Translating the Service Quality Gaps into Strategy Formulation. An Experimental Case Study of a Greek Academic Department.

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Abstract:

The purpose of the current research is to develop a strategic service quality focused framework in a Greek Academic Department, translating its service quality (SQ) gaps into specific strategic directions from a "student-focused" perspective. The research is separated in two parts and follows the recommendations of Tan and Pawitra (2001), using various SQ measurement techniques and management tools. In the first part a SWOT analysis is conducted and a SWOT matrix is produced in order to assess the Department's position, mission and vision as well as to construct the "Academic" questionnaires based on the SERVQUAL method and the Kano's Model. The proposed questionnaires were applied in 180 undergraduate students.

The second part incorporates the Quality Function Deployment (QFD) framework which is able to translate the customers' voice (WHATs) into specific processes and measurable actions (HOWs), generating a realistic approach for successful management. The incorporation of SERVQUAL-Kano's model in the QFD rated the importance of the WHATs, identifying the gaps which function as obstacles in the attainment of the Academic Department's superior SQ. With the assistance of the SWOT matrix the main strategies of the Academic Department were generated, feeding the HOWs in the QFD.

According to the findings, through the student priority level of SERVQUAL and Kano model, the most important SQ dimensions were found to be: Facilities/Equipment/Services, Abilities and Capabilities of Faculty, Educational/Course Content and Department's Reliability and Reputation. Finally, with the assistance of QFD correlations, a set of strategic directions were proposed such as Accredited Programs, Proactive Partnerships with Corporations, Well-Maintained and Attractive Buildings etc.

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1. Introduction

Examining the conditions on operating in highly competitive markets where branding consists the basis of differentiation, the attainment of high service quality is the ultimate purpose of enterprises for sustainability and profitability (Yeo, 2008). As Maltzer and Hinterhuber (1998) mention an increasingly number of organisations place considerable attention on customer satisfaction indicators of service performance as a resultant of the businesses long term viability. The intangibility of services led numerous researchers in their attempt to measure the notion of service quality. The sophisticated customers seek high quality of services in order to cover a great amount of their requirements and expectations while they attempt to achieve the greatest levels of satisfaction (Wang & Ji, 2010). In this light, Porter (1996) mentioned that setting strategies on the differentiation of products and services against competition is able to lead service/product providers in sustainable competitive advantages, to serve new and existing customer groups and to increase their market share.

During the last decades, service quality is a core subject in the Higher Education (HE) agenda where the intensive transformation to the knowledge-based economy has gained considerable attention. In the light of those innovations, Academic Institutions attempt to meet the new challenges of the fast-moving business context, the technological developments and the social changes. The challenging conditions forced HE to acquire quality assessment procedures in order to develop and maintain their effectiveness and efficiency (Elena-Perez et al., 2011; Tsinidou et al., 2010). As Yeo (2008) states, "teaching is a service while learning is an experience". The combination of these two notions is able to force Academic institutions to offer unique diverse interests to potential students, project research options, greater learning experience as well as community involvement. Lomas (2004) highlights another dimension in higher education, where institutions act in a managerial point of view developing measurable functions of outputs in order to measure the SQ and to increase their value and competence.

2. Literature Review

2.1 Service Quality in Business Context

According to the definition proposed by Gronroos (2002), service is a process of interaction between two counterparties, customers and service providers; where its main purpose is the fulfillment of customers' needs. Kvist and Kletsjo

(2006) mention some unique characteristics of services such as the intangibility, the customers' influence to the service development as well as the difficulty of customers to assess the service prior to their experience and consumption. According to Edvardsson (1998), the proper service modification and design has a significant influence on customer anticipations. In this light, quality of services plays an important role to the final choice.

SQ is defined by Bergman and Klefsjo (2003) as the ability of service provider to satisfy or even to exceed customers' expectations. As mentioned by Sahney et. al (2004) the SQ lies in the "eyes of the beholder" as a customer-centered perspective with customer satisfaction at the top of the iceberg. Mukherjee et al. (2003) debates the impact of SQ in the financial performance of an enterprise. On the other hand, Peters (1999) suggests that quality can be viewed as a 'magic bullet' which enables organisations to provide superior customer service, to increase their margins and to improve goods and services. In the same manner, a survey conducted by Rapert and Wren (1998) examined the association of enhancing a 'quality-based strategy' not only on customer satisfaction but also on the financial performance. Furthermore, as they pointed out, SQ affects the financial performance of an organisation, moving to higher productivity, customer loyalty and market share improvement. However, even excellent service providers are difficult to achieve SQ excellence (Chen et al., 2011). According to Rodie and Martin, (2001), the continuous changing operating environment and the alternation of customer expectations are considered to be key determinants of enhancing superior SQ. More specifically, the following sources pursue the levels of SQ: Firstly, the Intra-industry competition where consumers are able to judge and evaluate multivariate services and compare how well each service fulfils their expectations. Secondly, the new entrants of companies challenge the existing base of organisations. These companies benefit from the 'low entry barriers' and the 'low start-up costs'. Thirdly, the existence of substitute services also presents another confront. The inter-industry competitors provide services to customers with substitute (equal) features. As mentioned by Kannan and Tan (2007), in the fierce competition, quality as well as value added is regarded to be the key drivers of success.

2.2. Service Quality Measurement and Developments Methods

According to Caruana and Pitt (1997) the SQ measurement had been diachronically based on the form of questionnaires. Yang (2003) highlighted that the most common methods used in measuring SQ and judging its performance was customers' surveys, customer interviews and customer value workshops.

In 1988, Parasuraman, Zeithaml and Berry introduced the SERVQUAL as an instrument of measuring the SQ performance (Lee & Yoo, 2000; Zisis et al., 2009). In an earlier study, Parasuraman et al. (1985) had developed the 5-Gap model which was proposed as the Gaps of attaining superior SQ, referring to 10 determinants of SQ (Figure 1). In 1988, they revised and adjusted their conceptual model, well-known to date as 22 items/five dimensions model, focusing on the

Reliability, Assurance, Tangibles, Empathy and Responsiveness (RATER) as the key dimensions of SQ (Lee & Yoo, 2000). SERVQUAL 'aims to measure' the difference between perceptions and expectations 'of the five dimensions' following the disconfirmation model (Robinson, 1999).

Figure 1. The 5 Gap model
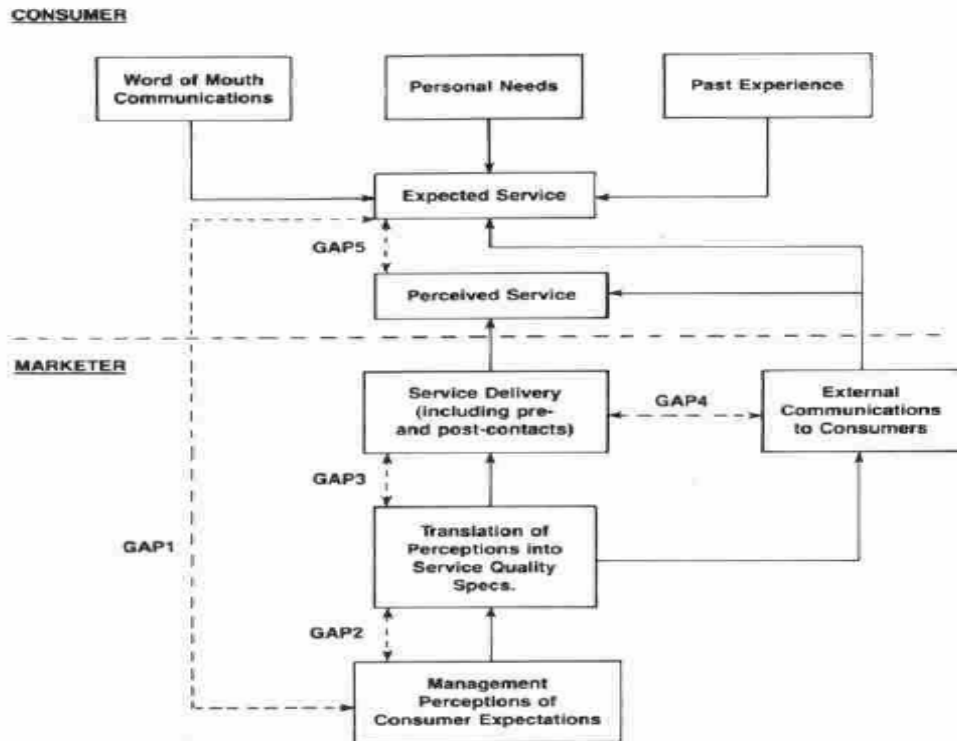
Adopted from: Parasuraman et. al, 1985

The SERVQUAL instrument is constituted from three parts and operated as follows: a set of 22 items in the form of a questionnaire is applied to consumers in order to identify their perceptions and expectations (Robinson, 1999). The customers are asked to rate their perceptions and expectations in a 7-point-scale from 1 = strongly disagree to 7 = strongly agree (Robinson, 1999). The survey's results are collected and categorized into the five dimensions (Franceschini et al., 1998). In that way, using their rating scores, the gaps between perceptions minus expectations are determined as follow (Robinson, 1999):

$$SQj = \frac{\Sigma Pij - Eij}{nj}$$

SQj - Service Quality of Dimension j
Eij - Expectations of the firm for item i in dimension j
Pij - Perceived performance of the firm on item i in dimension j
nj - Number of items in dimension j

In addition, the third part of SERVQUAL asks customers either to weigh the 22 items or to rate each of the five dimensions according to their importance in 'a scale out of 100' (Burch et al., 2004). As a result, an 'average score' is identified for each of the 5 dimensions as well as 'an overall SQ score' is determined using the 'mean score' of the RATER. Thus: 1. if the gap is positive, the SQ is regarded to be better than expected, 2. if the gap is zero, SQ is good, and 3. if the gap is negative, improvements are demanded (Robinson, 1999).

However, Parasuraman et al.'s SERVQUAL was critiqued by various scholars. Dotchin and Oakland (1994) stated that the dimensionality of SERVQUAL depend on the context which is applied and cannot be generalized in any service industry. In addition, Caruana and Pitt (1997) argued that gathering data for both perceptions and expectations is in doubt, as expectations may be already incorporated in the customers' perceptions. Moreover, Tan and Pawitra (2001) mentioned that SERVQUAL is not an instrument, so as innovation to be achieved.

Cronin and Taylor were the main source of SERVQUAL's criticism. They clearly stated that SQ should be determined only by its performance, against the claims of Parasuraman et al.'s performance minus expectations model. As a result they introduced SERVPERF (Lee & Yoo, 2000). SERVPERF follows the same 22-item-scale/5 dimensions as SERVQUAL. Their difference is derived from their operation: now, the 22 items relate only to performance. The respondents are asked to rank both the performance and importance of the 22 items, using the same 7 rating scale. The results are collected and 'treated as uni-dimensional and a factor analysis' is conducted. Finally the items are categorized into the 5 dimensions, similar to SERVQUAL (Burch et al., 2004).

Various instruments similar to SERVQUAL and SERVPERF have been applied, such as Teas' Normed Quality and Evaluated Performance (Seth et al., 2006) and QUALITOMETRO (Franceschini et al., 1998). Another important tool of examining the SQ, is the model proposed by Kano et al. (1984). The philosophy of this model was to classify the quality characteristics applying a questionnaire of two pairs of questions using their functional and dysfunctional form (Mikulic & Prebezac, 2011). Wang and Ji (2010), conducting a research in the mobile banking service, give an example of formulating the Functional (F) and Dysfunctional (D) form of the Kano's pair of questions as follows:

Functional: *"When opening a new bank account, how would you feel if you were provided with the possibility of managing your bank transactions via your mobile phone?"*
Dysfunctional: *"When opening a new bank account, how would you feel if you were not provided with the possibility of managing your bank transactions via your mobile phone?"*

The questions are classified in six categories according to the correlated responses of F and D, as (Wang & Ji, 2010):

1. *Must-be (M):* Customers prefer the must-be quality attributes. When the must-be attributes are not fulfilled the customer feel dissatisfied.
2. *One-dimensional (O):* Customer satisfaction is positively and highly related to one-dimensional attributes. The greater the level of one-dimensional attributes, the higher is the amount of customer satisfaction.
3. *Attractive (A):* Customer satisfaction tends to be greater when the Attractive attributes are fulfilled. Conversely, lack of satisfactory fulfillment does not lead in customer dissatisfaction.
4. *Indifferent (I):* Customers are likely to be indifferent in those quality attributes.
5. *Reverse (R):* Customers have conflict requirements among these quality attributes.
6. *Questionable (Q):* Debated customers' needs.

The correspondence of the pair wise correlations are analyzed and categorized using an evaluation table and the means are calculated. The final classification criterion is the "frequencies of single respondent categorization" (Mikulic & Prebezac, 2011). According to the Kano et al. (1984), the M category is essential, the O category is important and A category ultimate, according to their importance.

However, Tan and Pawitra (2001) clearly stated that these instruments are looking only in the one side of the river. Despite the fact that these tools are able to identify the possible gaps of SQ, they do not provide applications of how to "secure" them. Managerial actions are demanded in order operational strategies to be identified. Hence, they suggest that the proposed instruments should be incorporated 'with other SQ tools' in order specific actions to be applied. SQ should be measured in every function of its process. Zineldin (2005) mentions that the key concern of measuring and controlling the SQ is to give an accurate 'reflection of the way in which' the resources are deployed, providing comparison 'between service production and delivery systems'. Therefore, more comprehensive frameworks should be developed in order to identify the criteria with which specific measures of SQ to be developed.

Going further to the development of more complicated quality assessment frameworks, various tools have been developed taking into consideration the managerial point of view of enhancing SQ. QFD is used as a planning frame of fulfilling customers' demands and it is a widely used implement of the examination of SQ progress (Pawitra & Tan, 2003). As mentioned by Baki et al. (2009), QFD introduces a combination of seven associated matrices where the correlation of WHATs and HOWs is identified. The set of the matrices integrate the following areas (Figure 2):

**Figure 2. The House of Quality (HoQ) or QFD framework.**
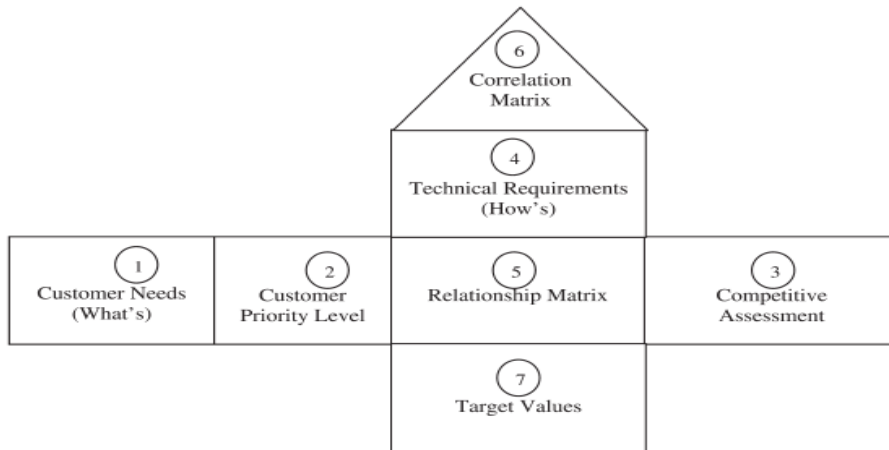
The process of the correlation follows several logical steps where the customers' requirements (WHATs) are identified (1) and the priority level of those necessities are examined (2). Another stage involves the area of competitive assessment (3), where the products/services are challenged with competitive benchmarks. The HOWs are considered to be the objectives which cover customers' needs (4). In this light, a correlation matrix between WHATs and HOWs is developed (5-6). The correlation is rated as: Strong = 9.0, Medium = 3.0 and Weak = 1. Finally, the target values are an evaluation factor of the correlation between WHATs and HOWs (Baki et al., 2009).

In addition, Tan and Pawitra (2001) suggested a model which incorporates SERVQUAL and Kano's model into the QFD (Figure 3). As they stated, the incorporation of SERVQUAL-Kano's model is able to rate the importance of the WHATs in the HoQ. In that way, QFD has the ability to identify the gaps which function as obstacles in the attainment of superior SQ and to apply specific actions/measures to improve SQ.

Figure 3. The incorporation of SERVQUAL-Kano into QFD
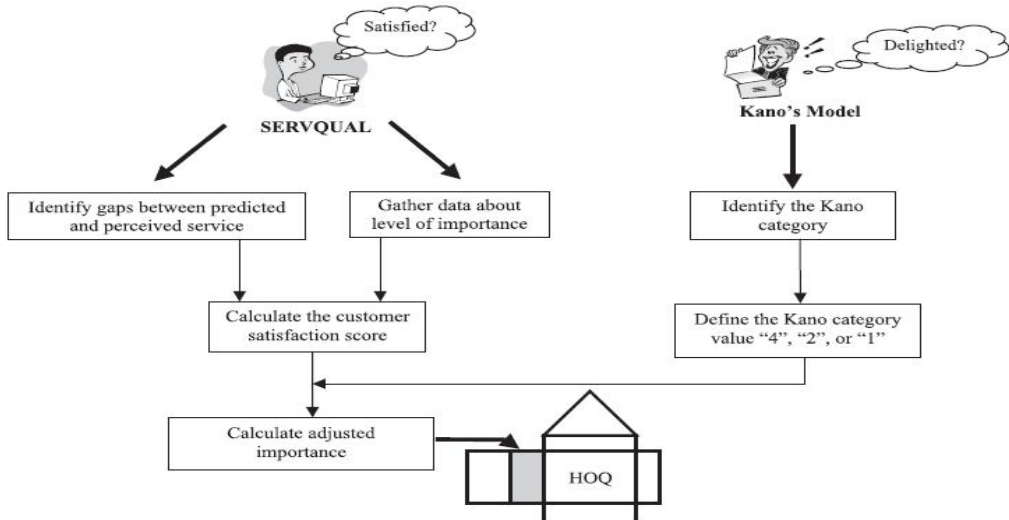
2.3. Service Quality in Higher Education

Moore (1983) highlights the importance of HE in the developed and developing countries as a core ingredient of enhancing and sustaining the culture and standards of living. Furthermore, he pointed out that the aims which HE Institutions should fulfill extend from providing research and discovery prospects, to promoting and enhancing learning and cultural developments.

European universities operate in continuous changing and challenging environment, where the development of knowledge based economy act as a motive for further improvement. In this light, Universities have to take upon the opportunity to apply procedures and strengthen their relationships inside and outside of their operating environment, in order to sustain and compete in the long-term (Elena-Perez et al., 2011). Huisman and Currie (2004) give emphasis to four important changes that have been arisen in the HE context:

1. *Changing relationships between governments and universities:* There is a transition from central control by governments to greater university autonomy.
2. *Efficiency and value for money:* HE Institutions should improve their quality of services in order to improve their efficiency, while they deploy their funds effectively.
3. *Internalization of higher education and globalization:* The release of the education market has changed the boundaries and gives space for the entrance of other foreign higher education institution in local education.
4. *Information and communication technology development:* The expansion of technology development allows HE Institutions to operate and communicate

their offering Academic packages and services more easily in the international environment.

In this changing environment, Academic Institutions have to place considerable attention to the services which they provide while they should develop quality assessment procedures in order to offer academic excellence in all their functions. The advance in "specialist and interdisciplinary courses", the "diverse research interests", the facilities and the future prospect opportunities should be central in the HE mission and vision (Yeo, 2008), as the students tend to be more demanding considering their criteria which are able to motivate them either to recommend or to select a University (Huisman & Currie, 2004).

Brochado (2009) mentions the significance of SQ in the HE literature where the examination of SQ tends to be a factor of continuous improvement and enhancement. However, he debates which the ideal definition of SQ in HE is. Tsinidou et. al (2010) point out the great diversity of the definitions related to the notion SQ in HE, where different points of view are presented (Table 1).

Table 1. Service Quality definitions in Higher Education

Excellence in education	Peters & Waterman (1982)
Value addition in education	Feigenbaum (1951)
Fitness of educational outcome and experience for use	Juran & Gryna (1988)
Conformance of education output to planned goals, specifications and requirements	Gilmore (1974); Crosby (1979)
Defect avoidance in the education process	Crosby (1979
Meeting or exceeding customers' expectations of education	Parasuraman et. al (1985)

Source: Nagata et al., 2004; Tsinidou et al., 2010

The services which Academic Institutions provide are in their majority intangible and there is a complexity on their depiction into measurable aspects. In HE, SQ is subject of a great diversity of stakeholders extending from students, faculty and staff to organisations, parents and society in general. Thus, agency problems may arise due to the fact that each group place multiplicity attention on SQ. In this light, a rational approach has to be developed from HE institutions in order to satisfy all the requirements related to stakeholders' expectations (Nagata et al., 2004; Trivellas & Dargenidou, 2009).

The constraints and shortfalls of SQ attainment in HE were highlighted by Yeo (2008) where the deficiencies in the absence to recognize the customer expectations, the invalid SQ standards, the lack of matching promises of deliveries, the gaps in service performance as well as the level of tolerance were ignored. These

shortfalls are engendered from the shortage of the universities to alter their programs, to deliver academic excellence and to diversify their operations and services (Yeo, 2008).

In 2005, the European Association of Quality Assurance in HE set some important objectives to be achieved from Academic Institutions related to internal quality assurance systems. These issues include quality assurance of teaching staff, facilities and resources, the communication with external bodies, program and degree information and quality assessments (Tsinidou et al., 2010).

2.4. Service Quality in Higher Education

The topic of SQ in the HE realm has acknowledged an elevating attention, where institutions make use of service industries practices to evaluate their quality performance (O'Neill & Palmer, 2004). As pointed out by Ford and Bach (1997), the education managers have acquired various applications in order to assess and measure the students' perceived SQ. However, it is debated in to what extend these techniques are able to be capable to fulfill their task, as regarded to be "costly and complicated". Thus, an incorporation and combination of a mixture of qualitative and quantitative methods is demanded for application (Table 2).

Table 2. Summary of SQ methods used in HE

Qualitative methods	Quantitative methods
Interviews	Face to face (exit surveys)
Focus groups	Indirectly (by telephone)
Customer-role play and observation research	Classroom questionnaires & comments cards

Source: O'Neill & Palmer, 2004

Summarizing the SQ measurement techniques in HE, Brochado (2009) mentions that SERVQUAL and SERVPERF have numerous implications in HE. In 2006, Firdaus introduced a new approach of measuring SQ in HE where a set of 41 industry-scale service quality attributes were divided in five dimensions: non-academic aspects; academic aspects; reputation; access; program issues. In addition the studies of Ginss et al. (2007) and Wilson et al. (1997) attempted to evaluate the students' perceptions related to learning and teaching aspects making use of the course experience questionnaire. Furthermore, Trivellas and Dargenidou (2009), measure the teaching and administration quality combining the frameworks of Waugh (2001) which is related to the administrative and supportive SQ as well as the model of Owlia and Aspinall (1996) which emphasizes on the teaching dimension of education in order to assess the teaching and administration quality. Finally, going further to more complex assessment of SQ, Tsinidou et al. (2010) referred to management tools and quality assurance techniques such as QFD and TQM respectively.

3. Research Methodology

3.1. Sample and Data

The current research attempts to develop a strategic SQ focused framework in the field of the HE. A leader Greek Academic Department participated, where the empirical analysis was carried out. The current study employs a survey in the form of questionnaires, where a representative number of 180 undergraduate students of the Greek Academic Department were participated. Following the recommendations of Tan and Pawitra (2001) and the assistance of various SQ measurement techniques and management tools, the strategy formulation was developed.

3.2. Objectives and Methods

An illustrative case study of a Greek Academic Department was conducted where the following issues are explored (Figure 4):

1. Conducts a SWOT analysis where a SWOT matrix was developed, in order to acquire strategic issues, directions and initiatives
2. Sets an "Academic" questionnaire using the forms of SERVQUAL and Kano models, translating the SWOT matrix strategic initiatives in SQ dimensions
3. Determines the SQ gaps using the SERVQUAL's results, while categorizing the weak dimensions with the assistance of Kano's model
4. Incorporates the SERVQUAL and Kano into the QFD framework in order to highlight strategic issues
5. Proposes a set of strategic formulation objectives for the Department's SQ improvement.

Figure 4. The proposed methodology of the study
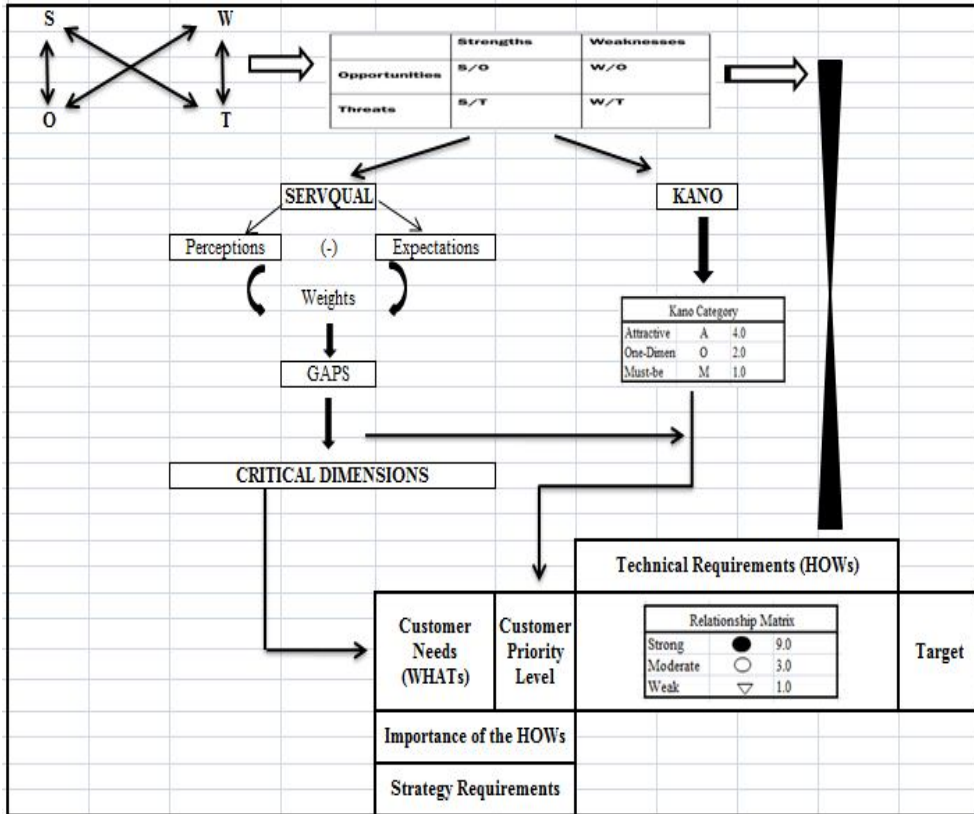
a. SWOT Analysis

The first examination objective identifies the Strengths, Weaknesses, Opportunities and Threats of the Academic Department's environment, where the Directors Board was participated in the process. A competency based view of the SWOT analysis was employed where the capabilities of the Academic Department were identified in order the initiatives to be chosen for strategy development (Dyson, 2004).

Figure 5. The SWOT Analysis

Adopted from: http://www.google.gr/imgres
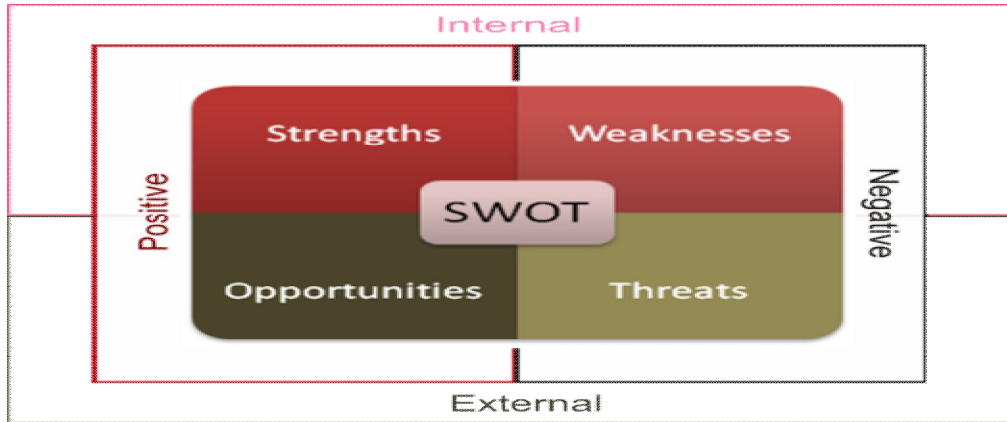
Going further to our analysis, a SWOT matrix was developed (Figure 6). The SWOT 'wizardry' constitutes the corresponding of particular internal and external factors, which generates a strategic matrix of sensible correlations. It is necessary to mention that the internal factors are under the department's control, such as finance, marketing, while the external factors such as the governmental, technology, contest are apart from the department's charge (Ip & Koo, 2004). The four groupings are known as Maxi-Maxi (strengths/opportunities), Max-Mini (strengths/threats), Mini-Max (weakness/ opportunities) and Mini-Mini (weakness/threats). The major cause, which corresponding these factors, will generate strategic initiatives (Lee & Lo, 2003).

Maxi-maxi (S/O)	This grouping indicates the company's strengths and opportunities. In reality, a company must attempt to develop its strengths to the maximum and to invest in new opportunities.
Maxi-mini (S/T)	This grouping indicates the company's strengths in relation to threats. In reality, a company must attempt to utilize its strengths to escape or reduce threats to the minimum.
Mini-maxi (W/O)	This grouping indicates the company's weaknesses in consideration with opportunities. It is an effort to overcome the company's weaknesses by taking advantage of the new opportunities.
Mini-mini (W/T)	This grouping indicates the company's weaknesses in relation to the existing threats. This is absolutely the most self-protective policy, to reduce to the minimum the company's interior weaknesses and escape exterior threats

Figure 6. The four combination of SWOT Analysis & the correlation matrix

	Strengths	**Weaknesses**
Opportunities	**S/O**	**W/O**
Threats	**S/T**	**W/T**

<u>**Source:**</u> Lee & Lo, 2003

b. SERVQUAL & Kano's Model

Using the strategic corresponding of the SWOT matrix, a questionnaire was designed including two parts. The first part consisted a SERVQUAL questionnaire where 6 ''Academic dimensions'' were developed including 35 questions to be answered by the sample of the undergraduate students. The SERVQUAL instrument operated as follows: a 35 item-scale questionnaire was applied to the undergraduate students in order to identify their perceptions and expectations from the Greek Academic Department. The students were asked to rate their perceptions and expectations in a 7-point-Likert-scale from 1 = strongly disagree to 7 = strongly agree. In that way, using their scores from the 7-point-scale, the gaps between perceptions minus expectations were determined as follows (Robinson, 1999):
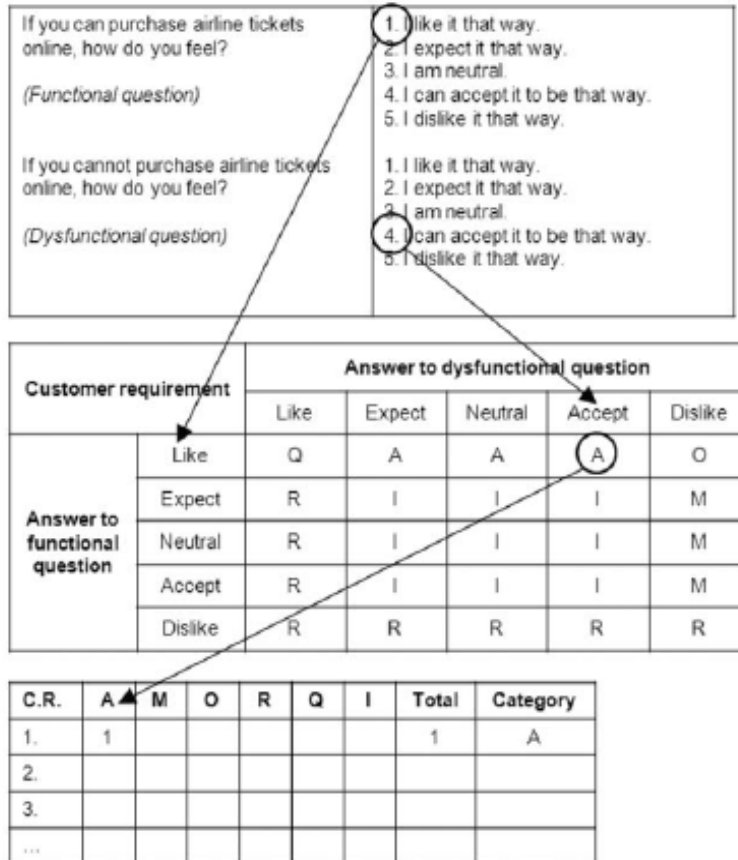
$$SQ_j = \frac{\Sigma P_{ij} - E_{ij}}{n_j}$$

SQ_j - Service Quality of Dimension j
E_{ij} - Expectations of the firm for item i in dimension j
P_{ij} - Perceived performance of the firm on item i in dimension j
n_j - Number of items in dimension j

In addition, SERVQUAL forced students to weigh each Academic dimension according to their importance in 'a scale out of 100' with a total score of all dimensions of 100. As a result, an average score was identified for each of the 6 dimensions as well as an overall SQ score was calculated. Thus, if the gap is positive, the SQ is regarded to be better than expected; if zero, SQ is good while if the gap is negative, improvements are demanded (Burch et al., 2004).

The second part of the questionnaire was designed according to the model proposed by Kano et al. (1984), where the same set of questions was applied with according to their Functional (F) and Dysfunctional (D) form. The students were kindly requested to rate the functional and dysfunctional items as: 1 = I like it that way; 2 = I expect it that way; 3 = I am neutral; 4 = I can accept it to be that way; and 5 = I dislike it that way.

Figure 7. The methodology of Kano's model

| If you can purchase airline tickets online, how do you feel? *(Functional question)* | 1. I like it that way. 2. I expect it that way. 3. I am neutral. 4. I can accept it to be that way. 5. I dislike it that way. |
| If you cannot purchase airline tickets online, how do you feel? *(Dysfunctional question)* | 1. I like it that way. 2. I expect it that way. 3. I am neutral. 4. I can accept it to be that way. 5. I dislike it that way. |

Customer requirement		Answer to dysfunctional question				
		Like	Expect	Neutral	Accept	Dislike
Answer to functional question	Like	Q	A	A	A	O
	Expect	R	I	I	I	M
	Neutral	R	I	I	I	M
	Accept	R	I	I	I	M
	Dislike	R	R	R	R	R

C.R.	A	M	O	R	Q	I	Total	Category
1.	1					1		A
2.								
3.								
...								

Notes: A = attractive; M = must-be; O = one-dimensional; R = reverse; Q = questionable; I = indifferent

Adopted from: Mikulic & Prebezac, 2011

The combination of the functional and dysfunctional responses of the Kano's methodology produced a matrix where each dimension was categorized as: M=Must-be; O=One-dimensional; I=Indifferent; A=Attractive; Q=Questionable; and R=Reverse. For example, if the functional form of the question is rated with 1 and the dysfunctional form with 4, then the correlation of the two answers produces an A (Attractive) in the correlation matrix (Figure 7). The combination of these two frameworks as mentioned by Pawitra and Tan (2003), classifies the quality dimensions of SERVQUAL according to their strengths and weaknesses as well as better characterized the relationship between students' needs and service attributes.

c.   The combination and analysis of QFD, SERVQUAL and Kano

The next stage combines the results produced and analyzed by SERVQUAL and Kano questionnaires into the QFD framework. According to the methodology proposed by Tan and Pawitra (2001) the SERVQUAL and Kano's model can be incorporated into QFD as follows:

1. Uses the weighted gaps produced by the SERVQUAL questionnaires

2. Categorizes and rates the weak dimensions examined by the SERVQUAL survey as: 4 = Attractive; 2 = One – Dimensional; 1 = Must – Be, using the Kano's methodology.

The purpose of the latter is the achievement of higher performance while satisfying "every customer need" and to calculate the adjusted importance of each dimension. However, some modifications have been proposed in our framework. We incorporate in the WHAT's of the QFD the dimension in which the gaps have been detected and not the quality attributes. In that way, we treat each dimension as a strategic area to be improved and not as a single attribute to be fulfilled. In addition, we use the SWOT Matrix strategic initiatives produced by the SWOT Analysis, as part of the Technical Requirements (HOWs) translated in Strategic Academic Directions. The combination of strategy and customer requirements is able to produce and develop strategic objectives for the Academic Department. We incorporate the values of expectations in the weak SQ dimensions. Finally, we incorporate another part of HoQ named Strategic Quality Priorities. In this part we prioritise the strategic initiatives to be pursued by the Academic Department. We calculate the relative importance of each interrelationship where the weighting is multiplied with the overall weighting from the Planning Matrix. In that way, the priority score for each strategic initiative is calculated.

4. Analysis

4.1. Mission, SWOT Analysis & Strategic Directions

Five key Academics were participated in the process of the determination of the SWOT analysis. The latter would tend to appraise the internal and external factors which affect the Institution's operations. A discussion was held out about the mission and the vision of the Greek Academic Department where the following Strategic directions were acquired (Figure 7): 1) to provide high quality Programs; 2) to attract the best students and faculty; 3) to prepare high qualified scientists and executives for public and private corporations; 4) to provide high quality facilities & services; and 5) to enhance financial sustainability and fundraising.

Figure 7. The Mission of the Greek Academic Department
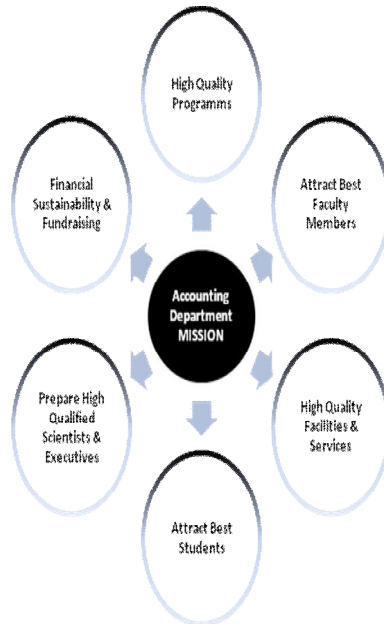
Having identified the strategic directions of the Greek Academic Department, a brainstorming process was carried out where a number of important factors were highlighted and a SWOT analysis was conducted (Figure 8).

Figure 8. The Greek Academic Department's SWOT Analysis

SWOT ANALYSIS		
STRENTHS		**WEAKNESSES**
S1 Responsiveness to students		W1 Programm Credibility
S2 Department's Brand & Reputation		W2 External Collaborations
S3 Faculty Development & Support		W3 Limited Recruitment Potential
S4 Exceptional Programms Offered		W4 Low Graduate Year Rates
S5 Faculty Experience & Expertise		W5 Increasing Demand of New Faculty/Administrative Staff
S6 Technological Capability		W6 Lack of Autonomy, Management & Funding
S7 Collaboration & Partnership		
S8 IT Ifrastructure		
S9 Bulding & Plant		
S10 Library & Facilities		
OPPORTUNITIES		**THREATS**
O1 Growth of Potential Students Rates		T1 High Competition
O2 Service Quality Improvement		T2 Uncertain Governmental & European Funds
O3 New Faculty Recruitment		T3 Rapidly Advancements on Technology
O4 Improving Programm Credibility		T4 Lack of Service Quality Strategy focus
O5 Expand Programm Dimensions		T5 Programms Variability & Competition
O6 Globalisation & European Competition		
O7 Research Initiatives		
O8 Funding from EU		

The outcome of the SWOT analysis produced a matrix as proposed by Lee and Lo (2003). The philosophy was to correlate the factors of S-W-O-T and to propose strategic initiatives and patterns of the Academic Department (Appendix 1). The correlation highlighted the areas of: Program development; Facilities & services; Faculty & Staff; External Relationships & Partnerships as important issues to fulfill the mission and the task of the Greek Academic Department and to strengthen its image while establishing high quality services.

4.2. SERVQUAL – Kano's Analysis & Results

The outcomes of the SWOT Matrix were used in order to construct the "Academic" SERVQUAL as well as the Kano's questionnaire used for our survey. The philosophy was to create a competitive questionnaire in where the strategic objectives of the Academic Department would be incorporated in the examination of the quality issues. The direct perceivers of the department's services (e.g. undergraduate students) would challenge their perceptions and expectations with the strategic direction of the department. In that way, we highlight the extent to which the strategic objectives of Academic Department are fulfilled. The "Academic" SERVQUAL was structured in the following SQ dimensions (Appendix 2):

a. *Facilities/Equipment/Services:* Includes 9 quality items related to the tangible and intangible assets that the department provides.
b. *Ability & Capabilities of Faculty:* Includes 7 quality items related to the Faculty competence and skills.
c. *Responsiveness & Attitude of Faculty & Staff:* Includes 5 quality items focusing on willingness to student problem solving issues by Faculty & Staff.
d. *Educational/Course Content:* Includes 5 quality items based on content relevance of the academic programs.
e. *Content Delivery & Management:* Includes 6 quality items related to teaching activities and knowledge delivering skills.
f. *Department's Reliability & Reputation:* Includes 3 quality items related to the Department's relevance, consistency and promises – practice.

The score of the students' perceptions and expectations for each quality item and dimension were coded and statistically analyzed. The following step was to calculate the difference between perceptions and expectations. This difference would indicate weak and strong dimensions of the department's SQ. The results indicated gaps in the 4 of the 6 dimensions of the "Academic" SERVQUAL (Table 3). The greatest SQ gap perceived in the area of *Ability & Capabilities of Faculty*, where the gap of SQ was (-2.10). The *Department's Reliability & Reputation* dimension had a gap of (-1.93) while the *Educational/Course Content* dimension a gap of (-1.67). Finally, in the Facilities/Equipment/Services dimension a gap of (-1.42) was observed. On the other hand, the rating process pointed out that the dimensions of *Responsiveness & Attitude of Faculty/Staff* and *Content Delivery & Management* had positive SQ of 0.19 and 0.16 respectively.

Table 3. The SERVQUAL's results of the Greek Academic Department

SQ DIMENSIONS	PERCEPTIONS	EXPECTATIONS	SQ GAP	IMPORTANCE	WEIGHTED SCORE
Facilities/Equipment/Services	4,240123457	5,664814815	-1,424691358	0,139583333	-0,198863169
Abilities & Capabilities of Faculty	3,937301587	6,041534392	-2,104232804	0,195416667	-0,41120216
Responsivenes & Attitude of Faculty/Staff	5,238888889	5,044074074	0,194814815	0,145388889	0,028323909
Educational/Course Content	4,402345679	6,081851852	-1,679506173	0,188444444	-0,316493608
Content Delivery & Management	5,461419753	5,293518519	0,167901235	0,133277778	0,022377503
Department's Reliability & Reputation	4,219753086	6,15	-1,930246914	0,197888889	-0,381974417

In addition, the undergraduate students placed a percentage of importance in each dimension. The purpose of the latter was to strength the criteria of the value that students assign in each SQ dimension. The results underlined the following dimensions according to their importance: *Department's Reliability & Reputation (19.78%); Ability & Capabilities of Faculty (19.54%); Educational/Course Content (18.84%);* and *Facilities/Equipment/Services (13.96%)*. The overall score of SQ for each weak dimension was measured as the SQ gap multiplied with the importance average percentage per dimension. For instance, the overall SQ score for the *Department's Reliability & Reputation* is (-1.92) * (19.78%) = (-38.19). Therefore, the dimensions with the greatest gaps are:

1. *Ability & Capabilities of Faculty: (-0.4112)*

2. *Department's Reliability & Reputation: (-0.3819)*

3. *Educational/Course Content: (-0.3164)*

4. *Facilities/Equipment/Services: (-0.1988)*

In order to enhance consistency on the results, the Kano's model was pursued. The Kano's model included the same dimensions and quality items with SERVQUAL, using the functional and dysfunctional form of the questions. The overall responses for each dimension were coded according to the correlation of the functional and dysfunctional rates in order to characterize each dimension as M, A, O, I and R (Table 4). The Kano category with the maximum number of correlated responses was selected to characterize each dimension. For example, in the *Facilities/Equipment/Services* dimension, the statistical observations were in total 1620 from which 485 placed in the Must-Be Kano category. Therefore the latter was characterized as M. The analysis results revealed as Must-Be (M) the *Facilities/Equipment/Services*, as Attractive (A) the dimensions of *Educational/Course Content* and *Department's Reliability & Reputation*, while the *Ability & Capabilities of Faculty* dimension as One-Dimensional (O). The results in the other two dimensions, according to the students' responses were indifferent (I) and were excluded from our analysis.

Table 4. The Kano's results of the Greek Academic Department

DIMENSIONS		KANO'S MATRIX							CATEGORY	
		A	M	O	R	Q	I	TOTAL		
	Facilities/Equipment/Services	225	485	425	148	1	336	1620	485	M
	Abilities & Capabilities of Faculty	239	291	334	153	81	155	1253	334	O
	Responsivenes & Attitude of Faculty/Staff	98	90	114	239	38	321	900	321	I
	Educational/Course Content	265	248	107	112	56	112	900	265	A
	Content Delivery & Management	159	86	43	274	96	422	1080	422	I
	Department's Reliability & Reputation	214	150	80	26	26	44	540	214	A

According to the results, the Greek Academic Department should firstly focus on the weak dimensions which were characterized as Attractive (A). In addition, it should place attention on the weak dimensions of One-Dimensional (O) and Must-Be (M) as the Kano's model proposes.

4.3. QFD, SERVQUAL and Kano's analysis & results

The results produced from the SERVQUAL and Kano's model were incorporated in the QFD matrix. The weighted gaps of the four weak dimensions examined by SERVQUAL's survey were placed in the WHAT's of the QFD. The rating of each SQ dimension according to the Kano's category was assigned as: A = 4.0, O = 2.0 and M = 1.0. The adjusted importance was calculated as the weighted gap of SERVQUAL was multiplied with the Kano's category. For example, the adjusted importance of Facilities/Equipment/Services calculated as: (0.20) * (1) = (0.20). In doing so, the priorities of the Greek Academic Department were altered and different priorities were set as the most important. The adjusted importance highlighted the following dimensions according to their importance:

1. *Department's Reliability & Reputation (1.53)*

2. *Educational/Course Content (1.27)*

3. *Abilities and Capabilities of Faculty (0.82)*

4. *Facilities/Equipment/Services (0.20)*

The second stage of the analysis was to place the SWOT matrix strategies in the HOW's of QFD. In that way, a rating process of the correlation between WHAT's and HOW's took place. Each correlation was accredited as Strong = 9.0, Medium = 3.0 and Weak = 1.0. The produced correlation matrix highlighted which strategies of HOW's cover better the weak dimensions.

Figure 9. The QFD results in combination with SERVQUAL and Kano's model of the Greek Academic Department
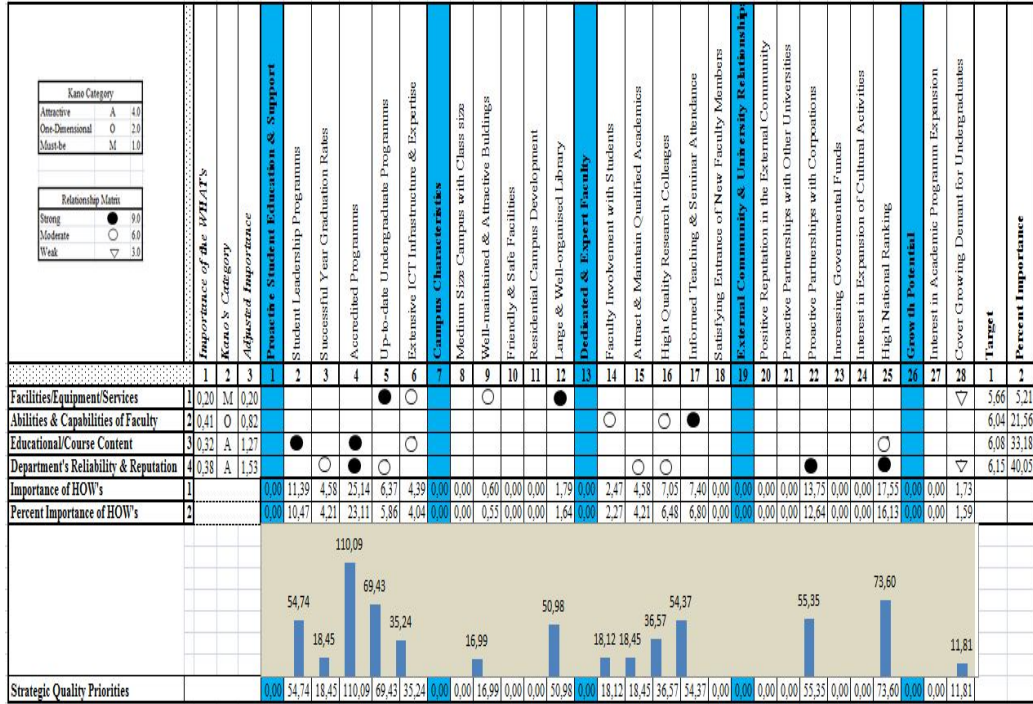
The process of the correlation matrix highlighted the Strategic Quality Priorities which the Greek Academic Department should acquire to improve its weak SQ dimensions:

1. *Accredited Programs (110.09)*

2. *High National Rating (73.60)*

3. *Up – to – date undergraduate programs (69.43)*

4. *Proactive Partnerships with Corporations (55.35)*

5. *Student Leadership Programs (54.74)*

6. *Informed Teaching & Seminar Attendance (54.37)*

7. *Large and well-organized Library (50.98)*

8. *High Quality Research Colleagues (36.57)*

9. *Extensive ICT Infrastructure & Expertise (35.24)*

10. *Attract & Maintain Qualified Academics – Successful Year Graduation Rates (18.45)*

11. Well maintained & Attractive Buildings (16.99)

12. Cover Growing Demand for Undergraduates (11.81)

4.4. Discussion

The outcome of the quality strategic analysis of the Academic Department suggested some important implications in order to improve its quality of services. The results indicated a wide range of strategies in which the department should place its attention (Figure 10).

Figure 10. The examined strategies of the Greek Academic Department categorized in each weak SQ dimension.

DIMENSION	STRATEGIES
Facilities/Equipment/Services	Up-To-Date Undergraduate Programs
	Large & Well-Organised Library
	Extensive ICT Infrastructure & Expertise
	Well-Maintained & Attractive Buildings
	Cover Growing Demand for Undergraduates
Abilities & Capabilities of Faculty	Informed Teaching & Seminar Attendance
	Faculty Involvement with Students
	High Quality Research Academics
Educational/Course Content	Student Leadership Programs
	Accredited Programs
	Extensive ICT Infrastructure & Expertise
	High National Rating
Department's Reliability & Reputation	Accredited Programs
	Proactive Partnerships with Corporations
	High National Rating
	Succeessful Graduation Year Rate
	Up-To-Date Undergraduate Programs
	Attract & Maintain Qualified Academics
	High Quality Research Academics
	Cover Growing Demand for Undergraduates

The proposed methodology highlighted some important strategic directions in which the Academic Department should focus on, in order to improve its SQ. First of all, the dimension of the Facilities/Equipment/Services emphasized in the development of a well organized library, well maintained buildings, advance IT services and an expansion of its assets in order to cover potential students. Therefore, the Academic Department should invest heavily in the development of its infrastructure which will improve students' satisfaction. Another strategic dimension

is the quality of the faculty. The Academic Department should focus on the selection of the most capable and well informed Faculty members which will upgrade the quality of the provided studies. In addition, the department should force its academics to attend seminars in order to develop their skills and knowledge with up to date research developments. Furthermore, the department should improve its education programs incorporating new core modules which will depict the current and future requirements of the market work place as well as to grant and update the existing ones. Placing accredited programs and attract high qualified academics, the National rating will be improved and the Reputation will be strengthened. Another dimension which is considered as important in order the potential students to continue their studies in the Academic Department is the Reliability and Reputation of the Department where the promises and the practical knowledge should be in consistency. Finally, the department should focus on external strategic co operations. The purpose of the latter is threshold: Firstly, the department will succeed the fundraising demanded in order to improve its infrastructure, personnel development as well as to develop new attractive educational context. Secondly, the co operation of the Department with corporations in research potential projects will raise the image and the research orientation of the Department. Finally, having succeeded to create strategic alliances future employment prospects may arise for the graduate students.

5. Conclusion

The purpose of the current study is to develop a strategic service quality oriented framework in a Greek Academic Department in order to highlight the strategic dimensions in which it should focus on to improve and enhance superior SQ. A set of questionnaires were applied in 180 undergraduate students. The questionnaires constructed with the assistance of the strategic initiatives produced by the SWOT matrix, using the forms of the SERVQUAL and Kano's model and statistically analyzed with the support of Eviews. In that way, the weak SQ dimensions were highlighted and categorized. The results indicated weaknesses in the following four SQ dimensions: Facilities/Equipment/Services, Abilities and Capabilities of Faculty, Educational/Course Content and Department's Reliability and Reputation. The incorporation of the results in to the QFD framework led us to prioritize the quality strategies which the Academic Department should adopt in order to improve its weak SQ dimensions. Some of the most important strategic directions that the Academic Department are: Student Leadership Programs, Informed Teaching & Seminar Attendance, Large and well-organized Library, High Quality Research Colleagues etc.

Considering the limitations of the study, we have to take into serious consideration that the research analysed 180 questionnaires which means that the number of observations may not be convenient in order to have precise results about the weak dimensions. In addition, the results may enhance bias due to the objective

views of the participants about the perceived and expected SQ. Apart from these limitations; we propose some implications for future research. The examination of a larger sample of Departments is considered to be an essential step in order to formulate a unique strategic planning framework to the Greek Academic Institution. In addition, the incorporation of the Balanced Scorecard framework as an additional step of the Strategy Formulation process would probably produce specific measurements functions and SQ indicators in order to access in a continuous basis the SQ enhancement and operation. In that way, a more accurate SQ framework would be developed.

Appendix 1

SWOT MATRIX		STRENTHS		WEAKNESSES
	S1	Responsiveness to students	W1	Programm Credibility
	S2	Department's Brand & Reputation	W2	External Collaborations
	S3	Faculty Development & Support	W3	Limited Recruitment Potential
	S4	Exceptional Programms Offered	W4	Low Graduate Year Rates
	S5	Faculty Experience & Expertise	W5	Increasing Demand of New Faculty/Administrative Staff
	S6	Technological Capability	W6	Lack of Autonomy, Management & Funding
	S7	Collaboration & Partnership		
	S8	IT Ifrastructure		
	S9	Bulding & Plant		
	S10	Library & Facilities		
OPPORTUNITIES		**MAXI - MAXI (S/O)**		**MINI - MAXI (W/O)**
O1	Growth of Potential Students Rates	Cover Growing Student Demand		Accredited Programms
O2	Service Quality Improvement	Interest in Academic Programm Expansion		Success Year Rate Graduation
O3	New Faculty Recruitment	Increasing Government & EU Funds		Attract & Maintain Qualified Academics
O4	Improving Programm Credibility	High Quality Research		Proactive Partnerships with Colleges/Corporations
O5	Expand Programm Dimensions	Up-to-date Undergraduate Programms		Entrance of New Faculty/Staff members
O6	Globalisation & European Competition	Faculty Capabilities		
O7	Research Initiatives			
O8	Funding from EU			
THREATS		**MAXI - MINI (S/T)**		**MINI - MINI (W/T)**
T1	High Competition	Large & Well-organised Library		Positive Reputation in the External Community
T2	Uncertain Governmental & European Funds	ICT Infrastructure & Expertise		Residential Campus Development
T3	Rapidly Advancements on Technology	Friendly & Safe Facilities		Student Leadership Programms
T4	Lack of Service Quality Strategy focus	Informed Teaching		Expansion of Cultural Activities
T5	Programms Variability & Competition	Well-maintained Buildings		
		Medium Sized Campus & Classes		
		High National Ranking		

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