Applying Iterative Design Principles to a Live Product

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Step 1

Select KPIs

&

Evaluate Previous Multivariate Experiment Results

Select KPIs for Flyber Analyses

Using the data available, the KPI(s) that match Flyber's business model are the following:

- **Number of users per day:** This can be counted using the event log with the distinct user_uuid group by day.
- **Average number of rides per user per month:** This can be counted using the event log with the distinct event_uuid associated to event_type = 'ride_begin' grouped by user_uuid and month.

Other KPIs that might be important to Flyber but are not calculable based on available data:

Finding New Customers

- User lifetime value
- User acquisition cost

Customer Satisfaction

- Survey customers about their happiness with their rides and Flyber's app

Customer Support

- Number of customer support tickets
- Average time to address customer support ticket

Revenues and Costs

- Net profit: revenue after all costs
- Revenue per month from rides fees
- Cost of vehicles maintenance

Describe the First Multivariate Experiment

With the purpose of finding the most optimal design for Flyber's app a multivariate experiment were 3 variations were tested along with the control version.

The tested features were:

- "Book flight" button vs "Fly now" button
- "* Tip included" message

Control

Experiment 1

Experiment 2

Experiment 3

Review Multivariate Test Results: Visualization

- In the following tables we can see total amount of users in each test groups and how many of those users booked a ride.

Amount of users that participated in each test

	experiment_group...	Users
1.	control	32,125
2.	experiment_1	32,005
3.	experiment_2	32,216
4.	experiment_3	32,105
	Grand total	**81,557**

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Amount of users that converted (booked a ride)

	experiment_gro...	Amount of users
1..	control	154
2..	experiment_1	172
3..	experiment_2	179
4..	experiment_3	171
	Grand total	**676**

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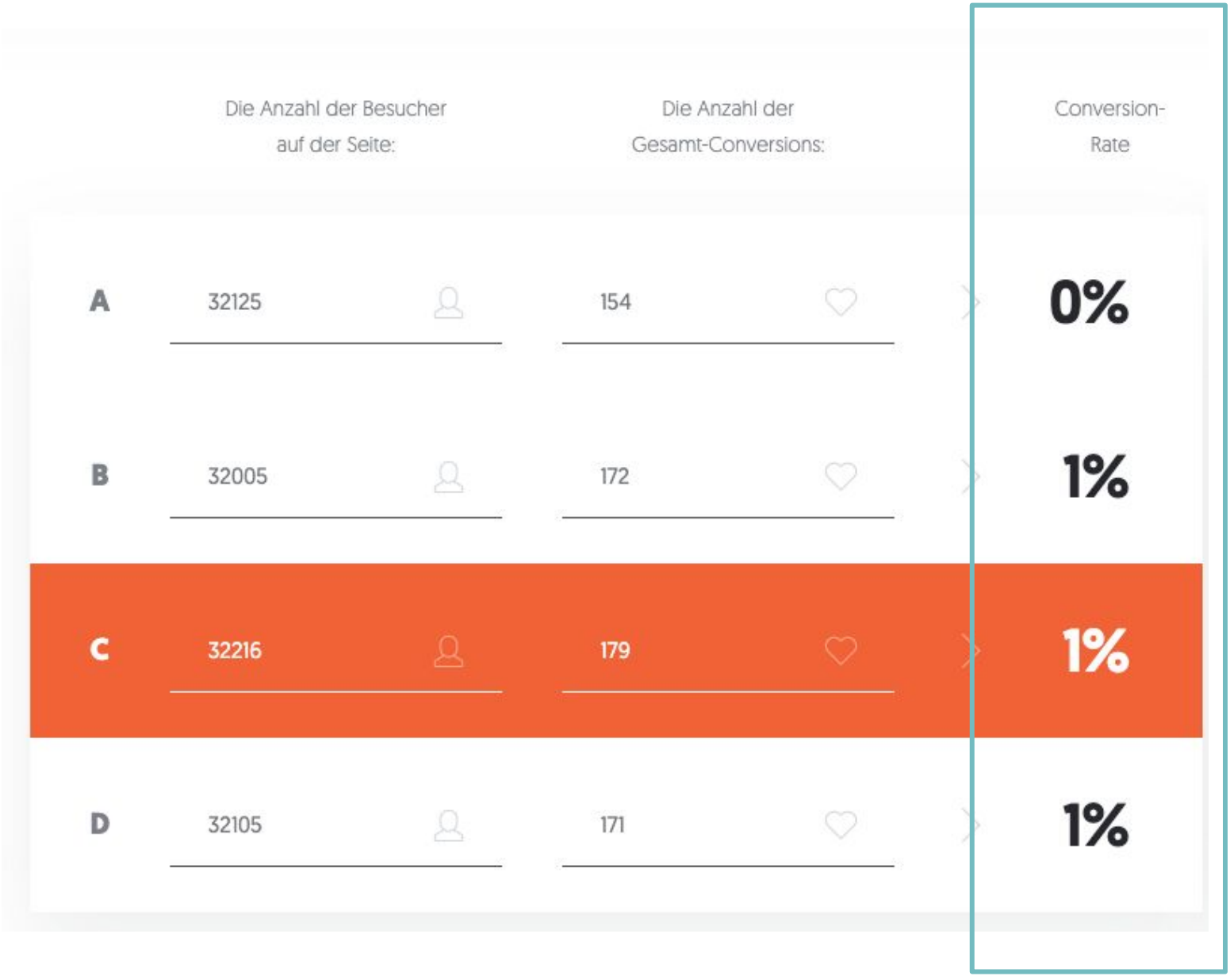
Review Multivariate Test Results: Visualization

- Using the numbers presented we can calculate conversion rate for each test and control group.



Review Multivariate Test Results: Significance Test

Determine if there was a significant difference between the experiments and control states.

Steps to perform a t-test:

1. State the null hypothesis: there is no difference in the booking of a ride rate between users in the control and test groups. This is what we want to reject.

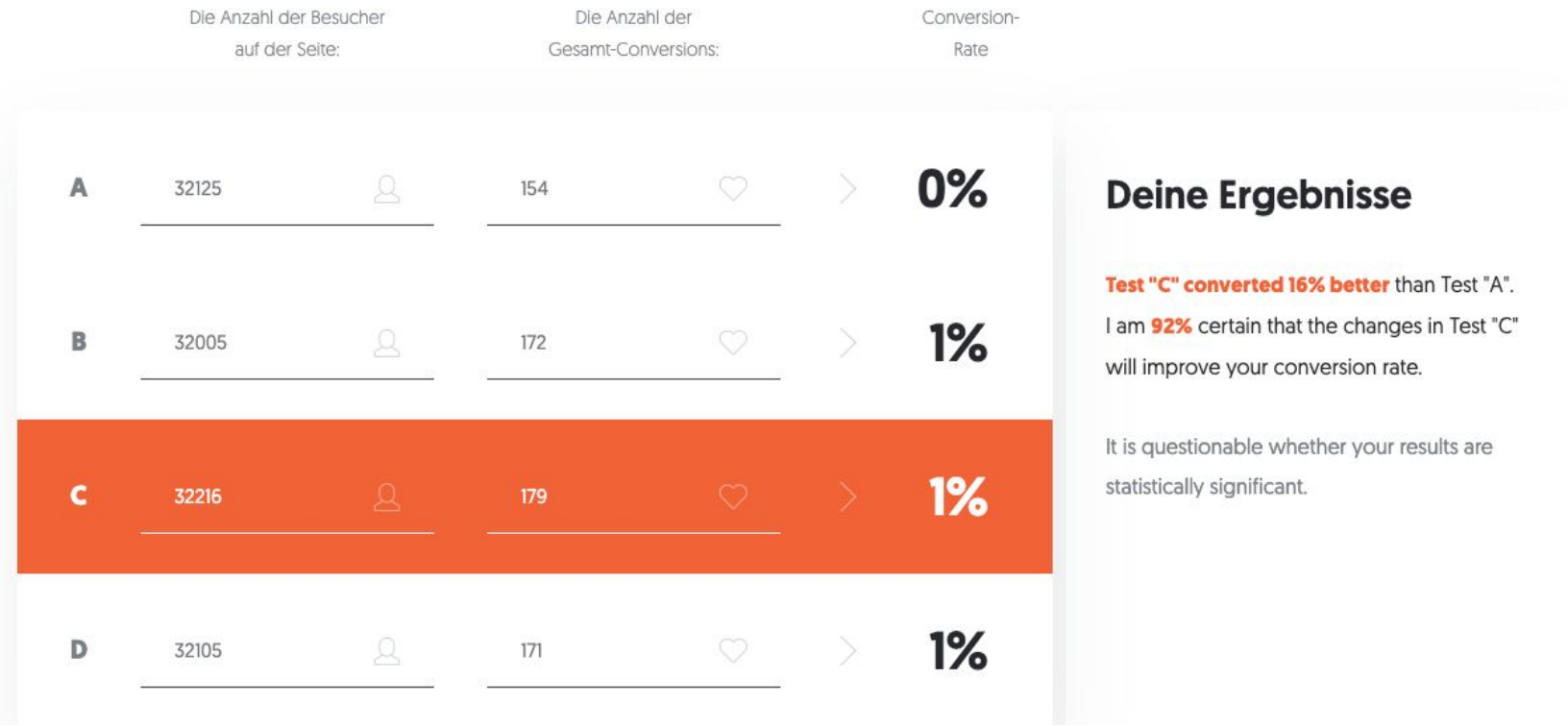
2. State the alternative hypothesis: there is a difference in the booking of a ride rate between the test and control groups. This is what we want to accept.

3. Set confidence threshold: 95%

Review Multivariate Test Results: Significance Test

Determine if there was a significant difference between the experiments and control states.

4. Using a [statistical significance calculator,](#) determine which experiments, if any, had a significant result at the 95% level.



Based on the statistical significance calculations, we don't have enough results to make a decision. W[illegible] can't confirm nor expect that changing the app [illegible] result in more users booking a ride.

Step 2

Funnel & Cohort Analyses

User Funnel

We can define a funnel that users will go through while using the Flyber's app that follows the steps:

- Open the app
- Select the amount of people that will be using the ride
- Search for an available ride
- Finally booking of a ride

In the table we can see the funnel from step to step, including drop off rates.

	event_type	Drop off rate
1.	open	0%
2.	#_of_users	-58.1%
3.	search	-79.88%
4.	begin_ride	-99.7%

User Segments

In the data available we can identify 2 demographic attributes that allow for segment analysis:

- Age: Being the segment group with the largest number of users the age range between 30-39.

	age	Number of users ▲
1.	30-39	20,124
2.	18-29	28,321
3.	40-49	41,774
4.	50+	64,059

- User's neighborhood: Being the segment group with the largest number of users Manhattan.

	user_neighborhood	Number of users ▼
1.	Manhattan	57,110
2.	Brooklyn	16,435
3.	Queens	4,050
4.	Bronx	2,396
5.	Staten Island	1,566

Segment Analysis of Funnel

Identify Opportunities for Improvement

- Funnel analysis by segment **age group**

event/age	50+	40-49	18-29	30-39
open				
#_of_users	-58.08	-58.11	-58.02	-58.36
search	-67.87	-35.97	-35.75	-36.49
begin_ride	-98.72	-98.30	-98.62	-98.34

We can see that the age group 50+ has the highest drop off rate in the search stage compared to other age groups.

These findings may indicate areas for app experience optimization for older users.

More user research should take place in order to to determine what may be causing the higher drop off rates.

Segment Analysis of Funnel

Identify Opportunities for Improvement

- Funnel analysis by segment **user neighbourhood group**

event/age	Manhattan	Brooklyn	Queens	Bronx	Staten Island
open					
#_of_users	-58.03	-58.19	-58.58	-58.79	-57.80
search	-51.94	-52.24	-51.23	-51.85	-52.67
begin_ride	-98.52	-98.52	-98.63	-98.27	-98.39

There's no indication that the user neighbourhood has some influence in the drop off rates, because numbers are quite similar across all of the segment groups.

Step 3

Hypothesis & Next Steps

Review Qualitative Data

- Read user interviews to understand “why” any funnel under-performance seen in Step 2 might occur
- List your hypothesis for what customer need is being under-served
- Provide 3 or more quotes as evidence for this hypothesis

Suggested Features & Experimentation Plan

- Share your hypothesis using the following format: We believe [observed quantitative effect] Because [hypothesized user “why”] And that by [general change/opportunity for Flyber to improve] for [targeted cohort] we will see [expected effect]

- Suggest 2 or more features that would match your hypothesis and determine a plan for multivariate testing, including describing the control and experimental conditions

- Determine who should be exposed to the experimental changes

- List any additional metrics that would be helpful to collect from your suggested features

Appendix

Raw Data

Additional Info

You could include supporting or additional information that can support your previous slides but isn’t necessary for every person to see that looks at your slides.