Quality improvement professionals are frequently asked about the expected return on investments (ROI) in product or service quality improvement efforts. By training and habit, financial managers are most likely to ask these questions – they would like to be able to predict the future value of some expenditure to their organization’s bottom line. In turn, consultants typically recommend quality improvement strategies to management on promises of reducing the cost of quality and thereby directly benefiting the bottom line. The problem with the questions and the promises is that both the costs and benefits of quality improvement are very difficult to fully identify. The addition of the notion of quality adds to the complexity because quality is not easily quantifiable, particularly as it exists principally in the opinions of an organization’s customers or more broadly in the minds of the general public. It is for this reason that measuring quality typically involves listening to customers using interviews or surveys in addition to developing internal process measures.

Some costs and benefits may be hidden. Edwards Deming, the great proponent of Statistical Process Control (SPC), refers to these as the invisible figures. Examples are the “costs” of a dissatisfied customer or the “benefits” of a satisfied one. Invisible though they may be, Deming insists that managers must attend to them or see their failure to do so reflected in more visible figures – their balance sheets.

COST–BENEFIT ANALYSIS

Since the 1950’s economists have used the formal approach of calculating a cost-to-benefit ratio in evaluating some potential investment or policy change. The strategy was to rank order actions (investments) on the basis of the extent to which benefits outweighed the costs of the action. The theory followed that competing alternatives could be compared to one another to identify the alternative with the largest expected payoff.

Of course there are lots of difficulties with this technique. Both costs and benefits may be difficult to identify and harder yet to specify in terms of dollars. For most organizations, costs are easier to estimate than benefits because costs are near-term claims on existing financial resources.

THE COST OF POOR QUALITY

Despite the inherent difficulties of quantifying the elusive cost and benefit figures, it remains a fact that costs to an organization are real when it has dissatisfied customers as a consequence of poor quality. It should be an important exercise for most organizations to consider classifying the range of costs that may result from poor quality. These can be classified as internal, external, or program costs as follows.
ROI on Quality Improvement Efforts

Internal Costs
Internal costs consist of the expenditures that are currently paid to compensate for the defects in service delivery or products. These include:

- *Complaint Handling Costs* – the labor and material costs for customer handholding, incident reporting and resolution, repeat service calls, and product replacement.
- *The Cost of Repeated Inspections* – to search for defects when better processes could produce a smaller number of defects.
- *Wasted Management Time* - spent trying to guess where problems exist in the product or service delivery structure so that improvements can be made.
- *The Cost of Doing the Wrong Thing* – “fixing” things that will not result in the desired quality improvements.
- *Legal Costs* – necessary to mitigate the damage done by inadequate service or defective products or to defend policies to customers, employees, subcontractors or suppliers.
- *The Costs of Excessive Oversight* – of employees, subcontractors or suppliers to ensure quality levels remain sufficiently high.
- *Costs of Attracting New Members or Customers* – to compensate for membership/customer loss due to poor quality.

External Costs
Some costs to an organization may be best described as external or *Opportunity Costs* because they represent the loss of future revenue or unrealized gains as a consequence of poor quality products or services. The effects of actual or perceived poor quality products or services may result in any of the following external costs:

- *Poor Customer Retention* – the reduction in customer loyalty results in defections to competitors.
- *Loss of Benefit of the Doubt* – an organization’s customers who experience service quality lapses are less willing to tolerate repeated difficulties.
- *Lost Opportunities for Up-sell* – existing customers are less likely to upgrade to more expensive products or services.
- *More Difficult Cross-sell* – the ability to sell different products or services to existing customers may be inhibited.
- *Increased Marketing Costs* – an unfavorable quality reputation increases the cost of obtaining new customers.
- *Decreased Pricing Power* – organizations saddled with reputations for poor quality products or services may have to discount prices to attract and maintain customers.
**ROI on Quality Improvement Efforts**

**Quality Improvement Program Costs**
Costs also include those for designing, developing and maintaining the necessary components of quality improvement programs. For organizations without ongoing quality improvement programs, these may represent new expenditures. For other organizations, replacing quality programs which perform poorly with effective ones may or may not increase costs. Examples of program costs include:

- **Diagnostic Research** – expenditures to identify the causes and correlates of defects in products or a service delivery system.
- **Measurement and Tracking Systems** – the cost of setting up and maintaining ongoing quality tracking and evaluation programs including data collection and analysis.
- **Education and Training** – the costs to train employees to use quality improvement tools and strategies and to build a culture of quality within the organization.
- **Quality Program Staff Time** – the ongoing cost of management and staff time spent on quality improvement program development and monitoring.
- **Hardware Investments** – the costs of upgrading communications, remote sensing, production equipment, or information technology.
- **Adding or Restructuring Incentive Programs** – quality improvement efforts may use formal goal setting and variable incentive compensation systems that may or may not increase costs.

**THE BENEFITS FROM QUALITY IMPROVEMENT**
Benefits are typically expressed as the reduction of the internal or external costs of poor quality products or services. Only rarely are benefits easily quantifiable. Benefits may accrue to an organization by very indirect paths. The values of benefits are subject to substantial uncertainty because they often are based on a prediction of some future behavior of members or customers of the organization.

**Benefits from Reduced Internal Costs**
Improved quality removes or reduces an organization’s internal costs by lowering the levels of product or service defects and therefore the expenditures needed to remedy them. Some of the internal benefits of improved quality are reductions in the costs for complaint handling, replacement of defective products or services, or decreased warranty payments. Additionally, fewer defects mean that existing staff can spend less time reacting and more time producing value for the organization. These types of internal benefits are likely to be easily identified and tracked using business performance measures such as ratios of success over failures expressed in units of productions, customer transactions, or dollars.
ROI on Quality Improvement Efforts

Benefits from Reduced External Costs
We may consider external benefits to accrue to an organization when barriers imposed by its poor quality work are reduced. These barriers are largely composed of the effects of an organization’s negative reputation. These are reflected in the attitudes and beliefs held by existing or potential customers. Once barriers are reduced, organizations are likely to realize the benefits of significant growth such as increased up-sell and cross-sell opportunities, reduced member acquisition costs, and increased pricing power.

When a company has a reputation for high quality products or services with public appeal, it is likely to experience growth of its customer base – both by retaining existing customers and recruiting new ones. Under the stress of growth, if a company is able to maintain its commitment to quality, growth will likely continue to accelerate. The multiplicative effects between growth and quality will allow the company a greater ability to control pricing and to expand market share.

As previously mentioned, costs are usually due in the very short term, but external benefits may have extremely long durations, perhaps the lifetime of existing customers or even multi-generational benefits as today’s customers’ children become future customers. The challenge decision makers face when considering the costs of quality improvement programs is to appreciate the full value of the long term benefits that will follow.

Conclusion
In competitive markets, organizations must take advantage of opportunities to reduce the costs of poor quality so they may reap the market share and revenue growth benefits that result from a growing reputation for providing high quality products or services.

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