A shopping cart that sells How a new shopping cart design helped one company increase per customer revenue by 16%



punch case study

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About Twice

TWICE (ACQUIRED BY EBAY IN 2015) WAS AN ONLINE RETAILER OF SECONDHAND CLOTHING FOR WOMEN AND MEN.

Twice operated a large ecommerce website with hundreds of thousands of monthly visitors and tens of thousands of secondhand items listed each month in inventory. The large volume of items and high traffic posed two big issues for Twice: avoiding changes that would effect revenue and making it important to keep inventory moving.

Founded	2012
Acquired	2015
Location	San Francisco, California
Industry	Ecommerce, apparel, retail
Website	liketwice.com

Twice identified two key insights:

- **1 Checkout determined inventory sales.** If users abandoned carts or took too long, inventory spoiled. Old inventory did not sell as well as new.
- 2 Bad checkout was a design issue. As good as engineering and operations became, if the checkout design and experience lagged behind, it could block improvements meant to boost revenue per customer.



Why ecommerce checkouts fail

CART ABANDONMENT ISN'T A NEW PROBLEM. NEARLY 70% OF SHOPPING CARTS ARE ABANDONED BY POTENTIAL BUYERS ONLINE.¹

It's easy to dismiss cart abandonment to shoppers who were just browsing. After all, how often have you entered a store just looking? But once we remove that reason, we get a more interesting picture:

REASONS FOR CART ABANDONEMENT²

Extra costa too high (like chipping)	C194
Extra costs too high (like shipping)	01%
Had to create an account	35%
Too long or complicated to checkout	27%
Hard to see all costs upfront	24%
Website had errors	22%
Untrustworthy	18%
Other reasons	39%
Total responses given	1,044

A majority of reasons why users abandon their cart in the table above stem from

1 Baymard Institute. http://baymard.com/lists/cart-abandonment-rate. Retrieved January 1, 2017.

2 Baymard Institute.



design and user interface issues. Luckily for us, these are issues we can control and fix through intelligent design and interface decisions.

In the following case study, we show the process and results for how an ecommerce shopping cart for Twice was redesigned to increase revenue per customer by 16% and improve checkout conversion by 10%.

The existing shopping cart on Twice's website functioned well and was not considered unusable by any means. And while the cart appeared to be "good enough" for a fast-growing startup, once tested against different design variations, it became apparent that the cart was not as powerful as originally thought — and money was being lost.





Starting a new design project

WHEN TWICE REDESIGNED THEIR SHOPPING CART THEY WERE Not starting from scratch or fixing a broken feature.

In fact, Twice's shopping cart functioned well. The company was fast growing and month-on-month sales grew at an appetizing pace for investors, who helped the company grow into a multi-million dollar startup within a few years.

This led to a common problem found inside product teams: if it isn't broke don't fix it. The shopping cart was the linchpin for how Twice collected payment and any changes to it were either deemed risky or troublesome.

But as Twice began optimizing each part of their business to increase growth and revenue — operations, customer service, human capital, engineering, and product — they realized that design was a key comportment to improve, too, as it was the point through which all customers interfaced with the business.

As a startup, Twice challenged itself to improve their user experience. Twice followed an organized approach of data-driven design:

1 Define an experiment. Twice determined that the shopping cart was a key factor in ensuring users completed a purchase. The experiment would be to redesign how checkout worked. This involved redesigning the shopping cart on the site. Twice would consider the experiment a success if there was significant increases in the following metrics: adding items to the cart,

completing checkout, average revenue per order, and revenue per visitor.

- 2 **Create design variations.** Instead of running too many simultaneous experiments, Twice opted for a leaner user experience test. Twice would create a number of design variations internally and decide which one they would select to run publicly against the control group of users seeing the old checkout process.
- End experiment and analyze results. Twice picked a winning design based on its performance and not on direct customer or internal feedback.
 A numbers-based approach to design worked well in this case, as the checkout process was directly tied to revenue growth for the company.



CONTROL GROUP

THE EXISTING DESIGN

Twice's original approach was a common one: dedicate a full page to the checkout experience. This is a standard recommendation for traditional cart design.

FREE SHIPPING ON ORDERS OVER \$49			ACCOUNT	CART 5
	Tu	vice,		
	700		654DCU	
SELL NEW HANDBAGS	DRESSES TOPS	JEANS PANIS SKIRIS	SEARCH	С,
Cart expires in 11:33	0		Create an account	: Sign in
Michael Stars	\$20.95	Shipping information	n	
OSFM Purple Halter Dress SIZE OSFM • ORIG. \$112.95		Free shipping on orders over \$:49. Free returns within 30 day	/S.
Lucky Brand	\$14.95 \$11.96	Email address		
Green Low-Rise Jeans	20% OFF	me@email.com		
512230 - 51(13,30),55		First and last name		
Gap	\$24.95 \$19.96	Jane Smith		
SIZE 8 • ORIG. \$75.49	20% OFF FINAL SALE	Street address		
		123 Willow St	Apt 2	
		City	State	Zip
		Billing information Pay with a credit card Click the button below to co redirected to another page v information and complete y Check ou	Pay with PayPal omplete your purchase. You where you can enter in your your purchase. It with PayPal	will be PayPal
Subtotal	\$23.95 \$5.00	O Use my available credit	t	\$23.95
Sales tax	\$2.53			
Add coupon or gift code				
Order total	\$21.48			
What you saved shopping at Twice	\$478.22			

DESIGN VARIATION 1

TEASER CART

"Teaser" or mini carts are often found in the top right corner of shopping websites and hint at a larger dedicated checkout page. This variation suffered from exposing too little actionable information.



DESIGN VARIATION 2

LARGE VISOR

The most radical departure in testing was the full visor design. The visor cart — a first for Twice and most retailers — attempts to expand and hide as needed by the customer. This designed suffered from a lack of sufficient information.



DESIGN VARIATION 3

LARGE VISOR COMPLETE

Variations of the visor that were tested failed to include enough actionable information (Variations 1 and 2). In the winning variation, everything was condensed into the visor. High information-density yielded the most profits.

🛑 SHIPPING TO USA 🗸		HELP \lor create ac	COUNT I SIGN IN CART 5	
7 items	CHECH	(O U T	Cart expires in 60:00	
Shopping cart Michael Stars Jacket SIZE OSFM	\$20.95 💿	Shipping address Edit mail@account.com Jay Smith 123 Main Street, Apt 12	Billing address Edit Jay Smith 123 Main Street, Apt 12 Anytownville MA 34459	
Talbots Pants SIZE 30	\$46.56 \$11.96 S FINAL SALE	Payment method Edit	B Secured by VeriSign 1242	
		Subtotal Add coupon or gift code Vie Shipping to USA Free on orders Sales tax Total	\$42.87 w deals over \$49 \$2.10 \$ 31.05	
Oid you know? You've saved \$101.00) by shopping at Twice!	СОМРІ	ETE ORDER	
	Two	ice		
SELL I NEW WOMEN H.	ANDBAGS SHOES M	EN CLEARANCE ABOUT	SEARCH Q	



Understanding the results

THE WINNING DESIGN VARIATION 3 PROVED THAT TWO COMMONLY HELD BELIEFS ABOUT "GOOD" DESIGN WERE PROVEN WRONG IN THE CART EXPERIENCE.

"USERS NEED SEPARATE-PAGE CARTS TO FOCUS AND CHECKOUT"

Quite the opposite: Twice found that focus doesn't mean taking users away to a special or dedicated page. The poorest performing cart experiences in the experiments were the ones which hid navigation and other elements to create a "focused" and "error-proof" checkout experience (Variation 2 and Control). Users found this disorientating and frustrating, as it didn't mimic how they browsed, added, and removed items from their cart. They also did not find "incremental" carts (Variation 1) useful because those didn't allow for full checkout. This proves that even if large companies (like Amazon) pursue one design approach, it does not mean it will translate to another company without testing.

Shopping carts should be dense in information. It is up to good design to determine how to provide focus and ease-of-use without comprising information density. Users prefer one checkout experience available everywhere that doesn't disrupt their flow.

"USERS PREFER SIMPLICITY"

Where most designs fail (like Variation 2) is in execution. Simplicity does not mean showing less. Simplicity means making the necessary steps and information as quick and actionable as possible. A simple UI does not have less on it, it actually



has more on it but makes execution of tasks quicker. Simplicity is not a measure of how a thing looks or works, but how little *mental effort* it takes to use or understand. Simple things can be processed quickly with little stress.

In the winning Variation 3, simplicity was achieved in four ways:

- Steps to checkout were reduced from many pages and inputs to consolidated view. If users ever made a repeat purchase, their steps to checkout would effectively be reduced to 1-2 clicks depending on saved information. A quick scan and approval is all that was necessary.
- 2 In-page modals gave users clarity when they wanted it. Progressive reveal is a key strategy to take complex, multi-step tasks and collapse them into easy to segment steps. Users could mentally "finish" different aspects of checkout through modals and pop-ups. Modals provide an interface to give users compartmentalized tasks that in isolation are done quickly.
- 3 Recall was kept to a minimum by providing information in the most obvious places. Having to recall information between steps causes the most strain with users. Showing all information on the main visor view meant users never had to remember any piece of information. Inside discrete modal steps like "shipping" and "payment," the visor cart made sure to provide contextual information (like shipping speed and estimated costs) right next to the relevant inputs so users has piece of mind during checkout. Customer service teams know customer stress points the best, and a good interface works to prevent those.
- 4 The non-disruptive design of the visor never obstructed what users were working on. A failure of pop-up, overlay, or teaser carts (like Variation 1) is that they cover up the page the user is using. The winning visor design, instead pushes the page down but doesn't cover it, so users don't have anything blocked.



KEY CART INSIGHT

REDUCE RECALL

By providing the most common customer questions around shipping (gathered from real support tickets), customers would not need to recall information about shipping during checkout. Common buttons like "sign in" were repeated in case a user forgot to sign in at another point.

2 tems CHECKOUT Shipping address Edit Shipping address Edit erol@zafer.me PayPal First and last name erol@zafer.me First and last name @ All orders ship within 1-3 business days. First and last name @ Your order will be shipped via DHL GlobalMail. First and last name @ Your order will be shipped via DHL GlobalMail. First and last name @ Your order will be shipped via DHL GlobalMail. Grademas Street address 429 Bush Street 57 City State City State Zip M 48316	Stepsping cart Shipping address Edit colorater.me Billing address Edit PayPal Tormer Hilling STE 95 Billing address Edit erolorater.me PayPal First and last name Erol Ahmed Image: Concord of the shipped via DHL GlobalMail, greet address Image: Concord of the shipped via DHL GlobalMail, greet address Image: Concord of the shipped via DHL GlobalMail, greet address Image: Concord of the shipped via DHL GlobalMail, greet address Image: Concord of the shipped via DHL GlobalMail, greet address Image: Concord of the shipped via DHL GlobalMail, greet address Image: Concord of the shipped via DHL GlobalMail, greet address Image: Concord of the shipped via DHL GlobalMail, greet address Image: Concord of the shipped via DHL GlobalMail, greet address Image: Concord of the shipped via DHL GlobalMail, greet address Image: Concord of the shipped via DHL GlobalMail, greet address Image: Concord of the shipped via DHL GlobalMail, greet address Image: Concord of the shipped via DHL GlobalMail, greet address Image: Concord of the shipped via DHL GlobalMail, greet address Image: Concord of the shipped via DHL GlobalMail, greet address Image: Concord of the shipped via DHL GlobalMail, greet address Image: Concord of the shipped via DHL GlobalMail, greet address Image: Concord of the shipped via DHL GlobalMail, greet address Image: Concord of the shipped via DHL GlobalMail, greet address Image: Concord of the shipped via DHL GlobalMail, greet address Image: Concord of the shipped via DHL GlobalMail, greet address Image: Con	2 tens Accepted to Comparison Shopping car Singing address Edit Tenswe Hillfree Group address Tenswe Hillfree Group address SHIPPING ADDRESS Barban account? Sign in First and last name erol@zafer.me First and last name Erol Ahmed Street address 429 Bush Street 102 102 102 103 2100 Cucced	2 tens CHECKOUT Categorics Shoping car Shiping dares Edit Balpad Tormuk liftirar Stass Billing dares Edit BayPal Tormuk liftirar Stass Barbanda BayPal Tormuk liftirar Stass Barbanda BayPal Tormuk liftirar Stass BayBal BayBal First and last name Image: Stass Image: Stass Image: Stass First and last name Image: Stass Image: Stass Image: Stass Steet address 1mage: Stass Image: Stass Image: Stass 129 Bush Street 1mage: Stass Image: Stass Image: Stass Concord Image: Stass Image: Stass Image: Stass	
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KEY CART INSIGHT

GET OUT OF THE WAY

Once users were done with checkout, the visor provided a recap of the order and could be easily dismissed so users could continue shopping. For repeat customers, a new order could take as little as 1-2 clicks to complete, so it was important to move the visor back up as easily as possible.



KEY CART INSIGHT

COMPARTMENTALIZE COMPLEX TASKS

Instead of a long set of steps, the winning cart design took what were different checkout paths — payment methods, shipping addresses, shipping options, gift certificates, and more — and broke them into smaller steps.

FREE RETURNS 30-DAY FULL	REFUND	ACCOUNT \$30.00 CREE	DIT SIGN OUT CLOSE (
2 items	CHECH	(O U T	Cart expires in 20:28
Shopping cart	\$15.95	Shipping address Edit erol@zafer.me Erol Ahmed	Billing address Edit PayPal
	BILLING &	ΡΑΥΜΕΝΤ	
	Pay with credit card	O Pay with PayPal	
Billing address	 Same as shipping 	Card information	🖻 Secured by VeriSign
Street address		First and last name	
123 Willow St	Apt 2	Erol Ahmed	
City	State Zip	Credit card number	Expiration
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		Security code 🕜	
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SELL NI	EW DRESSES TOPS JEANS	PANTS SKIRTS SI	EARCH Q



Results

THE VISOR CART DESIGN WAS A RESOUNDING SUCCESS. AN UNEXPECTED 16% INCREASE IN REVENUE PER VISITOR AND A 10% INCREASE IN CONVERSION MEANT THAT BETTER DESIGN TRANSLATED DIRECTLY TO BETTER PROFITS.

EXPERIMENT RESULTS 8-DAY RUN TIME

Revenue per visitor	\$161.64	\$186.97	15.67% increase
Average revenue per order	\$6.24	\$6.49	4.01% increase
Average order size (items)	3.65	3.65	
Completed checkout	2.34%	2.57%	9.83% increase
Customers who added items to their cart	7.60%	8.00%	5.26% increase
115,000 participants	Original	Redesigned visor	

"Our checkout UX is basically 5 years in the future now."

NOAH READY-CAMPBELL

CEO at Twice



"Betting a dollar Amazon copies the design."

CHARLES CUSHING

COO at Twice





Conclusion

GOOD DESIGN IS GOOD BUSINESS.

As key revenue drivers, shopping carts often need special attention and care in the realm of product improvements. But their special status should not lead to them being ignored, overly-protected, or untouched.

With thoughtful, and multi-variation tests, shopping cart design can significantly improve to the point of moving large amounts of revenue and profit for an organization. The key is to test and be open to variations that go against commonly held ideas and implementations. What worked for someone may not work for you.

Shopping cart design — as researched and discussed — still offers much potential for design and product disruption for companies of any size and industry.



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