

Essentials of powerful A/B testing



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Lev Tatarov

Strategy Consultant

@



Help customers with...

- Setting up the right goals
- Identifying focus areas and strong ideas
- Experiment design
- Results interpretation
- Running an optimization program & scaling up

The Telegraph



ebay

ZARA



dailymotion



A/B

What is **A/B testing**?





100%

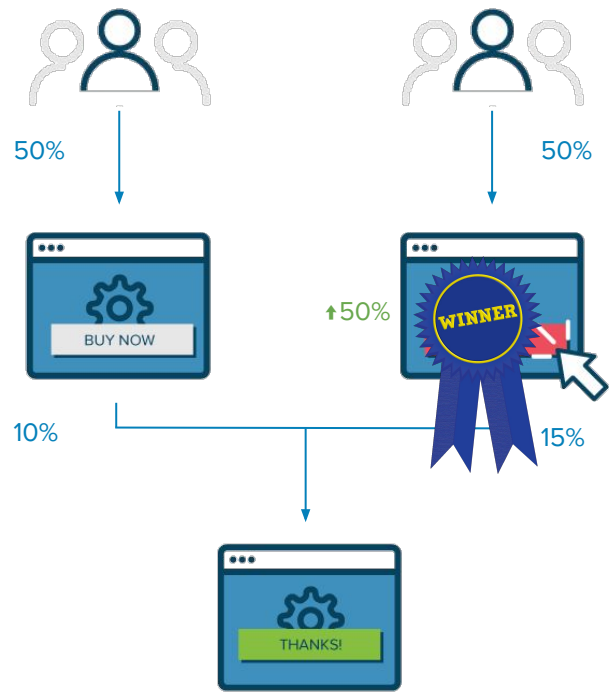


10%



1,000 \$

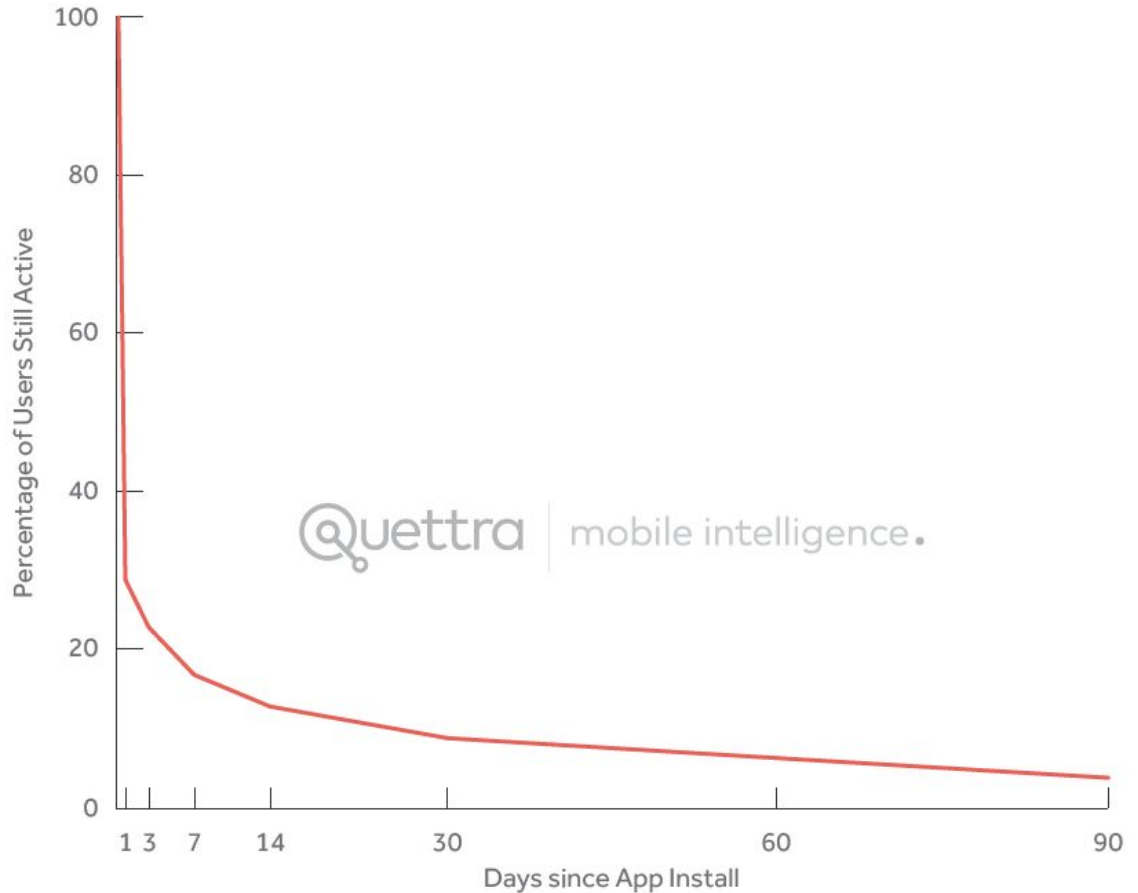






Keeping active users
is a challenge...

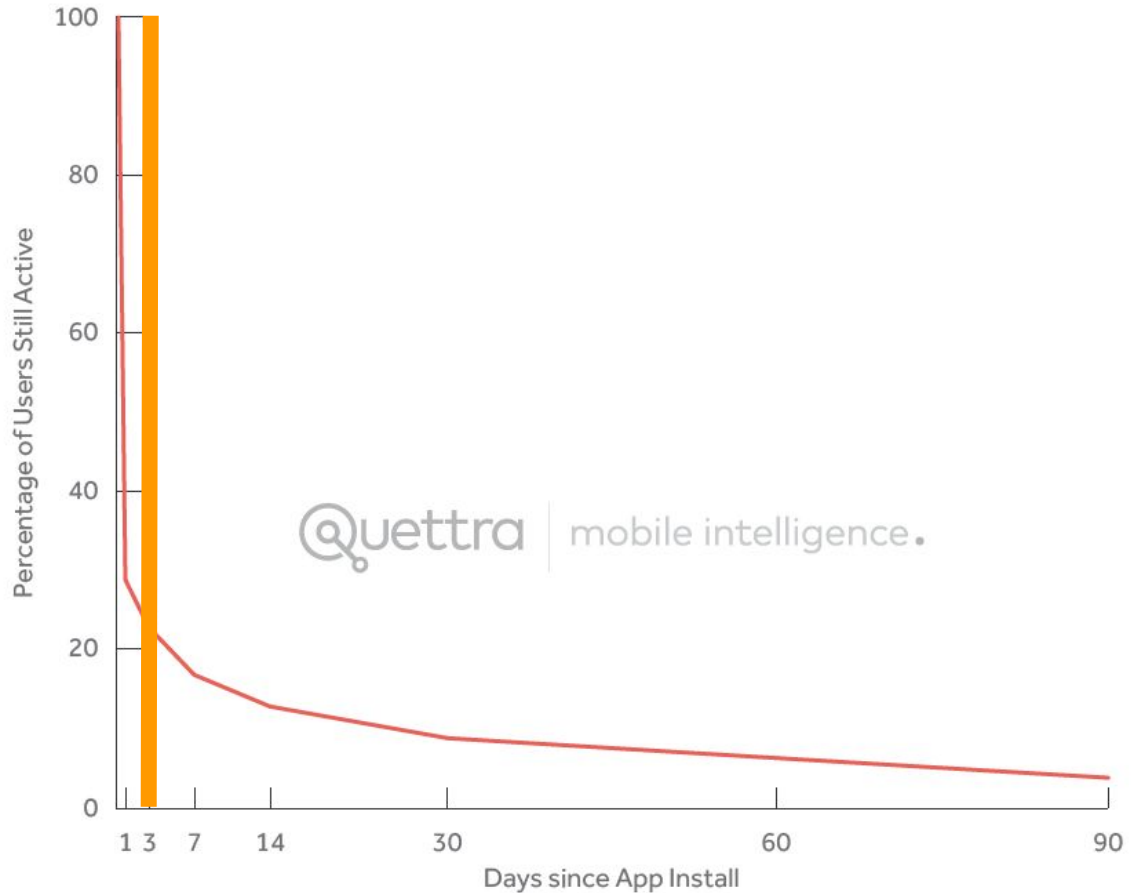
Average Retention Curve for Android Apps



Keeping active users is a challenge...

On average, after 3 days, 80% of users never re-open the app again

Average Retention Curve for Android Apps



...and they cost more to acquire

	April 2014	July 2015
Cost per install (iOS)	1.38\$	1.43\$
Cost per install (Android)	1.31\$	2.73\$

...and they cost more to acquire

	April 2014	July 2015
Cost per install (iOS)	1.38\$	1.43\$
Cost per install (Android)	1.31\$	2.73\$

2X



< Variations

Variation #1

Preview

Changes

Create >

Custom Javascript



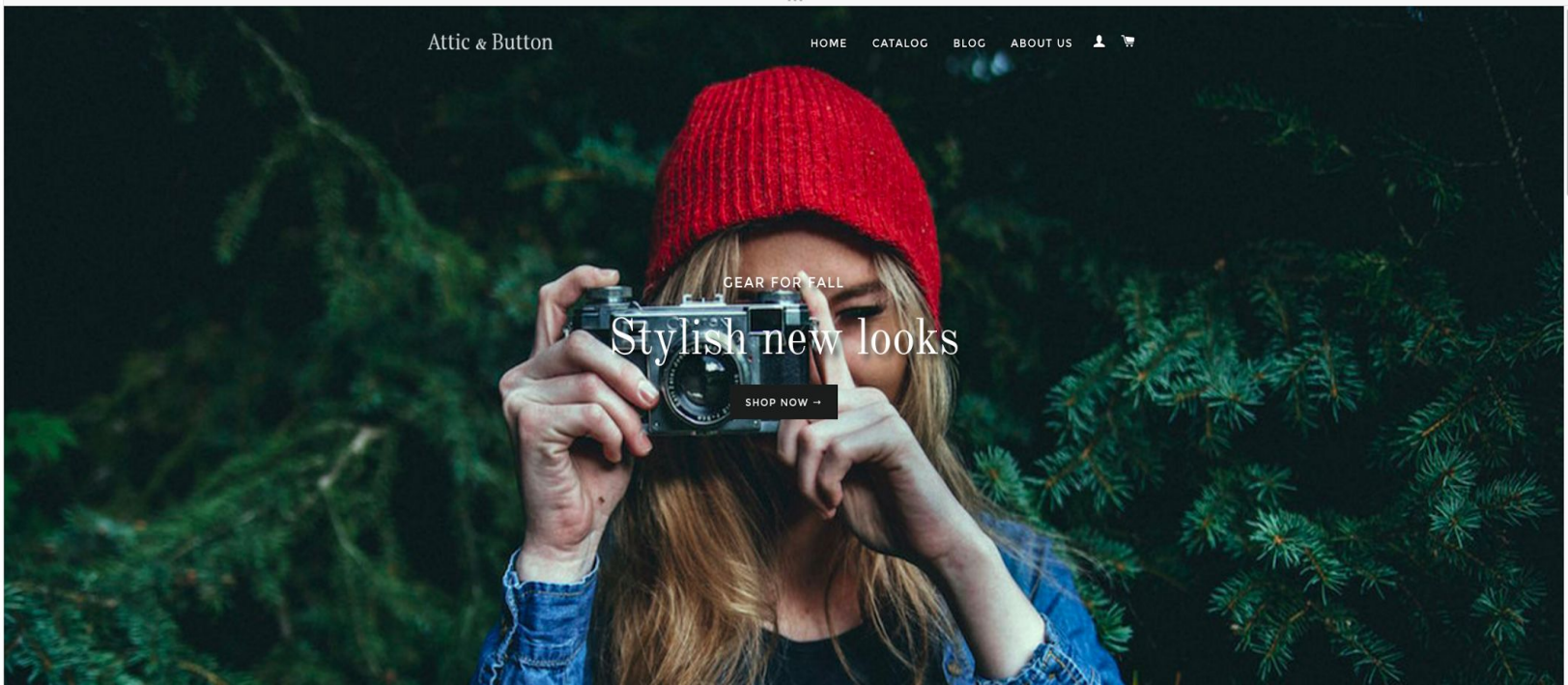
To make a change, select an element on the page.



```
Homepage https://www.atticandbutton.us/
Javascript CSS
40 var CTAtext = "";
41 if (window.favorite_category === "Coat") {
42   CTAtext = "Coats";
43 } else if (window.favorite_category === "Scarf") {
44   CTAtext = "Scarves";
45 } else if (window.favorite_category === "Accessory") {
46   CTAtext = "Accessories";
47 } else {
48   CTAtext = window.favorite_category;
49 }
50
51
52 var heroCTA = [
53   "Shop ",
54   CTAtext,
55   "<span class='icon icon-arrow-right' aria-hidden='true'></span>"
56 ].join("");
57
58 $("".hero_cta).html(heroCTA).attr("href", "/collections/all/" + window.favorite_category);
59 });
60
61 };
```

Help Synchronous timing

Revert to Saved Save & Apply



Experiment Variations

Saved 6 hours ago. [Saved](#)





Original [Variation #1](#) + Add Variation

Connected to: iPhone Simulator [Options](#)



Live Variables

TAKE 10% OFF FROM NOW UNTIL 9/15

 Standard Widget 3.99 \$3.59	 Standard Widget Pack 6.99 \$6.29
 Deluxe Widget 9.99 \$8.99	 Deluxe Widget Pack 12.99 \$11.69

[Sync](#) [View Selector](#)

All goals

Date Range: September 15, 2015 - September 23, 2015
 Segment: All Visitors

Baseline: Original Share Show Charts

- RESULTS VIEWS
- All goals
 - Revenue BETA
 - All variations
 - Primary goal
 - Winning & losing goals
 - CUSTOM VIEWS

OVERVIEW

Performance Summary

Overall summary of experiment performance.

UNIQUE VISITORS	Variations	Visitors	Social Media Shares	Newsletter Signups	Video Views	Total Revenue
150,944	Original	50,119 33.2%	---	---	---	---
	Variation #1	50,928 33.7%	▲ +16.0% 31.48%	▲ +10.2% 10.47%	▲ +33.5% 7.42%	-3.9% 0.0780
	Variation #2	49,897 33.1%	▼ -1.1% 27.43%	▼ -15.9% 7.99%	▲ +32.1% 2.35%	▲ +24.4% 0.0009

Started: September 15, 2015
 Significance level: 90%

GOAL

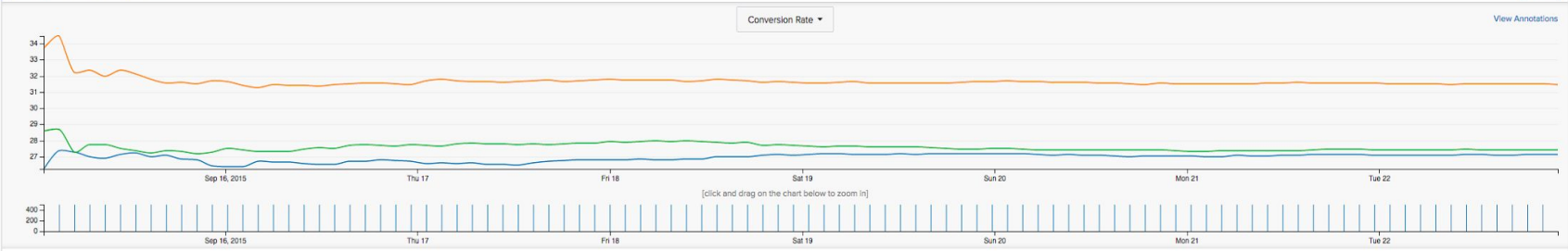
Social Media Shares

The percentage of visitors who triggered social_shares (custom event).

Uniques Totals Hide Chart

Variation #1 is currently beating Original.

Launch...



VARIATION	UNIQUE CONVERSIONS VISITORS	CONVERSION RATE	DIFFERENCE INTERVAL	IMPROVEMENT	STATISTICAL SIGNIFICANCE STATUS
Original	13,603 50,119	27.14%	---	---	--- baseline
Variation #1	16,032 50,928	31.48%		+16.0%	>99% winning
Variation #2	13,687 49,897	27.43%		+1.1%	47% * 100,000 visitors remaining.

GOAL

Newsletter Signups

The percentage of visitors who triggered newsletter_signups (custom event).

Uniques Totals Hide Chart

Variation #1 is currently beating Original.

Launch...

A graphic featuring the letters 'A/B' in a bold, white, sans-serif font. The 'A' and 'B' are flanked by two white, muscular arms flexing their biceps. The background is a solid blue color with faint, light blue outlines of a web browser window and a line graph. Three circular callouts are connected to the background by dashed lines: one at the top left containing '+23%', one in the middle left containing '-9%', and one at the bottom left containing '+11%'.

A/B

What is powerful
A/B testing?



The logo features a large, stylized letter 'R' on the left. The left vertical stroke of the 'R' is red, while the rest of the letter is blue. To the right of the 'R', the word 'ROMNEY' is written in a blue, serif, all-caps font. A thin red horizontal line is positioned below 'ROMNEY'. Below the red line, the word 'RYAN' is written in the same blue, serif, all-caps font.

ROMNEY
RYAN



Learn About Mitt | In Your Community | News & Media | Shop

Login | Register

DONATE

Americans deserve more jobs and more take-home pay. [Read Mitt's 5-Point Plan](#)

Ready

TO JOIN US?

Become a MyMitt Member To Get Involved.

[Sign Up Here](#)

This screenshot shows a website header with a navigation menu and a hero section. The navigation menu includes 'Learn About Mitt', 'In Your Community', 'News & Media', and 'Shop'. A 'DONATE' button is highlighted in red. The hero section features a background image of a man speaking at a podium to a large crowd. The text 'Ready TO JOIN US?' is prominently displayed, followed by the subtext 'Become a MyMitt Member To Get Involved.' and a 'Sign Up Here' button.

Learn About Mitt | In Your Community | News & Media | Shop

Login | Register

CONTRIBUTE

Americans deserve more jobs and more take-home pay. [Read Mitt's 5-Point Plan](#)

Ready

TO JOIN US?

Become a MyMitt Member To Get Involved.

[Sign Up Here](#)

This screenshot is identical to the one above, but the 'DONATE' button has been replaced with a 'CONTRIBUTE' button, also highlighted in red.

+ 10% Clicks



**WOODIES RAGLAN
BUTTON-UP**

FINALLY, A SHIRT WITH
EXACTLY TWO SLEEVES

Betabrand





0.30%

0.29%

0.28%

0.32%

0.25%

0.74%



0.11%

0.28%

0.24%

0.32%

0.09%

0.59%

Is this the kind of **A/B testing** you should be doing?

Probably not...



Save Thousands with a Fixed Low Rate Personal Loan

Enter Loan Amount (\$2,000 to \$35,000)

Select the Purpose of Your Loan

Select Your Credit Quality

Check Your Rate

[Learn about loans](#)

6.73 %

Starting APR for best borrowers*

- Low fixed rates
- Fast and easy online application
- No teaser rates or hidden fees
- Rates from 6.73% to 35.36% APR

Invest money. Earn great returns. [Learn about investing](#)

About +

Invest +

Personal Loans +

General +

Get a Custom Rate in 1 Click

First Name

Last Name

Middle Initial

Suffix

Home Address

City

State

Zip Code

Employment Status

Individual Yearly Income

\$

Date of Birth

Month Day Year

Email Address

Create Password



Original

Save Thousands with a Fixed Low Rate Personal Loan

Enter Loan Amount (\$2,000 to \$35,000)

Select the Purpose of Your Loan

Select Your Credit Quality

Check Your Rate

Learn about loans

6.73 %
Fixed APR for best borrower*

- Low fixed rates
- Fast and easy online application
- No hidden rates or hidden fees
- Rates from 6.73% to 35.36% APR

Invest money. Earn great returns. Learn about investing

About

Invest

Personal Loans

General

Get a Custom Rate in 1 Click

First Name

Last Name

Middle Initial

Suffix

Home Address

City

State

Zip Code

Employment Status

Individual Yearly Income

Date of Birth

Email Address

Create Password

Var 2

Checking your rate does not impact your credit

CHECK YOUR RATE
Est 5 minutes

Then, you can decide to

ACCEPT LOAN TERMS
Est 5 minutes

FILL IN FUNDING DETAILS
Est 4 minutes

We're open if you have questions

CHECK YOUR RATE

For a loan of

\$ 15,000

\$ 2,000 — \$ 35,000

Purpose of loan

We use your personal info to run a soft pull on your credit. This will not affect your credit score.

First name

Last name

Var 1

Loan Information

Loan Amount

\$ Enter 2,000 to 35,000

Purpose of Loan

Select

How's your credit?

Great! 750+

Good! 700+

Fair! 640+

Poor!

Continue

Get a Custom Rate in 1 Click

First Name

Bruce

Last Name

Wayne

Middle Initial

Suffix

A

Home Address

1007 Mountain Drive

City

Gotham

Var 3

How much money would you like?

\$ 15,000

\$ 2,000 — \$ 35,000

Back Next

We're open if you have questions

What is the loan for?

Debt consolidation

Vehicle

Home improvement

Large purchase

Business

Other

Back Next

We're open if you have questions

What's your birth date?

Date of birth

Back Next

We're open if you have questions

+30% completion





Powerful A/B testing means...

- Tackling your organization's most important challenges
- Validating assumptions with data
- Finding value in failed or inconclusive experiments
- Enabling a long-term optimization strategy



Powerful A/B testing is about turning
your data into action!

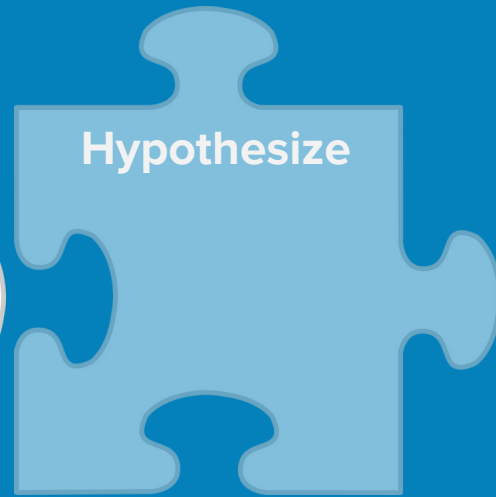




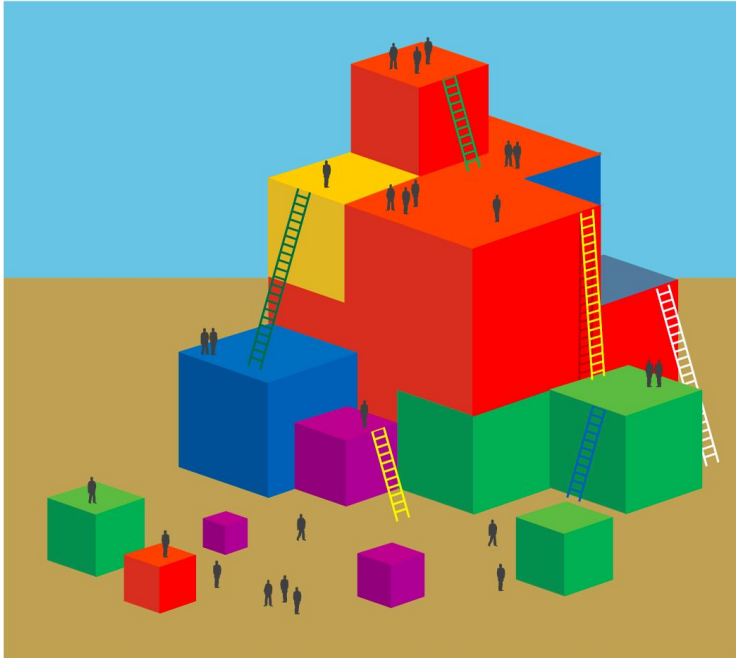
**Know your
business**

Hypothesize

**Research and
challenge**



Understanding the building blocks of your business sets the stage for optimization



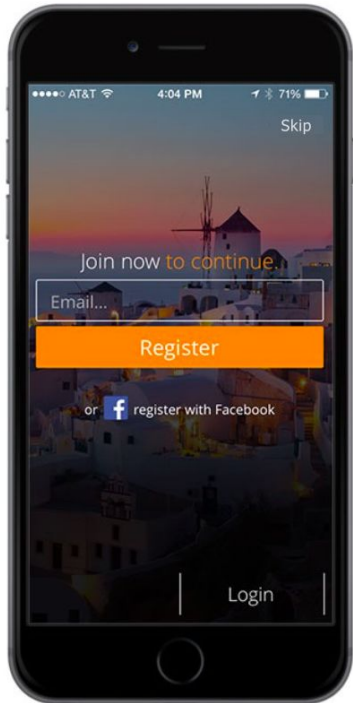
- Set the right goals and expectations
- Identify potential focus areas
- Easier to get reliable results
- Show the value of your optimization efforts



secret escapes



A



B



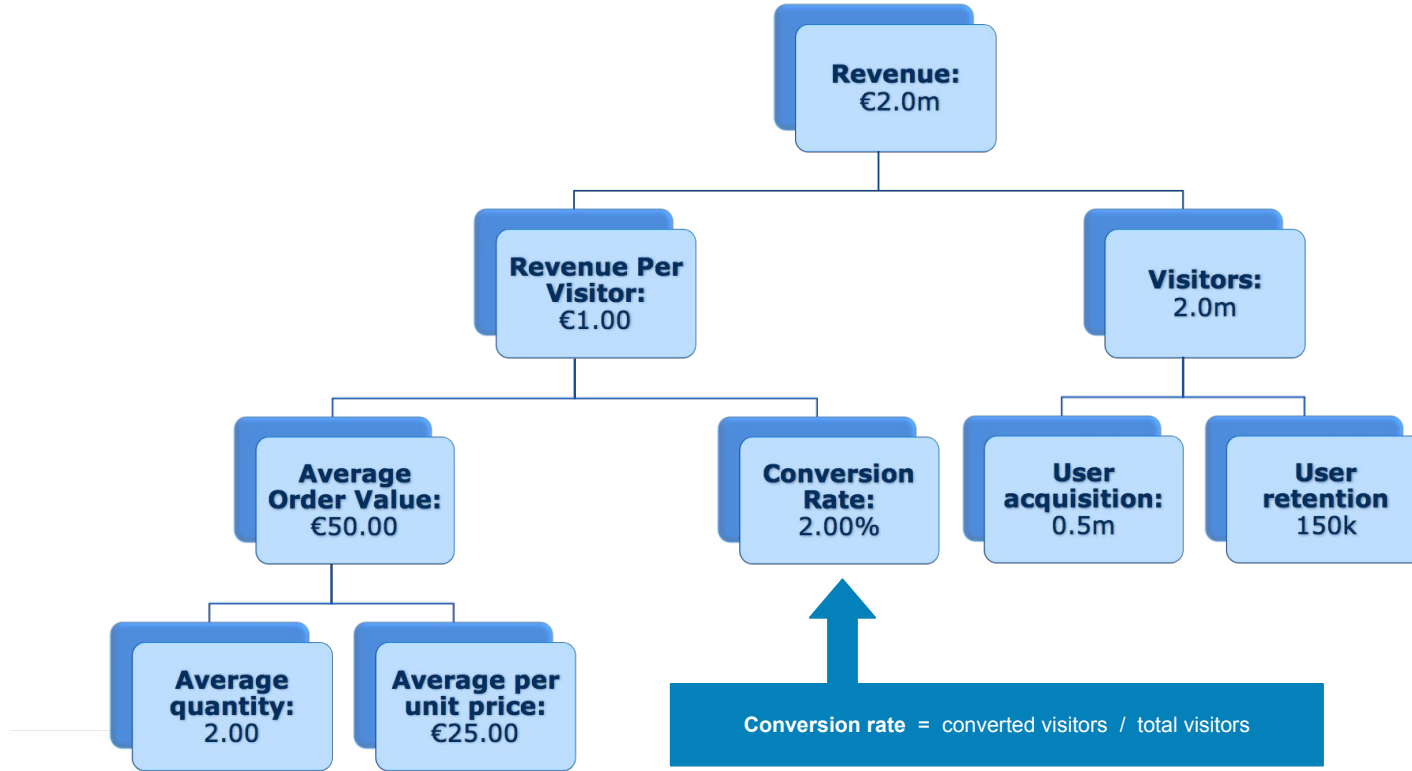
Hypothesis: If we make registration mandatory during the customer onboarding, more users will register

Risk: Customers will get upset, not register and leave negative app reviews

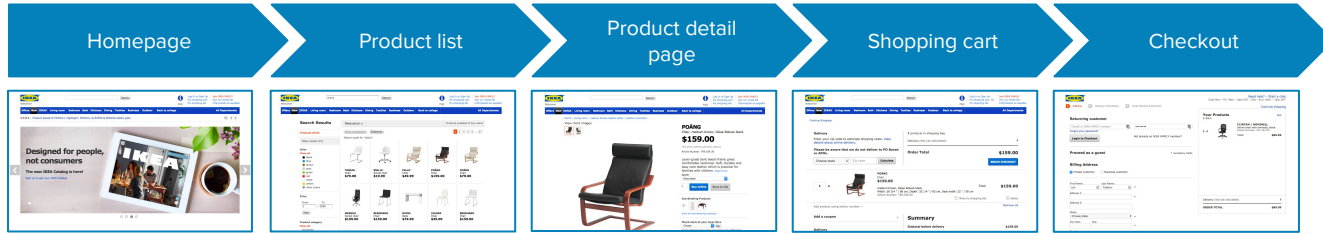
Result: More registrations & no negative feedback

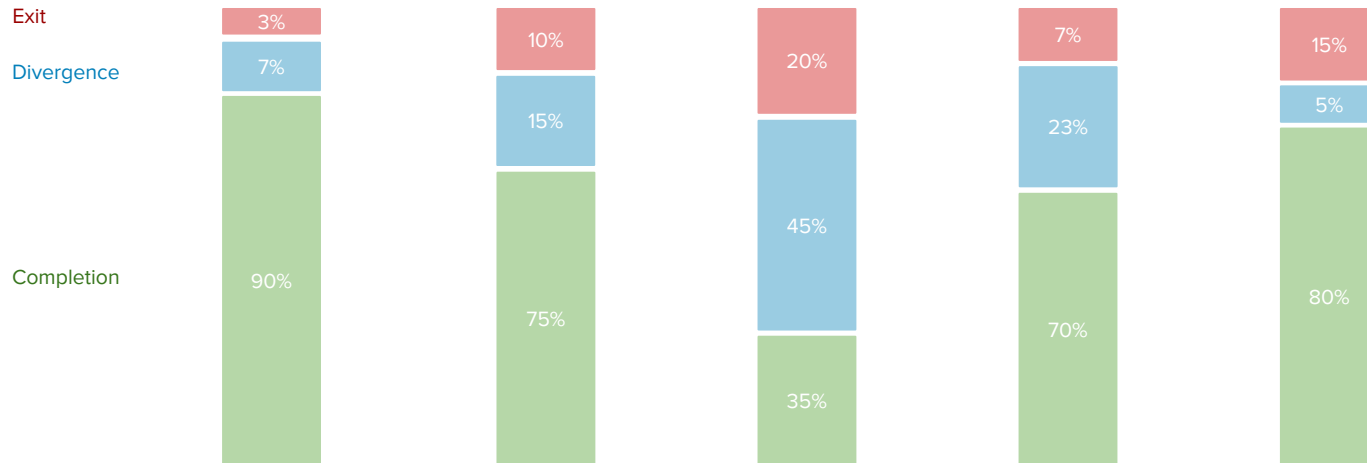
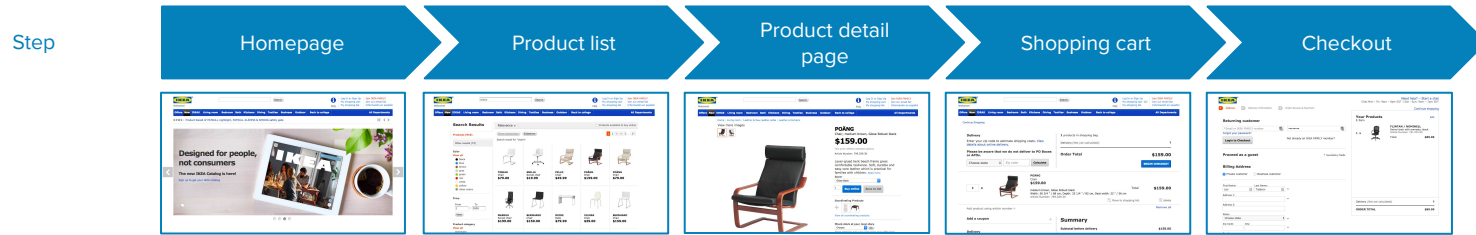
Value: +28.1% RPV

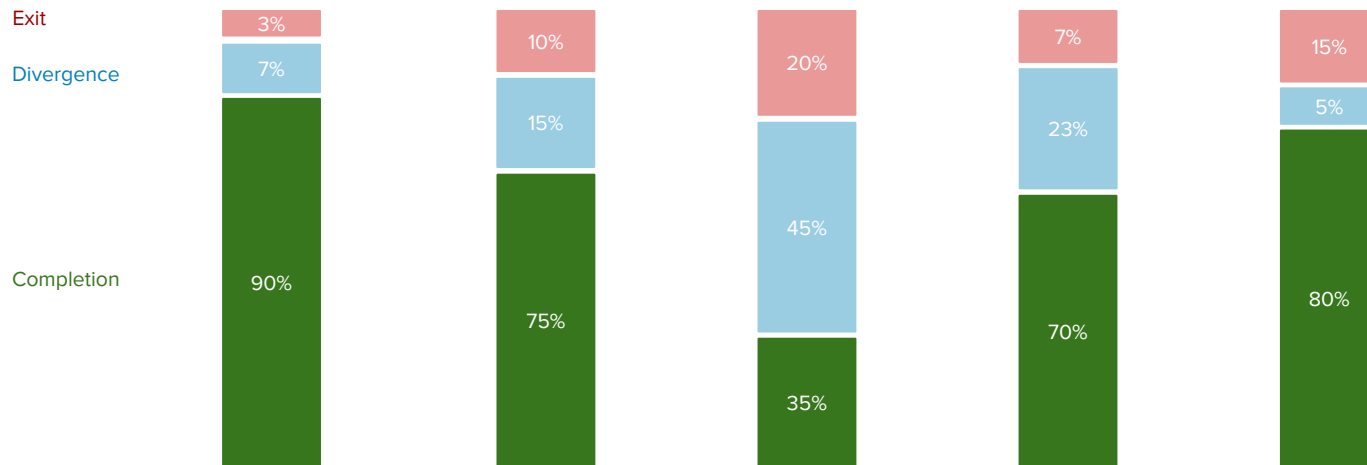
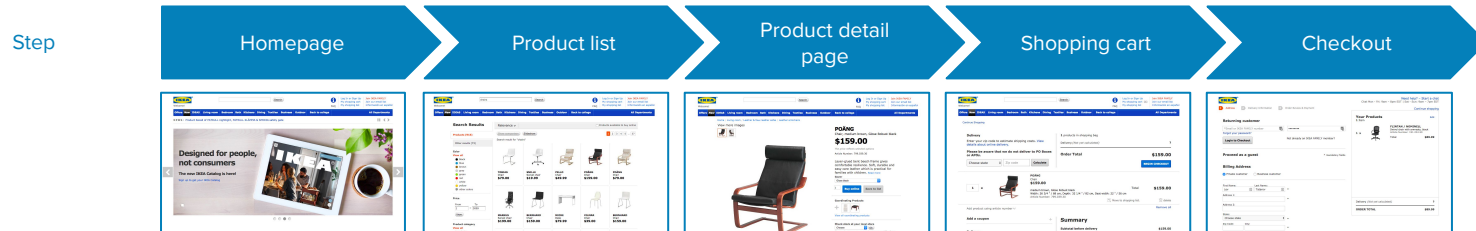


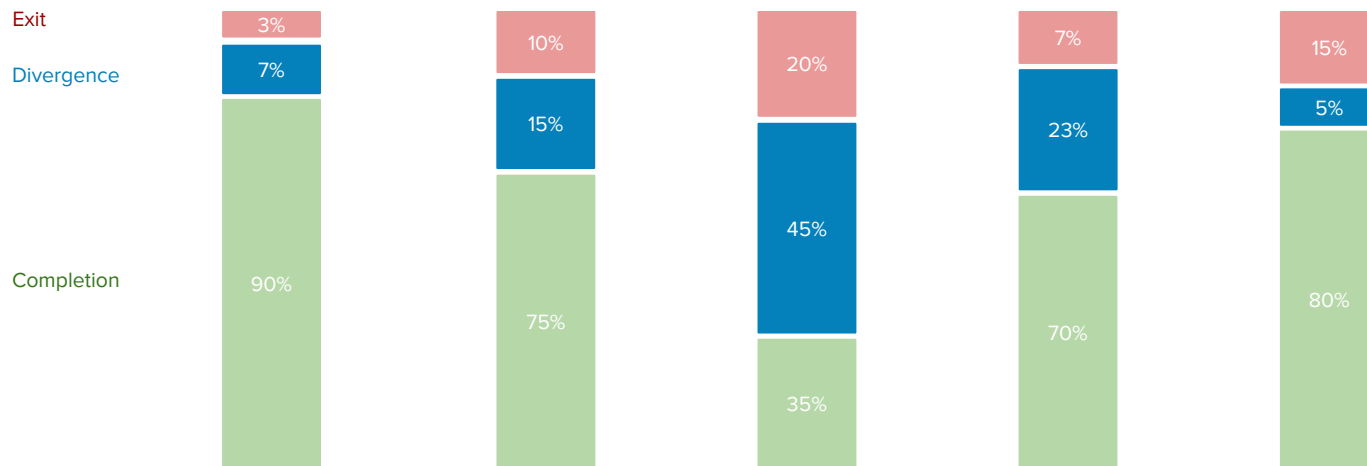
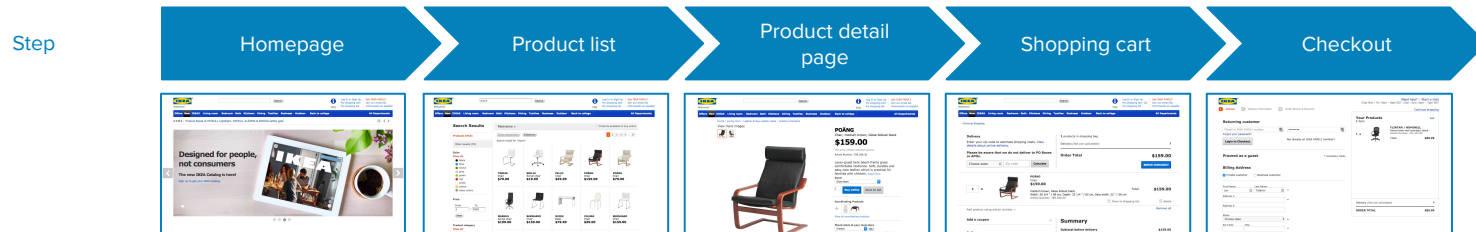


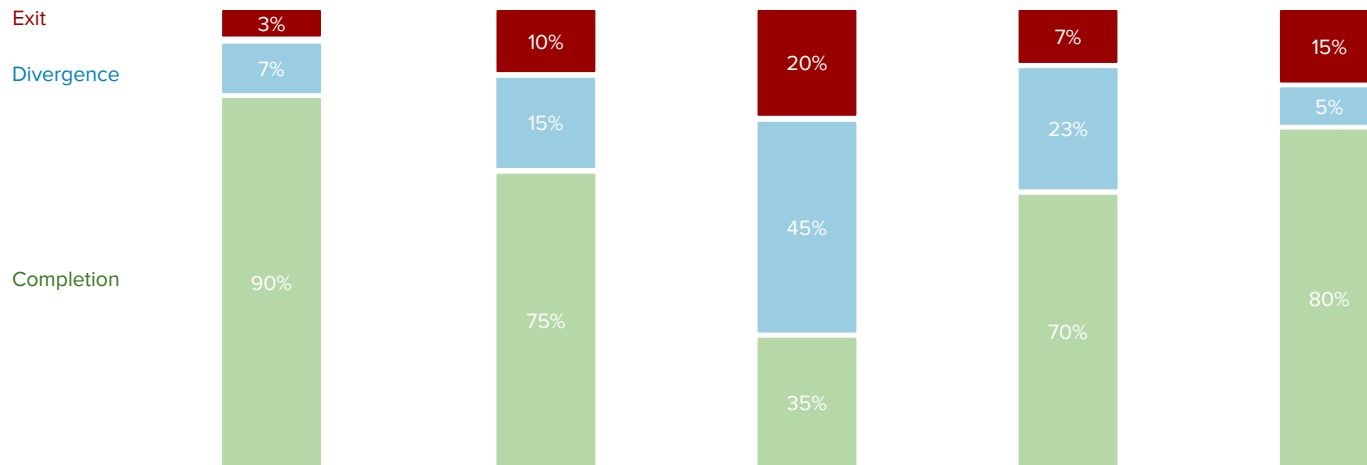
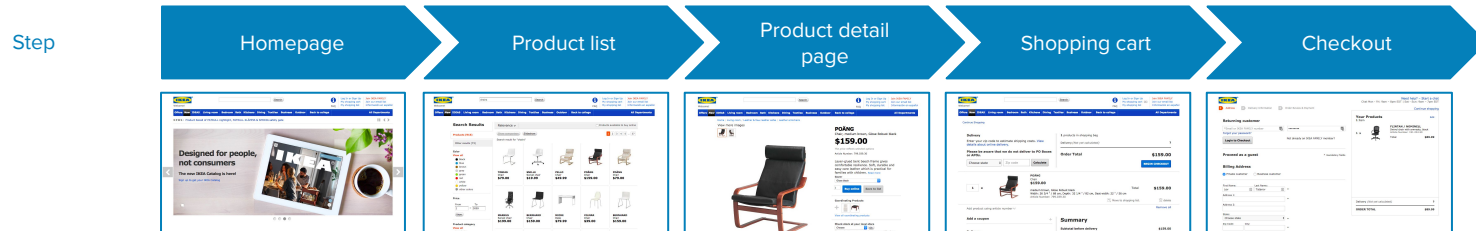
Step

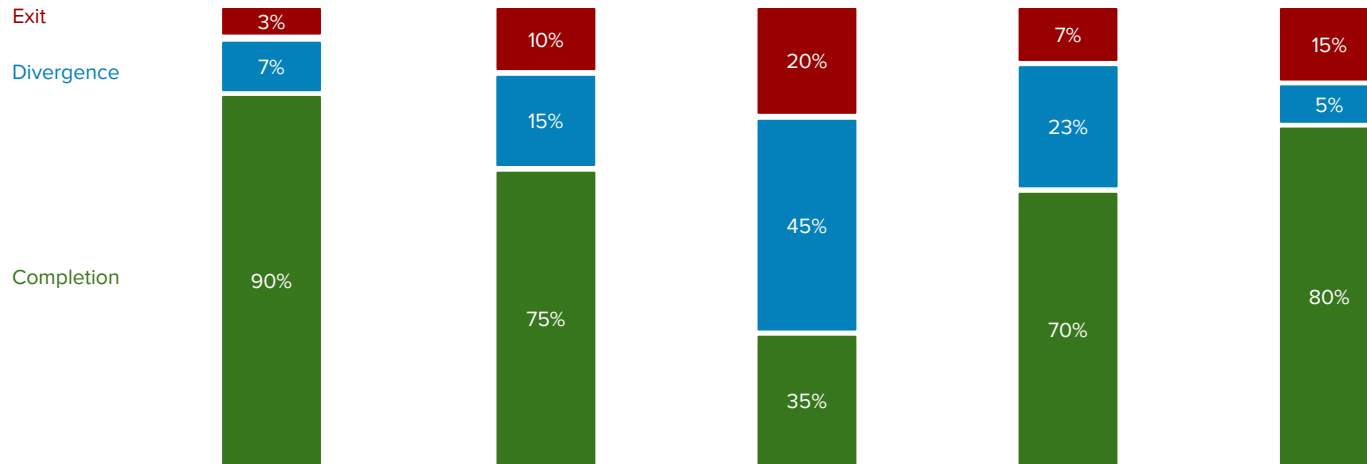
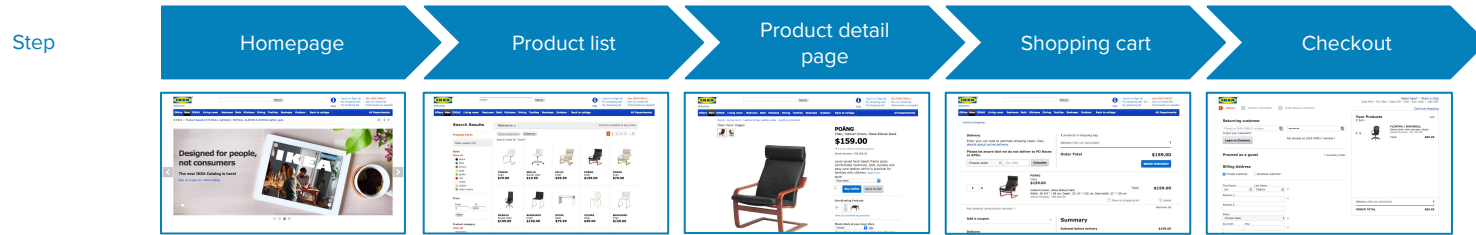












Macro & micro conversions



Macro conversions

E-commerce :

Purchases

Travel :

Bookings

Media :

Paids subscriptions

B2B :

Leads

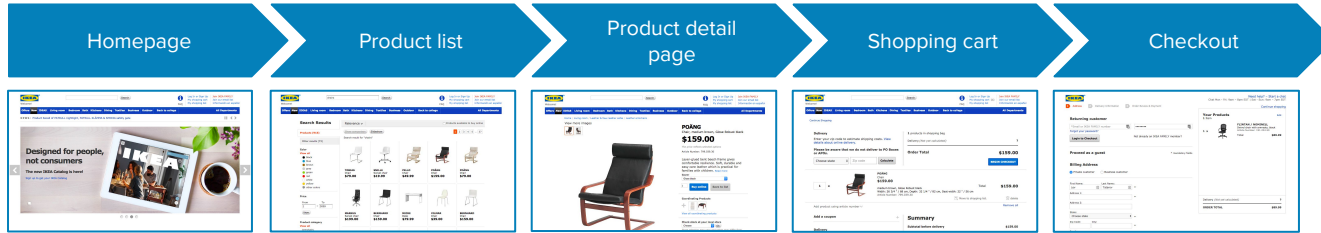


Macro conversion rates are often low

E-commerce :	Purchases	2-4%
Travel :	Bookings	2-3%
Media :	Paids subscriptions	<2%
B2B :	Leads	2-10%



Step



Metrics

- Searches submitted
- Category clicks
- Content clicks

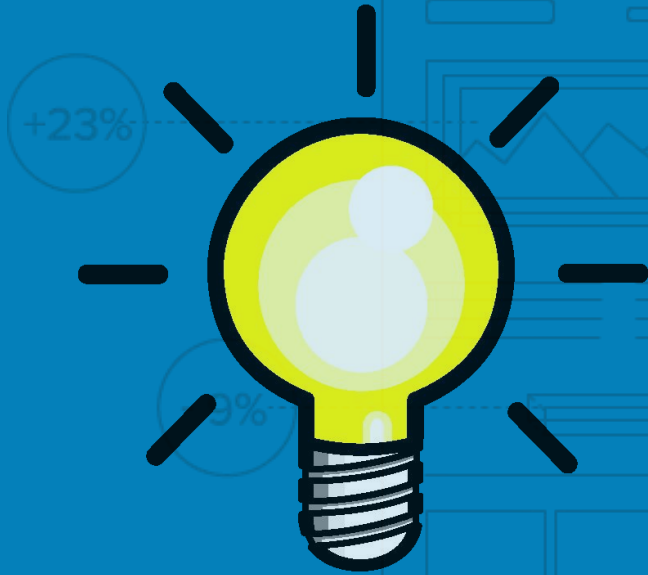
- Product views
- Filter usage
- Sort usage

- Add-to-cart clicks
- Info interaction
- Recommended products clicks

- Proceed-to-checkout clicks
- Coupon code usage

- Checkout completion
- Completion time
- Field usage





- Understand your funnel and goals
- Track both your **micro** and **macro** conversions





**Know your
business**

Hypothesize

**Research and
challenge**

HYPOTHESIS



Problem

Solution

Result



Problem

Solution

Result

- Clearly define your problem
- Use various data sources to validate your problem
 - Analytics
 - User feedback
 - Competitive review



Problem

Solution

Result

- Describe the change that you are testing
- Propose a rationale for why this will solve your problem
 - Theory about UX
 - Industry example



Problem

Solution

Result

- List the metrics that you would track in the experiment
- Provide a clear criteria for success

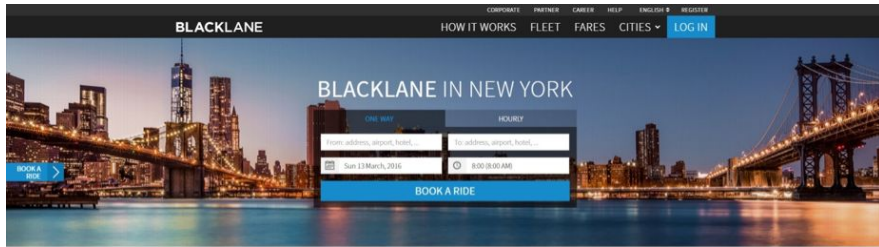




BLACKLANE
LIMOUSINES



A



Hypothesis: If we add press mentions at the bottom of the homepage, we will generate more clicks on the CTA because it will create trust in the brand

B



Result: No significant difference

Conclusion: Visitors are not driven to convert by press mentions

Next steps: ...???



A



Hypothesis: Because we have unused real-estate above the fold on the homepage, then if we add press mentions, we will increase booking CTA conversion

B

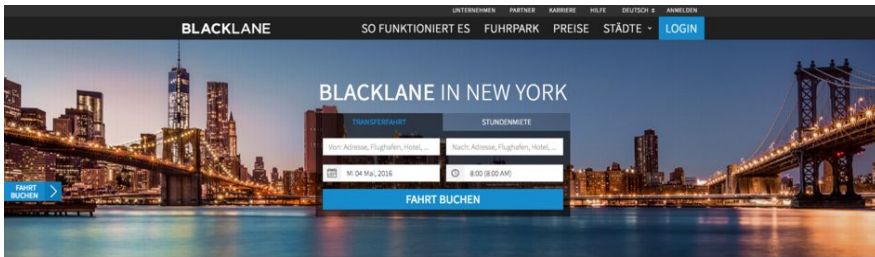


Result: No significant difference

Conclusion: Visitors are not driven to convert by press mentions

Next steps: What else can we use this real-estate for?





Hypothesis: Because we have unused real-estate above the fold on the homepage, then if we add USPs, we will increase booking CTA conversion

IHRE VORTEILE

Reisen Sie mit unseren professionellen Fahrern am Steuer um die Welt



KOSTENFREIE WARTENZEIT

Bei einer Abholung vom Flughafen warten wir bis zu 60 Minuten auf Sie. Bei allen anderen Abholungen beträgt die kostenfreie Wartezeit bis zu 15 Minuten.



ALL-INCLUSIVE FESTPREIS

Bei Blacklane gibt es keine versteckten Kosten. Unsere Preise beinhalten sämtliche Gebühren und Steuern und werden Ihnen mit der Buchung garantiert.



PROFESSIONELLE FAHRER

Alle unsere Fahrer sind lizenziert und arbeiten aufgrund ihrer langjährigen Erfahrungen stets professionell.



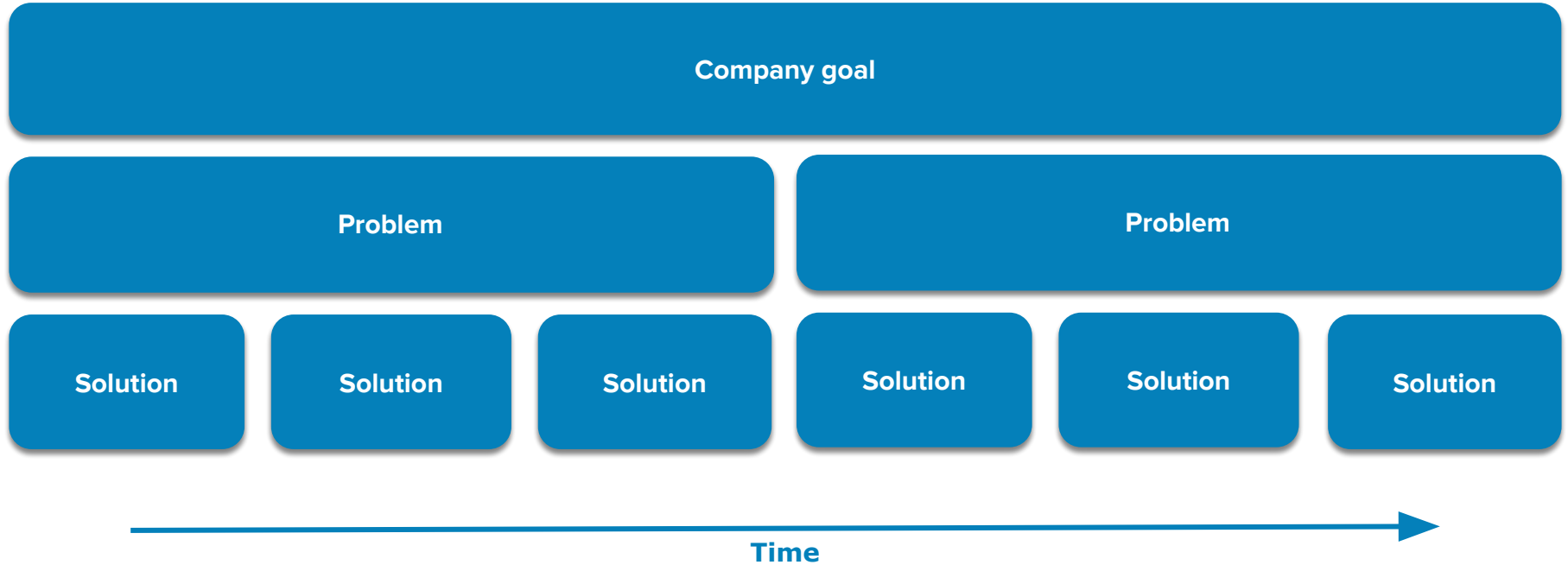
KOSTENLOSE STORNIERUNG

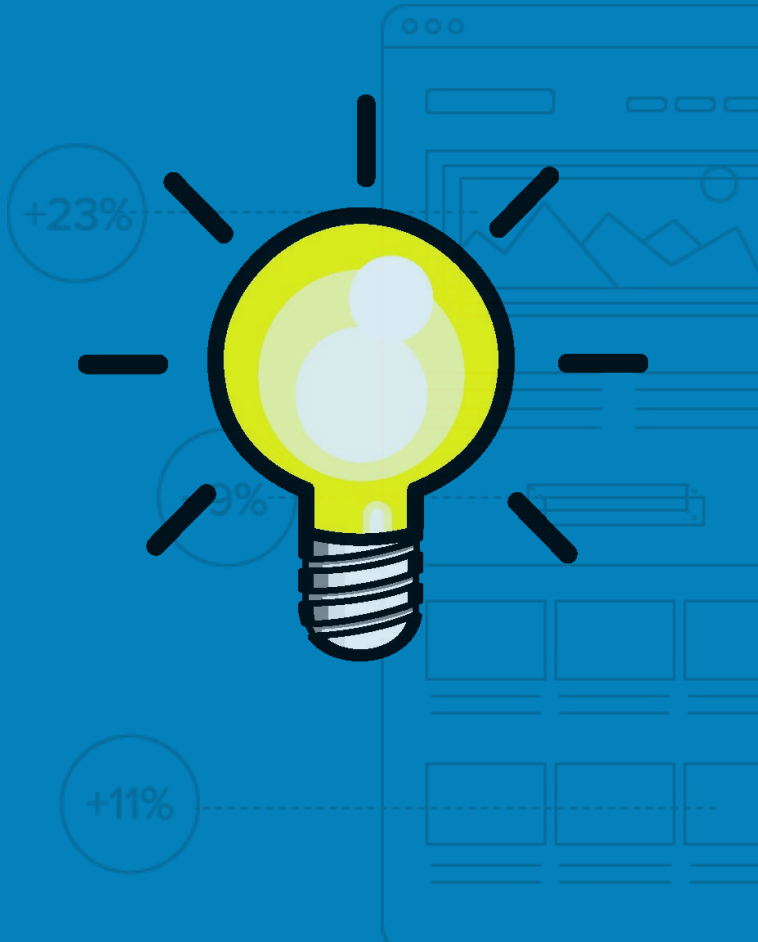
Ihr Plan hat sich geändert? Kein Problem! Bei einer einfachen Fahrt können Sie bis zu einer Stunde vor Abfahrt und bei einer stundenweisen Buchung bis zu 24 Stunden vor Abfahrt kostenfrei stornieren.

Result: Increased conversion on CTA!



Meaningful hypotheses drive focus





- **A strong hypothesis helps you frame your ideas**
- **Start with a meaningful problem definition**





**Know your
business**

Hypothesize

**Research and
challenge**

Assumptions should be tested!

Suspicious

Questions

Ideas

Perceptions





Marktplaats

()



Problem: Customers complaining about excessive monetization



LAATSTE KANS! simpel

Telecommunicatie Mobilele telefoons | Hoesjes en Frontjes | Apple iPhone 907 resultaten voor 'iphone 7'

Verfijn resultaten Bewaar deze zoekopdracht en ontvang nieuwe resultaten per e-mail. Nu zoek voor het bewaren van u ingebrede zoekopdrachten. Bewaar

Prijs van/tot van tot

Groep en Rubriek Telecommunicatie Mobilele telefoons | Hoesjes en Frontjes | Apple iPhone (907)

Moet nu weg Moet nu weg (3)

Conditie Nieuw (867) Zo goed als nieuw (9) Gebruikt (1)

Type Hoesje of Tasje (219) Frontje of Cover (95)

Levering Ophalen (11) Verzenden (36) Ophalen of Verzenden (91)

Model iPhone 4S (31) iPhone 5 (24) iPhone 5C (23) iPhone 5S (22)

Aangeboden sinds Vandaag (11) Gisteren (22) Een week of (104) Aitj (178)

Goedkope iPhone 7 Hoesjes - Te Koop Bij GSMpunt.nl
Goedkope iPhone 7 Hoesjes
Goedkope hoesjes iPhone 7 hoesjes bij GSMpunt. Optimale Bescherming!

Lijst Foto's Sorteer op Standaard

iPhone 7 hoesje (telefoonhoesjes, cover, case, hoes) kopen? € 4,95
Smartphonehoes...
Bij smartphonehoesjes.nl vindt u het grootste aanbod iPhone 7 hoesjes | gratis verzending | 30 dagen bedenktijd | keurmerk. Schade ...

Nieuw | Verzenden Topadvertentie Bezoek website

Mobilize Gelly Case Clear voor Apple iPhone 7 Plus € 13,99
Hoesjesdirect.nl
Bestel bij hoesjesdirect.nl direct uit voorraad leverbaar voor 19.00 Uur besteld, morgen in huis! Thuiswinkel waarborg keurmerk betaal ...

Nieuw | Ophalen of Verzenden Topadvertentie Bezoek website

SLiCOO TPU + PC Electroplating Case Black voor iPhone 7 Plus € 16,99
Hoesjesdirect.nl
Bestel bij hoesjesdirect.nl direct uit voorraad leverbaar voor 19.00 Uur besteld, morgen in huis! Thuiswinkel waarborg keurmerk betaal ...

Nieuw | Ophalen of Verzenden Topadvertentie Bezoek website

MobiGear Wallet Book Case US Flag voor Apple iPhone 7 Plus € 12,99
Hoesjesdirect.nl
Bestel bij hoesjesdirect.nl direct uit voorraad leverbaar voor 19.00 Uur besteld, morgen in huis! Thuiswinkel waarborg keurmerk betaal ...

Nieuw | Ophalen of Verzenden Topadvertentie Bezoek website

Apple 1x Iphone 7 screenprotector glas tempered glass € 6,99
Telesupplies.nl
1x iphone 7 screenprotector glas tempered glasdeze kraasbestendige screenprotector gemaakt van gehard glas biedt uitstekende bescherming ...

Nieuw | Verzenden Topadvertentie Bezoek website

Meet Optimizely X LEARN MORE Optimizely

iPhone 7 hoesje (telefoonhoesjes, cover, case, hoes) kopen? € 4,95
Smartphonehoes...
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Banners

Google ads

Admarkt (PPC)

+14%

Engagements with ads

+11%

Product pages per search

€7,50 1GB internet onbeperkt sms 100 belminuten Bestel nu x NOG 3 DAGEN

Mobilize Gelly Case Clear voor Apple iPhone 7 € 13,99
Hoesjesdirect.nl
Bestel bij hoesjesdirect.nl direct uit voorraad leverbaar voor 19.00 Uur besteld, morgen in huis! Thuiswinkel waarborg keurmerk betaal ...

Apple iPhone 7 case/hoesje € 4,99
Hoesjesdirect.nl
iPhone 7 soft gel case! Bescherm je iPhone 7! De transparante soft gel case beschermt je telefoon tegen vallen of stoten. In dit ultra ...

SLiCOO TPU + PC Electroplating Case Black voor iPhone 7 Plus € 16,99
Hoesjesdirect.nl
Bestel bij hoesjesdirect.nl direct uit voorraad leverbaar voor 19.00 Uur besteld, morgen in huis! Thuiswinkel waarborg keurmerk betaal ...

MobiGear Wallet Book Case US Flag voor Apple iPhone 7 Plus € 12,99
Hoesjesdirect.nl
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Apple 1x Iphone 7 screenprotector glas tempered glass € 6,99
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iPhone 7 Plus hoesje (hoesjes, cover, case) € 4,95
Smartphonehoes...
Bij smartphonehoesjes.nl vindt u het grootste aanbod iPhone 7 plus hoesjes | gratis verzending | 30 dagen bedenktijd | keurmerk. Schade ...

iPhone 7 case by Case Mate € 12,50
Raymond
Case mate barely there clear case voor de iPhone 7 nieuw, niet gebruikt (geen verzendkosten)

MobiGear Soft TPU Leopard voor Apple iPhone 7 Plus € 12,99
Hoesjesdirect.nl
Bestel bij hoesjesdirect.nl direct uit voorraad leverbaar voor 19.00 Uur besteld, morgen in huis! Thuiswinkel waarborg keurmerk betaal ...

Apple Ultra dun iPhone 7 silicone gel hoesje € 6,99
Telesupplies.nl
Ultra dun iPhone 7 silicone gel hoesje iPhone 7 blijft optimaal beschermd met dit trendy beschermhoesje alle voordelen op een rij: ...

iPhone 4 4s 5 5c 5s 6 6s 6 SE 7 plus flip cover hoesje € 9,95
NUPC service.rjn...
Met dit luxeuze zacht leren hoesje hoeft u niet meer bang te zijn voor beschadigingen aan uw toestel. Dit hoesje biedt rondom bescherming ...

Griffin Survivor Journey Clear voor Apple iPhone 7 € 29,99
Hoesjesdirect.nl
Bestel bij hoesjesdirect.nl direct uit voorraad leverbaar voor 19.00 Uur besteld, morgen in huis! Thuiswinkel waarborg keurmerk betaal ...

simpel LAATSTE KANS!

Optimization requires **freedom!**





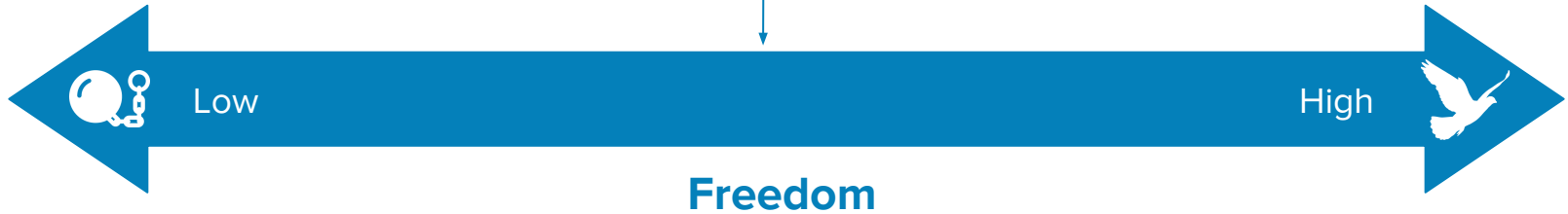
“We are not allowed to make changes to the product page because it has been designed by the CEO”

- E-commerce company



**“Our brand style-guide is key.
We cannot make changes that
do not fit with it”**

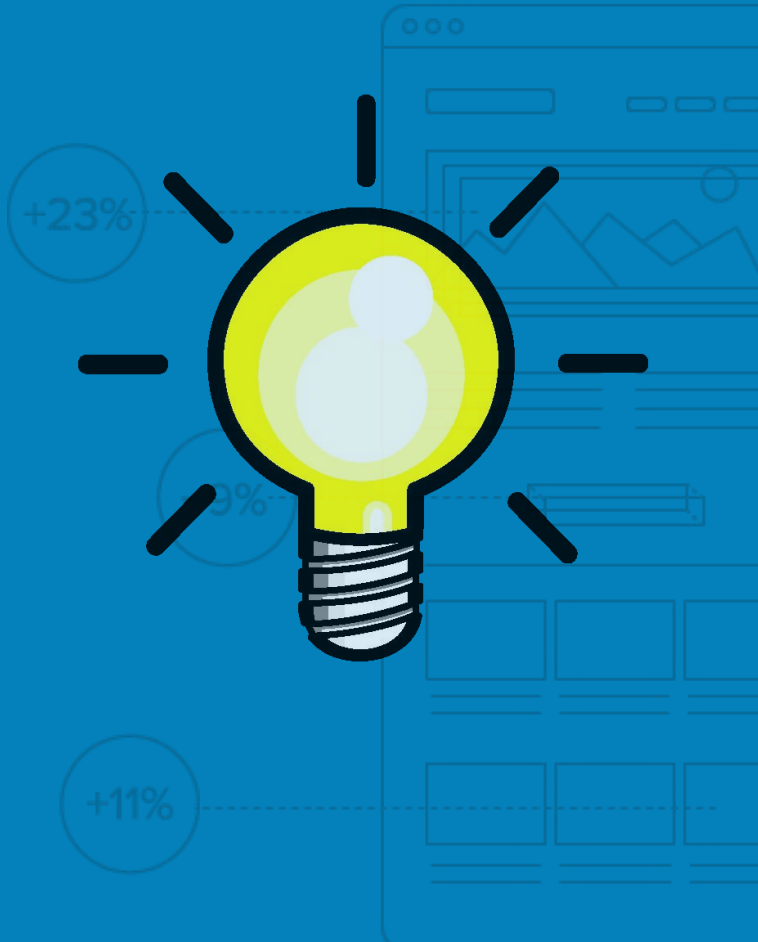
- Financial Services company



“We would change our
company logo if it converted
better!”

Booking.com





- **Strive to answer all questions and assumptions**
- **You need to have the freedom to explore**



RECAP

Know your business

Understand your funnel
and goals

Track both your micro
and macro conversions

Hypotheses are key

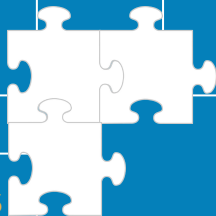
A strong hypothesis
helps frame your ideas

Start with a meaningful
problem definition

Challenge assumptions

Strive to validate all
assumptions

Allow to have freedom to
try things



Thank you for listening...
Questions?



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