

May 2009

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Recommended Citation

David, Meredith E.; David, Forest R.; and David, Fred R. (2009) "The Quantitative Strategic Planning Matrix (QSPM) Applied to a Retail Computer Store," *The Coastal Business Journal*: Vol. 8 : No. 1 , Article 4. Available at: <https://digitalcommons.coastal.edu/cbj/vol8/iss1/4>

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THE QUANTITATIVE STRATEGIC PLANNING MATRIX (QSPM) APPLIED TO A RETAIL COMPUTER STORE

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ABSTRACT

This article presents the Quantitative Strategic Planning Matrix (QSPM), an analytical tool used in formulating strategies. First introduced in a Long Range Planning (3), the QSPM has become widely used among strategic management professors and students for two decades. However, the QSPM has not been widely adopted by strategic planning consultants and organizations. This paper discusses how and why the QSPM should be used by businesses for strategic planning. An example QSPM for a retail computer store is provided and the benefits and limitations of this important strategic planning analytical tool are addressed. Specific guidelines are provided for preparing a QSPM.

THE STRATEGIC-MANAGEMENT PROCESS

The strategic-management process can be described as an objective, logical, systematic approach for making major decisions in an organization (1, 2). It attempts to organize qualitative and quantitative information in a way that allows effective decisions to be made under conditions of uncertainty. Although strategic management is not a pure science that lends itself to a nice, neat, one-two-three approach, the process is widely viewed to consist of three distinct stages: strategy formulation, strategy implementation, and strategy evaluation. The QSPM fits into the first stage, strategy formulation, and is an excellent tool for deciding among feasible alternative strategies.

Although widely used today in the classroom among business students learning strategic management concepts, the QSPM has not been widely used among businesses actually doing strategic planning. And there are no good reasons why the QSPM should be limited to classroom use! It is an excellent tool for assimilating and prioritizing key internal, external, and competitive information needed for devising an effective strategic plan. The relative importance of various facts, figures, trends, and data in deciding among feasible alternative strategies to pursue is critically important in formulating strategies that can provide major competitive advantages to the firm. The QSPM provides a clear framework for this prioritization process.

Formulating strategies is conceptually the same for large and small, profit and nonprofit organizations although there is debate among academicians and practitioners of strategic management as to the extent that the process should be more objective/quantitative as opposed to more subjective/qualitative. Mintzberg coined the term “crafting” strategies to refer to the more subjective approach, but the authors of this

paper advocate a more objective approach (6). Several leading strategic management textbooks today still use the term “Crafting Strategy” in their title (9). Certainly intuition, judgment, feelings, and past experiences are always essential in making strategic decisions (8), but the authors here advocate that underlying key internal and external information should be quantified where reasonably possible, even for a small firm such as the retail computer store being examined in this paper.

A basic tenet of the QSPM is that firms need to systematically assess their external and internal environments, conduct research, carefully evaluate the pros and cons of various alternatives, perform analyses, and then decide upon a particular course of action (4). In contrast, Mintzberg’s notion of “crafting” strategies embodies the artistic model, which suggests that strategic decision making be based primarily on holistic thinking, intuition, creativity, and imagination. (5, 8) Mintzberg and his proponents reject strategies that result from objective analysis such as a QSPM analysis, preferring instead subjective imagination. In contrast, many managers and academicians reject strategies that emerge from emotion, hunch, creativity, and politics. Proponents of the artistic view often consider strategic planning exercises and development matrices such as the QSPM to be time poorly spent. The Mintzberg philosophy insists on informality as opposed to formality. Certainly the two approaches are not mutually exclusive, but Mintzberg refers to strategic planning as an “emergent” process whereas more objective proponents use the term “deliberate” process. (7) The deliberate process, of which the QSPM is apart, contends that it is unwise for strategists to rely too heavily on gut feeling and opinion in the absence of research data, competitive intelligence, and analysis in formulating strategies.

Whether you are more supportive of the “emergent” or “deliberate” approach to strategic planning, there is widespread agreement that formulating strategies begins with development of a clear vision and mission, followed by an internal and external assessment, which leads to establishing long term objectives, and finally generate and decide among specific strategies to pursue. The purpose of this paper is to demonstrate QSPM’s usefulness in formulating strategies based on underlying external and internal assessments and a Strengths-Weaknesses-Opportunities-Threats (SWOT) analysis.

THE EXTERNAL FACTOR EVALUATION MATRIX (EFEM)

For the retail computer store focused upon in this paper, note in Exhibit 1 and 2 respectively that the external and internal assessments for this business are provided (summarized) in an External Factor Evaluation Matrix (EFEM) and an Internal Factor Evaluation Matrix (IFEM). The computer store’s EFEM and IFEM are included in this paper because in evaluating alternative strategies, the QSPM utilizes key internal and external information culminating from both of these underlying assessments.

The EFEM in Exhibit 1 reveals that the most important external factor to being successful in this business is “Population of city growing 10%” as indicated by the 0.15 weight. The weight column reveals how important the respective factors are to being successful in the industry. The weight column must sum to 1.0 regardless of the number

of factors. In contrast to the weights, the ratings reveal how well the firm is performing in regards to that factor, where a 4 = the response is superior, 3 = the response is above average, 2 = the response is average, and 1 = the response is below average. Note that the local retail computer store is doing excellent in regards to how they handle four factors (#'s 1, 5, 9, and 13) as indicated by the ratings of 4. Also, know that factor #2 (Rival computer store opening 1 mile away) is an opportunity because that firm currently is located next door to our business. It is moving away. However, our business has currently made no strategic decision to capitalize on this opportunity, so an appropriate Rating is 2.

EXHIBIT 1
External Factor Evaluation Matrix for a Retail Computer Store

Key External Factors

Opportunities	Weight	Rating	WScore
1. Population of city growing 10% annually	0.15	4	0.60
2. Rival computer store opening 1 mile away	0.05	2	0.10
3. Vehicle traffic passing store up 12% in last year	0.10	1	0.10
4. Vendors average six new products per year	0.05	3	0.15
5. Senior citizen use of computers up 8% this year	0.05	4	0.20
6. Small business growth in area up 10% this year	0.05	2	0.10
7. Desire for web sites up 18% by realtors yearly	0.10	3	0.30
8. Desire for web sites up 12% by small firms	0.05	1	0.05
Threats			
9. Best Buy opening a new store in 1 year nearby	0.10	4	0.40
10. Local university offers computer repair	0.05	3	0.15
11. New bypass Hwy 34 in 1 yr will divert traffic	0.05	3	0.15
12. New mall being built nearby in 1 year	0.10	1	0.10
13. Gas prices up 14% in past year	0.05	4	0.20
14. Vendors raising prices 8% quarterly	0.05	2	0.10
Total	1.00		2.70

Note that the key external factors are stated in quantitative terms to the extent possible, rather than being stated in vague terms. Factors should be quantified as much as possible in constructing both an EFEM and IFEM to minimize misinterpretation and misunderstanding. Finally, note in Exhibit 1 that the total weighted score of 2.70 is above the average (mid-point) of 2.5, so this retail computer business is doing pretty well taking advantage of the external opportunities and avoiding the threats facing the firm. There is definitely room for improvement, however, as the highest total weighted score would be 4.0. As indicated by Ratings of 1, this business especially needs to perform better regarding three external factors (#'s 3, 8, and 12). In other words, the business

especially needs to pursue strategies that will take advantage of opportunities # 3 and 8 and mitigate the impact of threat # 12.

If there was no weight column in this EFEM, note that each factor then would be equally important. Having a weight column therefore provides a more robust analysis because it enables strategists to assign higher and lower numbers to capture perceived or actual levels of importance. The QSPM utilizes this weight column information from both the EFEM and IFEM.

THE INTERNAL FACTOR EVALUATION MATRIX (IFEM)

Note in the retail computer store IFEM provided in Exhibit 2 that the two most important factors to being successful in the retail computer store business is “Revenues from repair/service in the store” and “Location of the store.” The store may need to advertise its repair/services more since that is a really important (weight 0.15) factor to being successful in this business. Also note that the store is doing outstanding on “Average customer purchase amount” and “In-store technical support” as indicated by the 4 ratings. The store is having major problems with its carpet, bathroom, paint, and checkout procedures as indicated by the 1 Ratings. This retail computer store might want to hire another checkout person and repair its carpet/paint/bathroom problems. Note also that the IFEM contains substantial quantitative data rather than vague statements. Overall, this store receives a 2.5 total weighted score which on a 1 to 4 scale is exactly average/half way indicating there is definitely room for improvement in store operations/strategies/policies/procedures. As described in a moment, a firm’s strategies should be derived from a systematic matching of strengths and weaknesses with opportunities and threats.

EXHIBIT 2
Internal Factor Evaluation Matrix for a Retail Computer Store

Key Internal Factors	Weight	Rating	WScore
Strengths			
1. Inventory turnover increased from 5.8 to 6.7 this year	0.05	3	0.15
2. Average customer purchase increased from \$97 to \$128 this year	0.07	4	0.28
3. Employee morale is excellent	0.10	3	0.30
4. In-store promotions resulted in 20 percent increase in sales this year	0.05	3	0.15
5. Newspaper advertising expenditures increased 10 percent this year	0.02	3	0.06
6. Revenues from repair/service segment of store up 16 percent this year	0.15	3	0.45

7. In-store technical support personnel have MIS college degrees	0.05	4	0.20
8. Store's debt-to-total assets ratio declined to 34 percent this year from 51%	0.03	3	0.09
9. Revenues per employee up 19 percent in last two years	0.02	3	0.06

Weaknesses

1. Revenues from software segment of store down 12 percent this year	0.10	2	0.20
2. Location of store negatively impacted by new Highway 34 to be completed in 1 year	0.15	2	0.30
3. Carpet and paint in store somewhat in disrepair.	0.02	1	0.02
4. Bathroom in store needs refurbishing.	0.02	1	0.02
5. Revenues from businesses down 8 percent this year.	0.04	1	0.04
6. Store has no web site.	0.05	2	0.10
7. Supplier on-time-delivery increased to 2.4 days in last two quarters.	0.03	1	0.03
8. Oftentimes customers have to wait 5 minutes to check out.	0.05	1	0.05
Total	1.00		2.50

THE STRENGTH-WEAKNESS-OPPORTUNITY-THREAT (SWOT) MATRIX

The SWOT Matrix is widely used among both practitioners and academicians of strategic management (9). This analytical tool utilizes the underlying internal and external factors to generate strategies that would be feasible to consider. Basically the SWOT Matrix matches key external and internal factors as a basis for generating feasible strategies. Exhibit 3 provides a SWOT Matrix for the retail computer store being examined in this paper. Analytical tools such as the SWOT Matrix and Boston Consulting Group (BCG) Matrix generate strategies that can then be evaluated in a QSPM. An effective process for strategic planning is to develop an EFEM and IFEM followed by a SWOT and BCG and then finally a QSPM.

There are some important aspects of a SWOT Matrix evidenced in Exhibit 3. Note that the SO/ST/WO/WT strategies are stated in quantitative terms to the extent possible. For example, regarding the second SO strategy in Exhibit 3, if the strategy was simply stated as "Add new repair/service persons" the reader may think that 20 new repair/service persons are needed. Actually, as noted in Exhibit 3, only two new repair/service persons are needed. Thus, always "be specific" to the extent possible in stating both external/internal factors and strategies.

Also in developing a SWOT Matrix, include the “S1, O2” type notation after each strategy as illustrated in Exhibit 3. This notation reveals the rationale for each alternative strategy. Strategies arise only from internal/external underpinnings and this notation reveals the thought process. In other words, this notation reveals the internal/external factors that were matched to formulate the particular strategies. This retail computer store business, for example, may need to “Purchase land to build new store” since a “New Highway 34” will make its present location less desirable. The notations (W2, O2) and (S8, T3) reveal the rationale for this particular strategy. Notation provided after the strategies exemplify this matching process.

EXHIBIT 3
A SWOT Matrix for a Retail Computer Store

Strengths	Weaknesses	
<ol style="list-style-type: none"> 1. Inventory turnover up 5.8 to 6.7 2. Average customer purchase up \$97 to \$128 3. Employee morale is excellent 4. In-store promotions = 20% increase in sales 5. Newspaper advertising expenditures down 10% 6. Revenues from repair/service in-store up 16% 7. In-store technical support persons have MIS degrees 8. Store’s debt-to-total assets ratio down 34% 9. Revenues per employee up 19% 	<ol style="list-style-type: none"> 1. Software revenues in store down 12% 2. Location of store hurt by new Hwy 34 3. Carpet and paint in store in disrepair 4. Bathroom in store needs refurbishing 5. Total store revenues down 8% 6. Store has no web site 7. Supplier on-time-delivery up to 2.4 days 8. Customer checkout process too slow 	
<p>Opportunities</p> <ol style="list-style-type: none"> 1. Population of city growing 10% 2. Rival computer store opening 1 mi 3. Vehicle traffic passing store up 12% 4. Vendors average six new products yr 5. Senior citizen use of computers up 8% 	<p>SO Strategies</p> <ol style="list-style-type: none"> 1. Add 4 new in-store promotions monthly (S4,O3) 2. Add 2 new repair/service persons (S6, O5) 3. Send flyer to all senior over age 55 (S5, O5) 	<p>WO Strategies</p> <ol style="list-style-type: none"> 1. Purchase land to build new store (W2, O2) 2. Install new carpet/paint/bath (W3, W4, O1) 3. Up web site services by 50% (W6, O7, O8)

- 6. Small business growth in area up 10%
- 7. Desire for web sites up 18% by realtors
- 8. Desire for web sites up 12% by small firms

- 4. Launch mailout to all realtors in city (W5, O7)

Threats	ST Strategies	WT Strategies
<ul style="list-style-type: none"> 1. Best Buy opening new store in 1yr near 2. Local university offers computer repair 3. New bypass Hwy 34 in 1 yr will divert traffic 4. New mall being built near 5. Gas prices up 14% 6. Vendors raising prices 8% 	<ul style="list-style-type: none"> 1. Hire two more repair persons and market these new services (S6, S7, T1) 2. Purchase land to build new store (S8, T3) 3. Raise out-of-store service calls from \$60 to \$80 (S6, T5) 	<ul style="list-style-type: none"> 1. Hire 2 new cashiers (W8, T1, T4) 2. Install new carpet/paint/bath (W3, W4, T1)

QSPM

The retail computer store's QSPM is provided in Exhibit 4. Note that the left two columns are extracted verbatim from the company's underlying EFEM and IFEM. Also note that two alternative strategies – 1) Buy new land and build new larger store and 2) Fully renovate existing store – were extracted from the company's SWOT Matrix. Note that an Attractiveness Score (AS) of 1, 2, 3, or 4 is used to reveal each strategy's attractiveness given the respective external or internal factor, where 4 is the best and 1 is the least attractive. Work row by row in developing the QSPM and decide which strategy is best given the respective external or internal factor. Assign a 4 to the best strategy. Note for example that opportunity #1 (Population of city growing 10%) was determined to benefit Strategy 1 (Buy New Land and Build New Larger Store) best as indicated by the AS of 4. However, for opportunity # 3 (Vehicle traffic passing store up 12%) would benefit Strategy 2 (Fully Renovate Existing Store) best, so the second strategy received an AS of 4 on the third row. Work all the way down the QSPM in this manner.

Note in Exhibit 4 that for some rows there are dashes all the way across the row. Use dashes to indicate which external/internal factors do not affect the strategy choice being considered. If a particular factor affects one strategy but not the other, it affects the choice being made, so AS's should be recorded for both strategies. Never rate one strategy and not the other. You may ask why include the external/internal factor if it has no affect on the choice being made. Answer is that the particular factor may impact other

strategy choices in other QSPM's so do not discard a factor since it was earlier determined to be of critical importance.

The QSPM sum total attractiveness scores of 3.32 versus 3.16 in Exhibit 4 indicate that the retail computer store business should "Buy new land and build a new larger store." The magnitude of difference between sum total attractiveness scores gives indication of the relative attractiveness of one strategy over another. This can be vital information for a firm in deciding between or among strategies.

Note in Exhibit 4 that there are no double 1's, 2's, 3's, or 4's in a row. Avoid assigning alternative strategies the same AS score in a QSPM. If you have more than one strategy in the QSPM, then let the AS scores range from 1 to "the number of strategies being evaluated." This will enable a different AS score for each strategy. AS scores are not mere guesses; they should be rational, defensible, and reasonable. These are all important guidelines to follow in developing a QSPM.

EXHIBIT 4
A QSPM For A Retail Computer Store

	STRATEGIC ALTERNATIVES				
	1		2		
	BUY NEW LAND AND BUILD NEW LARGER STORE		FULLY RENOVATE EXISTING STORE		
	WEIGHT	AS	TAS	AS	TAS
Opportunities					
1. Population of city growing 10%	0.15	4	0.60	2	0.30
2. Rival computer store opening 1 mile	0.05	2	0.10	4	0.20
3. Vehicle traffic passing store up 12%	0.10	1	0.10	4	0.40
4. Vendors average six new products year	0.05	-		-	
5. Senior citizen use of computers up 8%	0.05	-		-	
6. Small business growth in area up 10%	0.05	-		-	
7. Desire for web sites up 18% by realtors	0.10	-		-	
8. Desire for web sites up 12% by small firms	0.05	-		-	

Threats

1. Best Buy opening new store in 1yr near	0.10	4	0.40	3	0.30
2. Local university offers computer repair	0.05	-		-	
3. New bypass Hwy 34 in 1 yr will divert traffic	0.05	4	0.20	1	0.10
4. New mall being built near	0.10	2	0.20	4	0.40
5. Gas prices up 14%	0.05	-		-	
6. Vendors raising prices 8%	0.05	-		-	

	1.00				

Strengths

1. Inventory turnover increased from 5.8 to 6.7	0.05	-		-	
2. Average customer purchase increased from \$97 to \$128	0.07	2	0.14	4	0.28
3. Employee morale is excellent	0.10	-		-	
4. In-store promotions resulted in 20% increase in sales	0.05	-		-	
5. Newspaper advertising expenditures increased 10%	0.02	-		-	
6. Revenues from repair/service segment of store up 16%	0.15	4	0.60	3	0.45
7. In-store technical support personnel have MIS college degrees	0.05	-		-	
8. Store's debt-to-total assets ratio declined to 34%	0.03	4	0.12	2	0.06
9. Revenues per employee up 19 percent	0.02	-		-	

Weaknesses

1. Revenues from software segment of store down 12%	0.10	-		-	
2. Location of store negatively impacted by new Highway 34	0.15	4	0.60	1	0.15
3. Carpet and paint in store somewhat in disrepair.	0.02	1	0.02	4	0.08
4. Bathroom in store needs refurbishing.	0.02	1	0.02	4	0.08
5. Revenues from businesses down 8%.	0.04	3	0.12	4	0.16
6. Store has no web site.	0.05	-		-	
7. Supplier on-time-delivery increased to 2.4 days	0.03	-		-	
8. Oftentimes customers have to wait to check out	0.05	2	0.10	4	0.20
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Total	1.00		3.32		3.16

CONCLUSION

Developing a QSPM makes it less likely that key external/internal factors will be overlooked or weighted inappropriately in deciding which alternative strategies to pursue.

Although developing a QSPM requires a number of subjective decisions, making small decisions along the way enhances the probability that the final strategic decisions will be best for the firm.

As evidenced for the small retail computer store examined in this paper, the QSPM can be a useful strategic planning tool even for small firms. The business analyzed herein should “Buy land and build a new larger store” rather than “Renovate its existing store.” Success and even survival of this business could hinge on the owner getting this strategic decision right. So the QSPM can be helpful. The QSPM can be useful for all kinds of organizations - large, small, profit, and nonprofit – in doing strategic planning.

A limitation of the QSPM is that it can be only as good as the prerequisite information and matching analyses upon which it is based. Another limitation is that it requires good judgment in assigning attractiveness scores. Also, the sum total attractiveness scores can be really close such that a final decision is not clear. Like all analytical tools however, the QSPM should not dictate decisions but rather should be developed as input into the owner’s final decision.

This paper provides guidelines and procedures as well as a simple example to show how the QSPM can be successfully used by businesses facing critical strategic decisions. In absence of a tool such as the QSPM, sometimes strategic decisions are made based primarily on emotion, politics, gut feeling, past experience, and intuition. In actual business settings as opposed to the classroom environment, these subjective factors can result in loss of income and revenues by resulting in strategies that fail to create competitive advantage. The QSPM provides an objective framework that can facilitate organizational strategic planning just as well as it does classroom strategic planning.

Overall, the benefits of developing a QSPM far outweigh the limitations, because the analysis represents an objective rather than subjective basis for deciding among feasible alternative strategies. Also the QSPM utilizes the underlying external and internal assessments, rather than filing this information away and not using this it in deciding among strategies to pursue. Applying the QSPM in a retail computer setting, this article demonstrates QSPM’s usefulness. Hopefully this article will spur use of the QSPM among both profit and nonprofit organizations engaged in strategic planning.

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