

telenor

**SIMULATING MARKET SCENARIOS BASED ON
CONJOINT ANALYSIS**
Methodology and Applications

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Overview of Presentation

- What is Conjoint, What Can We do with Conjoint and What Comes Out of a Conjoint?
- Recent Conjoints Performed by Telenor
- Conjoints Step by Step
- More About The 3 Most Frequently Applied Methodologies
- Examples
- Summary

Conjoint-based methods

What is it?

- Conjoint (to join together), also called 'trade-off-analysis', is a quantitative market research technique which asks respondents to rank, rate or choose among multiple products or services
- Through statistical analysis of the trade-offs made by the costumers, we can estimate the relative importance of the different attributes of the products/services

When do we use it?

When trying to

- optimize product lines and estimate demand for a service/product under different scenarios
- estimate price elasticities
- measure brand strength
- segment the market according to customer needs
- understand the importance of product attributes
- understand product preferences
- segment customer bases
- forecast market dynamics

What it cannot be used for

- Understanding brand image, brand loyalty or brand commitment
- Deriving demand and market share without additional info
- Estimating the effect of time to market, distribution, out of stock conditions, advertising, effectiveness of sales force and awareness (demand and market share)



Conjoint Analysis. What is the main outcome?

**Importance
(Utilities)**

Which product attributes/levels influences the "buy" or "not buy" decision?

Preference Shares

How do consumers choose between different products in specific market situations?

Market Simulation

How should product attributes be changed to compete with new products entering the market?
How will consumers choose products in different market situations?

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Examples of Recent Conjoint Analyses by Telenor

- **Broadband Market**

Spring of 2006 and Fall of 2007

- **Fixed Telephony Market**

Summer of 2006

- **TV Market**

Spring of 2007

- **4play Market**

Spring of 2007

- **Mobile Broadband**

Spring of 2007

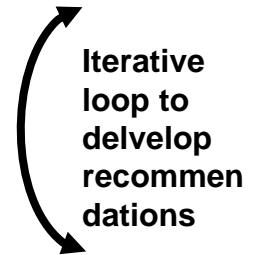
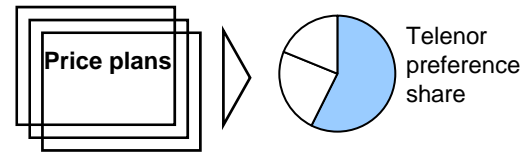
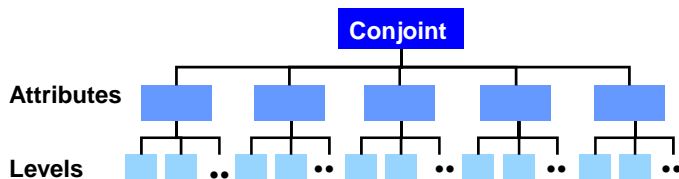
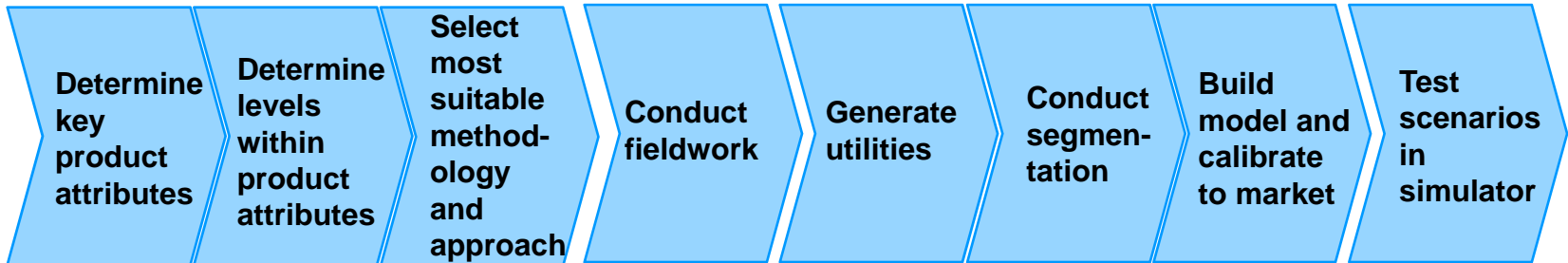


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Conjoint – Step by Step

1. Determine overall conjoint design
2. Conduct field work
3. Analyze results, develop segmentation and build simulator
4. Develop recommendations

Market research



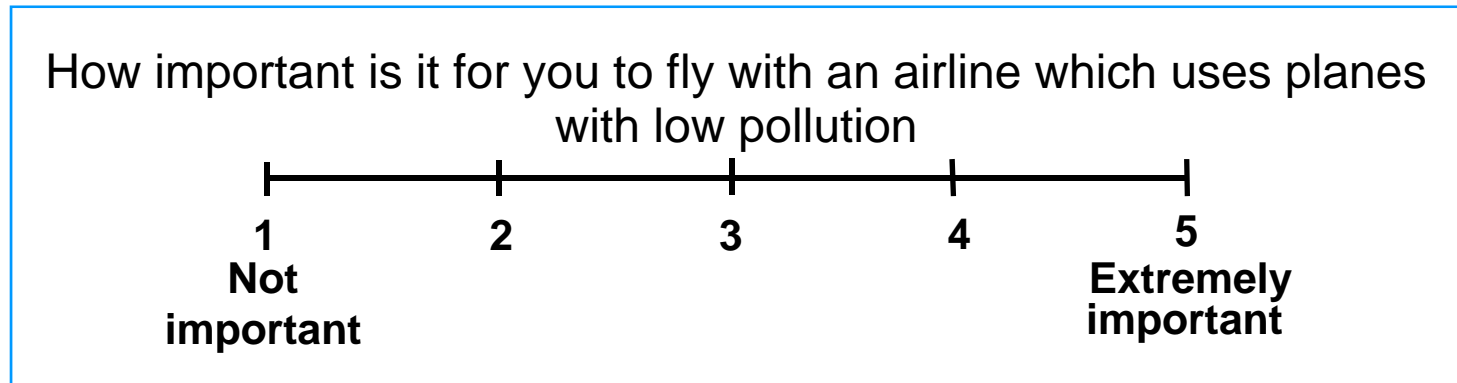
Economic modelling



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Questioning Techniques

Direct questioning results in an inflation of pretensions
→ everything becomes important



Level of agreement / importance

Air Pollution



Cheap Price



Flight Frequency



Questioning Techniques

When respondents are forced to make difficult tradeoffs,
we learn what they truly value

- You are in Munich
- You have a meeting in Oslo at 2:00 pm



Which airline will you choose?

Golden Wings	Sky Line	Air Shuttle
Flying every hour Normal seats Snacks Fast check in € 390 High pollution	Flying every hour Broad seats Complete meal Fast check in € 490 Low pollution	3 flights per day (6,10,19) Small seats Snacks Slow check in € 350 Low pollution

Oveview of Main Methodologies

Methodology	Description	Most frequent use
Conjoint Value Analysis (CVA) 10%	Consumers are asked to state their preference between two complete product bundles or to rank several product bundles	<ul style="list-style-type: none">– When computer based interviewing is not possible– When products can be described by few attributes (up to 6)
Adaptive Conjoint Analysis (ACA) 20%	Consumers are asked to state their preference between the most relevant attributes in bundles	<ul style="list-style-type: none">– Large number of attributes requiring complex designs (up to 30, depending on complexity)
Choice-based conjoint (CBC) Ca 70%	Consumers choose between different complete product bundles	<ul style="list-style-type: none">– When the relationship between price and other attributes is important. Normally up to 8 attributes. Considered the most realistic regarding purchase situation.

Conjoint Value Analysis - CVA

Respondents are asked to express their preference between two bundled product choices

Indicate which of the 2 options you prefer most using the scale below

Toshiba
\$1200
Pentium 3
Wide screen
CD writer
Light weight

Compaq
\$1500
Pentium 2
Normal size
No CD writer
Standard weight

Strongly prefer
option on the left

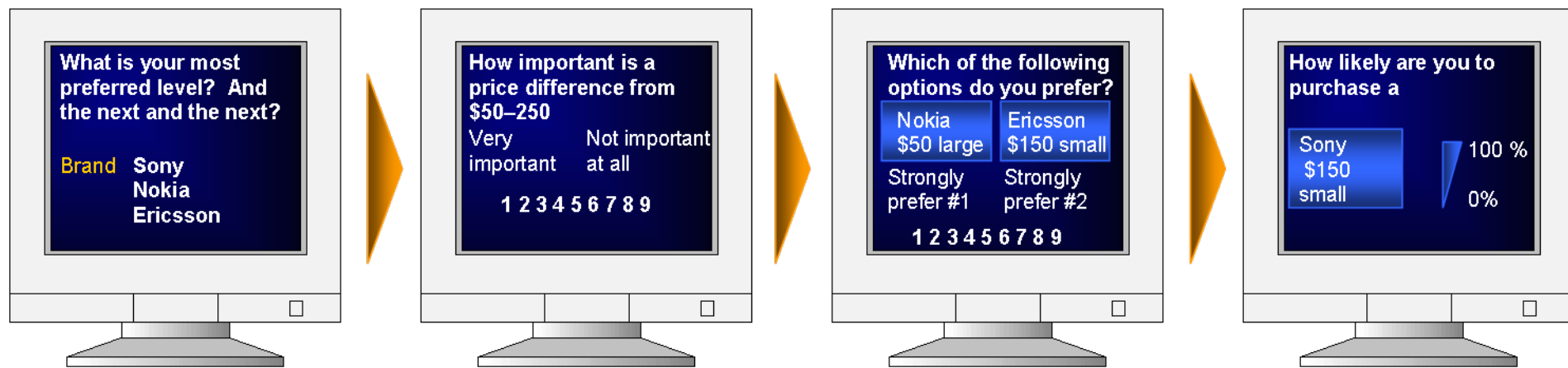
Prefer
equally

Strongly prefer
option on the right

1 2 3 4 5 6 7 8 9



Adaptive Conjoint Analysis - ACA



How it works:

1: For each attribute the respondents are asked to rank different levels of this attribute in order of preference

2: They are then asked to state how important the difference between the top and bottom level is for each attribute

3: Respondents rate their preference between two bundled concepts – repeated for different bundles

4: Finally, respondents are asked to indicate the likelihood of purchase for the winning product bundle

1 & 2 allow for the identification of the most important attributes, used for trade-off analysis



Choice-Based Conjoint - CBC

For each of the following cards, please indicate which of the mobile phones you would choose, if any

Nokia \$150 large	Sony \$250 large	Ericsson \$100 small	I would not purchase
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I would choose:

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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How it works:

Respondents are asked to choose their preferred product from a number of alternative product bundles

The option "I would not choose any", may or may not be used



Biases

Sampling Error

- Occurs when samples of respondents deviate from the underlying population
- For random samples it may be reduced by increasing the samples

Measurement Error

- Occurs because none of the respondents answers all the questions/combinations
- May be reduced by increasing the number of questions/combinations for each respondent

Estimation error

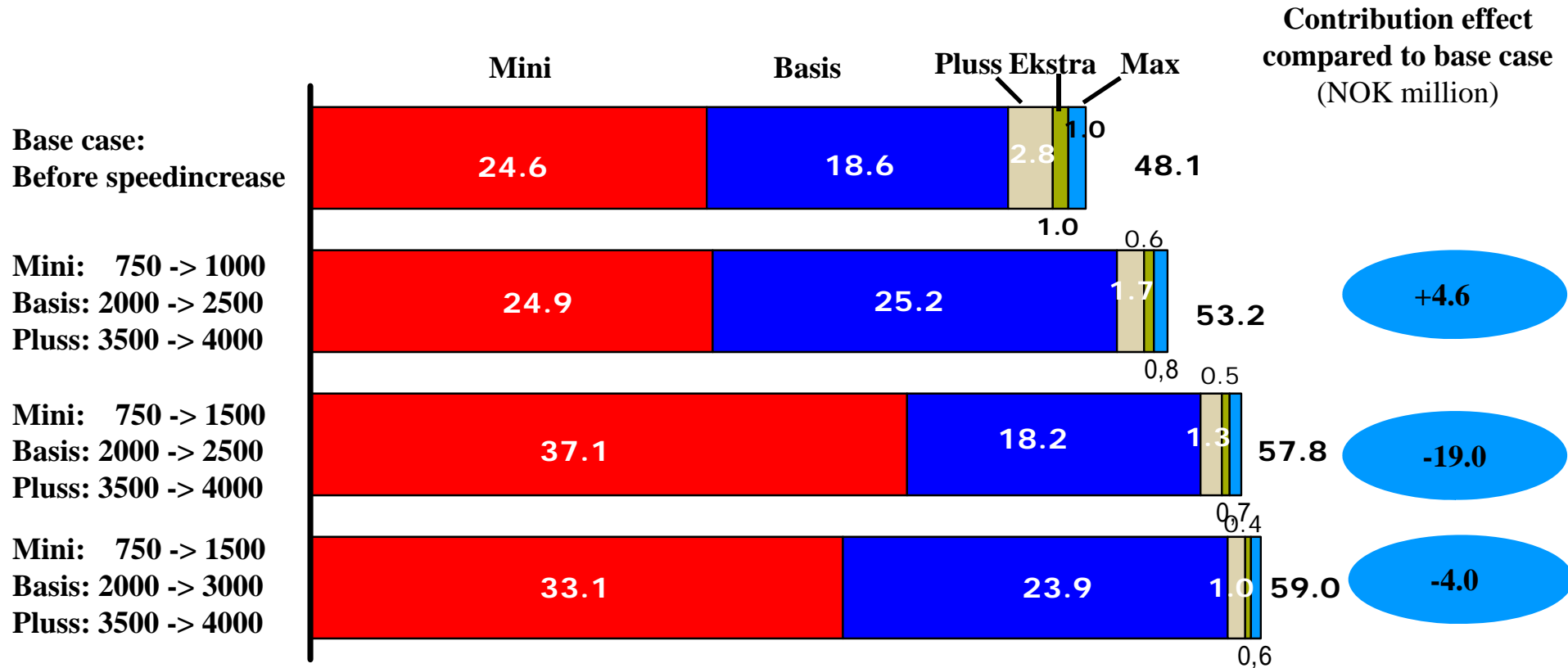
- Occurs when we estimate the relationship between e.g. price and demand.
- May be reduced by increasing the number of observations that the estimation is based on

A well conducted Conjoint analysis can predict with a hit rate of 75-85% on so called "holdout-data".



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2006 Broadband Speed Example



- 1) Increasing to Mini 1000, Basis 2500 and Pluss 4000 will increase preference share and contribution
- 2) Further increasing Mini to 1500 will create downwards migration from Basis, and is therefore a less attractive financial alternative, even if it increases overall preference share
- 3) Even further increasing Basis to 3000 increases the overall preference share but is also a less attractive financial alternative

What Else?

- Market shares
- Price Elasticities
- Brand strengths
- Segments
 - Age
 - Income
 - Supplier (e.g. Broadband, TV, Telephony, etc)
 - Geography
 - Clusters (e.g. Price driven, Brand driven, Technology driven, Average Customer, etc)
 - Other

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Summary

- Conjoint is a Trade-off Analysis, Used to
 - Understand the Importance and Preference of Product Attributes
 - Make Scenarios and Forecasts
 - Estimate Price Elasticities and Brand Strength
 - Segment the Market
- Telenor is Frequently Using Conjoint Analysis To Analyze
 - Mobile Markets
 - Telephony Markets
 - Broadband Markets
 - TV Markets
- The 3 Most Frequently used Methodologies are
 - Conjoint Value Analysis (CVA)
 - Adaptive Conjoint Analysis (ACA)
 - Choice Based Conjoint (CBC)

