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**Absorptive Capacity: A Hub of Blue Ocean and Red Ocean
Strategies and Capability Transformation in Innovative Business
Environments**

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Absorptive capacity: a hub of blue ocean and red ocean strategies and capability transformation in innovative business environments

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Abstract—Firms operating in innovative environments often keep track of their strategies (Blue Ocean and Red Ocean) by keeping a balance of market exploration and exploitation. There comes a point where companies feel that transformation of their capabilities to adopt a contrasting strategy requires capability transformation. This study addresses this process through absorptive capacity. Our study argues the pivot role of absorptive capacity by effective utilization of resources in capability transformation to adopt the contrasting strategy while keeping a balance of exploration and exploitation in the organisation.

Keywords—*absorptive capacity; innovative environments; business strategy; red and blue ocean; capability transformation.*

I. INTRODUCTION

Firms operating in innovative business environments compete on the grounds of available resources as the basis of their strategy formulation. Organisations which compete with a Resource Based View (RBV) protect the technologies and business processes which they employ, against imitation, transfer and substitution; their focus is aligned with long term competitiveness in the marketplace [1], strengthening their processes in order to achieve this goal of competitiveness. On the other hand, firms competing on the basis of Dynamic Capabilities (DC) focus more on sustainable competitiveness [2]. In order to achieve this, they create new adaptable processes and replace old with new innovative methods.

Competition among firms is often triggered by the business environment in which they operate and the fast change in current technologies. New external knowledge is continuously explored and exploited by firms using systematic processes; this systematic process of knowledge acquisition, assimilation and transformation between the exploration and exploitation of new external knowledge has been named as Absorptive Capacity (ACAP). It may be based on an organisation's Operational Effectiveness (OE) or it may be strategy based

dependent on the availability of resources and the capabilities of the firm [3]. The availability of existing capabilities of a firm enables it to decide whether they are suitable for the blue ocean strategy or if they should compete in the red ocean.

This paper, through critical review, aims to compare both firm types (those who take an RBV approach vs. those who base their strategy on DC). Also discussed is how, on the basis of resource and capability availability, a firm can transform their strategy from Red Ocean to Blue Ocean and vice versa; it is argued that simply opting for a blue ocean approach does not guarantee smooth success and operation. Furthermore, discussion is provided on the considerations which firms must take before opting for a Blue Ocean strategy approach. Firms who adopt an RBV approach and compete with firms with DC are also discussed with solution suggestions.

This paper aims to answer the following four questions: 1) What leads an organisation to consider their destiny in a turbulent business environment? 2) What forces a firm to consider realigning or regenerating their organisational knowledge processes to reach their destiny? 3) How does a firm transform its capabilities in order to change its posture of strategy to avoid disaster? and 4) How does Absorptive Capacity provide a hub between capabilities attributing to Resource Based View and Dynamic Capabilities for selection of Blue Ocean and Red Ocean strategies?

II. STRATEGY AND OPERATIONAL EFFECTIVENESS

An organisation's operational effectiveness and strategy are both important factors for improving the performance of a company; however, they often work in two distinct ways. Organisations which differentiate these two in practice can outperform their rivals. The key metric for many organisations is profit versus the cost of production and delivery; these activities are the basic units of an organisation's competitive advantage. Operational effectiveness is the utilization of any

number of activities in reducing corporate defects and producing better products compared to competitors. On the other hand, strategic positioning means performing those activities which are different from competitors or performing the same activities as of competitors, but using different methods. Competition based on operational effectiveness alone cannot be sustained for a long period of time and at some point, depending upon the marketplace, may lead organisations to face difficulties in competing or sustaining their position. An organisation's strategy may be variety based, need based or access based; the selection of the correct strategy requires a selection of different activities and considerations.

A. Blue Ocean Strategy and Red Ocean Strategy

The growing demand of customers in today's global marketplace encourages companies to begin operation or diversify into the market to meet customer requirements. There comes a time, however, when the demand of customers and supply from businesses achieves a break-even point and the market becomes saturated. This is the point where organisations must re-think or revise their business strategy. If an organisation continues to compete in the same environment and location as its competitors and offers the same product(s) without diversifying, this is termed Red Ocean strategy. On the other hand, if an organisation chooses to re-locate and establish their business elsewhere, where there are none or limited competitors, or chooses to change the dynamics of its product while staying in the Red Ocean, then this is termed as Blue Ocean strategy; incumbent companies and firms with limited resources facing difficulty to compete in Red Ocean often choose to follow this strategy [4].

B. Resource Based View and Dynamic Capabilities

Research [5, 6] relating to RBV defined 'Business Capabilities' as a bundle of skills and knowledge in respect to the management of assets and the coordination of activities. The capabilities specific to a firm stems from the business processes and applications it adopts; based on repetition, it may be hard for rival organisations to imitate these [7]. These business specific capabilities constitute the basic resources of the business to achieve long-term competitive advantage and performance. However, the use of these resources to gain competitive advantage has something to do with the strategic decisions taken by executives of organisations. Furthermore, changes to a business, to sustain the competitive advantage it has gained, depends on if the existing or potential capabilities are valuable, unique, non-substitutable and inimitable and on the special synergy caused by these capabilities in the firm.

The emergence of the RBV has brought with it an organisational focus on capability, competency and innovation as drivers to building successful organisations [8, 9]. A firm's ability to compete is increasingly seen as being rooted principally in the skills and knowledge of its employees.

Rapidly evolving business environments, however, tend to decrease the useful life span of such skills and knowledge; organisations must, therefore, continuously adapt to the environment in which they are working in order to maintain their fitness for survival [6].

Organisational life is characterized by the continuous need for an organisation to adapt to dynamic environments and to generate innovative products or enhancements to existing lines in order to meet or create future customer demands. Organisations must, therefore, sustain their stability and preserve their identity in order to ensure steady performance in the marketplace; moreover, companies may benefit from replicating existing models and fine-tuning processes.

Dynamic capabilities, embedded in ambidextrous organisations, can be defined as routines that facilitate both development modes and balance the tension between exploration and exploitation. Firms that perform applied Research and Development (R&D) can be perceived as ideal types of ambidextrous organisations, as they complete basic research with an exploration mode and in development (i.e. pure commercial research and consulting projects) with an exploitation mode; their trade-off between exploration and exploitation is inherent [10].

III. ABSORPTIVE CAPACITY

Absorptive capacity has been defined as the ability of an organisation to recognise new external knowledge entering the business [9]. After processing this new knowledge, companies must exploit it to maintain long-term competitive advantage. The dimensions of absorptive capacity, according to research Zahra and George [11] are: Acquisition, Assimilation, Transformation and Exploitation. In turbulent business environments, technologies are changing and improving extremely fast and there is a need to upgrade the ACAP of an organisation on a periodic basis. The stronger an organisation's ACAP process, the more competitive the firm will be and the greater potential it will have to grow in future.

Firms which possess enriched resources may be able to strengthen their ACAP, compared to firms with less developed resources. Firms which have dynamic capabilities along with enriched resources have good idiosyncratic learning behavior, which leads to the maturing of the process in less time, as opposed to firms with less developed resources. The maturity of the process determines if a firm is able to gain long-term competitive advantage, sustainable competitive advantage or fade from the business environment, due to failure of strategy. Corporate resources play an important role in the strengthening of the process, as the mere capabilities of a firm may not be sufficient. The key role of ACAP, in achieving competitive advantage, cannot be ignored and the continuous up-gradation, in alignment to the changing business environment, needs to be

completed; resources at this stage must be integrated into this process for best utilization.

A. Resources as a Focal Point

One key consideration for any organisation is its resource base. Resources include all tangible and intangible goods. The most important resource, however, is employee knowledge. The infrastructure of a firm and its physical resources play an important role in performing the activities, either in operational effectiveness or in the context of strategy. The optimized employment of resources leads a firm to be effective and efficient in performance. Resources are the first asset which should be analysed and audited before starting the planning of a new business strategy. The competence of a firm is applied on the basis of available resources, while competences and opportunities are analysed on the basis of the resources of the firm. The mere availability of capabilities, without sufficient resources, is meaningless. Whenever there is a need for changing the posture of an organisation or changing the trajectory in order to compete with competitors, the first thing which needs to be evaluated is the reallocation of resources. Intangible resources are focused and are normally enhanced by the firm. Resources linked with non-value added activities may be omitted or reduced to strengthen the resources linked with value-added activities. The path from resource audit to the development of strategy is illustrated in Fig 1.

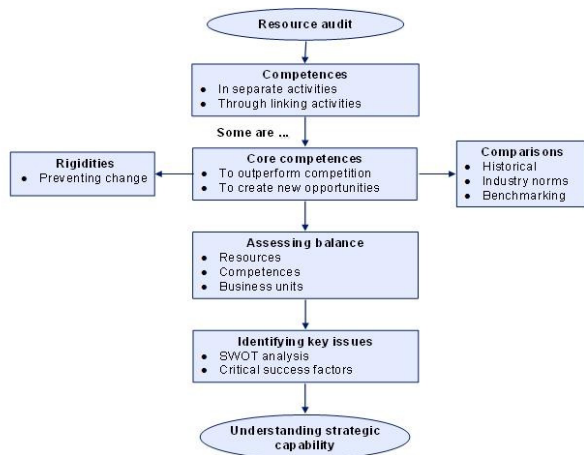


Fig. 1. Defining strategy through resource audit, based on [3]

B. Sustainable Competitive Advantage through Dynamic Capabilities

The sustainable competitive advantage of an organisation is achieved on the basis of the dynamic capabilities it possesses.

Dynamic capabilities require strong resources and a well-established resource base. The main focus of a firm is on the development and continuous up-gradation of its capabilities. Today's business environment requires different sets of capabilities to perform specific activities in a specific context or domain. At the same time, the knowledge in the market, because of the change in customer demands, keeps on changing. Ambidextrous organisations strive to match the frequency of their efforts with the environment and, at the same time, their competitors are also competing for competitive advantage. Firms, therefore, are required to follow changes in market demand and their competitor's position simultaneously i.e. they have to explore new knowledge in order to compete with their competitors and exploit the existing knowledge in order to strengthen their own position. If a firm makes the first move by introducing new products, they create an advantage and competitors may follow them; this strategy may improve their performance and position in the marketplace. Their aim is to stay ahead of competition, but to stay ahead, they need to invest to strengthen their capabilities, for which they need a strong resource base. The new knowledge explored in the market is processed through the ACAP process.

A firm employs its dynamic capabilities through their resources in order to create new processes or change the dynamics of existing processes. The ACAP process assumes that the firm has sufficient prior knowledge in order to process new acquired knowledge. On this assumption, firms invest to enhance their capabilities. The Red Ocean is a platform that requires a firm to keep ahead of technology and customer demands if they wish to stay in this platform. Firms compete in this platform on the basis of competence and dynamic capabilities as a strong resource base and the core competence is a necessary condition for 'just to play a game' at Red Ocean. Firms may strike an effective balance of exploration and exploitation keeping in view the requirement of the current business environment. The endless race among competitors is often experienced in the Red Ocean. Sometimes, however, resources and capabilities remain underutilized or over utilized which can lead to firms decelerating the effective path and compromising on cost effectiveness; this is a big challenge for organisations as they have to compete for sustainable competitiveness as well as fight with resources in-house.

C. Long term competitive advantage path through Resource Based View

In an ambidextrous environment, firms need to be proactive at all the times. Competitors, while competing in the Red Ocean, continuously think about new methods to become the market leader and sustain that position. On the other hand, firms which have less developed resources, as compared to ambidextrous firms, mainly focus on their existing resources, as can be seen in Figure 2.

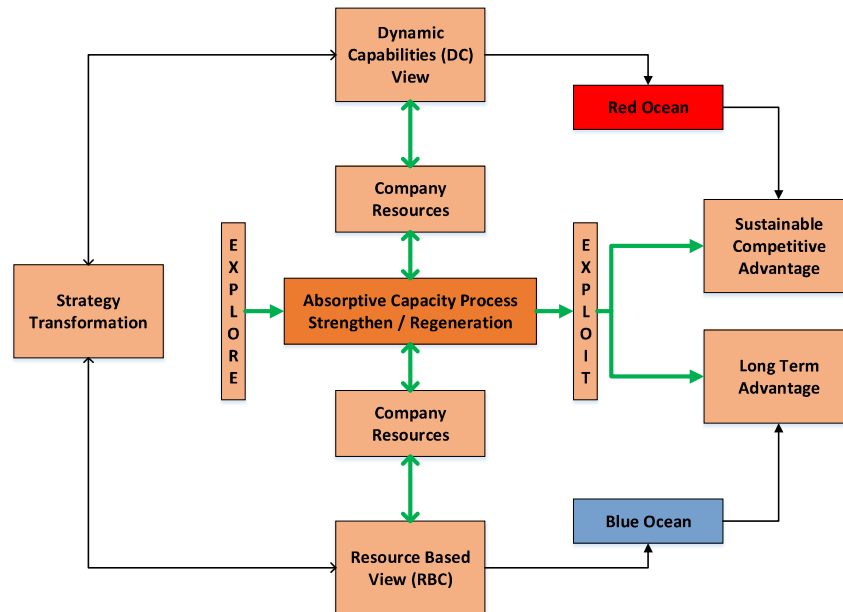


Fig. 2. Absorptive Capacity as a Hub of Blue and Red Ocean Strategies

Organisations must continuously strengthen their business processes and manage their resources effectively. Cost effectiveness is a main focus for an organisation, while keeping in mind their business situation and market/customer demands. A firm with a RBV protects their resources against imitation, transformation and substitution, which is the conceptual theme of RBV; these firms may have strong capabilities and a potential to grow, but may not have sufficient resources to execute practices, like ambidextrous organisations whom possess enriched resources. These organisations are left with only one option and that is to strengthen their own capabilities while living with scarcity of resources. During this time, they face competition and growing market demands, creating diverse requirements from new and existing customers. They compete with limited resources with the challenge of exploring new knowledge and exploiting existing knowledge. At the same time, they do not want their unique resources to be used by competitors, as it may shatter their distinction; they do this through the tacitness of knowledge and/or through patents, as they know that the secrecy is an advantage over competitors. A major portion of their strategy considers operational effectiveness, excluding unique resources; all competitors perform similar activities, with small deviations from that of the company, which may not be purely operational effective, but may not be termed as strategy even. They follow this blended approach of strategy and operational effectiveness strengthening the ACAP process, with little up-gradation being the main concern of the organisation.

Firms focus their internal processes and routine procedures to make the ACAP process stronger. The process is affected by organisational mechanisms with different intensities, as pointed out in the work of Jansen et al. [12]. They focus on the acquisition and assimilation of new knowledge and transform it into tacit knowledge; this gives firms an edge over competitors. These firms, however, may not be able to exploit new knowledge like that of an ambidextrous firm. They can often become limited in their scope and cannot compete with confidence, as market demands change rapidly. They may not be able to align their capabilities and resources with the same pace as the market. The pace of these firms may slow due to the scarcity of resources and capabilities owned, as well as the firms competing in the red ocean in an ambidextrous environment. If these firms are unable to keep pace with enhanced capabilities, their position in the market may decelerate, while time passes and technologies develop; these firms are pushed into a corner and may lose their identity indefinitely. The remaining option for them is to introduce unique selling points to their products or shift their business from a saturated state into a more competitive state, where limited competition exists; this shift from a place outside the Red Ocean, or finding the position with identity in the Red Ocean, is termed 'Blue Ocean' strategy. Blue ocean strategy provides firms with an opportunity to grow independently, without competitors, where companies may enjoy benefits such as long-term competitiveness. Companies may promote their brand and hold a dominant position in the market as long as no competitors exist. IKEA, the global home furnishings

organisations, found this strategy helpful. Following this strategy and moving away from their main market provided them with a unique identity, which makes them now a sole Red Ocean company with limited competition. Apple, the global phone manufacturer, found a gap in the marketplace in the development of smart mobile phones and have been able to keep themselves performing in the Red Ocean. By investing in iPhone technology, Apple have created a Blue Ocean in the Red Ocean and become a market leader in the smart phone market. Apple resources, as far as mobile phones are concerned, were not comparable with the resources owned by their competitors, such as Nokia or Samsung. Apple focused on the ACAP process and aligned its resources with a focus not to compete in the Red Ocean, but with a focus on creating a Blue Ocean within the Red Ocean; the company invested heavily on exploring new knowledge, assimilating it effectively and exploiting it in a smart and productive way. The ACAP process gave them a boost, but at the same time, the resources and capabilities were well aligned, though less developed, as compared to Nokia and Samsung. The focus of Apple was, therefore, on brand identity which was unique in the smart phone marketplace; this is a main point of concern, as far as the Blue Ocean strategy within the Red Ocean is concerned.

D. Firms with Appropriate Resources but adopting the Wrong Path

Sometimes, firms accidentally mismatch their capabilities, resources and ACAP process; this mismatch may lead to inefficiencies, which in-turn, may lead them to wastage of resources and efforts and, therefore, practices, such as lean manufacturing, should be adopted in order to minimise wastage. Through this wastage and their own inefficiencies, they may be lead to lose their dominant market position; irrespective of a business strategy, firms are forced to respond to the changing dynamics of the market and customers.

E. Mutual Transformation of Capabilities (RBV and Dynamic Capabilities)

This is not a solution for firms which have appropriate capabilities and resources but follow the wrong path, rather this section discusses scenarios where firms have well established networks and a strong understanding of their own capabilities. The capabilities are not, however, well aligned and their performance is affected due to one of a number of reasons. Firms decide to change the posture of their business for their strategy to be realigned. As discussed, specific capabilities are required for each path. Firms require these capabilities to be switched over i.e. forming dynamic capabilities to a RBV or vice versa. It is argued that this switch is not a simple process, but rather a systematic one; this process of interchanging capabilities is termed as Transformation Process.

There are certain conditions and considerations for the transformation of a business's capabilities. Dynamic

Capabilities are mostly related to ambidextrous organisations and are effective for turbulent business environments. If an organisation wants to switch to a RBV, the firm must decide which capabilities are required and at what stage. The Red Ocean is completely different from the Blue Ocean and so are its capabilities. The requirements of companies operating in the Blue Ocean need to be identified first and the over or under assessment may lead to wastage of resources by the company.

IV. ABSORPTIVE CAPACITY AS A HUB BETWEEN A FIRM'S NETWORK ACTIVITIES

Organisations which focus on specific strategy pools increase their resources to meet long-term and short-term goals. At times, these resources, efforts and business targets are not aligned, which could lead them to re-think either their transformation of capabilities or shift their current business strategy. The transformation of capabilities, from RBV to dynamic capabilities and vice versa, and shifting of a strategy from Blue Ocean to Red Ocean and vice versa, is directly or indirectly dependent upon the ACAP of a firm. The transformation process, while going from low to high level of transformation, and strategy shifting inertia, may be effected by insufficient absorptive capacity; in other words, absorptive capacity comes into play either way [9].

Firms also aim to achieve either long-term competitive advantage or a sustained competitive edge over their competitors; they adopt different approaches, such as the effective management of assets both physical and intellectual [13], securing unique resources through intellectual property rights [14], foreign direct investment and spill-overs [15] and continuously building ACAP within their organisational boundaries [11]. ACAP, being the capacity of a firm to deal with new knowledge, both internal and external, incorporates every aspect of a firm dealing with new knowledge entering the business, thus linking different business activities and external networks with the firm. Long-term competitive advantage and sustained competitive edge are majorly dependent on a firm's resources and operational effectiveness, which in-turn is dependent upon their effective utilization of resources; firms with high ACAP may achieve these goals more effectively as compared to firms lacking in effective absorptive capacity.

Organisations operating in ambidextrous environments are constantly under threat of new entrants to the marketplace. Changing this threat to their strength is an effective method of eliminating this threat and allows businesses to enjoy competitiveness over their rivals. Firms investing heavily on the development of assets and resources in order to develop innovative products, compared to their rivals, require a knowledge base, both from inside and outside of their organisational boundaries in the form of ACAP [16].

ACAP, as a hub of all network activities inside a firm, contributes directly or indirectly as follows: Switching between

capabilities of the firms (RBV and DC); Switching strategy postures (Blue Ocean and Red Ocean); Switching between physical and intellectual resources; Creating balance between the exploration and exploitation of new knowledge to achieve a desired destiny; Defining and redesigning the business strategy; Evaluation of threats of new entrants to the market; and Resource auditing for future planning purposes.

V. DISCUSSION

Firms may switch between capabilities, based on lack of resources, loss and gain in business and adoption of different strategies. At the same time, the utilization and exploitation of resources is required at each change or transformation interval, either from the high-level of their position or otherwise; this requires ACAP to come into play. Firms require an ability to gain knowledge and build ACAP while going from low to high-level transformation, whereas, de-absorption of knowledge and the redefining of ACAP, is required during transformation, from high-level to low-level in business. Resource re-allocation, defining a firm's new path, setting new goals, defining new customer segments for new product(s) and human capital and physical assets, require knowledge-based analysis capabilities and strong absorptive capacity. ACAP inside an organisation is required, if it is to adapt to these changes effectively. Apple, for instance, had a strong position in computing and made a shift towards smart phone technologies. The comparison of resources and infrastructures required for computer and smart phone technologies refer to the transformation of capabilities from a higher level to a lower level. Apple managed to complete this transformation successfully with the effective management of ACAP and has successfully changed their strategy position of Red Ocean to Blue Ocean, based on their ACAM and dynamic capabilities.

VI. CONCLUSION

Companies which follow a resource based view produce products which cannot be successfully copied and possess unique resources, which are strong assets to the firm for long-term competitive advantage. On the other hand, firms which follow a knowledge-based view, focus more on the latest knowledge, as this is a strong benefit for market competition and domination. Businesses operating in turbulent markets need to develop effective ACAP, irrespective of their adopted strategy, to remain successful; Absorptive capacity should be embedded into each artery of an organisation.

This paper has explored the key role of absorptive capacity in turbulent and innovative business environments, while producing a framework of alternate postures which can be adopted in case of a mismatch between desired outcomes and results. Although extant literature is enriched in ACAP studies, there is less identification on how to gel this capability within routine organisational processes and this leaves a noticeable

gap which needs to be explored further; it is strongly advised that potential researchers exploring the field of knowledge management, explore absorptive capacity further to understand its impact, but also to consider a meshed approach to incorporate it into organisational routines, starting from grass root level. Absorptive Capacity in relation to Human behaviour mechanisms also needs to be explored further, as employees are the basic units in the absorptive capacity process.

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