The Importance of SAS® Software in a TQM Environment

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Abstract

In today's dynamic business environments, top management leaders are initiating the integrated management system known as Total Quality Management (TQM). This strategic system for achieving customer satisfaction through employee empowerment and teamwork by using software like SAS® to continuously improve an organization's processes will ultimately lead to quality. The major emphasis of this paper is to expose some of the outstanding quality facets of SAS® software an organization can exploit to meet its customers' requirements, needs, and most importantly, their expectations. References to SAS® software in this paper are for illustrative purposes only and do not constitute an endorsement of the product by the U. S. Air Force or the Department of Defense.

1. INTRODUCTION

The purpose of this paper is to discuss the importance of software like SAS® in a TQM environment. To accomplish this objective, we will first illustrate the three principles of TQM, i.e., achieving customer satisfaction, involving everyone, and making continuous improvement, as the legs of the triangle in Figure 1.

This triangle is further subdivided visually into seven individual triangular components. All seven components are portrayed individually in Figures 2 through 8 and discussed as separate entities in order to outline their independent function within a TQM environment. This unique interrelationship, achieved by combining them together, allows any organization to involve everyone to employ software like SAS®, which makes continuous improvement, leading to customer satisfaction, achievable. Finally, the triangular component labeled Measurement and Analysis, is redefined as SAS® Software. This transposition is displayed in Figure 7 and becomes the crucial part of this paper.

2. PRINCIPLES OF TQM

There are three principles of TQM: achieving customer satisfaction, involving everyone, and making continuous improvement. Connecting them as the legs of the triangle in Figure 1 provides the framework of TQM. It also supplies a high-level overview of the structure of this strategic management system. This arrangement can then be subdivided into the components of TQM [7].

3. COMPONENTS OF TQM

There are seven components of the integrated management system known as TQM:

- Top Management Leadership and Support
- Focus on the Customer
- Strategic Planning
- Quality Assurance
- Commitment to Training and Recognition
- Measurement and Analysis
- Employee Empowerment and Teamwork

Each component can function independently on its own merits. This fact will be exploited throughout the rest of the paper by examination of each component individually. However, it is the combination of all the components, in conjunction with SAS® software integration within the organization, which provides an opportunity for the implementation of TQM [7].
4. TOP MANAGEMENT LEADERSHIP AND SUPPORT

To begin, the Top Management Leadership and Support component is located at the very top of the TQM triangle (Figure 1). This serves two purposes. First, top management leaders are responsible for initiating this integrated management system. Second, with the use of Figure 2, we illustrate what top management leaders must accomplish to maximize productivity of the data processing organization. They must involve everyone in the direction of focusing on customers. Once these two legs of the Figure 2 triangle are performed by top management leaders, the final leg of this triangle, customer satisfaction, will become achievable.

The way top management leaders could use software like SAS® within the TQM environment is through the development of in-house visual information delivery systems. These information delivery systems can be developed by the organization with base SAS® software, SAS/ASSIST®, SAS/GRAPH®, and other SAS® software products. An alternative method may consist of the adaptation of SAS® EIS® software.

5. FOCUS ON THE CUSTOMER

Next, the Focus on the Customer component is the center of the TQM triangle (Figure 1). Historically, within many organizations, this component has not always received the attention it deserves. One of the achievements of TQM is changing the attitudes of many professionals so that they focus on everyone as valued and important customers [5: p.11].

If we closely examine Figure 3, we see that the top leg is labeled Top Management Leadership and Support. This is significant because the Focus on the Customer component is the only one with direct contact to this component. It really means that the customer will always have a high-level executive sponsor for all their activities [4: p. 90].

Before we begin the discussion about the other two legs of the Focus on the Customer component, namely, Strategic Planning and Quality Assurance, some other points of interest are addressed. The Focus on the Customer component also contacts two of the legs of the large triangle in Figure 1, Involving Everyone and Achieving Customer Satisfaction. This supports the position expressed above which states that it takes the involvement of everyone in the organization to achieve customer satisfaction. In addition, this component also points to the Employee Empowerment and Teamwork component. Later we will see that this component will become ultimately responsible for building information delivery systems with software like SAS®, which in turn addresses customer concerns. Thus it will become the responsibility of professionals with SAS® programming skills to make continuous improvement of the organization's processes in order to meet the demands of its customers.

6. STRATEGIC PLANNING

As mentioned above, the Strategic Planning component has a common leg with the Focus on the Customer component. To succeed in today's business world, organizations must recognize that the customer must become a viable partner when making effective choices regarding strategic planning. By considering this option, the organization will find itself in a position to discuss other competitive alternatives which should ultimately lead to more effective business choices. Additionally, the leg labeled Employee
Empowerment and Teamwork in Figure 4, is shared with the Strategic Planning component. The Strategic Planning component also connects the Top Management Leadership and Support component with the Commitment to Training and Recognition component. This involvement of both top management leaders and data processing professionals along with their customers as a part of strategic planning will indeed lead to the third leg of the Strategic Planning component, Achieving Customer Satisfaction.

Looking at Figure 1 again, we see that a leg of the Quality Assurance component connects the Top Management Leadership and Support component and the Measurement and Analysis component. This is important because quality assurance should become a top management priority within every organization. Additionally, quality must be measured and analyzed with software like SAS® so everyone in the organization can see how they are doing and what needs to be done to make continuous improvement.

8. MEASUREMENT AND ANALYSIS

The Measurement and Analysis component has a common leg with the Employee Empowerment and Teamwork component. This is significant because organizations must seek employees who possess SAS® programming skills. It is these professionals who will be able to develop information delivery systems which measure all the organization’s processes and provide everyone with results which channel efforts toward making continuous improvement. Therefore, the Measurement and Analysis component in Figure 6 conveys the thought that everyone, especially those employees with no SAS® skills, must measure the service delivered and analyze the work being accomplished in order to make continuous improvement and assure quality.

7. QUALITY ASSURANCE

The other common leg with the Focus on the Customer component is Quality Assurance. This is significant because customers constantly demand and look forward to superior service. To meet such high expectations will take the involvement of everyone through employee empowerment and teamwork, while focusing on the customer, as displayed in Figure 5, Quality Assurance.

9. REDEFINE THE MEASUREMENT AND ANALYSIS COMPONENT

We are now ready to redefine the Measurement and Analysis component. This component will be renamed to SAS® Software as shown in Figure 7.

The major reason for doing this is to take a candid look at the importance of software like SAS® in a TQM environment. To accomplish this point, a list of
quantitative methods to continually improve the areas concerning projects which exploit technological advances, which deliver information throughout the organization and to customers, and to track and solve those problems which strive toward customer satisfaction follow:

- Analysis
- Application Development
- Computer Performance Evaluation
- Database Management
- Econometrics
- Executive Information Systems
- Graphics
- Operations Research
- Project Management
- Quality Control
- Statistics
- Transporting Files
- Visual Information Delivery Systems

This identification of some of the outstanding facets of software like SAS® an organization can exploit to meet all customer requirements, needs, and most importantly, their expectations will lead to quality.

10. COMMITMENT TO TRAINING AND RECOGNITION

The Commitment to Training and Recognition component also has a common leg with the Employee Empowerment and Teamwork component. Employees in any profession are most committed to making continuous improvement and achieving customer satisfaction if they are foremost respected as a viable member of the team. Additionally, they must be provided with interesting work, allowed to be heard, to think, to see results, and above all to be recognized for their contributions. Moreover, employees want to be trained so there are opportunities for personal growth. In turn, the company benefits by obtaining new ideas for existing projects that affect strategic planning and revolutionize ineffective methods of the past. A company which provides training opportunities with SAS® software to establish well-planned information delivery systems will be able to react quickly and accurately in changing business circumstances. In Figure 8, all these concepts are brought together as one single entity.

Finally, the Employee Empowerment and Teamwork component shown in Figure 9 is the most complex. Note that of the seven internal triangles within the large triangle (see Figure 1), only this component comes in contact with the three principles of TQM. Additionally, it contacts all the components except the Top Management Leadership and Support component. There may be some irony here. Remember that it is the responsibility of top management leadership to initiate this integrated management system - - not the members of the Employee Empowerment and Teamwork component. Leadership consists of accomplishing projects by providing these members with both the intellectual and technical tools to perform the mission. A leader, instead of being a judge, will be a colleague, counseling and leading the people on a day-to-day basis, learning from them and with them [1]. Through the steady effort of both components, Top Management Leadership and Support and Employee Empowerment and Teamwork, a TQM environment with unlimited opportunities for success will become the ultimate result.
12. SUMMARY

The demand for a systematic approach in order to make the best use of the individuals who possess the expertise and skills critical to an organization's success has long been a vital concern of many top management leaders. In dealing with this problem, this paper has presented a repeatable process which continually moves an organization toward excellence. Included is a comprehensive set of diagrams which, when combined together, as in Figure 1, serves as an effective management tool. It is now possible to achieve an environment that encourages everyone to employ software like SAS® in order to contribute on a regular basis toward improving quality, surpassing customers' needs, and fulfilling their expectations.

In closing, a better view of the future can only be achieved by building an organization which exploits the unique capabilities of SAS® software. Accomplishing this will require less traditional, less conservative, and less bureaucratic leadership. It will take a top management leader who truly fosters the achievement of customer satisfaction through employee empowerment and teamwork by using quantitative methods to continuously improve the organization's processes. Finally, because software like SAS® can be used to handle all customer demands, success is inevitable.

References to SAS® software do not represent an endorsement of the product by the U.S. Air Force or the Department of Defense.

13. REFERENCES


14. ACKNOWLEDGEMENTS

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