

# Development of a Value Creation Programme in the Yachting Services Cluster: A Value Management Approach

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**Abstract:** *Yachting services in Trinidad and Tobago (T&T) is an important cluster in the tourism sector and is characterised by low switching costs and a highly sophisticated demand. The decrease in demand of yachting services over the years has signaled a cause for concern. Evidence shows that service providers are unable to attract and retain customers. This paper investigates the current status and discusses the key variables affecting value creation of the yachting services cluster (YSC). An empirical study was recently conducted to acquire the views from the targeted groups of the cluster stakeholders in T&T. A host of factors/elements, including repair accuracy, concurrent engineering, quality standards, quality assurance, and quality control, were identified. Results showed that the majority of customers were concerned with a disparity between quality of services offered and the prices charged particularly in the repair and maintenance of their yachts. Incorporating the empirical findings acquired, an attempt was made to develop a value creation programme for the cluster using a value management (VM) approach. A VM framework is proposed for possible adoption in the cluster to gain sustainable competitiveness.*

**Keywords:** *Yachting services cluster, value management, value creation, sustainable competitiveness*

## 1. Introduction

Yachting as a service-oriented export is seen as critical to Trinidad and Tobago's value creation programme. The loss of competitiveness among the yachting services cluster (YSC) and the concomitant decline in yacht arrivals over the last few years have signaled a cause for concern among industry stakeholders. Yachting services providers (YSPs) are unable to get customers and keep them. In fact, recent statistics of Yacht Services Association of Trinidad and Tobago (YSATT, 2010) shows that yacht arrivals to Trinidad declined by approximately 64% from 2664 in 2000 to 959 in 2010. The declining trend in the data suggests that the maximum profitability of the cluster is affected and that the weaknesses/negative factors within the cluster are impacting its competitiveness (SCBD, 2005). This paper focuses on investigating into the application of a value creation programme using a Value Management (VM) approach to improve the competitiveness of the YSC.

## 2. Value Creation, Competitiveness and Value Management

The concept of value creation has its economic antecedents in exchange theory, which seeks to understand the social behaviour of humans in economic

undertakings. People usually review and weight their relationships in terms of costs and rewards (Ho, 2006). The worth of the relationship predicts its outcome. Costs have negative worth to a person while rewards have positive worth. If the relationships between service providers and customers are to be sustainable, the key players must have great insights aimed at tapping new value so as to ensure the outcome of the exchanged value is benefited mutually (Woodhead and McCuish, 2002). Value creation must therefore take cognizance of the needs and expectations not only of customers but also of various stakeholders (Kothari and Lackner, 2006). The primary challenge is to do the right thing and to do the thing right.

The notion of competitiveness has been widely acknowledged and debated (Porter et al., 2006). In the context of value added, competitiveness can be discerned as profitability, the difference between the value of a firm's output and the cost of resources used as input and the cost of transforming such resources into the final output. Although Value Management (VM) has become a general concept (Fong et al., 2001), the term is used interchangeably with value engineering (VE), and value analysis (VA). Value management however, is business project focused, while value engineering, as a subset of

value management, is more technical project focused (Kelly et al., 2003).

True competitiveness measured in terms of productivity requires increased investments in technology, training and research and development (R&D). The proposed relationship between competitiveness and VM replicates the logicalness adopted by (Abidin and Pasquire, 2005). When managing resources around the project, issues related to higher order functions (such as competitiveness) should be addressed in the initial stage of the project. Contentious issues such as quality, functionality, cost, tools and techniques and responsiveness should also be considered in the process (Dwivedi and Maffioli, 2003; Abidin and Pasquire, 2005).

### 3. Profile of the Yachting Services Cluster

Yachting services is not in the conventional sense thought of as an industry, because "there is no single production process, no homogenous product and no locationally confined market" (Tucker and Sundberg, 1999). Similar to tourism and educational services, yachting may be defined as provider-located services characterised by cross-border flows of consumers with their purchasing power. The YSC spans three broad service value chains: marinas, boat yards, and maintenance and repairs, which are supported by small to medium-sized firms that are not government regulated. Firms are organised as sole proprietorships, partnerships and limited liability companies and cater specifically to the needs and satisfaction of nautical tourists.

There are currently 10 marinas and boat yard facilities with an average cumulative capacity to accommodate approximately 885 visiting yachts in Trinidad. The term "marina" refers to a specially designed harbour for mooring yachts and other pleasure crafts. There are also a number of repair contractors ranging in sizes from a single person operation to businesses with 20 or more employees. There are also approximately 1,400 persons directly employed in the YSC. All firms are privately owned and they offer a wide range of high and low contact services, with low contractual relationships and no severe financial penalties for default. Generally, nautical tourists are free to choose an alternative service provider each time they require services.

The gross annual revenue of the cluster in 2001 for example, was estimated to be in excess of USD23.3 million (MTI, 2006). Overall, the price of labour and the cost of doing business in the cluster are competitive with those in regional markets. Prices in the marina, boat yards and storage value chains are fixed and could therefore be predetermined.

### 4. Variables Affecting Value Creation in the YSC

Although the YSC is gaining importance for T&T's economic development programme, there is no tracking mechanism to inform its development. The national

statistics and Balance of Payment schedules for example, lump yachting repairs and marina services under the general heading "tourism and travel related services." The factor payments/receipts do not distinguish income from goods-related tourism activities as opposed to services-related tourism activities. As a consequence, measurement and evaluation of the true value and/or the growth rate of a specific area in the YSC becomes very difficult (Quildon, 2002).

Figure 1 depicts the major activities along the YSC value chain for which fees are charged. Fees for repair and maintenance services are usually estimated. This creates another area of dissatisfaction among nautical tourists when they are unable to secure firm cost estimates for their yachting services projects. There are a number of customers who felt that proper job estimation was most important for value creation. The inability of sub-contractors to properly estimate a job creates a perception of mistrust and dissatisfaction by nautical tourists.

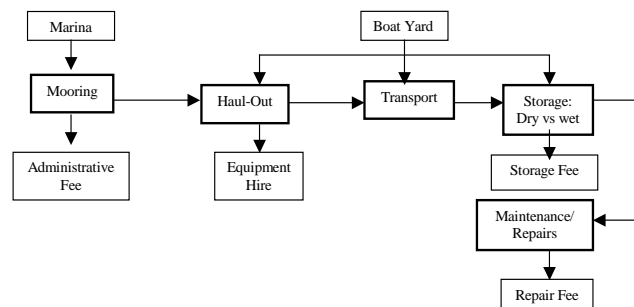


Figure 1. A value creation system for the yachting services cluster

Several variables affecting value creation in the YSC are identified. They are elaborated as follows:

- 1) *Types of Projects* – Project's diversity can range from simply removing barnacles from the bottom of a vessel and repainting to rebuilding an engine or a complete retrofit. However, regardless of the type of project, a widely held perception among nautical tourists is that work standards are decreasing.
- 2) *Customer Requirements* - Firms in the YSC are not generally customer oriented. The cluster is affected by inadequate marketing and customer service representation. More importantly, the voices of the customers are not expressed as clear objectives in the company's language, and all employees do not understand this language in terms of executable technical specifications.
- 3) *Culture and Ethics* - Nautical tourists are usually of varying cultures (Quildon, 2002). Trinidadians inherently equate service with servitude as such there is disconnect between the customer expectations and customer service in the cluster. While the work-culture in T&T firms cannot be changed easily, one can change the processes that created the culture

(Dwivedi and Maffioli, 2003). The key areas to be targeted are culture and ethics, knowledge and skills training, and performance management. Through institutionalisation in these areas, the weaknesses in the cluster can be converted into strengths.

- 4) *Stakeholders* - In addition to the Yacht Services Association of Trinidad and Tobago (YSATT), a trade organisation, stakeholders include YSPs, nautical tourists, sub-contractors, and government. As facilitator of economic activities, Government in particular has an interest in ensuring that improved value is created if the cluster is to move to an efficiency driven stage of development and thereby increase the cluster's competitiveness. To this end, in 2005, the Government agreed to the establishment of the Yachting Steering Committee of Trinidad and Tobago (YSCTT) to oversee the implementation of its yachting strategic plan.
- 5) *Knowledge Management* - This is integral to value creation in the cluster. Knowledge is created through:
  - a) collective learning e.g., from the boat manufacturing industry to the yacht repair cluster, and
  - b) collective efficiency e.g., the collaboration, teamwork and effective communication about markets and processes.
- 6) *Change Management* - It must be recognised that people are at the heart of any change process (Turner, 2002). As such, success of any value creation programme requires that mechanisms to enhance leadership, training, education, teamwork and communication are present. Insufficient industry specific training has been identified as a major constraint for participants in the cluster.
- 7) *Value Team* - A multi-disciplinary value study team comprising of no more than one or two members of the same discipline should be included. Non-technical expertise should also be included to bring diverse alternatives to problem solving and decision-making.
- 8) *Risk Management* - Real risks related to the YSC can be attributed to humans when they do not perform in a quality manner. Of particular concern however, are those risks that are related to inadequate environmental management. Apart from sewage and solid waste, accidental spills of petroleum can cause serious environmental hazards. Gasoline spills can lead to explosion and fire. Hazardous materials that are dangerous to the environment such as solvents, lead paint, and petroleum-extracting materials if not properly managed can have substantial harmful impacts on the cluster's competitiveness (Dolgen et al., 2003).
- 9) *Performance measures* - Performance measures are the critical success factors of project outcome. These may include quality of leadership, members of multi-disciplinary teams, and all workers who must work together to achieve the stated outcomes. Key performance indicators include time, cost, quality,

return on investment, stakeholders' satisfaction, and environmental and social issues (Yu et al., 2005).

## 5. Conduct of an YSC Study

In order to acquire the views from the targeted groups of the cluster stakeholders in T&T, a questionnaire study was based on a cross sectional design to provide an accurate snapshot of the YSC. In total, 7 broad categories of predictor variables are used to gather data. Variables are grouped according to: respondents' information on yachting services activities; competitiveness; value creation; sub-contractors' organisation; customer value; and characteristics of yachts. A total of twenty-four (24) questionnaires were administered to sub-contractors and ten (10) business entities, respectively. Besides, six (6) interviews were conducted with participants in the YSC to capture some insights into the perceived attributes that might be causing a decline in yacht arrivals.

The Statistical Package for the Social Sciences (SPSS) was used in the analysis of data. The reliability of the five-point scale used in the survey was determined using Cronbach's coefficient alpha which ranged from .6955 to .8041. Twenty-two (22) sub-contractors and nine (9) business entities returned their completed questionnaires representing a response rate of 91.6% and 90%, respectively.

### 5.1 Identification of value creation determinants

Based on literature review findings, five value creation determinants, namely repair accuracy, concurrent engineering, quality standards, quality assurance and quality control, were adopted for this study. Descriptive statistics (i.e. frequency) was used to analyse the determinants of value creation for both business entity and sub-contractors (see Table 1). The main findings are discussed below.

- 1) *Repair Accuracy* - 44.4% of business entities as opposed to 61.9% of sub-contractors found that repair accuracy affected value creation very much.
- 2) *Concurrent Engineering* - Both sub-contractors (38.1%) and business entities (33.3%) identified concurrent engineering as a determinant having much impact on value creation. 14.3% of sub-contractors and 22.2% of business entities felt it affected value creation very much.
- 3) *Quality Standard* - Both sub-contractors (61.9%) and business entities (44.4%) showed quality standard to be a very much-needed criterion for value creation. Its importance was underscored by 33.3% of each group who felt it was much needed for value creation.
- 4) *Quality Assurance* - 52.4% of sub-contractors and 55.6% of business entities felt that quality assurance affected value creation very much. 28.6% and 22.2% of sub-contractors and business entities respectively have much impact on value creation.
- 5) *Quality Control* - Similarly, the majority (52.4%) of

sub-contractors identified quality control as impacting value creation very much. 42.9% of sub-contractors and 22.2% of business entities viewed it as having much impact.

In seeking to determine the extent to which repair accuracy, concurrent engineering, quality standards, quality accuracy, and quality control affect value creation in the YSC, a reliability coefficient of .70 or higher was considered “acceptable”. The analysis of variance (ANOVA) was also performed. In one instance, the F statistic = 10.6074 and probability (p) = 0.000 which suggests varying views on the extent to which the determinants affect value creation in the YSC.

As depicted in Table 2, the estimates of value creation coefficient have positive signs in the case of sub-

contractors. This is indicative of the perceived importance of all 5 determinants for value creation. Among business entities, not all the determinants have positive estimates indicating that only repair accuracy and quality standards are important for value creation.

The independent variables reliably predicted the importance of concurrent engineering and quality control between both groups. The p-values associated with the F values were .009 and .007 for concurrent engineering and .015 and .000 for quality control, respectively. The group of variables used to predict the relationship of independent variables with repair accuracy and quality standards did not show statistical significance p-value = .667 and .668 and .719 and .128 for repair accuracy and quality standards, respectively.

**Table 1.** Descriptive statistics of value creation determinants

Value creation determinants	Sub-Contractors N = 21; Frequency, %					Business Entities N = 9; Frequency, %				
	Very Little	Little	Neut'l	Much	Very Much	Very Little	Little	Neut'l	Much	Very Much
Repair Accuracy	0.00	0.00	0.00	38.1	61.9	0.00	11.1	22.2	22.2	44.4
Concurrent Engineering	4.8	9.5	33.3	38.1	14.3	0.00	11.1	33.3	33.3	22.2
Quality Standards	0.00	0.00	4.8	33.3	61.9	0.00	0.00	22.2	33.3	44.4
Quality Assurance	0.00	0.00	19.0	28.6	52.4	0.00	0.00	22.2	22.2	55.6
Quality Control	0.00	0.00	4.8	42.9	52.4	0.00	0.00	22.2	22.2	55.6

**Table 2.** Regression analysis of value creation determinants: sub-contractor versus business entities

Value creation Determinants	Sub-contractor N = 21				Business Entities N = 9			
	Value Creation Coefficient	Adj. R <sup>2</sup>	F	Sig.	Value Creation Co-efficient	Adj. R <sup>2</sup>	F	Sig.
	Repair Accuracy	5.43	-.107	.634	.677	6.333	-.244	.686
Concurrent Engineering	.635	.532	5.542	.009	-1.329	.905	19.966	.007
Quality Standards	6.279	-.111	.525	.719	.219	.552	3.462	.128
Quality Assurance	2.928	-.090	.687	.641	-3.925	.828	8.700	.052
Quality Control	.526	.459	4.219	.015	-10.000	1.000	3.4E+14	.000

**5.2 Interview Findings**

Because of the changing business environment, it is imperative that yachting services facilities and the operations are internationally certified. Based on the interview findings, the cluster could seek to attract the more sophisticated super yachts with certification. In order to ensure long-term sustainability in the YSC, YSPs must continuously reassess and redesign their competencies and relationships in order to keep their value creating system responsive.

Besides, empirical evidence supports the view that it is easier to satisfy a repeat customer than it is to satisfy a new one. YSPs need therefore to create switching costs by improving relational value in terms of social bond and strong network ties. Regular surveys and data collection

would provide a basis for the efficient development of the cluster. Moreover, there is a pressing need to legislate the operation of the YSC, by introducing a new Act and Regulations. This should address the issues of: 1) minimum performance standards, and 2) issuance of permits to operate.

**6. Development of a Value Creation Programme for YSC using VM Approach**

Incorporating the literature review with empirical findings, an attempt was made to develop a value creation programme for the YSC. It is aimed to satisfy customers’ need requirements and the improved competitiveness in the YSC. This objective can be best achieved by improving quality through functionality, innovation, and

responsiveness in the cluster. It would be YSCTT's responsibility for the establishment of the value creation policy, and would monitor its implementation in the organisation. Top management must get involved and ensure that functional and line managers "buy in" to a culture of putting the customer first.

The voice of the nautical tourists would be incorporated in all activities throughout the life cycle of the project while ensuring timeliness of performance, cost control, and the mitigation of adverse events. Through the interaction of a multi-disciplinary team and its members with other groups the importance of the nautical tourist takes precedence when providing a service. Adopting VM provides a rationale for decision-making based on function analysis. The study of functions will direct efforts at improving performance, reliability, quality, safety, repairs and maintenance costs of systems or procedures. Success is ensured by adherence to the job plan. The major activities are described below.

### 6.1 The Pre-Study Phase

The Pre-Study phase begins with the collection of data and the development of a data file for the specific project. These include: 1) conducting market research to learn what nautical tourists using facilities in other parts of the world would expect in regards to technical functions, safety functions, comfort functions, and the price which they would be willing to pay for the service; 2) benchmarking international competitors and analysing competitors' service comparing the above functions and solutions; and 3) identifying customer's specific requirements to be met and offered.

The scope of the VM study is yacht services that comprise various sub-activities: haul-out and launch of vessels; dry-docking; and repair and maintenance. In response to specific customer requirements, project preparation activities begin with problem identification and a thorough inspection of the yacht. The problem is diagnosed and if required the vessel is dry-docked for repairs. Because yacht repair and maintenance require the right mix of human skills, technology and capacity utilisation to fulfill customer requirements, a project management steering team is established.

### 6.2 The Value Study Phases

1) *Information Phase* - During the information phase, the project team would define the yacht repairs to be undertaken, and identify the areas of work to be performed and the constraints that may impact project decisions. The information collected would provide the base line for the project.

2) *Function Analysis Phase* - The Work Breakdown Structure (WBS) identifies the areas of work for a repair activity. Its role is to define the project scope and separate the major project deliverables into smaller components to

improve the accuracy of cost estimates. It also provides a mechanism for collecting, and organising actual costs, and for controlling and measuring performance. The WBS also provides the bases for function decomposition. The Function Analysis System Technique (FAST) as depicted in Figure 2 is employed to diagnose logical relationships between functions. If the goal (the higher order function) of the project is to make the yacht available for use by its owner (nautical tourist), the core function is then to repair the yacht in a timely manner at optimal cost. The required secondary functions could also be defined if repairs are to comply within a technical and legal framework, meeting technical competencies, cost control, and resource allocation.

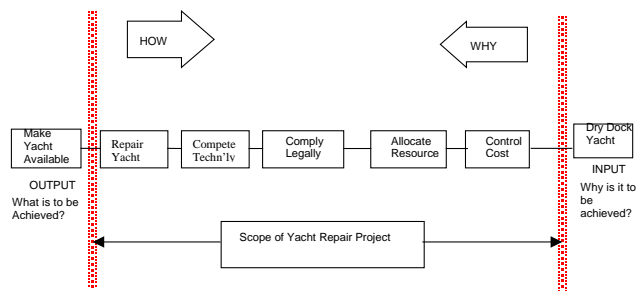


Figure 2. A sample FAST diagram of a repair project

3) *Creative Phase* - One of the major challenges gleaned from the interviews is the inability of sub-contractors to provide proper cost estimation for repair projects. The creative phase allows for brainstorming alternative ways to perform functions. During this phase, sub-contractors could address how to improve value through cost estimation and to ensure that tasks are performed accurately and on schedule.

4) *Evaluation Phase* - Ideas that are being currently utilised in the base case must be removed and those that are different be retained. Identify which ideas are deemed worthy of focused attention. The objective is to generate scenarios that would add to or compare with the base case. If, for example, a decision is made to change nothing, one should continue with the base case or current system.

5) *Development Phase* - Be clear on the quality of the decision that is required to implement the works. Benchmark the ideas identified for focused attention. If benchmarking is based on empirical, more precise or accurate information, writing up the details would take more time than if it is based on estimates. Each idea should be detailed in the form of a proposal.

6) *Presentation Phase* - The presentation phase involves reporting to management and presenting a logical matrix of the VM framework as depicted in Table 3. The status of

the project is highlighted in an abridged format.

### 6.3 The Post-Study Phase

The Post-study phase includes the implementation of the

systems, processes and activities for improving VFM and competitiveness in the YSC. These include repair accuracy, concurrent engineering, quality standards, quality assurance and quality control.

**Table 3.** A logical matrix of the proposed VM framework

<i>Narrative Summary</i>	<b>Objectively Verifiable Indicators</b>	<b>Means of Verification</b>	<b>Critical Assumptions</b>
<b>Long-Term Objectives/Goal</b>			<i>Assumptions for Achieving Goal</i>
- To develop and grow the YSC. - To improve value for money. - To improve competitiveness.	- Implementation of the strategic plan for the yachting services cluster.	- Project manager hired to oversee implementation of strategic plan.	- Strategic plan for the yachting cluster is approved by Cabinet.
<b>Purpose</b>			<i>Assumptions for Achieving Purpose</i>
- To move the YSC from a factor driven stage of development to an efficiency driven stage of development.	- Legislation proposed and drafted. - Implement the VM programme.	- Promulgation of new Act and regulations.	- Buy-in from the private sector. - Mechanism for enforcement established.
<b>Outputs</b>			<i>Assumptions for Achieving Project Outcomes</i>
- Improved customer satisfaction. - Trained/skilled workers.	- Improvement in quality of services offered.	- Increased yacht arrivals - Improved financial position of YSPs. - Increased GDP.	- Support from top YSC management. - Comprehensive training programmes.
<b>Inputs</b>	<b>Cost \$</b>	<b>Total Cost \$</b>	<i>Assumptions for Achieving Project Output</i>
- Strengthened project management. - Competent operations. - Efficient sub-contractors.			- Funds necessary for administrative and operating expenses are available.
Base Cost			
Price contingencies			
<b>TOTAL COST \$</b>			

### 7. Conclusion

This paper has brought to light a number of insights between decline in yacht arrivals and competitiveness. What was revealed was that a yacht services’ problem would no longer be evaluated as a process which passes from one stage to another. A VM framework for improving competitiveness has been put forward. If the decline in yacht arrivals is to be stymied, sub-contractors have to improve the level of efficiency, and effectiveness while optimising the cost at which yachting services are offered. In order to achieve a long-term competitive advantage goal, switching costs through improved relational value needs to be created. Initially, VM efforts in the YSC can occur as a cooperative effort between business entities and sub-contractors and government with no expectation of sharing cost savings/avoidance achieved. Functions are performed through the control of causal relationships.

The framework conceptualised in this study integrated VM practice with tools to create value in the

YSC. As the cluster evolves towards efficiency-driven development, and transition from the value chain to a VM approach, what is required is a change in mindset. A deeper understanding of what constitutes customer value and how this value is produced. It is anticipated that the findings can have wider implications in generality. Future research (e.g., case studies) can validate the key performance attributes of the VM framework for YSC operations in T&T.

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