It has been observed that the studies of quality are pursued in various disciplines like economics, quality management, and marketing science, and are seen isolated. The treatments imparted to these studies are also different and has the backdrop of discipline in which the work has been pursued. The nature of isolation is equally seen when quality uncertainty and perceived quality were pursued separately without showing any inkling that these can be complimentary.

Economist and Nobel Laureate, Akerlof (1970), wrote a seminal piece “The market for lemons: quality uncertainty and market mechanism”, where he described quality uncertainty due to information asymmetry. It refers to the fact that a party in a transaction may have more information than the other. This is information asymmetry. If the seller has more information than the buyer about the product quality, he/she may sell it, as if it is a high-quality product. In reality, it could be a low-quality product. The buyer does not have the information regarding the quality of the offered product. The market condition that led to this transaction is quality uncertainty due to information asymmetry.

An attempt was made in 1980s by Parasuraman, Zeithaml, and Berry, to develop a metric for the measurement of perceived quality. However, it was largely applicable to service quality. The approach to perceived quality of products has been a peculiar marketing science way of statistical computation on the basis of sample survey. It has neglected the Total Quality Management (TQM) efforts and the crucial component of information asymmetry that prevails in the market.

Traces of perceived quality are also seen in quality management. Garvin (1984) identified the eight dimensions of quality. Perceived quality is one of these eight dimensions. Garvin suggested that information content is one of the bases of perceived quality. The process of quality perception requires the basis of information that is similar to the phenomenon of quality uncertainty.

Thus, the dimensions of quality uncertainty and perceived quality have been studied in various disciplines. Now, it is a time to break the barriers of disciplines to usher in a more purposeful study on these aspects of quality. A few more disciplines can be involved to further the multidisciplinary approach. Uncertainties are handled
by using probabilities. Hence, perception of quality is now probabilistically coined as quality perception as an opposite of quality uncertainty. Quality perception and quality uncertainty have become two sides of the same coin.

Theories of reliability engineering can be applied for modeling and analysis of quality uncertainty as well as quality perception. Fault tree and success tree methods are specifically helpful. Thus, economics, marketing science, reliability engineering, and quality management are mingled to evolve the theory of quality perception. The theories need to be refined and implemented by using system behavior approach. System dynamics then plays a final role in deciphering the complex situation of quality perception.

**Intended Audience**

At the core, the content of this book refers to economics, marketing, and quality management. Hence the audience for this book are primarily drawn from all these streams. Specifically, quality management people may want to incorporate the new dimension of quality perception that will render the competitive edge to business growth. The people from economics of information would like to see the way quality uncertainty issue is modeled and how simulations are useful to reiterate on hypothesis. Above all, it is marketing that has to deliver truly to the customers. The kernel of business growth lies in understanding the marketing strategies and the way strategies are developed. The work in this book supports to develop marketing strategies by using optimal resources, and also tries to directly link these strategies to business growth.

Also, the students from business schools can learn the engineering based mechanics of quality perception that is developed in this book. Many times, the management tools alone are not sufficient to fully explore the issue that is being handled. Quality uncertainty and perception have been given the multidisciplinary orientation in this book that is based on engineering perspective.

Developing the metric linking customers to business growth has been the constant urge of practicing executives and managers. They have implemented such metrics that were developed earlier, and the satisfaction had been either partial or none. Certainly, the work in this book will provide the scientific way of looking at quality perception which will render the proper insight to executives and managers. The insight gained from this book will be capable of developing managerial perspective to translate the customers’ sentiments into business performance.

**Organization of the Book**

Quality uncertainty has been studied earlier in economics of information. These attempts are reviewed as an introduction to this book. The work starts by identifying the role of information asymmetry to understand the phenomenon of quality uncertainty. The mechanics are elaborated in the second chapter. Similarly,
perceived quality as noticed in the literature is presented in the third chapter. Some attempts have been made earlier, to develop the metric for measurement of perceived quality, which are traced through the time and disciplines.

The fourth chapter links quality perception to quality uncertainty. The extent of information asymmetry or symmetry has been used as the basis for this linkage. This is a chapter from where the disciplines start mingling in this book. Quality uncertainty or perception is viewed from both, endogenous and exogenous perspectives. Total Quality Management makes the endogenous side with TQM constructs as endogenous variables, whereas marketing science framework exhibits the exogenous side. Principles of economics of information are implemented to correlate marketing parameters with the TQM practices in industry so that quality is perceived by customers. Quality uncertainty and perception behaviors are also related to product life cycle. Thus, a new direction has been given to the perceived quality that traversed thus far in different streams.

Generally data collection is a tedious work discouraging managers from implementing any theoretical framework. The approximate method that creates starting motivation is proposed in the fifth chapter. It needs only partial data and identification of the product specific factors. Affinity diagram, interrelationship diagram, and tree diagram, from seven management tools are used to develop root cause and failure analysis of quality uncertainty.

The sixth chapter presents the system dynamics approach to modeling and analysis of quality perception. Models are developed in Vensim PLE. Simulation runs are carried out. The process of quality perception is made explicit through simulations. Behaviors are studied extensively. Thus, the dynamics of quality perception are presented in this book. Finally, research potential on the topic is unfolded in the seventh chapter.

The instruments to minimize quality uncertainty or to maximize quality perception are developed in the fourth, fifth and sixth chapter. The instruments are developed along with subtle explanation so that their use in real life should be credible. The reader tends to get stuck in all these details and using these tools look difficult. The seeming complexity of using the tools has been avoided by developing the simple worksheets that are ready for practical use. Thus, six worksheets are developed and included in appendices at the end of the relevant chapters. The step-by-step explanation is also provided to fill the worksheets.

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