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Strategic Clarity: Actions for Identifying and Correcting Gaps in Mental Models

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Whether you are making quick resource-allocation decisions alone or collaborating with your executive team to set organizational strategy, what you see, what you advocate, and what you ultimately decide are influenced by the map of the world you carry around inside your head. In some ways, this map or mental model is unique to you, as it was formed through your specific experiences and ways of engaging with the world. This article is based on a decade of research and fieldwork and is illustrated with multiple references to both large and small European and American organizations in the for-profit, non-profit, and governmental sectors. It presents five guiding guestions that can help identify and correct gaps in managers' mental models of their organizations. This approach enables managers to be clear about how to move their organizations in the desired direction, in order to achieve their goals. While useful for professional managers of complex systems, these questions are particularly applicable for leaders of civil society, governmental, and entrepreneurial for-profit organizations. The main contribution of this article is a framework of exercises based on the five questions that integrates traditional strategic dimensions and allows leaders to identify gaps in their mental models, resulting in more effective leadership and improved performance.

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Introduction

An organization's strategies are influenced in their inception, development, communication and implementation, not only by analytical frameworks and information systems, but by the mental models of its leaders, managers and employees who envision, enliven and enact them. Whether making quick resource-allocation decisions alone or sitting down with their executive team to determine their organization's strategy, what managerial leaders see, what they advocate, and what they ultimately decide are influenced by the maps of the world they carry around inside their heads. In some ways, their individual maps or mental models are unique to them, as they were formed through their specific experiences and ways of engaging with the world. This observation leads to two obvious insights. First, since they have not experienced or seen everything there is to see about a specific situation, their mental model has gaps. Second, since each person experiences the world through separate and different perceptual filters — mental models — there are differences between what individuals understand. This same logic leads to the observation that collective mental models also have gaps: in an organizational collective, managers do not, for instance, see the same things that their stakeholders see.

This article is based on a decade of research and fieldwork (see Exhibit 1) and presents five guiding questions that assess the leaders' strategic clarity — the correspondence of their mental models with the reality they represent. The five questions can increase leadership's integrated understanding of traditional strategic planning dimensions. The article is illustrated with references to our work with large and small, for-profit, non-profit, and governmental organizations, in both Europe and the Americas. While useful for professional managers of complex systems, these questions are particularly appropriate for leaders of civil society, governmental, and entrepreneurial for-profit organizations. The main contribution of this article, therefore, is not the five questions themselves, but, more simply, the integration of traditional strategic dimensions that allows leaders to identify gaps in their mental models. This integration process frequently results in more effective leadership and improved performance. We end the article by discussing the place of this approach within the broader academic and practitioner literature, as well as its limitations.

In our work with clients over the past decade, we have synthesized five guiding questions for identifying and correcting gaps in manager's mental models of the organization (see Exhibit 2). Leading organizations such as A. T. Kearney, Banamex, CARE, Global Business Network, Intel, PE-MEX, Pfizer, Royal Dutch/Shell, Secretariat of Health of Mexico, Society for Organizational Learning, Thorolo and the Town of Vail have used these questions to gain strategic clarity. (See Exhibit 11 in the Appendix for a full list of organizations highlighted in this article.) Our guiding

Exhibit 1 Research into Thinking Clearly within Complex Social Systems

Our research at the Institute for Strategic Clarity, Harvard, MIT, and the University of Texas at Austin explores why these questions improve our mental model of the dynamics of complex organizations.¹ Essentially, we found that the best predictor of the quality of a person's decisions — the value they created in the organization — was the degree to which their mental 'model,' of the values in the system and of the system's structure, corresponded to the system they were managing.² We observed that people incorrectly assumed they understood the many perspectives in the system, and we found that the use of an integrated set of simple, well-known techniques easily remedied this.

More specifically, our research and experience have focused on the characterization of social systems and of the strategist's mental model of that social system. We have developed a minimal set of guiding questions that include the comprehensive rigor of most previous strategic frameworks in an integrative framework that is simple enough to inform the strategist's mental model of the social system. questions fit together to create what we call a *GRASP map*, providing a holistic view of the organization, both as it currently exists and as it prepares for its future.

GRASP questions

The acronym GRASP addresses the elements and relationships that provide structure for all 'living' entities, including professional organizations.

- **Goals** Identify why the organization exists and what its global goal is. Identify stake-holders and their goals.
- **Resources** Identify those resources that drive value (*value-driving resources*) for stakeholders and those that enable value (*enabling resources*). Balance the resource needs for all key stakeholders.
- Actions Act at the level of enabling resources.
- Structure Identify the linkages between goals, resources, and actions.

Exhibit 2 Developing the GRASP Questions: Our Learning Experience

The GRASP questions came about early in our practice and research.³ What has evolved over the past decade of application is the set of exercises and analyses used to elicit, understand, and explain them. While the comprehensive, rigorous nature of the questions often overwhelmed clients, their integration provided unique insights.

Our fieldwork began by integrating strategic frameworks with a system dynamics perspective.⁴ Our subsequent study of the decision sciences highlighted well-developed processes for managing strategic complexities in a systemic perspective, such as the identification and integration of the many differing viewpoints of the organization's purpose.⁵ This was an example of where we found that an apparently insurmountable wall in the path of systems strategy was in fact just a hurdle. Many other hurdles sprouted along the way, and the wisdom of our predecessors and colleagues helped us to overcome them. Along this evolutionary path, we learned to integrate different levels and types of understanding in the strategy process.

For example, the 'one right' understanding of the structure of any system is actually built up from the many right experiences of the same structure from different perspectives, which are best shared through storytelling. To achieve effective decision making through deeper understanding, we shifted from focusing primarily on the systems analysis and simulation dynamics to focusing on the individual and collective understanding of the structure, with the analysis and simulation supporting that understanding.

We found that it is also very important to customize our approach for the client. With some clients, the GRASP questions are applied interactively with the organization's whole strategy team, following the well-known group model building process.⁶ We use this approach with leaders who are open to listening deeply to each other; otherwise the exercise is very interesting for a few and overly complex for the others. For other clients, who are less developed as a team, we learned that integrating the results from individual interviews and then validating them with the strategy team works better. We also learned that we needed to understand the basic dynamics of how the group works in order to decide which approach would be most effective.

We found great value from exploring each of the leading strategic questions as well as from integrating them. While this proved to be mentally challenging, we have learned that significantly more is gleaned by integrating the different questions, which allows leaders to see the whole more clearly. **People** – Bring the organization to life. Identify the incentives of those groups that control parts of the organization. Align the organization's structure and incentives to maximize the organization's potential.

The five GRASP elements fit together to form a comprehensive, dynamic and easy-to-communicate view of the whole organization (see Figure 1). Moving from the bottom up, the GRASP map highlights those Actions that most leverage the Enabling Resources and balance the management of those Enabling Resources that strengthen the Value-Driving Resources, which combine to create value for the Stakeholders' Goals and to achieve the organization's Global Goal.

Question 1: Goals – Why does the organization exist?

Though most leaders think that their organization's global goal is clear to all, our experience shows that there is often a lack of agreement among leaders and between them and their direct reports. Organizational leaders can often have such different mental models (understandings of the organization and its environment) that they view the organization's global goal quite differently: but how can a leadership team work together efficiently if its members do not even share a common understanding of the global goal? To compound the difficulties, most leaders with whom we have worked believe that their direct reports have, at most, 50% of the understanding they themselves have of the organization and its strategic direction. We have found that making explicit the various perspectives of the global goal and uniting them into a single, congruent goal - one that can then be communicated to the entire organization - goes a long way towards enabling strategic effectiveness.

Making explicit and uniting the various perspectives of the global goal goes a long way towards enabling strategic effectiveness.

What do the organization's owners want from the organization? The Mexican conglomerate Grupo Bal focuses on maximizing its value creation potential over time. The Texas Department of Health Antibiotic Resistance team strives to minimize morbidity due to antibiotic resistance. The Town of Vail wants to remain a premier resort and mountain community. These goals are so clear that they seem obvious - now - but reaching this degree of clarity required a process



Figure 1. GRASP framework

that could unite highly disparate visions into a singularly powerful purpose. In another example, the Mexican Secretariat of Health's epidemic advisors agreed that their overall goal was to minimize morbidity from an epidemic. They ultimately determined that this meant three things: preventing an epidemic from entering Mexico, keeping people from contracting the illness if an epidemic did enter the country, and helping anyone who became ill as a result.

Most organizations find that to accomplish their global goal, they must satisfy the needs of various stakeholders better than the competition does. There is much debate about whether organizations should focus only on satisfying their shareholders, and too often the interests of other stakeholders, which must also be satisfied if a business is to be sustainable and successful, are overlooked.⁷

Each stakeholder has its own goals (referred to here as *stakeholder goals*), which may differ from or even be in conflict with those of others. For example, in a regional electric utility, while consumers are most concerned with economic, reliable access to energy, regulators are interested in market efficiencies and consumer satisfaction and local community authorities may be more focused on the safety of the electric lines running through their neighborhoods. Similarly, in the hosiery industry, Thorolo's consumers want their feet protected; big box stores want high turnover, high margins and well advertised products; independent storeowners want high margins and product variety to promote repeat customers; and suppliers want large, predictable orders.

To organize their thinking about stakeholders, many organizations have found it helpful to think about the following four things: 1) the marketplace *need* that their organization fulfils; 2) the *permission* they get from the government and communities to provide for this need; 3) the *support in action* they can gain from employees, suppliers and partners; and 4) the *support in capital* they need from credit-holders and shareholders. Stated differently, while a company exists to satisfy its own global goal, it needs to satisfy its stakeholders' goals in order to continue receiving the resources it needs to stay alive. The satisfaction of each of these stakeholder goals can be seen as a relative satisfaction, in the sense that it is relative to the offer the competition may be making to those same stakeholders.

For SAPAL (the governmental water management organization in Leon, Mexico) the global goal is to guarantee the city's economic and social development sustainability in hydraulic matters. It fulfils the *need* of supplying sufficient high quality water at a fair price and it gets permission from political organizations wanting sustainable development for the city. Support in action comes from its employees and their unions, who want to maximize benefits for the workers, while support in capital comes from the government. The exercise of explicitly identifying both the company's global goal and its stakeholders' goals provides the top-level SAPAL management with a GRASP map. (For process tips about Question 1: Goals, see Exhibit 3.)

Exhibit 3 Process Tips: Goals

Overview of Exercise: You want to understand the goals that define the 'reason for existence' for the overall system.

Set-up: In this exercise, you want to talk to people who have insight into the key areas of the system. Here you can inquire into why individuals think the overall system exists and how their work contributes to its achievements. The key is to approach the task with empathy and inquiry. You care about how they experience their perspective of the system.

Common Challenges: Most organizations think they already know what their global goal is and what the stakeholders' goals are. When we ask the members of a group to write them down individually, they all write something very different, demonstrating the lack of shared understanding. The exercise helps with this. It also continues to be very challenging for an organization to satisfy all its stakeholders in a balanced way. Many focus on shareholder satisfaction versus client satisfaction. And, in many organizations, employees are not considered a stakeholder group. Not paying attention to their satisfaction is pathological, as they exert a great impact on the overall performance of the organization.

Question 2: Resources – Which resources drive value for stakeholders and which enable value?

Organizations need resources to stay alive. A resource is defined as anything that the organization accumulates, and this definition holds good for both quantitative and qualitative accumulations.⁸ Much of the strategy process focuses on value-driving and enabling resources, and we make great efforts to determine which of these resources provide a competitive advantage, how to most efficiently accumulate them, and how to utilize them better than the competition.⁹ (See Exhibit 4)

Organizations have two types of resources used to satisfy both their global goal and their stakeholders: *value-driving resources* and *enabling resources*. *Value-driving resources* are those resources that drive value for both the overall organization and for the stakeholders. In our experience, most value-driving resources are intangible assets, such as product quality, perceived customer satisfaction and trust. *Enabling resources* are those resources to which all organizations have access, such as human resources, relevant skills, physical assets, technology and capital.¹⁰ An organization's competitive advantage is determined by how it uses these enabling resources to influence the value-driving resources, thereby creating more value for its stakeholders relative to its competitors.¹¹

In terms of understanding value-driving resources, consider the example of Banamex, a leading Mexican bank focused on increasing its participation in the standardized small company market. To grow its credit portfolio with the lowest acceptable risk, the bank depended on a high level of *quality of the standardized credit process* (italics indicate resources). This was a strategic resource; relationship managers were incentivised to grow the credit portfolio, but were not penalized for taking on bad loans. If the *quality of the credit process* was inadequate, it could increase the *bad loan portfolio*, reducing the profitability of the whole portfolio. The bank's leaders decided that other important value-driving resources included the *clients' perception of the bank* and the *clients' perception of the products*, resources which determined whether Banamex would be the clients' choice when requesting loans and whether its products covered the customers' credit needs.

It was very important that Banamex's leaders understood how all the pieces came together, where they needed to excel, and where they needed to be careful. To grow their market participation just for the sake of growth was not acceptable - pushing onwards with placing loans would only increase the bad loan portfolio. They had to be extremely careful with the credit process. In addition, they realized that they needed to focus more on their value-driving resources to be ready to penetrate this sector of the market, and to be very competitive.

The direct connections between value-driving resources and stakeholders' and global organizational goals are rarely laid out explicitly.

When leaders are able to be explicit about which value-driving resources satisfy both the organization's key stakeholders and its global goal, they gain critical insights. Though many of these resources seem intuitively obvious, they are rarely laid out explicitly in a way that allows for discussion, nor are the direct connections between them and both the stakeholders' goals and the organization's global goal clarified. For example, in one failing financial institution, we were called in as part of the management's preparations for being acquired. We identified that *customer satisfaction* was seen as the result of multiple actions, but not identified as a strategic resource. While many different areas of the business influenced this strategic resource, no one was specifically responsible for managing it. If strategic resources are not explicitly identified, the probability of managing them effectively is very low. The company's leaders felt that it was crucial to understand

Exhibit 4 The Resource-Based View of the Firm

The Resource-Based View of the Firm is a framework that allows leadership teams to move from thinking about abstract, fuzzy issues — such as supplier relationship, leadership talent, or quality of client interaction — to thinking about the strategic management of the key resources that determine an organization's ability to achieve the desired overall results.¹² According to this framework, an organization is endowed with 'resources,' which are the assets that it uses to achieve its goals.¹³

The resource-based view argues for shifting from a static resource perspective to a dynamic resource perspective. This shifts management's perspective from an assumption that resources exist in a stable, predictable environment to an emphasis on the rate at which the firm's resources accumulate and are utilized or decay, over time. Accumulating and maintaining resources requires thinking of resources as dynamic: these resources ebb and flow over time. This focuses attention on exploring how much and when to invest, how to maintain, and when to retire these resources.

From the resource-based view, key concerns for management include the prioritization and location of resources within the organization — determining which resources and bundles of resources provide competitive advantage or, in other words, are strategic.¹⁴ Typical valuedriving resources may include customer loyalty, production efficiency, and service quality. Some resources are strategic because different groups within the firm share them. In many cases, the authors have observed that each group wants something different to happen to strategic resources and each group influences them differently. This happens because these leaders have different goals and rewards for the management of the same resource and thus their incentives for managing the resource push them to actions that seem logical locally, yet globally may frustrate the efforts of other groups.

what went wrong, so that the mistakes would not be repeated after the bank was acquired. The GRASP questions helped this team to uncover the causes of the failure.

It is also informative to ask if the organization has been successful in satisfying stakeholders with its value-driving resources. Mapping the behaviour of these value-driving resources over time shows the historical trends in stakeholder satisfaction, and mapping likely versus desired behaviour on into the future indicates potential gaps in the organization's ability to satisfy its stakeholders.

In terms of manipulating enabling resources, consider the case of Tegucigalpa, a city of 800,000 people in Honduras. During an urban planning exercise in the immediate aftermath of Hurricane Mitch, city leaders identified the *tax money* as an enabling resource [capital] that the government used to build the value-driving resources of *services* and *infrastructure* for its population. However, only 50 to 60% of the population paid taxes — the remainder avoided them by working in the informal economy. The GRASP exercise led to an understanding that the government needed to work specifically on the value-driving resource *policy quality*, which would help to build the *peoples' trust* and increase the *peoples' motivation* (two additional value-driving resources) to pay taxes. If the population does not see their taxes spent well, they are not going to pay! Improvements in *public motivation* and *infrastructure* might go far to cross social-economic barriers and benefit all the city's sectors.¹⁵

The difficulty with strategic conversations about value-driving and enabling resources is that the conversations often lead to talk about changing resource levels, as if it were possible to influence them directly. While some resources, such as materials, can be changed quickly through purchase on the open market, most strategic resources, such as *customer satisfaction*, cannot be changed

instantly. Changing these resources requires multiple, coordinated activities conducted over time. (For process tips about Question 2: Resources, see Exhibit 5.)

Question 3: Actions – Which actions most effectively leverage the enabling resources?

The third guiding question aims at clarifying the distinction between the resources that organizations use to drive value and the activities they engage in to accumulate those resources. Actions are those things an organization can do to change the level of its enabling resources: for example, to increase the number of human resources, an organization can hire more people, or reduce the outflow of manpower by increasing the incentives for employees to stay.

During a strategic conversation at a national telecommunications firm, the leaders began talking about increasing customer satisfaction. Is it possible to walk in one day and increase customer satisfaction, just because you want it to increase? Obviously not. To satisfy the customer requires providing higher levels of value-driving resources, such as service quality, product innovation, coverage and technical support quality. Most value-driving resources depend on enabling resources. To increase its value-driving resources, an organization needs to take specific actions to accumulate the requisite enabling resources. Framed this way, the strategic conversation at the telecom firm took on a different and more realistic twist. Leaders asked: which resources should the organization focus on to increase customer satisfaction? What actions were needed? What would be the consequences in other parts of the organization of focusing on building up those resources?

Is it possible to walk in one day and increase customer satisfaction, just because you want to? Obviously not.

In the Tegucigalpa project, the government, which needed *financial resources* to build *infrastructure* and to provide *community services*, was considering introducing a gasoline tax. A team member pointed out that an unintended consequence of this action would be to decrease *peoples' morale*, potentially lessening their willingness to pay regular taxes. Another member then suggested refocusing on how the government could raise more money by, for instance, working on raising its *credibility* to increase *peoples' motivation* to pay taxes. Another potential solution was to regulate private housing, where 30 to 40% of the houses were unregistered and therefore not subject to property tax. By addressing this situation, the government could collect more money, but without imposing new taxes. Without adopting a systemic view of the alternative actions it could take, the government

Exhibit 5 Process Tips: Resources

Overview of Exercise: You want to understand how 'experts' from each part of the system see the functioning of their area, including the resources they use to create value for the organization and for the different stakeholders they influence, and the actions they take to affect those resources.

Set-up: In this exercise, you want to talk to people who have enough breadth and depth of experience to know how their part of the system works. You inquire into the resources they use to achieve their functional goals and the actions that they take using those resources.

Common Challenges: While it proves straightforward to show someone how their resources accumulate over time, most people tend to think of their resources as static. This is hard to shift. Additionally, we have found that many people struggle to conceive of stakeholder goals in terms of resources the firm manages, such as product quality or profitability.

would not have realized that imposing a new tax might reduce its *total financial resources* - exactly the opposite of what was wanted - or been able to go on to consider other alternatives actions, which would improve its enabling financial resources.

Fira, a second-tier bank, focuses on value creation through the development of financial, technological and service markets in the Mexican rural sector. In general, Mexican financial institutions prefer not to use their resources to finance the agricultural sector because the *perceived risk* is too high, and Fira attempts to offset this risk by delivering financial incentives to the institutions that give credit to the agricultural sector. But Fira's leaders found this strategy was insufficient to reduce the *financial sector's perception of the risk*, and that more efforts in terms of technical assistance, training and technology transfer were needed to boost the *creditworthiness of the rural sector*. Eventually these actions will strengthen farmers' competencies and lower investment project risks, in turn increasing their likelihood of gaining bank funding. This new approach will make farmers less dependent on incentives and Mexican banks more willing to finance the country's rural sector. (For process tips about Question 3: Actions, see Exhibit 6.)

Question 4: Structure – What are the linkages among the goals, resources, and actions?

Now that the critical elements of GRASPing strategy - the global goal, the stakeholder goals, the value-driving resources, the enabling resources and the actions - have been made explicit, the fourth guiding question addresses the matter of structure, or how these elements interrelate.

Structure refers to the causal relationships among the goals, resources and actions. So far, we have focused on how the *actions* influence the *resources* and how the *resources* influence the *goals*. The *goals* also influence the *actions* and *resources* subsequently, as satisfying or dissatisfying the *global* and *stakeholder goals* drives corrective *actions* to alter investment levels. Competitive responses to the degree to which the organization satisfies its key stakeholder goals influence its ability to take those same actions later. *Resources* also influence other *resources* and *actions*, forming reinforcing and balancing feedback loops. For example, in terms of organizational skill sets, as the rate of technological innovation increases, the level of relevant skills is depleted, requiring the organization to invest in new technology training in order to continue to achieve its global goal.

Understanding the structure that relates the goals, resources and actions allows leaders to examine organizational alignment, efficiency and leverage. Organizational alignment addresses whether the local goals of the organization - which control critical value-driving and enabling resources - are aligned towards achieving the global goal and thus satisfying the stakeholders. Efficiency looks at the structure to determine whether the actions the organization is focusing on might lead to avoidable unintended consequences.¹⁶ Leverage focuses on most effectively utilizing the organization's resources.

Grupo Bal, a multi-billion dollar diversified Mexican business group, embarked on an initiative intended to optimize the potential for value creation of all of its operating companies over time. However, the corporate offices and the individual companies had different perspectives on how

Exhibit 6 Process Tips: Actions

Overview of Exercise: You want to understand what actions can be taken on the enabling resources.

Set-up: In this exercise, you need to determine if each enabling resource is at the desired level to affect the value-driving resources and identify which actions you can take to increase, decrease, or maintain the enabling resource.

Common Challenges: People tend to think of everything they could possibly do without considering whether they could actually influence the outcome, directly, from within the organization. This makes it challenging for them initially to isolate the few actions they can actually take to affect the enabling resources of the firm on a daily basis.

to create value in the companies. Mapping the linkages between goals, resources and actions allowed the corporate offices and the company directors to arrive at a deeper and shared understanding of how the value-driving and enabling resources related to value creation for the group.

When we conducted a similar exercise with a European equipment manufacturer, the different experts we interviewed were quite clear about how their work in sales, design and assembly was influenced by the actions of each of the other areas: however, they seemed unaware of the reverse, and showed little knowledge about how their work influenced the other groups!

When a financial institution decided to cut payroll in an effort to reduce costs and increase profitability, its action had unforeseen and detrimental side effects. Reducing the *number of employees* lowered *operational efficiency*, thereby decreasing the *quality of service* and, in short order, *customer satisfaction*. The payroll cut also increased uncertainty for the remaining employees, negatively affecting their *motivation* to promote the institution's products and to serve its customers. And, as if this were not enough, the action also led to the institution losing relevant skills thus reducing its ability to serve its customers and generate profits in the mid-term. (For process tips about Question 4: Structure, see Exhibit 7.)

Question 5: People – What brings the organization to life?

The GRASP map is completed by focusing on the *people* who bring the organization to life. As we saw earlier, the theory of the firm suggests that the organization exists to achieve a global goal. The organization, however, does not do the work - people do, and they are not miniature versions of the organization, but each have their own reasons for doing what they do.¹⁷ The fifth guiding question addresses this local rationale and explores how to create an organization that takes advantage of the potential in each person.

Employee incentives may provoke unaligned actions if they are at odds with what those doing the work hold to be important.

Setting incentives is how the organization lets its employees know what is expected of them. But such apparently obvious incentives may provoke actions that are not aligned with the organization's

Exhibit 7 Process Tips: Structure

Overview of Exercise: You want to understand how the goals and parts of the system link together.

Set-up: In this exercise, you can talk to the same people who were involved in the previous exercise. Here you can learn how people think they influence and are influenced by other areas. Whether you use systems modelling tools such as causal loop diagrams, stock and flow models, or simply develop a deeper understanding of these relationships, you will gain insight into how functional parts of the system relate to each other.

Common Challenges: It is often straightforward for people to understand the flow from actions to resources to goals. It proves more challenging for them to consider the consequences throughout the system of achieving or missing those goals and the effect on subsequent actions and resources. People also find it challenging to think through the consequences that the actions they take within their area have on the actions others can take in other areas of the system. goal, if they are at odds with what the people doing the work hold to be important.¹⁸ For example, doctors are obliged to perform a host of administrative tasks to protect themselves from legal liability, and this requirement can limit the time they have available for patients. When high performing line managers are elevated into management, they can often fail to produce at the same level, or with the same passion. If banks pay credit officers to build their loan portfolios at any cost in order to grow market share, they can end up needing loan work-out specialists as well.

Some employee incentives also produce unintended conflicts across business functions.¹⁹ A European capital equipment manufacturer paid its sales force based on how much they sold, inspiring them to sell as much as possible. But they were not being paid to ensure that production could deliver on time. The production section was striving to maximize operational efficiency, and thus lacked the flexibility to rapidly adjust production to the increased sales. When combined, these locally sensible priorities led to expediting orders and high penalties for late deliveries. Although the organization was able to book more sales, its profitability and future viability suffered. Focusing on the GRASP questions allowed this manufacturer to chose to modify its incentive structure to bring all functions into alignment with each other and with the global goal.

Great results rarely come from trying to reward individuals for doing something they do not like. It is usually preferable to assign an employee to an area where he enjoys the required work. The hiring processes must clearly support the varied needs of the organization in a coherent way. Sadly, it is a rare organization that cares whether its employees are really comfortable in their work, perhaps (or probably) because human resources are more often seen as a cost center than a strategic center.

To align the organization's structure and incentives to maximize the organization's potential, managers need to make explicit the gaps between the global goal and what the current organizational structure delivers. In many cases, managers feel at the mercy of externalities and blame outside forces when they do not achieve the organization's goal. While this is sometimes true, more often such failures are the result of how management structured the organization in the first place, with local level incentives not properly aligned with the structure to accomplish the goal. To close this alignment gap, the leadership team can change actions, change the incentives or change the structure of the organization.

For the Tegucigalpa urban planning process, the global goal was to increase the 'quality of life' in the city, and do so sustainably. As part of the GRASP framework, the leaders identified the different actors in the system and their local goals:

- the government wanted to maximize tax collection, in order to provide improved services and infrastructure for the population;
- the private sector wanted to maximize returns and, thus, to minimize taxes;
- the urban population wanted to increase their standard of living, but they did not want to pay taxes;
- the rural population wanted to increase their standard of living, without having to move to the city, which would exacerbate the current infrastructure problems.

We can see how each local perspective can potentially frustrate the ability of the whole group to accomplish its global goal. In this exercise, the different stakeholders saw how they were all part of the problem, and they could become part of the solution. They already understood that a successful urban plan could not be accomplished by one stakeholder alone, but it took the GRASP exercise to clarify the level of participation that would be required to achieve the project's global goal of improving the quality of life of Tegucigalpa's residents. The exercise increased the level of awareness of all the participants, who were then more ultimately highly motivated to be part of a long-term urban plan.

The managers of a European commercial equipment manufacturer explored the People question by dividing into four functional areas. The head of each area wrote down how the different resources within their area had behaved in the past and how they were expected to behave in the future. They then did the same exercise for the other three areas. To most of these leaders, the answers seemed obvious and straightforward — until the results were consolidated. They were then shocked to find that they had been very wrong about the other leaders' perspectives, and, even worse, that the reverse was also true! This emphasized their lack of common understanding about critical shared resources, and showed how they acted in ways that frustrated one another. By using the GRASP map to tell their own story, they were all finally able to understand what each other did and why. The leaders reported subsequently that this experience changed how they talked about what they were doing, and enabled them to understand more about how their actions influenced the actions of others, and of the whole organization. (For process tips about Question 5: People, see Exhibit 8.)

The five GRASP questions form together a set, a systemic whole. (For a complete GRASP, see Exhibit 9)

Discussion

The development and refinement of the five GRASP questions has been driven by our intention to help leaders reach greater strategic clarity by identifying and correcting gaps in their mental models. In this section, we highlight differences between the GRASP approach and other similar methods which aim at the same result. We also discuss the work of other researchers who have developed similar tool kits focusing on some of these dimensions. Lastly, we identify unique aspects of the five GRASP questions, as well as the risks in applying them.

While many dimensions can be used to differentiate approaches for characterizing mental models of a system, we focus here on:

- what knowledge is used;
- whose knowledge is used;
- what unit of analysis is used;
- what process is employed.

Exhibit 8 Process Tips: People

Overview of Exercise: You want to understand the incentives and goals of the groups of people working within the system as well as how these incentives and goals influence the resources these groups manage. Typical insights from this perspective come from making explicit, often for the first time, the management team's expectations for certain locally-controlled organizational resources and how these resources are interrelated across organizational boundaries. This permits checking the consistency of these expectations and seeing how inter-group expectations differ within the organization. In this exercise, leaders often hear from their colleagues, for the first time, how other areas of the business actually work, how they are managed, how their work affects others, how the work of others affects them, and why.

Set-up: In this exercise, you want to have each group, whether functional, process or stakeholders, describe what they hold to be important to achieve among their contributions to the system.

Common Challenges: The biggest challenge to this question is that of inquiry. People tend to believe they know exactly how the people in the other parts of the system think – until they have the opportunity to live in the mindset of the other group, when they universally exclaim, 'I had no idea that this is what it looked like over here.' This is a simple matter of inquiry – asking others what they think versus assuming we already know. Though simple, it turns out to be seldom done.

Exhibit 9 GRASP of the Society for Organizational Learning

To round out the many corporate and government examples provided above, we will provide a full description of the application of the GRASP questions to a global civil society organization — the Society for Organizational Learning (SoL). Emerging out of the Organizational Learning Center at MIT in the mid-1990's, SoL found itself in the early 21st century facing exponential growth on a global level. It had grown from a heavily engaged group of dozens of members in the USA to thousands of unengaged members in dozens of countries. SoL used the GRASP questions to guide a systemic conversation about the organization's strategy as it struggled to clarify its focus.

SoL's GRASP map integrates different perspectives of the organization's strategic conversation — its trustees, staff, research-consultant-company members, within the USA and overseas, focusing it on the actions the different leaders needed to take in unison within the structure of relationships among its enabling resources, the value-driving resources they build up and the stakeholders they influence.

Development Process: The SoL GRASP map was developed through a series of three, 1.5hour interviews with sixteen stakeholders, representing the organization's staff, international volunteer leadership, and diverse membership constituencies, including researchers, consultants, and company members. Each interview was validated initially with the interviewee, as was the GRASP map. The map was then validated with the Council of Trustees, which then dedicated many working sessions over a few months to understand, enhance, and analyze the map. Subsequently a design team was formed to implement the systems understanding, which ended with the recommendation of three core processes, described below.

GRASP Questions: Application of the GRASP questions brought coherence to a diverse set of viewpoints on why SoL existed (Question #1), which is elaborated below.

Key Results: The key results from the initial GRASP map were the identification of four agreed-upon goals and three core processes for sustainably achieving them. Application of **Question #1** (the Goal) brought coherence to a diverse set of viewpoints on why SoL existed, as described in four goals:

- the idea human-centered, systemic view of social systems
- *the impact* for healthy, sustainable organizations and society
- the community the mutually agreed upon questions for how we work together
- *knowledge creation* the development of new knowledge, processes and tools

While different stakeholders (company leaders, researchers and consultants) within SoL might tend to talk more about specific goals, it became clear that they all valued the four goals. Application of **Question #2** identified the resources that drive value for the different stakeholders toward the four goals, such as *mutual acceptance of ideology and processes*, *knowledge of concepts, frameworks, and processes, project reflection and synthesis, project design and implementation, access per member,* and *knowledge shared with greater community*. Application of **Question #3** focused attention on the actions that could be taken on SoL's enabling resources, such as *nurturing of emergent needs, facilitating focus on SoL's purpose, synthesizing and connecting across network*, and *managing number of active members*.

Question #4 connected all of the actions, resources, and goals in a set of feedback loops, defining the agreed-upon map (see Figure 2). **Question #5** highlighted the incentives different groups within SoL had, from which the design group defined three core processes that linked up the major elements, perspectives, and levels of the GRASP map in a unified manner, focusing on how the system drove value for different goals in the system:

- *applied learning process* building new knowledge and capacity, while doing actual projects within organizations
- core questions process a think tank for the core questions facing organizational leaders on a global level
- *community connections* focusing on the interdependent development of individuals and community

Six years later, SoL's strategy continues focused on the insights gained from the SoL GRASP map.

Within the strategic mapping arena, looking at what knowledge is used, we can differentiate tacit and explicit knowledge, as well as systemic and procedural knowledge. Nonaka and colleagues suggest tacit knowledge 'indwells' within the person, while explicit knowledge resides outside the person.²⁰ There are also two broad schools of strategic mapping, focusing on the system of resources and their interrelationships, or on the process flow of materials and information through the organization.²¹ These two dimensions differentiate a broad range of approaches, which tend to focus either on mapping the tacit knowledge of the system or process, or on mapping the explicit knowledge of the system or process. While many mapping approaches eventually address both system and process, as well as tacit and explicit knowledge, they tend to use one as the source and the other as the validation. For example, the GRASP questions primarily explore the tacit knowledge of the system, with a secondary focus on the resource and information flows that make up strategic processes. Subsequent to the integration of the maps resulting from the GRASP questions, explicit knowledge in the form of data about the behaviour of strategic variables over time can be used to validate the relationships.

Approaches to characterizing mental models of a system also vary according to whose knowledge they use. Some assume that the best understanding resides within experts who are external to the system – objective observers – while others assume that the best understanding arises from those people within the system.²² It must be acknowledged that there is great value in the generalizations that objective observers can provide based on their experience with multiple cases. But it is also important to be able to work within the emergent complexity of the localized context, which can only be done by those working in the local system. While most approaches focus solely on one end of this continuum, recent approaches attempt to combine the best of both, with external observers facilitating a more objective exploration by a group of internal observers.²³ The GRASP approach assumes that the best knowledge of the system resides within those individuals most exposed to the strategic intentions and dimensions of the organization. The strategic framing implicit in the questions attempts to bring some objective rigor to the strategic exploration of the internal perspective.

The GRASP approach assumes the best knowledge of the system resides in those most exposed to the organization's strategic intentions and dimensions.

Approaches to mental model mapping also differ, based on their unit of analysis. They may focus primarily on the individual or on the collective (i.e., team, organization, supply chain,



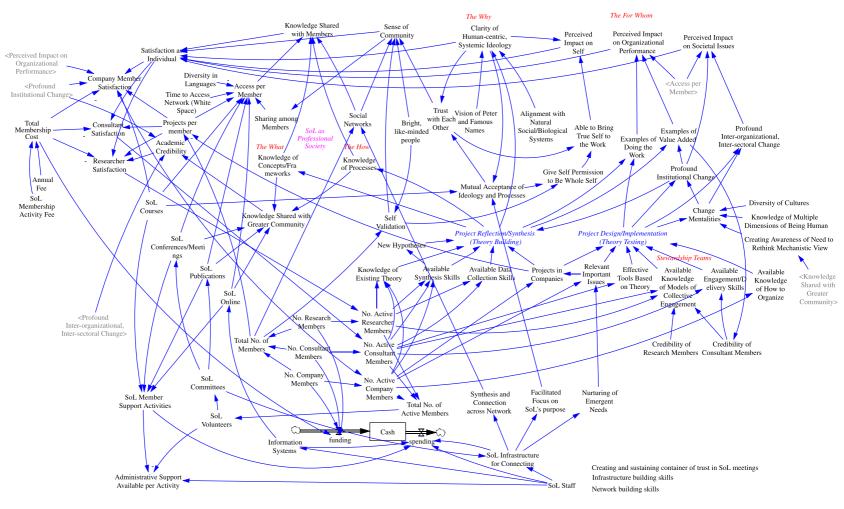


Figure 2. GRASP of the Society for Organizational Learning

industry, society).²⁴ Given that organizations are collectives of individuals, it is important that the mental models of both the individuals and the collective to which they contribute are strategically clear. The processes for engaging with individual and collective mental models differ; they are most effective when used iteratively, with individual mental models enhancing the clarity of collective mental models, which refocus individual mental models. Since holding a clear, long-term picture in an ever-changing environment is critical to strategic thinking, there is value in making explicit the individual mental models used to make decisions within the organization. The GRASP questions, supported by team processes, enable managers to mitigate their own peripheral blindness.²⁵

Finally, processes for characterizing mental models tend to use analysis or synthesis.²⁶ The power of analysis lies in breaking down something complex into simple elements in order to enhance understanding. The power of synthesis lies in seeing what properties emerge when the component parts are put together. Analytic mapping approaches might disaggregate the supply chain to determine how the different elements influence strategic cost drivers; they also might explore the intentions of different stakeholders.²⁷ Mapping focused on synthesis might explore the understanding that emerges when an organization's strategic intentions are coupled with its stakeholders' needs and the resources it brings to address those needs, which is the focus of the GRASP questions.

In summary, many approaches have been developed to characterize individual and collective mental models of the organizational system and the processes within them. These approaches tend to assume that the best knowledge resides in external experts or within the system and they use processes of analysis or synthesis to reflect that understanding. If we agree that all decision makers within an organization have a mental model of that organization, and that the decision makers influence the behaviour and outcomes of the organization, then it is important to gain greater strategic clarity on all of these dimensions: an individual's understanding within the

Exhibit 10 GRASPing Rich Strategic Analyses

Though many strategic analyses provide a clear picture of part of the organization, most leaders have difficulty seeing how the analyses relate to each other. For example, how does the value chain analysis of cost drivers relate to the stakeholder assessment?

Walking through the GRASP logic shows how different, familiar strategic analyses fit together (see Figure 3). The Goals describe the organization's vision for itself and its mission — why it exists and how it knows that it is being successful.²⁸ The stakeholder goals address the stakeholder analysis, also commonly known as Porter's Five Forces analysis.²⁹

The Resources focus on those resources that drive value for key stakeholders and where they must excel, in order to create sustainable value for these stakeholders while outperforming their competitors.³⁰ The first is commonly referred to as value-driver analysis and the second is the realm of core competencies analysis made popular by Hamel and Prahalad.³¹ Finally, the Actions are the organization's intervention points, often presented in the order in which they appear in the supply chain, thus conforming to the organizational cost drivers in the value chain analysis made famous by Michael Porter.

In summary, our research and experience show that it is straightforward to characterize social systems using a minimal set of guiding questions that include the comprehensive rigor of most previous strategic frameworks in an integrative framework that is simple enough to inform the strategist's mental model of the social system.

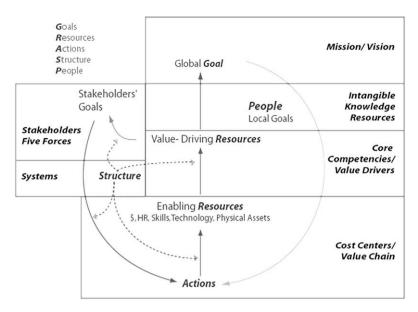


Figure 3. Strategic dimensions overlay on GRASP

collective understanding of the system they lead. Therefore it is valuable to use a combination of the different approaches highlighted in this section.

These dimensions highlight the contribution that the GRASP questions make to the field of strategy. To characterize the individual's mental model of the organization, and the gaps in it that need to be corrected, the GRASP approach uses five simple, relatively intuitive questions. These questions allow managers to make explicit and integrate individuals' disparate mental models of a comprehensive set of strategic dimensions (see Exhibit 10). Once identified and corrected, the GRASP map of the individual's mental model can then be used to communicate that understanding in other individual and collective strategy processes.

Our experience shows that the GRASP questions create value for the organizations through:

- Inputs to the strategic conversation Focusing what the organization's leaders pay attention to strategically, without sacrificing comprehensiveness and rigor;
- *Structured framework for strategic sense making* Making explicit the stakeholders and structural interdependencies, without sacrificing simplicity and clarity;
- Actionable, communicable decisions Generating effective, efficient decisions, without sacrificing integrative rigor.³²

Leaders then have an agreed-upon, holistic platform with which to strategize. At Royal Dutch Shell, the Production Systems Optimization leaders printed out a 6x4-foot version of the GRASP map, which they put in their conference room to guide strategic conversations. At SAPAL, the Town of Vail and CARE, managers have large copies of the map in their offices, which they use in strategy meetings. At a regional electric utility, divisional leaders were asked to use the GRASP logic to explain how their divisional strategies influenced key stakeholders. The president of the utility said that, even two years later, the GRASP map was still clear in his head. He added:

This way of thinking has enabled me and my leadership team to better understand our business, clearly define our interdependencies, and, from this place of greater clarity, identify those few,

critical 'leverage points' from among the host of options on the table. Bottom-line, GRASP has enabled us to make better-informed resource allocation decisions.

The simple, integrated nature of the GRASP questions has proved widely useful in helping leaders understand their organizational systems. The process has been applied at the mid-management, senior management and corporate levels in both small and large organizations, in the for-profit, non-profit and government sectors as well as in inter-sectoral networks. We have applied the process most frequently in relatively stable industries facing possible discontinuities, such as computer memory, oil and gas, epidemic control, and deregulation, and in some cases to startups requiring high-risk investments where success required unprecedented collaboration. It has been used extensively in banking, oil and gas, healthcare/pharmaceuticals, textiles, utilities and aerospace, as well as in dealing with AIDS, poverty, water and municipality management. It has been applied throughout the Americas and Europe, and in a few cases in Africa and Asia.

Nonetheless, while important, having strategic clarity is neither the beginning nor the end. Successful strategy also requires great data, market research, leadership, organization and implementation. The strategic dimensions provided in the pages of this journal provide great evidence-based approaches that are inputs to the strategy process. Leadership acting as a team is needed to steward the organization's strategy and its understanding over time. The organization and its stakeholders need to be integrated into the whole process, to understand and implement the strategy. Finally, proper follow-through and learning in implementation is critical to successful strategy.³³

Garbage-in-garbage-out applies to mental models, too. Successful learning depends on high quality input.

There are three big risks to using the five GRASP questions, which have to do with the quality of input, the level of inquiry, and the simplicity of what they show. Garbage-in-garbage-out applies to mental models, too. Successful learning from using the questions depends on high quality input, which is diminished if the right people are not asked to meetings. It is also essential to recognize that the mental models people share in meetings may not tell the whole story, and they may not have run rigorous strategic analyses to be able to address each question. The simplicity of the questions masks the risk of insufficient inquiry into the questions themselves, the responses given, their relevance or importance, and the consequences of their integration. Finally, by simplifying the whole field of strategic inquiry into five guiding questions, the exercise can miss many important elements of strategic inquiry. It is up to the leaders to use the simplicity of the framework to reveal, rather than obscure, what is missing.

Directly facing the gaps in their own mental models about the organization allows leaders to conceive, develop, communicate and implement the organization's strategies more clearly and more strategically.

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Exhibit 11 Organizations Highlighted

This paper highlights the following organizations.

- Banamex, part of the Citibank family, a leading bank in Mexico
- Capital equipment manufacturer (Europe), a global industry leader in capital equipment design for 100 years
- CARE, a 600 million dollar/year global aid organization
- Department of Health for the State of Texas (USA), Antibiotic Resistance team
- Fira, a Mexican second-tier bank, focuses on value creation in the rural sector through the development of financial, technological and service markets
- Grupo Bal, a Mexican multi-billion dollar diversified business group, including finance, insurance, mining, and retail
- Regional electric utility with 30 billion dollars in annual revenues
- Royal Dutch/Shell, the Production Systems Optimization team in Rijswijk (The Netherlands)
- SAPAL, the governmental water management organization in Leon (Mexico)
- Secretariat of Health (Mexico), advisory board
- Society for Organizational Learning, previously the Organizational Learning Center at MIT, has members in 30+ countries
- Thorelo, 40-year old preventive foot health company, based in North Carolina (USA), known globally for defining the activity-specific sock category
- Tegucigalpa (Honduras) government, CARE, civil society, urban planning
- Town of Vail, Colorado (USA), municipal government

References

- J. L. Ritchie-Dunham, Social Systems Intelligence, Elsevier, New York, (forthcoming); J. L. Ritchie-Dunham, Balanced Scorecards, Mental Models, and Organizational Performance, in Department of Management Science and Information Systems, University of Texas at Austin, Austin, Texas (2002); J. L. Ritchie-Dunham, et al. A simulation exercise to illustrate the impact of an enterprise system on a service supply chain, INFORMS Transactions on Education 7(3), (2007).
- 2. J. L. Ritchie-Dunham, Informing Mental Models for Strategic Decision Making with ERP's and the Balanced Scorecard: A Simulation-Based Experiment, in 19th International Conference of the System Dynamics Society, System Dynamics Society, Atlanta, Georgia (2001); J. L. Ritchie-Dunham, et al. A Strategic Supply Chain Simulation Model, in J. A. Joines (ed.), Proceedings of the 2000 Winter Simulation Conference Institute of Electrical and Electronics Engineers: Piscataway, New Jersey (2000).
- 3. J. L. Ritchie-Dunham and J. F. Mendez Galvan, Evaluating epidemic intervention policies with systems thinking: A case study of dengue fever in Mexico, *System Dynamics Review* 15(2), 119–138 (1999).
- 4. J. L. Ritchie-Dunham, Systems Thinking in Controlling Epidemics: Strategic Planning in the Mexican Health Sector, in *Strategic Management Society 15th Annual International Conference Proceedings*, Mexico City, Mexico (1995); J. L. Ritchie-Dunham, *The End of Poverty – the Beginning of Self-Determination: An Integral Systemic Exploration of Self-Determination in Guatemala*, Institute for Strategic Clarity, Wilton, NH (2008).
- R. L. Keeney, Value-Focused Thinking: A Path to Creative Decisionmaking, Harvard University Press, Cambridge, MA (1992); J. L. Ritchie-Dunham, A collaborative-systemic strategy addressing the dynamics of poverty in Guatemala: Converting seeming impossibilities into strategic probabilities, in C. Wankel (ed.), Alleviating Poverty through Business Strategy, Palgrave Macmillan, New York (2008).

- 6. J. Vennix, Group Model Building: Facilitating Team Learning Using System Dynamics, Wiley, New York (1996).
- 7. A. K. Sundaram and A. C. Inkpen, The corporate objective revisited, *Organization Science* **15**(3), 350–363 (2004).
- 8. K. Warren, Competitive Strategy Dynamics, John Wiley & Sons, Chichester (2002).
- 9. K. Conner, A historical comparison of resource-based theory and five schools of thought within industrial organizational economics: Do we have a new theory of the firm? *Journal of Management* **17**(1), 121–154 (1991).
- 10. M. E. Porter, *Competitive Advantage: Creating and Sustaining Superior Performance*, The Free Press, New York (1985).
- 11. J. Barney, *Gaining and Sustaining Competitive Advantage*, Addison-Wesley Pub Co, Reading, MA (1997); S. A. Lippman and R. P. Rumelt, Uncertain imitability, *The Bell Journal of Economics* 13, 418-438 (1982).
- 12. N. J. Foss (ed.), Resources, Firms and Strategies: A Reader in the Resource-Based Perspective, Oxford University Press, New York (1997).
- 13. C. N. Pitelis and M. W. Wahl, Edith Penrose: Pioneer of Stakeholder Theory, *Long Range Planning* **31**(2), 252–261 (1998).
- 14. R. P. Rumelt, D. E. Schendel and D. J. Teece (eds.), *Fundamental Issues in Strategy*, Harvard Business School Press, Boston (1995).
- 15. L. M. Puente and C. J. Forrest, Aplicación de Pensamiento Sistémico al Desarrollo del Plan Urbano de Tegucigalpa, CARE Honduras, Tegucigalpa, 16 (1999).
- 16. C. I. Barnard, The Functions of the Executive, Harvard University Press, Cambridge, MA (1938).
- 17. E. A. Locke and G. P. Latham, A Theory of Goal Setting and Task Performance, Prentice-Hall, Englewood Cliffs, NJ (1990).
- 18. J. Pfeffer, *The Human Equation: Building Profits by Putting People First*, Harvard Business School Press, Boston (1998).
- 19. J. L. Ritchie-Dunham and A. Membrillo, Breaking down functional blinders: A systemic view of the organizational map, *The Systems Thinker* **10**(10), (1999).
- I. Nonaka, R. Toyama and N. Konno, SECI, Ba and Leadership: A Unified Model of Dynamic Knowledge Creation, Long Range Planning 33(1), 5–34 (2000); I. Nonaka and H. Takeuchi, The Knowledge-Creating Company, Oxford University Press, New York (1995).
- P. Raimond and C. Eden, Making Strategy Work, Long Range Planning 23(5), 97–105 (1990); K. Warren, Exploring competitive futures using cognitive mapping, Long Range Planning 28(5), 10–21 (1995); M. Hammer and J. Champy, Reengineering the Corporation, HarperBusiness, New York (1993).
- 22. A. S. Huff and M. Jenkins (eds.), Mapping Strategic Knowledge, Sage Publications, London (2002).
- J. M. Mezias, P. Grinyer and W. D. Guth, Changing Collective Cognition: A Process Model for Strategic Change, Long Range Planning 34(1), 71–95 (2001).
- 24. A. S. Huff, Mapping Strategic Thought, Wiley, New York (1990).
- M. Pina, E. Cunha and R. Chia, Using Teams to Avoid Peripheral Blindness, *Long Range Planning* 40(6), 559–573 (2007); G. S. Day and P. Schoemaker, Peripheral vision: Sensing and Acting on Weak Signals, *Long Range Planning* 37(2), 117–121 (2004).
- 26. C. E. Weber, Strategic Thinking—Dealing with Uncertainty, Long Range Planning 17(5), 60-70 (1984).
- 27. T. Clarke, The stakeholder corporation: Introduction to the special issue, *Long Range Planning* **31**(2), 181 (1998); M. E. Porter (1985) op. cit at Ref 10.
- 28. M. E. Raynor, That vision thing: Do we need it? Long Range Planning 31(3), 368-376 (1998).
- 29. M. E. Porter, Competitive Strategy, Free Press, New York (1980).
- 30. R. E. Freeman, Strategic Management: A Stakeholder Approach, Pitman, Boston (1984).
- 31. G. Hamel and C. K. Prahalad, *Competing for the Future: Breakthrough Strategies for Seizing Control of Your Industry and Creating the Markets of Tomorrow*, Harvard Business School Press, Boston, MA (1994).
- 32. J. L. Ritchie-Dunham, A framework for achieving clarity for you and your organization, *The Systems Thinker* **15**(7), 7–8 (2004).
- 33. S. Miller, D. Wilson and D. Hickson, Beyond Planning Strategies for Successfully Implementing Strategic Decisions, *Long Range Planning* **37**(3), 201–218 (2004).

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