs		
Software Engineers	4	Included
Site Reliability Engineer	1	Included
Carrier Partnerships Manager	1	Included
Required Non-Labor Costs		
Hosting	$$$	Included
Regulatory Compliance	$$$	Included
Software Upkeep	$$$	Included
Postage Fees	$$$	$$

About Shippo

Founded in 2013, Shippo is the leading shipping platform for modern e-commerce. More than 120,000 businesses, including top e-commerce platforms, marketplaces, warehouses, and brands, trust Shippo to navigate the complexities of shipping and fuel growth. With Shippo's platform, businesses of all sizes can access our 1000+ global carrier network, get real-time shipping rates, print labels, automate international paperwork, track packages, facilitate returns, and more.

Shippo's robust shipping API architecture helps you power delightful experiences and drive efficiency at scale. We have you covered from pre-purchase to returns.

Learn more:

shippo.com/products/api

300K+

Shippers rely on Shippo

90%+

Potential savings on shipping labels

$12B+

Annual gross merchandise volume

200M+

Shipments annually

Trusted by

Aēsop Caraway hims Ryder ShipBob shiphero

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