CRITICAL SUCCESS FACTORS FOR THE LAUNCH OF IPTV (INTERNET PROTOCOL TELEVISION) BY THE BRAZILIAN TELECOMS, AND THE ANALYSIS OF ATTRIBUTES, BENEFITS AND VALUES

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ABSTRACT

The telecommunications network operators have been under increasing attacks from new technologies, which are "stealing away" their customers and reducing revenues from the traditional fixed telephony services. One of those new technologies is VOIP (Voice over Internet Protocol). Operators responded by acting in the content distribution segment. In this context, a new technology, called IPTV (Internet Protocol Television) emerged. The new IPTV technology can offer TV broadcasting based on the Internet Protocol, allowing video-on-demand and other services, as well as the traditional cable TV services. Acting in this new segment, telcoms want to compensate for the losses imposed by the decreased demand for fixed telephony services and the performance of cable TV companies in the segment, as well as to create new business opportunities. It is necessary to find out which factors will influence the success of such service, and to identify variables related of the potential consumers, and to evaluate the true desires and needs of future customers. Therefore, the proposal of this research is to identify the IPTV critical success factors by collecting and examining the opinion of

executives of companies in the market, as well as to analyze the attributes, benefits and values as see through the eyes of sample of potential costumers, with the application of the Means-end Chains methodology. Another theoretical framework that has been used is the study of the Critical Success Factors based on Rockart – who that defines the Critical Success Factors as being a limited number of areas in which satisfactory results are absolutely necessary for a particular manager to reach his/her goals. Information is analyzed according to the Kolmogorov Smirnov statistics. Hypotheses are corroborated or refuted through the application of this methodology, resulting in conclusions and suggestions for future work.

Keywords: Critical Success Factors. Product Life Cycle. Brazilian Telcoms.

1. INTRODUCTION

IPTV will certainly change the way in which subscribers watch and interact with entertainment. With this new technology, subscribers will be able search for and watch the content they want, at any time they want, in any of the following devices – TV sets, computer monitors, and portable devices.

The main challenges telcoms will be facing are identifying, understanding and improving the critical factors that will determine the success of the IPTV service. According to the attributes of this service, companies will have to create benefits that might work as a way to provide value to customers.

This paper will analyze the critical success factors (CSFs) for the launch of IPTV by Brazilian telcoms, from on a selection of forecasts based on the Michael Porter's model. It will also analyze how the IPTV attributes and benefits relate to the potential customers' personal values.

1.1 IPTV TECHNOLOGICAL ASPECTS

IPTV is a broadband application. It should not be confused with similar technologies, such as VOIP (voice over IP), or any other IP application over broadband. In fact, it is a much more complex application, with specific network requirements. Several network elements are required for IPTV, including transportation, access and

subscriber's premises. Hardware and software interact with those elements for the use of IPTV.

Figure 1 illustrates the main components of the IPTV network .

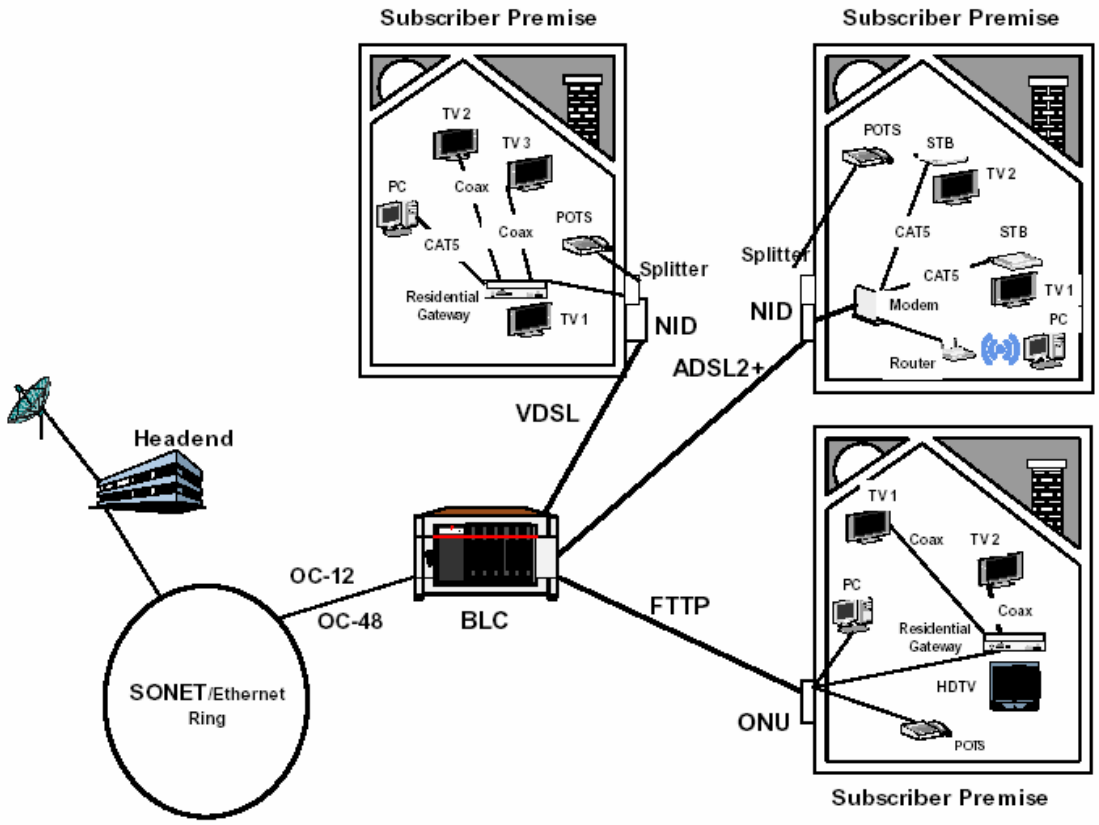

Figure 1– Examples of components at the subscriber's premises.
Source: NTSC.

1.2 IPTV SERVICES

The **VOD (video on demand)** system allows the subscriber to buy films by pressing a key on the remote control through an online system. The selection of films is much wider than that of the current cable TV. Besides, the IPTV application allows several other converging and interactive services.

The **caller ID** service allows the user to see the incoming call on the TV screen through the IPTV application. The user can then choose on the screen whether to take the incoming call through the mobile phone or through the fixed telephone line.

Another service is **my own TV channel**, in which users create their own TV channel, with pictures, home videos, and so on.

Users can also have access to **electronic games** through the IPTV application. The high-definition image that characterizes IPTV allows for high-resolution games and interactivity in a network environment.

As new technologies are developed, several other functionalities will emerge. For the purposes of this paper, only the services described above will be considered.

1.3 PROBLEM DESCRIPTION

In today's increasingly complex business environment, managers must have access to information regarding their roles and responsibilities. One of the methods used to filter down relevant information is the Critical Success Factors - CSFs - (ROCKART, 1979, p.81). Moreover, in order to have a better understanding of the future IPTV consumers, this paper approaches consumption according to the logic proposed by the means-end chains model (GUTMAN, 1982), which allows us to understand that the service has specific attributes that generate benefits which, in turn, are relevant to the values of potential users.

As a result of changes in the telecommunications market, we are thus posing the following question:

What are the CSFs for the launch of the IPTV service by the telecommunication network operators and which values are related to the benefits provided to a specific sample of potential customers?

1.4 GOALS OF THE RESEARCH

Overall goal: Identifying and validating the critical success factors for the launch of IPTV by the telecommunication network operators, and the customers' values supplied by the benefits generated by the IPTV attributes.

Specific goals: (1) Identifying the CSFs for the launch of the IPTV service from the standpoint of the Brazilian telecoms executives and solution developers; (2) identifying the related attributes and benefits, and how they relate with the personal values of a sample composed of college students living in Rio de Janeiro.

2. THEORATICAL FRAMEWORK

2.1 **CRITICAL SUCCESS FACTORS**

In today's increasingly complex business environment, managers must have access to information related to their roles and responsibilities. One of the methods used to filter down relevant information is called Critical Success Factors - CSFs - (ROCKART, 1979, p.81)

Rockart defines as critical success factors small areas of critical activities in which favorable results are absolutely necessary for an individual manager to reach his/her goals. Once those areas of activities are considered critical, managers must have appropriate information that will enable them to evaluate if the events are going sufficiently well in each of these areas. In this context, the author suggests an empirical research method, based on interviews.

2.2 PRODUCT LIFE CYCLE

Porter (1986) states that the Product Life Cycle - PLC is one of the oldest concepts that have been used to forecast the probable course of industry evolution. The author assumes that industry goes through several phases or stages, which are defined by points of modulation of the industry's sales growth rate. Such stages are described as follows:

a) Introduction: sales growth is slow, investment is high and, as a result, profits are virtually non-existent.
b) Growth: the product is quickly being accepted in the market, resulting in sales and profit growth.
c) Maturity: market potential has been reached; therefore, sales growth decreases. There is a trend towards stable or decreasing profits; it is time to make heavy investments in marketing.
d) Decline: profits and sales go down, often irreversibly, resulting in the product extinction.

2.3 MEANS-END CHAIN AND VALUE LISTS

The theory behind the means-end chain, (TER HOFSTEDE et al., 1995) is based on the content and structure of consumer's knowledge, which connects knowledge to product according to a hierarchical cognitive structure involving a simple associative link of product attributes, the outcomes of product use and consumer values.

In order to use this model as the central element in consumer surveys, one must specify its operation, nature and the association of hierarchical levels – attributes (A), outcomes (O), and values e (V) – all of which make up the means-end chain (MEC). Attributes, defined as characteristics of the product to be consumed, are linked by the outcomes of product use to the users according to the value systems.

2.4 LADDERING TECHNIQUE

The laddering technique works with three different phases, in which several tools are used. In the first phase, a survey of the major product attributes is carried out, in order to clearly identify them. In the second phase, the attributes that have been identified during the previous phase are the starting point for in-depth interviews. During this second phase, questions such as "why is this product characteristic important to you?" are intended to make the consumer to express his/her concepts about the product – from the most concrete to the most abstract ones. Once such concepts are identified, they can be benefits, undesired outcomes or values that are somehow related to the product. However, values are not always promptly and clearly identified (REYNOLDS; OLSON, 2001 apud KAMINSKY, 2004).

3. METHODOLOGY

3.1 HYPOTHETICAL-DEDUCTIVE MODEL

The hypothetical-deductive model is based on the perception of knowledge gaps for solving a problem that has been detected. Suppositions, hypotheses and theories for solving it are formulated; prediction of phenomena involved in the hypothesis or theory occurring are tested. Tests consist in the critical discussion and in the comparison of hypothesis to the real facts. They act as a filter, eliminating errors and temporarily

accepting the hypotheses that have been proved, until new suppositions and tests arrive (LAKATOS; MARCONI, 2000, p. 71).

The identification of hypothesis started with the identification of which of Porter's aspects were most relevant for the telecommunications services market, and with the development of a set of critical success factors related to those forecasts for the IPTV introduction stage.

Six hypotheses were developed as a temporary solution for the problem. They try to determine, based on some of Porter's forecasts, what are the critical success factors for the launch of IPTV by the Brazilian telecommunications network operators. The hypotheses were tested, then refuted or confirmed.

H1 – Success in the launch of IPTV by the Brazilian telecommunication operators depends on the integration of different services and on programming content.

H2 – Informative advertising is a CSF for the launch of a new TV service based on the facilities provided by the Internet Protocol.

H3 – A price structure with several payment options for different service packages is a CSF for the launch of IPTV.

H4 – Excellence in infrastructure costs for the acquisition of new technologies, and the proper use and combination of the external network and the existing equipment are crucial for creating competitive edge.

H5 – A marketing strategy focused on the perception of the values that are generated by the IPTV attributes is a CSF for the introduction of these services by the Brazilian telecoms.

H6 – Competition with established cable TV companies will influence the success or failure of the launch of IPTV by the Brazilian telecommunications network operators.

3.2 RESEARCH TARGETS

For the purposes of this research, we used a convenience sample, since we have chosen authors who are more representative in the context. We have used an intentional, non-probabilistic sample, composed of the main telecommunications network operators, consulting firms and vendors in the IPTV area.

The following companies were identified for the sample: OI, BRASILTELECOM, and TELEFÔNICA, which represent 80% of the Brazilian telecom operators' market share. As a consulting firm, TELECO was used. As vendors, MICROSOFT and ALCATEL were used.

A convenience sample was used as the sample for future potential consumers for value analysis. The sample included a group of college students who were users both of the broadband Internet service and the traditional cable TV service. This type of sample was chosen due to the limitations of another type of sample, such as resources expenditure and the time frame needed.

As a result, here are the two groups that were used in the sample:

a) First group:

- 3 telecommunication network operators: OI, BRASILTELECOM, and TELEFÔNICA.
- 2 IPTV platforms/solution providers: MICROSOFT and ALCATEL.
- 1 consulting company: TELECO.

b) Second group:

- 98 college students in the city of Rio de Janeiro who are broadband Internet users and cable TV users.

3.3 Data collection

For the first group, represented by the telecommunications network operators, vendors and consulting firms, data collection was carried out through a questionnaire they filled out by themselves – that is, the questionnaire was read and answered directly by the respondents.

In order to develop a questionnaire to be used by the second group of college students, first the attributes and benefits associated with IPTV had to be identified. Havin that in mind, we reviewed the relevant literature, including articles, manuals, and a qualitative query using the laddering method, as described in item 3.1, with four college students from the city of Rio de Janeiro. Due to the characteristics of the issue under study, we had to use specific attributes obtained through the biographical review, in order to characterize IPTV. Four respondents were chosen: two college students with deeper understanding of IPTV because they worked on a telecom, and another two students who knew nothing about IPTV. We have thus attempt to balance the perceptions of students with different levels of knowledge about IPTV. The process for obtaining the constructs followed predetermined guidelines for the interview. Their responses were carefully analyzed in an attempt to identify relationships that might be associated with the constructs and with the model that was used. This last analysis allowed the generation of indicators confirming the theoretical-empirical review, as well as the generation of other indicators associated with the constructs. It was thus possible de determine the several constructs and the model under examination.

4. RESULTS

4.1 CSF IDENTIFIED IN THE SURVEY

The results, verifying the CSFs priority order of the according to the point of view of the companies' executives, were submitted to the Kolmogorov-Smirnov test, which, according to Mattar (1997), is the most appropriate to the ordinal nature of the variables and to the type of sample under study.

The statistical analysis of the results allowed us to conclude that all seven CSFs for the launch of IPTV derived from Porter's forecasts for the different product life

cycle stage were accepted by the companies surveyed in the telecommunications industry. Thus, all six hypotheses of this research were validated, according to the methodology.

The seven CSFs validated included:

- Programming content (the content provided to the customer);
- Integration of several services (video on demand, electronic games, voice over IP, integration with telephone and Internet);
- Marketing strategies, with a focus on value perception;
- The customer price structure;
- Informative advertising;
- Infrastructure costs for the telecommunications network operator (equipment and network); and
- Competition with the traditional cable TV companies

No CSF reached the 30% threshold that would recommend elimination, the criterion that was established for its rejection. The CSF with the highest rejection rate was “informative advertising”, which was rejected by 23% of the respondents.

4.2 THE LADDERING METODOLOGY AND THE IDENTIFICATION OF ATTRIBUTES AND BENEFITS:

With the laddering methodology and the theoretical-empirical framework analysis defining IPTV, five attributes were determined, as described in Table 01. As to the benefits, the perceptions identified were gathered in only one benefit or eliminated because they were alread part of benefits with the same meaning. The five resulting benefits are described in Table 02.

Attributes
1. Video-on-demand (VOD)
2. Own TV channel
3. Caller ID
4. On-line purchase of films
5. High-definition electronic games

Table 01 – IPTV attributes.
Source: Research data.

BENEFITS
1. Greater comfort and convenience when bying a film without leaving home.
2. The selection of films available is wider than that of the traditional cable TV
3. Greater comfort (on-screen caller ID)
4. Greater interativity through electronic games
5. Relationship with other people through TV

Table 02 – Perceived benefits.
Source: Research data.

The significant links for college students are presented in Figure 2:

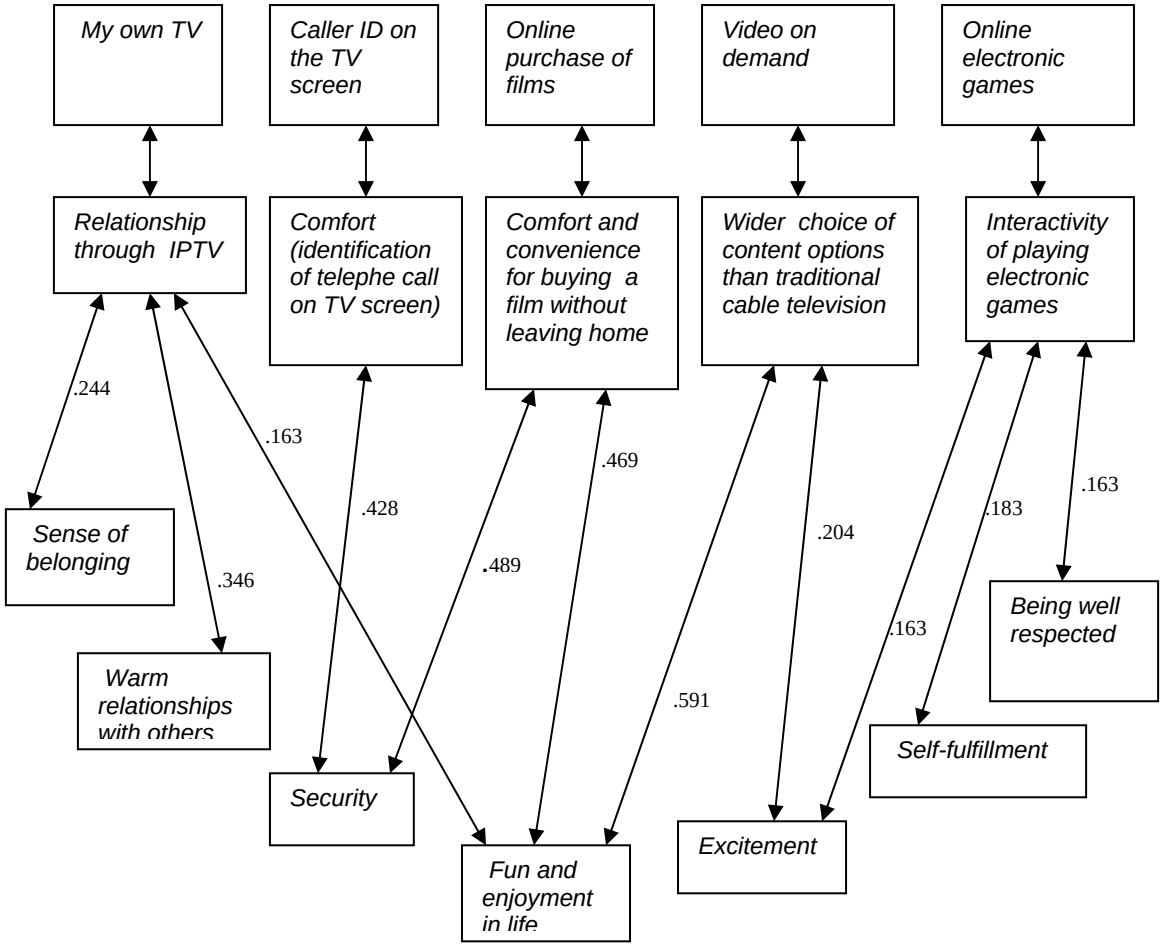

Figure 2 – Means-end Chain probabilities map: attributes/benefits links and values for the surveyed college students.
Source: Research data.

4.3 RESULTS FROM THE MEANS-END CHAIN ADAPTED MODEL

The analyses justifying relationships detected among the consumers' values and the benefits provided by the IPTV services, as shown in Figure 2, according to the Means-End Chain model for the chosen sample, are presented below. The associations that were not found in the executive sample data, but had significant chance of occurring in the college students data will also be presented.

a) Entertainment

According to Khale (1983), the "entertainment" value is linked to the pursuit of a pleasurable and happy life, making the most of situations such as entertainment in a relaxed and calm atmosphere. IPTV is a new technology; nonetheless, as a way to watch TV, it is entertaining, and can bring great pleasure to consumers, through programs themselves and through the traditional cable or open TV.

For potential consumers, the pursuit of this type of entertainment provided by IPTV is met as a result of the link to three benefits: (1) relationship with others through television, (2) a wider selection of films available than that offered by the traditional cable TV, and (3) greater comfort and convenience for buying a movie without having to leave home.

In the examined sample of college students, Benefit 1, "relationship with others through television" has a 0.163 probability of occurring. Individuals already relate virtually through the exchange of e-mails, photos, and short films. In this context, IPTV can be a new form of relationship; one of its attributes is the development of a channel with one's own content, and that can be a source of pleasure and entertainment.

The second benefit related to the "entertainment" value is "wider selection of films available than that offered by the traditional cable TV" has a 0.591 probability of occurring, the highest probability of all. As a result, this benefit provides the main IPTV attractiveness and differential, satisfying the entertainment value for potential consumers. The attribute related to this benefit is video on demand, or VOD, that is, the possibility of watching the desired film at any time. The subscriber is not restricted to

watching that movie at a predetermined time, which happens today in the traditional TV.

The third benefit related to the entertainment value is “greater comfort and convenience for buying a movie without having to leave home”, with a 0.469 probability of occurring. In this case, their relation appears to be associated with the fact that benefits such as comfort and convenience are conductive to situations where consumers feel calm and unconcerned.

b) Excitement

The “excitment” value is related to the pursuit of a more exciting and stimulating life KAHLE (1983). Products or services consumed by individuals should present them strong emotions in life.

The probability of occurrence was 0.204 between this value and the benefit “a wider selection of films available than that offered by the traditional cable TV” and 0.163 for the benefit “greater interactivity through electronic games”. Such associations could be explained by the fact that the larger number of options and interactivity make watching TV much more stimulating and exciting.

c) Security

The “security” value conveys the individual’s attempt to avoid misfortunes (KAHLE, 1983). Individuals who place high priority on this particular value are trying to feel safe and protected from circumstances that might cause psychological or physical harm, that is, things should play out as desired, with no unwanted consequences due to accidents or by chance.

The probability of occurrence detected was 0.204 between this value and the benefit “convenience” ($p = 0.428$). In this case, the security value could have been chosen more due to the direct influence of the identifying attribute than to the benefit of convenience. This association can be explained by the caller ID, a device well known by most telephone users. The probability of occurrence was 0.32 for the absence of a value for this benefit, the only one with significant value of all benefits presented. This probability of a non-existing value might have occurred because the respondents were highly influenced by the traditional caller ID and did not promptly realize the comfort of

choosing whether or not to take the call, as well as the possibility of transferring the call to other devices through the remote control.

The second benefit, “greater comfort and convenience for buying a film without having to leave home” had a 0.489 probability of association with the securitt value. Such association can be explained by the fact that the electronic purchase, for instance, eliminates the risks of traffic accidents or attacks on the streets, especially in Rio de Janeiro (where all individuals included in the sample live), a city facing a huge urban violence crisis.

d) Self-fulfillment

The “self-fulfillment” value includes a high priority for successfully doing whatever it is that the individual wants to do (KAHLE, 1983). In order to meet it, individuals behave according with the orientation of whatever satisfies them.

A benefit that meets this value is “greater interactivity through electronic games”, with 0.183 probability of occurring. This association can be better understood in the passage below, written by Professor Fátima Cabral, from the Department of Sociology and Anthropology, Unesp (Universidade Estadual de São Paulo):

> [...] games seem to provide players with the possibility of inclusion in an emotionally richer reality than that of their own experience, particularly when their reality does not match their creative potential. While reality is often considered illegitimate, in games what matters is the electronically experienced fantasy. Thus, electronic games, specially those suggesting violence, possibly work as a kind of catharsis for anguish, dreams, and for the inclination young people have towards dangerous situations, competitive challenge and experience.

Thus, the greater interaction through network games might be related to the individuals’ self-fulfillment, once games allow their inclusion into a highly emotional virtual reality.

e) Warm relationships with others

The “warm relationships with others” value is related to the ability to meet people, make new friends, and develop passions, that is, emotionally strong relationships.

The IPTV benefit associated to this value is “relate to other people through TV”, with a 0.346 probability of occurring. The possibility of creating a TV channel with personal content, a channel that can be watched by close friends is an attribute of the IPTV environment. This attribute generates the benefit of being able to relate to other people through TV which, in turn, allows the development of close friendships.

f) Sense of belonging

The “sense of belonging” value is related to the pursuit of inclusion and the feeling of being needed in the group. Individuals who make it their priority, carry out group activities. As a result, they consume products or services that are related to a group of persons.

The benefit matching this value, according to the research, is “relationship with other people through TV”, with a 0.244 probability of occurring. The relationship of this benefit with the above-mentioned value seems to be centered in the idea that the individual who wishes to be part of a group would look for ways to allow such social participation. In this case, information exchange by means of an own TV channel is an option to be considered in the pursuit of group activities.

g) Being well respect

The “being well respected” value is related to the need to be admired and acknowledged by others. It corresponds to the recognition and admiration from others. It can suggest that individuals will consume innovative services just for the sake of being acknowledged by their peers. Therefore, the association of this value with the benefit “greater interaction through network games”, with a 0.163 probability for the research sample, could be related to the need to be admired or acknowledged through the privilege of being able to consume interactive and high technology services, for instance, network games.

5. CONCLUSION

We have reached the following conclusion: The Critical Success Factors for the launch of IPTV by the Brazilian telecommunications network operators are:

- The content of programming or the content offered to the customer;
- Integration of different services, such as video on demand, games, voice over IP, telephone and Internet;
- Marketing strategies with a focus on value perception by customers;
- Price structure to customers;
- Informative advertising;
- Infrastructure costs for the operator (equipment and Access network); and
- Competition with traditional cable TV companies.

As to the values that are not met with benefits generated by the IPTV attributes, according to the Means-End Chain methodology, and based on the view of a specific sample of college students, seven values were identified as the most important values in the research. They are:

- Entertainment and fun
- Excitement
- Warm relationships with others
- Sense of belonging
- Self-fulfillment
- Being well respected
- Security

REFERENCES

AGRAVAL, Dakshi; Beigi, Mandis S.; Bisdikian, Chatschik; Lee, Kang-Won. *Planning and Managing the IPTV Service Deployment.* IM.Integrated Network Management, 2007. May 21, 2007, 10th *IFIP/IEEE International Symposium*. pp:353 – 362.

ARNASON, Bernadin. *IPTV and the Evolution of Video Delivery*. 2006. White paper. NTCA – National Telecommunication Cooperative Association. Available at: <http://www.ntca.org/ka/ka-2.cfm?Folder_ID=546> . Accessed on February 20, 2007.

BAXTER, Mike. *Projeto de Produto*: *Guia Prático para o Design de Novos Produtos.* 2a. edição, São Paulo: Edgard Blüncher, 2003.

BURKHART, Kimberly. "Competitive Intelligence and the Product Life Cycle". *Competitive Intelligence Review*. Vol. 13(3), 2001. John Wiley & Sons, Inc. 2001.

CADERNO CPqD TECNOLOGIA. *Impacto da introdução da tecnologia de voz sobre IP no desempenho de operadores tradicionais*. Campinas, v.1, n.1, p. 159-164, January/December 2005.

CARALLI, Richard. *The Critical Success Factor Method*: *Establishing a Foundation for Enterprise Security Management*. CMU/SEI-2004-TR-010. Software Engineering Institute, Carnegie Mellon, July 2004.

CASTELLS, Manuel. "Communication, Power and Counter-power in the Network Society". *International Journal of Communication 1* (2007) , pp. 238-266.

COOPER, Donald; SCHINDLER, Pamela. *Métodos de Pesquisa em Administração*, 7º. ed. Porto Alegre: Bookman, 2003.

DAVIS, F. "Perceived Usefulness, perceived ease of use, and user acceptance of Information Technology". *MIS Quartely*, v.13, n. 3, p. 319-340, 1989.

ESPARTEL, L. B.; SLONGO, L. A. "Atributos de produto e motivação de compra no mercado jornalístico do Rio Grande do Sul", *Annals of the XXIII ENANPAD*, Foz do Iguaçu, 1999.

GONÇALVES, R. (2002). A empresa transacional. In: KUPFER,D; HASENCLEVER, L. (Org.) *Economia Industrial*: *fundamentos teóricos e práticas no Brasil*. Rio de Janeiro: Campus, 2002, Chapter16.

GUTMAN, J. A. "Means-End Chain Model Based on Consumer Categorization Processes", *Journal of Marketing*. Vol. 46, p. 60-72, 1982.

HASSEGAWA, Lauro. *O Papel das Interfaces no Sucesso de Projetos Utilizando Equipes Virtuais*. 2002. MA thesis (Mestrado em Administração de Empresas). Universidade de São Paulo, São Paulo, 138 f. 2002.

HEGEMBERG, Leonidas. *Etapas da investigação científica*. São Paulo: EPU-EDUSP, 1976.

INFONETICS RESEARCH. *IPTV equipment sales exploding to $6.8B, subscribers to 68.9M by 2009*. 2007. Available at: <http://www.infonetics.com/resources/purple.shtml?ms06.vid.2h.nr.shtml>. Accessed on: February 21, 2007.

ITU World Telecommunication/ICT Development Report 2006 – Measuring for Social and Economic Development. Available at: <http://www.itu.int/ITU-D/ict/publications/wtdr_06/index.html>. Accessed on January 10, 2007.

JENSTER, P.V. *Using critical success factors in planning. Long Range Planning*. V. 20, n. 4, p. 102-109, 1987. Available at: www.esmeraldinsight.com. Accessed on May 10, 2007.

KAHLE, L. R; BEATTY, S. E.; HOMER, P. "Alternative Measurement Approaches to Consumer Values: The List of Value (LOV) and Values Life Style (VALS)". *Journal of Consumer Research*, vol. 13, December, 405-409, 1986.

KAHLE, L. R; KENNEDY, P. F. "Using the List of Values (LOV) to understand consumers". *The Journal of Consumer Marketing*. vol. 6, n. 3, p. 5-12, Summer. 1989.

KAMAKURA, W.; MAZZON, J. A. "Values Segmentation: A Model for the Meansurement of Values and Value Systems". *Journal of Consumer Research*, vol. 18, September, p. 208-218, 1991.

KAMAKURA, W.; NOVAK, T. "Value-System Segmentation: Exploring the Meaning of LOV". *Journal of Consumer Research*, vol. 19, June. 1992.

KAMINSKI, Sergio Ricardo. *Valores, Benefícios, Atributos e Dimensões Simbólicas no consumo de música do estilo New metal: Uma análise exploratória*. Master's thesis. 2004. Universidade Federal do Paraná. Curitiba, PR. 2004.

KLEPPER, Steven. "Entry, Exit, Growth and Innovation over the Product Life Cycle". *American Economic Review*, vol 86, no. 3, Jun 1996, pp 562-583.

KOTLER, Philip; ARMSTRONG, Gary. *Princípios de Marketing*. Rio de Janeiro: LTC, 1999.

LAKATOS, Eva; MARCONI, Marina. *Metodologia Científica*. 2. ed. São Paulo: Atlas, 1991.

LEÃO, André Luiz M.; MELLO, Sérgio C. Benício. *The Means-End Approach to Understanding Customer Values of a On-Line Newspaper*. 2007. Article published ar

the *BAR* magazine, v. 4, n. 1, art. 1, p. 1-20. Available at: <http://www.anpad.org.br/bar>. Accessed on: May 10, 2007.

MARCONI, Marina; LAKATOS, Eva. *Técnicas de pesquisa*: *planejamento e execução de pesquisas, amostragens e técnica de pesquisa, elaboração, análise e interpretação de dados*. 3. ed. São Paulo: Atlas, 1996.

OLIVA, R. *Relatório Integrado Setorial das Telecomunicações*. Instituto de Economia. Universidade Federal do Rio de Janeiro (UFRJ). Rio de Janeiro, 2004.

PORTER, M. E. *Estratégia Competitiva – Técnicas para Análise de Indústrias e da Concorrência*. 7. ed. Rio de Janeiro: Campus, 1986.

QUINTELLA, H. L. M. M. ; ROCHA, H. M. ; ALVES, M. F. . "Automobile Project management: Critical success factors in product start-up" (Qualis NA). *Produção* (São Paulo), São Paulo, v. 15, n. 3, p. 334-346, 2006.

QUINTELLA, H. L. M. M. ; ROCHA, H. M. . *Análise dos fatores críticos de sucesso no lançamento de veículos automotivos na indústria sulfluminense*. In: II Simpósio de Excelência em Gestão e Tecnologia, 2005, Rezende - Rio de Janeiro. II Simpósio de Excelência em Gestão e Tecnologia. Rezende - Rio de Janeiro : AEDB - Associação Educacional Dom Bosco, 2005. v. 2. p. 1-27.

ROCKART, F. J. *Critical Success Factors*: *A 2002 Retrospective*. Center for Information System Research, Sloan School of Management, Massachusetts Institute of Technology, 2002.

ROCKART, F. J.; BULLEN, C. *A Primer on Critical Success Factors*. Center for Information Systems Research, Sloan School of Management, Massachusetts Institute of Technology, 1981.

ROKEACH, M. "Change and Stability in American Value Systems 1968-1971", *Public Opinion Quarterly*. Vol 38 (Summer), 232-238, 1974.

ROKEACH, M. *The Nature of Human Values*. New York: Free Press, 1973.

SCHWALB, Micah. *IPTV:* "Public Interest Pitfalls". *Journal on Telecommunications and High Technology Law*, Vol. 5, p. 305, 2006 Available at SSRN: http://ssrn.com/abstract=960248

SCHWARTZ, S.H. e BILSKY, W. "Towards a Theory of the Universal Content and Structure of the Values: Extensions and Cross–Cultural replications". *Journal of Personality and Social Psychology*. Vol 53, 1987.

SIEGEL, Sidney. *Estatística Não-Paramétrica para as Ciências do Comportamento*. São Paulo: McGraw-Hill do Brasil, 1981.

SOARES DE MELLO, J.C.C.B.; Gomes, L.F.A.M.; Gomes, E.G. & Soares de Mello, M.H.C. "Use of ordinal multi–criteria methods in the analysis of the Formula 1 World Championship". *Cadernos EBAPE.BR*. Fundação Getúlio Vargas. Volume III – number 2 – July 2005.

SOARES DE MELLO, J.C.C.B.; Quintella, H.L.M.; Soares de Mello, M.H.C. (2004). "Avaliação do desempenho de alunos considerando Classificações obtidas e opiniões dos docentes". *Revista Investigação Operacional* 187 – 196.

TER HOFSTEDE, F.; AUDENAERT, A.; STEENKAMP, J. B. E. M.; WEDEL, M. "An Investigation into the Association Pattern Technique as a Quantitative Approach to Measuring Means-end Chains". *International Journal of Research in Marketing*, 15, p. 37-50, jan. 1998.

VEIGA NETO, A. R. (1999) *Atitudes de consumidores frente a novas tecnologias*. Master's theses. PUC-Campinas. Campinas, SP, Brasil.

WAUTERS, Tim; Vlaeminck, Koert ; Meerssche, W. V. ; Turck, Filip; Dhoedt, Bart; Demeester, Piet; Berghe, S. V.; Six, Erwin e Caenegem, T. V. *IPTV Deployment – Trigger for Advanced Network Services*. FITCE — Federation of Telecommunications Engineers of the European Community. Artcle published at the 45th Congres, Athens, September 02, 2006.

ZEITHAML, Valerie A.; BITNER, Mary Jô. *Marketing de Serviços - A empresa com foco no cliente.* Porto Alegre: Bookman, 2003.