Chapter 17
Achieving Market Leadership with Collaborative Innovation: The Case of Technology-Driven Companies

Eric Viardot

Abstract In the last few years, there has been a major paradigm shift in the innovation process with the rise of a "collaborative innovation" process where an increasing proportion of innovative firms now rely heavily on external support for innovation. Technology companies are at the forefront of this revolution and this chapter analyzes how those firms have dramatically modified their communication strategy within the innovation process. The priority is now on a "pull" communication strategy in order to get new ideas from different sources in the environment but there is also a change in the "push" communication strategy with the offering of open access technology in order to help external partners to develop complementary solutions. The collaborative innovation is also redefining the branding strategy for innovation, which has often been the favorite communication strategy of successful technology companies. Finally collaborative innovation is impacting the global commercialization strategy of innovative technology companies, another proven way to accelerate market dominance. The chapter concludes on the managerial implications of the new collaborative innovation trend with the dominant role of communication.

17.1 Introduction

Companies are increasingly putting more emphasis on innovation. In a recent survey of large global companies by Capgemini, 76 % of executives indicated that innovation is among the top three priorities of their organization and the main lever for growth (Klokgieters and Chu 2013).

E. Viardot (✉)
EADA, Barcelona, Spain
e-mail: eviardot@eada.edu

N. Pfeffermann et al. (eds.), *Strategy and Communication for Innovation*,
DOI: 10.1007/978-3-642-41479-4_17, © Springer-Verlag Berlin Heidelberg 2013

Innovating is not an easy path to market success as illustrated by the fact than more than 90 % of new products introduced in the market usually failed within their first year of introduction (Nielsen 2012). One reason is that it is difficult to anticipate the market potential of an innovation as many inventions proceed to solve a specific problem but often turn out to have unexpected uses in unexpected conditions (Klein and Tornatzky 1982). Another cause is that very often, the impact of an innovation relies on complementary inventions, which contribute to a full system solution that will add to its performance and, consequently, its demand (Chesbrough and Teece 1996). An extra source of uncertainty is that development time for these complementary innovations can fluctuate very significantly (Viardot 2011). For example, the first patent for a solar collector was actually given in 1886 to the Italian Alessandro Battaglia in Genoa, Italy but it took almost one century to have all the equipment to build and operate the first concentrating—solar plant in 1968 (Butti and Perlin 1980).

But the failure to innovate is much riskier than the alternative of doing nothing while a successful innovation can be the source of a unique and sustainable differentiation which provides a competitive edge and generates a significant profitability. Some companies have even managed to achieve a "winner-takes-all" position (Frick and Torres 2002) for a given innovative product category with a very dominant market share.

This is especially notable in technology driven industries like telecommunications, electronics, or information technologies and services, where the pace of technology innovation is quite substantial with the consequence of the rapid introduction of new products and the reducing of the products' life cycle. Technology firms are emblematic of the way to attain success in the business thanks to an innovation strategy. In fact, in a survey done by the BCG every year since 2004, where more than 1,500 executives are polled about the most innovative companies, the technology and telecom companies constantly dominate the top-ten list, with Apple being number one every year since 2005 and Google being number two every year since 2006 while Microsoft has been in the top ten every year since 2005 and IBM and Sony have been in the top ten nearly every year since 2005 (Boston Consulting Group 2012).

Table 17.1 provides a list of those market leaders in the technology sector. The name of the company is usually associated with its major successful innovation, even though the company may be diversified in other businesses. For example, Google is closely related to web search engine, as Microsoft is with PC software, or Apple and Samsung with smartphones.

An analysis of the various case studies shows that all those winning companies rely less on technology than on their marketing capacities to transform a successful idea into a product or a service which is valuable to customers (Viardot 2004). Among the marketing skills which those firms have developed, communication is extremely important in order to create awareness for the new product in the market and to convince "early adopters" to buy the innovation (Frattini et al. 2013).

This ability to communicate externally has become even more fundamental as in the recent years, there has been a major paradigm shift in the innovation process

Table 17.1 Dominant companies in various innovative product categories (Market share 2012)

Industry	Market share of the dominant players (%)	Names of the dominant players
Mainframe	90	IBM
Browser	90	Google, Microsoft, Mozilla
Operating systems	85	Microsoft
Digital map	85	Navteq
PC microprocessors (notebooks)	83	Intel
PC microprocessors (desktops)	74	Intel
Database software	72	Oracle, IBM, Microsoft
Smart phones OS	68	Android
Networks systems (routers)	68	Cisco
Search engine	67	Google
Social networks	61	Facebook
Personal computer	59	HP, Lenovo, Dell, Acer, Asus
Custom chips	49	TSMC
Cell phones	48	Samsung, Apple
ERP software	47	SAP, Oracle, Microsoft Dynamics
GPS systems	38	Tom Tom

Source Companies annual reports, press release, Reuters, Blooberg, MedAd news, IDC, Gartner group

with the rise of collaborative innovation (Baldwin and von Hippel 2009) as the proportion of large innovative firms that rely heavily on external support for innovation has increased dramatically in the last few years (Roberts 2001). This trend will certainly go on in the future as companies consider that the world is substantially more volatile, uncertain, and complex than before. Thus regarding innovation, top executives believe that their organizations will no longer succeed alone when faced with the complexity of the world and they have to engage and collaborate with the external world system of customers, partners, governments, and institutions (IBM 2011).

The logic of collaborating with customers and other partners to innovate is not particularly new, but the trend toward open innovation has been dramatically accelerated with the development of information technology like the Internet which offers real-time communication that fosters external and internal learning networks by establishing and enhancing the quantity and quality of communications (Inauen and Schenker-Wicki 2012).

Various studies have shown the value generating effects of integrating a broad range of external parties which are bringing a large range of resources, skills, as well as technical and commercial competences in the innovation process (Love and Roper 1999; Tether and Tajar 2008). Other works have underlined that companies relying on external parties have better innovation performance than endocentric companies (Miotti and Sachwald 2003; Nieto and Santamaria 2007).

A recent research has also shown that companies that emphasize innovation are more likely to create radical innovations while firms pursuing closed innovation are more likely to exhibit a higher incremental product innovation performance (Bigliardi et al. 2012).

The collaborative innovation process can be of different kinds. Gassmann and Enkel (2004) have made a useful distinction between the flows between a company and the many external innovation stakeholders. There is the "outside-in" process where ideas, knowledge, technology and are obtained from the outside and brought into the company. There is the "inside-out" process where the innovation is put on the market from the company to its various external partners. Finally there is the "coupled" process which is a combination of the two previous processes.

While communication has always played an important role in the innovation process in order to beat the uncertainties associated with innovation, collaborative innovation is now changing and expanding the role of communication. The traditional way of communicating innovation was placing a heavy emphasis on "pushing" the innovation to the external partners and the customers in order to accelerate its diffusion (inside-out). But collaborative innovation is completely changing the perspective as we are going to consider in this paper. First, we will show that the priority is now on a "pull" communication strategy in order to get new ideas from different sources in the environment (outside-in). Secondly, we will analyze how the collaborative innovation process is also heightening the importance of a push communication strategy at a very early stage of the process with the offering of open access technology which will help external partners to develop complementary solutions. Moreover, we will examine the fact that collaborative innovation is also redefining the branding strategy for innovation which has often been the favorite communication strategy of successful technology companies at the time to push their innovation on the market. Finally, we will consider in what way collaborative innovation is impacting the ultimate avenue for a firm to communicate an innovation, which is its global commercialization strategy in order to reach as fast as possible the maximum volume of users for an innovation.

17.2 Leveraging the "Outside-In" Innovation Effect with a Forceful "Pull" Communication Approach

Open innovation has drastically change the way companies are communicating with their environment as they are now trying to pull all potential contributors to their innovation process in order to get new ideas, feedback, or technologies. Indeed, many researches recognize now that creativity is a social process: when communicating with others, ideas are exchanged, knowledge is pooled, new insights are inspired, and ideas can be evaluated according to standards valid in the social context (Ohly et al. 2010).

There is a wide variety of potential external partners available for companies which are looking to initiate collaborative innovation. They are the customers, the suppliers, the competitors, the universities the private research institutes, the government research organizations, the "complementors" that provide the product and services around the technology, the consultants, acting as carriers of the innovation or facilitators to the markets.

There are two ways to activate a "pull" communication strategy with all those potential contributors to innovation, depending if the company wants to have frequent or intermittent contacts. In the first case the pull communication is aiming at the building of a structured eco-system of identified partners with as much interaction as possible while in the second case the communication strategy is based essentially on discontinuous connections with a multitude of potential participants, a process commonly defined as crowdsourcing (Howe 2006).

17.2.1 Building an Eco-System for Co-Creation with Partners

Some companies are pushing aggressively the forming of an external innovation network with various partners in order not only to get new ideas but also to develop the products or services in the way which will be the more adapted to each element of the industry value chain. Thus new inputs with constant feed-back for improvement are constantly searched from the network participants and they are nurtured by a communication flow which is forcefully managed by the firm. Moreover the addition of more participants to a group creates an incentive for others to join in. Such a snowball effect may provide the necessary momentum to make an innovation successful enough to become a de facto standard and eliminate other competitive solutions.

For instance, SAP, or IBM have forged an entire ecosystem around their solutions, namely Windows, R/3, and Notes, with application developers, system integrators, trainers, and hardware companies working together to provide solutions to end users. SAP, the leader in ERP software for business-to business applications, has more than 10,000 partners all over the world—which the company describes as the SAP Ecosystem—working with and around its software solutions. This "co-innovation" allows SAP to offer an extensive range of industry specific solutions for its professional customers (SAP 2013). In the same line, IBM is now offering to its customers or business partners to connect directly with its 11 worldwide IBM Innovation Center. It has also relocated some of its R&D facilities closer to its main customers in order to enhance the communication with them, such as its new R&D center recently opened in Beijing which is completely dedicated to meet the growing demand for smart-grid infrastructure development in China (IBM 2013).

Similarly, another innovation driven company, Samsung has decided to put the principles of Open Innovation into operation in addition to its existing overseas

research centres. It has adopted a multi-pronged approach that involves participation in global consortia, forging links between the industry and top universities as well as cooperation with its vendors (Samsung 2013). The group maintain tight relationship with all partners. In Korea, it has even acquired a public university—the SKK—in order to get a better control in the training of the next generation of researchers who could work for Samsung in Korea (Oh 2013). Those companies are dealing mostly with business customers. But in consumers markets, the same route has been adopted by Google. Notwithstanding its numerous acquisitions, Google has also been teaming constantly with various public and private organizations in order to consolidate its leadership position in the search engine industry. Through a mix of distribution agreements, partnerships, and alliances which are listed in Table 17.2 Google aims to make its search engine and other services such as YouTube widely available for all categories of applications.

Apple offers another interesting example of "outside–in" communication for innovation, with its iTunes site which is a collaboration of music artists, publishers, movies and TV shows producers, etc. iTunes was launched in 1998 as a simple music player, but over time it has developed into a sophisticated multimedia content manager which support not only the iPod, which is a range of portable media, but the other Apple devices as well, including the iPhone and the iPad.

The communication for building an ecosystem of external innovators is based on the setting of strong ties which involve a strong degree of trust and are characterized by frequent contacts over a longer period. Those interpersonal ties that are built through frequent communication can lead to more effective interactions (Uzzi 1997) but conversely they may provide redundant information, especially as they occur among a small group of people in which almost everyone knows what the others know. That is the reason why some firms are also trying to enlarge their reach of innovation contributors far outside than their regular business environment.

17.2.2 Opening to Everyone: Crowdsourcing

Beyond the structured networks of external partners, some innovative companies are going after almost any kind of outside source of ideas. This move has been facilitated with the rise of the Internet and the social applications which are tremendously easing the way for companies to engage and collaborate with mainstream users or contributors (Prandelli et al. 2006).

For instance, the old way of idea contest has been rejuvenated with the internet which is used to distribute the "call for ideas" among a wide target group (Bilgram 2013). Based on crowdsourcing principles and using the reward structures of tournaments (Morgan and Wang 2010), a challenge is posted to a large public and the contributions are evaluated by a jury to select and reward the winning ideas. For example, Cisco has launched an external innovation competition called the

Table 17.2 Google partnerships since its foundation

Year	Company/organization	Type of relation	Official goal
2001	Yahoo!	Partnership	Become Yahoo's default search provider
2001	Universo Online (UOL)	Partnership	Search service (for the Brazilian leading online service provider)
2002	AOL	Partnership	Offer Google search and sponsored links to 34 million customers
2004	Libraries of Harvard, Stanford, University of Michigan, Oxford, and New York Public Library	Partnership	Digital scanning
2005	NASA Ames Research Center	Partnerships	Research projects involving large-scale data management, nanotechnology, distributed computing, and the entrepreneurial space industry
2005	Sun Microsystem	Partnership	Share and distribute each other's technologies
2005	Time Warner's AOL	Partnership	Enhance each other's video search services
2005	Websites	Service: "Adsense for Mobile"	Provides the ability to monetize mobile websites through the targeted placement of mobile text ads
2006	News Corp.'s Fox Interactive Media	Agreement US$900 million	Provide search and advertising on the social networking site, myspace
2006	eBay	Partnership	Advertising partnership
2006	Adobe	Distribution agreement	Toolbar distribution
2006	Intuit	Strategic alliance	Offer a variety of Google services to Intuit small business customers
2006	Dell	Partnership	Install search software on Dell computers
2007	China Mobile	Partnership	Provide CM users with Google mobile search
2007	Samsung	Collaboration	Put Google products and services on selected Samsung phones
2007	Salesforce.com	Partnership	Combini on-demand CRM applications with AdWords
2007	The University of Texas at Austin library and the Princeton University library	Partnership	Library Project: digitize and make available approximately 15 million volumes on line before 2015

(continued)

Table 17.2 (continued)

Year	Company/organization	Type of relation	Official goal
2007	Google, HTC, Intel, Motorola, Qualcomm, Samsung, LG, T-Mobile, Nvidia, Wind River Systems, TI, etc.	Open Handset Alliance	Develop an open platform for mobile services called Android.
2007	NORAD	Sponsorship and partnership	Use of Google earth to track Santa Claus in 3-D and on YouTube
2007	IBM	Partnership	Supercomputing initiative so that students can learn to work at Internet scale on computing challenges.
2008	Publishers	Partnership	Digitize millions of magazine articles and make them available on Google Book Search.
2008	GeoEye	Partnership	Launch a satellite providing Google with high-resolution (0.41 m monochrome, 1.65 m color) imagery for Google Earth
2009	Open Technology Institute from the New America Foundation	Partnership	M-Lab: open platform with testing tools for broadband connections.
2009	Twitter	Partnership	to include updates in searching results
2009	The New York Times and The Washington Post	Partnership	Living Stories (app): prototype for online news
2010	Oregon State (USA)	Partnership	Distribution of Google Apps for Education
2010	Guggenheim Museum	Partnership	For developing YouTube Play: creative video biennial
2011	Bing & Yahoo!	Partnership	Schema.org: supports a common vocabulary for structured data markup on the entire Web

Source Adapted from Google.com

I-Prize to help the company identify promising business platforms for future growth and with a prize of $250,000 prize for the winner (Jouret 2009). In its last edition, 2,900 participants representing more than 156 countries submitted 824 ideas to the competition. Ideas were narrowed down to 32 semifinalist ideas and nine teams representing 14 countries in six continents reached the final phase of the competition (Cisco 2010).

Smaller companies are also using this communication strategy to get new ideas, new technologies or even new funds for a potential project. A company like Kickstarter founded in 2009 provides tools to raise funds for creative projects via crowd-funding through its website. That is how Ouya, a new low-price home video game console based on Android has managed to be funded in 2012. The $8 million development budget was raised within 8 hours after being posted on the Kickstarter website (Strickler 2012). The Ouya Kickstarter page featured an introduction video, which explained various aspects of the console, showcased the process of designing of the 3″ touchpad-sporting controller, and gave viewers a glimpse of the motherboard. It also presented the first looks of the console's game store, showing several games from independents developers which had shown interest in the Ouya. Such an innovative communication strategy enabled the Ouya project team to lower the high financial entry barriers in the video game console and to challenge the three dominant players that are Nintendo, Microsoft, and Sony.

Thus the key benefit of crowdsourcing is to reach out an undefined mass and a wider variety of user types than the traditional external partners; it provides a more heterogeneous background favorable to highly creative and "out of the book" suggestions. Furthermore, crowdsourcing is based on mostly weak ties with the participants of the network which are built on loose emotional tendencies and are maintained via infrequent communication. This kind of relationship is considered to increase the probability of stimulating creativity because they bridge otherwise disconnected groups and individuals (Tsai 2001), they are providing access to original information (Granovetter 1973), and they encourage autonomous thinking (Perry-Smith 2006).

Ultimately, one goal of the "outside-in" process in collaborative innovation process is to find the most creative and effective contribution. This means that a company must be able to articulate its propositions in a clear, credible, and attractive manner when communicating either with some preferred partners or with an unfamiliar multitude.

17.3 Powering the "Inside-Out" Innovation Effect with an Effective "Push" Strategy

Using a push communication strategy at the early stage of the "inside-out" innovation process has been used for a long time now by technology based successful companies because the development of complementary innovations is so

often crucial for the market success of an original innovation. In the old days, the push communication was to communicate "inside-out" at a very early stage in the innovation process about the technical features of an innovative technology and to share them with the key market players in order to get a prior agreement of what would become the future technology standard so that all those complementary solutions will work well together (Farrell and Saloner 1985).

For instance, in the personal computer industry, compatibility is required to ensure that computers, software, modems, printers, and other peripherals interface easily. Similarly, in the cellular telecommunications market, compatibility demands a common set of technological standards for the design of cellular base stations, digital switches, and handsets to ensure maximum geographical coverage for users. The larger is the coverage, the greater is the value for customers and the bigger is the future demand, leading more customers and other market players to invest in the expansion of the network (Mc Gee et al. 2002).

Traditionally, the discussions about compatibility have taken place in the various standardization committees like the International Telecommunication Union (ITU), the Institute of Electrical and Electronics Engineers (IEEE), or the European Telecommunications Standards Institute (ETSI). This compatibility approach has very effective when the market was mostly dominated by the large suppliers. For instance in the 1990s the European mobile telecom vendors and operators companies managed to agree on one compatible technology, the Global System for Mobile Communications (GSM) developed by the ETSI while there were four different and non compatible technologies in the US. The value for the cellular phone users clearly was much bigger in Europe than in the US and the cellular phone caught up more quickly in Europe than in the US. At the same time, Nokia was able to surf on this mobile phone innovation wave and manage to build a strong market share, in Europe and to run over Motorola.

Another key element of an "inside-out" innovation strategy is the ability to engage with the very influent external contributors that are the "lead users" through a push communication directed specially toward them (Salah et al. 2010). Lead users are dissatisfied users ahead of the market trends who are willing to develop their own solutions or to collaborate with the provider (Franke and Piller 2003) because they enjoy the problem solving techniques (Bilgram et al. 2008). Some innovative companies have managed to develop a "toolkit approach" (von Hippel and Katz 2002) that transfers most of the product and service development tasks from the research and development department to pre-qualified lead users (Piller and Walcher 2006). Such an approach minimizes the "sticky information" transfer costs since the customers are participating directly in most of the stages of the product development process (Prűg and Schreier 2006). Furthermore this method facilitates the development of new products that are accepted by the market (Henkel and von Hippel 2005) and contribute to an accelerated rate of diffusion in comparison with the traditional internal innovation method (van Oast et al. 2009). A recent comparative study has shown that the impact of lead users on the performance of new product development is superior to any other external

agents including the external product development partners (Al-Zu'bi and Tsinopoulos 2012).

More recently, the ultimate communication "push strategy" is to make the technology available for free to all potential "innovators" or "complementors" which are ready to suggest an develop an improved or complementary application which is adding value to the exposed innovation. This inside-out "open collaboration" process has been made possible with the rise of the Internet and the increased experience of industrial customers.

It started with the development of new application software. Compatibility left the way to the "open source" software such as Linux, Apache or Mozilla for instance which were developed in a collaborative manner with a free access to an end product's design and implementation details as well as a free redistribution. The success of 'open-source' software was achieved by making the software architecture widely available for free, so that it could benefit from the value co-creation (sometimes also called user generated content) with the complementors, the customers and any other third party.

However, the "open-source" model suffered from a lack of effective communication and control of the full compatibility of the new software version over time. This is known as 'forking' in the software industry when a single software project is split between various development teams which are making increasingly different versions of the original. It ends up into a fragmentation of the solutions available on the market, i.e. the exact opposite of a universal standard which may accelerate the adoption of an innovation. The most famous example is the original Unix computer operating system which was developed in the 1970s by AT&T's Bell Labs but is now sold in many different and often incompatible versions, including HP/UX, AIX (IBM), Berkeley BSD, SINIX (Siemens), Solaris (Sun), Inx (Silicon Graphics), etc. Consequently an application developed originally for the Unix market could run only on one of the versions and required a substantial adaptation to run on another version. Such an absence of compatibility has ultimately limited the value of Unix as a market standard for PCs and servers.

One key lesson from the "open source" software is that opening the innovation process does not guarantee the full compatibility of an innovation over time. It requires an aggressive stand from a company to make sure that this will happen and will last in order to make the innovation widely available to external parties who will adopt it and fine-tune it. For instance, in 2008, Apple launched its App Store, based on open collaboration with thousands of independent third party software suppliers who could design and create a variety of software applications for iPhone users, though within certain parameters only, while getting a 70 % share of the price of their application. One driver of the success of the iPhone, stands in the number of third party applications available that consumers can purchase and download from the App Store. In January 2013, in the US only there were more than 800,000 applications available with over two billion downloads during the month of December 2012 and 20 billion downloads for the whole year of 2012 (Apple 2013).

Likewise, in the early months of 2013 Google has made public the technical specifications of its future "Google glasses", a wearable computer with a head-mounted display. It has shipped prototypes to developers so that they could start to develop applications. It has also reserved 8,000 samples to non developers and future users which were selected over an internet contest asking people to say on Twitter and Google+ how they would use the glasses if they were given a set.

Such a push communication strategy is not reserved to large companies. Ouya, the young start up which has been mentioned earlier, has made its specification widely available to any would-be independent developers of video game. The move has been paying off as in March 2013, there were currently more than 450 confirmed games being developed for the Ouya, of which 80 games had been confirmed by Ouya or a developer (Ouya forum 2013).

Finally, when the time comes to commercialize an innovation, successful innovative companies are also aware of the importance to push directly this innovation towards the opinion leaders. They are usually among the first adopters of new products and, as they represent a reliable source of information, their word-of-mouth power is strong enough to influence the behaviour of other people in terms of search, purchasing and usage of new products (Goldsmith et al. 2003). Thus marketers work to create communication channels to reach opinion leaders in order to encourage them to spread a positive word-of-mouth (Lyons and Henderson 2005).

17.4 Developing a Dominant Brand Name

Open collaborative innovation has also reinforced the importance for a company to have a strong brand image and to communicate it forcefully and effectively outside in order to rally the maximum of external parties around an innovation (Corkindale and Belder 2009). One major issue associated with the uncertainties of any innovation is the anxiety of many customers, developers or external parties (Boyd and Mason 1999). Some are intimidated by the task of learning how to use the innovation, some are risk averse to any novelty, and others are afraid that the innovation will become obsolete quickly; all are always postponing their decision to take it on. What is true for consumers is also true for organizations. Many managers fret about innovations and try to assess the balance on the risk/return relationship of such investment more than considering the sheer novelty of an innovation.

A brand is a name, a set of words, a sign, a symbol, a design, or a combination that identifies a seller's goods or services (Keller 1993). Consequently, a well-known and familiar brand helps to reassure individuals or industrial buyers when they consider the purchase of an innovative solution which represents always a leap into the unknown. In that case, one of the main criteria that determine a customer's choice is confidence in a company and its products (Temporal and Lee 2000).

Table 17.3 Ranking of the top most valuable marketing brands in 2012

Ranking	Company	Value ($M)[a]	Industry
1	Apple	182.951	Technology
2	IBM	115.985	Information technology
3	Google	107.857	Internet search
4	McDonald	95.188	Fast food
5	Microsoft	76.651	Software
6	Coca Cola	74.286	Soft Drink
7	Marlboro	73.612	Tobacco
8	AT&T	68.87	Telecommunication
9	Verizon	49.151	Telecommunication
10	China Mobile	47.041	Telecommunication
11	GE	45.81	Conglomerate
12	Vodafone	43.033	Telecommunication
13	ICBC	41.518	Finance
14	Wells Fargo	39.754	Finance
15	Visa	38.284	Finance
16	UPS	37.129	Logistics
17	Walmart	37.129	Retail
18	Amazon	34.077	e-retail
19	Facebook	33.233	Social network
20	Deutsche Telekom	26.837	Telecommunication
21	Yves St Laurent	25.92	Luxury
22	SAP	25.715	Software
23	BMW	24.623	Cars
24	China Construction Bank	24.517	Finance
25	Baidu	24.326	Internet Search

Source Milward Brown, Brand Z top most valuable marketing brands report, www.millwardbrown.com/brandz

[a] Brand value represents the fractions of intangible corporate earnings of a company which is attributable to the brand multiplied by an earning multiple, depending on the brand market valuation and the brand growth

A strong brand facilitates the identification of the innovation while attaching a quality image and a personality that establish a bond with the customers and facilitate their loyalty (Urde 1999). For instance, Google is perceived as a clean, friendly but credible path to accessing the tremendous wealth of the Internet. Cisco's image is associated with being a visionary and an expert in Internet telecommunication as well as a partner with its clients. And the Apple brand personality is about lifestyle, imagination, innovation, passion, and aspirations. It suggests also power-to-the-people through innovation thanks to simplicity and the removal of complexity from people's lives (Marketingminds 2013).

In general, dominant brands which come first in customers' minds enjoy greater market and financial success than their competitors (Burke and Schoeffler 1980). This is also true for innovative products and companies. In the ranking of the first 25 major corporate brands according to their brand value in 2012, 14 are closely associated with innovative product or industries, as illustrated in Table 17.3.

This preeminent position of innovation driven brands does not come by accident. One may argue that their brand value reflects their market success. Actually part of their hit performance has been achieved through a very forceful branding strategy which they have started very early in their corporate life.

For sure, some of the companies listed in the ranking above are now spending huge amounts of money to promote their brand. For example, in 2012, Microsoft spent US$ 1.6 billion (2.2 % of its total revenues), while Dell invested US$ 860 million (1.30 %) and Apple devoted US$ 933 million (0.86 %) in advertising (Forbes 2012).

But the building of a strong brand image for an innovation does not always require big amounts of money. Some highly successful innovative companies have managed to achieve recognition essentially through creativity, quality and word-of-mouth. Intel, Microsoft, Intel, Compaq, Cisco, and others were first talked about in the pages of the Wall Street Journal, the Financial Times, Business Week, Forbes and Fortune magazines. Only once their brand image was made, then they spend money in advertising to maintain their image and notoriety. More recently a new generation of web based firms such as Google, E-bay, Amazon, or Facebook have also got top of mind recognition on a low advertising budget. By making an effective use of the internet, those companies have been able to generate "buzz" among "influencers" instead of relying solely on traditional advertising. The excitement and passion they have generated has translated into sales afterwards.

Collaborative innovation provides additional ways to enhance brand awareness and brand image like by developing and tightening deep relationships when hundreds of consumers spend significant amounts of time interacting with companies and their brands on idea contest platforms (Nambisan 2008). Furthermore usually consumers share their experiences with a brand over the social network and spread positive word-of-mouth in their networks extending the reach of simple open collaboration platforms or initiatives (Füller et al. 2010). For instance, Microsoft has created the *Imagine Cup* to give the opportunity for students to turn their ideas into reality, as well as to solve challenges and problems provided to them. On the average, more than 165,000 students are participating every year, but on a given day on the facebook page of the Imagine cup there were 227,936 followers who liked the topic and 2,562 persons actively discussing the subject.

When promoting an innovation, the use of branding is not exclusive to private companies. It has been used very effectively by some alliances to promote an innovation in order to make it a standard like for instance HDMI, a compact audio/video interface which was initiated in 2002 by a handful of companies, and has now more than 1,300 adopters (Hdmi 2013). Another successful example is Bluetooth, a short-range networking protocol for connecting different types of digital devices (mobile phone, computer, GPS, etc.) or accessing the Internet by wireless signals within a 35-foot or 10 m range. In 1998, five companies founded the Bluetooth Special Interest Group (SIG), Ericsson, IBM Corporation, Intel Corporation, Nokia and Toshiba Corporation. Its goal was to promote the development of the new protocol as the standard solution for wireless connections. Very early the decision was made to develop a strong brand so as to communicate with

the end—consumers in order to accelerate its recognition and to step up its adoption by other industrial companies. Today, the Bluetooth SIG has more than 10,000 member companies and an astonishing 91 percentage of brand awareness among end users (Bluetooth.com 2013).

17.5 Communicating with the World by Going Global

A final way to ensure the market acceptance of an innovative product is to open it up to the world market as innovation is becoming increasingly global from the supply perspective and from the demand side. This is a direct consequence of the explosion of the Internet, the rise of globalized financial markets, the spiralling foreign direct investment by multinational companies, and the emergence of China and India on the world scene.

The collaborative innovation process is combining with the globalization of business so that technology companies increasingly go abroad to interact with their most demanding customers, get the most competent or cheapest suppliers, and seek ideas or knowledge with leading research environments which are getting more geographically dispersed. Consequently, the proportion of corporate R&D performed outside domestic countries is increasing rapidly (Herstad et al. 2008) while some companies are even relocating their headquarters in order to be more collaborative such as Nokia which has moved the head office for feature phones to China and the one for Smartphones to the Silicon Valley in the US.

Consequently, going global becomes a natural way to ensure the commercial triumph of an innovation. It comes as another extension of the push communication strategy in order to promote innovations towards all the external market participants as increasing returns follow the firms that penetrate one large geographical market after another.

Innovation driven companies serving business customers were the first to embrace globalization as organizations all over the world have more or less the same needs and expectations. Consequently, opening up globally an innovation was relatively easy and not too costly. For instance, in the software industry, the swift growth of the German SAP resulted from the increasing acceptance of its ERP (Enterprise Resource Planning) software in various part of the western world: in 1980, SAP had only 50 customers, all Germans companies; in 1996, it had 9,000 customers worldwide, and in 2013, it has more than 238,000 customers in over 180 countries. Today, SAP makes more than 85 % of its turnover outside the German market.

But globalization has also proven to be effective to push innovative solutions towards consumers markets. For example, Nokia's globalization strategy has provided a major push to ratchet up the adoption rate of mobile phones in the world. In the 1980s Nokia was selling to the Finnish market only; it became the market leader in Europe in the early 1990s. Then, it went truly global and achieved market leadership in 1998 as its sales had expanded dramatically.

Table 17.4 Global reach of some innovative technology firms in 2012

Company	Country	% of annual revenues made outside the country of origin
Accenture	Ireland	99.7
Nokia	Finland	99.6
Infosys	India	98.3
Tata Consulting (TCS)	India	91.5
Vodafone	UK	88.4
SAP	Germany	85.5
Intel	US	84.3
Samsung	South Korea	83.9
Movistar	Spain	72.5
Sony	Japan	70.3
HP	US	66.0
Huawei	China	66.0
IBM	US	60.7
Apple	US	60.1
Oracle	US	57.4
Deutsche Telekom	Germany	55.6
Google	US	54.2
Lenovo	China	53.0
Dell	US	52.4
e-Bay	US	52.4
Cisco	US	50.9
Facebook	US	49.4
Microsoft	US	47.9
Amazon	US	43.0
France Telecom	France	42.5
Yahoo	US	30.6

Source annual reports and press releases compiled by the author

In 1990, Nokia shipped around 1 million units in 1990, over 77 million units in 1999 (Ahonen 2010) and 335 million units in 2012, the year where it lost its market leadership to Samsung which managed to ship 384 million units out of a total of 1,746 million units sold worldwide (Gartner 2013).

Table 17.4 shows how some innovation driven companies have managed to grow their leadership by promoting their solution outside of their native markets. Of particular interest is the growing presence of Chinese and Indian innovative technology companies which have managed to increase significantly their business outside of their native countries in recent years. The large internationalization of Samsung has also help the company to overcome Apple in the smartphone business. Apple has made up some of its gap as it has increased its share of international revenues from 60 to 66 %, but it success is still mostly driven by the US market. Another telling example is the case of Yahoo which has a smaller degree of internationalization compared to some of its rivals, such as Google and

Microsoft. This is probably one of the reasons, among others, why Yahoo has not been able to maintain its leadership position in search engine and other internet services.

17.6 Conclusion

Ultimately, some technology companies are actually combining the different types of communication strategies that we have detailed as they are now relying on collaborative innovation. They are not only using their own innovation teams but they are also working with a network of structured partners as the same time as they are tapping on the creativity of outside creative individuals or organizations, whilst they are promoting their brand and they are expanding globally.

Google provides a typical example of such an inclusive communication strategy. For instance Google has its own internal collaboration of software developers who work to improve its search engine and develop other offerings. Those new services are made available to consumers in beta-test format in order to have their feed-back and suggestion for improvements or even the development of additional features. In 2010, using a push communication approach, Google has launched a website called Demo Slam to demonstrate the technology of Google Products into new contexts. But, as the main source of revenues for Google is coming from its targeted advertising placement, Google also collaborate with its main partners—the advertising agencies, advertisers and research firms—to find out innovative ways to gain the attention of consumers. It has also launched in 2012 the "Google Apps Developer Challenge" where entrants can submit an application that showcases innovation, relevance to their target audience, and creativity with regard to use of Google products or services (Google 2012). But Google relies also on crowdsourcing for innovation with special projects, such as its "Project 10 to the 100," which presented a problem to the virtual world via Google and screened the ideas to fund solutions.

We have analyzed how the open collaborative innovation process has redefined the communication of technology companies towards the outside. This does not come automatically and requires an effective management because collaborative innovation is redesigning completely the flows of information—and power—inside the company, as the innovation team is no longer the only source of input. Today many innovation teams understand the value of collaboration, at least in a large majority technology firms. However, a more pressing challenge is making the rest of the company fully understand and engage into collaborative innovation so that all employees may fully support open innovation and benefit from it. This is an important condition for innovative companies if they want to increase their absorptive capacity of external information (Cohen and Levinthal 1990) with collaborative innovation.

This often requires changing the employees' mindset and behaviors through an effective internal communication which is aligning innovation to strategy and is rising above organizational silos. The most important is to promote collaborative innovation with ongoing communication to reach, tell, and support people to participate; then it is equally important to sustain the momentum with continuing messages about successes, current actions, platform improvement or other innovation initiatives (Lindegaard 2012).

Ultimately collaborative communication leads to the emergence of a new category of managers, the "network orchestrators" (Fung et al. 2007) who are able to deal with a large diversity of contributors. They have to develop a specific set of management skill, because their role is not the same as managing internal collaboration; it requires a more fluid approach with a network centric perspective and not only a firm centric or a market centric viewpoint (Thomas and Wind 2013). In any case, network orchestrators must have considerable communication skills and they must be able to communicate clearly, simply, effectively, and consistently with all innovation partners in order to find them and then to keep them motivated and engaged. As an increasing number of companies in various industries are opening their innovation out, one key lesson they can learn from successful innovative technology firms is that communication is an indispensable key success factor to achieve an effective collaborative innovation.

References

Ahonen, T. (2010). Retrieved from communities-dominate.blogs.com/brands/2010/01/what-to-call-the-past-decade-has-to-be-the-nokia-decade-heres-why.html.

Al-Zu'bi, Z. M. F., & Tsinopoulos, C. (2012). Suppliers versus lead users: Examining their relative impact on product variety. *Journal of Product Innovation Management, 29*(4), 667–680.

Apple. (2013). *App store tops 40 billion downloads with almost half in 2012*. Retrieved from http://www.apple.com/pr/library/2013/01/07App-Store-Tops-40-Billion-Downloads-with-Almost-Half-in-2012.html.

Baldwin, C. Y., & von Hippel, E. (2009). Modeling a paradigm shift: From producer innovation to user and open collaborative innovation. *MIT Sloan Research Paper, 4764–09*, 1–34.

Bigliardi, B., Dormio, A. I., & Galati, F. (2012). The adoption of open innovation within the telecommunication industry. *European Journal of Innovation Management, 15*(1), 27–54.

Bilgram, V., Brem, A., & Voigt, K.-I. (2008). User-centric innovations in new product development-systematic identification of lead user harnessing interactive and collaborative online tools. *International Journal of Innovation Management, 12*(3), 419–458.

Bilgram, V. (2013). Performance assessment of co-creation initiatives: A conceptual framework for measuring the value of idea contest. In: A. Brem & E. Viardot (Eds.), *Evolution of innovation management: Trends in an international context* (pp. 32–51). Hampshire: Palgrave Macmillan.

Bluetooth. Org (2013). Retrieved from www.bluetooth.org/en-us/bluetooth-brand/smart-marks-overview.

Boston Consulting Group. (2012). *The most innovative companies in the world*. Retrieved from https://www.bcgperspectives.com/content/articles/growth_innovation_the_most_innovative_companies_2012/.

Boyd, T. C., & Mason, C. H. (1999). The link between attractiveness of "extrabrand" attributes and the adoption of innovations. *Journal of the Academy of Marketing Science, 27*(3), 306–319.

Burke, W. L., & Schoeffler, S. (1980). *Brand awareness as a tool for profitability. The strategic planning institute*. Boston: Cahners.

Butti, K. & Perlin, J. (1980). *A golden thread: 2500 years of solar architecture and technology* (pp. 68–69). Palo Alto: Cheshire Books.

Cisco. (2010). *And the cisco I-prize winner is… Rhinnovation!* Retrieved from http://www.cisco.com/web/solutions/iprize/index.html.

Chesbrough, W., & Teece, D. J. (1996). When is virtual virtuous. *Harvard Business Review, 74*(1), 65–73.

Cohen, W. M., & Levinthal, D. A. (1990). Absorptive capacity: A new perspective on learning and innovation. *Administrative Science Quarterly, 35*(1), 128–152.

Corkindale, D., & Belder, M. (2009). Corporate brand reputation and the adoption of innovations. *Journal of Product and Brand Management, 18*(4), 242–250.

Facebook. (2013). *Microsoft imagine cup*. Retrieved from www.facebook.com/microsoftimaginecup.

Farrell, J., & Saloner, G. (1985). Standardization, compatibility, and innovation. *RAND Journal of Economics, 16*(1), 70–83.

Forbes. (2012). *Who spends more on ads – apple or microsoft? Another lesson in quality vs. quantity*. Retrieved from http://www.forbes.com/sites/ycharts/2012/08/02/who-spends-more-on-ads-apple-or-microsoft-another-lesson-in-quality-vs-quantity/.

Franke, N., & Piller, F. T. (2003). Key research issues in user interaction with configuration toolkits in a mass customization system. *The International Journal of Technology Management, 26*(5/6), 578–599.

Frattini, F., Colombo, G., & Dell'Era, C. (2013). Exploring the role of early adopters in the commercialization of innovation. In: A. Brem & E. Viardot (Eds.), *Evolution of innovation management: Trends in an international context* (pp. 151–182). Hampshire: Palgrave Macmillan.

Frick, K. A., & Torres, A. (2002). Learning from high-tech deals. *The McKinsey Quarterly, 1*, 112–124.

Füller, J., Mühlbacher, H., Matzler, K., & Jawecki, G. (2010). Consumer empowerment through internet-based co-creation. *Journal of Management Information Systems, 26*(3), 71–102.

Fung, V. K., Fung, W. K., & Wind, Y. (2007). *Competing in a flat world: Building enterprises for a borderless world*. Upper Saddle River: Wharton School Publishing.

Gartner. (2013). Gartner says worldwide mobile phone sales declined 1.7 percent in 2012. Retrieved from http://www.gartner.com/newsroom/id/2335616.

Gassmann, O., & Enkel, E. (2004). Towards a theory of open innovation: Three core process archetypes. *Proceedings of the R&D Management Conference*. Lisbon, July 6–9.

Goldsmith, R. E., Flynn, L. R., & Goldsmith, E. (2003). Innovative consumers and market mavens. *Journal of Marketing Theory and Practice* (Fall), *11*(4), 54–64.

Google. (2012). Google apps developer challenge 2012 official rules. Retrieved from http://www.google.com/events/gadc2012/terms/.

Granovetter, M. (1973). The strength of weak ties. *American Journal of Sociology, 78*(6), 1360–1380.

HDMI. (2013). Retrieved from http://www.hdmi.org/learningcenter/adopters_founders.aspx.

Henkel, J., & von Hippel, E. (2005). Welfare implications of user innovation. *Journal of Technology Transfer, 30*(1/2), 73–87.

Herstad, S., Bloch, C., Ebersberger, B., & de Veld, E. V. (2008). Open innovation and globalisation: Theory, evidence and implications, Visionera.net. Retrieved from https://www.tem.fi/files/25709/Open_innovation_and_globalisation.pdf.

Howe, J. (2006). *Crowdsourcing: A definition*. Retrieved from http://crowdsourcing.typepad.com/cs/2006/06/crowdsourcing_a.html.

IBM. (2011). *From stretched to strengthened, Somers, NY: IBM global business services*. Retrieved from http://www-935.ibm.com/services/us/cmo/cmostudy2011/cmo-registration.html.

IBM. (2013). *Maximize your relationship with IBM*. Retrieved from https://www.ibm.com/developerworks/community/blogs/9a1ba618-dfdd-45af-b55e-1ad7f6442045/entry/maximize_your_relationship_with_ibm32?lang=en.

Inauen, M., & Schenker-Wicki, A. (2012). Fostering radical innovations with open innovation. *European Journal of Innovation Management, 15*(2), 212–231.

Jouret, G. (2009). Inside Cisco's search for the next big idea. *Harvard Business Review, 87*(9), 43–45.

Keller, L. K. (1993). Conceptualizing, measuring and managing customer-based brand equity. *Journal of Marketing, 57*(1), 1–22.

Klein, K. J., & Tornatzky, L. G. (1982). Innovation characteristics and innovation adoption implementation: A meta-analysis of findings. *IEEE Transmission Engineering Management*, 438 *29*(11), 28–45.

Klokgieters, K., & Chu, R. (2013). Creating an environment for successful innovation: A management consultant's perspective. In: A. Brem & E. Viardot (Eds.), *Evolution of innovation management: Trends in an international context* (pp. 327–347). Hampshire: Palgrave Macmillan.

Lindegaard, S. (2012). *Communication is key to successful open innovation*. Retrieved from http://www.customerthink.com/blog/communication_is_key_to_successful_open_innovation.

Love, J. H., & Roper, S. (1999). The determinants of innovation: R&D, technology transfer and networking effects. *Review of Industrial Organization, Springer, 15*(1), 43–64.

Lyons, B., & Henderson, K. (2005). Opinion leadership in a computer-mediated environment. *Journal of Consumer Behaviour, 4*(5), 319–329.

Marketingminds (2013). *Apple's branding strategy*. Retrieved from http://www.marketingminds.com.au/branding/apple_branding_strategy.html.

Mc, Gee J., Sammut, B., & Tanyut, A. (2002). Network industries in the new economy. *European Business Journal, 14*(3), 116–133.

Miotti, L., & Sachwald, F. (2003). Co-operative R&D: why and with whom? An integrated framework of analysis. *Research Policy, 32*(8), 1481–1499.

Morgan, J., & Wang, R. (2010). Tournament for ideas. *California Management Review, 52*(2), 77–97.

Nambisan, S., & Nambisan, P. (2008). How to profit from a better "virtual customer environment". *MIT Sloan Management Review, 49*(3), 53–61.

Nielsen. (2012). *Countdown to product launch*. Retrieved from http://www.nielsen.com/us/en/newswire/2011/countdown-to-product-launch-12-key-steps.html.

Nieto, M. J., & Santamaría, L. (2007). The importance of diverse collaborative networks for the novelty of product innovation. *Technovation, 27*(6–7), 367–377.

Oh, I. (2013). Joining innovation effort using both feed-forward and feedback learning: The cases of Japan and Korea Universities. In: A. Brem & E. Viardot (Eds.), *Evolution of innovation management: Trends in an international context* (pp. 208–235). Hampshire: Palgrave Macmillan.

Ohly, S., Kaše, R., & Skerlavaj, M. (2010). Networks for generating and for validating ideas: The social side of creativity (June 10, 2010). *Innovation: Management, Policy & Practice*, *12*(1), 50-60.

Ouya forum. (2013). List of confirmed OUYA games. Retrieved from http://ouyaforum.com/showthread.php?18-List-of-Games-Coming-to-the-OUYA.

Perry-Smith, J. E. (2006). Social yet creative: The role of social relationships in facilitating individual creativity. *Academy of Management Journal, 49*(1), 85–101.

Piller, F. T., & Walcher, D. (2006). Toolkits for idea competitions: A novel method to integrate users in new product development. *R&D Management, 36*(3), 307–318.

Prandelli, E., Verona, G., & Raccagni, D. (2006). Diffusion of web-based product innovation. *California Management Review, 48*(4), 109–135.

Prűg, R., & Schreier, M. (2006). Learning from leading-edge customers at the sims: Opening up the innovation process using Toolkits. *R&D Management, 36*(3), 237–250.

Roberts, E. B. (2001). Benchmarking global strategic management of technology. *Research-Technology Management, 44*(2), 25–36.

Salah, S. H., Maha, M., & Tolba, A. H. (2010). Conceptualising the influence of lead users and opinion leaders on accelerating the rate of innovation diffusion. *International Journal of Technology Marketing, 5*(3), 203–218.

Samsung. (2013). *Open innovation is a samsung initiative to identify and grow the technologies and infrastructure of the future*. Retrieved from http://www.samsung.com/global/business/semiconductor/aboutus/business/open-innovation/overview.

SAP. (2013). *100 K SAP SME customers can't be wrong*. Retrieved from http://www54.sap.com/solutions/sme/strategy.html.

Strickler, Y. (2012). *Ouya's big day*. Retrieved from http://www.kickstarter.com/blog/ouyas-big-day.

Tether, B., & Tajar, A. (2008). Beyond industry–university links: Sourcing knowledge for innovation from consultants, private research organisations and the public science-base. *Research Policy, 37*(6–7), 1079–1095.

Temporal, P., & Lee, K. C. (2000). *Hi-tech hi-touch branding: Creating brand power in the age of technology*. New York: Wiley.

Thomas, R. J., & Wind, Y. (2013). Symbiotic innovation: Getting the most out of collaboration. In: A. Brem & E. Viardot (Eds.), *Evolution of innovation management: Trends in an international context* (pp. 1–31). Hampshire: Palgrave Macmillan.

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), 996–1004.

Urde, M. (1999). Brand orientation: A mindset for building brands into strategic resources. *Journal of Marketing Management, 15*(1–3), 117–133.

Uzzi, B. (1997). Social structure and competition in interfirm networks: The paradox of embeddedness. *Administrative Science Quarterly, 42*, 35–67.

Van Oast, E., Erhaegh, S., & Oudshoorn, N. (2009). From innovation community to community innovation: User-initiated innovation in wireless leiden. *Science, Technology and Human Values, 34*(2), 182–205.

Viardot, E. (2004). *Successful marketing strategy for high-tech firms* (3rd ed.). Boston: Artech House.

Viardot, E. (2011). Achieving market leadership for innovation through communication. In: M. Hülsmann & N. Pfeffermann (Eds.), *Strategies and communications for innovations: An integrative management view for companies and networks* (pp. 243–256). Berlin: Springer-Verlag.

Von Hippel, E., & Katz, R. (2002). Shifting innovation to users via toolkits. *Management Science, 48*(7), 821–833.