Total Quality and Computer-Assisted Interviewing; frames, definitions and tools for planning a total quality system

Pentti Pietilä and Hannu Niemi, Statistics Finland

1. Introduction

Total quality management (TQM) and computer-assisted interviewing (CAI) could well be compared to the quality of a fuel injection system and the total quality of a car. The aim of this paper is to give a broader view and metaphorically speaking to discuss about the car - that is, to discuss about total quality management, which gives a frame for CAI. A car will not work if the fuel injection system is faulty and the same applies to CAI as a subsystem of a survey study.

Total quality management is essential for the survival of the survey industry regardless of whether the sector involved is the private, public, or non-profit one.

2. Computer-assisted interviewing

CAI is estimated to be one of the main data collection methods in survey research in the near future. Its "competitors" are mail surveys and administrative records. Interviewing offers some very significant advantages. It is for example not "a second hand shop". The data obtained are always new. Almost anything can be asked. Furthermore, the results are obtained quickly and in this respect CAI offers major advantages. The disadvantages are the costs in data collection and the respondent burden.

However, interviews form only part of a survey research process. As a simplified model one can distinguished the following subprocess in a complete survey research:

- survey design
- sampling
- questionnaire design
- management
- data collection
- data processing

- analysis
- dissemination.

The use of computers in interviewing has an effect on all of the subprocesses.

3. Definitions of total quality management

The survey question: "What does the word quality mean?" would probably bring as many answers as there are respondents. It has been claimed that TQM is no longer applicable and that by the year 2000 quality will be self-evident. Quality thinking started from process control, but later evolved into a much broader concept. This may be one reason why quality thinking has survived so long - it changes form continuously like an amoeba.

David Garvin [2] has presented five points of view on quality:

* The transcendent view of quality is synonymous with innate excellence, a mark of uncompromising standards and high achievement. This viewpoint is often applied to the performing and visual arts. It argues that people learn to recognize quality only through the experience gained from repeated exposure. However suggesting that managers or customers will know quality when they see it offers little practical guidance.

* The product-based approach sees quality as a precise measurable variable. Differences in quality reflect differences in the amount of some ingredient or attribute possessed by the product. Since this view is entirely objective, it fails to account for differences in individual tastes, needs and preferences.

* The user-based definition starts with the premise that quality lies in the eyes of the beholder, equating quality with the maximum satisfaction. This subjective, demand-oriented perspective recognizes that different customers have different wants and needs.

* The manufacturing-based approach, in contrast, is supply based and is primarily concerned with engineering and manufacturing practices. It focuses on conformance to internally developed specifications, which are often driven by productivity and cost containment goals.

* Value based definitions define quality in terms of value and price. By considering the tradeoff between performance and price, quality comes to be defined as "affordable excellence". This perspective makes clear that one can have a high quality motel as well as a low quality five star hotel.

Basic principles of TQM are:

* Customer orientation
* Internal customer-supplier partnership
* The process view
* Suppliers as a part of the system
* Total employee involvement
* Continuous improvement
* Quality measurement and management system
* Employee training
* Vision and strategic goals.

4. Levels, frames, and tools in TQM

Quality can be discussed on many different levels of an organization:

* Managing the whole organization by mission, vision, strategic goals, management structure and shared values

* Managing different activities and processes such as data collection, data analysis and reporting, where products are considered, production, information technology, research and development, customer relationships.

* Managing different subprocesses (for example a survey)

* Personal level, where personal skills, attitudes and knowledge are key factors.

Different tools are needed at different levels. On the two higher levels the use of concepts related to quality awards are very useful. Deming [1], Malcolm Balridge and the European Quality awards are well-known sources that offer useful information on strategic quality thinking. The structure of the European quality award is appended in appendix 1. Bench marking - comparing your organization with similar organizations - can also give a stimulus to work for better quality on the organisational level. Quality assurance matters are covered extensively in the ISO standards. An example of ISO 9001 standards used in a survey research organization is presented in appendix 2, and the concepts used in these standards are "converted" to the survey research framework. Level three involves working with specific surveys where a new si planned or old surveys are reengineered or renewed. A very interesting model for these purposes was developed by the US Bureau of Labor Statistics (see appendix 3).

The main principles of quality improvement include:

Customer orientation

Quality is related to customer demands. Deviations from expected quality result in customer dissatisfaction. Customers and their needs must be identified. The means of measuring customer satisfaction is necessary. Martin Collins [4] has pointed out that loving care instead of meeting contract standards is important in developing the customer relationship management.

On the other hand, excessive customer orientation can be damaging. Customers are not necessarily aware of all the better quality options available. The purpose is to reach a level of quality where the customer is surprised in a positive way.

The process view

All the products and services, as well as their quality characteristics, are produced within a process. Process thinking is a dominant feature in TQM. The use of characterization in terms of functional organizations is less important whereas the framework of horizontal processes and process owners is more relevant. Business is organized around key customers. The building blocks of all the processes consist of subcontractors, internal suppliers and customers.

Processes consisting of subprocesses within different departments contribute and add value to final products. An internal customer supplier interface must exist between subsequent subprocesses, as with external customers. These internal customers must be identified. Every process must have a process owner, making the organization very flexible. A new customer or a new product is reason enough for reorganisation. Organizational levels also become thinner and the personnel becomes more customer-driven than driven by their superiors.

Continuous improvement

"Right first time" is one of the slogans frequently used in TQM. It implies that error prevention - avoiding faults happening in the first place - is much cheaper than detecting faults and correcting them afterwards. By not doing things right first time we:

* waste time
* cause trouble to others

* put ourselves under pressure
* put customer satisfaction at risk

No matter how much improvement is made, our competitors will continue with their quality improvement efforts and our customers will expect quality that is still better. Small steps to improve the efficiency of our processes and to meet new customer needs are taken continuously. Major changes are followed by some reengineering and big steps to fulfill the requirements must be taken.

Occasionally problems arise. A stepwise approach to problem solving increases the possibilities in problem solving:

* define the problem
* look for root causes not special (random) causes
* choose a solution
* implement the solution
* check that it worked.

Once the solution to the problem has been found, the following questions should be asked:

* will it solve the problem?
* will it solve it forever?
* will it prevent the problem renewing itself?

If you do not know where you are going, all the roads will take you there!

Total employee involvement

Employees throughout the organization are encouraged to be responsible for quality. Most people would rather do a high quality job than a poor quality one. Hence each employee needs to know how she or he adds value in the process and how quality is measured.

Suggesting quality improvements is essential. In order to help improve quality it is necessary to ensure that:

* the right tools and training are available
* systems are designed to help and not hinder
* guidance is offered
* documents are available.

Working with one another is a lot better than working against one another. The best teams have good individual players, but the winning team is created by playing well together. Working in teams helps to:

* achieve things individuals alone cannot
* make best use of all our skills
* make better decisions
* get more enjoyment from work.

It is also very important not to separate those who plan and those who actually do the work. Everyone must be offered a chance to develop his/her own work.

Employee training

Quality training is necessary for everyone. By learning to use different quality tools we can contribute in quality and it is easier to understand personal influence in quality. Special skills in problem solving and teamwork as well as customer relationship management skills are all essential.

An organization needs not only qualified staff, but also employees that are willing to improve their skills continuously.

Management, communication and recognition

A clear vision, shared goals and values are necessary, and constancy of purpose for product and service improvement should be created. TQM puts emphasis on managing processes, people and customers. Taylorism as a management system is outmoded. Employees cannot do their jobs better if massive inspections are held or if work is divided into small segments.

Work standards should be eliminated, as should management by objective. The responsibility of supervisors must be changed from sheer numbers to quality. Barriers between staff areas should be broken and everyone should be allowed to be proud of his or her job.

5. Considerations between TQM and CAI

Quality is not for sale - you cannot buy it. Similarly you cannot teach it, but you can learn it. Every organisation must make its own quality system to fulfill the special needs and goals of that specific organisation. However, it is possible to suggest some useful points when planning a total quality system for CAI operations.

Work done in CBS Netherlands by Keller and Betlehem and the Blaise team on the integration of data collection, processing and dissemination and planning and developing the Blaise system for these operations offers very significant advantages in becoming leading survey organizations in the total quality sense in the future.

Some advice in planning quality:

* Avoid the creation of a cati centre, which uses the methods of Taylorism and reflects offices of the past, where a supervisor sitting high up knows everything and interviewers sitting down in straight lines only know how to read questions and how to type the answers.

* Do not rely on massive inspection and control once a survey has been completed. Try to avoid errors in planning and programming.

* Identify your CAI service as a system and focus on internal and external customers and make a quality agreement with each customer, and make an alliance with your subcontractors.

* Lead different processes instead of functional units.

* Do not separate planning and doing. Let everyone be responsible for quality and be proud of it.

* Try to reach the quality award level as a strategic quality standard. Following the principles is more important than winning the award.

* Create a quality system for CAI-operations by defining subsystems and evaluating, developing, implementing and documenting them. Use internal auditing and possible certification to make sure you follow the documents on different levels. A quality system is never ready and continuous improvement and development is necessary.

* Cooperation between BLAISE users in different countries offers crucial benefits in reaching excellent quality with fewer resources. The basic quality system for CAI can be implemented in cooperation. Setting a high quality standard for CAI is a worthwhile challenge. Achieving that level would almost be equivalent to winning a quality award!

References

[1] Deming Edwards, (1986): *Out of the crisis*,

[2] Garvin David, (1988): *Managing quality*.

[3] Colledge & March (1993): Quality management; Developing of a Framework for a Statistical Agency, ASA, April 1993.

Papers presented by

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[5] Lorna Hall: *Quality certification in the survey research industry*

[6] Cathy Dippo: *Integrating the concepts of survey measurement and process improvement*

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