

STRATEGY DEPLOYMENT FOR SMALL AND MEDIUM ENTERPRISES

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Abstract

The purpose of this paper is to introduce to small and medium enterprises, a quick and easy adaptation of strategic planning and deployment methods being used by large corporations world wide. A system of analyses coupled with powerful, yet easy to perform thinking tools will be explained through a case studies of manufacturing and service companies. This system will help executives and managers in small and medium enterprises more quickly make informed and creative decisions and issue directives to implement them. A case study of a small university bookstore will be presented.

Introduction

The pressure on small and medium enterprises (SME) in today's economy is to do more for their customers, to do it faster, and to do it more cost effectively. In these days of rapidly changing technology, global markets and competitors, and downsizing, this can yield a series of critical questions.

1. Who are my stakeholders and customers now? Who will they be in the future?
2. What do they want most now? What will they want most in the future?
3. By when?
4. What choices do my customers have? What choices will they have in the future?
5. What must I do now to satisfy them? What must I do in the future?
6. Who will be responsible for carrying these activities out?
7. How much will it cost?

The quality movement has attempted since the 1960s to address these issues from a systems and process point of view, rather than just a financial analysis point of view. The advantages and disadvantages of this approach can be summed up in Table 1.

Table 1. Advantages and Disadvantages of a Quality Approach to Strategy.

Advantages	Disadvantages
<ul style="list-style-type: none"> • Identifies a process to manage the organization using strategy as well as manage the implementation of the strategy itself. • Produces both strategic targets and the means to attain them. • Promotes clarification of the strategy and means by using measureables, assigning responsibilities, time frames, and quality standards to both the process and the results. • Helps identify core competencies and <i>incompetencies</i> and their contribution to achieving the strategy. • Easier to track gap between planned and actual results early enough so that corrective measures can be identified, implemented, and tracked. 	<ul style="list-style-type: none"> • Requires more time and effort to plan the process. • Not all strategies have means that are easily identifiable at the outset. • Not all aspects of strategy are easily quantified, particularly with regards to human endeavors.

For the SME, some of the above are more academic than practical, given the resource (time, people, money, information) constraints of a small business. Further, the closer relationships between and the multiple roles of individuals, makes many of the most powerful strategy tools unnecessary.

Still, there are some essential steps regardless of the level we explore them or the tools we need to use. They include, but are not limited to the following items in Table 2.

Table 2. Essential Steps in SME Strategy.

Step 1.	Vision	What we see the organization becoming at some future point.
Step 2.	Mission	How we will get to this future point.
Step 3.	Strategy	Near term goals that move us toward vision. Hoshin.
Step 4.	Tactics	Implementation details of the strategy.

This paper will explain each of these steps in shortened version that has worked well in small and medium size enterprises. By way of example, we will look at a case from a medium size business, a North American book store company named Nebraska Books which primarily sells textbooks, educational in-

struments, and memorabilia to university students and their families, faculty, alumni, and others. We will focus on one of their operating divisions, Ulrich's Bookstore, which is located at the University of Michigan in Ann Arbor, Michigan. This study was conducted by students of Total Quality Management at the University of Michigan College of Engineering. The full contents of this case may be viewed on the following web site:

<http://www-personal.engin.umich.edu/~gmazur/tqm/student.htm>

Vision

Vision is how the organization sees itself or wishes to be seen at some time in the future. Imagine being in a forest and rising 100 meters into the air, above the tallest trees. Your range of vision would extend much farther than when you were on the ground. This view of what is out there, what we want to become, to what extent or range we wish to move and in which direction, and in what time frame are the components of a Vision.

For the SME, this Vision is often coupled with the entrepreneurial spirit of the owner. This makes it easy to have a Vision, but often difficult to communicate it to others in the organization, since this spirit can be little more than a vague sense of the "what feels right."

A verbal algorithm can be used to help the entrepreneur articulate his Vision(s). It should contain a *direction* of improvement verb + an *indicator* of improvement, a *measurable target value* of how much improvement the company wants to achieve stated in terms of our current performance level and our envisioned performance level + a *time limit* by when the improvement should be realized. At Ulrich's:

Ulrich's will increase sales by 25% over current levels, increase used text book sales to 50% of total text sales, and decrease costs as a percentage of sales 1-2% per year, by the year 2004.

The value of this algorithm is that it forces clarity and measurement. A common condition of Vision statements in organizations is that they tend towards the abstract. Lacking specifics, it is easy to see why such Visions are difficult to attain.

Another trick is to think of a Vision as a desired goal or outcome to be achieved, rather than the action to achieve it. It is the desired results, not how to cause it. This trick lends itself nicely to the fishbone diagram commonly used in quality control. As we will see later on, the Vision would be the "head" of the fish.

Vision statements commonly deal with business objectives such as profits, costs, market share, as opposed to product objectives such as improved customer satisfaction, or use of some new technology. Product objectives are better viewed as the means to achieve the business objectives. We call these Missions, and with a short term time frame and or high degree of detail, strategies. An SME should limit it-

self to its top three Visions. The priority matrix mentioned below is a useful way to establish the top priority Visions.

Not all organizations can articulate their Vision easily. Several useful tools and techniques have been developed in the quality field, called the Management and Planning Tools.¹ While it is beyond the scope of this paper to identify all of these methods, the author finds particularly useful the affinity diagram and the priority matrix.

Mission

The Mission identifies the activities we believe will allow us to achieve the Vision. Missions are activities over which we can exert enough control so that we can predict that their performance will be adequate to achieve the Vision.

First begin with an analysis of the organization’s current business environment. A SWOT Analysis is a useful tool. A team of seasoned managers representing all the various functions such as sales, research, production, human resources, finance, etc. can use this method to articulate their perspectives on the business. A portion of Ulrich’s SWOT Analysis is given in Table 3.

Table 3. Ulrich’s SWOT Analysis

<p><u>Strengths</u></p> <ol style="list-style-type: none"> 1. core of experienced employees (15-20 years) 2. experience with college texts 3. make higher profits on used books 	<p><u>Weaknesses</u></p> <ol style="list-style-type: none"> 1. high turnover with part time help 2. high cost of living in Ann Arbor 3. local market
<p><u>Opportunities</u></p> <ol style="list-style-type: none"> 1. MSA to get the university to encourage professors to turn in text reports before due date 2. expand web site to encourage more mail orders (both memorabilia and textbooks) 3. provide virtual course pack services including course pack development 4. integration of course packs between universities 5. increase in adults attending college while working 6. professionals in “right-sized” companies too busy to search out relevant books needed to keep them abreast of their profession 	<p><u>Threats</u></p> <ol style="list-style-type: none"> 1. possible new bookstores in area 2. textbooks sold on web site (amazon.com) 3. new web book stores such as amazon.com, borders.com, barnesandnoble.com 4. course packs and the changing nature of the product 5. professors don’t turn in next semester’s text order in time for Ulrich’s to offer best repurchase price to students, so many will just keep the books, thus lowering availability of high profit used book inventory 6. books become obsolete quickly

¹ The New Seven Quality Tools are commonly called the Management and Planning Tools. See Michael Brassard’s *Memory Jogger II* for detailed examples and steps on how to use them.

From the SWOT Analysis, identify which are most relevant to the Vision. The fishbone diagram is helpful here. In the head of the fish place each Vision, and in the bones the relevant SWOT statements. These should be rephrased into action oriented expressions. For example, in Figure 1, one each of the strengths, weaknesses, opportunities, and threats have been somewhat rephrased as Mission statements and associated with one of the visions.

To the extent possible, Missions should follow the same guidelines as Vision. Focus on actions over which the organization has control. Set time limits for the actions. Identify ways to track the success of the actions.

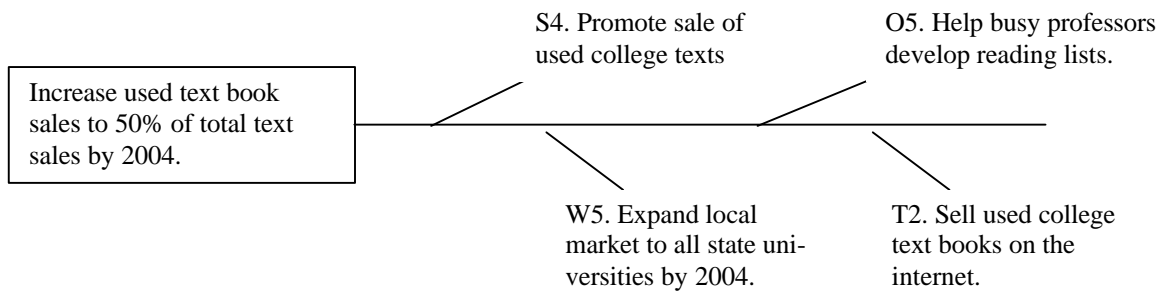


Figure 1. Fishbone Diagram of Vision and Missions.

The fishbone diagram differentiates the observable results (Vision) from the actionable causes (Mission). This helps managers develop strategies that contribute directly to achieving the vision. Typically, strategies like improve customer service sound good on paper, but are very difficult to turn into lasting behavior changes or process improvements because they are too general. By specifying Missions, metrics, and time commitments, it is easier to gain employee compliance because they know what to do and how their actions will be measured. Later in this process, employee measurements will also include how they can self-inspect the inputs to their work, rather than just having management measure the outcomes.

There could be several fishbone diagrams created, one for each high priority Vision. They are often consolidated into a matrix to aid visualization and to determine which Missions contribute most strongly to the most important Vision. Table 4 shows that selling used books on the internet would have several strong and medium contributions to all the Visions.

Table 4. Matrix Consolidates Fishbone Diagrams to Improve Visualization and Priority.

⊙ Strong relation ○ Medium relation	Promote sales of used college texts	Help busy professors find text book	Expand market to all state universities	Sell used college text books on internet	Get next semester requirements before end of current semester.
Ulrich's will increase sales by 25% over current levels	○		⊙	○	
increase used text book sales to 50% of total text sales	⊙		○	○	⊙
decrease costs as a percentage of sales 1-2% per year, by the year 2004.				⊙	

Strategy and Tactics

Now the management focuses their attention on the highest priority Missions. Ulrich's focused in 1997 on improving the process for getting professors to submit their required course texts before the end of the current semester. When they know early on that a book will be used the next semester, they can offer students a better buy-back price now and a larger selection of used books in the next semester. In 1998, Ulrich's is focusing on building a World Wide Web Site to better sell used college textbooks to more students at more universities. The first of these two strategies and the resulting tactics used to achieve them are detailed below. For details of the second study, please visit the WWW site.

Case Study - Improving Professor Book Submission Process

First data was collected on the profits and revenues of selling used books. Figure 2 shows f the proportion of used textbooks increases so will the profits. The figure shows that the margin gained from new textbooks is only about 5%. When Ulrich's buys a textbook from a student, knowing they can resell it the following term (50% of its value), the margin is 12%. When Ulrich's sells used textbooks bought from a wholesaler, the margin increases abruptly to between 31% and 43% (the range is due to the variation in wholesale prices). Finally, for a book bought from students at current market value (usually much less than 50%), the profit margin ranges from 33% to 45%.

It appears that the biggest opportunity is in the used textbooks coming from wholesalers. The more orders Ulrich's receives in advance the higher their chances of selling more of those items with a margin between 31% and 43%. However, these books are usually more difficult to get in quantity from a wholesaler compared to what is possible to buy from students during the buy-back period, especially if the student receives 50% of the value. Therefore, Ulrich's felt it best to strive for a large quantity of 12% margins rather than achieving the higher margins yet in lower quantities.

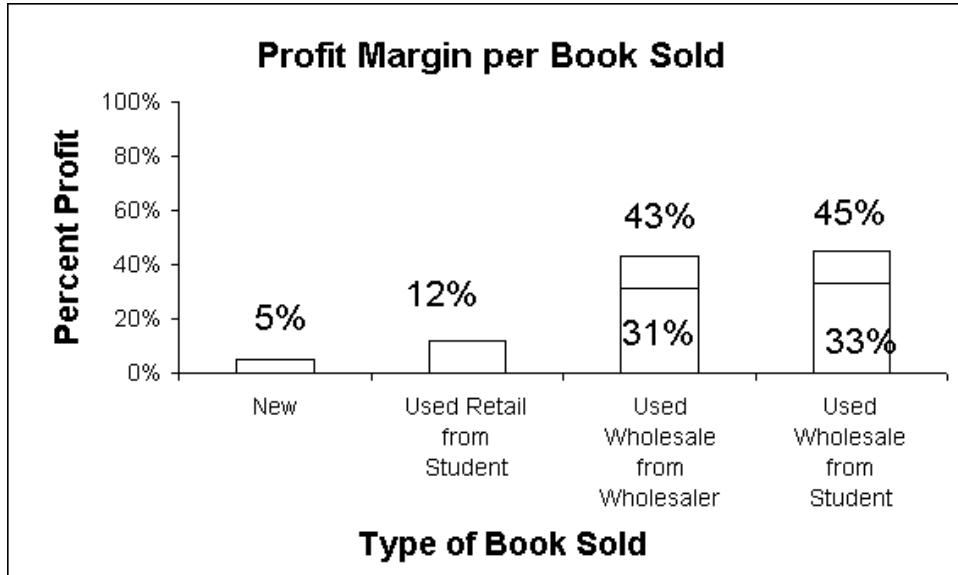


Figure 2. Ulrich's Profit from Used Books.

With such profit potential, Ulrich's asked the University of Michigan student teams to examine the problem further. Ulrich's parent, Nebraska Books reported that their other subsidiaries sold approximately 50% used books; Ulrich's sales were only 22%. The fishbone diagram in Figure 3 aided the cause and effect analysis of low used text book sales. One of the most important causes, professors not turning in orders was selected due to its impact of reducing used book profits by some 43% (Table 5).

The TQM student team interviewed faculty members to learn the barriers to better compliance with early text order policies. The fishbone diagram in Figure 4 illustrates some of the major concerns faculty face when ordering text books. Past improvements were in late requests had only been the result of departmental deans directly contacting faculty to get their requests in early (1995), as shown in Figure 5.

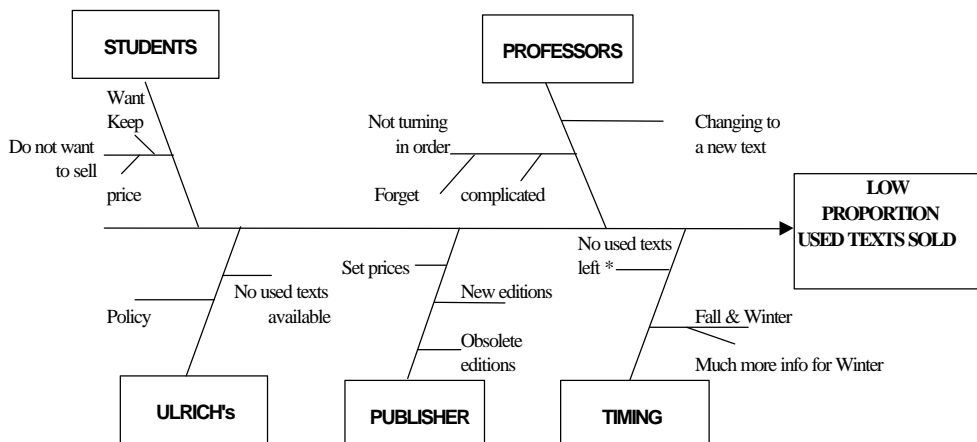


Figure 3. Fishbone Diagram of Low Proportion of Used Texts Sold.

Table 5. Financial Impact of Late Textbook Requests.

Brief Impact of Money Lost						
Number of books bought	Book wholesale buy-back	Book retail buy-back	All orders in	No orders in	Actual	
82	26	45.175	3704.35	2132	2132	
79	10	24.975	1973.025	790	790	
82	26	45.175	3704.35	2132	2132	
79	10	24.975	1973.025	790	790	
53	23	37.825	2004.725	1219	1219	
25	25	47.325	1183.125	625	625	
25	25	47.325	1183.125	625	625	
25	25	47.325	1183.125	625	625	
25	25	47.325	1183.125	625	625	
25	25	47.325	1183.125	625	625	
25	25	47.325	1183.125	625	625	
25	25	47.325	1183.125	625	625	
31	2	4.975	154.225	62	62	
31	2	4.975	154.225	62	62	
154	15	32	4928	2310	2310	
154	15	32	4928	2310	2310	
126	5	12.675	1597.05	630	630	
126	5	12.675	1597.05	630	630	
64	0.5	2	128	32	32	
64	0.5	2	128	32	32	
38	13	31.325	1190.35	494	494	
38	13	31.325	1190.35	494	494	
38	13	31.325	1190.35	494	494	
39	5	39.85	1554.15	195	195	
46	15	7.5	345	690	690	
50	7	3.5	175	350	350	
50	7	3.5	175	350	350	
50	7	3.5	175	350	350	
72	10	25.375	1827	720	720	
72	10	25.375	1827	720	720	
1793						
29	2	4.475	129.775	58	129.775	
29	2	4.475	129.775	58	129.775	
78	18	31.85	2484.3	1404	2484.3	
107	10	37.825	4047.275	1070	4047.275	
26	1.5	4.975	129.35	39	129.35	
45	17	30.175	1357.875	765	1357.875	
31	2	4.975	154.225	62	154.225	
31	2	4.975	154.225	62	154.225	
37	2	11.5	425.5	74	425.5	
39	5	39.85	1554.15	195	1554.15	
452			55471.55	26150	32929.45	

If all orders had been turned in:	70,932.39	Note: (there is additional data that is not shown in this figure. With the data shown in this figure the money lost would be \$22,542.10----> \$55,471.55-\$32,929.45)
Actual:	40,178.95	
Money lost:	30753.44	

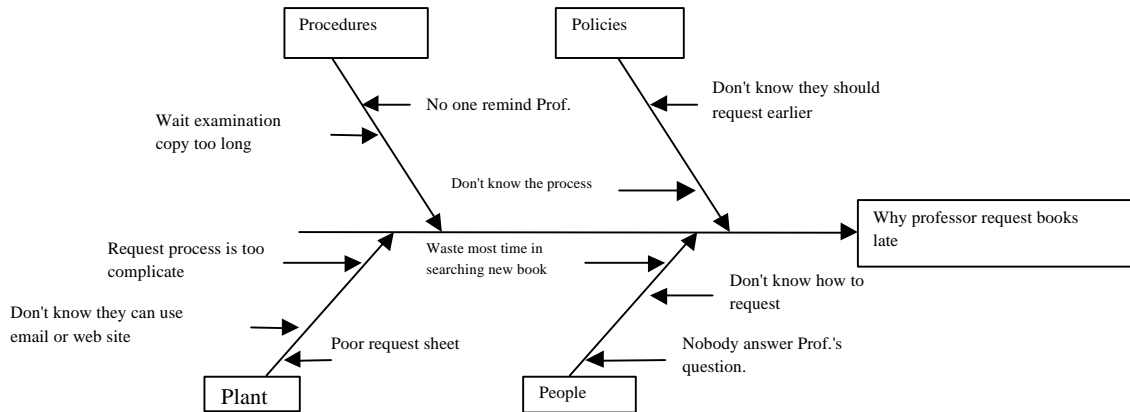


Figure 4. Fishbone Diagram of Causes of Late Textbook Requests.

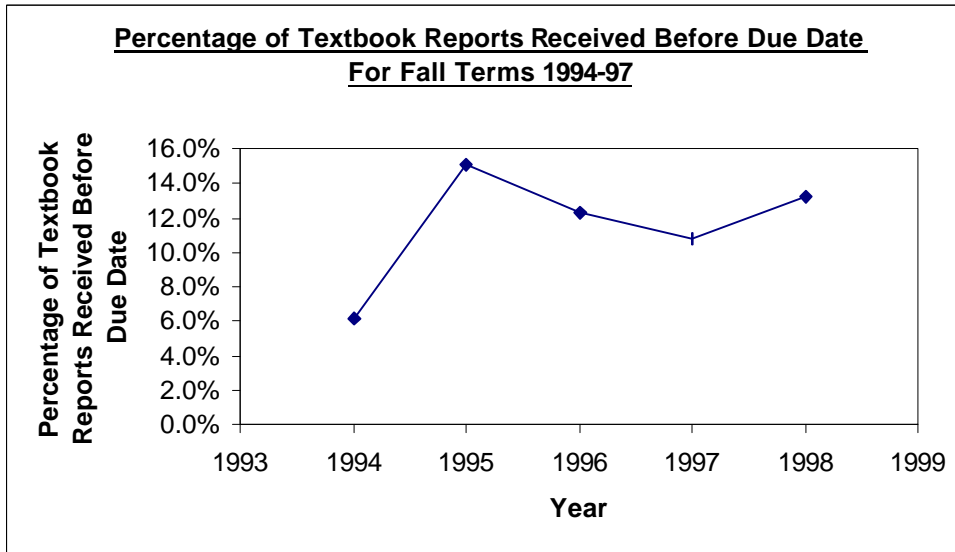


Figure 5. Percentage of Textbook Requests Received Before Due Date.

Shortly after the TQM team began to focus on this, a Michigan Student Assembly (MSA) committee on textbooks was created. There were also several news stories in the *Michigan Daily* and the *Ann Arbor News* discussing related textbook issues. The articles reported rough amounts of money lost by students, figures regarding bookstore's margins on textbooks, and other concerns of faculty, students, bookstores, publishers, and the general public. Many of the causes of late ordering were thus inherent in the basic process used to order books. The TQM team decided to re-engineer the process, by incorporating creative breakthroughs. They used a Russian methodology know by the acronym TRIZ which stands for Theory of Inventive Problem Solving.² Table 6 gives some examples of new process steps proposed to Ulrich's.

Table 6. TRIZ Based Solution Proposals.

TRIZ Solution Set	Proposed Process Changes
Cushion in advance.	Check with publisher for availability of popular books. Ask professor directly if he plans to teach the course next semester and if the same textbooks will be used.
Inversion.	Ulrich's researches new books and recommends to professors. Students feed information on classes they intend to take.
Prior action.	Professors turn in decisions on books as they are made, even if not complete. Ulrich's prepares default order to be placed unless professor instructs otherwise.
Replacement of mechanical system.	Use internet, www, and email to order/confirm book orders. Replace text books with <i>virtual</i> textbooks and course packs.

² For details of TRIZ, visit the University of Michigan TQM TRIZ web site at <http://www.mazur.com>

The result of this work was a redesign of the book ordering process. This process was examined for potential failure modes, job assignments were identified and appropriate job descriptions were made. A high level view of the new process is given in Figure 6 and a subset of the details of the tactical actions are given in the Task Deployment Table shown in Table 7. The new system is being implemented in 1998 in order to improve the value of used textbooks to students (the customer) and Ulrich's. Future TQM student teams will help Ulrich's implement and improve this new textbook ordering system.

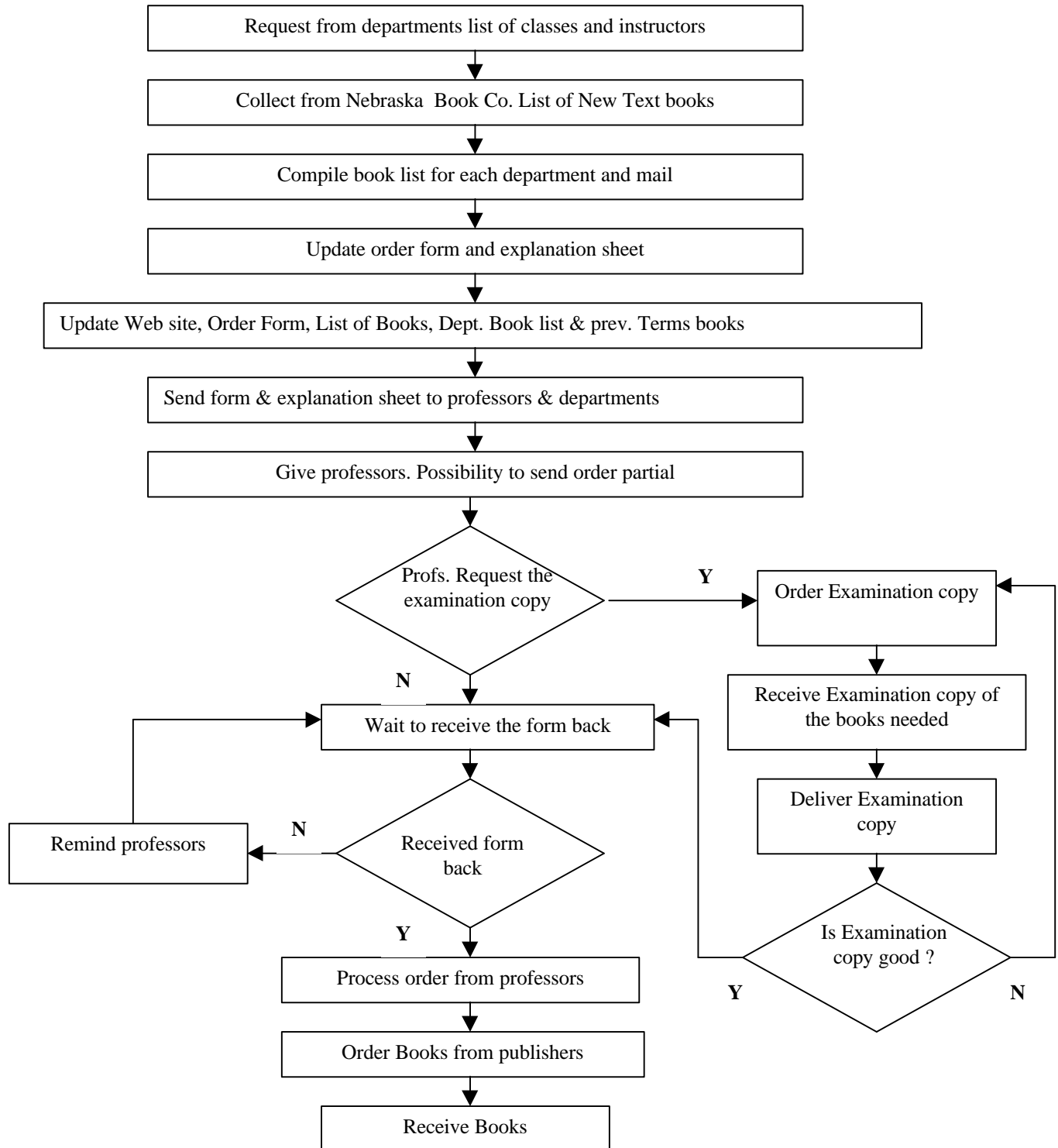


Figure 6. New Textbook Ordering Process.

Table 7. Task Deployment Table for New Textbook Ordering Process (excerpted).

What	Who	When	How	How much	Why
Web Site Updated	New Web people	Per Week	New Computer	80% new at begin. of each Semester	To improve communication info.
On-Line Ordering Processing	New Web people	1 time per day at least	On computer	100% orders processed	To offer different ways to communicate
Collect info on books from publisher	Textbook secretary	Per week	Fax, Mail, computer	Depends on subject	To create the list
Update info. on appropriate order sheet	Textbook Manager	3 Months before the semester begins	On computer	Drastically	To improve the transmission of information

Conclusion

Small and Medium Enterprises often lack the time and manpower to implement complicated strategic plans. The activities outlined above took place over three months by one team of seven. The strategy portion of the TQM course comprised one week out of the thirteen, so approximately three class hours and six contact hours with Ulrich's took place. The simple, visual tools of TQM can be effectively employed by SME managers with little training. The results of a systematic clarification of strategic organizational objectives and dissemination of specific actions tied to the objectives, combined with time deadlines and clear metrics is a powerful one. As the SME grows to need more powerful analytic tools to continue its strategic drive, rest assured the quality movement has more to offer. Readers are directed to the bibliography to explore additional tools and methods such as Quality Function Deployment, Hoshin Planning (Policy Management), Theory of Constraints, Systems Thinking, New Lanchester Strategy, among others. All of these topics can be immediately accessed through the author's web site at the University of Michigan at <http://www.mazur.com> or by contacting the author at glenn@mazur.com or by fax at +1 (734) 995-3810.

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While the above methods have been succinctly portrayed in a way that a small group of SME managers can easily implement them, they in no way diminish the hard work put in by the University of Michigan College of Engineering students in the Fall of 1997 and Winter of 1998. I am indebted to the efforts of Carlos Abraham, Camelia Arnou, Gary Blasen, Jeremy Brochtner, Yao-Wei Fu, Joseph John Joshua, Jerome Paye (Fall, 1997) and Sandro Baldini, Bhavesh Desai, Michael Fry, Kelly Osburn, and Thomas Percy (Winter, 1998) who gave their permission to me to publish their work on the internet and in this paper.

We are all indebted to the management and staff of Ulrich's Bookstore, Dave Richard, Joe Cusumano, and Sue Zellers for their willingness to open up their doors to stranger students and their professor and their minds to strange ideas. The competitive and business pressures on a small business these days are immense, but I believe it will be those who have both the flexibility to try new things and the insight to manipulate them to their best advantage who will succeed. The management and staff at Ulrich's is to be congratulated for both what they gave and what they received from our students. And for their willingness to allow this information about their operations to be published on the internet, as well. Thank you.

About Glenn H. Mazur

Glenn Mazur has worked extensively since 1982 to disseminate the very best of Japanese strategic and product development methods throughout the West. He and his staff at Japan Business Consultants, Ltd. have translated nearly every major text pertaining to Quality Function Deployment (QFD) and Hoshin Kanri (Policy Deployment). As Executive Director of both the North American QFD Institute and the International Council for QFD, Chairman of the North American Symposia on QFD and member of the Scientific Board of the International Symposia on QFD, he continues to research and disseminate the best practices to organizations world wide. As a member of the Faculty of the College of Engineering at the University of Michigan, he brings the same to both undergraduate and graduate students alike through on-campus lectures, off-campus video courses, and his acclaimed *Virtual TQM Course Pack* on the World Wide Web (<http://www.mazur.com>). In addition to several industry-specific training manuals and numerous papers on QFD, he has just authored a book on Policy Management. Mazur is a 1998 Recipient of the Akao Prize for Excellence in QFD.

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