

Transparency in the International Telephone Service Market - An Evaluation of Services and User Preferences

The market for international telephone services in Europe is rapidly changing. Customers are partly in a position to choose between various service providers despite the existing telephone monopoly of national telephone companies. This summary of a working report [1] depicts how telephone services are seen from a customer point of view resulting from a customer survey of 82 companies in Switzerland. Additionally, important providers and their services are compared in terms of general product attributes. How an electronic market for international telephone services (EMITS) could improve market transparency for customers and service providers is described in the last section of the paper.

The transition in the international telephony from a seller to a buyer market, which commenced in the USA a number of years ago, is now discernibly taking

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effect in Europe as well. The aggressive entry of predominantly US companies into the mostly regulated European market is the apex of what telephone communications (TC) sellers and buyers will be faced with by 1998 at the latest - the year of the announced liberalisation of TC in the EU [2]. In the domain of international telephone services, already today the customer is in a position to choose from a number of different sellers offering a range of services although the telecommunication monopoly is still in place. With the growing diversity of offers it is becoming increasingly important for customers to determine their preferences. It is crucial for the supplier to have a good knowledge of user needs in order to position his products.

Customer Preferences for Telephone Services

For the evaluation of user preferences 82 companies in Switzerland were asked by means of a conjoint measurement (CM) interview. All the selected compa-

nies operate on an international level and are liable to have considerable expenses for international voice services. The yearly volumes of 42 of the 82 interviewed companies exceed 40 million Swiss Francs (CHF). This is equivalent to approximately 2% of the international telephone market volume in Switzerland [3].

The paper describes the research structure and contains a comprehensive interpretation of the interview data. To begin with, the decisive attributes for international telephone services are extensively characterized followed by a detailed description of the providers involved and their services. To extract the decisive attributes that describe international telephone services, an unsorted list of attributes was set up with the help of expert and customer interviews as well as an evaluation of specialized literature and the analysis of advertisements [4]. From an initial list of 16 attributes the following 10 attributes were selected for the analysis of preferences after a further round of expert discussions: costs, availability, flexibility, simplicity of operation, voice/data integration, connection quality, one-stop-billing and monitoring security. A number of levels was assigned to each attribute (Table 1). These attribute levels indicate different levels of performance and were used to rate important telephone service providers and their products offered in Switzerland. The calculated part-worths

were utilized to determine the relative importance of attributes [5]. These reflect the significance in the formation of preferences. Availability proved to be the most valuable attribute for the interviewees followed by telephone rates, voice/data integration, flexibility, simplicity of operation, voice quality, monitoring security, one-stop-billing and discount categories. Important attributes should feature prominently in the shaping of a service offer, as they provide a firm with the greatest potential to distinguish itself from others [6].

Market Segmentation

As the initial analysis of the part-worths showed, the market of international TC-services is not at all homogenous. Consequently, the requirements of all customers cannot be treated in the same manner. Because of that it is advisable to segment the total market. The segmentation was performed with the K-means heuristic. The method determined a suitable allocation with 4 partitionings. Roughly speaking, cluster 1 contains over proportional large companies with existing or planned leased lines, cluster 2 includes very small enterprises with no need for leased lines but with international travel agents. Small and medium enterprises without existing or planned leased lines are subsumed in cluster 3 and in cluster 4 the size of the enterprise is less important than the plan to lease fixed lines.

Market Simulation

Further emphasis rests on a disposition of a market scenario. In particular, the report regards three services from Swiss Telecom (the national carrier), two services from UBS Network (a costs centre of the Swiss Bank Union), two offers from Global Access (an US callback service provider) as well as one service each from Viatel (an US reseller), IDT (an US callback service provider) and MCI

Attribute	Information Source	Attribute Level			
Tariffs (based on PTT-standard tariffs)	Product comparison	-15%	-7%	PTT-tariff	3%
Discount categories	Product comparison	Bonus system	Peak / off-peak period system	Volume system	Automatic call routing (ACR)
Availability	OECD [10]	99,70%	97%	94%	
Simplicity of operation	Product evaluation	high	average	moderate	
Quality of the telephone connection	Product evaluation, product comparison	high	average	moderate	
One-stop-billing	Product comparison	comprehensive	limited	not available	
Flexibility	Supplier comparison	high	low		
Voice and data integration	Product comparison	yes	no		
Monitoring security	Product comparison	secure	not guaranteed		

Table 1: Levels of the attributes

(number two carrier in the US market) [7]. The service profiles in combination with the participant's individual part-worths are used to estimate the likelihood-of-purchase for all products included in the market simulation. Swiss Telecom's lately launched services turned out to be the overall market leader with a wide margin to the next competitor. Nevertheless, the scenario does suggest that the national carrier could lose a lot of ground compared to the current market situation. It must be emphasized that this market simulation rests on a number of assumptions and only points out general tendencies. In some instances, however, the estimates on market shares turned out astonishingly correct.

Electronic Market for International Telephone Services

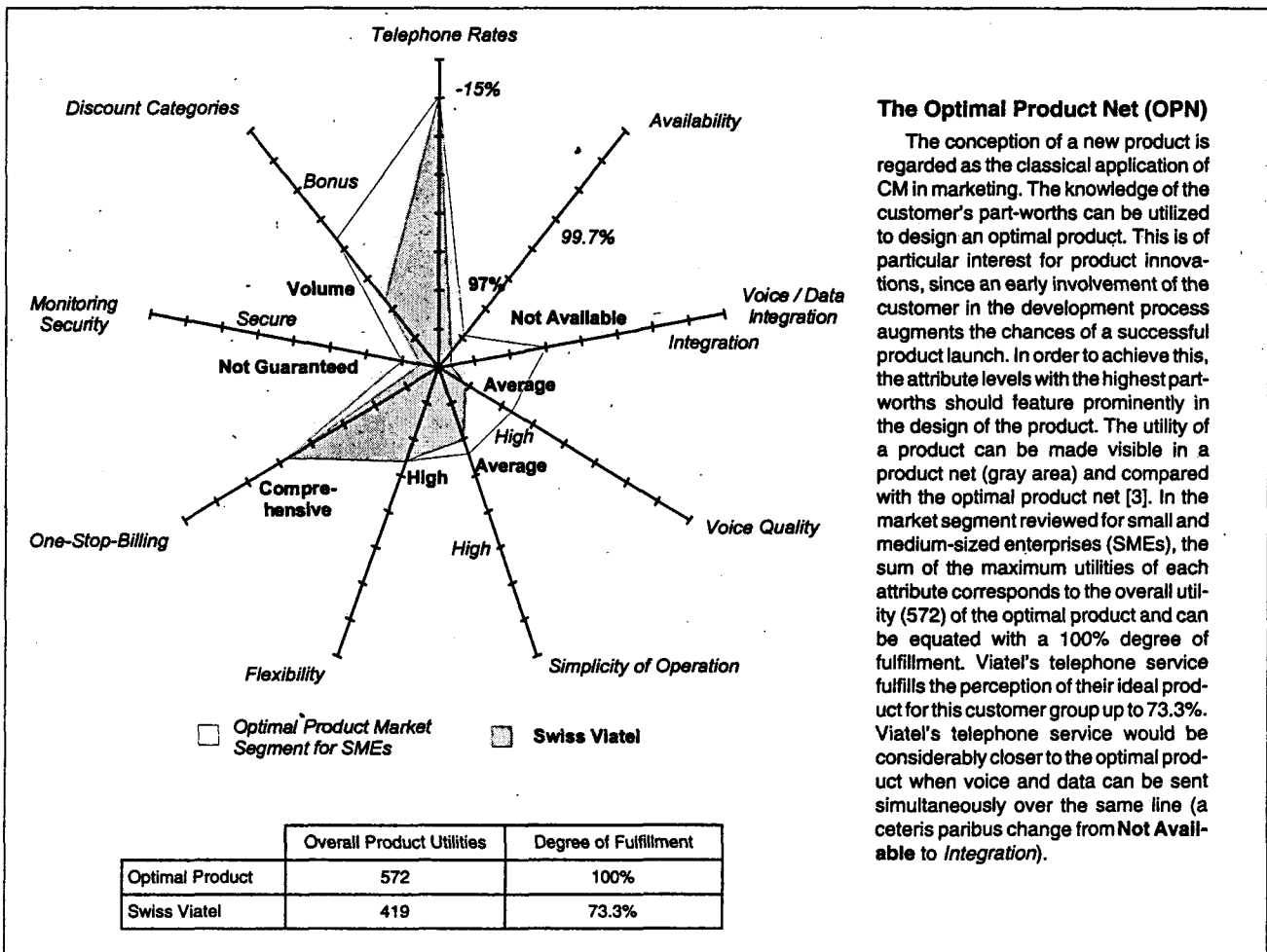
The paper concludes with a description of how an electronic market for international telephone services (EMITS) can be used to improve the market transparency for providers and customers. The customer can get a better idea about which service best fits his requirements. Conversely, the clientele and certified telecommunication experts are continu-

ously called upon to electronically classify the services offered[8]. The rating of existing services can be personally carried out by the customer or, in the future, by one of his dedicated intelligent agents [9]. In addition, a dynamic CM application running on an EMITS helps a telephone service provider in reasonable time to figure out which product attributes have to be primarily improved and to what extent (Figure 1). With this continual feedback he can adapt his services faster and more reliably to the constantly changing competition conditions and the users perception of an optimal product in the targeted niche market. An EMITS is moreover an option for the suppliers to offer their services to virtually countless potential customers through one ubiquitous electronic showcase. ■

References

- [1] Eggenberger, C.; Hauser, C.: Transparency in the International Telephone Service Market - An Evaluation of Services and User Preferences, Working Paper 12/94, University of St. Gallen (can be ordered for CHF 150.--).
- [2] Horrocks, J.: European Guide to

- Telecommunications Liberalisation, Surrey 1993.
- [3] Staple, G.C. (ed.): Telegeography, Washington 1993.
- [4] Alpert, M.J.: Identification of Determinant Attributes: A Comparison of Methods, in: Journal of Marketing Research 8(1971), pp 184-191.
- [5] Louviere, J.: Analyzing Decision Making - Metric Conjoint Analysis, Beverly Hills 1988.
- [6] Hauser, C.: Market-Driven Quantification of Competitive Advantage by Means of Conjoint Measurement, in: EM-Electronic Markets 4 (1994)11, pp 11-12 (URL: <http://www-iwi.unisg.ch/about/stz.html>).
- [7] Eggenberger, C.: Resale and call-back challenges the monopoly, in: Tariffica Bulletin No. 22, November 1994, pp 3-5.
- [8] Compact Disc Connection: Sunnyvale (CA): telnet cdconnection.com.
- [9] Maes, P.: Agents that Reduce Work and Information Overload, in: Communications of the ACM 37(1994)7, pp 31-40.
- [10] OECD (ed.): Communications Outlook 1993, OECD Information Computer Communications Policy, Paris 1993.



The Optimal Product Net (OPN)

The conception of a new product is regarded as the classical application of CM in marketing. The knowledge of the customer's part-worths can be utilized to design an optimal product. This is of particular interest for product innovations, since an early involvement of the customer in the development process augments the chances of a successful product launch. In order to achieve this, the attribute levels with the highest part-worths should feature prominently in the design of the product. The utility of a product can be made visible in a product net (gray area) and compared with the optimal product net [3]. In the market segment reviewed for small and medium-sized enterprises (SMEs), the sum of the maximum utilities of each attribute corresponds to the overall utility (572) of the optimal product and can be equated with a 100% degree of fulfillment. Viatel's telephone service fulfills the perception of their ideal product for this customer group up to 73.3%. Viatel's telephone service would be considerably closer to the optimal product when voice and data can be sent simultaneously over the same line (a ceteris paribus change from Not Available to Integration).

Figure 1: Viatel in comparison with the optimal product of the market segment for SMEs