CONJOINT
REIMAGINED!
EVERYTHING THAT CAN BE AUTOMATED SHOULD BE AUTOMATED

EVERYTHING THAT SHOULD BE AUTOMATED WILL BE AUTOMATED

EVERYTHING ELSE IS ART
CASE STUDY ABOUT AUTOMATION

THIS IS A CASE STUDY ABOUT USING UI/UX PRINCIPLES TO DRIVE AUTOMATION OF A PROVEN, ROBUST METHODOLOGY SUCH AS CHOICE BASED CONJOINT (CBC)
BUSINESS OBJECTIVE WE NEEDED TO ADDRESS:

FULLY AUTOMATE CBC TO MAKE IT FAST, EASY AND RELIABLE FOR OUR FAST-PACED CLIENTS
WHAT COMES TO MIND when you hear the word CONJOINT?
BIG PROJECT
LONG LOI
HIERARCHICAL BAYESIAN
CALL STATISTICIANS
HIGH QUALITY
SOPHISTICATED
MOBILE-UNFRIENDLY
EXPENSIVE
MANUAL
COMPLICATED
5-10 WEEKS
TAKES A VILLAGE...
WHAT IS IT ANYWAY?
WHAT IS IT ANYWAY?
WHAT IS IT ANYWAY?
WHAT IS IT ANYWAY?
WHAT IS IT ANYWAY?
WHAT IS IT ANYWAY?
CONTRADICTORY OBJECTIVES

FAST → ACCURATE

OBJECTIVES:
FULLY AUTOMATE CONJOINT TESTS WHILE STAYING TRUE TO OUR CORE BRAND PROMISES
LESS IS MORE

Conjoint Express℠

PRIORITIES:

MAKE IT EASY FOR CLIENTS AND RESPONDENTS

REAL-TIME DATA ANALYSIS

EASY TO INTERPRET VISUALIZATION
LESS IS MORE

TECH INSIDE:

MULTINOMIAL LOGISTIC REGRESSION
LESS IS MORE

MAKE IT EASY FOR
CLIENTS AND
RESPONDENTS

REAL-TIME
DATA ANALYSIS

EASY TO INTERPRET
VISUALIZATION
EDIT YOUR SURVEY

Choice Based Conjoint test (4 monadic groups)

- PQ1: Add Prequalification Question
- Ideal vacation
- 1. Please choose the vacation package you prefer

Add your attributes below and list available options

1. Destinations
   - Paris, France
   - London, England
   - Venice, Italy
   - Cancun, Mexico
   - Sydney, Australia
   - Moscow, Russia

2. Internet service included
   - High speed internet
   - Wi-Fi available at $$$

Add Third Attribute/Feature +24 combination

- N/A option
AYTM Design Sheet:
Experiment contains 6 attributes with 4-8 options each, resulting in 23,040 combinations.

How many columns should you like to present on the screen at the same time? The more columns you choose, the less attention you can expect to receive at each column. Check how it looks in the preview.

Show 3 packages per screen (+1 None)  We'll show 4 screens to each respondent

Experiment is using 4Qs (12 packages/respondent | 396 unique packages | 23,040 possible packages)
LESS IS MORE

MAKE IT EASY FOR CLIENTS AND RESPONDENTS

REAL-TIME DATA ANALYSIS

EASY TO INTERPRET VISUALIZATION

ONLY 3-5 SCREENS
LESS IS MORE

MAKE IT EASY FOR CLIENTS AND RESPONDENTS

REAL-TIME DATA ANALYSIS

EASY TO INTERPRET VISUALIZATION
LESS IS MORE

MAKE IT EASY FOR CLIENTS AND RESPONDENTS

REAL-TIME DATA ANALYSIS

EASY TO INTERPRET VISUALIZATION
VISUALIZATION

MAKE IT EASY FOR CLIENTS AND RESPONDENTS

REAL-TIME DATA ANALYSIS

EASY TO INTERPRET VISUALIZATION
MAKE IT EASY FOR
CLIENTS AND
RESPONDENTS

REAL-TIME
DATA ANALYSIS

EASY TO INTERPRET
VISUALIZATION

VISUALIZATION

Q8: Please choose the vacation package you prefer

1. Destinations
   - Sydney, Australia
   - Venice, Italy
   - Tokyo, Japan
   - San Francisco, ...
   - Moscow, Russia

2. Vacation duration
   - 10 days
   - 2 weeks
   - 7 days
   - 3 days

3. Flight included
   - Non-stop flight
   - Flight with 1 layover
   - Flight with 2 layovers

4. Entertainment
   - All museums pass
   - Theme park
   - Night clubs pass

5. Included foods
   - Unlimited food
   - Breakfasts
   - Morning coffee
   - Drinks only
   - No flight included

6. Internet service
   - High speed internet
   - Low speed internet
   - Wi-fi available
   - No internet available

Make it easy for clients and respondents with real-time data analysis and easy-to-interpret visualization.
PROs:

**FAST:** MINUTES TO SET UP AND ANSWER

**EASY:** ANYONE CAN USE AND ANALYZE IN REAL-TIME
EXPRESS: CONS

Conjoint Express™

CONs:
AGGREGATED RESULTS
APPROXIMATION
INHERITED FOCUS ON ONE BEST COMBINATION
GOING FURTHER

Conjoint Segmentation

PRIORITIES:
HIGHEST ACCURACY
OPTIMIZE DATA CRUNCHING CYCLES
EXPANDING THE METHODOLOGY

Lev Mazin
powered by aytm.com
EXPRESS VS SEGMENTATION

PARIS AS VACATION PACKAGE DESTINATION

PRIORITIES:
- HIGHEST ACCURACY
- OPTIMIZE DATA CRUNCHING CYCLES
- EXPANDING THE METHODOLOGY

Mean 0.6

-7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 +7
EXPRESS VS. SEGMENTATION

PARIS AS VACATION PACKAGE DESTINATION

Priorities:
- Highest Accuracy
- Optimize Data Crunching Cycles
- Expanding the Methodology
EXPRESS VS SEGMENTATION

PARIS AS VACATION PACKAGE DESTINATION

PRIORITIES:

HIGHEST ACCURACY

OPTIMIZE DATA CRUNCHING CYCLES

EXPANDING THE METHODOLOGY
GOING FURTHER

HIERARCHICAL BAYESIAN

Conjoint Segmentation™

MODEL
GOING FURTHER

TECH INSIDE:

Hierarchical Bayesian Model
Multinomial Logistic Regression

+ CLUSTERING

Finite Gaussian Mixture Model via Expectation-Maximization Algorithm, with Bayesian Information Criterion for model selection.

Multiple bi-variate Fisher's Exact Tests for categorical variables, and Welch's T-test for numerical variables.

Ronald Fisher
PRIORITIES:

HIGHEST ACCURACY

OPTIMIZE DATA CRUNCHING CYCLES

EXPANDING THE METHODOLOGY

GOING FURTHER

7-10 SCREENS
GOING FURTHER

OPTIMIZATION:

9 HOURS
>

5-15 MINUTES

CRUNCH TIME
GOING FURTHER

PRIORITIES:
HIGHEST ACCURACY
OPTIMIZE DATA CRUNCHING CYCLES
EXPANDING THE METHODOLOGY
GOING FURTHER

VS
PRIORITIES:

HIGHEST ACCURACY

OPTIMIZE DATA CRUNCHING CYCLES

EXPANDING THE METHODOLOGY

GOING FURTHER

SEGMENTATION LAYER
**Q6:** Please choose the vacation package you prefer

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Best</td>
<td>Sydney, Aus...</td>
<td>2 weeks</td>
<td>Non-stop fli...</td>
<td>Spa packages</td>
<td>Unlimited fl...</td>
<td>High speed fl...</td>
</tr>
<tr>
<td></td>
<td>Venice, Italy</td>
<td>3 weeks</td>
<td>Flight with 1 la...</td>
<td>All museums</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Paris, France</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>San Francisco,...</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tokyo, Japan</td>
<td>3 days</td>
<td>No flight is incl...</td>
<td>Bicycle city to...</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Moscow, Russia</td>
<td></td>
<td></td>
<td>Breakfas...</td>
<td></td>
<td>Morning coffee</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Drinks only</td>
</tr>
</tbody>
</table>

**Q7:** Please choose a vacation package you prefer
PLEASE CHOOSE THE VACATION PACKAGE YOU PREFER

Conjoint Segmentation. Persona 1. 578 respondents in this cluster

### Joel

Joel showed specific preference for Paris, France over other options of Destinations.

**Prevalent traits:**
- Gender: Males
- Age Range: 35+
- Ethnicity / Race: White American

**Favorite answers:**
- Q1
- Q2A6
- Q11SQ1

### Importance of attributes

1. Destinations Expand - 38.7%
2. Vacation duration Expand - 11.6%
3. Flight included Expand - 16.0%
4. Entertainment Expand - 11.7%
5. Included food and drinks Expand - 14.6%
PLEASE CHOOSE THE VACATION PACKAGE YOU PREFER

Joel showed specific preference for Paris, France over other options of Destinations.

Prevalent traits:
- Gender: Males
- Age Range: 35+
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Favorite answers:
- Q1
- Q2A6
- Q11SQ1

Top ten packages. Conjoint Segmentation. Persona 1. 578 respondents in this cluster

<table>
<thead>
<tr>
<th>Destination</th>
<th>Vacation duration</th>
<th>Flight included</th>
<th>Entertainment</th>
<th>Food &amp; drinks</th>
<th>Internet service</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sydney, Australia</td>
<td>10 days</td>
<td>Non-stop flight</td>
<td>All museums pass</td>
<td>Unlimited</td>
<td>High speed</td>
<td>86.9%</td>
</tr>
<tr>
<td>Sydney, Australia</td>
<td>10 days</td>
<td>Non-stop flight</td>
<td>Spa packages</td>
<td>Unlimited</td>
<td>High speed</td>
<td>86.6%</td>
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<td>3 weeks</td>
<td>Non-stop flight</td>
<td>All museums pass</td>
<td>Unlimited</td>
<td>High speed</td>
<td>85.8%</td>
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<td>High speed</td>
<td>85.4%</td>
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<td>Non-stop flight</td>
<td>All museums pass</td>
<td>Unlimited</td>
<td>High speed</td>
<td>85.3%</td>
</tr>
<tr>
<td>Sydney, Australia</td>
<td>2 weeks</td>
<td>Non-stop flight</td>
<td>Spa packages</td>
<td>Unlimited</td>
<td>High speed</td>
<td>85.2%</td>
</tr>
<tr>
<td>Sydney, Australia</td>
<td>7 days</td>
<td>Non-stop flight</td>
<td>All museums pass</td>
<td>Unlimited</td>
<td>High speed</td>
<td>85.1%</td>
</tr>
<tr>
<td>Sydney, Australia</td>
<td>10 days</td>
<td>Non-stop flight</td>
<td>Night club pass</td>
<td>Unlimited</td>
<td>High speed</td>
<td>84.8%</td>
</tr>
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Importance of attributes

1. Destinations Expand 38.7%
2. Vacation duration Expand 11.6%
3. Flight included Expand 16.0%
4. Entertainment Expand 11.7%
5. Included food and drinks Expand 14.6%
TESTING AND OPTIMIZING
NEW TECH
MINIMAL N

Raw coefficients/Utility scores of Sydney as a Vacation package destination

N = 400+

Tests:
Optimal N
Validation
N/A Option
Express vs HB
IMPACT OF THE N/A OPTION

VACATION PACKAGE DESTINATION AND DURATION MEANS (33 variables)

with NA option

TESTS:
OPTIMAL N
VALIDATION
N/A OPTION
EXPRESS VS HB
EXPRESS VS HB

TESTS:
- OPTIMAL N
- VALIDATION
- N/A OPTION

VACATION DURATION IMPORTANCE
TESTS:
- OPTIMAL N
- VALIDATION
- N/A OPTION

RESPONDENTS’ SURVEY-TAKING EXPERIENCE RATING

EXPRESS VS. HB

- 7 screens
- 4 screens
- 6 screens

DELTAS:
- 1/10 OF 1 STAR

+ N/A
WE’VE PROVEN THAT IT’S **POSSIBLE**

<table>
<thead>
<tr>
<th>Conjoint Express™</th>
<th>Conjoint Segmentation™</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GOALS:</strong></td>
<td><strong>GOALS:</strong></td>
</tr>
<tr>
<td>✅ MAKE IT EASY FOR CLIENTS AND RESPONDENTS</td>
<td>✅ ACHIEVE THE HIGHEST POSSIBLE ACCURACY</td>
</tr>
<tr>
<td>✅ ANALYZE DATA IN REAL TIME</td>
<td>✅ OPTIMIZE DATA-CRUNCHING TIME</td>
</tr>
<tr>
<td>✅ CREATE ONLINE SIMULATOR THAT A NON-RESEARCHER COULD USE</td>
<td>✅ EXPAND THE METHODOLOGY ONE STEP FURTHER</td>
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**OBJECTIVE:**
FULLY AUTOMATE C.B. CONJOINT TESTS WHILE STAYING TRUE TO OUR CORE BRAND PROMISES
Live demo today at **3:30 at the Board Room**

Stop by the **AYTM booth** to experience it firsthand

[aytm.com](http://aytm.com)

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