Innovation Capability: A Critical Review of its Role in Determining Firm Performance

Muhammad Arafat Noordin
arafatprofit@gmail.com
Dr. Shahimi Mohtar
shahimi@uum.edu.my

College of Business, Universiti Utara Malaysia,
06010 Sintok, Kedah Darul Aman, Malaysia

Abstract

The recognition of innovation capability as a key success factor in an increasingly competitive, global economy has laid the groundwork to explore new practices of management. Innovation capability is the ability of a firm to transform an idea into a something new which carries an economic value. The economic value would then increase profit and consequently firm performance. However, prior empirical study on innovation capability does not provide conclusive evidence regarding the relationship between innovation capability and firm performance. This paper tends to explore the conflicting results that link between the two variables.

Keywords: Innovation, Innovation Capability, Performance

Introduction

Rapid changes are taking place at present, with increasing competition both in the domestic and international market. In order to meet these changes, a firm should have the innovation capability to create superior products which are different from others. Deeds, DeCarolis and Coombs (1999) shared the same view when they claimed that firms should rely on unique and innovative ideas to survive and compete in the fast changing and aggressive market.

In addition, firms can no longer rely their business merely on domestic market. They need to seek opportunity and compete in the global market place. In order to compete in the global competition, being innovative is paramount. Other than enjoying lower cost (Neely, Filippini, Forza, Vinelli, & Hii, 2001) and increasing productivity (Alsaaty, 2011), innovative firms are capable of introducing or improving products or processes; define and redefined the firm or product positioning in a new market place (Francis, 2005; Darroch & McNaughton, 2002).

Even though there are indications that innovation capability is important to a firm, prior empirical study on innovation capability does not provide conclusive evidence regarding its relationship with performance. There were conflicting results that link between the two variables. This paper tends to look into the relationship between innovation capability and firm performance.

Definition of Innovation Capability

There are various definitions of innovation capability in the literature. Browsing from previous articles, some researchers used the term innovation capability to refer to innovation or innovative organization or innovativeness. The difference is found exists only in term of different sets of measurement approaches (Kumar & Che Rose, 2010). Innovation capability is the ability of a firm to transform an idea into a something new which carries an economic value. Value is something that is relatively worth which determines wealth creation. The economic value would then increase profit and consequently firm performance.

According to Ngah and Ibrahim (2011), innovation capability refers to a firm’s ability to generate knowledge in the form of intellectual property such as a pattern. Laforet (2011) refers...
innovation capability as availability of resources, collaborative structure and process to solve problems. Table 1 illustrates the definition of innovation capability captured from different authors.

**Table 1: Definition of Innovation Capability**

<table>
<thead>
<tr>
<th>Author (Year)</th>
<th>Definition of Innovation Capability</th>
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</thead>
<tbody>
<tr>
<td>Akman and Yilmaz (2008)</td>
<td>An important factor that facilitates an innovative organizational culture, capabilities of understanding and responding to the external environment and characteristics of internal promoting activities</td>
</tr>
<tr>
<td>Elmquist and Le Masson (2009)</td>
<td>Consists in generating new ideas and knowledge to take advantage of market opportunities.</td>
</tr>
<tr>
<td>Malaysia Productivity Corporation (2009)</td>
<td>The capability to generate new ideas which lead to higher performance, create new opportunities, increase future capacity, technological leadership as well as increased knowledge base through managing technological changes.</td>
</tr>
<tr>
<td>Wonglimpiyarat (2010)</td>
<td>The ability to make major improvements and modifications to existing technologies, and to create new technologies.</td>
</tr>
<tr>
<td>Laforet (2011)</td>
<td>Availability of resources, collaborative structure and process to solve problems.</td>
</tr>
<tr>
<td>Withers, Drnevich, and Marino (2011)</td>
<td>The degree to which a firm possesses resources and capabilities presumed necessary for innovation.</td>
</tr>
<tr>
<td>Ngah and Ibrahim (2011)</td>
<td>A firm’s ability to generate knowledge in the form of intellectual property such as a pattern.</td>
</tr>
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</table>

Source: Compiled by the Authors

Innovation capability is derived from the word innovation and capability. A Google search on the term using the keyword ‘innovation’ produced thousands of definitions. Innovation is production or adoption, assimilation, and exploitation of a value-added novelty in economic and social spheres; renewal and enlargement of products, services, and markets development of new methods of production; and establishment of new management systems (Crossan & Apaydin, 2010). It involves the process of identifying and matching external opportunities with internal opportunities in order to deliver new superior product and explores new markets (Ibrahim, Zolait, & Subramanian, 2009). Innovation implies invention plus exploitation which produces value. Innovation needs to be realized and possess the economic benefits to be perceived as innovation. In contrast, an invention without commercial value is not considered as innovation. Also, new ideas which are not useful are not considered as innovation; they are called mistakes (Van De Van, 1986).

On the other hand, capability has much to do the ability of a firm to generate and develop ideas and create opportunities which will guarantee the firm’s future undertakings. Capability is the processes and functions that enable a firm to deliver high quality product and services with speed, efficiency and high customer service (Allee, 1999). Makadok (1998) defined capabilities as a specific resource type that serves the purpose of improving productivity of the other resources of the firm. It is through capabilities that enable firms to create value and stay competitive. Difficulties associated with replication make capabilities a critical ingredient for a firm's survival.

**Performance**

Performance differences can be understood differently by different people in many aspects and connotations depend on the application. It refers to a standard that a firm does something. Traditionally, performance measurements were accounting oriented which emphasized on selective financial indicators such as return on investment. However, the area has evolved and it is measured differently based on the objective of a study as shown in Table 2. For example, Neely, Filippini, Forza, Vinelli, and Hii (2001) used four items to measure business performance, namely return in investment,
market share competitive position versus direct competitors, and value to the customer; whilst Rujirawanich, Addison and Smallman (2011) measured performance using measure of success also involving return on investment.

<table>
<thead>
<tr>
<th>Authors</th>
<th>Dimension</th>
<th>Indicators</th>
</tr>
</thead>
</table>
ii. Market share.  
iii. Competitive position versus direct competitors  
iv. Value to customer (the extent to which product and services are seen by customer as value for money). |
ii. Rate of return.  
iii. Expected growth.                                                     |
ii. Growth.                                                                 |
ii. Financial performance.  
iii. Product/service.                                                     |
| Al-Kazemi (2009)                             | Financial performance      | i. ROA.  
ii. ROS.  
iii. ROE.                                                                 |
ii. Profitability (ROA).  
iii. Productivity (ATO).  
iv. ROE.                                                                    |
ii. Profitability.  
iii. Market valuation.                                                    |
ii. Net profit ratio.  
iii. Loan loss recovery ratio.  
v. Repayment rate.  
v. ROA.                                                                 |
| Phusavat, Comepa, Sitko-Lutek and Ooi (2011) | Firm performance          | i. ROE.  
ii. ROA.  
iii. Growth in revenue.  
v. Employee productivity.                                                   |
ii. Profitability (ROA).  
iii. Productivity (ATO).                                                    |
Performance can be measured based on two concepts either an objective concept based on absolute measures of performance or a subjective concept based on self-reported measures. Objective measures are directly taken from external recorded and audited accounts using absolute measures; whilst subjective measures are based on the respondents’ ratings of their company performance (Wall, et al., 2004). Many researchers prefer to employ subjective measures because of several reasons. First, using subjective measure is cost effective where data is collected from questionnaires or interview surveys and it is widely used to measure business performance of public services, voluntary sector organizations and small enterprises. Second, financial data from firms are generally confidential and are publicly hard to obtain. Even some of them, especially those small entities might not have proper financial records (Kapelko, 2006).

### Innovation Capability and Firm Performance

Many scholars acknowledge that innovation capability of a firm is one of the crucial factors for it to survive and succeed. They agreed that innovation is related to firm performance (Chaveerug & Ussahawanitchakit, 2008; Fruhling & Siau, 2007; Rujirawanich, Addison, & Smallman, 2011; Phusavat, Comepa, Sitko-Lutek, & Ooi, 2011). For instance, Chaveerug and Ussahawanitchakit (2008) and Fruhling and Siau (2007) research findings indicate a positive and significant relationship between innovation and performance. Battor and Battor (2010) further highlighted that 22 percent of profit and 28 percent of sales growth from 700 companies with 13,311 new products between year 1976 and year 1981 came from new product launches. However, empirical study investigation on innovation capability shows conflicting results that link between the two variables as shown in Table 3.

### Table 3: Research Studies of the Relationship between Innovation Capability and Performance

<table>
<thead>
<tr>
<th>Author (Year)</th>
<th>Independent Variable</th>
<th>Dependent Variable</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fruhling and Siau (2007)</td>
<td>i. Innovation Strategy Model</td>
<td>Innovation outcomes: E-Commerce initiatives.</td>
<td>The organization that had a larger locus of innovation attributes appeared to thrive in the deployment of its E-Commerce initiatives (Qualitative case study).</td>
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<td></td>
<td>ii. Collaborative process.</td>
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<td>iii. Performance measures.</td>
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<td>iv. Education and development.</td>
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<td></td>
<td>v. Organization’s distributed learning network.</td>
<td></td>
<td></td>
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<td></td>
<td>vi. Intelligence market positioning.</td>
<td></td>
<td></td>
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<tr>
<td>Author (Year)</td>
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Source: Compiled by the Authors

Referring to Table 1, two studies were conducted by Booz & Company on the year 2005 and year 2009. They analyzed the statistical relationships between R&D investment and business result, and revealed that R&D to sales ratio which is the percentage of an organization’s revenue that it spends on R&D has no discernible relationship with most measures on financial performance (Jaruzelski & Dehoff, 2005; Jaruzelski & Dehoff, 2009). Jaruzelski and Dehoff (2005) added that using firms listed in the Global Innovation 1000, Intel (no. 12) is found spending 130 times as much as Cymer (no. 766), but their R&D to sales ratio was only 14 percent in the year 2004.

In relation, Battor and Battor (2010) claimed that the failure rate of new products is somewhere between 40 percent and 75 percent; and nearly 50 percent new products that are introduced each year...
failed. This failure rate implies costs that must be borne by firms which consequently deteriorate their performance. Due to this, Ahmad (1998); and Ibrahim, Zolait and Subramanian (2009) further concluded that innovation is linked to risks, and as a result most firms remain averse to give commitment and invest in innovation activities.

Future Studies

Despite the indication that innovation capability is important for firms to perform, there were no agreement between scholars that innovation capability will determine firm performance; thus creating a gap between both variables. Future studies may look into many raised issues and questions pertaining their relationship which researchers may wish to investigate further. Researchers may explore other mediating variables that are assumed have effect on performance such as firm age, organizational culture, technological facilities or ICT infrastructure.

Conclusion

Thousands of researches on innovation capability have been published to show its relative importance and relationship with performance. However, the link between the two variables remains uncertain. It indicates that there are still attempts to analyse the role of innovation capability and performance. Although no consensus has been reached on the definition, scholars agreed that innovation is beneficial to firm performance.

References


