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How to cite:

Dibb, Sally and Simkin, Lyndon (2010). Judging the quality of customer segments: segmentation effectiveness. *Journal of Strategic Marketing*, 18(2) pp. 113–131.

For guidance on citations see [FAQs](#).

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Version: [\[not recorded\]](#)

Link(s) to article on publisher's website:  
<http://dx.doi.org/doi:10.1080/09652540903537048>

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## **TITLE PAGE**

### **Judging the Quality of Customer Segments: Segmentation Effectiveness**

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## **Judging the Quality of Customer Segments: Segmentation Effectiveness**

### **Abstract**

Market segmentation is well established in marketing theory and applied by organizations from all industry sectors. Despite wide-spread use, developing and implementing segmentation schemes is rarely problem free. Testing the quality and robustness of segments is one of the difficulties which marketers face. The literature describes segment quality criteria which are intended to help with this task, yet there is little evidence of their deployment and efficacy in practice. Using a longitudinal case study from the Eastern European mobile phone market, the practical application, impact and efficacy of these segment quality criteria are examined. The findings reveal the value of combining 'hard' statistical and 'soft' segment quality criteria to test the validity and robustness of segmentation outputs prior to implementing the segmentation. Implications from this case for managers seeking to select and deploy suitable quality criteria are considered.

### **Key Words**

Segment quality criteria, market segmentation, segmentation implementation, segmentation effectiveness, target market strategy.

## Introduction

Market segmentation principles are well-established in marketing theory and a recognised component of marketing strategy (Albert, 2003; Dibb and Simkin, 2008; LaPlaca, 1997; Weinstein, 2004). Segmentation helps organizations to manage diverse customer needs by identifying homogenous market segments (Simkin, 2008; McDonald and Dunbar, 2004). Recognised outcomes include an improved understanding of customers, more efficient resource allocation, better-tailored marketing programmes, and enhanced competitiveness (Albert, 2003; Beane and Ennis, 1987; Freytag and Clarke, 2001). Despite these advantages (cf: Clarke and Freytag, 2008), developing and implementing workable segmentation schemes is rarely problem free (Dibb and Simkin, 2008; Dibb and Wensley, 2002; Goller *et al.*, 2003; Millier, 2000; Palmer and Millier, 2004; Quinn *et al.*, 2007; Verhallen *et al.*, 1998).

A range of segmentation implementation problems has been reported. Sausen *et al.* (2005) distinguish two causes: (i) poor fit between market segmentation theory and 'real world' applications (eg: Crittenden *et al.* 2002; Kalafatis and Cheston, 1997); and (ii) weak connections between operational segmentation and strategic marketing (eg: Piercy and Morgan, 1993). This paper falls in the first of these areas, focusing on one particular implementation issue: the use of so-called *segment quality criteria* to judge the robustness of segmentation outputs. Various versions of these criteria have been presented, with Kotler's (1967) original list of segment *measurability*, *accessibility*, *substantiality* and *actionability* probably the best known. While the theoretical basis for such criteria has been examined (Goller *et al.*, 2002; Hassan *et al.*, 2003), their efficacy remains largely untested, with few published examples of

their application in practice. Yet the experts agree that proposed segments must be evaluated for their quality before an organization operationalises the produced segmentation. More research is needed to examine how organisations assess segment quality and the role which quality criteria play in this process.

We address this gap using a case study from the Eastern European mobile phone market, to analyse the progress of a major service provider through a large-scale segmentation project. The case organisation was applying segmentation to improve its responsiveness to changing customer needs and behaviour within its fast-moving and maturing market. The study is longitudinal, examining the choice and use of different quality criteria throughout the course of the segmentation project and its implementation. Our findings contribute to existing knowledge in three ways. First, through a comprehensive review of published sources of segment quality criteria, we develop a classification which aggregates the criteria into six quality themes. Second, we adopt this framework as the basis for an in-depth analysis of the scope, sequencing and impact of the quality criteria used by the case organisation. Finally, the longitudinal nature of the case study reveals incremental improvements in project outcomes which enable the effectiveness of criteria to be judged. Consequently, we make recommendations for managers about effective choice and deployment of segment quality criteria.

### **Segmentation Criteria for Judging Segment Quality**

The high financial and other costs of segmentation projects (Weinstein, 2004) have brought questions about effectiveness to the fore, with some researchers criticising the lack of reliable measurement tools. Recent work by Foedermayr and Diamantopoulos

(2008) addresses this issue through its conceptualisation of segmentation effectiveness in the international context and through the development of a formal measurement model. Other researchers have tackled the problem through checklists of criteria for judging segment quality. These lists of desirable segment characteristics can be used in both consumer and business-to-business contexts. The original version developed by Kotler (1967) refers to segment *measurability*, enabling segment size and potential to be judged; *accessibility*, in order that a segment can be reached and served; *substantiality*, ensuring that a segment is of sufficient size and profit potential; and *actionability*, so that a segment can be reached and served with a marketing programme. These criteria have been endorsed by other authors (eg: Bonoma *et al.*, 1983; Wind, 1978), some of whom develop their own checklists for assessing the quality of segmentation output. It is necessary to distinguish these criteria from factors which are considered in the assessment of segment attractiveness during targeting decision-making (cf: Goller *et al.*, 2002); for example, see the targeting criteria listed later in Figure 4. Segment quality criteria are used at the point segments are derived, to help check the robustness of the emerging segmentation: they are not associated with the selection of which segments to target.

This distinction is clarified by Hlavacek and Reddy's (1986) view of segmentation as a three-part process comprising (i) segment identification, (ii) segment qualification, and (iii) segment attractiveness. Under this scheme, segment identification relates to the design of the segments, while the qualification phase concerns the extent to which the emerging customer groups can be operationalised. The segment attractiveness component fits with targeting decisions about resource allocation and segment priorities. This approach establishes a clear role for qualifying criteria which appraise

the quality of emerging segments, as opposed to criteria which are used to judge targeting attractiveness.

Historically, segmentation theory has rested on a basic assumption of market heterogeneity, allowing homogeneous segments to be identified (Beane and Ennis, 1987; Wind, 1978). Although it is worth noting the views of Wedel and Kamakura (2000), who suggest that the extent of homogeneity within segments may be artificially manufactured by practical managerial constraints (Quinn *et al.*, 2007). Nevertheless, once this assumption about homogeneity is satisfied, the role of segment qualification criteria is to assess whether a segment has distinct user characteristics and needs, if the scale of the opportunity is worthwhile, the extent to which these features are measurable and stable over time, whether the competitors can be readily identified, and whether a specific marketing programme can effectively target it (Doyle and Saunders, 1985).

Kotler's (1967) criteria are central to many of the proposed schemes (Bonoma *et al.*, 1983; Wind, 1978). His notion of segment size (substantiality) is echoed by Chaston (1990), by Young *et al.* (1978), who link it with profitability, and by Adcock *et al.*, (2001), who also emphasise the reachability and relevance of segments. The concept of accessibility is reflected by Saunders' (1980) focus on segments which are managerially useful, and by Greenberg and McDonald (1989) who discuss the suitability of segment output for programme development. The notion of simplicity in assigning customers to segments (Abratt, 1993), and the desire for homogeneous and distinctive customer segments (Bertrand, 1989; Hooley *et al.*, 2004), also relate to accessibility concerns.

Other authors have supplemented the Kotler criteria with the concepts of segment stability (eg: Littler, 1992; Zikmund and D'Amico, 1996); and segment effectiveness (Doyle, 2001). For writers with a particular interest in B2B markets, the need for segments which are operationally relevant is a priority (Clarke and Freytag, 2008; Dibb and Wensley, 2002; Hassan *et al.*, 2003). This issue is touched on, but not fully explored, by Kotler's (1967) actionability criteria, which stresses the execution and roll-out of the segmentation solution. Webster (1991) also mentions relevance to major customer groups, and operational relevance for market strategy. Similar lists are offered by Gross *et al.* (1993), Goller *et al.*, (2002) and Hutt and Speh (2006), who develop the concept of corporate fit by adding segment compatibility with current marketing and business strengths. On a similar theme, Garda (1981), and Johnson and Flodhammer (1980) consider the fit with existing market situation and organisational characteristics. Table 1 summarises the range of published segment qualifying criteria.

### **Table 1: Segment Qualifying Criteria**

This review (cf: Table 1) suggests that published segment quality criteria fall into a number of thematic areas. These areas can be distilled into one *underlying requirement* for segmentation and six distinctive *quality themes*. The underlying requirement is that the market to be segmented is heterogeneous. This criterion is implied, but not explicitly included, in Kotler's (1967) original list. The six quality themes are listed below:

1. Segments are homogeneous. Each segment being distinctive in terms of its customer profile and needs. This will impact upon the extent to which the segments are accessible.



2. Segment size and potential profitability. This involves two sub-themes: the first is that the size of the segment is sufficient, so that resource allocation can be justified and future profitability judged adequate. This fits with Kotler's notion of substantiality, yet more specifically expresses the underlying components. The second sub-theme concerns the ability to predict size and profitability, closely fitting with Kotler's measurability criterion.
3. Segment stability. Although not directly included by Kotler, given that profitability could rely upon it, this is perhaps implied by the substantiality criterion.
4. Segment accessibility. This theme mirrors one of those originally expressed by Kotler, concerning whether suitable and distinctive marketing programmes can be developed for emerging segments.
5. Segment compatibility. Perhaps the most complex theme is the extent to which the segment output fits the organisational context. This includes synergy with corporate and/or marketing strategy; match to resources and capabilities; and fit with organisational factors such as culture, structure and operational considerations. Although this theme is not the same as Kotler's notion of actionability, it highlights issues which affect whether a segment can be served.
6. Segment actionability. This theme is consistent with Kotler's original interpretation of the term, referring to whether the organisation has the resources, capabilities, desire and realignment of marketing programmes to serve the emerging segments.

We use these themes from the literature as a point of comparison for the quality criteria adopted in practice by the organisation in the case study. Through this review we test the applicability of the theoretical criteria and develop insights for managers about the appropriate scope, application, and sequencing of quality criteria.

## **Case Study**

### Method

Market segmentation is complex and has far reaching consequences for an organisation (Dibb and Simkin, 2008; Weinstein, 2006). Research examining the segmentation process needs to reflect this complexity and capture its impact on all areas of activity. We use a case study approach which enables the necessary in-depth analysis of the segmentation process, the contributing stakeholders, and the consequences for the organisation's operations and performance.

Our choice of case study was partly driven by the requirement for high quality access. Regular contact with senior and middle managers within the telecommunications organisation was necessary for the entirety of the segmentation process and its implementation. Access was also needed to the research company which was working with the company to develop and implement the segment solution. The length and depth of this access enabled a longitudinal study of the organisation's segmentation process, from the planning stage to the point at which the marketing programmes were developed and implemented. A further consideration was the opportunity to observe the segment quality procedures used by a commercial provider of segmentation services as it went about its business of creating and implementing a segment solution. Although we do not claim that our findings can be generalised to all other contexts, they do nevertheless provide a theoretical basis against which future cases can be compared.

This was an embedded case study, with data collected through regular contact with the senior managers from the telecommunications business and from the research company retained to conduct the customer research and identify the segments. Contact with both organisations was ongoing throughout the course of the project, including follow-up meetings for three years during the post-implementation phase. The meetings included strategy, marketing planning, budgeting and review sessions, some of which were specifically organised to review progress of the segmentation process. Detailed checklists of issues developed from the literature review were used as the basis for structuring the recorded information. Specific areas of information collection included:

- market segmentation objectives

- steps in the market segmentation programme
- roles of different stakeholders within the organisation and the research supplier
- sources of data and data collection
- modes of analysis
- validation of segment outputs
- details of segment quality criteria applied
- review of targeting decisions and applied criteria
- personnel involved and the nature of the internal marketing processes
- outcomes and impact of the market segmentation process
- performance criteria and monitoring.

A key concern was to ensure the quality and credibility of the collected data (Flint *et al.*, 2002). The following procedures were adopted: i) detailed written records were maintained in a format which reflected the themes above; ii) these records were used as the basis for teasing out issues around the segmentation programme, the validation of outputs, and the application of agreed quality criteria; and iii) a process of explanation building then took place (Yin, 1994). A series of follow-up interviews and discussions with managers from the telecommunications and research organisations enabled remaining details to be clarified and preliminary findings to be tested out. Taken together, these procedures helped to increase our confidence in the accuracy of the data and the credibility of the results.

The presentation of the data follows the components involved in the segmentation, explaining the inputs of the different stakeholders at each point in the process. The case contains background information, an overview of the segmentation project, and a detailed description of the segment identification and quality review process. An in-depth review of the project results shows how the quality criteria have impacted upon these outcomes.

## Case Background

As the mobile phone market matures and becomes saturated, service operators look for new ways to target and serve their customers, in order to grow revenue streams. The telecommunications company at the heart of this study operates throughout much of Northern and Eastern Europe, regions which are known for their advanced cell phone usage and marketing programmes. Faced with growing competition, the organisation was seeking a more sophisticated customer segmentation approach for its Eurasian markets. Previously, the company had treated its market as divided only into business and private users, with a further distinction between customers on pay-as-you-go and monthly contracts. The organisation's leadership team recognised it must radically overhaul this rudimentary approach in order to compete more strongly.

As explained below, a German marketing research organisation was signed up to carry out the required data collection and segmentation analysis. No constraints were placed on this supplier in terms of incorporating the organisation's existing operating practices and structure. The initial focus was a consumer segmentation scheme, quickly followed by a review of the requirements, usage, attitudes, behaviours and purchasing of corporate users. The emerging segments reflected the overall set of behaviours in evidence in this market: some were consumer-focused, others were business user-orientated, while one segment was part consumer and part business user in composition.

The segmentation project had to dovetail with the organisation's marketing planning and strategy. The programme was used as a catalyst for reorganising the organisation's sales, marketing and customer support personnel around a more

meaningful set of customer segments. The data warehouse was also to be realigned. Co-ordination of the segmentation project involved a team of managers and directors working closely with the German research organisation and supported by a team of external marketing strategy consultants. The segmentation outcomes needed to move the organisation towards its stated goals:

- To be the market leader or the number one challenger brand in each country.
- To grow revenue per subscriber.
- To increase customers' usage times per month.
- To build the subscriber base.
- To create a brand reputation for innovation, service delivery excellence and value.

Given these objectives and the high costs of the segmentation project, managers needed to be confident about the quality of the emerging segments.

### The Segmentation Project

A leading German research organisation was recruited to specify and implement a research project to identify market segments within four of the organisation's national markets. The segmentation project combined qualitative and quantitative research methods. It took place over an eighteen month period, from initial project scoping to the roll-out of the marketing plans. There were five phases to the project which are depicted in Figure 1.

Phase 1a: This was a preparatory phase during which the current market structure was explored through an internal scoping workshop involving the organisation's senior leadership team, external industry experts and the research organisation. This workshop identified the level of change desired or anticipated as a result of the project, coverage of markets/businesses to include, key personnel to involve, data requirements, anticipated timelines and budgets. Phase 1b: The researchers needed to delve into consumers' behaviour and use of mobile phones. Exploratory focus groups were conducted in each country to learn more about consumers' usage of mobile phones; including their attitudes, motivations, stated behaviours, purchasing approaches, lifestyles, and factors affecting their perceptions of currently available options. A questionnaire was then prepared for use in the quantitative research phase.

Phase 2: 10,000 consumer interviews were conducted (2,500 in each of the four countries) to provide data for a quantitative analysis of consumers' needs, required benefits, usage, lifestyles and attitudes towards mobile phones. Of these 2,500 interview targets (which included non-users) 1,000 were current users of the brand. This number provided a statistically valid sample on which to conduct the multivariate analyses and apply the necessary statistical significance tests for each country. The number of corporate subscribers is far less in these countries than the majority of the market, which is made up of private consumer subscribers. A further 2,000 interviews addressed corporate subscribers in the four countries, allocated in proportion to the size of the corporate subscriber base in each country. These business-to-business interviews covered the same usage, attitude, perception, lifestyle, functionality and profiling aspects as in the consumer interviews, but also examined the buying centre dynamics and decision-making, billing and tariff issues that are pertinent to corporate subscribers.

Phase 3: A range of multivariate techniques, including factor and cluster analyses and structural equation modelling, were applied to the data to generate segments of homogeneous customers. Workshops with client personnel helped to test the intuitive logic of the emerging segments. Once managers had approved the groupings, further 'deep-dive' focus groups were run within each identified segment to more accurately profile customer requirements and expectations, and to test the validity of the proposed segmentation.

### **Figure 1: The Five Phases of the Segmentation Project**

Phase 4: Managers took part in reporting the segments throughout the organisation. Considerable efforts were undertaken to ensure that this presentation and the dissemination were tailored to fit each of the specific country markets.

Phase 5: The final stage involved managing the adoption of these segments within the organisation and the implementation of the recommended segmentation solution. Follow-up qualitative marketing research was used to test consumer and business customer views of the marketing propositions and competitive standing within each of the targeted segments.

#### **Identifying the Market Segments**

The segmentation solution was developed using a clustering approach. The input variables collected from the consumer and business subscriber interviews related to customer needs, mobile phone usage behaviour, attitudes towards mobile telephony and 'on-the-move' communications, consumer lifestyles and business usage

behaviour, the dynamics of the buying centres and influences upon purchasing decision-making. Variables from the following marketing information categories were used as inputs to the analysis, or to assist in describing the emerging segments:

- Peer group orientation
- Trend/fashion influences
- Tradition/family values
- Communication needs and usage
- Fun and emotional aspects from mobile usage
- Mobile and e-world immersion
- Technology affinity
- Interest in teleco applications and services
- Demographics/lifestage/lifestyles
- Media usage
- Tariff plans and requirements
- Purchasing policies
- Factors influencing buying
- Buying centre dynamics

The analysis produced a statistically sound fourteen cluster solution. As the organisation had previously operated with just two customer groups (business users on contracts and consumers on 'pay as you go' tariffs), managers felt that progressing from two to fourteen customer groups was too major a transition to handle. The focus shifted instead to the next cut-off point in the clustering, the eight cluster solution. Tests of the statistical robustness of these eight segments were satisfactory. Initial reviews suggested the groupings were intuitively robust, with managers readily able to visualise the customers contained within them. The different segments were also mutually exclusive, with each user clearly allocated to one of the segments. The segments were then profiled in terms of the behavioural and aspirational variables considered in the analysis and descriptive labels identified (see Figure 2).

**Figure 2: The Eight Segment Profiles**

The segment labels closely reflect the allocation of customers to segments using easily remembered language. The clarity aided internal communication, helping to convince managers that customers could be readily allocated to the segments. As part of the overall project, it was soon recognised that all of the organisation's existing subscribers in the data warehouse had to be analyzed and allocated to one of these segments.

### Quality Checking the Segments

Having statistically and qualitatively identified the segments, the research company applied an agreed set of evaluation criteria to test the quality of the segments. This process took place *prior* to the selection of segments to target with marketing resources. The adopted criteria are a mix of statistical and qualitative measures routinely applied by this research organisation as part of the segmentation projects it undertakes for clients. They are a carefully considered set of dimensions, with interesting parallels with the literature on segment quality criteria. There is a set of fairly standard statistical significance tests which routinely accompany the multivariate techniques deployed, but also a set of managerial judgemental criteria based on the organisation's extensive experiences in developing segmentations (see Figure 3). The qualitative criteria include coherence, vividness, differentiation and usefulness. The statistical tests are used to verify the robustness of the segment identification process and its outcomes. The qualitative criteria then enable the intuitive managerial logic of the solution to be judged. Both of these stages are crucial to the satisfactory implementation of any segment solution.

### **Figure 3: Qualitative and Statistical Segment Quality Criteria**



A strong feature of the quality checking process is that it combines the statistical validation of segments with the kinds of qualifying criteria advocated in the segmentation literature. Combining these 'hard' and 'soft' measures provides a tough test of the robustness and validity of a segmentation project.

### Targeting Decisions

Following the quality checks, managers from the four countries considered their targeting options and reviewed the allocation of resources to the emerging segments. Although the same segments were found in each of the four national markets, the size and relative attractiveness of each segment varied across the countries. Using a previously agreed set of attractiveness variables (see Figure 4) in conjunction with portfolio planning tools, each national management team decided which segments to prioritise. Managers were helped by the provision of detailed information about each of the segments and the customers contained within them. This included breakdowns of the customers' technology affinity, communication and mobility, cell phone attitudes and usage behaviour, spending and price sensitivity, internet and mobile office usage, brand awareness, preferences for operator/service providers, current network satisfaction, demographics/lifestage, lifestyle/leisure activities.

### **Figure 4: The Target Market Attractiveness Criteria**

Each national team had made its own targeting decisions to take account of local market and competitive conditions. The importance of the corporate user segments to all countries was quickly evident. In one of the markets, two of the consumer segments were also prioritised. One had particularly strong growth prospects, while the other had seen a challenger brand stealing market share. A second country team

opted to address three of the eight segments. None of the countries focused on all eight segments and no two teams shared the same target market priorities.

Once the targeting had been finalised, each national team developed a bespoke marketing plan focusing on the selected segments. These plans reflected the needs of targeted customers, the competitive and regulatory context, and distribution channel characteristics in each country. The detailed customer insights obtained from the marketing research were invaluable to this process.

### Project Outcomes

In most of its countries of operation, the organisation had been the first established, leading to 100% market share, while in others it was the number two entrant. Since then, all countries had seen an intensification of competition, with customers increasingly aware of their product and service options. The problems caused by these developments had been the initial drivers for undertaking segmentation. As a consequence of the new target market priorities, market share declines were reversed, rival new entrants were forced to concentrate on the less attractive segments, and there were improvements in brand awareness and customer satisfaction measures for consumers within the prioritised segments. Internally, a series of product/service development improvements were made which specifically reflected customer characteristics and behaviours in the newly targeted segments. The organisation also benefited from the less focused approaches of rival suppliers to target marketing and campaign development. Where the organisation was already market leader, challengers' shares were eroded. In situations where it was the challenger brand, there were some impressive market share gains following implementation of the new

target segment strategy. Revenues per subscriber in priority segments increased and having more focused marketing programmes improved the organisation's reputation with targeted consumers and corporate users.

Progress for the segmentation was formally tracked by the project team every quarter. Two major review workshops took place, involving personnel from all countries/companies, after twelve and twenty-four months. After eighteen months, new marketing research was undertaken to verify the continuing relevance and robustness of the eight previously identified market segments. The Financial Director re-engineered reporting structures and metrics, to enable a monthly assessment of market share, contribution, income stream and cost-to-acquire/retain customers in the segments. These outcomes are illustrated by reviewing the performance outcomes and experiences of the national team from country 'X'. These outcomes typify the experiences of the other national teams taking part in the project.

### Commercial Performance

The national team in country 'X' had seen its 100% share eroded to 72%. New entrants to the market were tending to target the heavy spending and high value *Talkative Trendies* and *Sophisticated Careerists* segments. The *Gaming Youths* were also attracting attention, being seen as heavy future spenders worth capturing while young. For *Talkative Trendies*, the company's market share was down to 77%, for *Sophisticated Careerists* it was 80% and for *Gaming Youths* it had plunged to 66%, with overall company market share at 72% against the market's only other player, at the time of the segmentation project. A year after the segmentation implementation, shares in these three segments had risen to 79%, 84% and 76% respectively. More

significantly, eighteen months on, these market share improvements had been maintained. This was despite three further new entrants into the market, including a resource-rich Russian player and a leading German mobile phone brand.

Three years after the segments had been implemented, despite the entry of another competitor, the company's overall market share stood at 77%, with RoI, contributions and revenue streams from the targeted segments all improved. Similar improvements to market share and revenue streams were seen by the other national teams. This was despite the entry of new, aggressive competitors and more discerning customers prepared to switch networks/brands for tariffs and packages which better served their needs.

Two to three years after the original segmentation, the segments identified in the initial study were proving remarkably robust. Subsequent marketing research had revealed some migration of females from *Gaming Youths* to *Talkative Trendies*, but otherwise the stability and distinctiveness of the eight original segments remained strong. Nonetheless, by this time all of the national teams had modified their segment priorities to reflect commercial achievements in previously targeted segments, and to respond to changing market conditions. In country 'X', these changes involved greater resources being devoted to increasing phone usage in the *Laggards* segment.

Feedback from senior managers indicated that they attributed the performance improvements and halt of market share losses to the operationalisation of the segmentation project. Some referred directly to the qualitative segment criteria used in the exercise (see Figure 3), commenting that the vivid and coherent nature of the

segments had enabled the organisation to strongly differentiate its marketing activities in those segments it had targeted. As the German research company's statistical criteria for segment quality had already been met, this increased confidence that both the qualitative and strategic criteria had been addressed.

## **Discussion**

The mobile phone case study demonstrates the practical application of segment quality criteria. By analyzing the adopted criteria in relation to the six identified quality themes, we have shown the priority areas for assessing segment robustness. We begin the discussion by explaining the broad strategy adopted by the research organisation in carrying out this assessment. Next, the thematic areas (shown underlined) included within that strategy are reviewed, considering the overlaps and linkages with the quality criteria applied in the case study (shown in *italics*).

The research organisation bases its segment quality judgments on a combined assessment of qualitative and statistical criteria. The statistical criteria perform two functions: (i) they enable the statistical robustness of the segment solution to be evaluated; and (ii) they provide an additional layer of evidence to enable the judging of segment quality (what Hlavacek and Reddy, 1984 term 'segment qualifying'). This approach reveals this particular organisation's view of how segment robustness should be judged. It is implicitly acknowledged that the notion of quality has different dimensions. Taking a holistic approach to segment quality assessment ensures that these dimensions are rigorously managed. A more typical approach is to artificially separate testing the statistical robustness of a segment solution from the more qualitative reviews of segment quality. Organisations adopting this approach may do so for operational reasons, because different personnel are involved in the

statistical analyses and the subsequent implementation of the segment outputs. Interestingly, this separation of quality issues is also reflected in the marketing literature, with some authors interested in the statistical validation of segmentation, while others focus on implementation considerations. The danger of such separation is that certain dimensions of the quality testing may be overlooked.

The basic statistical analysis of segment robustness established that the market was heterogeneous, thus dealing with the overriding requirement for segmenting a market. These tests also backed up the research organisation's concerns about segment *coherence*, clearly demonstrating the plausibility of the segments. Three of the applied quality criteria have synergies with the segment homogeneity theme discussed earlier: *vividness*, *coherence*, and *differentiation*. When viewed in conjunction with the *vividness* criterion, the notion of *coherence* provides a test of distinctiveness in terms of customer needs and profiles, a notion which is central to the homogeneity theme. Similarly, the *differentiation* criterion provides a check of whether customers within segments differ in terms of mobile phone needs, usage and attitudes. An interesting feature of these quality criteria is the extent to which they tease out different aspects of segment homogeneity. The linkages to the six quality themes do not end here. The *vividness*, *coherence*, and *differentiation* concepts also connect with the accessibility theme, since well-targeted marketing programmes can only be developed when clarity exists around the customers on which they focus. The final criterion of segment *usefulness*, which concerns the usability of the output and whether marketing programmes can readily be developed, is the broadest in scope. Focusing on whether the segments can easily be targeted, there are clear connections with the notion of accessibility, but also with actionability. This is because whether

an organisation has the resources and other capabilities to access the segments impacts upon their usefulness. Undertones of segment compatibility, while not explicit, are also implied as usefulness is affected by the goodness of fit between segment output and the organisational context.

A variety of connections and overlaps can be seen with the six quality themes from the literature. This is not to say that the remaining thematic areas were neglected in the case study. For example, the segment compatibility theme was not explicitly included in the research organisation's segment quality criteria. Instead, these issues were examined by the mobile phone organisation's national teams, as they explored the relative attractiveness of the emerging segments. This enabled the development of marketing plans which genuinely reflected the organisational and market context in which each team was operating. Questions about segment size, profitability and stability were also addressed as part of the targeting process, playing a key role in determining ultimate resource allocation. The logic for handling these issues in this manner in this context was strong. We suggest that while comprehensive checklists of segment quality themes can be developed, the precise manner in which they are handled must reflect the operational context of the specific segmentation project. Here, the involvement of the research organisation in identifying the segments and the role of the national teams in implementation helped determine the allocation of responsibilities and sequencing of activities.

Had the organisation handled the process differently, perhaps by managing all aspects of the segmentation project itself, a different approach might have been warranted. For example, the extensive experiences of the external advisors and the research

company's well-proven criteria would not have been available to provide direction or benchmarking. This question about the sequence in which segment quality criteria are applied is an important contribution of our research. The implication is that scope and coverage of the criteria is not necessarily connected with the point at which they should be applied. To some extent this contradicts Hlavacek and Reddy's (1984) findings that certain criteria are connected with particular phases of the segmentation project, in favour of sequencing which is more strongly geared to the particular context.

## **Conclusions and Implications**

Despite the widespread adoption of market segmentation, developing and implementing workable segmentation schemes is rarely problem free. In this paper we have addressed the need for more studies examining the application and efficacy of segment quality criteria in practice. Our first contribution has been to develop a classification of six quality themes from the literature, which we have used to review the scope and impact of the quality criteria applied in the case study. This longitudinal and in-depth analysis, revealing the combination of 'hard' statistical and 'soft' quality criteria used by this organisation to test robustness of segmentation outputs, has been our second contribution. There is strong direction, for other users of segmentation, from this particular organisation's approach to assessing segment quality.

For managers contemplating a segmentation programme, the findings emphasise the need to work from a complete list of such criteria. Robustly testing the statistical validity of multivariate outputs is essential, particularly given the ready availability of 'off the shelf' software packages which can be used by relatively inexperienced users.



Softer tests of segment quality, which assess the robustness and appropriateness of a project's outputs, are also needed. In compiling an appropriate list of such hard and soft criteria, we find the distinction in the literature between segment identification, segment qualifying and targeting criteria not to be particularly meaningful. Flexibility to ensure that the coverage is sensitive to the particular corporate and marketing context is much more important.

Another contribution is that the longitudinal nature of the case study has enabled incremental improvements in project outcomes to be revealed, making it easier to judge the effectiveness of the criteria. Furthermore, our analysis has restated the inherent implementation complexities in segmentation projects, emphasising the value of practical and easy-to-apply tools for judging segment quality. Consequently, we make the following recommendations for managers and segmentation researchers:

- Segmentation projects sometimes fail to generate practically meaningful and useful findings. Segment quality criteria play a useful role in testing the robustness of the outputs.
- Segment quality criteria should balance hard tests of the validity of statistical outputs with soft criteria, which enable the robustness and appropriateness of the segmentation outputs to be judged.
- The order or stage in the segmentation process at which the quality criteria are applied is less important than the scope and coverage of the criteria included.
- Broad areas of quality criteria coverage should include: tests of statistical robustness; segment homogeneity, segment size and potential, segment stability, segment accessibility, segment compatibility, and segment actionability.
- The segment quality criteria included must reflect the segmentation objectives and the context in which the project takes place.

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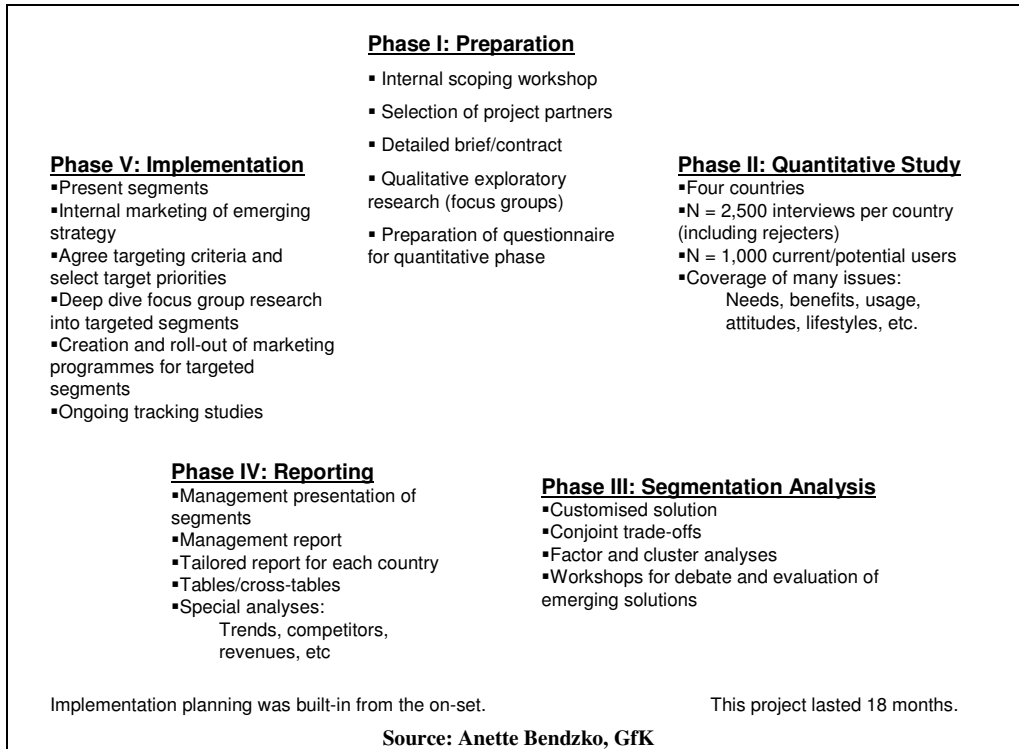
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**Table 1: Published Segment Qualifying Criteria**

Segment Qualifying Criteria in the Segmentation Literature

- Market is not homogeneous (Beane and Ennis, 1987; Green, 1977; Green and Carmone, 1977; Wind, 1978).
- Measurability, accessibility, substantiality, actionability (Goller *et al.*, 2002; Kotler, 1967; 1984; Kotler *et al.*, 1996; Perrault *et al.*, 2007; Bonoma *et al.* 1983; Wind, 1978).
- As Kotler criteria plus segment stability (Dibb *et al.*, 2006; Littler, 1992; Zikmund and D'Amico, 1996).
- As Kotler criteria plus effective (Dibb and Simkin, 2008; Doyle, 2001).
- As Kotler criteria plus capability to change organisation structure and decision making systems to reflect new segments (McDonald and Dunbar, 2004).
- Sizable, reachable and relevant (Adcock *et al.*, 2001).
- Segment size and sales potential (Chaston, 1990).
- Measurability, relevance to major customer group, operational relevance for market strategy (Webster, 1991).
- As Webster plus segment compatibility with current marketing and business strengths (Gross *et al.*, 1993; Hutt and Speh, 2006).
- Segment stability (Bass, 1977; Blattberg and Sen, 1974; Calantone and Sawyer, 1978).
- Different sub-markets must have different elasticities (Bieda and Kasserjian, 1973).
- Segment parsimony (Choffray and Lilien, 1978).
- Segment distinctiveness (Hooley *et al.*, 2004).
- Segments are homogeneous (Bertrand, 1989).
- Suitability of segment output for programme development (Greenberg and McDonald, 1989).
- Fit with existing market situation and organisational characteristics (Garda, 1981; Johnson and Flodhammer, 1980).
- Managerial usefulness (Blattberg *et al.*, 1978; Saunders, 1980).
- Simplicity of assigning to segments (Abratt, 1993).
- Segment profitability (Abratt, 1993; Young *et al.*, 1978).

**Figure 1: The Five Phases of the Segmentation Project**



## **Figure 2: The Eight Segment Profiles**

***Talk 'n' Texters*** - "I just have a mobile phone because it is practical".

- The conservative customer, not immersed in technology but with a few practical needs that can be fulfilled by technical appliances. S/he relies on mobile phones for practical reasons only.
- Interested in basic functions, especially SMS, but not attracted at all by more sophisticated or fun services, be it via mobile phone or the internet.

***Talkative Trendies*** - "Talk around the clock".

- The modern, fun- and fashion-oriented socialiser. This customer needs a mobile phone to keep in constant touch with the social scene and fulfil a strong need for communication.
- Interested in all applications and services.

***Aspiring to be Accepted*** - "Would like to have it but is not really up to it".

- Wants to be part of the in-crowd, but is not there yet, and possibly never will be! These customers have a mobile phone because they just want to have it (show off) and seek to have trendy handsets they believe are adopted by peer sets they aspire to join.
- Show a special affinity towards photo, video and MP3 applications.

***Laggards*** - "Torn between conservative values and the modern world".

- Traditionalist views with low communication needs and basic technical usage.
- The Luddites or those late into the market!
- S/he holds specific aversions to mobile phones (SMS) but also views them as a practical-only device (eg: for emergency calls only).

***Gaming Youths*** - "Game oriented mobile world addict".

- Young and very technology-oriented people, belonging to the mobile generation, who need a mobile phone in order to maintain a fast-living fun life.
- Games, games, games! Plus music.
- These customers search for images and brands that help them keep track with the modern world.

***Sophisticated Careerists*** - "Be successful with mobile technology".

- Career-oriented individualists with lots of contacts. Highly immersed in technology and very mobile.
- Demanding value for money. Customer care and respect are very important to these customers.
- They need a mobile phone to organise their life and business, but they are not emotionally attached.
- Self-choosers for work mobiles are included here.

***Organisation Paid*** - "No choice – the corporation decides".

- Demanding value for money and customer care.
- Network coverage, reliability and volume discounts are the focus.
- Users have little influence in selection, so not particularly fashion or technology-led.

***International Business Users*** - "Frequent connected business travellers".

- Easy quad-band roaming and smooth data transfer.
- Some similarities with *Sophisticated Careerists* but with much greater emphasis on functionality and flexibility of at-destination services.
- Influenced by corporate choice of network and tariff plans.

The first five are consumer segments. The last two are business user segments. The *Sophisticated Careerists* are mainly business users who self-select mobile network, handset and tariff option and behave as consumers rather than business users.

In order to protect the commercial interests of the client, the segment labels and descriptions, along with a few client-specific aspects of the data collection, segment analysis and subsequent datawarehouse mining, have been disguised or amended.



**Figure 3: Qualitative and Statistical Segment Quality Criteria**

<p><b><i>Qualitative and strategic criteria</i></b></p> <ul style="list-style-type: none"><li>▪ <i>Coherence</i>: are the segments plausible in relation to the base and descriptive variables used?</li><li>▪ <i>Vividness</i>: are the segments vivid? Does the segment solution provide a clear mental picture of the entities within each segment?</li><li>▪ <i>Differentiation</i>: do the customers within each segment differ according to core dimensions, such as their interest in mobile phone services/applications, lifestyle and personality, general affinity towards technology, attitudes towards mobile phones, mobility, communication habits?</li><li>▪ <i>Useful</i>: are the segments usable for the marketing function? Can customers within them be readily targeted with marketing programmes?</li></ul>
<p><b><i>Statistical criteria</i></b></p> <ul style="list-style-type: none"><li>▪ <i>Profiles</i>: is the composition of each individual segment statistically different?</li><li>▪ <i>Distribution of minima and maxima</i>: are the emerging segments sufficiently different from each other and from alternative ways of grouping these consumers?</li><li>▪ <i>Discriminance (F-value)</i>: how many variables have the power to discriminate between segments?</li><li>▪ <i>Country distribution</i>: can all segments be found in all countries and do they have a sufficient size to be viable?</li><li>▪ <i>Robustness</i>: can the segments be replicated in further analysis or does the segment structure lack stability?</li></ul>
<p>Source: GfK Segment Quality Criteria</p>

**Figure 4: The Target Market Attractiveness Criteria**

**The Teleco's Segment Attractiveness Variables**

Disposable Income in the Segment  
Willingness to Spend on Mobiles in the Segment  
Interest in Value-Added Services (Mobiles) in the Segment  
ARPU/Revenue/Profitability – the financial worth of the segment  
Share in Prospects in the Segment  
Loyalty Level in the Segment  
Size of the Segment  
Competitive Intensity – degree of competition in the segment  
Potential Growth of the Segment  
Market Share in the Segment

These criteria were the variables selected and weighted for use in this mobile phone company's directional policy matrix (DPM) evaluation of market attractiveness versus business capabilities, in order to assist in selecting which market segments were prioritised for marketing programmes.