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Scenario-based strategy maps

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Abstract Strategy maps are designed to help execute strategy and bring predictive qualities to key performance indicators by linking them according to perceived cause-and-effect relationships. However, in our experience strategy maps are often extrapolations of past performance and are seldom sufficiently linked to possible future states. In this article, we argue that scenario analysis could play an important role in the design of strategy maps, as it is an effective method to look at the future. Through the development of scenarios, organizations can think creatively about possible discontinuous future states and can prepare themselves for multiple plausible futures, not only the one they expect to happen. Therefore, scenario-based strategy maps could enable organizations to face strategic uncertainty in a more effective way and make them more sustainable in the longer term. This article highlights the strengths and weaknesses of strategy maps and scenario analysis, and outlines a method to develop scenario-based strategy maps both in theory and by presenting a significant example.
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1. Linking present and future

Despite considerable research in the areas of strategy and performance management, there is still need for "an explicit, process-based description of how managers at all levels can contribute to managing strategic uncertainty in ways that mitigate risk and position a firm to capture emerging opportunities" (Raynor, 2007, p. 10). This is certainly not easy, as it is challenging to predict future trends and developments, particularly in the current turbulent business climate (Fink, Marr, Siebe, & Kuhle, 2005). In this context, although strategic planning has been used by a wide proportion of organizations, "it has not proven its ability to inform organization leaders about massive emerging political, environmental, economic, and/or societal changes" (Chermack, 2004, p. 301). To serve a similar purpose, several forecasting techniques have been adopted—but they have not proven effective, either (Raynor, 2007).

At the same time, increasing emphasis has been placed on strategy execution, namely the mobiliza-

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tion of resources necessary to deliver on the organization's strategy (Kaplan & Norton, 2008; Rosenzweig, 2007). The need for tools that could enable organizations to communicate both their strategy and the processes and systems that will enable them to execute that strategy, has been recognized (Kaplan & Norton, 2000). However, in a number of organizations, it is still unclear what the strategy means in operational terms, and there is still little explicit sense of priority among the variety of performance targets and indicators existing at different hierarchical levels (Neely, Adams, & Kennerley, 2002).

Herein we will bring together two approaches that could enable organizations to effectively implement their strategy, while considering alternative options of how different factors may affect the organization's future environment and performance. Strategy maps are a visual representation of the relationships among the key components of an organization's strategy (Eccles & Pyburn, 1992). They are developed to provide "the missing link between strategy formulation and strategy execution" (Kaplan & Norton, 2004, p. 10). Scenario analysis encourages managers and organizational planners to examine situations and factors that challenge their current way of thinking, and to consider what could be presently unthinkable (Wack, 1985). In opposition to forecasting techniques, which aim to provide answers about future states, the purpose of scenario analysis is to encourage people to pose questions (van der Heijden, 2005). By developing scenarios, organizations oppose the idea that a single predictable future exists (Fink et al., 2005).

To develop this idea further, we will: critically review the strengths and weaknesses of strategy maps; examine the main characteristics and use of scenario analysis; compare and contrast the two tools, outlining the benefits of their conjoint use; and exemplify the suggested approach to designing scenario-based strategy maps through the hypothetical case of a large recruitment firm for people with technology skills, such as software developers, support specialists, and database administrators. Finally, we will draw conclusions with respect to the benefits of developing scenario-based strategy maps.

2. Strategy maps

A strategy map is an illustration of an organization's strategy. Its main purposes are to facilitate the translation of strategy into operational terms and to communicate to employees how their jobs relate to the organization's overall objectives (Lawson, Hatch, & Desroches, 2007). Strategy maps are intended to help organizations focus on their strategies in a comprehensive yet concise and systematic way (Kaplan & Norton, 2000).

If a strategy map is created via collaborative process, buy-in and commitment toward the strategy could be enhanced. Through strategy maps, it is possible to visualize how different parts of the organization contribute—directly or indirectly—to the organization's overall performance. If we consider the Balanced Scorecard framework, a strategy map is used to describe the logic of strategy, connecting organizational assets to internal business processes which, in turn, enable the organization to succeed from both customers' and shareholders' points of view. Moreover, objectives drawn from the four Balanced Scorecard perspectives are linked together in a chain of cause-and-effect relationships (Kaplan & Norton, 2004). An optional attribute often used with Balanced Scorecard (BSC) framework is the Strategic Theme. Organizations typically choose three to five strategic themes which are used to highlight the value proposition of the entire organization, and to communicate shared priorities needed to achieve the value proposition. As noted by Kaplan and Norton (2004, p. 104):

> Each theme consists of a vertical chain of cause-and-effect relationships linking objectives, measures, and initiatives that span the four BSC perspectives. The collection of strategic themes articulates how business and support units can work together to create the synergies necessary to realize the enterprise's value proposition.

Strategy maps can be used to help identify appropriate performance indicators (PIs) associated with the objectives. On the other hand, it could be argued that PIs that do not fit in a cause-and-effect relationship may not be important, and if cause-and-effect relationships require a 'leap of imagination,' then this may indicate that relevant PIs might be missing. Finally, strategy maps can facilitate the selection of leading indicators. When PIs are linked together in a cause-and-effect relationship, some necessarily would be leading and some lagging. Those PIs that are leading may be used for predictive purposes.

While there may be benefits related to the design and use of strategy maps, a number of authors have highlighted possible shortcomings (e.g., Ahn, 2001; Buytendijk, 2008; Norreklit, 2000). From a stakeholder management point of view, the development of strategy maps could be criticized as too much of an inward-looking exercise. Also, the cause-and-

effect relationships depict a one-way, linear approach often starting with the 'learning and growth' perspective and culminating in financial results instead of depicting non-linear, two-way linkages. Since the Balanced Scorecard perspectives are not independent, feedback loops should be included in the maps (Franco & Bourne, 2005).

From a statistical standpoint, testing the validity of the relationships between elements of a strategy map could enhance its quality. Ittner and Larcker (2003) suggest that less than 30% of the companies they surveyed actually create causal models to test the relationships. However, the very idea of calculating cause-and-effect relationships may be misleading, as performance indicator or strategic objective data may result in a positive or negative correlation without necessarily being causal. As Norreklit (2003) pointed out, strategy maps do not discriminate among logical and causal links. Even if we focused only on statistical analysis, insufficient historic data may be available to determine a reliable coefficient. Typically, in many organizations, there are inconsistencies in the frequency of gathered values and the range in which the values vary over a period of time.

Even though statistical concerns with strategy maps are certainly relevant, in our experience, the design of strategy maps is rarely scientific. Most often, strategy maps are the outcome of a collective view of the involved managers on which objectives the business should focus, and how the business should operate to attain them. This is not necessarily wrong; however, if communicated poorly, a statistically proven and robust strategy map may be seen as a 'black box' with cause-and-effect relationships that are poorly understood. If managers were not part of the development process, they could try to distance themselves from the use and results of the strategy map, especially if the implications are not to their liking. Indeed, buy-in and a sense of ownership are needed, and the design of a strategy map should be a collaborative process.

A final but very important concern is that reliance on the causal model represented in the strategy map may not be sufficient to reflect the evolution of strategy over time (Othman, 2007). Relying on a static strategy map over the mid and long term is equivalent to assuming not only that the organization and its strategy will stay the same, but also that competitors will continue to behave in the same way. Furthermore, if strategy maps are supposed to have predictive abilities, one could question the validity of analyzing past data to predict future states. Strategy maps do not include a possible time lag among PIs, and future situations may be different as relationships which were valid in the past may not hold up in future circumstances. Therefore, organizations incur the risk that once a map is created, they concentrate solely on the development of a linear set of performance indicators, oblivious to possible changes in the future (Othman, 2007). Given that all we can truly predict about the future is that most likely it will be different from today, one could even argue that validating a strategy map based on past data may, per definition, invalidate it. This implies that although the development of a strategy map could help an organization implement its strategy, it could not enable the organization to face the changes that can impact its strategy and—ultimately—its performance.

Building on the previous analysis, it is possible to conclude that strategy maps should not be closed, static representations of strategy. Both organizations and PESTEL—Political, Economical, Social, Technological, Environmental, and Legal—factors (see Gillespie, 2007) change continuously, and over-reliance on past performance can be very risky. Linking the design of strategy maps to future scenarios could help mitigate this risk, as maps could become future-related, rather than mere representations of the present state. Therefore, we suggest that the use of a method for imagining possible futures, such as scenario analysis, could address these concerns and improve both current relevance and predictive abilities of strategy maps.

3. Scenario analysis

A scenario was defined by Porter (1985, p. 63) as "an internally consistent view of what the future might turn out to be - not a forecast, but one possible future outcome." According to Schwartz (1991, p. 4), "scenario analysis is a tool for ordering one's perception about alternative future environments in which one's decisions might be played." As such, scenario analysis is not meant to be right about the future. Instead, it helps managers think of future performance not as a single plan to stick to, but as a number of options that—once played out—simply need to be recognized. In other words, scenarios could be used to prepare an organization for what might happen in the future. Scenario analysis is a qualitative and disciplined way to depict possible future states (Schoemaker, 1995). According to Miller and Waller (2003, p. 93), "scenario planning" is used to "envision plausible future states of the world and to consider how to take advantage of opportunities and avoid potential threats." In the literature, the terms scenario analysis, scenario planning, and scenario development are often used interchangeably (Bishop, Hines, & Collins, 2007). In this article, we

will employ the term scenario analysis, as we base our approach mostly on Schwartz (1991).

Despite being "essentially a study of our collective ignorance" (Schoemaker, 1995, p. 38), scenario analysis aims to tackle two common concerns in decision making: predicting too much change or not enough change. To do so, participants involved in the development of scenarios are encouraged to differentiate between factors they believe they are knowledgeable about and elements they consider uncertain or unknowable. Building on Schoemaker (1995, pp. 26–27), scenario analysis differs from other planning methods in a number of ways:

- Scenarios explore the joint impact of various uncertainties, which stand side by side as equals.
- Scenarios change several variables at a time, without necessarily keeping others constant.
- Scenarios go beyond objective analyses to include subjective interpretations.

Scenario analysis is a relevant method to look at the future for two principal reasons. First of all, it is fundamental for organizations to think creatively about the future in order to avoid the risk of being surprised and unprepared, once discontinuous future states manifest themselves. Second, since the future is inherently uncertain, organizations need to prepare for multiple plausible futures, not only the one they expect to happen (Bishop et al., 2007).

Scenario analysis can lead managers to gain a deeper appreciation for the innumerable factors that shape the future, thus challenging tunnel vision and insufficient consideration for possible future states (Schoemaker, 1995). In doing so, organizations are encouraged to build flexibility in the ways they operate (Miller & Waller, 2003). Moreover, scenarios can be used for a number of purposes (Schoemaker, 1995, p. 34):

- Identify early warning signals
- Assess the robustness of the organization's core competencies
- Generate better strategic options
- Evaluate the risk/return of each option in view of the uncertainties

According to Schwartz (1991), usually two or three scenarios are created. One scenario can be an extrapolation of the present. A second may describe a bright future, such as a discontinuity that would be dealt with well because the organization was prepared. The third scenario could describe a more gloomy perspective; for instance, a discontinuity that would not be dealt with successfully because the organization was not ready. Others—such as analyst firm Gartner (2008)—use a grid of two dimensions, each describing opposite sides of a trend, leading to four scenarios; for a review of the different approaches to scenario analysis, see Bishop et al. (2007).

The development of scenarios also has the benefit of continually pushing the envelope of possibilities, since it regards strategic planning as collective learning (Schoemaker, 1995). Once scenarios are created, managers can devise strategic initiatives, which could reduce the risk posed by the main uncertainties, exploit the opportunities identified, and keep risk within an acceptable limit (Miller & Waller, 2003). Although there may be benefits related to the use of scenario analysis, some authors have highlighted possible shortcomings. More precisely, Miller and Waller (2003) suggest four main weaknesses:

1. Scenarios may consist of nothing more than imaginative guesswork unless there is logical consistency and thorough examination of the logic used and outcome.
2. Some of the inputs to scenario analysis are nonquantifiable in nature. In this case, the output of the scenario may not be quantifiable.
3. The scenarios created may reflect current conditions and biases rather than future possibilities, and the personalities of those developing the scenarios would likely limit the possibilities considered.
4. During analysis, many perspectives may be considered. It is possible that there will be a lack of consensus and therefore, in the end, participants may not reach a shared or common strategy.

Following the reflections presented in the previous section, it is possible to argue that organizations could benefit from bringing together scenario analysis with a formalized approach in creating strategy maps. Strategy maps aim to be predictive, as they aspire to show how decisions made in the present could impact future results. Scenario analysis could expand the effectiveness of strategy maps. The joint use of the two methods could be a substantial step forward, compared with either the uncoordinated multiple versions of the truth that all too often characterize the state of

management information in many organizations (Buytendijk, 2008), or with a single version of the truth, often crystallized through the design of a single strategy map. The use of scenario analysis in the creation of strategy maps could add a probabilistic and anticipatory view, which the standard process of strategy map design lacks. Despite the benefits of jointly developing scenarios and strategy maps, the combination of these two techniques is not common. Let's now investigate, in more detail, how such a combination could work.

4. Scenario-based strategy maps

Both scenario analysis and strategy maps require managers to exercise their judgment to distil countless possible future states to the most plausible few, and identify the key organizational objectives. The development of scenario-based strategy maps implies that, once scenarios have been created, the main task for managers is to devise a strategy that is robust under the conditions identified under the final scenarios considered (Othman, 2007). Building on Miller and Waller (2003) and Kaplan and Norton (2004), the combination of strategy maps and scenario analysis has a number of advantages:

- Strategy maps and scenarios are effective means to communicate the present and future strategy of an organization.
- Both tools are built on a holistic view of the organization and its environment, and on how key activities and processes are interrelated.
- The internal focus of strategy maps is complemented by the focus of scenario analysis on environmental factors.
- Through strategy maps and scenarios, both qualitative and quantitative aspects can be taken into account.
- Both tools require the participation of several stakeholder groups; this could increase the validity and robustness of the organization's strategy.
- The development of strategy maps and scenarios also implies the comparison of mental models (Senge, 1990) and the achievement of intersubjective agreement between participants.
- Finally, contingencies, uncertainties, trends, and opportunities—which are seldom anticipated—could be identified and evaluated through scenario analysis, incorporated in the strategy maps, and thus acted upon.

Although the joint development of scenarios and strategy maps could result in major benefits, we are not suggesting that the complete process of developing a strategy map should be driven solely by external influences as identified in various scenarios. Competitive advantage also comes from strategic choices based on the organization's own capabilities and strengths. As a market player, those strategic choices impact the market as well; therefore, they should be taken into account along with external factors. However, even though the literature on strategy mapping is fairly vast, few authors have suggested the combination of strategy maps and scenario analysis (Fink et al., 2005; Othman, 2007) and none have described the actual design process.

To address this issue, we propose the following four steps to create a scenario-based strategy map. Given the popularity of balanced scorecards and strategy maps (Lawson et al., 2007), we will begin by assuming that the organization already has a strategy map:

1. Consider the strategy map and identify the strategic objectives that describe the assumptions for the business model. For instance, 'cost leadership' for a budget airline, or 'ultimate safety' for a car manufacturer, or 'superior service' for a hotel chain.
2. Create different scenarios; for example, using PESTEL analysis. Identify the new or unchanged critical success factors in each of those scenarios.
3. Create a strategy map with objectives for each of those scenarios based on the specifics of that scenario.
4. Establish the commonality of objectives across the various scenarios. The more an objective is present across scenarios, the more relevant and 'trustworthy' such an objective will be, and the higher the probability that these goals could be reached in a changing environment. In order for this commonality analysis to work, objectives will have to be specific; this implies that predominantly high-level objectives such as 'maintain profitability' and 'seek growth' do not provide practical guidance and will most likely only change in the gravest of discontinuities.

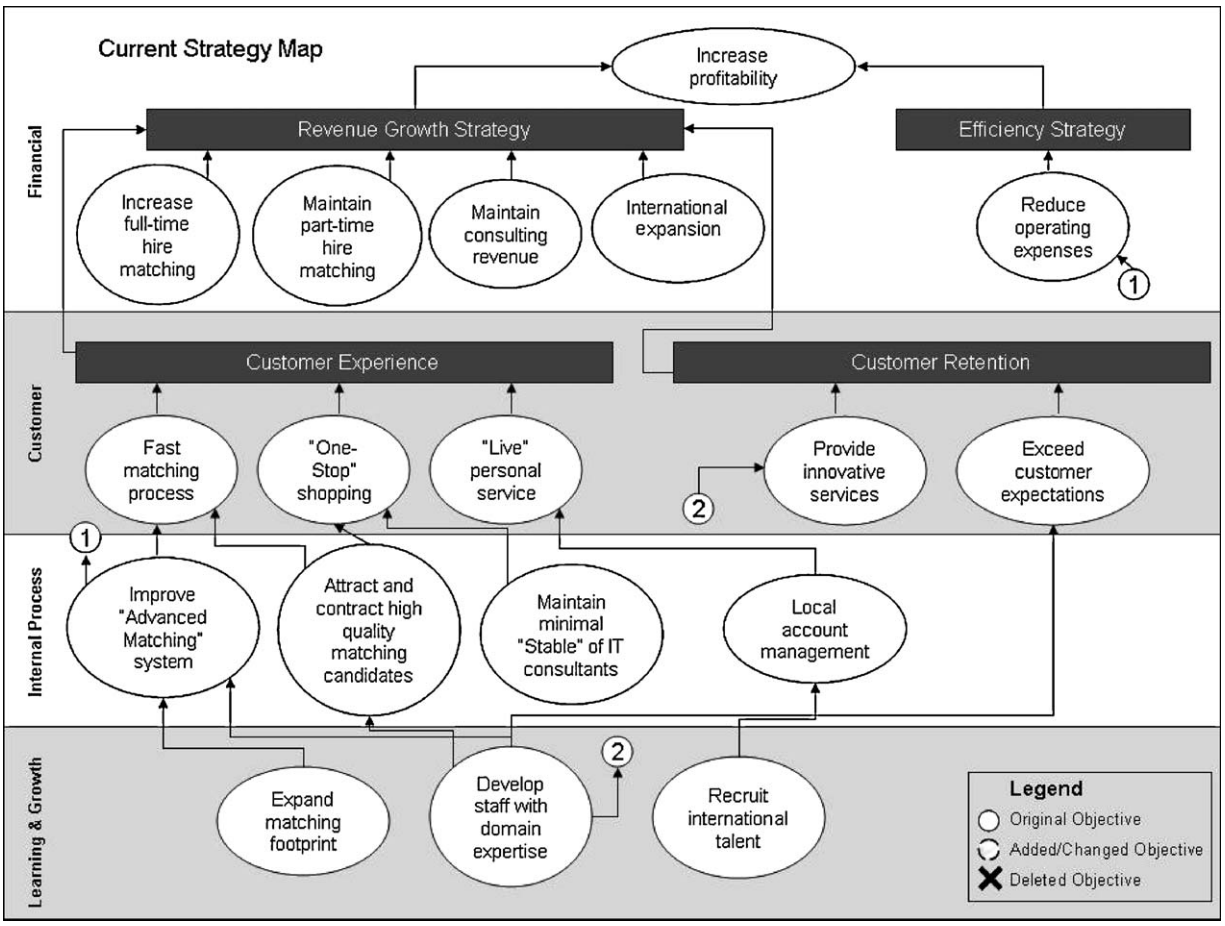
In order to clarify and illustrate the proposed approach, an example is presented in the next section.

5. Example: Tier One Talent

Tier One Talent (a hypothetical entity) is a large recruitment firm for people with technology skills, such as software developers, support specialists, and database administrators. In a market full of job mobility and many people building IT skills, there is an ample supply of talent. The competitive differentiators of Tier One Talent (TOT) are its superior matching process and customer relationships. The company has developed global contracts with its large multinational customers, yet retains local management for personalized service. Account managers know their customers inside and out, and know what skills to look for. For example, instead of asking customers to fill in forms, TOT offers 'live services' creating job profiles based on interviews and mutual understanding. In other words, TOT focuses on the customer intimacy value discipline (Treacy & Wiersema, 1995). TOT created a strategy map (Figure 1) to articulate how it intends to meet its goals in upcoming years. The strategy map uses the Norton and Kaplan (1996) Balanced Scorecard framework, and employs strategy themes to demonstrate how the key areas of Revenue Growth, Efficiency, Customer Experience, and Customer Retention are central to TOT's ability to achieve its strategy.

Tier One Talent is known for its advanced matching system consisting of very specific technology that provides better results than off-the-shelf packages. This translates well into the company's customer value proposition, as TOT can offer better candidates in a shorter period of time—an important driver of revenue growth. TOT is also working on expanding the footprint of the technology. This means adding candidates and adding matching criteria to further improve the system, and opening up the system for candidates and customers to search themselves, providing an innovative service. TOT's focus is to increase the number of full-time placements and maintain part-time placements in order to meet its revenue growth objectives. Customer intimacy implies not only knowing the customer very well and having local account management

Figure 1. Tier One Talent's current strategy map



(increasingly internationally), but also having a staff that understands IT. This discipline also adds to qualifying candidates effectively, a positive customer experience, customer retention, and—ultimately—revenue growth.

To further differentiate from the competition, Tier One Talent has a small unit of employed IT consultants that take on projects, mainly focused on project management. This is an hourly-rate consulting business designed to create a 'TOT' way of doing IT and adding to the customer experience. This service was created chiefly for smaller customers, who do not have their own professional IT department.

Following the arrows between the objectives (see Figure 1), it is possible to understand the cause and effect links. For example, if Tier One Talent chooses to expand the matching footprint, this will aid in improving the advanced matching system. A better matching system will produce a faster matching process. A faster matching process contributes to the theme of a better Customer Experience, which in turn will help with Revenue Growth. Along the same lines, if TOT chooses to recruit international talent, this will aid in local account management, which will help provide live personal service. Live personal service contributes to a good Customer Experience, which in turn helps with the Revenue Growth Strategy.

5.1. Scenarios

When deciding on the number of scenarios to create and test for future stability, the pros and cons of creating not enough or too many must be considered. Bishop et al. (2007) advise against producing a best case, worst case, and a middle version, as this would lead organizations to choose the middle ground. They also point out there are many other techniques. For our Tier One Talent example, we have chosen a variation on this approach as the focus of this article is not the description of approaches to scenario analysis, but rather the idea of using scenarios when creating strategy maps. Therefore, in order to test the validity of the strategic objectives, and make the strategy map reliable in the future, TOT has prepared three scenarios:

1. Steady-As-She-Goes: The economic market stays the same and the company continues to grow organically.

2. It's A Networked World: The labor economy starts to boom and TOT needs to focus on hypergrowth.

3. Costs, Costs, Costs: The economy takes a severe downturn, IT strategies change, and TOT needs to change the business model to survive.

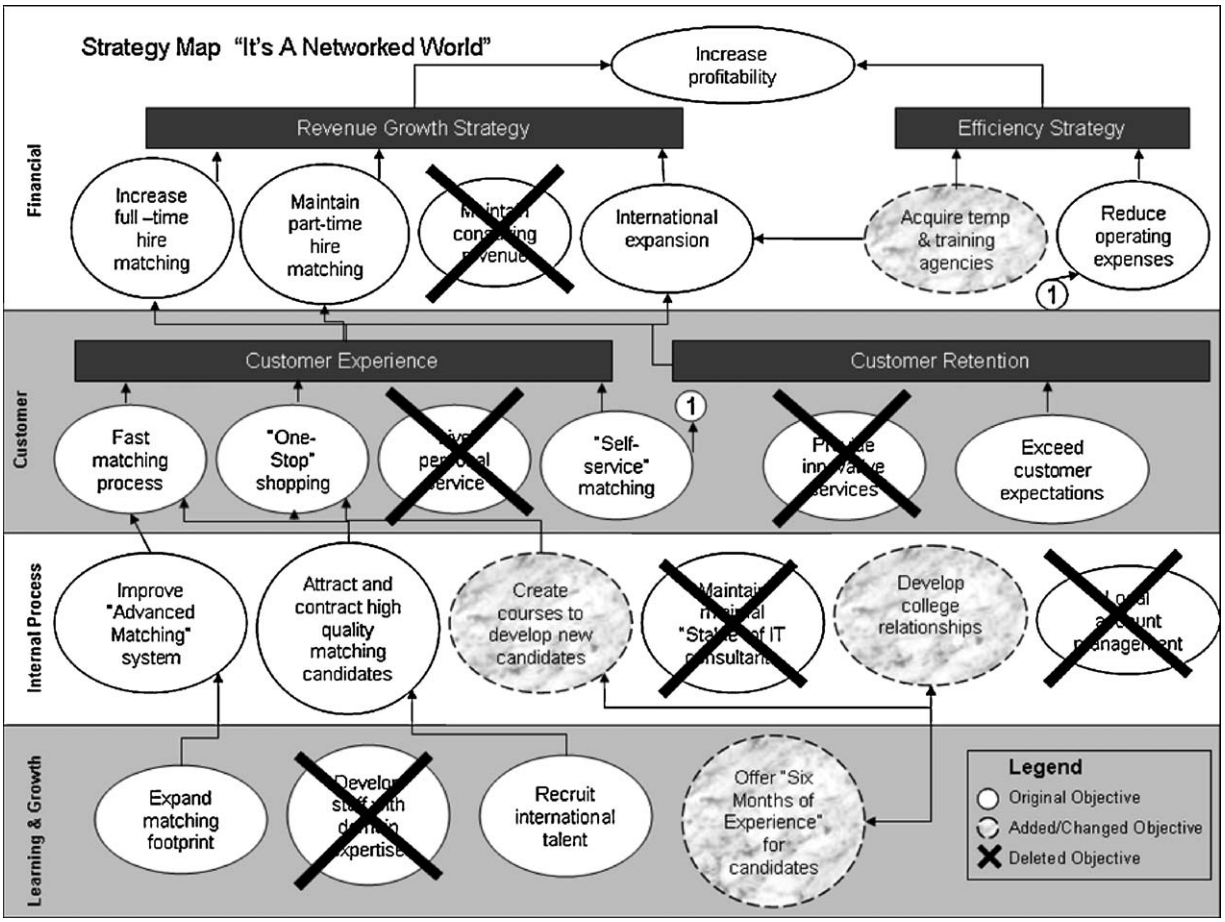
Scenario 1 (Steady-As-She-Goes) can be completed using the same strategy map. Tier One Talent simply ramps up efforts to hire and retain employees, and find and contract new candidates for matching. The current objectives in the learning and growth perspective would be sufficient.

Scenario 2—It's A Networked World—sketches a different situation. (We used the six factors of PESTEL-analysis to create this sample scenario—Political/Legal influence: tax rebates. Economical/Social factors: Generation Y self-employed professionals who use Internet markets to find work. Technological: rise of the 2.0 world. Ecological: focus on sustainability.) With Generation Y entering the workforce, there is an increase in the number of independent professionals. Whereas lifelong employment had already transitioned to job-hopping, now professionals hop from project to project. Governments support entrepreneurship by offering various tax rebates, thus lowering the risk for people who become self-employed. Open source working styles dominate the IT world. The 2.0 wave rules the business and commerce shifts even more from traditional channels to social websites. 'Green' is the key, causing many professionals to work at home serving multiple customers, and find new projects using Internet markets.

This scenario has a clear impact on Tier One Talent's strategic objectives (Figure 2). The dynamics of the market will change, too. Currently a recruitment firm, TOT may have to shift its focus to become more of a temp agency, matching customers and candidates on a project-by-project basis. Given the huge growth of the market, TOT may have to acquire a temp agency in order to keep up with the competition and the market growth. Another opportunity might be to acquire a training firm, to educate new graduates and provide them with a few months of basic experience.

With a huge demand for flexible employment, Tier One Talent's customer intimacy would have to shift focus to the supply side: understanding the networks of self-employed professionals and building close relationships with colleges and universities. In this scenario, it is no longer necessary to have staff with in-depth domain expertise about IT. TOT's 'live services' would not scale, and matching would have to become a self-service process between customers and candidates. This, then, becomes the innovative service of choice. In addition, TOT would have to take a hard look at its lines of business to ensure revenue maximization. For this reason,

Figure 2. Strategy map, Scenario 2



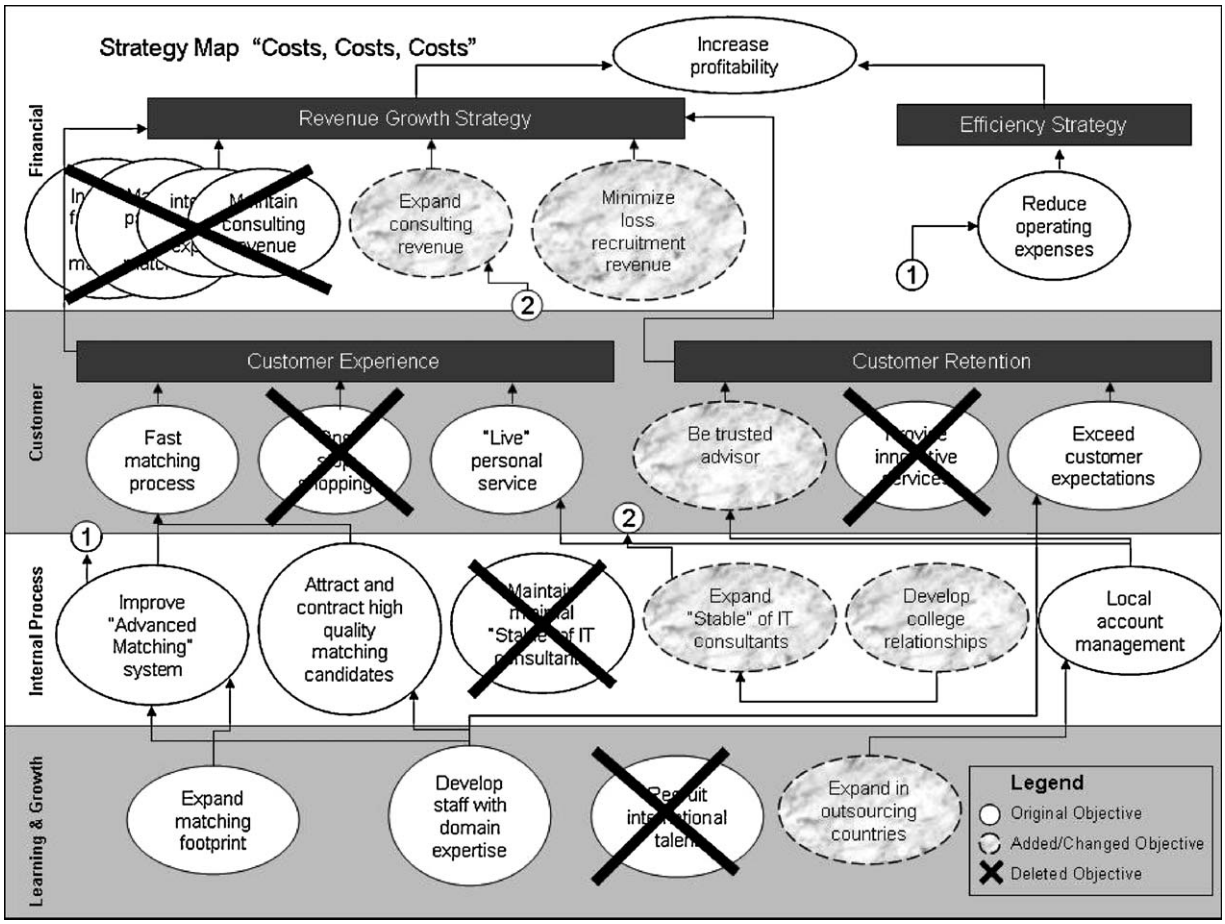
TOT would no longer have the luxury of maintaining its own staff to provide hourly consulting for smaller clients.

In this scenario, Tier One Talent's customer intimacy strategy turns out not to be very reliable. However, given the enormous market growth, the matching system and the planned expansion still hold effective.

The previous scenario depicts only one of several potential realities. Scenario 3—Cost, Cost, Cost—draws a different picture. (The PESTEL analysis used for this scenario is—Political/Legal influence: increased compliance regulations. Economical/Social factors: job security in a declining economy. Technological: Internet largely used to globalize and source operations; IT becomes a utility. Ecological: focus on sustainability.) In this scenario, the economy declines and the cost of living increases. People are looking for secure jobs. Companies are not willing to invest in IT innovation, but instead outsource IT activities to offshore companies that offer economies of scale. IT professionals focus on managing sourcing relationships, instead of developing or maintaining systems themselves. Consequently, IT becomes a utility, government regulations intensify, and more IT budget is spent on compliance.

Also in Scenario 3, Tier One Talent's strategy is heavily impacted (Figure 3); new sources of business are needed. The traditional recruiting business will take a hit, so TOT will have to differentiate even more. The company will need to emphasize its live services, and prove even more the superior capabilities of the matching system. The IT people customers hire will be of a more senior level, and IT managers will manage the outsourcing relationships instead of IT development and operations. TOT will need to position the matching system as a mechanism between the customer and the outsourcing party, and how resources can be matched between those parties. TOT then will mediate between outsourcers and customers, based on an annual contract. Given the additional complexity of this work, TOT will need to ramp up its consulting business, advising large customers on outsourcing strategies, and managing outsourcing relationships for smaller customers as a trusted advisor. TOT will need to hire more IT professionals themselves. Instead of

Figure 3. Strategy map, Scenario 3



expanding in North America and Europe, the company would need to invest in India and other offshore companies where outsourcers run their operations. Like in Scenario 2, the company needs to intensify relationships with the supply side. There are more than enough candidates, but TOT needs to find the right ones with a multitude of skills. Customer intimacy is now more important than ever; however, the company must specialize, and therefore no longer has the luxury of offering one-stop-shopping.

Key objectives in this scenario are expanding the matching footprint and expanding the consulting business. Setting up college relationships also emerges as an important objective in two of the three scenarios.

5.2. Synthesized strategy map

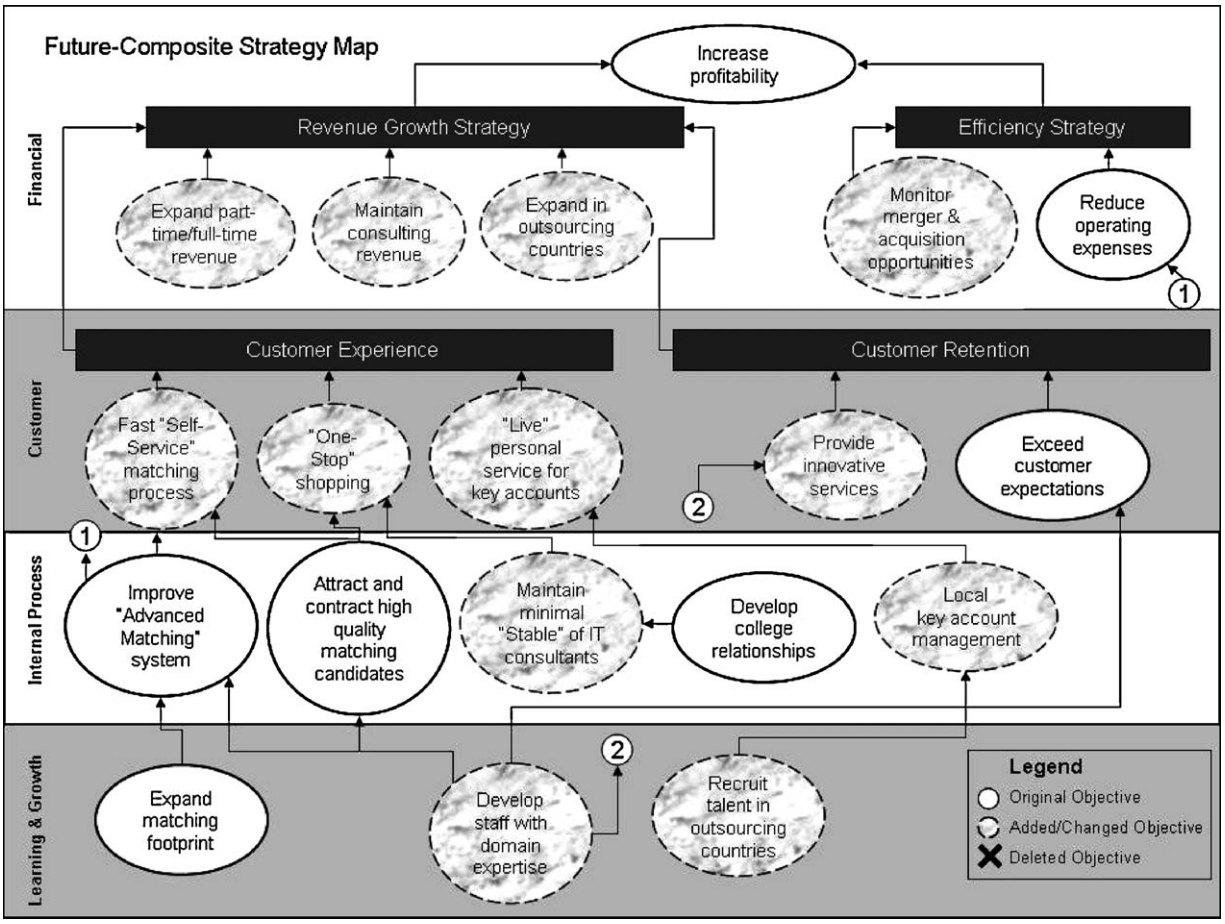
After considering all the scenarios, a new, synthesized strategy map can be created (Figure 4). This map is Tier One Talent's new, more reliable strategy map for the future based on the common strategic objectives throughout the various scenarios, and other objectives which were evaluated and considered important to TOT's future. The objectives are categorized into two types: strategic imperatives and strategic choices.

- The strategic imperatives (SI) include all objectives that remained stable throughout the scenarios. Strategic imperatives also include the objectives that appear in all the new scenarios (other than Steady-As-She-Goes), that don't harm the original scenario and fit the new strategic direction. The objectives that were formulated on a level which is too abstract (too high) did not change, but are likely not useful. These should be discussed to see if they can be made more relevant, or be removed.

- Strategic choices (SC) include all objectives that did not appear in all scenarios but do fit the future strategic direction.

The objectives in scenarios that are neither imperative nor a strategic choice (not chosen) are removed from the strategy map. We suggest that it is considered safe to make long-term investments in

Figure 4. Synthesized strategy map



strategic imperatives. It is less safe to invest heavily in strategic choices, unless the investment can be made in such a way that it is possible to reconsider or alter the investment, if required by a future reality. Table 1 compares the objectives for the three scenarios being considered. The evaluation column describes whether or not the objective was considered a strategic imperative, a strategic choice (in some cases modified based on the insights gained by the scenario analysis process), or not considered at all for the synthesized map.

A few strategic objectives of Tier One Talent remain solid throughout all scenarios, and were therefore labeled imperatives (Table 1). TOT's key competitive differentiator, the matching system, is fortunately reliable now and in the future. Expanding its technology footprint works in all explored scenarios, and using it in various ways remains an important part of the customer value proposition. Monitoring operating expenses—and reducing them where possible—is also important, as is the main strategic objective: increasing profitability. It is also logical that attracting candidates remains a strategic imperative throughout all scenarios, as it is TOT's core business.

Scenarios 2 and 3 both suggest it is wise to invest in college relationships, and since this objective does not negatively affect the Steady-As-She-Goes scenario, it can be considered a strategic imperative as well. Exceeding customer expectations endured throughout the three scenarios; therefore, it is also present on the new strategy map. This objective is meaningful in all scenarios; however, it is not clear if this is truly a strategic imperative or if it did not change from scenario to scenario because it has been defined at too high a level to be of significance.

Based on the scenario analysis, Tier One Talent chooses to change its strategy. As TOT already has a reasonable share of the market, the strategic choices it makes will not only affect the company, but will also have an impact on the market. TOT decides to move away from a high-touch business model for all customers. Consequently, it will supply local account management and live personal service for key accounts only. For other customer segments, the company will move to a self-service model

Table 1. Finding commonality across all scenarios

Strategic Objective	Current & Steady-As-She-Goes	It's A Networked World	Costs, Costs, Costs	Evaluation
Financial				
Increase profitability	✓	✓	✓	SI
Increase full-time hire matching	✓	✓	×	SC Modified
Maintain part-time hire matching	✓	✓	×	SC Modified
Maintain/Expand hourly consulting	✓	×	✓	SC
International revenue expansion	✓	✓	×	SC Modified
Minimize loss recruitment revenue	×	×	✓	Not Chosen
Reduce operating expenses	✓	✓	✓	SI
Acquire temp & training agency	×	✓	×	Not Chosen
Customer				
Fast matching process	✓	✓	✓	SI Modified
One-stop shopping	✓	✓	×	SC
Live personal service	✓	×	✓	SC
Self-service matching	×	✓	×	SC
Provide innovative services	✓	×	×	Not chosen
Exceed customer expectations	✓	✓	✓	SI
Be trusted advisor	×	×	✓	Not Chosen
Internal Process				
Improve matching system	✓	✓	✓	SI
Attract and contract high quality matching candidates	✓	✓	✓	SI
Create courses to develop new candidates	×	✓	×	Not Chosen
Maintain/Expand stable of IT consultants	✓	×	✓	SC
Local account management	✓	×	✓	SC
Develop college relationships	×	✓	✓	SI
Learning & Growth				
Expand matching footprint	✓	✓	✓	SI
Develop staff with domain expertise	✓	×	✓	SC
Recruit international talent	✓	✓	×	SC Modified
Expand in outsourcing countries	×	×	✓	SC Modified
Offer 6 months of experience for candidates	×	×	✓	Not Chosen

whereby customers and candidates get access to the matching system themselves. For non-key customers, TOTwill still offer a wide range of services for all areas of the business, thus retaining its business model of one-stop-shopping for IT recruitment.

As long as the consulting activities are profitable, and there are no drastic changes in volume, this objective should remain on the map. The revenue stream from maintaining an in-house group of consultants should be retained. Given the lower service costs of the self-service model, it makes sense to continue providing and even expanding full-time and part-time contracts. Currently, Tier One Talent does not need to actively pursue acquiring a temp agency, another recruitment agency, or a training company. However, it is prudent to continue to monitor the mergers and acquisitions market in case good opportunities arise, or the market conditions change again.

In the learning and growth area, Tier One Talent will continue to invest in developing IT domain expertise in its own staff. This expertise is needed to carry on improving the intelligence of the self-service matching system, from which customers and candidates will benefit. On a more strategic level, international investments will be rerouted to countries that may hold large outsourcing businesses. Attracting staff in these local communities can not

only help grow business and revenue in the emerging economies, but also add to the intelligence of the self-service system.

The objective, 'to provide 6 months of experience,' was not inserted in the synthesized strategy map, as currently it is not needed and the program can always be started later. Although it makes sense in a number of scenarios (Scenario 3 and, in hindsight, Scenario 1) to focus on being a trusted advisor, this path of thinking is not followed. It does not fit the self-service model, and local account management should already have that role in key accounts. Providing innovative services is also not on the strategy map anymore, because the self-service model has become the innovative model of choice.

Figure 4 shows the effects of the new approach on the development of the strategy map. If we compare this new strategy map with the original (Figure 1), a number of differences are evident. Based on the scenario-based strategy mapping exercise, Tier One Talent has effectively decided to change its strategy. Strategic uncertainty will always be present, and although TOT's new strategy is more reliable in a number of possible future situations, it may not necessarily be right. However, the new strategy map has supported TOT's decision on which strategic areas the company could invest in safely for the long term, and which options should be kept open.

6. Conclusions

Strategy maps are useful tools for strategy execution, but they are often built on unclear cause-and-effect relationships derived from the extrapolation of past performance data and insufficiently linked to possible future states. If too static, strategy maps could actually lead organizations on a risky path which assumes that present conditions will simply perpetuate. Therefore, the development of static strategy maps might make organizations even more ill-prepared to face radical changes than if they did not have a strategy map at all.

In order to address these concerns, we propose the joint use of scenario analysis and strategy maps. Scenario analysis has been used in a variety of contexts over the past decades, and it has proven valuable in considering new and possibly discontinuous futures. Building strategy maps that are linked to scenarios could help organizations link their strategy to future conditions, and prepare them to face currently unexpected situations.

Through the hypothetical case of Tier One Talent, a large recruitment firm for people with technology skills, we have exemplified the development of scenario-based strategy maps. In this instance, it is clear how TOT could—and should—consider a suite of factors that may have a significant impact on the way the organization and its market operate. By considering three scenarios, TOT could modify its current strategy and prepare itself for possible future conditions. Differentiating among strategic imperatives, strategic choices, and marginally relevant objectives (particularly in the light of future states), the organization could design a more reliable strategy map for the future. This could enable it to face strategic uncertainty in a more effective way and, eventually, make it more sustainable in the longer term.

In this article, we have presented one way to combine strategy maps and scenario analysis to help organizations face strategic uncertainty in a more effective way. Moreover, we have discussed a hypothetical example to clarify the effectiveness of this combination. We have found no other article that has done so before. Future research could explore the joint use of strategy maps and scenario analysis in real-life cases. In particular, issues which could be discussed in more depth include: the cause and effect links between measures and objectives; the most appropriate number of scenarios to obtain future-reliable strategy maps; and, the outcomes of using such a method.

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