



# Can competitive advantage be predicted?

Towards a  
predictive  
definition

## Towards a predictive definition of competitive advantage in the resource-based view of the firm

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### Abstract

**Purpose** – The fundamental problem of the resource-based view (RBV) of the firm is its lack of predictive ability and its inability to identify, *ex ante*, those resources and capabilities leading to competitive advantage and superior profitability. This paper aims to propose an extension of the RBV model that incorporates the demand-based variables of customer needs and size of addressable market segment in the definition of the resources and capabilities that enable competitive advantage and superior profitability.

**Design/methodology/approach** – The paper's approach is to use a literature review and two case studies.

**Findings** – In this model a company has a competitive advantage if its resources and capabilities are valuable, rare, non-imitable, organized, and if these resources and capabilities address unmet customer needs in market segments large enough to cover organizational fixed costs.

**Research limitations/implications** – The proposed extension of the RBV is based on current literature and two qualitative case studies. Future longitudinal studies should establish causal links between current resources and capabilities meeting the proposed criteria and future performance.

**Practical implications** – The model appears to be able to guide decisions about investment in resources and capabilities to further develop existing competitive advantages and to build new ones. The benefit of this model lies in its ability to identify, *ex ante*, those resources and capabilities leading to competitive advantage and superior firm profitability.

**Social implications** – An improved ability to predict future firm performance based on more rigorous tests of current resources and capabilities improves the resource allocation process in firms and thus benefits society.

**Originality/value** – The benefit of this model lies in its ability to identify, *ex ante*, those resources and capabilities leading to competitive advantage and superior firm profitability.

**Keywords** Resource-based view, Competitive advantage, No rules for riches, Customer needs, Market orientation, Predictability, Organizations, Corporate strategy

**Paper type** Research paper

### 1. “No rules for riches” in the resource-based view

One of the fundamental questions that the resource-based view (RBV) explores is how to explain intra-industry profitability differentials between companies (Peteraf and Barney, 2003). This search for explanations of superior performance is backward-oriented. Its natural, forward-oriented flipside concerns recommendations to executives and academics on how to increase profitability at any given company and/or on how to further develop existing competitive advantages or create new ones.



The RBV, however, is silent on these latter questions. It offers “no rules for riches” (Sheehan and Foss, 2007). Paradoxically, the ability to tell how to make existing resources more valuable would make these resources less valuable because imitable (e.g. Barney, 1986).

Despite recent developments of the RBV (Bromiley and James-Wade, 2003; Foss, 2011; Mosakowski, 1998), its scholars have not changed this fundamental stance. Barney (2008), in a keynote address at the annual conference of the Verband der Hochschullehrer für Betriebswirtschaft (VHB) at Freie Universität Berlin in May 2008, repeats the assertion. There are “no rules for riches” in the RBV: any advice leading to superior performance will diffuse, so that the rent-generating property of the advice dissipates and competitive parity is restored. Bowman and Collier (2006, p. 192) state: “the RBV literature currently lacks any meaningful or useful prescriptions that practitioners can use to move their firms forward.”

This criticism largely mirrors the observation by Priem and Butler (2001a), who cite Barney (1991) and his claim that “valuable and rare organizational resources may be a source of competitive advantage,” pointing out that “competitive advantage is defined in terms of value and rarity,” and that the resource characteristics leading to competitive advantage are, again, “value and rarity” (Priem and Butler, 2001a, p. 28). In other words, the RBV is tautological (Priem and Butler, 2001a, p. 58). Priem and Butler (2001a, pp. 63-64) further state that “the RBV has had little to contribute to the explanation or prediction of competitive advantage. That is, advantage can be identified once it is achieved, but it cannot be explained or predicted with the RBV.”

The need for an *ex ante* understanding of the sources of competitive advantage is highlighted also by Cockburn *et al.* (2000):

*Ex post*, it is clear that some firms actively identify, interpret, and act upon early signals from their internal and external environment, and so position themselves to effectively exploit these opportunities well in advance of others’ demonstration of the pay-off from the strategies which emerge later on as “best practice.” These firms are *creating* new sources of competitive advantage. Understanding how they organize *ex ante* to do this is, in our view, a central question for strategy research (p. 1142, emphasis in original).

In sum, the fundamental problem of the RBV in its present form is its lack of future orientation and thus its inability to differentiate, *ex ante*, between valuable and less valuable resources and capabilities.

The objective of this paper is to enrich the understanding of the content of competitive advantage by addressing the fundamental problem of the RBV: its “current lack of managerial guidance” (Sheehan and Foss, 2007, p. 459) and its inability to predict competitive advantage (Priem and Butler, 2001a). Specifically, this paper provides a new framework for understanding *ex ante* those resources and capabilities leading to competitive advantage and superior firm profitability.

I begin with a review of the intellectual journey of the RBV, highlighting which initial predictions between input variables and output variables still hold today and where its proponents have made adaptations. I then present two qualitative case studies to illuminate along which lines the RBV could be improved so that it fulfills its as-yet “unfulfilled contribution” (Bingham and Eisenhardt, 2008, p. 251). The use of qualitative research is warranted since this research, interested more in words than in numbers, aims at exploring context-dependant causal relationships (Maxwell, 2005). Next, I extend the VRIO framework to incorporate demand-based variables of

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customer needs and expected market demand: with this, the identification of resources and capabilities able to generate competitive advantages becomes content-rich and predictive in nature. I then illustrate the application of the extended framework (VRIOLU) within the context of a second case study. Finally, I provide directions for future research on the RBV.

## 2. The search for sustainable competitive advantage: a history of the resource-based view

In the course of its intellectual history, the RBV has been used to theorize linkages between causes (e.g. resources) and effects (e.g. competitive advantage, performance). This section summarizes this history, highlighting the main intellectual advancements of the RBV and its open questions.

On the grounds of earlier conceptual work (Hitt and Ireland, 1986; Wernerfelt, 1984; Penrose, 1959), Barney (1991) offers the first comprehensive framework linking resources to sustained competitive advantage and superior performance. According to Barney (1991), such resources share the traits of being valuable, rare, difficult to imitate, and non-substitutable (VRIN; Barney, 1991, p. 112). With Barney's VRIN framework begins an immense scholarly interest in the nascent discipline of the RBV.

Barney (1997) is the first to amend the VRIN framework, following observations that the possession of resources *per se* is not sufficient for generating a competitive advantage: first, theoretical arguments (Porter, 1991), followed by empirical evidence (Newbert, 2007), suggest that resources must be deployed in order to generate rents. Amending his framework, Barney (1997) argues that sustained competitive advantage derives from resources that are valuable, rare, difficult to imitate ("non-substitutable" is subsumed under "difficult to imitate"), and that a company must be organized to exploit and deploy them (criteria abbreviated as VRIO).

Working in parallel with scholars of the RBV, organizational researchers recognize that the link between competitive advantage and organizational performance is not as straightforward as early proponents of the RBV appear to have assumed. A competitive advantage leads to superior performance only if the company can capture part of the value created *vis-à-vis* other stakeholders (Coff, 1999).

Observation of the static nature of these frameworks (Priem and Butler (2001b, p. 33) lead to a further important refinement of the RBV: static resources or capabilities are not sources of competitive advantage. What enables competitive advantage are dynamic capabilities (e.g. Eisenhardt and Martin, 2000; Teece, 2007).

Dynamic capabilities are:

[...] [t]he firm's processes that use resources – specifically the processes to integrate, reconfigure, gain and release resources – to match and even create market change. Dynamic capabilities thus are the organizational and strategic routines by which firms achieve new resource configurations as markets emerge, collide, split, evolve, and die (Eisenhardt and Martin, 2000, p. 1107).

While apparently incorporating the notion of change – inherent in all matters human and non-human – into resources and capabilities, critical voices question the ability of the dynamic capability construct to advance the RBV. For example, Schreyögg and Kliesch (2007) observe that this approach, other than insisting that capabilities be "dynamic," fails to describe specifically the characteristics of valuable resources and

capabilities. Thus, the dynamic capability approach cannot overcome the fundamental problem of the RBV – its lack of prescriptiveness.

The hypercompetition view of strategy (D'Aveni, 1994), although clearly not intended as further theoretical advancement of the RBV, is subject to some of the concerns voiced about the dynamic capabilities view: Contrary to the RBV, with its focus on punctuated equilibria, sustainable competitive advantages, path dependency, and stability of competitive positions (see also Lengnick-Hall and Wolff, 1999), hypercompetition (or guerrilla) logic stresses the need for continuous disruption (D'Aveni, 1994). Hypercompetitive logic emphasizes the need for a strong process orientation in strategy-making (see also Eisenhardt, 1999), since content “can quickly become outdated and lead to inappropriate behavior” (Bogner and Barr, 2000, p. 225).

Researchers disagree on whether recent times have become more or less hypercompetitive (Wiggins and Ruefli, 2005; McNamara *et al.*, 2003), but the focus of hypercompetitive logic on process, as opposed to content, mirrors the premise of the dynamic capability approach. Bogner and Barr (2000, p. 221), for example, state:

[...] [in hypercompetitive environments] success is based on a series of rapid and anticipatory actions that move the industry to the next round of competition.

Where this next round of competition is, and whether this move is indeed profitable, is left unanswered: Thus this approach cannot predict which specific competitive advantage a company should invest in – it merely states that companies must continuously destroy their own competitive advantages and invest in new ones. In sum, the logic of hypercompetition has a heavy process focus but seems to be devoid of any specific content about which competitive advantage leads to superior profitability. With this, there seems to be an equal lack of ability to predict in this approach[1].

Returning to the RBV, further refinements lead to the proposal that processes, rather than resources and capabilities, are the relevant unit of analysis (Ray *et al.*, 2004). Processes that share VRIO traits are sources of competitive advantage.

Bingham and Eisenhardt (2008) propose that linkages or relationships between resources, instead of (isolated) resources *per se*, are key to the creation of new opportunities. These opportunities arise from resource leverage, resource position, and resource opportunity.

Further extending the RBV, Lavie (2006) argues that ownership of resources is not an essential condition for competitive advantage: organizations create and capture value by appropriating relational and inbound spillover rents from participating in alliances. Internal and network resources (i.e. resources accessed through relationship networks) are thus both sources of competitive advantage.

Finally, responding to requests for the integrating of demand-based perspectives into the RBV (e.g. Priem and Butler, 2001b, p. 36; Adner and Zemsky, 2006), Peteraf and Barney (2003) drastically review fundamental – and in part their own – concepts of the RBV. First, Peteraf and Barney (2003, p. 314) do not link competitive advantage to superior financial performance: “An enterprise has a Competitive Advantage if it is able to create more economic value than the marginal (breakeven) competitor in its product market”. Competitive advantage thus equates to an ability to create customer value. Next, and in contrast to previous work, they state, “There is no absolute causal chain in RB[V], leading directly from greater value to greater profitability” (Peteraf and

Barney, 2003, p. 320); a competitive advantage is merely an indicator of a firm’s potential to “best its rivals in terms of rents” (Peteraf and Barney, 2003, p. 313).

These historical iterations of the RBV are summarized in Figure 1.

None of the recent adaptations and extensions of the RBV is able to address its fundamental problem: its lack of future orientation and thus its inability to differentiate, *ex ante*, between valuable and less valuable resources and capabilities.

I posit that this fundamental problem is the result of two assumptions which the RBV silently makes: the assumption of zero fixed costs and the assumption of customer homogeneity. I argue that once these assumptions are dropped, there is an opportunity to render the RBV more useful and to open the current “black box of understanding how resources contribute to value creation” (Sheehan and Foss, 2007, p. 452). I illustrate these assumptions and their consequences through the following two case studies.

### 3. A case study illustrating two counterproductive assumptions of the resource-based view: the case of Ralph Sarmani Roses

During a 36-month period (2007-2009), I am involved – as an *ad hoc* advisor – in the process of strategic planning and resource deployment of a company operating in the luxury-goods industry. The company, Ralph Sarmani Roses (RSR; the company name has been altered to protect confidentiality) is an offspring of a well-known fashion and luxury-goods company with a nearly universally recognized brand name. One of the owners and former board members founds RSR in an attempt to diversify away from the company’s core product range in fashion items. The objective is to develop a new business by transferring a well-known brand name to a new product category: roses.

Input	Output	Result	Key critique	Additional remarks
VRIN Resources: Valuable, Rare, difficult to imitate, Non substitutable (Barney, 1991)	Comp adv	Superior performance	Resources are not valuable in and of themselves (Porter, 1991)	Inability to address RBVs fundamental problem: “lack of meaningful prescriptions” (Bowman and Collier, 2006)
VRIO Resources: Valuable, Rare, difficult to imitate, Organization (Barney, 1997)	Comp adv	Superior performance	Concept is static (Priem and Butler, 2001)	Inability to address RBVs fundamental problem
Dynamic capabilities (e.g. Eisenhardt and Martin, 2000; Teece 2007)	Comp adv	Superior performance if value is appropriated	Total flexibility eliminates need for hierarchies (Schreyögg and Kliesch, 2007)	Inability to address RBVs fundamental problem
VRIO Processes (Ray et al. 2004)	Comp adv	Superior performance if value is appropriated		Inability to address RBVs fundamental problem
Linkages between resources are key (Porter, 1996; Bingham and Eisenhardt, 2008)	Comp adv	Superior performance if value is appropriated		Inability to address RBVs fundamental problem
Network resources more important than nature of resources (Lavie, 2006)	Comp adv	Superior performance		Inability to address RBVs fundamental problem
Revised RBV (Peteraf and Barney, 2003)	Competitive advantage is value creation for buyer	Potential to exceed rivals in terms of profitability		Inability to address RBVs fundamental problem

Figure 1. A history of the RBV

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The market is fragmented: there are, to date, no companies selling roses on a global level under a globally recognized brand name. In addition, even for the most up-market roses, quality problems persist, since customers can evaluate the quality of roses only well after their purchase (observation of freshness period). Thus, the company senses a significant market opportunity.

From its outset, the foray into the new business is characterized by the use of the most expensive resources. For its global marketing campaign the company hires the agency run by the creative director responsible for designing the original Apple<sup>®</sup> logo in the 1970s. RSR sources roses directly from leading cultivations in Kenya and Latin America: transportation by air directly into the company's retail outlets is unique in the industry (retailers traditionally use distributors and wholesalers for their purchases) and guarantees two to four days of increased freshness. The company's retail outlets are designed to resemble fashion temples, sharing none of the characteristics of traditional flower shops: they are large (up to 1,000 square meters), and meticulously designed by leading indoor architects. An air of relaxed luxury and exclusivity permeates these shops, found in prime retail locations in New York, Dubai, Sao Paolo, Vienna, Tokyo, Milan, Zurich, Frankfurt, and elsewhere.

Based on the criteria suggested by Arend (2006), in a series of workshops with senior executives the following resources are identified as passing the VRIO test: a protected brand name, a distinct brand identity, privileged access to prime retail space, a cost advantage from large-scale global sourcing and distribution and, finally, distinct quality (freshness). Focus group interviews with customers confirm the potential value of these resources and capabilities to customers. Earlier research on the RBV (Barney, 1991, 1997) would likely have predicted that RSR has a competitive advantage and above-average profitability.

In line, however, with newer research (Peteraf and Barney, 2003), the company decides to investigate customer-value creation. Customer value is equal to the microeconomic concept of a customer's reservation price or the use value of goods (Nagle and Holden, 2002; Priem, 2007). More precisely, the reservation price is the price at which the consumer is indifferent between buying and not buying (Moorthy *et al.*, 1997).

Customer value in this sense thus closely trails the use of this term by other researchers investigating the origins of competitive advantage (Ghemawat and Rivkin, 2006; Brandenburger and Stuart, 1996), and is in line with the use of the term by Peteraf and Barney (2003): customer value is equal to customer willingness to pay.

Whereas different empirical methods exist for determining willingness to pay (conjoint analysis, first price auctions, Vickrey auctions, BDM auctions – the last named after the three scientists (Becker, DeGroot, and Marschak) who in the 1960s develop a mechanism for evaluating attitudes toward risk (Wertenbroch and Skiera, 2002), “true” willingness to pay is an unobservable construct (Voelckner, 2006). Researchers (Wertenbroch and Skiera, 2002; Voelckner, 2006) agree, however, that methods requiring an actual purchase act (e.g. BDM auctions) have higher validity than methods which ask for a hypothetical willingness to pay (e.g. conjoint analysis). RSR thus decides to use BDM auctions to quantify customer willingness to pay. A market research agency conducts the actual field studies with 212 customers of RSR.

Customer willingness to pay for RSR's flagship products (two bouquets of preserved flowers and two compositions of fresh flowers) is, on average, 267 €, 145 €,

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71 €, and 58 € for each of the four products. Variable cost of goods sold (COGS) for these products are 48 €, 28 €, 19 €, and 12 €, respectively. Taking into account price elasticities, fairness considerations, competitive price levels, and other factors, RSR decides – after conducting a specific pricing project – to set product prices at the following levels: 199 €, 99 €, 60 €, and 45 €. This allows markups of roughly between 2 and 3 – values in line with average markups in the luxury-goods industry.

After these tests are conducted, the logic of the RBV could be applied again to test for the presence of competitive advantages and superior profitability.

Testing for customer value (willingness to pay) versus actual prices paid versus costs of good sold (Peteraf and Barney, 2003) clearly confirms that willingness to pay > price > cost of goods. Assuming further that stakeholder bargaining power (Coff, 1999) is absent, the RBV very likely would conclude that RSR has a competitive advantage and the potential (Peteraf and Barney, 2003) – probably even a very high likelihood (Newbert, 2008) – of earning above-average returns.

This is not the case. To date, RSR has accumulated significant losses, exceeding its annual turnover by a factor of nearly 3, and shareholders are considering closing down RSR.

What went wrong? What the RBV and the company in this case study overlook are fixed costs and customer heterogeneity: driving “a wide wedge between actual costs and willingness to pay” (Ghemawat and Rivkin, 2006, p. 7) – building competitive advantage (Peteraf and Barney, 2003) – leads to superior performance only in the absence of fixed costs. In the presence of (high) fixed costs, customer value > price > costs is an insufficient condition for superior profitability. In addition, the absolute contribution margin (units sold × unit contribution margins) must exceed fixed costs. This consideration is so far overlooked in the RBV.

Furthermore, RSR treated its customers as a homogenous mass, overlooking that different customer segments may have significant differences in willingness to pay and in customer value. The addressable market segment for which customer value > price > costs has to be large enough to cover organizational fixed costs. An understanding of the absolute size of different market segments and differences in willingness to pay between these segments thus is necessary in order to understand whether the achievable absolute contribution margin exceeds the organizational fixed costs associated with creating customer value.

#### 4. Proposal for an extension of the resource-based view

The most fruitful areas for extending the RBV are demand-based perspectives. Early proponents of the RBV all but neglect customers: Barney (1991) mentions the word “customer” five times in his seminal article. So far, “consumer heterogeneity” is “largely ignored in strategy studies” (Adner and Zemsky, 2006, p. 234). Priem and Butler (2001b, p. 36) suggest that “the greatest potential likely will only be realized through complementary and integrated use of the RBV together with other, demand-oriented perspectives.” Similarly, Srivastava *et al.* (2001, p. 778) observe a “disconnect” between the RBV and market-based perspectives.

A fruitful hunting ground for integration of the two is marketing theory and its considerations of customer value, market segmentation, and price elasticities. Marketing theory considered the need to take a highly fine-grained view of customers early on. As early as the 1960s, Weir (cited in Yankelovich, 1964, p. 90) observes that

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“the market’ is not a single, cohesive unit; it is a seething, disparate, pullulating, antagonistic, infinitely varied sea of human beings – every one of them as distinct from every other one as fingerprints.”

The conceptual background for this integration is research by Ulwick (2002) on breakthrough innovations. Marketing and strategy researchers debate whether breakthrough innovations are the results of listening to customer needs (Day, 1999; Urban and Hauser, 2004) or of leveraging technological competencies (Danneels, 2007). Ulwick (2002, 2003, 2005) integrates these two approaches. Customers do not have needs or desires, constructs which are too vague to be useful for specific product/market strategies. Customers instead have reasons for purchasing products and services, as means of getting certain “jobs” done; they “hire” products or services in order to accomplish these jobs (Ulwick, 2002, 2003; see also Levitt, 1960). Customers thus do not know exactly what they need – at least, not until they see it. Finally, in some cases a need may not exist until there is a solution able to fulfill it.

Understanding tasks that customers seek to accomplish is especially helpful when designing and evaluating innovations. In the 1980s, merely listening to customer needs would likely not have helped Sony in designing the Walkman[2]. Similarly, it is unlikely that by pushing technological competencies alone, it could have designed a product so well-aligned with customers’ (unexpressed) needs. The understanding of customers’ jobs is thus the bridge between customer orientation and technology orientation.

Understanding these jobs involves the following process: Customers are first interviewed about the tasks (“jobs”) they wish to accomplish; each job is then broken down into a series of desired outcomes, that is, the criteria customers use to evaluate different solutions for a given job or set of jobs (Ulwick, 2002). These desired outcomes are directional and have a unit of measure. Quantitative interviews with hundreds or thousands of actual and former customers are used to prioritize these outcomes, along the two dimensions of satisfaction and importance. Those outcomes, which are rated by a pre-defined percentage of customers as “high” in importance and at the same time “low” in satisfaction, are opportunities for breakthrough innovations. These outcomes are the true “unmet needs” of customers.

According to this approach, customers in the 1980s would likely have rated their current audio equipment “low” on satisfaction with regard to transportability, while – probably – also rating this attribute as “very important.” This recognition – transportability as a highly important but unsatisfied outcome – could have been the decisive factor enabling Sony (or other companies with technical competencies in miniaturization) to launch the Walkman, in one of the most successful new product launches ever. These views have an important impact on the literature dealing with disruptive innovation: Christensen credits Ulwick (2002) for his own subsequent work on disruptive innovation (Christensen and Raynor, 2003, p. 96; Christensen, 2000).

The RBV so far does not incorporate these ideas, being essentially silent on the question of “where marketplace opportunities come from” (Srivastava *et al.*, 2001, p. 785). An extended, market-oriented version of the RBV thus takes the following shape.

It builds on the VRIO framework (Barney, 1997; Barney and Hesterly, 2005), extending it along the two dimensions of customer needs and size of addressable

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market segments. Thus, resources and capabilities that constitute the basis for competitive advantages and superior profitability have the following properties:

- They are *valuable*: they enable the firm to exploit an external opportunity or to neutralize an external threat.
- They are *rare*: perfect competition for them has not yet set in.
- They are *imperfectly imitable* and *non-substitutable*: competitors face a cost disadvantage in imitating or substituting them.
- The company is *organized* to exploit them: the firm's structure and control mechanisms are aligned so as to give people ability and incentive to exploit them.
- They are sufficiently *large*: they address market segments that are sufficiently large to cover organizational fixed costs.
- They enable the company to address customers' *unmet* needs: a need is unmet if customers perceive it as simultaneously high in importance and low in satisfaction.

This framework should be seen not as a criticism of the RBV but as yielding insights into value creation and valuable resources that are not available in the RBV in its current form. According to this extended framework, which I call the VRIOLU framework, resources and capabilities must meet the additional requirements of being linked to customer unmet needs and to a sufficiently large addressable market segment allowing coverage of organizational fixed costs. In the next section, I describe an empirical study that tests the (predictive) utility of this framework. I argue that the integration of unmet customer needs with company-specific resources and capabilities is a highly promising area for extending the RBV, contributing to our (*ex ante*) understanding about which resources and capabilities are valuable and which are less so. This integration thus allows an *ex ante* prediction of sustainable competitive advantage.

### **5. Illustration: application of the extended model of the resource-based view to identify sources of competitive advantage and to predict firm performance**

I conduct a study within a global specialty chemicals company seeking to identify and further develop its competitive advantages in order to improve its performance. Over a two-year period (2007-2008), I conduct numerous workshops with middle and senior executives, interview customers and competitors to help the company identify and expand its competitive advantage.

In a highly dynamic environment such as the global chemical industry (see, for example, Deutsche Bank, 2006; JP Morgan, 2008), it soon becomes apparent that the frameworks currently used to determine sources of competitive advantage are of limited value. Specifically, company executives themselves recognized that the identification and development of competitive advantages is pointless if customer needs are unknown and/or changing.

The company thus first sets out to identify and prioritize customer needs, specifically customer unmet needs, in order to assess in a second step the ability of the company's resources and competencies to address these needs. The process involves two steps (Ulwick, 2002). Customers are first interviewed in focus groups to identify –

in a purely qualitative manner – a list of potential jobs, outcomes, and constraints they face. These focus groups consist of 30 customers, since research (Hauser, 2002) shows that this (small) number is sufficient to capture more than 98 percent of customer needs. During a subsequent broader, quantitative phase, market researchers interview 800 customers in three large markets globally (Germany, Italy, and USA) to understand which of the outcomes identified in the previous qualitative phase are truly important to customers.

Truly important outcomes – i.e. customers’ unmet needs – score high on the opportunity algorithm (Ulwick, 2002). According to this algorithm, first, the percentage of customers indicating a given outcome as either “very important” or “extremely important” on a five-point scale is recorded; this number is multiplied by ten for ease of computation. Next, the percentage of customers indicating low levels of satisfaction on a five-point scale (“not satisfied at all” or “somewhat satisfied”) on this outcome is recorded; this number is also multiplied by ten for ease of computation. The algorithm to distinguish between important and less important customer needs is:  $Opportunity = Importance + \max(Importance - Satisfaction, 0)$ . This algorithm thus yields higher values for those outcomes where customers rate the importance as high and the satisfaction as low. Values less than 7 indicate customer needs that are (too) well satisfied, values less than 10 indicate needs that are appropriately satisfied, and higher values (high = greater than 12; very high = greater than 15) indicate unmet customer needs.

In mature industries, most customer needs are resolved: customers thus indicate that the related outcomes are either not important, or are fairly well satisfied, or both. In these markets the percentage of unmet needs (i.e. needs that customers indicate as high in importance and low in satisfaction) is thus typically low (< 15 percent). Figure 2 shows the survey results for this chemical company, operating – as the executive team believes – in a mature market. Contrary to expectations, out of the total number of outcomes identified (104) an extremely high number (74 percent) scored high on this opportunity algorithm, indicating that customers felt them to be very important and, at the same time, not well satisfied.

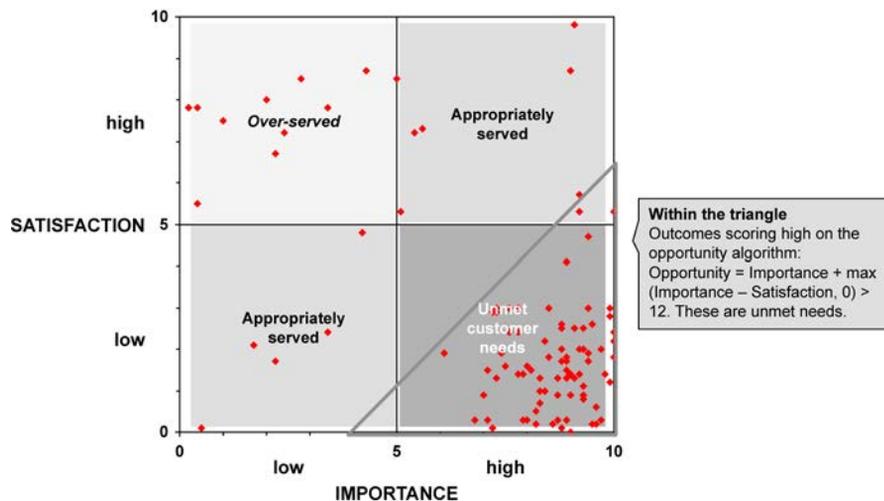


Figure 2.  
Unmet customer needs at  
the global B2B company

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Once unmet needs are known, the company's resources and competencies are mapped against those of the strongest competitor for each unmet need. This is important to determine whether the company's resources and competencies are suitable for addressing unmet needs better than competitors. This analysis also helps to indicate whether, conversely, the company's resources and capabilities address customer needs which are over-satisfied (low in importance and high in satisfaction), leading to the conclusion that competitive advantage is weak and that profitability is below average.

First, outcomes scoring highest on the opportunity algorithm are listed according to their relative importance, leading to a rank order of most important unmet customer needs (see Figure 3). Next, each of the company's resources and capabilities is benchmarked against the best competitor for each of these unmet needs. Finally, a matrix combining the opportunity score with relative competitive strength shows for which unmet needs the company possesses a resource/capability advantage over its competitors.

This study thus provides an understanding of the most important unmet customer needs and the suitability of current resources and competencies to meet these unmet needs.

A company has a competitive advantage if its resources and capabilities are valuable, rare, non-imitable, organized, and if these resources and capabilities address unmet customer needs in market segments large enough to cover organizational fixed costs. A competitive disadvantage, in contrast, is present when these conditions are not fulfilled.

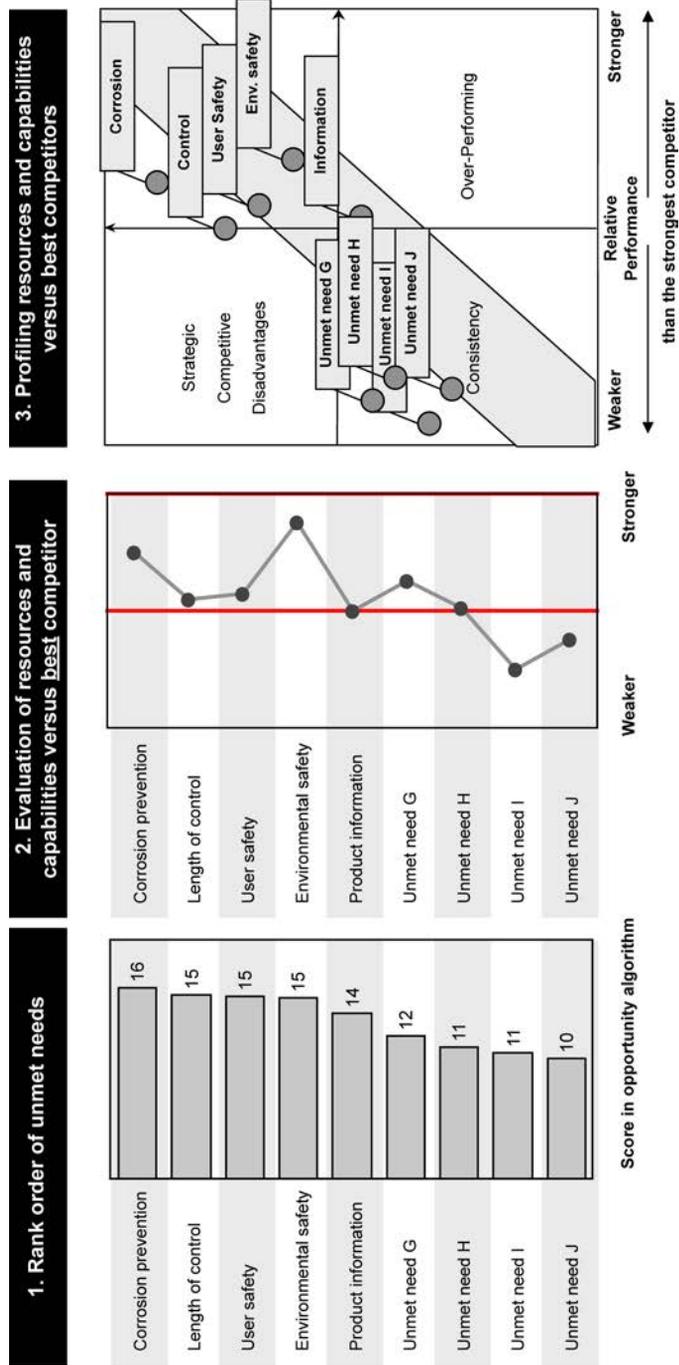
I conduct these extended RBV (VRIOLU) test on the resources and competencies of the chemical company. Based on this test, I identify several capability and resource advantages of the focal company over its competitors along the main unmet needs previously identified.

These advantages concern the following (some unmet needs have been altered to protect confidentiality): first, a competitive advantage related to the production and development of chemicals which addresses the perceived corrosion of current products in the machinery and equipment of customers; and second, a competitive advantage related to developing and selling chemicals that offer an improved performance under difficult environmental situations (rain, humidity, drought); also here, customers expressed a clear unmet need (high importance, low satisfaction) with current products, as determined based on the customer surveys. Executives, concurrently, listed this as an area where the company's resources and capabilities are stronger than those of its competitors and are thus a valuable source of competitive advantages.

The results of this study are useful. First, identifying those few resources and capabilities that pass the extended VRIOLU tests helps the company to also identify specific competitive advantages that enable superior profitability. The relationship between capabilities and future performance in the present version of the RBV is tenuous; by contrast, the extended model, by incorporating demand-based consideration in the definition of valuable resources and capabilities ensures that the latter address important, unmet customer needs. Second, this extended model also enables to prioritize investment decisions into the development of competitive advantages or in the remediation of competitive disadvantages.

Through the use of this framework, patterns emerge that allow firms to distinguish, *ex ante*, which organizational resources and capabilities are valuable and thus worthy of further development.

**Figure 3.**  
Mapping resources and  
competencies against  
unmet customer needs



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One of the products the company has recently launched as a result of this study is a product with a specific, innovative label guaranteeing protection of equipment against corrosion. As a further result of this study, the company is developing its competencies in producing corrosion-resistant formulations in order to offer them for all products in all major markets. Finally, the company's recognition that environmental and user safety are still unmet needs, for which it occupies a very strong position *vis-à-vis* its strongest rival, point toward the further development of the underlying capabilities, in order to promote a series of newly launched products specifically aimed at the growing segment of low-input, environmentally conscious industrial customers.

As a result of the steady development of these competitive advantages, the company improves its performance along key performance indicators – customer satisfaction, market share, total returns to shareholders and operating profitability – in the three years following this study. This model thus seems to be able to isolate *ex ante* those resources and capabilities which enable a competitive advantage and superior profitability.

## 6. Conclusion

Perhaps one of the single most ridiculous aspects of the modern investment landscape is the quest for constant good performance. It is as elusive as the mythical Holy Grail. But, that doesn't stop the vast majority of investors desperately trying to achieve it (Montier, 2007, p. 2).

Cockburn *et al.* (2000, p. 1129) observe that the current RBV leaves one critical question unanswered: “*how does one know*” (emphasis in original) which resources and capabilities to develop in order to gain competitive advantage and increase company performance? This problem arises since many researchers treat resources as a “black box” (Bitar and Hafsi, 2007, p. 404).

I propose that the revised RBV model can answer this question, albeit at a cost: whereas most current RBV scholars take a relatively low-cost path to identifying VRIO resources and capabilities – internal and competitive analysis – the extended RBV model requires a sophisticated understanding of customer unmet needs, customer willingness to pay, and sizes of market segments. This framework borrows, as Srivastava *et al.* (2001, p. 798) suggest, “theories from outside the historic confines” to overcome some of its shortcomings.

The proposed extended RBV framework has intellectual underpinnings that some of the existing RBV proponents already voice. In an interview for the *McKinsey Quarterly*, Lovallo and Mendenoca (2007, p. 6) ask Richard Rumelt about tools for understanding strategy dynamics. He replies:

I use another tool I call “value denials.” These are products and services that are both desired and feasible but that are not being supplied to the market. The concept combines insights into demand and potential supply . . . There are times when we would pay the premium, but these services are not offered. That's a value denial. A value denial is a business opportunity.

Rumelt's (as cited in Lovallo and Mendenoca, 2007) value denials are unmet customer needs, that is, outcomes rated low in satisfaction and high in importance by customers in interviews. Rumelt sees value denials as opportunities for understanding strategy dynamics and new business opportunities. I agree, and I propose to go one step further. Unmet customer needs can and should serve as criteria for eliciting those resources and capabilities that are useful for designing products or services that address these unmet needs.

This extended framework, VRIOLU – and its predecessor, the VRIO framework – can also be analysed in the context of the strategic triangle originally developed by Ohmae (1982). Ohmae (1982) argues that effective strategic decisions take into account the company perspective (resources and capabilities), the competition (competitive actions and reactions), and the customer (customer needs).

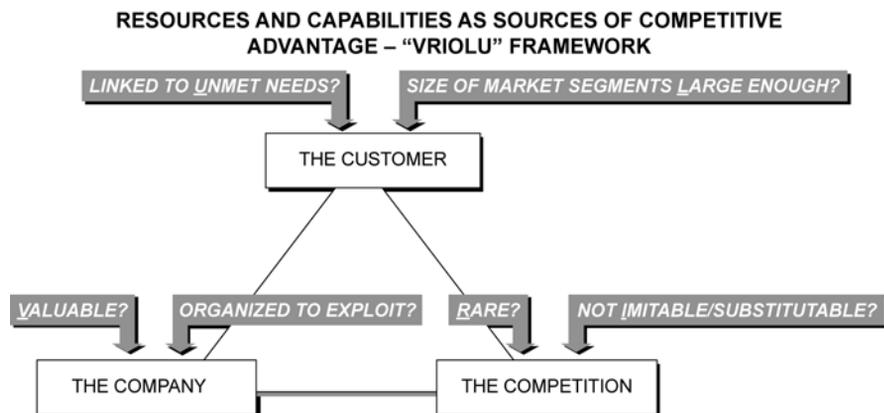
The proposed VRIOLU framework examines resources and capabilities along all three dimensions:

- (1) *Company perspective.* The elements “Value” and “Organization” examine to which degree these resources are valuable for the organization and to which degree the organization is able to exploit these resources.
- (2) *Competitive perspective.* The elements “Rareness” and “Non-imitability/substitutability” examine to which degree resources and capabilities are available to competitors and at which costs imitation/substitution occurs.
- (3) *Customer perspective.* The elements “Unmet needs” and “Large market segments” examine, first, to which degree resources and capabilities are linked to currently unmet customer needs, and, second, whether the target market segments are large enough to generate contribution margins large enough to cover organizational fixed costs.

In other words, the proposed extended framework advances the VRIO framework by incorporating a new dimension of analysis – the customer perspective – into the analysis of resources and capabilities for competitive advantage (Figure 4).

I contend that this framework overcomes the fundamental problem of the RBV, its lack of managerial use. The VRIOLU framework is capable of identifying *ex ante* those resources and capabilities leading to competitive advantage and superior profitability. This leads thus to a definition of competitive advantage that is content-rich: in other words, one that is able to guide managerial actions and to distinguish more valuable resources and capabilities from other, less valuable ones.

Andersén (2011) suggests a set of criteria which resources must fulfill to contribute to superior firm performance; these criteria, however, rest on a logical plausibility rather than an empirical basis. This paper aims to improve our understanding about the link between firm resources and profitability through exploratory, qualitative research.



**Figure 4.**  
The extended  
resource-based view  
framework (“VRIOLU”)

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Are there thus “rules for riches” in the RBV? I argue that the key limiting factor of the extended RBV model is an understanding of customer unmet needs, which are heterogeneously distributed, within companies and, even more so, among companies. As long as this heterogeneity persists, rules for riches appear to exist.

## 7. Limitations

There is support in the literature for the idea that the RBV needs more empirical testing (e.g. Newbert, 2007, 2008). I propose and experiment with an extended VRIO model that demonstrated, in a globally operating B2B company, its usefulness, in terms of its ability to guide the board of management in decisions about which resources to deploy, which products to launch, and which capabilities to prune.

A single case study has severe limitations: I did not develop a model to test causal links between variables. Furthermore, in order to advance the RBV on predictiveness and managerial applicability, I give preference to tools of high relevance. Future longitudinal studies should establish causal links between current capabilities meeting the proposed criteria and future performance.

## Notes

1. The same, finally, could be argued also about the organizational learning school of thought: scholars of the organizational learning or evolutionary school (e.g. Strata, 1989; Senge, 1990) have underlined the importance of learning in order to maintain and defend competitive advantages: “The rate at which individuals and organizations learn may become the only sustainable competitive advantage” (Strata, 1989, p. 64). Also here, except for the prescription to learn something, little is said about what, specifically, organizations and individuals should learn.
2. A quote by Henry Ford, the American industrialist, is well to the point: “If I’d listened to customers, I’d have given them a faster horse . . . Cars were considered a public nuisance because they made a racket and scared the horses.”

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