

SUSTAINING THE ISO 9001:2008 CERTIFICATION OF TEST ADVANTAGE HARDWARE PHILIPPINES INCORPORATED

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ABSTRACT

When Test Advantage Hardware Philippines Incorporated was begun in Makiling, Laguna in 2008, Engr. Edsel H. Solon and Engr. Nilo Anticamara proclaimed that the company would go beyond the impossibilities. Both founders dedicated themselves to the task of trying to establish TAHPI a semi-conductor company that would synchronize business and engineering by board repairs. Engr. Solon and Engr. Anticamara were able to achieve their goal of establishing and harnessing the quality process of their proposed plans for about six years. However, market competition finally gave them no choice but to declare expansion and garner new customers like Texas Instrument on early 2014. The partnership between Texas Instrument and Test Advantage Hardware Philippines made a gigantic impact on their marketing and sales. Though Test Advantage Hardware Philippines Incorporated does not have enough manpower to cope with the incoming board repair, they did manage somehow to meet the target per week. Their financial aid to Texas Instrument and BSE Company, along with new ideas and ASEAN Integration involvement, contributed tremendously toward bringing TAHPI to a fast moving quality service: board repair. This study assessed to maintain the ISO Certification of TAHPI and probably move fast forward for continuous improvement. The study utilized SWOT Analysis, Balanced Scorecard and Strategy Mapping for sustainability. Later, the study revealed that the analysis will instigate the value stream mapping of the ways and process on how to sustain the ISO Certification. It is recommended that these analyses would be used daily and be initiated continuously by all team members.

Key words: assessed, maintain, ISO Certification of TAHPI, fast forward, continuous improvement.

INTRODUCTION

The semi-conductor industry is the aggregate collection of companies engaged in the design and fabrication of semiconductor devices. It formed around 1960, once the fabrication of semiconductors became a viable business. It has since grown to be the \$249 billion industry it is today.

The global semiconductor industry is dominated by USA, South Korea, Japan, Taiwan, Singapore, and European Union. The U.S. industry faces challenges to development by some forms of government regulation. The U.S. government regulates exports and certain uses of some types of semiconductors due to their potential dual use in military applications and Test Advantage Hardware Philippines, Inc. is one of them.

TAHPI which was originally MICROSTATS, Inc. was perceived in the late year of 2008. In 2006, two former Teradyne employees, Edsel Solon and Nilo Anticamara, decided to start a company of their own after more than 10 years in the field of ATE Global Customer Service.

Solon began his prosperous engineering career in TIMEX Philippines in early 90's and in mid-90's, he worked as a professor in one of the most prestigious Universities in Cebu, Philippines. In the late 90's he was recruited by Teradyne, one of the world's leading ATE producers as Test Engineer, where he was responsible for retaining and improving the repair metrics of A3xx, J750, and Flex systems, which include cycle time, WIP (Work In Process) age, RO (Repeat Offender), DOA (Dead on Arrival), MTBF (Mean Time Between Failure).

In Teradyne, Solon met another active pioneering engineer Nilo Anticamara, who has been going in and out of the US doing several Teradyne ATE transfers. They then joined Covenant Ultratech group of companies owned by Nor San Juan who has been in the trading business for 15 years in semi-conductor industry. They formed a subsidiary group called CUI-BRS (Covenant

Ultratech, Inc. - Board Repair Services) and gained several multi-national customers both local and foreign.

Unfortunately, the CUI-BRS only lasted for three years providing both semi-conductor and tele-communication repair services and gave rise to MICROSTATS, Inc. Solon and Anticamara were determined to bring the business to a bigger and wider perspective. They shared the board repair concept to Fabrice, CEO of Test Advantage Inc. Since then, MICROSTATS, Inc. was born.

The new venture was named MICROSTATS because “the technology is moving towards miniaturization” according to the founders, “STATS is an acronym for “Semiconductor Test Analysis and Troubleshooting Standard.”

For them, the name means pounding the existing service standards of OEM in every statistic data for repair quality, reliability and turn-around time.

In beating the standard of repair, Solon and Anticamara learned how to deal with fast growing technology, and repair the oldest and even the newest category of test equipment directed at cutting down cost on the semiconductor manufacturers.

Microstats, Inc. was formed by two natural-born Filipinos and foreign partners from US. Microstats is a foreign corporation majority owned by foreign investors. Later in the year 2011, Microstats, Inc. was acquired by Test Advantage Hardware, US, a supplier of custom-configured Automatic Test Equipment Tool (ATE) for semiconductor test and changed the name to Test Advantage Hardware Philippines (TAHPI).

At TAHPI, the engineers are fully trained to diagnose and repair any electronic boards/products with certification from IPC (Institute for Interconnecting and Packaging Electronic Circuit). At TAHPI, all rework procedures are based on IPC standard to ensure accurate removal and placement for each and every

required component that makes it dependable and highly reliable rework service every time. TAHPI specializes in the repair, service and sales of refurbished ATE test systems manufactured from various OEM ATE manufacturers. TAHPI is proud to be a one-source repair solutions company that brings together a unique combination of services that enables itself to be a valued outsourcing service. TAHPI professional in protecting its customer's investment by providing repair services on out-of-warranty products or end of life ATE products.

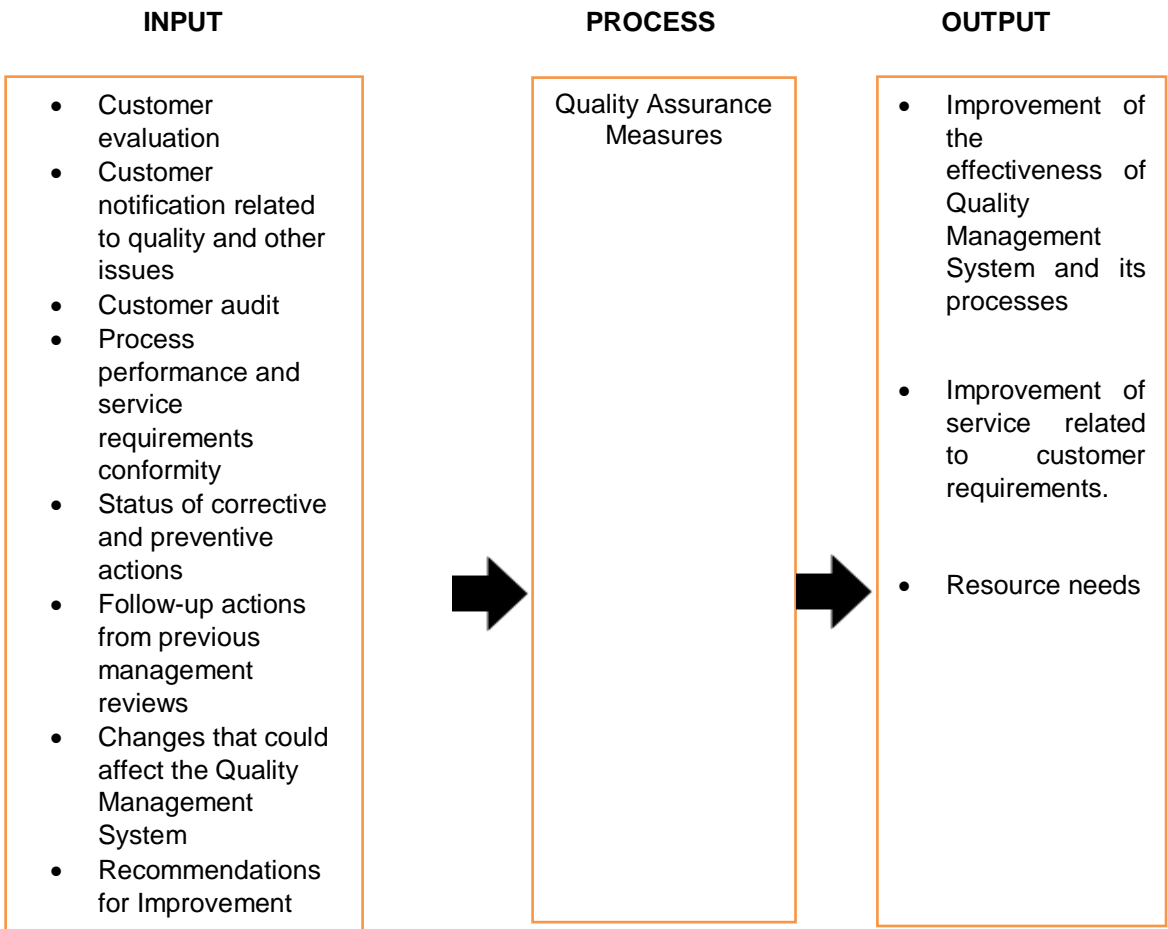
TAHPI expertise covers sales, system training and field service engineering capabilities for a wide range of Teradyne, CREDENCE, LTX ATE out-of-warranty products or end of life product support including some Megatest ATE products. Their dedicated staffs of repair engineers and technicians ensures that its customers receive only the highest levels of quality service in scrutinizing and resolving repair issues.

Objectives of the Study

The driving force behind this project and all recommendations made is to address the primary questions:

- *“How do we maintain the **standardization** of TAHPI?”*
- *“How do we sustain the standardization to assure satisfaction of the customer of TAHPI's products and services?”*

Research Framework



Review Input

Depending on the availability of information, the following are the topics to be discussed, but not limited to:

- a) Customer feedback - this includes, but not limited to:
 - Customer complaints;
 - Customer evaluation of TAHPI performance;
 - Customer notification related to quality and other issues; and
 - May also include the result of customer audit to TAHPI

- b) Process performance and service requirements conformity - examples of process performance are, but not limited to, productivity, accuracy of outputs, etc. Examples of service conformity are checking results, customer complaints, and number of revisions of reports and outputs.

- c) Status of corrective and preventive actions - corrective and preventive actions may arise from processor system.

- d) Follow-up actions from previous management reviews - actions and other pending issues from the previous management reviews are followed up to check status of actions and/or how effective the implemented actions were.

- e) Changes that could affect the Quality Management System - there are several changes that could affect the Quality Management System. Examples are additional service and/or service categories, improvement on processes, change in organizational structure, etc.

- f) Recommendations for Improvement - TAHPI top management is committed to continually improve its Quality Management System. Should there

be any recommendations for improvement regardless of the source, these are reviewed by the top management for suitability and adequacy.

Strategy Map

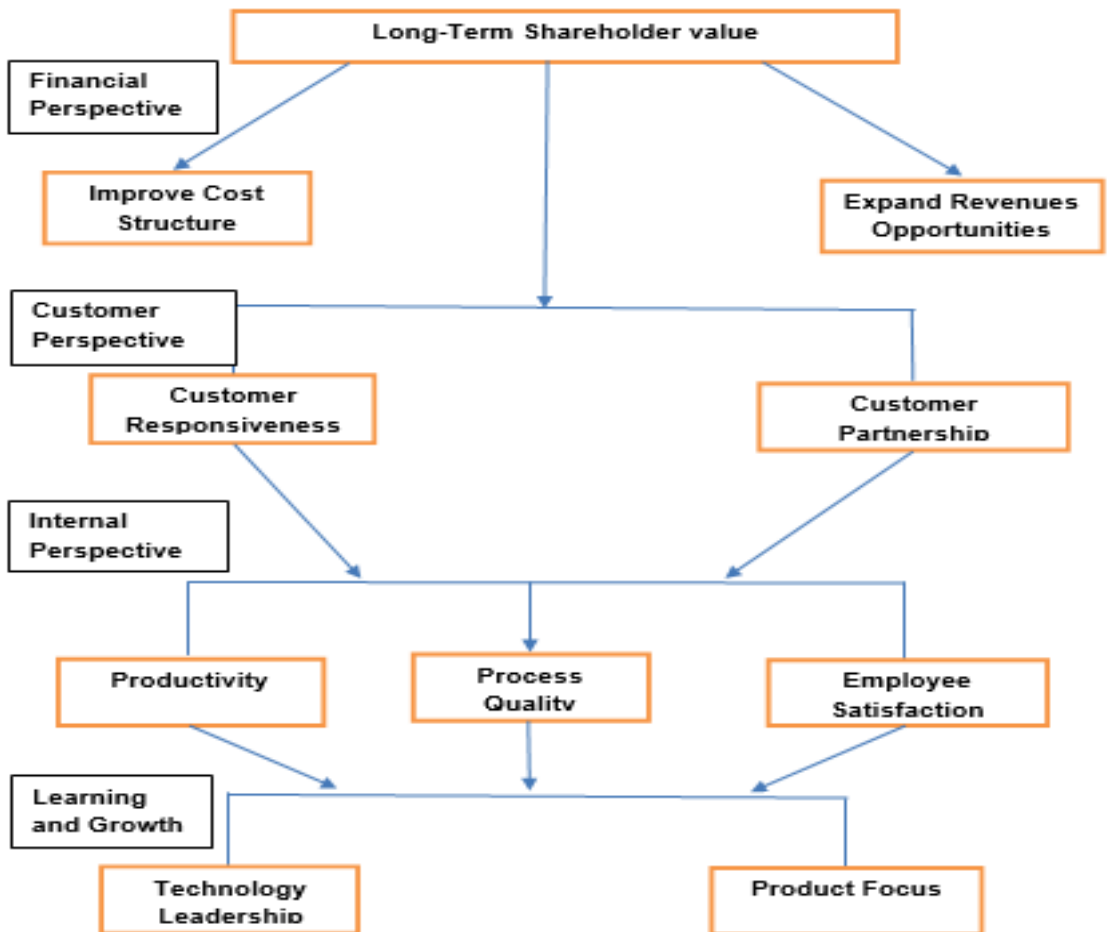


Figure 1 above reflects the framework of the study. Observation and interview was used as pre-examination to the host company. Trainings, seminars

and the Quality Manual was given to control the threats inside and outside TAHPI. Hence, to determine the effectiveness of the resolution of TAHPI, the research combined all the analysis and formulate an extensive solution to the problem.

The strategy map is a communications tool in the form of a diagram that is used to ensure the strategy required by the company in order to become more successful. It aids TAHPI in capturing, communicating and managing the strategy better. The strategy map indicates how the strategic objectives can be connected with each other in their cause and effect relationships. This is made possible with the use of the Balanced Scorecard and its four perspectives: financial, customer, internal business process and learning and growth.

Balance Scorecard

Name	Progress	Value	Baseline	Target	Measure	Weight	Min	Max
Company Strategy - Sample Scorecard	73.87 %		48.32	61.14	%		0	100
Finance	81.94 %		26.75	45	%	3	0	100
ROA	93.33 %	29	15	30	%	2	0	100
ROE	80 %	45	25	50	%	1	0	100
Debt/equity ratio	61.11 %	63	52	70	%	1	0	100
Customer	77.72 %		81.76	95.69	%	4	0	100
Response Time	77.27 %	91.8	79.9	95.3	%	6	0	100
On-time delivery	80.39 %	97	92.9	98	%	1	0	100
Internal Business Processes	54.01 %		3.08	5.33	%	2	0	100
DOA	1.08 %	0.07	0.05	1.9	%	3	0	100
Cycle time	77.78 %	6.6	5.2	7	%	7	0	100
< 90 Days	71.74 %	3.8	0.5	5.1	%	1	0	100
NFF	80 %	7	3	8	%	1	0	100
PCFD	2.7 %	0.06	0.02	1.5	%	1	0	100
Learning and Growth	73.93 %		69.8	83.04	%	1	0	100
Access to strategic information	70.59 %	75	63	80	%	6	0	100
Employee Satisfaction	78.95 %	86	80	87.6	%	4	0	100

The balanced scorecard is a performance management system developed by Kaplan and Norton to keep track of the implementation of activities by the staff within their control. The balanced scorecard provides a recommending tool which is used to monitor and control the business activities of TAHPI and the consequences arising from these actions. These business activities will be aligned

to the vision and strategy of the organization according to its financial, customer, internal business process and learning and growth perspectives.

Financial Analysis

1. Test Advantage Hardware Philippines Inc.

TAH Philippines

Balance Sheet

As of December 31, 2015

ASSETS

Current Assets

Checking/Savings

Petty Cash	1,152.
BPI-Peso PHP	68,715
BPI-Dollar USD	558,012
Metrobank-Peso PHP	15,942

Total Checking/Savings	<u>643,822</u>
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Accounts Receivable

Accounts Receivable	721,162
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Total Accounts Receivable	<u>721,162</u>
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Other Current Assets

Other Current Assets

Prepaid Inventory	33,673
Prepaid Expenses	70,671
Deposits	30,627
Other Receivables	11,495

Total Other Current Assets	<u>146,467</u>
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Receivables from Affiliates

Employee Receivables	2,627.
Total Receivables from Affiliates	<u>2,627.</u>
Inventory Default Account	
PCB Inventory	1,321,890.
Repair Components	153,443.
Total Inventory Default Account	<u>1,475,333.</u>
Total Other Current Assets	<u>1,624,429.</u>
Total Current Assets	<u>2,989,414.</u>
Fixed Assets	
Furniture & Equipment	1,208,227.
Accum Depr-F & E	-740,772.
Leasehold Improvements	719,438.
Accum Depr-Leasehold Impr	-462,372.
Total Fixed Assets	<u>724,521.</u>
TOTAL	
ASSETS	<u><u>3,713,935.</u></u>
LIABILITIES &	
EQUITY	
Liabilities	
Current Liabilities	
Accounts Payable	
Accounts Payable - PHP	41,672.
Total Accounts Payable	<u>41,672.</u>
Other Current Liabilities	
Accrued Exp & Other Liability	
Accrued Payables/Expenses	11,019.
Payroll Taxes Payable	

Pag Ibig Payable	138.
Pag Ibig Loan Payable	167.
SSS Loan Payable	127.
SSS Payable	751.
WTax Payable	12,320
Total Payroll Taxes Payable	13,504
Philhealth Payable	329.
Expanded W/Tax	495.
Other Payables	73,240
Total Accrued Exp & Other Liability	98,589
Payables to Affiliates	
Due to Affiliated Companies	1,335,865.
Total Payables to Affiliates	1,335,865.
Deferred Revenue	
Customer Deposits & Prepayments	15,232
Total Deferred Revenue	15,232
Total Other Current Liabilities	1,449,687.
Total Current Liabilities	1,491,359.
Total Liabilities	1,491,359.
Equity	
Share Capital / Member Interest	300,000
*Retained Earnings	236,838
Net Income	1,685,738.
Total Equity	2,222,576.

TOTAL LIABILITIES & EQUITY

3,713,935.

TAHPI proves itself to be a lucrative business as it continues to increase in its net income signifying profit. The company makes sure the standards of low cost are followed to maintain low prices.

CONCLUSION

- There is only little room for improvement since TAHPI is already standardized. It has complied with the requirements for ISO certification. Every system that TAHPI is implementing is working effectively.
- TAHPI must be incessantly observed to ensure the application of absolute standardization. It has complied with the requirements for ISO certification and may be implementing its work effectively, but as Operations management students, the researchers must still discern further improvements in the methods and processes to benefit the organization.

RECOMMENDATION

Based on the foregoing findings of the study, the following are recommended for future enhancement of Test Advantage Hardware Philippines Inc.

- More company visits and observations for better accuracy. If the researcher had more time and resources, the researcher will aim to achieve this. To be specific, the accuracy and the communication between TAHPI and the researcher will be better.

- Deeper knowledge of research methodology. To be specific, the researcher highly recommends the Operation Management Student, Industrial Engineering student, and other interested students, to formally study research methodology before they start doing any research. In other words, the Research Methodology class should be a mandatory subject.
- Very small knowledge of semi-conductor industry. Prior to starting this research, the researcher had a very small amount of knowledge in semi-conductor industry. It is when the research started that the researcher also started to gain knowledge in semi-conductor industry. In other words, before starting to conduct a research study about semi-conductor industry the future researcher should have a broader knowledge in engineering field.

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