QUALITY MANAGEMENT SYSTEMS

TQM vs. BPR

by **Farzaneh Fazel**

What's the difference between total quality management (TQM) and business process reengineering (BPR)? Though the terms themselves aren't heard much anymore, many organizations still use the tools in these programs to make changes. Both embrace the same ideas and goals for organizational improvements. Both encourage employee empowerment, teamwork, quality, change and focus on the customer. What differs, though, is the means each program employs for achieving improvements.

In 50 Words Or Less

- **Though the terms are no longer in vogue, total quality management and business process reengineering programs are still used to make organizational improvements.**
- **Data from a study on how companies use each program indicate a lack of understanding of the differences between the two.**

TQM is a management system that aims at long-term continuous improvements in customer satisfaction and real costs. BPR, on the other hand, is the rapid and radical redesign of strategic processes to optimize the workflow and productivity in an organization.[1]

The changes that take place during BPR are fast and drastic. Its advocates argue no gain is derived

from adding antilock brakes to a horse and buggy. The goal is to demolish old processes to clear the way for new ones. TQM advocates, on the other hand, say the TQM philosophy supports a building block approach to improvement projects and does not resemble the clean slate approach associated with BPR projects. Even some BPR supporters argue the clean slate approach is a myth and is not practical in most organizations.[2]

So which mechanism produces the most organizational benefits? There does not appear to be a set of objective criteria for determining the circumstances under which one or the other of these approaches should be employed. Some companies that fail with one approach just switch to the other.

Many researchers and quality advocates support the notion that a short-term, radical change achieved through BPR programs should be followed by TQM's long-term continuous improvements. BPR could later be used when another dramatic change is required.[3,4] Stated differently, TQM may be a natural extension of a successful BPR program, and BPR is the turning point of a TQM initiative.

The best organizational change programs are those that integrate quality and reengineering initiatives.[5] Firms may customize their approach to organizational change, combining tools from BPR and TQM.[6] In fact, TQM training, teams, commitment, trust and communication are major enablers for the successful implementation of reengineering.[7] For example, Eastman Chemical's TQM program provided the foundation for its BPR initiatives, prompting the organization to call its integrated program for change breakthrough quality management/business process reengineering (BQM/BPR).[8]

On the other hand, some organizations have tried TQM and BPR interchangeably without integrating them into a comprehensive program for change.

TABLE 1 Comparison of Total Quality Management (TQM) and Business Process Reengineering (BPR) Programs

	TQM (mean values)	BPR (mean values)	T
Time since start (in months)	59	25.69	5.390 *
Planned implementation time (in months)	26.7	20.16	1.516
Actual implementation time (in months)	29.8	15.93	2.017 **
Magnitude of changes sought (1 to 7)	5.2	5.38	-0.723
Impact on profitability (1 to 7)	5.55	5.38	0.462

* $p < 0.01$
** $p < 0.10$

Study Objectives

I decided to conduct a study that took a closer look at how companies use TQM and BPR relative to their two major differences—TQM's small, gradual changes and BPR's radical, fast changes. I examined the impact these programs had on the profitability of 29 sample companies and explored how and why the two programs were implemented in industry. It was not my intent to compare the advantages or shortcomings of these programs, or to advocate the use of one over the other.

I tested the following four propositions:

1. There is a significant difference between the degree of change sought from TQM and BPR programs.
2. There is a significant difference between the timeframes imposed for completing the change initiatives brought about by TQM and BPR programs.
3. There is a significant difference between the actual time it takes to implement the change initiatives brought about by TQM and BPR programs.
4. There is a significant difference between the impact of TQM and BPR on a company's profitability.

Sample Companies

To obtain the required data, a questionnaire was mailed to 2,000 randomly selected manufacturing firms listed in the Dun & Bradstreet directory.[9] The letter was sent to the presidents or CEOs of the sample companies requesting their cooperation in completing the survey as related to one of their plants. The CEOs were then asked to forward the

survey to other executives if necessary.

The questionnaire included two questions asking whether the company had initiated TQM or BPR, without defining the terms, to allow participants to respond based on their own understanding of the programs. The questions read: Has your plant initiated any comprehensive programs for quality improvement (including TQM or similar programs, but not reengineering programs)? and Has your plant initiated any reengineering programs such as business process reengineering (BPR)?

The questionnaire also asked respondents:

- The date the company started implementing these programs.
- The planned timeframe of the change programs.
- The actual time it took to implement the changes.
- The rating, on a scale of 1 to 7, of the degree of change/improvements sought by the company (from fine-tuning to radical change) and the impact of these programs on its profitability (from very negative to very positive).

A total of 142 responses were received, and 29 of the respondents indicated they implemented both TQM and BPR in their companies. The analysis presented in this article is based on the data collected from these 29 companies. Although one should be cautious generalizing the results based on a sample this size, the findings provide valuable information about the way TQM and BPR are implemented by some companies.

Results

A paired t-test was used to test the four propositions noted earlier. As can be seen in Table 1, the sample companies started their TQM programs significantly earlier than their BPR programs. The planned implementation time for BPR programs was shorter than that for TQM programs by an average of about six-and-a-half months, but the difference is not statistically significant.

The actual time it took the sample companies to implement the desired changes, however, was longer than the planned time for TQM programs and shorter than the planned time for BPR programs. The actual time to implement the changes was significantly lower for BPR than for TQM programs at $p < 0.10$.

The magnitude of change the companies expected from their BPR programs was slightly higher than, but not significantly different from, the magnitude of change expected from their TQM programs. Finally, the sample companies reported some positive impact on their profitability from both their TQM and BPR programs. Overall, the respondents thought TQM had a more positive impact on the bottom line, though the difference was not significant.

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The Details

Despite the reported characteristics of BPR in terms of its speed and magnitude of change, the data indicate the sample companies' time and magnitude of change expectations from BPR programs were not significantly different from those for their TQM programs.

Of the 29 respondents, only one reported practices and results that support all the propositions of this study. The company started its TQM program three years before its BPR program. It expected the timeframe for implementing TQM to be ongoing and for the program to result in moderate changes. The reported impact of TQM on its profitability was positive (6 on a scale of 1 to 7, where 1 is very negative and 7 is very positive). The company had a timeframe of one year for its BPR program and

expected radical changes. The program had a very positive impact on profitability.

Another sample company reported a negative impact from implementing TQM, while another reported a negative impact from BPR. It looks as if many of the companies tried TQM first, and when it failed to meet their expectations, they tried BPR, seeking almost the same speed and degree of change. This is different from the practice of integrating TQM and BPR to address different organizational problems and initiate changes of different magnitudes.[10, 11]

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Although BPR is purported to focus more on costs and improving the bottom line, the data don't show a significant difference between TQM and BPR programs in terms of improving profitability. In fact, the responding executives believed TQM had a slightly more positive impact on their company's profitability.

Overall, the data collected from the sample companies may indicate a lack of clear understanding of the differences between the two change mechanisms and what they can accomplish.

Instead of integrating the two initiatives as two complementary, but different, approaches to change, it looks as though the sample companies implemented them with the same expectations regarding change and implementation time and failed to identify where and when each approach would be most beneficial to the organization. This may partially explain why some TQM and BPR programs have not resulted in much success.

REFERENCES

1. Raymond Manganelli and Mark Klein, *The Reengineering Handbook*, Amacom, 1994.

2. Raymond Manganelli and Mark Klein, "Should You Start From Scratch?" *Management Review*, July 1994, pp. 45-47.

3. T.H. Davenport, "Need Radical Innovation and Continuous Improvement? Integrate Process Reengineering and TQM," *Planning Review*, May/June 1993, pp. 7-12.

4. Gary Salegna and Farzaneh Fazel, "An Integrative Approach for Selecting a TQM/BPR Implementation Plan," *International Journal of Quality Science*, 1996, pp. 6-23.

5. T.H. Davenport, "Need Radical Innovation and Continuous Improvement? Integrate Process Reengineering and TQM," see reference 3.

6. T.H. Davenport and D.B. Stoddard, "Reengineering: Business Change of Mythic Proportions?" *MIS Quarterly*, June 1994, pp. 121-126.

7. J.R. Dixon, Peter Arnold, Janelle Heineke, Jay Kim and Paul Mulligan, "Business Process Reengineering: Improving New Strategic Directions," *California Management Review*, 1994, pp. 93-108.

8. Susan Taylor, "Eastman Chemical Strives for Better Than World Class," *Industrial Engineering*, November 1993, pp. 28-34.

9. *Million Dollar Directory: America's Leading Public and Private Companies*, Dun & Bradstreet Inc., 1996.

10. Davenport, "Need Radical Innovation and Continuous Improvement? Integrate Process Reengineering and TQM," see reference 3.

11. Salegna, "An Integrative Approach for Selecting a TQM/BPR Implementation Plan," see reference 4.

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