

## Chapter 2

# Two Views for Understanding How TQM Fosters Learning and Value Innovation: Absorptive Capabilities and Action-Based Management

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**Abstract** In the last decade some frameworks have tried to explain how to devise strategies for innovation in value by determining the needs of customers and non-customers, also creating new industries in which competition becomes irrelevant (Hax, The delta model. Reinventing your business strategy. New York: Springer, 2010; Kim and Mauborgne, Blue ocean strategy. Boston: Harvard Business School Press, 2005; Madhok and Marques 2013). These reference frameworks are based on a common set of principles: Value is created through the relationship with the customer (Priem, Acad Manag Rev 23; 219–235, 2007; Vargo and Lusch 2008); Strategy is considered to be a continuous process of exploring new opportunities, through observation of customer behaviour, intuition of opportunities (as a result of inductive reasoning) and the definition of value proposals characterized by being focused, clear, and original (Hax, The delta model. Reinventing your business strategy. New York: Springer, 2010; Kim and Mauborgne, Blue ocean strategy. Boston: Harvard Business School Press, 2005); agility and speed to intuit and capture new opportunities, as well as flexibility to operationalize them through experimentation and subsequent trial and error actions (Madhok and Marques 2013).

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This approach to strategy is relevant in the case of services with high customer contact, in which the management of the relationship with the customer is at the centre of the process of value creation, and in which the implementation of the principles previously mentioned produces links which lead the customer to perceive the value proposition as valuable, unique and irreplaceable (high switching costs). In this paper we highlight that a substantial part of the above principles are common to those proposed by TQM. The central aim of this essay is to show that organizations which have successfully implemented TQM are in an optimal position to find, define and create innovative value propositions.

## 2.1 Introduction

TQM has been considered both as a managerial philosophy (Camisón et al. 2006) and as a management innovation (Volverda et al. 2013) which fosters internal knowledge creation (Camisón et al. 2009) and increases internal knowledge transfer (Molina et al. 2004) through basic TQM principles such as continuous improvement and learning. However, only recently has attention been devoted to TQM as an antecedent of the capability of absorbing external knowledge. Fernández-Pérez and Gutiérrez-Gutiérrez (2013) show that TQM improves a CEO's external social network, which results in higher strategic flexibility and improves organizational learning. Likewise, Arumugam et al. (2013) state that TQM practices increase firm and team activities devoted to seeking information from customers and suppliers. Nevertheless, TQM is usually considered at an operational level, as Porter (1996) states, TQM is about operating efficiency, but that is not strategy. Research remains scant, Volverda et al. (2013, p. 11) suggest that few scholars have examined how TQM practices contribute to exploratory processes which lead to strategic innovation.

Departing from the absorptive capability framework (Cohen and Levinthal 1990) which considers both sides of knowledge creation (internal and external), this paper considers TQM from recently proposed strategy models based on Austrian Economics postulates (Roberts and Eisenhardt 2003; Guerras-Martín et al. 2013), which highlight customer-oriented value creation, inductive reasoning, entrepreneurial behavior, strategic flexibility and agile execution (Madhok and Marques 2013). From this point of view, learning produced by TQM is not only useful to reach the productivity frontier as Porter states (1996), but also has the potential to foster deep customer understanding which leads to value innovation, resulting in the development of new and uncontested markets where competition becomes irrelevant (Kim and Mauborgne 2005).

The rest of the paper is organized as follows: firstly, we develop a brief but complete revision of the absorptive capability framework; secondly, the literature that analyzes the relationship between TQM and absorptive capability is outlined; thirdly, customer-oriented strategic models are considered; and finally some research questions are proposed.

## 2.2 Absorptive Capacity in the Context of Strategic Management

Strategic management literature in recent decades has focused on two fundamental paradigms, as being the most influential ones: Competitive Positioning, as proposed by Michael Porter (1980), and the Resources and Capabilities-Based View (Wernerfeld 1984; Prahalad and Hamel 1990). Porter's view is that, "the essence of formulating competitive strategy is relating a company to its environment" (Porter 1980, p. 3). On the other hand, the Resources and Capabilities-Based View focuses "on the distinctive competences and the resource and capability assets within the enterprise, as determinant key success factors" (Garrigos and Palacios 2008, p. 85). However, as Coulter (1997, p. 40) points out regarding these two perspectives, "both are important to understand how organizations achieve a sustainable competitive advantage". In the same vein, newer approaches, such as the Dynamic Capabilities perspective, have tackled strategies enabling flexibility and responsiveness to environmental changes (Teece et al. 1997). Moreover, as Posen and Levinthal (2012) stress, the literature increasingly focuses attention on high-velocity markets (Brown and Eisenhardt 1997), and hypercompetition (D'Aveni and Gunther 1994).

In addition, the perspectives centred on internal resources and capabilities agree that the most strategically important resource is knowledge (Kogut and Zander 1996). Thus, "knowledge management has become a line of research attracting much interest" (Palacios and Garrigos 2006), and as Garrigos (2009, p. 2) points out, "the importance of information and knowledge as increasingly key aspects of competitive advantage in the activities of both individuals and organizations, is widely recognized by authors and practitioners".

Following a combined perspective, Cohen and Levinthal (1990, p. 128), labelled the term "absorptive capacity", as "the ability of firms to recognize the value of new, external information, assimilate it, and apply it to commercial ends". "These abilities collectively constitute what we have termed a firm's "absorptive capacity" (Cohen and Levinthal 1989a, 1990, 1994, p. 227). As these authors point out, "A critical factor in industrial competitiveness is the ability of firms to exploit new technological developments. We term this ability a firm's absorptive capacity and argue that such a capability not only enables a firm to exploit new extramural knowledge, but to more accurately predict the nature of future technological advance" (Cohen and Levinthal 1994, p. 227).

### 2.2.1 *Absorptive Capacity: Exploration, Exploitation, and Ambidextrous Firms*

As Cohen and Levinthal 1994, p. 227, point out, the capacity to "exploit" outside knowledge is comprised of the set of closely related abilities to evaluate the technological and commercial potential of knowledge in a particular domain, assimilate it, and apply it to commercial ends. The importance of recognizing, assimilating, and

applying new knowledge, as the centre of the absorptive capacity, is also stressed by Andriopoulos and Lewis (2009), who point out the importance of combining exploitation and exploration of knowledge, together with the relevance of ambidextrous firms.

According to Subramaniam and Youndt (2005), and Andriopoulos and Lewis (2009, p. 696) “Innovation denotes intricate knowledge about the management processes of identifying and utilizing ideas, tools, and opportunities to create new or enhanced products or services”. The importance of combining exploration and exploitation is crucial, as Andriopoulos and Lewis (2009, p. 708) point out, in essence, the two modes of innovation are mutually reinforcing. But what is exploration and what is exploitation? As Atuahene-Gima (2005), and Andriopoulos and Lewis (2009, p. 696) explain “exploitation hones and extends current knowledge, seeking greater efficiency and improvements to enable incremental innovation”, in addition, exploration, “entails the development of new knowledge, experimenting to foster the variation and novelty needed for more radical innovation”. Exploration is essential for firms, as Posen and Levinthal (2012, p. 598) stress, “we conceive of strategies as reflecting managerial and organizational attempts to understand the world and act appropriately”. However, as Andriopoulos and Lewis (2009, p. 708) point out “Exploitative efforts help transform knowledge into commercial ends, but without exploration a firm’s stock of knowledge will wane (e.g., being used repeatedly until a firm is stuck in a specific product or industry niche). Likewise, exploratory efforts help to continuously renew and expand a firm’s knowledge base, but without exploitation that knowledge may not be utilized fully (e.g., recombined in varying ways across projects or product iterations)”.

Nevertheless, sometimes organizations do not balance these factors appropriately. In the same vein, organizational ambidexterity signifies a firm’s ability to manage tensions between the exploration and exploitation (Duncan 1976). Hence, ambidextrous firms are those “capable of simultaneous, yet contradictory, knowledge management processes, exploiting current competencies and exploring new domains with equal dexterity” (Lubatkin et al. 2006; Andriopoulos and Lewis (2009, p. 696). This point was stressed previously by March (1991), who identifies the need to allocate limited resources across both the exploitation of the known and exploration of the novel as a central strategic trade-off, and also highlighted by Gupta et al. (2006) and Posen and Levinthal (2012, p. 587), who point out that “balancing exploration and exploitation is central to a firm’s performance”.

### ***2.2.2 Antecedents of Absorptive Capacity***

However, how can companies enhance these processes? According to Cohen and Levinthal (1994, p. 244) “a firm’s absorptive capacity - not only permits firms to exploit new, valuable developments, but also to better envision their emergence”.

Similarly, the intention in this chapter is to stress the link between quality management and the use of absorptive capabilities to enhance the exploitation and exploration of knowledge by firms. Let us start by emphasizing the main ways of

developing absorptive capacity. According to Cohen and Levinthal (1994, p. 227), “a firm may develop its absorptive capacity in a variety of ways:

1. “It may do so directly by sending employees for advanced technical training or by encouraging employees to monitor and read the technical literature in their areas of expertise” Cohen and Levinthal (1994, p. 227).
  - First of all, Cohen and Levinthal (1990, p. 128) point out that March and Simon (1958, p. 188) suggest that most innovations result from borrowing rather than invention”, so monitoring the external environment, and also the literature is essential.
  - However, and apart from this, “the ability to evaluate and use outside knowledge is largely a function of the level of prior related knowledge” (Cohen and Levinthal 1990, p.128). Moreover, “The premise of the notion of absorptive capacity is that the organization needs prior related knowledge to assimilate and use new knowledge” Cohen and Levinthal (1990, p. 129). According to these authors, prior knowledge is essential as it permits not only the assimilation (*ibid*, p. 135), but also the exploitation of new knowledge (*ibid*, p. 136). Hence, prior knowledge will affect innovative performance in an evolving, uncertain environment (Cohen and Levinthal 1989b; Cohen and Levinthal, (1990, p. 136). Following Cohen and Levinthal (1994, pp. 227–228) “firms develop their absorptive capacities largely through the accumulation of related knowledge that permits them to evaluate and exploit subsequent developments within a field.... To use such knowledge, a firm must typically acquire complementary internal expertise to create what we call absorptive capacity”. As Cohen and Levinthal (1990, p. 136) mention, “the possession of related expertise will permit the firm to better understand and therefore evaluate the import of intermediate technological advances that provide signals as to the eventual merit of a new technological development”. These postulates are also stressed by Subramaniam and Youndt (2005, p. 453), who point out that “An organization’s preserved knowledge influences its propensity to reinforce its knowledge”.
  - Thirdly, according to Cohen and Levinthal (1990, p. 129) “the concept of absorptive capacity can best be developed through an examination of the cognitive structures that underlie learning”. In addition, this learning depends on individuals, not only on the organization. Cohen and Levinthal (1990, pp. 131–132) postulate that, “An organization’s absorptive capacity will depend on the absorptive capacities of its individual members... an organization’s absorptive capacity does not simply depend on the organization’s direct interface with the external environment. It also depends on transfers of knowledge across and within subunits that may be quite removed from the original point of entry”. Likewise, according to Cohen and Levinthal (1990, p. 132), to understand the sources of a firm’s absorptive capacity, we must focus on the structure of communication between the external environment and the organization, as well as between the subunits of the organization, and also on the character and distribution of expertise within the organization.

- Moreover, Cohen and Levinthal (1990, p. 130) postulate that “problem solving and learning capabilities are so similar that there is little reason to differentiate their modes of development”.
    - Similarly “some psychologists suggest that prior knowledge enhances learning” Cohen and Levinthal (1990, p. 129).
    - In addition, according to Cohen and Levinthal (1990, p. 130) “the literature also suggests that problem-solving skills develop similarly. In this case, problem-solving methods and heuristics typically constitute the prior knowledge that permits individuals to acquire related problem solving capabilities...”.
  - Hence “the firm invests in absorptive capacity by developing the expertise that subsequently permits evaluation, assimilation, and exploitation of knowledge from the environment” Cohen and Levinthal (1994, p. 230).
2. However, Cohen and Levinthal posited other ways of developing this prior related knowledge, stressing that, “More typically, however, absorptive capacity is developed as a by-product of some other activities such as R&D or manufacturing” Cohen and Levinthal (1994, p. 227).
- Innovation is the intended outcome of most R&D efforts (Cohen 1995). Cohen and Levinthal (1990) formulate a model in which R&D contributes to a firm’s absorptive capacity. As Cohen and Levinthal (1990, p. 229) stress, “absorptive capacity may be created as a by-product of a firm’s R&D investment”, or as they also highlight, “a firm’s ability to exploit external knowledge is often generated as a by-product of its R&D.... we assume that R&D not only generates new knowledge but also contributes to the firm’s absorptive capacity” Cohen and Levinthal (1990, p. 138). Likewise, “With regard to R&D....firms which conduct complementary research in-house are better able to exploit contract research...” (Cohen and Levinthal 1994, p. 227).
  - “With regard to manufacturing,.....through direct involvement in the manufacture of a product, a firm is better able to recognize and exploit new information relevant to that particular product market” (Cohen and Levinthal 1994, p. 227). Similarly, Cohen and Levinthal (1990, p. 129) point out that “product experience provides the firm with the background necessary both to recognize the value of and implement methods to reorganize or automate particular manufacturing processes”. Moreover, “when organizations harness their preserved knowledge through structured recurrent activities, they deepen their knowledge and further legitimize its perceived value..... Eventually, such processes create a path-dependent trajectory of reinforced knowledge” (Cohen and Levinthal 1990; Subramaniam and Youndt 2005, p. 453).

## 2.3 TQM as an Antecedent to Absorptive Capacity

The consideration of TQM as a source of knowledge creation is not a new issue (Rose and Ito 1996). TQM principles such as continuous improvement and learning orientation suggest that the deployment of TQM practices would have a positive

impact on internal knowledge creation (Lima et al. 1999) and transfer (Molina et al. 2004). Different tools and assessment practices enable knowledge creation which fosters product and process innovation, and greater customer satisfaction (Camisón et al. 2009). The PDCA cycle and the generalized use of analytical tools throughout the organization contribute to building a shared vision and knowledge base which is continuously renewed (Choo et al. 2007). Likewise, TQM fosters inductive learning through experimentation (Ruiz-Moreno et al. 2005; Martínez-Costa and Jiménez-Jiménez 2008). The most important thing is that learning occurs at all levels of the organization and is related to regular activities.

Equally, TQM principles promote cooperative relationships with suppliers and customers. The entire supply chain is considered in the process of value creation (Powell 1995), and stable trustful relationships are developed. TQM stimulates customer loyalty and satisfaction (Black and Porter 1995; Powell 1995; Tummala and Tang 1996) and promotes the consideration of value from the customer's side. This requires a deep understanding of the customer's explicit and latent needs. Customer Orientation, the first TQM principle, encourages scanning and identifying user's latent and explicit needs (Linderman et al. 2004; Prajogo and Sohal 2001).

Suppliers are as important as customers, considering the entire supply chain enables a long term relationship which makes cooperation and knowledge exchange possible (Ruiz-Moreno et al. 2005; Tarí et al. 2007). As a consequence of such organizational openness, TQM enables the acquisition and assimilation of external knowledge (Arumugam et al. 2013; Martínez-Costa and Jiménez-Jiménez 2008; Ruiz-Moreno et al. 2005; Molina et al. 2007).

According to Moreno-Luzón et al. (2000), TQM develops an extensive and close internal network. Process management and teamwork enables mutual learning and knowledge transfer. In the same line of research, Molina et al. (2004) confirm that ISO standards improve knowledge transferability, while TQM enables internal knowledge transference.

Likewise, TQM promotes the development of multiple communication channels linking the organization to its environment (Fernández-Pérez and Gutiérrez-Gutiérrez 2013). As Moreno-Luzón et al. (2000) show, when this network is decentralized throughout all departments and hierarchical levels, a firm's absorptive capability increases due to the symmetry of experience and expertise between partners. As Cohen and Levinthal (1990, p. 129) state, "some psychologists suggest that prior knowledge enhances learning".

The above paragraphs show a wide body of literature research that clearly demonstrates how TQM promotes internal and external learning. However, this learning is mainly focused on improving the effectiveness and efficiency of the established strategy and its current processes (Birkinshaw et al. 2008; Walker et al. 2011). As Volverda et al. (2013, p. 11) underline, little research is devoted to analyzing how TQM contributes to managerial innovation.

In this regard, we must remember that TQM was developed in the field of operations and its major gurus are mainly engineers (Camisón et al. 2006). During the last decade of the twentieth century, most of the research in the managerial field analyzed TQM from resources and capabilities based views, theoretical frameworks which provide an outside-in focus. In the same vein it is well recognized how TQM increases a firm's resource endowment and learning capabilities. However a strategic



customer-focused view with an inside-out focus (McGrath 2010) is lacking. In the next sections, we propose how recently proposed customer-oriented strategic models, based on Austrian Economics principles, could help Academics and practitioners to better understand how TQM fosters exploratory innovation.

## 2.4 Action-Based Management

Here we use the term Action-Based Management (ABM) from Madhok and Marques (2013). Under this label we will consider a set of different strategic models based on Austrian Economics principles. Without intending to be exhaustive, we present an outline of the basic and shared axioms characterizing these models:

- **Customer orientation.** The strategy is centred on the customer. Thus, deep customer knowledge becomes paramount (Hax 2010; Kim and Mauborgne 2005; Madhok and Marques 2013). The firm must embark on a continuous search process, looking for present and potential user's needs—what Kim and Mauborgne (2005) label as 'visual exploration' and Hax (2010) terms 'customer segmentation'.
- **Focus on Value Innovation.** This principle is based on theoretical propositions from the field of marketing, namely Service-Dominant Logic (Lusch and Vargo 2006; Vargo and Lusch 2004a, b, 2006, 2008), and from the field of strategy (Priem 2007). Firms can only articulate value propositions because 'value is always uniquely and phenomenologically determined by the beneficiary' (Vargo and Lusch 2004a). A value proposition is innovative when it creates disproportionate value at a low cost (Kim and Mauborgne 2005). Value innovation is a conjunction of creativity, customer understanding and technology (Ibid.) and is the result of an entrepreneurial strategic process (Ireland et al. 2003).
- **Opportunities are created and captured.** Markets are in a constant state of flux (Schumpeter 1942; Kirzner 1997; Jacobson 1992). From this '*reconstructionist*' view of strategy, restrictions on firm behaviour are due to the absence of entrepreneurial knowledge. That is, innovation depends on a cognitive reconstruction of existing data and market elements in a fundamental new way (Kim and Mauborgne 2005). Thus, mature businesses exist only in the minds of mature managers (Baden-Fuller and Stopford 1994) or in a similar way; commodities only exist in the mind of the inept (Hax 2010, p. 11). Therefore, the relevant challenge is not catching a competitor's market share, but creating totally new markets where competition becomes irrelevant (Kim and Mauborgne 2005). In order to capture and capitalize transient opportunities, timing and organizational flexibility are critical success factors (Madhok and Marques 2013).
- **Consider the *extended enterprise*.** That is, align the whole system of activities, including those carried out by customers, suppliers and complementors (Hax 2010; Kim and Mauborgne 2005). Creating or reconstructing an industry requires changes in the entire system, and in the way constituents create, deliver and capture value (Zott and Amit 2010). Thus, suppliers and complementors become



partners in the value creation process, and the firm must choose to engage in those activities which constitute the cornerstones of the entire system (Zott et al. 2011).

- **Strategic Planning as a fair process.** The Strategic process requires organizational engagement and open dialog throughout the organization leading to consensus (Hax 2010, p. 12). That is agreement, at least between key executives and everybody's buy-in. Also transparency is important for two purposes: Everyone involved in the new value proposition should understand it and the underlying assumptions behind it; and expectation clarity, that is, everyone understands his new role (Kim and Mauborgne 2005, pp. 175–176).
- **Leadership guides the searching process and promotes change.** Given that the entrepreneurial, strategic process is a 'crossing of the desert' that requires vision and guidance. This model presents a pragmatic leadership focus, the leader concentrates his efforts on the people and activities which have a disproportionate contribution to value creation (Kim and Mauborgne 2005, p. 151).
- **Metrics and experimentation: key success factors for organizational learning.** As Alvarez and Barney (2007, p. 15) state: "rarely will entrepreneurs be able to see 'the end from the beginning'". Thus, intuitive thinking (Kim and Mauborgne 2005, p. 67), experimentation by trial and error and proper assessment and measurement tools, to quantify value created for customers and other constituents (Hax 2010; Madhok and Marques 2013), are key elements for discovery and learning.

These principles sustain an alternative way of carrying out innovation and value creation. The traditional way is based on possessing the proper resource base (knowledge and financial), tight process control (financial risk control), and a top-down elitist focus, where a few (engineers and scientists) create innovations based on the cutting edge of knowledge technology. ABM proposes a different way where resources are secondary, what's really important is sensing and creating new opportunities. The customer is the key, not only today's customers but also underserved customers. Customer contact becomes a cornerstone and, as a consequence the process should be participative in a bottom-up-bottom way. Finally, the process is flexible and recursive, based on intuition, trial and error and learning by doing.

After presenting axioms that make up these entrepreneurial, customer-oriented strategic models we will devote the last section to showing how AMB axioms and TQM principles present relevant coincidences.

## 2.5 TQM as ABM Enabler

This paragraph looks at the correspondence between TQM principles and ABM axioms (Table 2.1).

As Table 2.1 shows, correspondences are numerous and relevant. TQM principles provide a sound basis for ABM deployment. These similarities indicate that TQM systems could be focused not only toward operational excellence and deliberate planning, assumptions that underlie Business Excellence Models. Alternatively,

**Table 2.1** TQM and ABM correspondences

ABN axioms	TQM principles	Degree of matching
Customer orientation	Customer orientation	<b>Very High.</b> Both are demand-side/ Customer-oriented focus
Focus on value innovation	Strategic orientation to value creation	<b>Low.</b> While TQM fosters traditional deliberated strategic planning, ABM advocates inductive processes where the strategy is shaped by action
Opportunities are created		<b>Null.</b> TQM focus on operational excellence and incremental value creation
Consider the extended enterprise	Development of Alliances and External Cooperation	<b>High.</b> Both advocate considering the entire supply chain while ABM highlights network effects
Strategy as a fair and open process	Teamwork and Internal Cooperation	<b>High.</b> Both require the entire organization's engagement, but role division may differ
Leadership guides searching processes	Visionary Leadership	<b>High.</b> Both highlight the need for a leader who leads the way and protects from fear
Metrics and experimentation	Managing by Facts	<b>Very High.</b> Both foster experimentation and learning from hard facts through key performance indicators

TQM could be focused on unleashing entrepreneurial strategic processes oriented to create and capture new market opportunities. As Volverda et al. (2013) stress, the relationship between TQM and exploratory innovation remains unexplored, but it seems promising. Here we propose developing future research to examine how TQM contributes to performance in exploration-oriented firms. Likewise, new evidence is required in order to understand how traditional innovation processes and ABM innovation dynamic could be harmonized and generate synergies. Finally, it is necessary to determine the circumstances under which each of the two innovation focuses is more appropriate.

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