

An Attempt to Understand How B2C High-Tech Start-ups Harness Innovation through Social Media

Dr Raja Yahya Alsharief & Arwa Al-Saadi

Faculty of Economics and Administration
King Abdulaziz University
KSA

Abstract

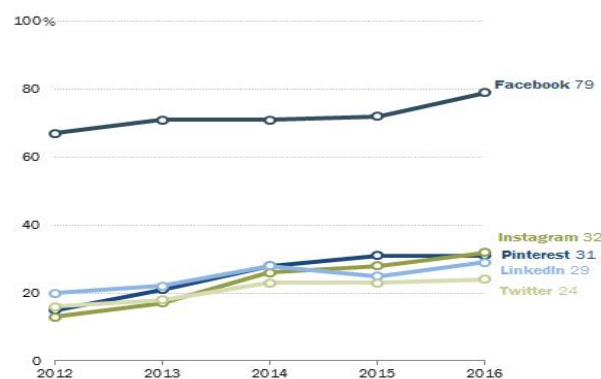
The rise of social media in business world today has been one of the major trends that are highly affecting business transactions worldwide. Existing literature focused on how businesses can leverage social media to better interact with their customers, deal with their questions and queries, and encourage them to participate in new product development and/or other marketing activities. Various studies investigated the increased use of social media by companies to drive innovation. This study attempts to understand how B2C high-tech start-ups harness innovation through social media through providing a deep analysis of the literature dealing with start-ups utilisation and/or usage of social media. The study also provides directions for future research in this area of the field.

Keywords: B2C, High-Tech, Start-ups, Innovation, Social Media

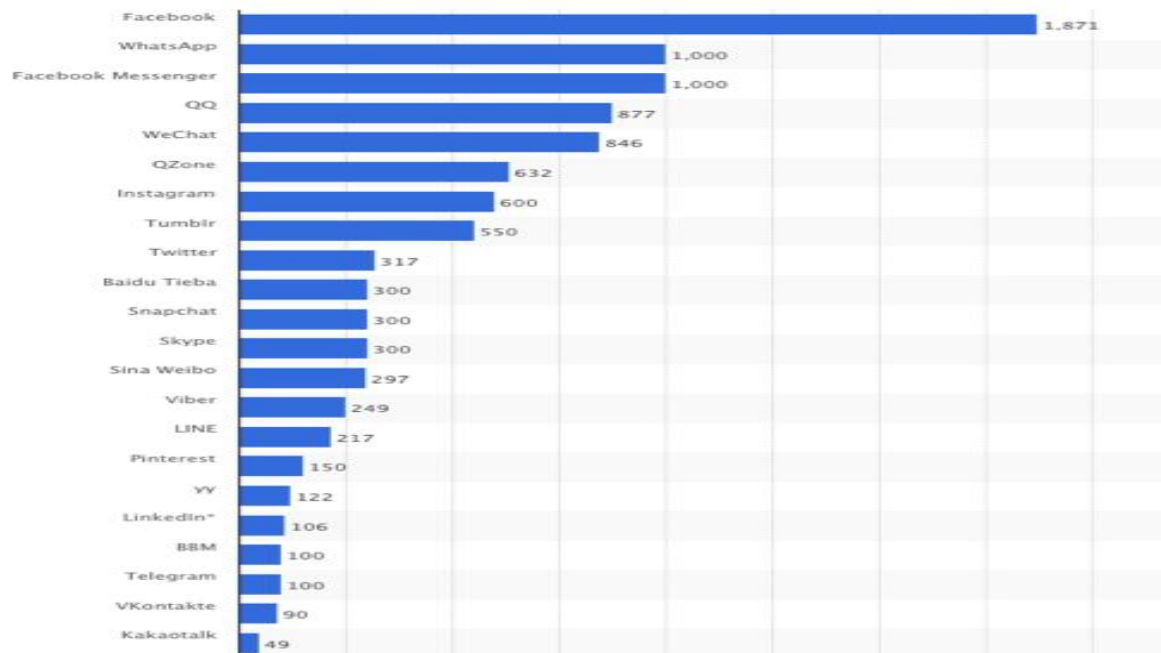
1. Introduction

The rise of social media in business has been one of the major trends in recent years. According to Narayanan et al., (2012), social media sites like LinkedIn, Facebook, and Twitter have sparked a business revolution. Companies have been using these sites and other networks as key channels through which they connect with their consumers. Meanwhile, social media begun to serve as a watchdog in today's business environment. This has led to a focus on the extent to which innovation(s) can be achieved through social media to allow businesses to interact with their customers on a deeper level (Martini et. al, 2014). Figures 1 and 2 illustrate percentage of adults' social networks in USA and the most popular social networks worldwide respectively. However, the existing literature within the field focused mainly on how businesses can leverage social media to better interact with customers and encourage them to participate in new product development (Martini et. al, 2014; Bugshan, 2015). Various studies investigated the increased use of social media by companies to drive innovation (such as: Arvanitis & Stucki, 2014; Jacobs, 2013).

Figure 1: Percentage of adults' social networks in USA



Source: Chaffey (2017)

Figure 2: The most popular social networks worldwide

Source: Chaffey (2017)

Many researchers had identified a fundamental need for entrepreneurs to build communities and relationships through social media, internet marketing, viral marketing and e-marketing tools in order to draw knowledge and ideas (e.g. El-Gohary and El-Gohary, 2016; Kask and Linton, 2013; El-Gohary et al, 2008; El-Gohary, 2009; Ma, et. al, 2014; El-Gohary, 2012; El-Gohary, 2011; El-Gohary, 2010; Hamad et. al., (2016); Hamad et. al., (2015); Raghubansie et. al., (2015); El-Gohary and Eid (2013); Eid and El-Gohary (2013); El-Gohary et. al., (2013); El-Gohary (2012b); El-Gohary (2012c); El-Gohary and Eid (2013b); El-Gohary and Eid (2012); Millman and El-Gohary (2011); El-Gohary (2010); El-Gohary (2010b); El-Gohary (2010c); El-Gohary et. al., (2009); etc.).

Different social media platforms and tools are providing easier ways for start-ups to build teams that are innovative and knowledgeable (Colombo, et. al, (2014); Bugshan, 2015). Moreover, interaction and involvement have been identified to be central to an innovative organisation. Such involvement and interaction is offered by social media (Kask and Linton, 2013; Ma, et. al, 2014). The benefit to start-ups of obtaining a better understanding of their ecosystem through developing business intelligence using social media has also been investigated (Groen, et. al, 2008; Chesney & Lawson, 2015).

Nevertheless, existing literature falls short of fully exploring the implications of social media as a form of innovation for businesses and how it can be leveraged to improve business performance and outcomes. While building on existing research, this study will aim to address this topic and analyse the extent to which the use of social media as an innovation tool can contribute to an organization's success. The study will specifically focus on high-tech Business to Consumer (B2C) start-ups. The term high-tech has been used to describe industries, as well as products of these industries and people who work in this sector. According to Mohr, et. al, (2010, p.10); high-tech can be defined as 'engaged in the design, development, and introduction of new products and/ or innovative manufacturing processes through the systematic application of scientific and technical knowledge.' This study focuses on the high-tech industry because existing literature has not focused on this particular industry. Moreover, this industry has a far-reaching impact on the life of millions of people. An example is Uber which is evolving the way the world moves. It seamlessly connects riders to drivers and makes cities more accessible (Price, 2015).

2. Literature Review

This part of the paper starts by describing innovation and the requirements for an organisation to nurture and subsequently drive innovation. This is followed by a discussion of the evolution of information exchange from basic medium to sophisticated social media tools.

A dedicated sub-section then establishes the link between innovation and social media, and how social media fulfils key requirements for an innovative organization. Next a following section describes the advantages and disadvantages of social media. Then conclusion with a detailed discussion of the existing literature on the topic and how this study attempts to build up on the existing work. Examples of real start-ups have been provided where possible in order to support the discussion.

2.1 Innovation in Business:

Innovation involves changing or improving business processes, ideas and products to make them more effective with the underlying idea of making the business more successful (Colombo & Grilli, 2007; Mergel, 2012). Innovative businesses are more productive which is often reflected in their overall performance (Backes-Gellner & Werner, 2007; Zolkepli & Kamarulzaman, 2015). Existing literature further suggests that innovation enables the business to be more flexible and adaptable in a rapidly changing environment (Sahut & Peris-Ortiz, 2014; Criado, et. al, 2013). Innovation now plays an even important role in an arena influenced by fast technological advancements (Ooms, et. al, 2015; Mount & Martinez, 2014).

Numerous numbers of large corporations have been affected by the failure to innovate. These include: Nokia, Research in Motion and Kodak. Kodak was a extremely successful company specializing in imaging products. This company was at its peak in the 1990s for decades and dominated the camera industry to the extent that a large number of cameras sold globally were Kodak-branded (Crick, 2012; Yanget. al, 2014). Though, the company ignored signs of change when mobile phones started coming with built-in cameras and started to disrupt the imaging industry. This meant that customers no longer required dedicated cameras to take pictures. As these tendencies picked up and phone cameras became increasingly sophisticated, the market share of the company plummeted and investor confidence in the company sunk. This made it difficult for the company to raise capital to support the business (Groen, et. al, 2008; Chesney & Lawson, 2015) and the corporation ended up fading.

Another example is Nokia which was knocked off from the top position within the industry after it failed to recognise the disruption caused by smartphones to the mobile phone industry (Caliendo, et al., 2015; Barnes & Jacobsen, 2013). It was this lack of innovation, which then caused Nokia to run into financial problems since falling revenues resulted in low profits and a lost competitive edge. Nokia's offices in Finland were reduced significantly and the company was later bought by Microsoft (Arvanitis & Stucki, 2014; Jacobs, 2013). This example illustrates the problems that an organisation runs into with the failure to innovate especially when part of industries that are constantly evolving. An innovative idea is one of the basic elements to propel a start-up business. However, continuous innovation is also required to successfully operate and remain competitive in a constantly evolving marketplace.

This turn out to be even significant in industries that are in their mature stage within its life cycle (Perleberg, 2015; Scheepers, et. al., 2014) or with many large players who have already established economies of scale, giving them a competitive advantage (Caliendo & Kritikos, 2010; Henrekson, 2014). Therefore, start-ups that enter the market with highly innovative ideas, which are able to disrupt the industry, can help the new entrant eventually succeed (Kösters, 2010; Filieri & Algezau, 2014). Collect Plus is an example of a delivery start-up, which disrupted the postal service industry in 2009. It offers a convenient parcel postage and delivery service where customers do not have to visit the post office and can visit any convenient store near them to post or collect parcels (Collectplus, 2015; Wallop, 2013).

Innovation should be entrenched within the strategy of the business and should be reflected in the culture. This enables everybody working in the corporation to contribute towards the creation of innovative ideas (Kask and Linton, 2013; Ma, et. al, 2014). It is essential for start-ups to create a team of employees who are creative and innovative thinkers (Fritsch & Aamoucke, 2013; Hall & Wylie, 2014). Start-ups should conduct analysis of the market environment, determining what customers want and need, and gain more insight into their competitors (Festel, 2013; Audretsch, et. al, 2014). This analysis in previous decades was carried out using traditional approaches such as using research agents. The growth and popularity of the internet has now made such analysis convenient, fast, detailed and affordable (Colombo, et. al, 2014; Bugshan, 2015). The concept of social media is one that companies have leveraged to help them succeed in various areas of their business (Colombo & Grilli, 2007; Mergel, 2012). The next sub-section discusses the evolution of information exchange and the increased use of social media by businesses to improve their outcomes.

2.2 Social Media

The extensive usage of the internet has led to augmented acceptance of social media. There has been an argument in the literature around the definition of social media. However, the most common definition was given by Kaplan and Heinlein (2010, p.61), which states ‘social media is a group of internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user-generated content.’

In the business realm, social media has become a significantly important avenue where businesses use various formats to improve different aspects of their business processes (Backes-Gellner & Werner, 2007; Zolkepli & Kamarulzaman, 2015). Adequate research material exists on social media particularly in connection with the increased use of online platforms (Sahut & Peris-Ortiz, 2014; Criado, et. al, 2013). Technological advancements over the years have resulted in traditional approaches to information flow being overtaken by easy access and faster spread of information via the internet.

Information dissemination and distribution in the pre-internet age was generally one-directional and was dominated by televisions and radios. Robust information collection on customers and brand perception within the market was relatively expensive, less exhaustive and more time consuming (Ooms, et. al, 2015; Mount & Martinez, 2014). The introduction of new technologies in today’s world means that detailed customer data can be obtained with minimal effort and cost (Crick, 2012; Yang, et. al, 2014). Moreover, these new technologies have enabled two-way information exchange. The collected information can be analyzed to draw insight into key areas such as customer demand, product feedback and customer satisfaction, which can lead to a loyal customer based, enhanced sales, and improved profit.

Within this regard, Ooms, et. al, (2015) investigated large high-tech companies and concluded that social media can be used as a boundary-spanning tool to build and increase an organization’s absorptive capacity. They further suggest that if necessary conditions are met, social media increases the mode rational, transparent and multi-dimension interactions which in turn influence four capabilities of absorptive capacity: connectedness, cross-functionality, receptivity, and socialization tactics. Absorptive capacity affects inter-organizational learning (Lane & Lubatkin, 1998) and innovation (Tsai, 2001; Fabrizio, 2009). It helps increase both the magnitude and frequency of innovation (Lane, et. al, 2006). However, findings from this study are not generalizable beyond global high-tech companies. Therefore, this study will investigate the role played by social media to drive innovation specifically in high-tech B2C start-ups.

Table 1 illustrates a summary of systematic social media literature review as found in two of the major citing databases used in the field.

Table 1: Summary of systematic social media literature review

Search query	Scopus Results	WOS Results	Total Results
Social media and strategy	945	211	1156
Web 2.0 and strategy	748	174	922
Social network site and strategy	79	10	89
Social media and policy	516	255	771
Web 2.0 and policy	360	121	481
Social network site and policy	38	14	52
Social media and governance	130	54	184
Web 2.0 and governance	107	57	164
Social network site and governance	17	1	18
Facebook and strategy	482	103	585
Twitter and strategy	405	67	472
LinkedIn and strategy	39	4	43
YouTube and strategy	220	50	270

Source: Adopted from: Schrader (2017)

In the meantime, social media allows and facilitates collaboration between customers and the business. Technological advancements have proved to be instrumental towards the development of new enterprises as alternative entry points into different industries have made traditional barriers to entry irrelevant (Groen, et. al, 2008; Chesney & Lawson, 2015). Uber has quickly established a huge customer base in over 35 cities globally by increasingly leveraging technology (Price, 2015). However, it did not have to overcome the traditional barrier to entry of acquiring several hundred vehicles and hiring several hundred drivers. Therefore, an innovative idea enabled by technology allowed the start-up to successfully enter the market via an alternative and previously unexplored route.

Although existing literature mainly focuses on the role of social media in improving the marketing abilities within organisations, limited work has been carried out to determine its role in improving the innovation abilities of organisations (Caliendo, et al., 2015; Barnes & Jacobsen, 2013). The next sub-section aims at establishing this link between social media and innovation, providing an overview of existing literature and how this study aims to address the gaps in this area.

2.3 Using Social Media for Innovation:

There have been an increasing number of intersections between social media and innovation in the past few years (Festel, 2013). Based on existing literature, companies are increasingly tapping the potential of social media to drive innovation (Arvanitis & Stucki, 2014; Jacobs, 2013). This is particularly the case for start-up companies, which have smaller budgets to engage in expensive and traditional approaches to business innovation. Social media provides a platform for such companies that can help them innovate and improve business processes and product offerings at a lower cost (Perleberg, 2015; Scheepers et al., 2014).

The linkage between social media and innovation in business has become inseparable. In the past, it was a common scenario that a solo inventor would create breakthrough solutions working in isolation. However, these days are now long gone (Bugshan, 2015). In today's world, problems have become increasingly complex. Hence, solving them in a solo effort is less effective as it limits the speed at which the solution would be generated. These complex problems are multi-faceted and require collaboration between people with broad expertise. Collaboration allows drawing from a diverse skillset to enhance the solution so that it addresses the problem from all angles. Successful innovation requires ideas and knowledge to be exchanged (Caliendo & Kritikos, 2010; Henrekson, 2014). This should be accompanied by the ability to manage and organise information in such a way that gives the entrepreneur the ability to mine the value of innovation (Kösters, 2010; Filieri & Alguezaui, 2014). Incorporated within this environment is the underlying need to build communities and relationships, which entrepreneurs can draw knowledge and ideas from. This is where the concept of social media as an overall tool for innovation starts to prove beneficial for start-ups (Kask and Linton, 2013; Ma, et. al, 2014).

In any sense, seeking new relationships for organisations is not a relatively new concept. However, it has evolved and changed dramatically over the last decade. A good case in point to illustrate is the professional web platform LinkedIn that has been a huge driver behind this development and evolution in the way relationships are built. The most important element within the area of innovation is knowledge and the processes of gaining access to such knowledge (Fritsch & Aamoucke, 2013; Hall & Wylie, 2014). The key idea here is that knowledge – and hence organisational memory – is not found within large database servers. Knowledge is found inside the heads of people such as customers, suppliers and other stakeholders (Binet & Facchini, 2015; Isaacs, 2014). But it is difficult to identify and gain access to people who possess this knowledge (Festel, 2013; Audretsch, et. al, 2014). Social media provides the tools for such an endeavour for start-ups and other companies. Platforms such as LinkedIn provide the opportunity to easily seek out the kind of individuals who have a plethora of knowledge that the company may, for instance, require for its innovation drive, business process improvements and operational effectiveness.

Social media tools significantly reduce the cost, time and effort required for knowledge acquisition that used to be carried out through traditional and formal networking. Social media platforms such as LinkedIn, Facebook and Twitter provide easier ways through which start-ups can build teams that are relatively innovative and quite knowledgeable (Colombo, et. al, 2014; Bugshan, 2015). One of these ways is enhanced search features offered by these platforms. Having an innovative team of employees is critically important for companies as it puts innovation at the heart of the company's culture, which is something imperative for the success of a company's innovation strategy (Colombo & Grilli, 2007; Mergel, 2012).

In the past few years, the world has become increasingly dependent on social media services and tools (Backes-Gellner & Werner, 2007; Zolkepli & Kamarulzaman, 2015). This area is also in focus within the existing literature where a lot has been mentioned about the role of social media in innovation within product development and improvements. Existing literature mainly points out that the growth of social media usage has outpaced previous innovations in communications (Sahut & Peris-Ortiz, 2014; Criado, et. al, 2013). In particular, the enormous growths in the usefulness and relevance of platforms such as Facebook, LinkedIn, Twitter and YouTube have been stressed upon. The subscriptions on these social media platforms are large with more than 100 million to a billion users for popular sites (Ooms, et. al, 2015; Mount & Martinez, 2014). The users of these platforms have grown rapidly and are spread around the world making it a great source for obtaining knowledge and information for companies to harness and use. This, according to Zolkepli & Kamarulzaman (2015), is a good indicator of the high demand and strong usage of social media, and of the opportunities that it brings for businesses and start-ups.

In a study carried out by Zolkepli and Kamarulzaman (2015) discusses the factors that drive social media adoption. Social media adoption is partly motivated by its innovation characteristics including relative advantage, observability and compatibility. Once adopted, various functions in an organisation can benefit from social media. For example, the marketing function in a start-up needs to understand these factors in order to optimise the probability of efficiently addressing customers in a proper consumer-need typology based on personal, social and tension release needs of social media. The very nature of social media means that traditional methods of customer segmentation may mislead product managers. For instance, segmenting customers by geography may be irrelevant because of dissolved geographical boundaries from social media and internet usage.

To leverage the potential of social media and its power to improve the overall organisation's performance and competitiveness, businesses tend to consider three particular circles of innovation; these include the innovation community, innovation ecosystem, and customers and users circle (Ooms, et. al, 2015; Mount & Martinez, 2014). The innovation community includes thought leaders, consultants, academics, and corporate voices on innovation. These groups can prove to be essential in the process of improving innovation capabilities of start-ups. They help build credibility of the innovation capabilities of the business by leveraging their own experiences and capabilities. This credibility can prove to be a very important aspect in the next circle of innovation i.e. the innovation ecosystem (Crick, 2012; Yang, et. al, 2014).

The innovation ecosystem includes strategic partners such as universities, institutions and other companies, which are in a position to contribute towards the level of innovation in a start-up (Caliendo, et al., 2015; Barnes & Jacobsen, 2013). Today, there are very few companies that are limited to only one choice of partner when deciding on an innovation partner. It is therefore important for start-ups to partner with aspiring innovation leaders within that particular industry (Arvanitis & Stucki, 2014; Jacobs, 2013). Start-ups and industries have to pay a lot of attention to the third circle of innovation – the customers and users circle (Caliendo & Kritikos, 2010; Henrekson, 2014). This third circle of innovation includes the organisation's own customers as well as customers of their partners within the innovation ecosystem.

This particular circle generally involves B2C arrangements rather than B2B (business-to-business) arrangements. It is also under this particular circle that initiatives such as crowd sourcing are common (Kösters, 2010; Filieri & Algezau, 2014). Interaction and involvement are central to the development of these circles of innovation within the business. Such involvement and interaction is exactly what social media offers to entrepreneurs and businesses.

Entrepreneurs have to engage in interaction and involvement at all the three mentioned circles of innovation (Kask and Linton, 2013; Ma, et. al, 2014). In the innovation community circle, interaction needs to be sought with thought leaders, consultants, academics, corporate voices on innovation and service providers in order to build internal innovation capabilities which are of significant importance to the innovation ecosystem circle (Fritsch & Aamoucke, 2013; Hall & Wylie, 2014). This is often observed in the way start-ups adopt social media tools such as crowdsourcing. In these cases, start-ups seek to tap knowledge and expertise from the open community of customers and potential users (Binet & Facchini, 2015; Isaacs, 2014). This provides the company with the right skillset and expertise, which are essential in building innovative solutions and game changing products or services.

Therefore, entrepreneurs are able to reach out to experts on particular topics or problems that they seek to solve through social media. They can create communities of individuals that are interested in solving problems for which formidable solutions can be obtained and they can also showcase the business' innovation leadership in a particular area (Festel, 2013; Audretsch, et. al, 2014).

2.4 Advantages and Disadvantages of Social Media:

The integration of social media within the company's overall innovation strategy provides further benefits. Indeed this is what many start-ups have come to embrace (Colombo, et. al, 2014; Bugshan, 2015). However, existing research also suggests some disadvantages surrounding the use of social media for innovation.

The benefits of social media in the business world have started to be recognized. A large number of companies already use social media tools and services for product innovation to some extent (Colombo & Grilli, 2007; Mergel, 2012). The benefits such companies gain from the application of social media within the innovation strategy often include creative ideas for products or services offered and a much faster time in launching a product or service in a market. Products or services are also adopted quite quickly due to the high level of interaction and involvement from the early stages of product development and design through social media (Backes-Gellner & Werner, 2007; Zolkepli & Kamarulzaman, 2015). Other benefits that are well documented in the existing literature include reduced product costs as well as lower development costs of the products (Sahut & Peris-Ortiz, 2014; Criado, et. al, 2013). The low production costs emerge from the fact that there are fewer defects and minimal changes to the product requirements and concept. Since the requirements are generated through involvement and interaction with the users and customers in the first place, the rate at which the product will have to be changed generally tends to be much lower (Ooms, et. al, 2015; Mount & Martinez, 2014).

A study conducted by Barnes and Jacobsen (2013) found out how leadership and employees at the 2010 Inc. 500 affirmed their intent to continue immersing themselves in the use of social media tools. The study suggests that widespread acceptance of social media for innovation is reflective of the fact that people have started to recognise the benefits of social media for business specifically in smaller business start-ups. However, social media adoption was observed to be skewed by industry. The largest adoption was observed in the financial sector. The data obtained in the study showed that the Inc. 500 are utilising all new communications tools to help their business grow and thrive in this tumultuous economic climate. Social media offers 'trial-ability', compatibility and lack of complexity, which lends to their easy adoption. Social media allows these start-ups to observe and monitor the way customers interact with them through their blogs and social networking sites. This allows them to confidently share their story with their customers, which is a priceless asset. In particular, it works for start-ups because they have the ability to think differently and let the tools work for them.

Within the same line, Groen, et. al., (2008) suggest four types of functions based on social system theory used by entrepreneurs to develop high-tech start-ups: goal attainment, pattern maintenance, social networking and economic optimisation. All four functions require development up to certain level for the start-up to succeed. A study carried out by Filieri and Alguezaui (2014) highlight the gap that no systematic review has been carried out on the role played by structural social capital for knowledge transfer and innovation. Social capital theory has been adopted in many areas to explain how individuals and organisations manage relationships to generate innovation. An increasing number of scholars view knowledge transfer processes as mediating factors in the relation between social capital and innovation. Social media can easily lend itself as a tool for knowledge transfer.

Start-ups have managed to benefit from social media by developing business intelligence which has enabled them to gain a better understanding of their ecosystem (Groen, et. al, 2008; Chesney & Lawson, 2015). This has also led to improvements in the branding, marketing and promotion of their products to better improve their innovation outcomes as well as develop their corporate innovation capabilities (Caliendo, et al., 2015; Barnes & Jacobsen, 2013). Social media also facilitates feedback loops for ideas which are being developed in these start-ups (Perleberg, 2015; Scheepers et al., 2014). However, there are various social media sceptics who argue that the value of social media cannot be easily quantified. Others suggest that it is in early stages of evolution and it will soon be possible to quantify its benefits. Nonetheless, various studies have shown that start-ups have been able to obtain innovative capabilities through leveraging social media. Particular reference has been made on Google+, Hangouts and various crowdsourcing platforms. Through these platforms, various businesses have been able to obtain information about their customers' needs and feedback on their products in a cost effective way (Caliendo & Kritikos, 2010; Henrekson, 2014).

Figure 3: Benefits of social media

Source: Dodaro (2011)

While existing literature discusses benefits to start-ups of social media for innovation, it also provides an insight into the disadvantages. KPMG (2015) stated that managers should pay attention to the benefits of social media. However, they should also be aware of its risks (Sweeney and Craig, 2011). They should train their staff on how to employ it as an effective tool in their jobs. Social media can raise risks around brands. For instance, inconsistencies in advertising by employees in their social media profiles can lead to brand confusion and consequently to a poor perception of products. Third parties may also unjustifiably leave negative comments on social media, which could negatively affect an organisation's brand.

The reach of social media also exposes organisations to reputational risk. For instance, it may allow people to steal a company's identity by creating a false email, website or social media account. They may then use it to post incorrect information that could be detrimental to a company's reputation. Customers could also disseminate false information about the company in online forums, which cannot be policed and corrected. This also raises reputational concerns for the organisation (Shullich and Caudle, 2011). These risks become even more grave due to the fact that the potential damage done by the misuse of social media cannot be quickly undone, if at all.

Dedicating too much time on social media can be an issue. However, if spending increased time on social media leads to a proportional increase in profits, then it is commercially feasible. For instance, if the maintenance of an online blog requires significant time from employees but leads to substantially increased sales, this is beneficial for the firm. Additionally, Sweeney and Craig (2011) state that it is getting increasingly cheaper to leverage technology for the benefit of the business. Therefore, it is vital to keep technology assets and resources up to date in order to gain the competitive advantage that it offers.

3. Results

Based on the previous discussion and illustration, the increased use of the internet has provided entrepreneurs with various tools and means of improving their start-up businesses from conception. Social media is one of the tools that have evolved over time in terms of functionality, usability and sophistication. Most writers argue that social media has played a pivotal role in helping companies in their innovation efforts through supporting the development of the three circles of innovation (Ooms, et. al, 2015; Mount & Martinez, 2014). The literature cited discusses the concept of social media and how it can drive innovation. The studies were conducted on large firms and in different cities in the world. For instance, Ooms, et. al, (2015) have examined large global high-tech companies in their studies. Zolkepli & Kamarulzaman (2015) have carried out their research in the Malaysian context. Barnes and Jacobsen (2013) investigated small businesses in the US whereas Bugshan (2015) has generally emphasized on social media as a source of innovation. However, none of the studies have focused on high-tech B2C start-ups. This paper will aim to address this. The existing literature also misses to provide enough evidence on how social media usage in a company has led to innovation within a particular industry. Little attention has been paid to how social media can be used for innovation across the entire innovation funnel, spanning ideation, R&D and commercialization (Mount and Martinez, 2014). Consequently, there is little understanding of how organizations can use social media for innovation.

4. Direction for Future Research

Based on the result of this research, empirical research is highly needed to investigate how B2C high-tech start-ups harness innovation through social media. Such empirical examination of this phenomenon can be conducted in both developed and developing countries and is expected to add to the related knowledge within the field. This supports the findings of other researchers (e.g. El-Gohary and Eid, 2014; Edwards et. al., 2017; El-Gohary et. al., 2012; etc.) who suggest that developing countries are much less represented in the social sciences literature.

References:

- Arvanitis, S. and Stucki, T. (2014). The Impact of Venture Capital on the Persistence of Innovation Activities of Start-Ups, *Small Business Economics*, 42(4), pp.849-870.
- Audretsch, D., Coad, A. and Segarra, A. (2014), Firm Growth and Innovation, *Small Business Economics*, 43(4), pp:743-749.
- Backes-Gellner, U. and Werner, A. (2007). Entrepreneurial Signaling Via Education: A Success Factor in Innovative Start-Ups, *Small Business Economics*, 29(1-2), pp:173-190.
- Barnes, N. and Jacobsen, S. (2013). Adoption of Social Media By Fast-Growing Companies: Innovation among the Inc. 500, *Journal of Marketing Development and Competitiveness*, 7(1), p: 11.
- Binet, M. and Facchini, F. (2015). The Factors Determining Firm Start-Ups in French Regions and the Heterogeneity of Regional Labor Markets, *The Annals of Regional Science*, 54(1), pp: 251-268.
- Bugshan, H. (2015). Open Innovation Using Web 2.0 Technologies, *Journal of Enterprise Information Management*, 28(4), pp: 595-607.
- Caliendo, M. and Kritikos, A. (2010). Start-Ups by the Unemployed: Characteristics, Survival and Direct Employment Effects, *Small Business Economics*, 35(1), pp:71-92.
- Caliendo, M., Hogenacker, J., Künn, S. and Wießner, F. (2015). Subsidized Start-Ups Out Of Unemployment: A Comparison to Regular Business Start-Ups, *Small Business Economics*, 45(1), pp:165-190.
- Chaffey, D. (2017), Global social media research summary 2017, available from: <http://www.smartinsights.com/social-media-marketing/social-media-strategy/new-global-social-media-research/> (accessed on: 6/4/2017)
- Chesney, T. and Lawson, S. (2015). Critical Mass and Discontinued Use of Social Media, *Systems Research and Behavioural Science*, 32(3), pp: 376-387.
- Collectplus (2015). Collectplus Courier Services, [Online] Available At: <https://www.collectplus.co.uk/brands-we-work-with/> (Accessed 2 Aug. 2015).
- Colombo, M. and Grilli, L. (2007). Funding Gaps? Access to Bank Loans by High-Tech Start-Ups, *Small Business Economics*, 29(1-2), pp:25-46.
- Colombo, S., Grilli, L. and Rossi-Lamastra, C. (2014). Network Externalities, Incumbent's Competitive Advantage and the Degree of Openness of Software Start-Ups, *Computational Economics*, 44(2), pp: 175-200.
- Criado, J., Sandoval-Almazan, R. and Gil-Garcia, J. (2013). Government Innovation Through Social Media, *Government Information Quarterly*, 30(4), pp: 319-326.
- Crick, M. (2012). Social Media Use in the Bronx: New Research and Innovations in The Study Of Youtube's Digital Neighborhood, *Journal of Technology in Human Services*, 30(3-4), pp:262-298.
- Dodaro, M. (2011), 5 Benefits of Social Media for Small Businesses, Available from: <http://topdogsocialmedia.com/benefits-of-social-media-for-business/> (accessed on: 21/4/2017).
- Edwards, D., Parn, E., Love, P., and El-Gohary, H. (2017). Machinery, Manumission, and Economic Machinations, Special Issue on Big Data and Analytics in Technology and Organizational Resource Management, *Journal of Business Research*, 70(1), January 2017, pp: 391-394
- Eid, R., and El-Gohary, H. (2013). The Impact of E-Marketing Use on Small Business Enterprises' Marketing Success: The Case of UK Companies, *The Service Industries Journal*, 33(1), pp: 31-50.
- El-Gohary, H. and El-Gohary, Z. (2016). An Attempt to Explore Electronic Marketing Adoption and Implementation Aspects in Developing Countries: The Case of Egypt, *International Journal of Customer Relationship Marketing and Management (IJCRMM)*, 7(4), pp: 1-26.
- El-Gohary, H. and Eid, R., (2014), Emerging Research on Islamic Marketing and Tourism in the Global Economy, USA, IGI Global

- El-Gohary, H, and Eid, R., (2013). Leadership Teaching Impact on Tourism Students' Attitudes and Perceptions towards Leadership in Developing Economies: The Case of Egypt, *Journal of Hospitality & Tourism Education*, 25(4), pp: 180-192.
- El-Gohary, H, and Eid, R., (2013), *E-Marketing in Developed and Developing Countries: Emerging Practices*, USA, IGI Global.
- El-Gohary, H, Edwards, D., and Huang, J (2013). Customer Relationship Management (CRM) Practices by Small Businesses in Developing Economies: A Case Study of Egypt, *International Journal of Customer Relationship Marketing and Management (IJCRMM)*, 4(2), pp: 1-20.
- El-Gohary, H, (2012), Factors affecting E-Marketing adoption and implementation in tourism firms: An empirical investigation of Egyptian small tourism organizations, *Tourism Management*, 33(5), pp: 1256-1269
- El-Gohary, H, O'Leary, S. and Radway, P. (2012). Investigating the Impact of Entrepreneurship Online Teaching on Science and Technology Degrees on Students attitudes in Developing Economies: The case of Egypt, *International Journal of Online Marketing (IJOM)*, 2(1), pp: 29-45.
- El-Gohary, H. (2012), *The impact of E-Marketing Practices on Marketing Performance: A Small Business Enterprises Context*, Germany, LAP Lambert Academic Publishing.
- El-Gohary, H. (2012), *Transdisciplinary Marketing Concepts and Emergent Methods for Virtual Environments*, USA, IGI Global.
- El-Gohary, H, and Eid, R., (2012). DMA Model: Understanding Digital Marketing Adoption and Implementation by Islamic Tourism Organizations, *Tourism Analysis*, 17(4), pp: 523-532.
- El-Gohary, H, (2011), *Electronic Marketing Practises in Developing Countries: The case of Egyptian business enterprises*, Germany, VDM Verlag Dr Müller, ISBN: 978-3-639-27461-5.
- El-Gohary, H, (2010). E-Marketing-A literature Review from a Small Businesses perspective, *International Journal of Business and Social Science (IJBSS)*, 1(1), October 2010, pp: 214 – 244.
- El-Gohary, H, (2010). Expanding TAM and IDT to understand the adoption of E-Marketing by small business enterprises, *International Journal of Customer Relationship Marketing and Management (IJCRMM)*, 1(3), pp: 56-75.
- El-Gohary, H, (2010). E-Marketing: Towards a Conceptualization of a New Marketing Philosophy – Book Chapter, in the book: *E-Business Issues, Challenges and Opportunities for SMEs: Driving Competitiveness*, edited by Manuela Cruz-Cunha and João Eduardo Varajão, IGI global, USA.
- El-Gohary, H, (2010). Exploring E-Marketing as a tool for globalisation: the case of Egyptian small business enterprises – Book Chapter, in the book: *Electronic Globalized Business and Sustainable Development through IT Management: Strategies and Perspectives*, edited by Patricia Ordóñez de Pablos, Miltiadis D. Lytras, Waldemar Karwowski, and W. B. Lee, IGI global, USA.
- El-Gohary, H. (2009). *The impact of E-marketing practices on market performance of small business enterprises: an empirical investigation*, PhD, University of Bradford, Bradford, UK.
- El-Gohary, H, Trueman, M. and Fukukawa, K. (2009). Understanding the factors affecting the adoption of E-Marketing by small business enterprises – Book Chapter, in the book: *E-Commerce Adoption and Small Business in the Global Marketplace*, edited by: Thomas, B. and Simmons, G., IGI global, USA, pp: 237-258.
- El-Gohary, H, Trueman, M. and Fukukawa, K. (2008). The Relationship between E-Marketing and Performance: Towards a Conceptual Framework in a Small Business Enterprises Context, *Journal of Business and Public Policy*, 2(2), pp: 10-28.
- Fabrizio, K. (2009). Absorptive capacity and the search for innovation, *Research Policy*, 38(2), pp:255-267.
- Festel, G. (2013). Academic Spin-Offs, Corporate Spin-Outs And Company Internal Start-Ups As Technology Transfer Approach, *The Journal of Technology Transfer*, 38(4), pp:454-470.
- Filieri, R. and Alguezaui, S. (2014). Structural Social Capital and Innovation, Is Knowledge Transfer The Missing Link? *Journal of Knowledge Management*, 18(4), pp:728-757.
- Fritsch, M. and Aamoucke, R. (2013). Regional Public Research, Higher Education, and Innovative Start-Ups: An Empirical Investigation. *Small Business Economics*, 41(4), pp: 865-885
- Groen, A., Wakkee, I. and De Weerd-Nederhof, P. (2008). Managing Tensions in a High-Tech Start-Up: An Innovation Journey in Social System Perspective, *International Small Business Journal*, 26(1), pp:57-81.
- Hall, P. and Wylie, R. (2014). Isolation and Technological Innovation, *Journal of Evolutionary Economics*, 24(2), pp:357-376.
- Hallberg, L. (2013). Quality Criteria and Generalization of Results from Qualitative Studies, *International Journal of Qualitative Studies on Health and Well-Being*, 8(1), pp:19-23.

- Hamad, H., Elbeltagi, I., and El-Gohary, H. (2016). An Empirical Investigation of Business-to-Business E-Commerce Adoption and its Impact on SMEs Competitive Advantage: The Case of Egyptian Manufacturing SMEs, *Strategic Change*, 25(5),
- Hamad, H., Elbeltagi, I., Jones, P. and El-Gohary, H. (2015). Antecedents of B2B E-Commerce Adoption and its Effect on Competitive Advantage in Manufacturing SMEs, *Strategic Change*, DOI: 10.1002/jsc.2019, 24(5), pp: 405–428.
- Henrekson, M. (2014). Entrepreneurship, Innovation, and Human Flourishing, *Small Business Economics*, 43(3), pp:511-528.
- Isaacs, D. (2014). Social Media and Communication, *Journal of Pediatrics and Child Health*, 50(6), pp:421-422.
- Jacobs, H. (2013). Co-Innovation through Multiple Social Identity Processes, *European Business Review*, 25(1), pp:42-64.
- Kaplan, A. and Haenlein, M. (2010). Users of the world, unite! The challenges and opportunities of Social Media, *Business Horizons*, 53(1), pp:59-68.
- Kask, J. and Linton, G. (2013). Business Mating: When Start-Ups Get It Right. *Journal of Small Business & Entrepreneurship*, 26(5), pp.511-536.
- KPMG (2015). Social media risks, risks with using social media | KPMG | AU, Available at: <http://www.kpmg.com/au/en/beyond/new-thinking/pages/social-media-risks.aspx>(Accessed on 13 Aug. 2015).
- Kösters, S. (2010). Subsidizing Start-Ups: Policy Targeting and Policy Effectiveness, *Journal Of Industry, Competition And Trade*, 10(3-4), pp:199-225.
- Lane, P. and Lubatkin, M. (1998). Relative absorptive capacity and interorganizational learning, *Strategic Management Journal*, 19(5), pp:461-477.
- Lane, P., Koka, B. and Pathak, S. (2006). The Reification of Absorptive Capacity: A Critical Review and Rejuvenation of the Construct, *Academy of Management Review*, 31(4), pp.833-863.
- Ma, L., Sian Lee, C. and Hoe-Lian Goh, D. (2014). Understanding News Sharing In Social Media: An Explanation from the Diffusion of Innovations Theory, *Online Information Review*, 38(5), pp: 598-615.
- Martini, A., Massa, S. and Testa, S. (2014). Customer Co-Creation Projects and Social Media: The Case of Barilla of Italy. *Business Horizons*, 57(3), pp: 425-434.
- Mergel, I. (2012). The Social Media Innovation Challenge in the Public Sector, *Information Polity*, 17(3-4), p: 281.
- Millman, C. and El-Gohary, H. (2011). New Digital Media Marketing and Micro Business: A UK perspective, *International Journal of Online Marketing (IJOM)*, 1 (1), pp: 41-62.
- Mohr, J., Sengupta, S. and Slater, S. (2010). *Marketing of High-Technology Products and Innovations*, 3rd Ed. Upper Saddle River, New Jersey: Prentice Hall, p.10.
- Mount, M. and Martinez, M. (2014). Social Media. *California Management Review*, 56(4), pp: 124-143.
- Narayanan, M., Asur, S., Nari, A., Rao, S., Kaushik, A., Mehta, D., Athalye, S., Malhotra, A., Almeida, A. and Lalwani, R. (2012). Social Media and Business, *Vikalpa: The Journal for Decision Makers*, 37(4), pp: 69-111.
- Ooms, W., Bell, J. and Kok, R. (2015). Use Of Social Media In Inbound Open Innovation: Building Capabilities For Absorptive Capacity, Creativity And Innovation Management, 24(1), pp.136-150.
- Perleberg, G. (2015). Crowdfunding and Confidentiality for Tech Start-Ups, *The Licensing Journal*, 35(5), p: 27.
- Price, C. (2015). Digital Technology Drives Uber To Global Success, *Telegraph.Co.Uk*. Available At: <Http://Www.Telegraph.Co.Uk/Sponsored/Technology/4g-Mobile/Engaging-Customers/11366554/Digital-Technology-Uber.Html>(Accessed 2 Aug. 2015).
- Raghubansie, A., El-Gohary, H., Samaradivakara, C. (2013). An Evaluation of the Viral Marketing Research, *International Journal of Online Marketing (IJOM)*, 3 (4), pp: 1-27.
- Sahut, J. and Peris-Ortiz, M. (2014). Small Business, Innovation, and Entrepreneurship. *Small Business Economics*, 42(4), pp: 663-668.
- Schrader, J. (2017), A review of the social media strategy literature flying over social media strategies: exploring the current state of the field and analyzing the social media strategies of two German airlines, Available at: http://www.informatik.umu.se/digitalAssets/161/161594_smr.pdf(Accessed 9 April 2017).
- Scheepers, H., Scheepers, R., Stockdale, R. and Nurdin, N. (2014). The Dependent Variable in Social Media Use, *The Journal of Computer Information Systems*, 54(2), p: 25.
- Shullich, R. and Caudle, R. (2011). Risk Assessment of Social Media. [PDF] SANS Institute, pp:2-36. Available at: <http://www.sans.org/reading-room/whitepapers/riskmanagement/risk-assessment-social-media-33940>(Accessed 13 Aug. 2015).

- Sweeney, S. and Craig, R. (2011). *Social Media for Business: 101 Ways to Grow Your Business without Wasting Your Time*. Canada: Maximum Press.
- Tsai, W. (2001). Knowledge Transfer in Intraorganizational Networks: Effects of Network Position And Absorptive Capacity On Business Unit Innovation And Performance. *Academy of Management Journal*, 44(5), pp: 996-1004.
- Wallop, H. (2013). Click and Collect - The New Way to Go Shopping. [Online] Telegraph.Co.Uk. Available f: [Http://Www.Telegraph.Co.Uk/Finance/Newsbysector/Retailandconsumer/9785532/Click-And-Collect-The-New-Way-To-Go-Shopping.Html](http://www.telegraph.co.uk/finance/newsbysector/retailandconsumer/9785532/Click-And-Collect-The-New-Way-To-Go-Shopping.html)(Accessed 2 Aug. 2015).
- Yang, M., Weng, S. and Hsiao, P. (2014). Measuring Blog Service Innovation in Social Media Services, *Internet Research*, 24(1), pp: 110-128.
- Zolkepli, I. and Kamarulzaman, Y. (2015). Social Media Adoption: The Role of Media Needs and Innovation Characteristics, *Computers in Human Behavior*, 43, pp.189-209.