

# ***Maximum Difference Analysis***

***Multivariate Solutions***

# *Maximum Difference Analysis*

- The Maximum Difference (Maximum Difference) survey exercise is based on a measure of customer choice and trade-off, instead of typical rating scale responses.
- In a Maximum Difference exercise, consumers evaluate multiple sets of four to six attributes. For each set, the consumer indicates both the most important attribute and also the least important attribute.
  - Responses are analyzed using various techniques to derive attribute importance scores at the individual respondent level.
- Maximum Difference is often used for attribute prioritization.
  - Other uses include product benefits and brand preferences as well as customer needs and attitudes.
  - Its greater differentiation and lack of scale usage effects also means that Maximum Difference is a great input to a segmentation analysis.

# Maximum Difference Analysis

## Scoring

- High/Low Score
  - Among Scenarios with each reward present
    - Rewards scores 100 if 'Most Appealing'
    - Zero is 'Not Chosen'
    - Reward scores -100 if 'Least Appealing'
    - The mean scores for each reward are shown across total and two customer categories
  - The High/Low scores the percentage difference between those Most Appealing an attribute vs. 'Least Likely to Chose and 'attribute'.
    - Positive High/Low Scores show a preference for the attribute. The higher the number, the greater the preference.
    - Negative High/Low Scores indicate that more respondents are 'Least Appealing' than 'Most Appealing' an attribute.
- Percentage Chosen 'Most Appealing' vs. 'Least Appealing'
  - Among Scenarios with each reward present
    - Percentage of Respondents who 'Most Likely Choose' that Attribute
    - **Visually Contrasts Percentages of High/Low**
      - The larger the contrast between 'Most Appealing' (blue), and 'Least Appealing' (red), the more desirable the attribute.

# *Maximum Difference*

## *Survey Structure*

- Which of these 4 options would you MOST likely choose?
- Which of these 4 options would you LEAST likely choose?
- You will do this exercise 8 times.
  - Results in a better quality product
  - Improves quality assurance
  - Ensures consistency
  - Improves reliability
  - Provides the strength needed
  - Removes human errors
  - Improves my customer service
  - Saves money
  - Takes the guess work out
  - Saves time
  - Improves my bottomline
  - Results in fewer headaches

# Maximum-Difference Analysis

## Mean Summary To - Offers

Maximum Difference Point Mean Allocations			Total Sample	Management	Tec
Winners	<ul style="list-style-type: none"> <li>Results in a better quality product</li> <li>Improves quality assurance</li> </ul>	Level 1	75.0	75.0	
			66.5	66.5	
Desirable	<ul style="list-style-type: none"> <li>Ensures consistency</li> <li>Improves reliability</li> </ul>	Level 2	17.7	17.7	
			12.9	12.9	
Neutral	<ul style="list-style-type: none"> <li>Provides the strength needed</li> <li>Removes human errors</li> <li>Improves my customer service</li> <li>Saves money</li> <li>Takes the guess work out</li> </ul>	Level 3	0.4	0.4	
			-1.9	-1.9	
			-3.7	-3.7	
			-4.7	-4.7	
			-7.0	-7.0	
Losers	<ul style="list-style-type: none"> <li>Saves time at the expense of quality</li> <li>Improves my bottomline</li> <li>Results in fewer headaches</li> </ul>	Level 4	-31.8	-31.8	
			-32.8	-32.8	
			-62.7	-62.7	

Level 1 - WINNERS - Highly Desirable Items that have High/Low scores near 100

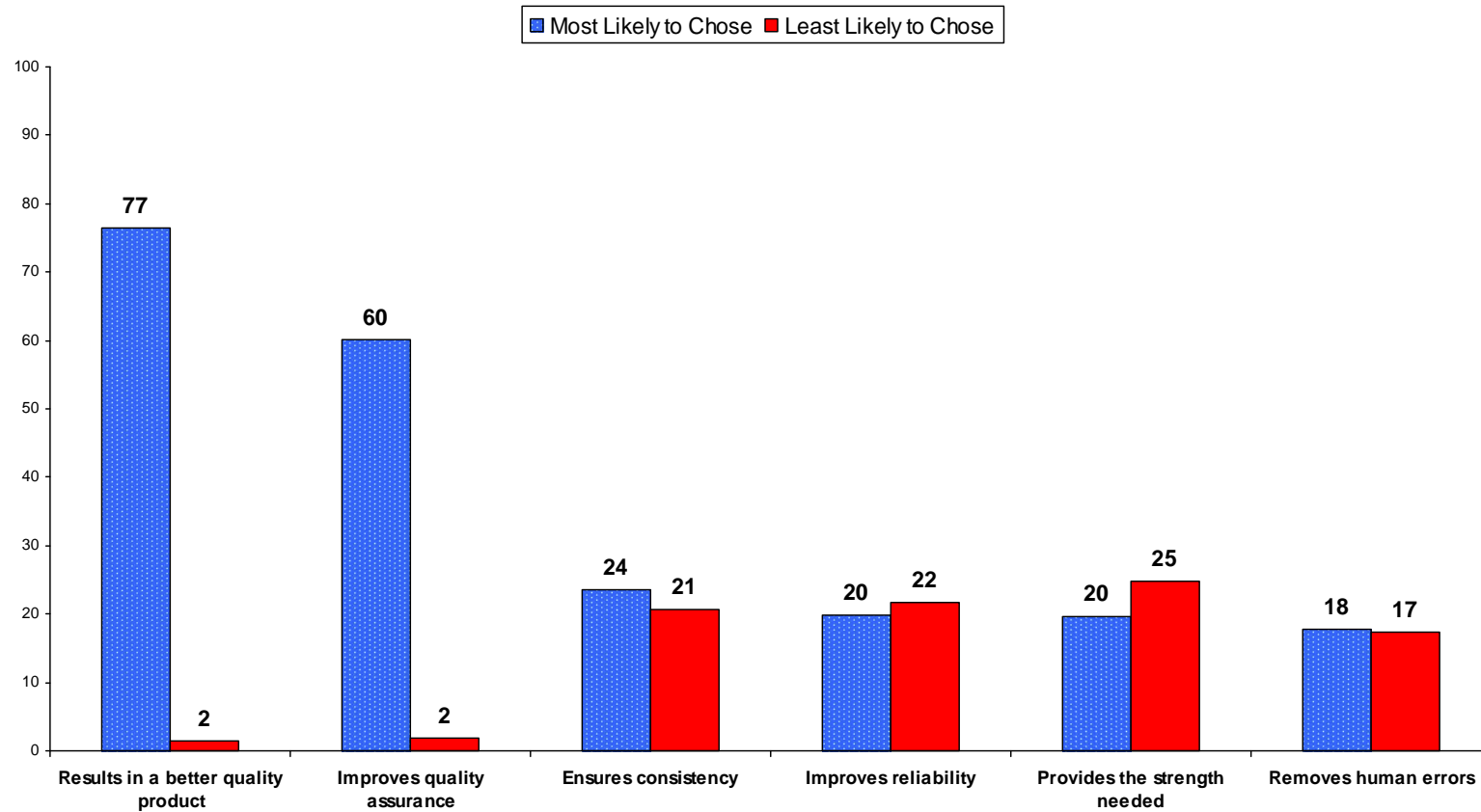
Level 2 - DESIREABLE Items with a High/Low over 10

Level 3 - NEUTRAL Items. High/Low near 0, indicating indifference

Level 4 - UNDESIRABLE items with High/Low with negative scores over -20

# Maximum-Difference Analysis

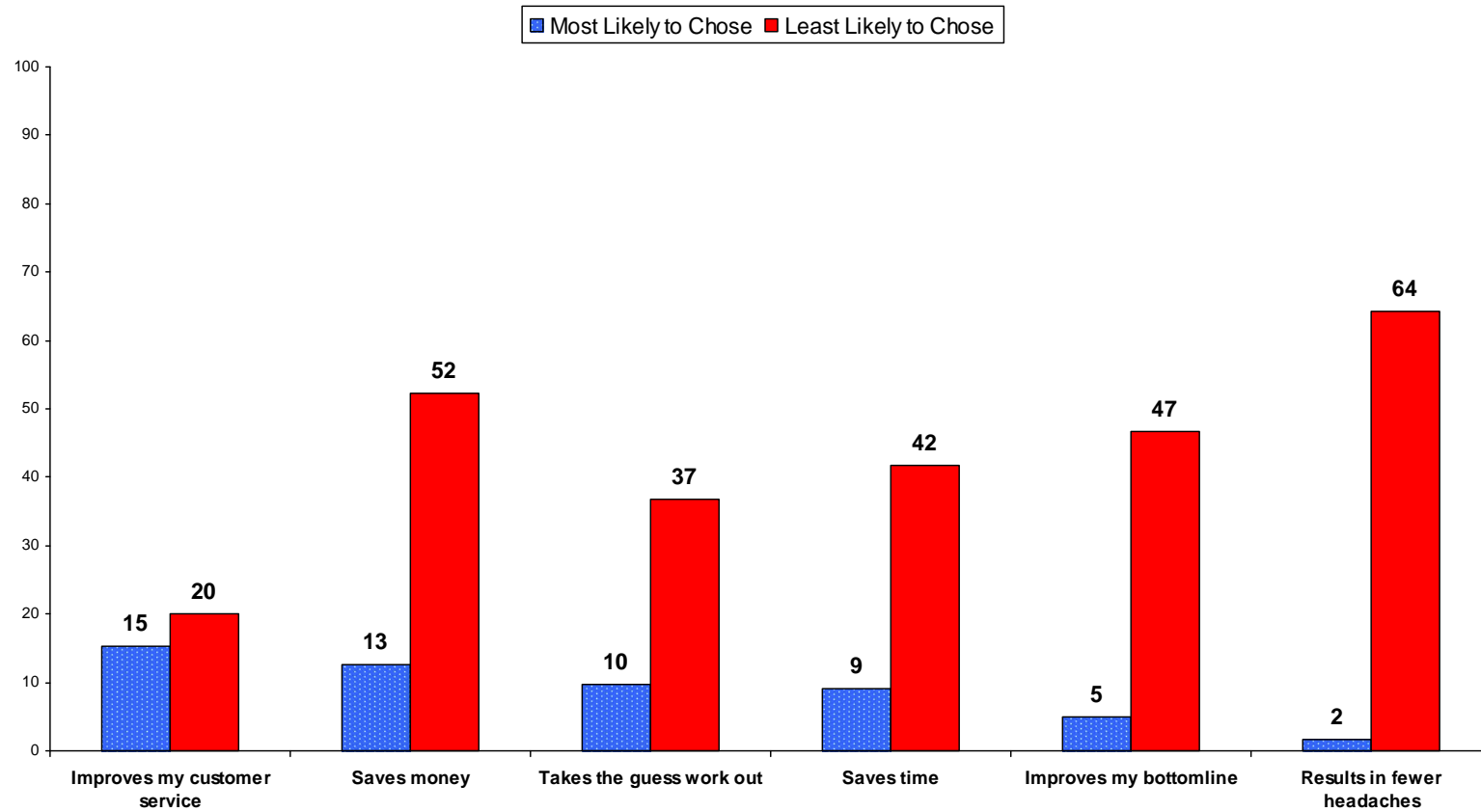
'Most Appealing' vs. 'Least Appealing' Percentage  
Total Sample



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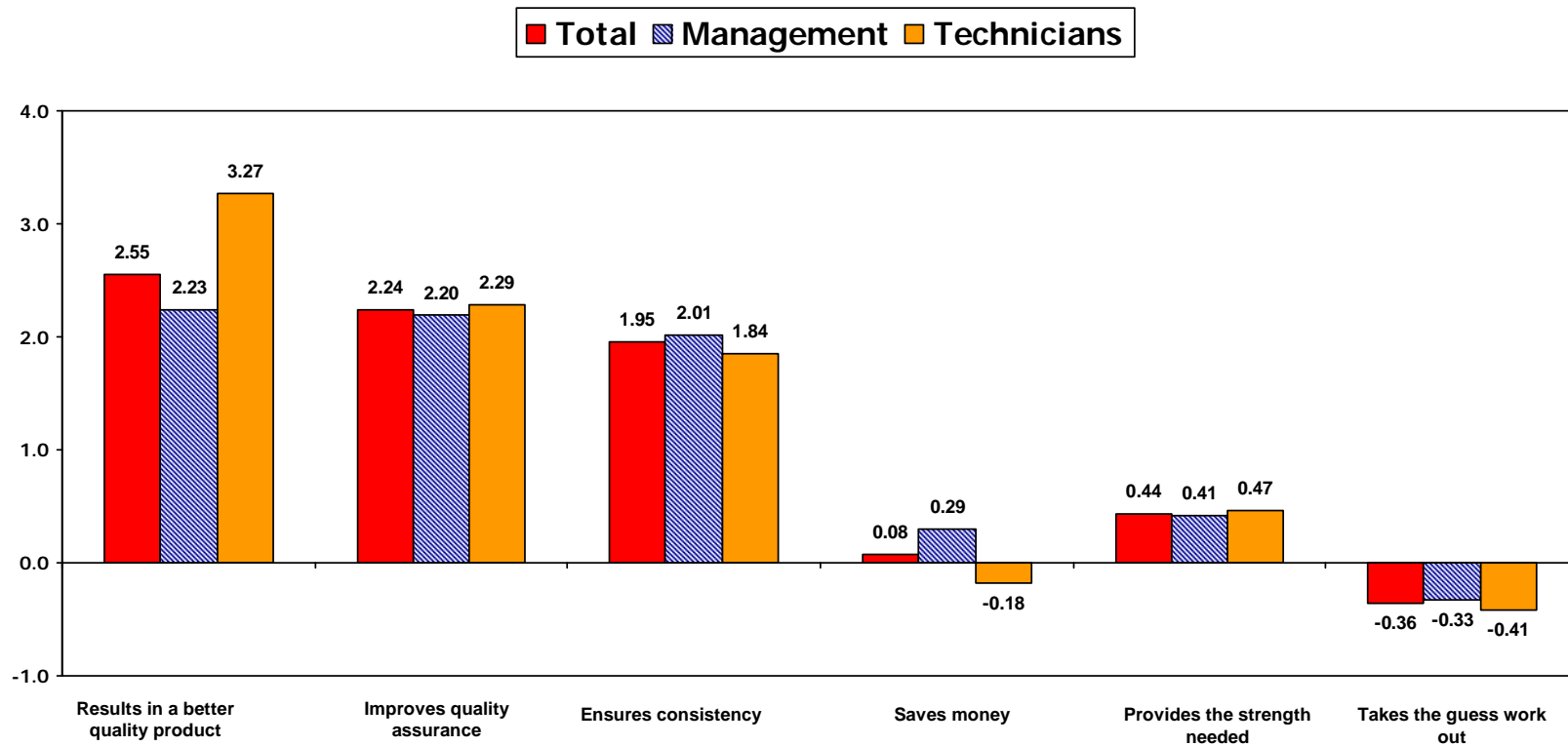
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## Understanding the Maximum-Difference Utilities Output

- Maximum-Difference Choice Utilities are calculated using a Latent Class Logit Regression Model which simulates respondents choices.
- These Utilities are then used to estimate the 'bump', or rise in the number of occasions customers might visit Lab Equipment if a given attribute were present in the Lab equipment.
- Lab equipment with the highest utility sums are preferred.
- The quotient of a given scenario (utility sum) to the best outcome determines the Estimated Rise in Lab Equipment Visits (one sum/best sum) rating. For example:
  - Before seeing the attributes, a customers indicate that intends to use Lab Equipment on average **5.4** times in the next ten occasions.
  - They are shown cards which says that the new Lab Equipment will:
    - Ensures consistency
    - Improves reliability
    - Provides the strength needed
    - Removes human errors
  - The model will now calculate that, given these incentives, customers on average will use Lab Equipment now around **7.2** times in their next 10 work occasions.



# Utility Scores for Maximum-Difference Analysis Total and User Groups



# Utility Scores for Maximum-Difference Analysis Total and User Groups

