Devising questionnaires for market research and customer segmentation

COMHRÁ
CUSTOMER DIALOG SYSTEMS

A Comhra White Paper

A Comhra White Paper

Devising questionnaires for market research and customer segmentation

Seán Kelly

Comhra Limited

PO Box 7, Skibbereen, Co Cork, Ireland

Tel +353 28 38483
Fax +353 28 38485
info@comhra.com

www.comhra.com

COMHRÁ
CUSTOMER DIALOG SYSTEMS

Version 1.0

Devising questionnaires for market research and customer segmentation

1 Introduction

Devising a questionnaire or even a single question requires a degree of skill and experience on the part of the designer. In order to make the question user-friendly, non-threatening, clear, and free of bias the approach to questionnaire design needs to be carefully considered. This paper is intended to provide Comhra clients with guidelines to follow when creating or customising questions for the purposes of conducting market research or customer segmentation.

There are a variety of pitfalls that may be encountered when designing questionnaires and the following checklist offers the designer an insight into the more common considerations:

- Does the question serve a business purpose?
- Do the responses provide the necessary information required for decision-making?
- Is the question clear, precise, and free of bias?
- Is the question/response format the most appropriate?
- Is the question posed in a relevant context?
- Can the question or response be subjected to different interpretations?
- Does the questionnaire take account of the respondent?
- How is the consumer incentivized to answer the question?

In general, the managers who will be using the data for decision-making within the business should always be actively involved in the design process and should approve the questionnaire. Because it is common for large numbers of people presented with a questionnaire to refuse to complete it, extreme care should be taken to make the questions relevant and non-threatening to the respondent. In addition, the respondents should perceive a benefit to themselves in participating in the dialog.

A common mistake made by researchers is to present disjointed questionnaires to potential respondents. This may occur because more than one constituency in the business is sponsoring the research, often with the result that unrelated and confusing topics are introduced. Keeping a questionnaire short is also a key goal of the researcher as it is more difficult to find individuals that are prepared to engage in lengthy dialogs.

At all times the language and orientation of the questionnaire should be tailored to the respondents. At no time should the marketing jargon or terminology employed by researchers in analyzing the results find its way into the questions. The style and language employed in engaging a technical audience, a youth audience, a community audience, an ethnic audience, or a dissatisfied user audience will all be different and will reflect the prior experience, knowledge, and attitudes of the target group. In this regard the testing of questionnaires plays an important role in establishing whether the tone and the intellectual level of the dialog is acceptable to candidate respondents.

In addition to making the questionnaire easier for the respondent to complete, the researcher may wish to improve the quality of the survey by introducing validation questions. For example, where a key goal of a questionnaire is to establish whether a customer is satisfied then a number of separate questions might probe this aspect obliquely instead of, or in addition to, posing the question baldly. Such questions serve the purpose of measuring the degree of consistency of a response and allow the researcher to apply confidence weightings to the individual responses.

2 Closed and open-ended questions

Closed questions are those that present a set of possible answers from which the respondent selects one correct value. Where possible, when posing closed questions to consumers, it is more efficient to include all of the possible answers and invite respondents to select one of these available options. Since this approach presents a limited number of valid responses, the data collected is easy to tabulate and present. However, since the range of valid responses is necessarily limited there is a danger that the available range of responses will not cover all possibilities.

Open-ended questions are those that allow respondents to answer in their own words. Since the vast majority of responses to open-ended questions will be different, the data is difficult to tabulate and analyze.

In summary, it may be said that open-ended questions are a useful means of establishing what people think, while closed questions are primarily concerned with discovering how many people think in a certain way. Some examples of closed questions and open-ended questions are given in Figure 1 (page 4).

Closed questions	Open-ended questions
What is your gender? Select option.	What is your opinion of the product?
What is your age? Select from list.	Explain your reasons for making this purchase?
How recently have you made a purchase? Select date from list.	What could we do to improve our service?

Figure 1: Examples of closed and open-ended questions

A schematic showing the hierarchy of question types is provided in Appendix A.

Care needs to be taken when deciding on the order in which questions are presented: the order of presentation can introduce confusion or bias. When ordering questions one of the following approaches tends to be consciously employed:

a) Inductive: start with closed (detailed) questions and end with open-ended questions.
b) Deductive: start with open-ended questions and end with closed (detailed) questions.
c) Combination: start with closed questions, move to open-ended questions, and end with closed questions.

The approach that is selected depends largely on assumptions made by the researcher concerning the target population. For example, in some cases it may be perceived to be more enticing to offer the closed questions initially since these can be answered quickly. In other cases the reverse logic might apply where the closed questions are perceived by respondents to be inflexible and are more likely to be completed after the respondent is satisfied that his opinions have been made clear in response to the more flexible format of the open-ended question.

When dealing with closed questions there are a number of different types of scale that can be employed. These are set out in Figure 2.

In general, customer segmentation projects and commercial market research are concerned with establishing how many people respond to a particular topic in a specific manner, and in some cases what the profile of those people is. It is common in such research to confine respondents to closed questions. The one exception is product testing, which should permit the individual responses of each consumer to be recorded. Normally, the special case of product testing is conducted by means of face-to-face interviews or through focus groups.

3 Format of questions and responses

Special care needs to be taken when selecting the response format to be used. The best format often varies from one type of question to another. In some cases the needs of a research project might require that only two binary options are available (for example Yes/No). In other situations the respondent will provide better quality feedback if a range of options is presented.

Scale type	Description	Example
Nominal	Values have no referential or positional meanings	Black Blue Green Red
Ordinal	Values are set out in a recognized order	Excellent Good Fair Poor
Interval	Values are equally spaced	$20,000 – 29,999 $30,000 – 39,999 $40,000 – 49,999
Ratio	Values are equally spaced but include absolute zero	0 2 4 6

Figure 2: Scale types for closed questions

Type of question	Description	Typical response
Dichotomous	A question offering a choice of two answers	• Yes • No
Multiple choice	A question offering three or more answer choices (for example, family size)	• One child • Two children • Three children • Four children • More than 4 children
Likert scale	The customer is presented with a statement and is required to indicate their level of agreement	• Strongly disagree • Disagree • Neither agree nor disagree • Agree • Strongly agree
Interval scale	The available answers are numeric and represent a scale from one positional extreme to another. The respondent selects the point that represents the direction and/or intensity of their feelings	Satisfied • 1 • 2 • 3 • 4 • 5 • 6 • 7 Dissatisfied
Rating	A scale defined for rating the importance of a specific attribute (usually from one extreme to the polar opposite)	• Extremely important • Very important • Somewhat important • Not very important • Not at all important
Intention scale	A scale of the likelihood of the customer taking a specified action	• Definitely • Probably • Uncertain • Probably not • Definitely not
Word association	A technique that offers the respondent a number of words that might describe their immediate response to a subject (for example, their response to a brand)	• Enthusiastic • Positive • Neutral • Negative • Hostile

Figure 3: Common types of question and response formats

Figure 3 identifies the more common techniques for presenting questions and response options.

4

Common questionnaire design errors

A range of errors are commonly encountered in questionnaire designs. People designing questionnaires need to be aware of the possibility of these errors if they are to create questionnaires that achieve their objectives by being easy to comprehend, direct, unbiased, and ordered in a logical sequence.

Many respondents will commence a questionnaire only to abandon the task when they encounter questions that are unclear, or too personal, or simply require too much effort. The goal of every researcher is to ensure that the task with which the respondent is faced can be completed quickly and without undue effort.

Sometimes it is necessary to sacrifice the level of detail that a researcher would like to obtain in favour of getting a reasonable level of response. On other occasions it is necessary to dramatically prune the number of questions in order to ensure a reasonably good response to the critical questions. In both market research and customer segmentation, more is not better!

At all times it is advisable to test a new questionnaire on a small sample. Figure 4 (page 6) outlines some of the more common mistakes that are made.

Issue	Example	Advice
Obscurity	'Have you experienced any dissonance between this and previous versions of the product?'	Questions should not contain words or concepts that are not likely to be readily understood by all respondents.
Precision - too much	'How many times in the past month have your children aged under 10 years used the product?'	Questions should never seek a degree of precision that requires the respondent to engage in research.
Precision - too little	'Have any of your children used the product recently?'	Questions should never invite a response that is insufficiently precise to form the basis of a finding.
Relativity	'Do your children like the product?'	Questions should not contain terms (such as 'like') that are relative and likely to mean different things to different respondents.
Incomprehension	'Are your male/female children less/more likely to use the product?'	Questions should not be phrased in such a way as to be open to different interpretations.
Loaded	'Are the educational aspects of this product beneficial to your children?'	Questions should never be loaded in favour of a particular response.
Social bias	'Do you take ethical consideration into account when making purchase decisions?'	Questions should not encourage respondents to falsify answers in the interests of giving socially acceptable answers, avoiding potential embarrassment, or concealing personal information.
Time sequence	Online questionnaires that are available for lengthy periods of time will tend to collect data that may not be comparable.	All responses should be time-stamped so that responses can be associated with time periods when the internal business value proposition as well as the external economic environment is constant.
Logical sequence	A question seeking to establish the ages of children in a household precedes a question seeking to establish the number of children in a household.	Questions should appear in a logical sequence with questions on similar topics clustered together. Care should also be taken that the sequence does not create bias. In general, important questions should be presented first, controversial questions should not be introduced early, questions with similar content should be clustered together, and the designer should be aware of the associational tendencies of respondents.
Order effects	If a question seeking a satisfaction rating is immediately preceded by questions that explore known strengths of the enterprise this will tend to increase the satisfaction perception of the respondent. Similarly, questions relating to weakness of the enterprise can reduce the respondent's satisfaction perception.	Typically, ratings for satisfaction questions are higher when asked at the end of a survey rather than at the beginning. Varying the location of the question in the questionnaire and observing the results can ameliorate this bias.

Figure 4: Common errors encountered in questionnaire design

5

Sampling error and bias

In addition to errors that arise as a result of poor design of questions, there is also the potential for sampling error. Two kinds of sampling error are commonly encountered:

1 Random error
2 Systematic error

Random error arises because there will always exist chance variations between the sample results and the true results. Such error cannot be avoided entirely when we rely on samples. It can be reduced by increasing the sample size, or could be eliminated by interviewing the entire population that is the subject of the research. In most properly conducted research projects however it is possible to provide an accurate estimate of the level of confidence that can be applied to the results. The confidence level is usually expressed in terms such as 'accurate to within ±3%'.

Systematic error occurs when sample results consistently vary from the true values for the population in question (for example, the results might be consistently higher than the true values). Systematic error includes all forms of error not directly attributable to the size of the sample and usually relates to mistakes made in the selection of the sample. An example of systematic error would be where the sample does not represent a true cross-section of the target population (this is also referred to as 'frame error').

Systematic error might arise where a survey of dissatisfied customers is confined to customers who have made a complaint that is not necessarily a reflection of the views of the entire population of dissatisfied customers.

Researchers should also be conscious of bias introduced by the level of non-response. In situations where care has been taken to avoid frame error by selecting an appropriate cross section of the population under study, the actual avoidance of frame error can be guaranteed only where all invited respondents actually respond.

Another example of systematic error would be where the researchers make an incorrect assumption concerning the target population. For example, a questionnaire might be directed exclusively at women on the assumption that females constitute the totality of a market for a product, when in fact that assumption is incorrect (this is also referred to as 'population specification error').

It should also be noted that in the case of face-to-face interviews other kinds of error and bias can arise as a result of the perception of the interviewer, or as a result of interview location or situation. In addition, errors arise in recording, transcribing, and transferring information to computer systems. Such errors do not arise in online dialogs and are not dealt with in this white paper.

6

Providing an incentive to respond

A key aspect of the Comhra customer dialog system is that it makes provision for benefits to be associated with the submission of information. This feature is intended primarily for corporate users of the software who are seeking to engage their customers in dialog. A more comprehensive treatment of the benefits of engaging customers in dialog is provided in a separate Comhra white paper entitled *Consumer motivation*.

There are many advantages to be gained from associating benefits with information provision and these include:

- Gaining the commitment of the consumer.
- Building durable relationships with consumers.
- Acknowledgement of the time spent by consumers in communicating with the enterprise.
- Acknowledgement of the value of consumer input.
- Encouragement of consumer participation through the provision of incentives.

In addition to these obvious reasons for establishing a benefits exchange contract with consumers, the prior identification of the benefits associated with receiving consumer information allows the enterprise to be clear about its own internal reasons for performing the research. If there are no direct benefits likely to accrue to consumers, or no indirect benefits that will enhance the quality of service generally, then the enterprise must question the point of engaging in the research. Thus the process of identifying benefits imposes a valuable discipline on the enterprise itself.

Figure 5 (page 8) identifies a range of tangible and intangible benefits that might be applied to the provision of consumer information. Figure 5 is intended to be illustrative only: not every benefit category or type will be relevant to all types of business.

This list provides an understanding of the variety and type of benefit that can be employed to encourage consumers to engage in dialog. Tangible benefits relate to the individual respondent providing information, whereas intangible benefits relate to general improvements in the value proposition of the business enterprise without being specific to the provision of information by any individual customer.

A major reason for engaging in market research or customer segmentation is to improve the value proposition the business enterprise offers the customer, and the customer is entitled to know what the intentions of the enterprise are in this regard.

Obviously, consumers are more responsive to tangible than intangible benefits. In addition customers will be more responsive to tangible benefits that are described clearly and in detail than to benefits that seem vague or uncertain. The

Benefit category	Benefit type	Examples
Tangible service benefits	Convenience	Personal customer delivery service
	Premier	Preferred reservations or priority response
	Value-added	Help-desk service
	Information	Personalized information services
	Customization	Targeted and personalized promotions
Intangible service benefits	Convenience	Introducing of new payment options
	Reporting	Online order status reporting
	Enhancement	Higher level of maintenance service
	New channel	Development of additional channel options or outlets
Tangible product benefits	Product bundle	Product combination proposition
	Product upgrade	Product upgrade proposition
	Customization	Customization of product
Intangible product benefits	Product innovation	Innovation in specific features of current product range
	Product range	Expansion of current product range
	Product demonstration	Physical or online demonstration of product
Tangible price benefits	Personal discount	Discount for individual customer
	Loyalty discount	Discount offered in return for customer loyalty
	Seasonal discount	Discount offered for a specific time period
	Special offer	Special-offer price reduction
Intangible price benefits	Channel discount	Discount related to a specific channel
	Volume discount	Volume discount proposition
	Credit terms	Favourable variation in standard credit terms
Tangible rewards	Points	Allocation of redeemable points
	Feedback	Sharing of research findings
	Participation	Invitation to participate in customer panel or representation group
	Subscription	Subscription to newsletter service
Intangible rewards	Lottery	Entry into lottery or prize draw
	Relationship	Recognition of customer

Figure 5: Benefit categories, types, and examples

consumer may see most of the intangibles as being of benefit to the enterprise rather than to the customer. However, most customers will consider giving of their time and personal information if there is a commitment by the enterprise that the efforts of the customer will result in an improved or cheaper level of service.

It is likely to be the case that consumers will perceive the tangible benefits as representing a contractual *quid pro quo* with the enterprise. This brings many advantages and some potential disadvantages to the information capture process. The advantages relate to the building of personalized relationships with customers, which is the key to marketing strategy formulation, customer retention, and business profitability. The potential disadvantages arise if the business enters into commitments that it cannot deliver. Care should therefore be taken to promise benefits only in circumstances where a function to deliver those benefits has already been put in place by the enterprise.

7

Conclusions

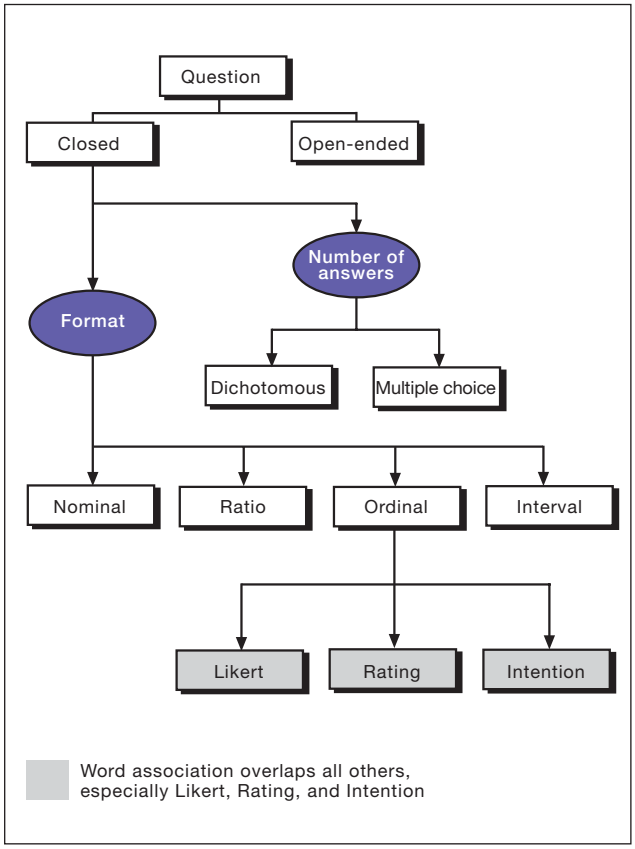
As use of the internet expands to include a greater proportion of the general population, online surveys will become more representative of the population at large and are set to become the ubiquitous method of engaging in dialog and feedback with customers. Growth in the use of electronic cash payments will further increase opportunities for conducting online surveys.

The resulting, essential skills and competencies that need to be developed by enterprises operating in this internet-based business environment are anticipated and supported by the Comhra vision for intelligent dialog, profiling, and feedback. The Comhra application is a rich and flexible tool for online market research and customer segmentation.

This white paper provides a primer for business enterprises facing the challenge of online market research and customer segmentation. Further assistance is available from Comhra professional services, Comhra training services, and Comhra partners.

8

Appendix A: Hierarchy of question types



COMHRA

Comhra supports the transition from mass marketing to individual communications with customers. It enables enterprises to:

- Analyse customer information through powerful segmentation capabilities.
- Devise highly cost-effective campaigns for cross-selling, up-selling, customer profitability, and loyalty programs.
- Establish integrated, consistent customer dialogs through which durable relationships with customers are created and sustained.
- Collect and manage high-quality customer information.

COMHRA PRODUCT COMPONENTS

Customer Segment Analyzer

The Customer Segment Analyzer (CSA) is a powerful, rich, and flexible system for performing automated market segmentation. CSA empowers the enterprise to make sense of increasingly complex and heterogeneous markets through segmentation into distinct, homogeneous segments.

CSA operates against data gathered through customer dialogs together with data from other systems such as transaction systems, data warehouses, data marts, and other business intelligence solutions.

CSA supports the two principal methods of performing segmentation:

- *A priori* segmentation defines, in advance, a framework that is based on known characteristics of customers or prospects.
- Cluster segmentation, in direct contrast to the *a priori* method, seeks to discover naturally occurring clusters of customers that share common characteristics or behave in the same way.

CSA also supports the most popular mechanisms that may be used to populate segments: Scored, Scalar, and Selected population. The ability to associate business actions with each defined or discovered segment is also provided.

Customer Dialog Builder

The Customer Dialog Builder (CDB) provides a powerful new layer of enterprise software to manage sales and marketing communications between enterprise and customer. The CDB offers:

- A range of dialogs that capture valuable customer profile information, plus the ability to customize dialogs.
- The ability to unify and integrate web-based communications with the customer within a single software system.
- The unification of all customer personal information (as opposed to transaction information) within a single software system.
- The option to associate specific benefits with information disclosure, which further encourages customers to participate in the dialogs, generating valuable, regular feedback.
- A capability for customers to specify permissions concerning how their personal data is used.
- The facility for customers to amend or update the information stored about them by the business enterprise.
- The facility for businesses to progressively fine-tune the questions that individual customers are asked and to progressively customize the service offering to that customer.

Customer Feedback Manager

The Customer Feedback Manager (CFM) provides complete control over the storage and transmission of messages to customers of the enterprise. CFM enables:

- Storage of predefined messages for future use.
- Association of individual messages with specific customer segments and specific customer actions.
- Complete control over the timing of message transmission to customers.

Vertical extensions

The Comhra application incorporates templates for each major industry sector, containing dialogs and structures that relate directly to key business and marketing issues commonly encountered in that industry.

PRODUCT BENEFITS

Use of Comhra provides the following benefits to enterprises that use the web as a channel for communicating with their customers:

- Empowers quality customer dialog.
- Replaces erratic with systematic market feedback.
- Increases control over marketing activities.
- Reduces marketing costs.
- Increases revenue from existing customers.
- Increases promotion response rates.
- Increases customer loyalty.
- Builds better knowledge about customers and prospects.
- Closes the feedback loop data warehousing has left open.
- Resolves customer permissions and privacy issues.

In addition the product is designed for ease of deployment and ease of use by marketing and other business personnel. In particular:

- Business people can perform deployment, customization, and fine tuning of the Comhra solution quickly and without significant intervention from the Information Technology department.
- Comhra dialogs adopt the look and feel of the organization's existing website.
- The Comhra solution does not degrade the performance of existing websites.
- The Comhra environment can be integrated with existing business intelligence, CRM, data warehouse, data mining, and marketing solutions that may already exist in the enterprise.

SERVICES

Comhra supports the deployment of its solution with an integrated range of consultancy, methodology, and training services.

The Comhra solution can be deployed successfully without customization. Each industry-specific solution provides fast ROI in its standard form. Such implementations require minimal amounts of external support.

Some organizations wish to customize the dialogs and define their own additional segments. This normally requires internal and possibly some external resources.

Consultancy

Both the customization of Comhra dialogs and segments and the integration of the Comhra solution with pre-existing systems can often be handled by the enterprise's own resources. But in cases where other demands on those resources create the need for external assistance, Comhra can provide most types of support. Comhra professional services include business consultancy, technical consultancy, product installation.

Methodology

The Comhra solution contains a complete, step-by-step methodology for putting the Comhra solution to work in any business, marketing, and technical environment. The Comhra Methodology defines in full detail all the tasks, resources, schedules, and deliverables required to achieve the substantial returns on investment available from deployment of the Comhra solution. The Comhra Methodology is an integral part of the Comhra product bundle.

Training

Comhra offers a range of education and training modules for senior marketing management, corporate management, marketing specialists, IT professionals, and Comhra partners.