

QUALITY BASICS

Quality From Scratch: A Model For Small Business

by **Grace Duffy**

About 84% of all U.S. companies have less than 50 employees.¹ Because these small- to medium-sized companies must continuously improve or die, implementing quality programs is critical. A smaller company may not

realize the huge returns of a large company, but that does not reduce the impact of a quality program's return on investment.

Start With Quality

Every company must satisfy customers, stakeholders and employees to survive. Day-to-day details often divert attention from what is good for the company. Conflicts in priorities and contention for resources combine to form a huge barrier to organizational excellence. Smaller businesses also have a narrow buffer to shelter customers from error and waste.

In a small business, quality planning and business planning are synonymous. The best time to start a quality program is during the initial planning for the business when designing quality into product and service delivery is essential. Integrating quality into an existing company culture is more difficult, but no less critical.

Smaller businesses have certain advantages over larger ones:

- Small businesses can move more quickly because innovative ideas are approved and developed at a faster pace.
- Communication channels are shorter and simpler.

In 50 Words Or Less

- **All companies have the same goal: to satisfy customers, stakeholders and employees. One way to do that is to implement a quality program.**
- **Many small-business owners don't know where to begin.**
- **One option is to use a methodology based on the Baldrige Award criteria.**

- Fewer bureaucratic procedures need to be overcome in getting ideas to market.
- Employees acquire decision making skills faster by exercising the authority that has been granted to them.
- Employees tend to form a close-knit effective work team.²

These advantages are an important springboard for management in starting a quality program.

Figure 1 illustrates the integration of the elements of a successful business into three principles supporting a complete quality system.³ A truly integrated quality system is based on three principles: customer focus, process improvement and total involvement. Customer focus encompasses both the external and internal customer's needs. Process improvement is the lifeblood of an organization wishing to sustain growth. Total involvement is the vehicle through which the company realizes the daily activities that act on the first two principles.

The elements in Figure 1 are taken from the Malcolm Baldrige National Quality Award performance excellence criteria. Though other models can successfully help small-business leaders segment their processes into measurable and stable components,⁴ small- to medium-sized businesses compete along with *Fortune* 100 businesses for recognition under these criteria.

The Baldrige website even offers a free tool to help companies of any size assess their initial quality positions. (This tool can be downloaded in PDF format at www.baldrige.nist.gov.) One of the first things managers are instructed to do during business planning activities is a SWOT (strengths, weaknesses, opportunities and threats) analysis.⁵ The Baldrige self-assessment tool is an excellent complement to the traditional SWOT exercise.

Successful Process Design

Table 1 illustrates a five-phase methodology supporting a systematic process of improving how work is done in organizations.⁶ This methodology, known as core process redesign, supports the whole company, not a subset of activities labeled "quality." Quality must be integrated into every phase of the business to be totally effective.

The core process redesign methodology asks two key questions at every phase:

1. Does the process under study support the organization's strategic mission?
2. Is the process under study necessary to meet the demands of our customers?

The Baldrige model can be easily fed into this methodology. Each element of the quality program becomes a mega-process for design under the core process redesign methodology.

The Baldrige performance excellence elements listed in Figure 1 are:

- Leadership.
- Strategic planning.
- Customer and market focus.
- Information and analysis.
- Human resource focus.
- Process management.
- Business results.

Using the phases identified in Table 1, the company leaders and employees assign teams to address each element in turn.

FIGURE 1 Quality Program Implementation Concepts

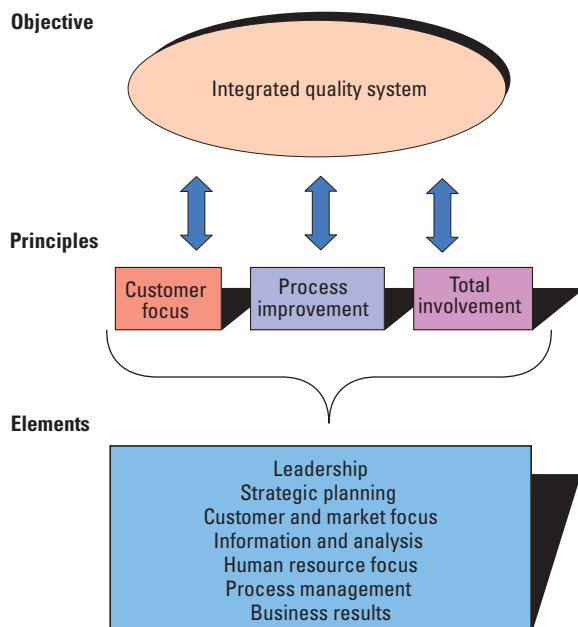




TABLE 1 A Core Process Redesign Pathway¹

Phase one: focus	Phase two: assessment	Phase three: negotiation	Phase four: redesign	Phase five: implementation
Form team.	Map process.	Identify unmet customer needs.	ACT.	<ul style="list-style-type: none"> Analyze implications. Seek approval.
Focus team: <ul style="list-style-type: none"> Mission. Scope. Objectives. Strategic ties. Measures. 	Assess and validate customer needs.	<ul style="list-style-type: none"> Negotiate valid requirements. Set improvement targets and success measures. 	<ul style="list-style-type: none"> Analyze. Conclude. Test. 	<ul style="list-style-type: none"> Refine. Monitor and measure.
Outcome: <ul style="list-style-type: none"> Establish the change imperative and guiding principles. 	Outcome: <ul style="list-style-type: none"> Understand the current business situation. 	Outcome: <ul style="list-style-type: none"> Define real requirements and gaps in performance. 	Outcomes: <ul style="list-style-type: none"> Change plan development. Pilot testing. Refinements. 	Outcome: <ul style="list-style-type: none"> Dramatically improved performance.

Reference

1. G. Dennis Beecroft, Grace L. Duffy and John W. Moran, *The Executive Guide to Improvement and Change*, ASQ Quality Press, 2003.

Focus Phase

Though senior leadership must be active in the focus phase of each element, in many companies with fewer than 50 employees the leadership team will be involved in all phases. As identified in Figure 1, total involvement is a critical factor of an effective quality system.

Senior management usually undertakes the focus step as the result of an organizational assessment and thorough data analysis, such as the Baldrige self-assessment or SWOT analysis discussed earlier. The owners or executives sponsor teams of leaders and employees in designing the seven elements. They focus organizational resources on improving the processes selected. And as teams meet for the first time, the owners and executives must also focus on management’s requirements of the work of the teams.

Two major activities are required during the focus phase of instituting a quality program:

1. Identify the scope of its proposed work.
2. Document its agreements with the executive sponsor.

The executive sponsor reviews the original process design team assumptions, thus ensuring alignment of mission, scope, objectives, ties with strategy and measures of success.

Assessment Phase

The real work begins in the assessment phase. The leadership team starts by gathering baseline data along two dimensions:

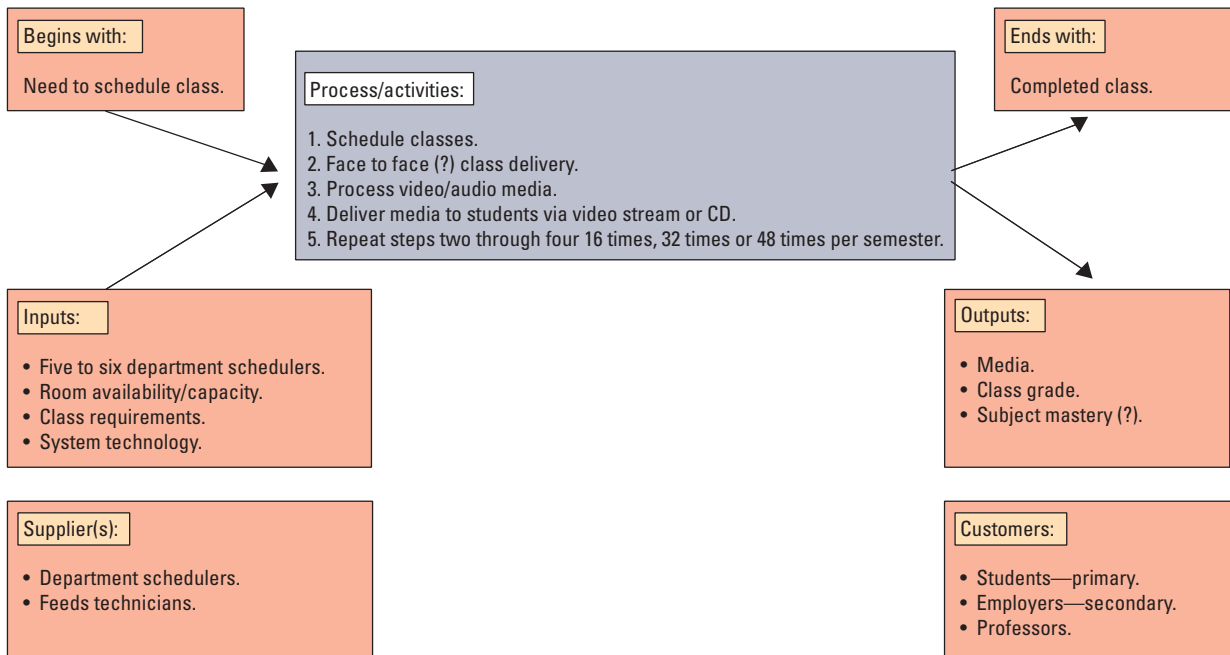
1. Process capabilities.
2. Customer needs.

Determining process capabilities—what the company can do or deliver—involves mapping the flow of activities as they currently occur and measuring their input, output and value added benefits, separately and together.

Figure 2 (p. 30) shows an example of a completed supplier, input, process, output and customer (SIPOC) worksheet for the distribution process of a distance learning program at a public university. This chart is useful for identifying the scope of the element being integrated into the quality program. If the company is working on the strategic planning element, for example, it would identify what starts strategic planning, which activities are involved in the planning and what ends it. The bottom part of the worksheet helps the company identify inputs and outputs of the strategic planning element, along with the suppliers and customers of that process.

As the team develops a flowchart of its current state, it will likely find unnecessary work being performed or unneeded reports being developed, and it

FIGURE 2 Example SIPOC Chart for Process Definition



SIPOC – supplier, input, process, output and customer.

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can eliminate them during this step. This is a dynamic process. Improvement activities need not wait until the end of the process. A small business has more flexibility when taking action than a larger organization does because it has less bureaucracy.

Figure 3 illustrates a flowchart for getting coffee.⁷ It is best for a team familiar with the process being charted to develop the flowchart so it can immediately find opportunities for improvement. (See “Entrepreneur’s Quality Library” for references to this and other basic quality tools.)

Assessing customer needs is also critical to measuring the success of a process. This component of the assessment phase involves identifying the customers of the process, documenting what the team knows these customers currently need and might expect in the future and planning how to close any gaps in knowledge and understanding.

Though assessing process capabilities and customer needs should be performed concurrently to ensure their alignment, there are two risks:

1. Performance gaps that occur when a process is

not meeting customer needs may go unnoticed.

2. Growth opportunities or risks critical to the business may go unnoticed. This occurs when a process delivers beyond what customers need. Companies need to leverage this situation because any process that delivers in anticipation of true, future expectations can become their competitive advantage.

The assessment phase is concerned with performance on three dimensions:

1. Process time (cycle time or throughput).
2. Costs (fixed and variable).
3. Rework and defects (product or service quality).

If the process performs well on all three dimensions and is built to the appropriate customer requirements, customer satisfaction should follow. Realize, however, that these three dimensions are internal measures for implementing the quality program. Customers don’t care what it costs the company to get work done. They care about product or service outputs and their interface with the people who deliver those outputs.

Negotiation Phase

The negotiation phase is critical to senior management. Leadership in the company must pause long enough to verify all stakeholders have been drawn into the quality program design as process partners.

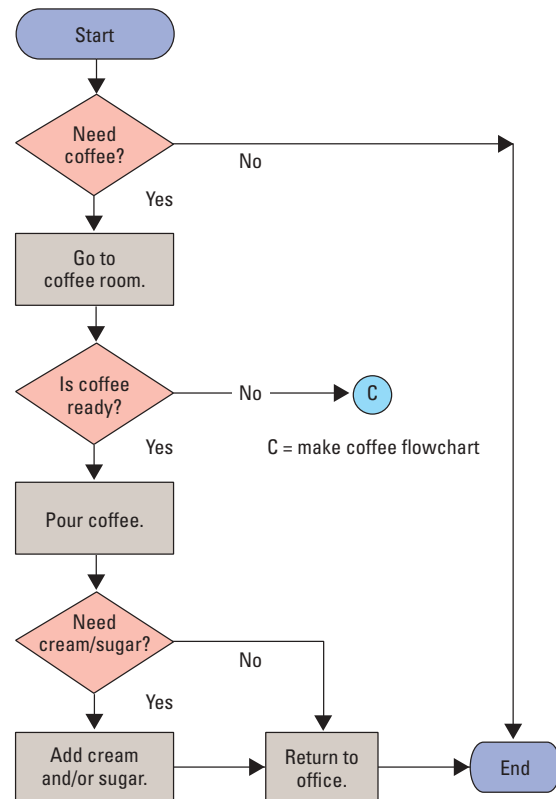
Negotiating the validity of customers' needs is critical to an understanding of process partnership. Needs are not valid requirements until the company is committed to fulfilling them.

Negotiation involves discussion, joint ownership and collaborative problem solving. Leadership should look for opportunities to give and take during this phase. Negotiation means being flexible, so leaders need to look out for the good of the whole business system. This phase usually concludes with a reconsideration of goals.

Redesign Phase

The reconsideration in the negotiation phase usually leads to the redesign phase because the company has likely made decisions about how the process might work better. This often manifests itself in a series of educated guesses on which leadership establishes pilot improvements. The guesses are called educated because they are

FIGURE 3 Example Flowchart for Process Step Identification



Entrepreneur's Quality Library

I suggest the following texts for a core quality program reference library. These books are used frequently at ASQ certification workshops and in university and company training programs to support the basic concepts of organizational excellence. This list is by no means inclusive:

1. *Quality Planning and Analysis*, fourth edition, Frank M. Gryna, McGraw-Hill Irwin, 2001.
2. *The Management and Control of Quality*, fifth edition, James R. Evans and William M. Lindsay, Southwestern, 2002.
3. *The Quality Improvement Handbook*, John E. Bauer, Grace L. Duffy and Russell T. Westcott, ASQ Quality Press, 2002.
4. *The Memory Jogger II*, Michael Brassard and Diane Ritter, GOAL/QPC, 1994.
5. *The Executive Guide to Improvement and Change*, G. Dennis Beecroft, Grace L. Duffy and John W. Moran, ASQ Quality Press, 2003.
6. *From Baldrige to the Bottom Line*, David W. Hutton, ASQ Quality Press, 2000.
7. *Measuring and Managing Customer Satisfaction*, Sheila Kessler, ASQ Quality Press, 1996.
8. *The Team Handbook*, second edition, Peter R. Scholtes, Brian L. Joiner and Barbara J. Streibel, Oriel, 2000.

based upon leadership's careful analyses of valid data.

This phase offers a natural synergy for getting the right people into the room. Small businesses are better able to congregate those most knowledgeable about a particular work process. They explore opportunities for future savings, such as lowered costs, reduced process time and improved output or service quality. By this time, company leadership has started to draw conclusions about where it can change things to meet customer needs.

The redesign suggests three steps to better manage unintended consequences of change that invariably pop up during implementation:

1. Analyze the process to look for the root causes or drivers of performance gaps.
2. Draw conclusions about what change will close these gaps.
3. Test conclusions about whether the right

improvements are identified and whether they go far enough.

This three-step cycle is easy to implement because every time a team begins describing a current process, it usually ends up analyzing it for suggested improvements.

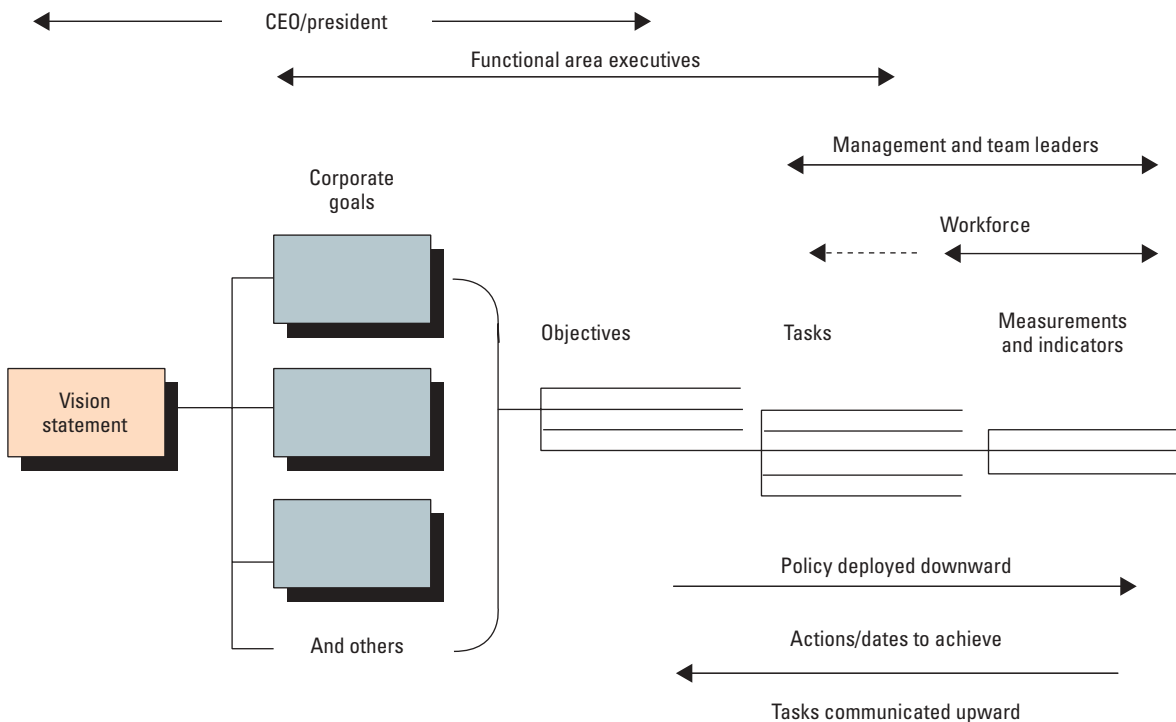
Implementation Phase

The last phase is implementation. By now, the leadership team should be ready to test and finalize new standards for how work flows through the system as a whole. Identifying progress and success indicators is an important part of the last core process redesign phase.

Indicators of Success

To be successful, any company must measure and report its performance on a routine basis. When designed and implemented effectively,

FIGURE 4 Involving the Organization





performance measurement does the following:⁸

- Supports the organization's strategic plan by providing management with tangible indicators and goals relevant to daily activities.
- Provides executives with sufficient and timely information regarding the effectiveness of operations before significant financial impacts are experienced.
- Creates a work environment that supports and rewards cooperation among key functional areas to attain desired results.
- Drives change by focusing resources and shaping behaviors toward specific, tangible results.
- Establishes a mechanism for assigning and enforcing accountability as well as recognizing and rewarding outstanding performance.

The target for measurement is processes and functions that, when performed and managed effectively, play a critical role in driving positive financial results. The key aspects of defining effective measures are:

- Identification of those areas of business that play a critical role in a company's success, including the financial, satisfaction and operational areas.
- Participation of departmental and functional managers that control key areas in the overall measurement design and implementation efforts.

All levels of an organization should be involved in defining the critical success metrics that measure progress and results associated with each process. While most managers have a solid understanding of what their staff is responsible for, they are usually too close to the activity to be of much help. Some points to consider:

- It is easier to edit than create. Where possible, use metrics that are already available and commonly used to track performance in your industry.
- Success metrics between departments should be complementary. Metrics are most likely interdependent at some level.
- Success metrics must be relevant to the particular function to which they are being applied.
- Success metrics should be defined in terms that continue to be relevant as the business evolves over time.
- Success metrics should be relatively easy to

calculate and understand. To be effective, this information must be understood from the boardroom to the break room.

- Not all effective measures are quantitative. Many human areas of business lend themselves to measurements related to timeframes, frequency of occurrence or other qualitative parameters.

The Human Element

So how does a small business transform all this process integration into a highly effective quality system? It should use the resources available. The human resources of a company are tremendously valuable if the company maintains an environment in which they can be successful.

All levels of an organization must be involved in

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the design and implementation of the new quality program. Leadership should use the "top to bottom and back to the top" concept of establishing a senior management vision, share it with the whole organization and listen to the ideas of those impacted by the changes.

Figure 4 shows the levels of involvement necessary for implementing a quality program into a business of any size.⁹ Executive management is responsible for strategic planning, SWOT analysis, customer and market research and the development of a company vision. Once senior management has identified the general direction of the company, functional managers take the vision to the tactical level. Goals are identified in support of the company as a whole and the functions that comprise the total enterprise.

Each functional area works with middle and first-line managers to identify specific tactical objectives. First-line managers, team leaders and the general workforce address each of these objectives in terms of specific outputs to meet customer needs.

Keeping It Current

Senior management must frequently review the anticipated effects of proposed changes on the people and systems of the organization. How might these changes affect the competencies of those who do the work? How might these changes affect the gathering and use of information needed to get the

work done? What reward mechanisms exist to encourage continuous application of the new and improved quality processes? The company owners must take another systems view of the whole organization. Successful implementation of an integrated quality program is an iterative process.

It is senior management's responsibility to consider recommendations of the teams in the context of each other. Remember, changes to one process are not made in a vacuum—all processes must be aligned so the entire system functions at an optimal level. The core process redesign methodology adapts to the industry because it is focused on

improving processes, those work-flows that deliver a company's products or services to its customers.

Implementing a quality program is not a one-way process. The drill-down sequence shown in Figure 4 (p. 32) must have a strong feedback element. Policy deployment moves downward in an organization, and action and finite completion dates must be reported back up the organization. Tasks that require additional resources or escalation also flow back up the management ladder. Proper use of team dynamics encourages a strong horizontal and vertical communication web within an organization.

The core process redesign model is a flexible sequence that supports any number of quality program structures. I use the Malcolm Baldrige performance excellence model because it is frequently used by businesses of all sizes. Another model commonly used is ISO 9001. Local quality consultants are usually available to assist with either of these options. The sidebar "Partial List of Quality Improvement Models" offers a number of models, and the books listed in "Entrepreneur's Quality Library" mention even more.

Integrating a quality program into a business is not a one-time activity.

Partial List of Quality Improvement Models¹

1. Plan-do-check-act or plan-do-study-act.
2. Cost of quality and return on investment.
3. Malcolm Baldrige National Quality Award, Canada Quality Institute or European Quality Award.
4. Six Sigma.
5. Lean.
6. Supply chain management.
7. ISO 9001 or ISO 14000.
8. Decision making: evolutionary and revolutionary.
9. Core process redesign.
10. Management audits.
11. Joseph M. Juran's and Frank Gryna's process improvement methods.
12. Total quality management.
13. Failure mode and effects analysis.
14. Value added analysis.
15. Statistical process control.

REFERENCE

1. G. Dennis Beecroft, Grace L. Duffy and John W. Moran, *The Executive Guide to Improvement and Change*, ASQ Quality Press, 2003.

Once the program is implemented and tested, a continuous measurement and improvement cycle must be instituted to keep the program effective. The effort to implement quality into all areas of the company is no small task, but the benefits and results are well worth the effort.

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2. Arthur H. Kuriloff, John M. Hemphill Jr. and Douglas Cloud, *Starting and Managing the Small Business*, third edition, McGraw-Hill, 1993.
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