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An overview of innovation strategies and the case of Alibaba

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Abstract

Innovation is crucial for the competitiveness of companies. With the complex use of innovation methods, products, quality and internal processes can be developed. Next to newer technologies and methods, emphasis should be placed not only on radical technological innovations, but also on changing and improving the production processes and the business models. Innovation can create value for the customers and the shareholders, using CSR information systems, downstream and upstream operations. Open innovation allows external knowledge flowing into, and internal innovation flowing out the company. Companies should develop an innovation strategy which determines how the company seeks and solves the problem at an organizational level; synthesizes ideas, concepts and design into business strategy. The paper explains the factors and methods that companies have to take into consideration in their innovation processes. The innovation of Alibaba, which plans to radically change the manufacturing sector worldwide is discussed in details.

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1. Introduction

The paper focuses on examining the importance of company strategies, production and innovation systems and their connections to each other. Strategy, innovation and their effects on company products and processes are described using different approaches, such as quality or customer value. Process and product innovation are separated from each other. Innovation strategy is discussed in general and in connection with customer value and resources. The advantages of open innovation are discussed. Several short case examples are presented.

Literature research is used as a research method. The research has an international view: cases are shown from six continents of the world, covering North and South America, Europe, Asia, Africa and Australia. The case of Alibaba is discussed in details because the innovative Alibaba B2B platform is radically changing the manufacturing sector

worldwide. The purpose of this paper is to discuss innovation strategies and to answer the question of what innovation strategy Alibaba uses.

2. Defining innovation strategy

Many companies joined the market with completely new techniques or products, but others, such as Wal-Mart or Dell renewed their operating processes and business models with success.

Innovation is the realization of original new ideas by creating a new product or product features, furthermore we can also consider the creation of a new business model or production process as innovation. The essence of innovation is to create value for the customer with these new methods. [1] Caterpillar, Michelin and Rolls-Royce are companies, which are examples of client-focused innovation [2]. A study of 197 Turkish manufacturing companies show that having an

innovation strategy leads to better customer performance, improved business processes and growth [3]. Newly founded companies can also exploit innovation. A research of 288 new Chinese ventures shows that having innovation strategy has a positive effect on the competitiveness of the company [4].

To be able to innovate, three things are needed: (1) innovation capacity, which is creativity inside the company, (2) innovation essence, meaning that the necessary knowledge is available, and (3) motivation to make the innovation [5]. Innovation platforms can help the development of new ventures. These can be various from research parks or co-working places and incubators [6].

According to the study made at eight of the top ten Swedish manufacturing companies the most common innovation appears to be the fragmented innovation [7]. This type of innovation shows that companies do not have company-wide innovation strategies.

2.1. Process innovation

Hammer (2004) believes process innovation is at least as important in increasing growth as R&D, product innovation or product development. The need for process innovation may be justified by slow growth in the industry, demand for overcapacities or increasing competition. [8] Pressure from competing companies increases the willingness to innovate [9]. Like all other activities in the life of companies, innovation can be either successful or unsuccessful, but most companies find it hard to keep up with successful innovation such as Polaroid, Nokia, Sun Microsystems, Yahoo and Hewlett-Packard [8]. The difficulty lies in defining corporate strategy and innovation strategy and the relationship between each other. According to Vörös (2018), the parallel examination of the two areas is important [1].

IKEA and Southwest Airlines report unusual competitive advantages based on individual activities. IKEA simplified its production and sales system, since the customer takes the product off the shelf in the shop and assembles it at home. This results in significant savings on employee wages, coupled with low sales prices and good quality. Southwest Airlines [10] is uniquely striving to gain a competitive edge by using secondary airports, providing mid-distance routes, and minimizing the use of the airport's passenger service system, so they can keep their prices low. For these two companies, the key to success lies in positioning. The creation of a unique and valuable market position can be a base of a strategy [11]. One of the tools of a unique competitive advantage may be the development of an innovation strategy, which means understanding the specific goals and pursue for the long-term sustainability of the competitive advantage [1]. Innovation can also foster the environment-consciousness because technological and organizational innovation can lead sustainable operations [12].

In case of some products, not only technological innovation is needed, but also the development and rethinking of processes. An example for this is the manufacturing system of Toyota which is a process innovation [8] that aims to minimize inventories. The Just-in-Time (JIT) system developed by

Toyota does not only cope with inventories but it is a philosophy which includes operations strategies, human resources management and quality management making JIT a comprehensive organizational phenomenon [13]. The Toyota JIT system was taken over by other companies in the industry and it spread widely to other industries as well. JIT became so popular that there are even organizations spreading this process innovation, such as the NEPA in UK. [14] Using IT methods, it becomes possible to use decentralized manufacturing through hybrid manufacturing platforms instead of the traditional big manufacturing plants. The use of 3D printing or printable electronics are examples of this [15].

The ideas behind JIT developed over the time. The innovation of Barilla is a so-called JITD (Just in Time Distribution) production concept that tries to balance the level of inventories to properly serve the demand. By this method, Barilla prepares a delivery plan that is adjusted to optimum production, not to the fluctuating demands of retailers. [16] Adjusting sales to production changeover times is important because according to Vörös (1999, 2013) it is impossible to unlimitedly decrease the changeover time [17, 18].

The ageing of workforce draws the attention to new challenges in manufacturing. Experiments at Toyota show that the strategic application of a consistent method for changing the working environment, the so-called "New JIT" can realize an epoch-making innovation in the work environment allowing ageing workforce to complete those tasks that younger workforce was doing before [19].

A research on the largest steel manufacturer firms in South Africa shows that continuous innovation can be the base of sustainable competitive advantage rather than relying only on advanced manufacturing technologies. These technologies require innovative ways and high skilled workforce so companies should invest in human capital, not only in manufacturing technology [20].

2.2. Product innovation

Fisher (1997) highlights the nature of the product as a factor influencing production and supply chains. According to Fisher it matters if we produce a functional or an innovative product. In case of innovative products, the product life-cycle is different because there are more followers on the market due to the high profit rate, which is lowering the value owned by the original developer [21]. Based on this we can distinguish innovators and replicators [22]. An open-minded culture increases product innovations [23]. The changing customer requirements may decrease the customer value of the products.

Functional products are everyday products, their production and development are less risky, they do not represent a radical innovation, and their product life-cycle is much longer. The demand for functional products is relatively stable and they have a long life-cycle. Innovative products meet the demand of current customer trends, therefore demand for innovative products may pose a greater risk. [21] Successful products with fundamental innovation require collaborative strategies with the vendors to fulfill the suddenly increased demand [24].

2.3. Innovation and quality

In addition to the innovative solutions in process and product innovation, achieving and maintaining the appropriate quality is an important issue for companies.

There are many barriers to define quality, one of the biggest problems is that quality has a different meaning to different people. The quality of a product is finally determined by the customer's judgement. Typically, if the customer is willing to pay the price of a product, then it can be considered to be good quality, otherwise it is satisfactory. The definition of quality is essentially the difference between the customer expectation and impression. If the gap is positive it means good quality, if it is negative, then the quality can be considered low [1]. Garvin (1986) argues that the importance of quality is determined by eight dimensions in case of products: (1) performance, (2) features, (3) reliability, (4) conformance, (5) durability, (6) serviceability, (7) aesthetics and (8) perceived quality [25].

Quality is the key to increase market share while keeping costs and price low. A research on 1244 manufacturing Chinese companies showed that during the economic transition times of the 1990s most of the innovations of these Chinese companies were about increasing quality [26]. Continuous improvement, sometimes referred as micro-innovations, is necessary to keep up the good quality [8, 27]. This includes frequent re-design of products and processes [28].

3. The connection of innovation, strategy and competitiveness

Strategy is a commitment to coherent, mutually reinforcing organizational policies and behaviors to gain a specific and unique competitive advantage [29]. In order to develop a good strategy, processes need to be made efficient [30]. This alone is not enough, resources and tools in the manufacturing need to be managed flexibly [31] and the production system has to fit the product life-cycle, this later one is one of the most important factors. In the early stages of the product life-cycle, the production system should be flexible, while later on, in case of the mature product a more automated and cost effective production system is needed [30]. The novelty value or maturity stage of the product is important in choosing the appropriate strategy for the company [29, 30].

There are five distinct strategies regarding innovation: (1) leading innovator, (2) follower, (3) imitator, (4) defender and (5) technology importer [26]. In order to understand how to develop a good innovation strategy, we first have to discuss those specific areas that offer a long-term competitive advantage.

Law systems can have an effect on a firm's innovation processes. According to a research in Delaware (US), increased takeover protection reduces the rate and the scope of innovation [32]. Innovation has an upside potential of corporate profits causing companies after accounting restatements more likely to use innovation [33]. The United States is still struggling with the competitiveness problems of the 1980s and 1990s [34]. To stop the decline in competitiveness two major changes have to

be made: (1) high tech products are needed, but to achieve these the government have to support research systems helping innovation systems, (2) corporate managements should review management structures and corporate practices. Outsourcing production to foreign countries is also a problem causing the reduction of research and development expenses and losing skilled workers. Companies should also take into account that if production and assembly is made at another place they lose industrial public goods because distance will cause to stop face to face exchange of experiences [34]. This decreases or eliminates the knowledge, which is absolutely needed for innovation [5]. In order to preserve competitiveness, the tendency for outsourcing abroad needs to be stopped [34]. Local manufacturing can even result in faster response times, which can result in better quality and higher customer experience [35].

Pisano (2015) states that growth, increasing sales and gaining a competitive advantage cannot be considered as a strategy [29]. To develop a strong innovation strategy, the following topics need to be discussed.

3.1. Creating value by innovation

An innovation goal should be set for which customers are willing to pay, which can be a product feature making the product more user-friendly, cheaper, more reliable or more durable. A strategy pursuing towards innovation should be part of the company strategy to be able to properly serve the customers [36]. An important goal is to create value for the customer and for the company shareholders in the long run [29].

The more attractive the product is to customers, the sooner the followers will appear. When followers appear, price competition will develop and the value of the original product innovation will decrease, such as the value of the product itself for the customer. Therefore, it may be important for businesses to think about complementary products and services that helps them to preserve customer loyalty. Apple, for example, tries to protect its market from competitors with its related products and its own operating system.

The blue ocean strategy suggests to look for existing customer demand where there are no or little competition. This is not a technologic innovation, instead of connecting the current technology with the demand of the customers. Cirque de Soleil combined elements of the traditional circus and the sophisticated theatre. It created new market and became very successful. [35, 37]. Ioanid et al. (2017) suggests the collaboration of customers, suppliers and partner companies to enhance the innovation process [38]. The strategic question is what can be done to add additional value to the customer [39].

Wise and Baumgartner (1999) propose to broaden our horizons and not only deal with production and sales but also recognize that in many cases customers spend more on product-related services than the product itself [40]. A strategy to increase the bargaining power with customers and increase its competitiveness against its competitors is the downstream strategy. This is a so-called downstream method or strategy that

can be implemented by the following methods: (1) integrating value-added services to the products, (2) providing full service, (3) offering integrated solutions focusing on meeting customer needs, (4) controlling the distribution channels that can be interpreted as a shift in the value chain [40]. A good example of this is Coca-Cola, where a 24-pack Coke is sold for €25/piece in wholesale, but if sold from a vending machine, it can cost up to \$2/piece. This means that Coca-Cola can realize a huge premium on price if it is sold at a special place of consumption where the customer is willing to pay more for it. Manufacturers have recognized the importance of this phenomenon and are trying to get closer to the customer. DuPont started advertising its Stainmaster brand of carpet fibers not only for manufacturers but to final customers as well. This proved to be successful as customers started to ask for Stainmaster carpets though DuPont is not a carpet manufacturer [41]. Technological innovations require the use of related assets. Most of these assets lie downstream, that's why downstream operations can improve the innovation performance indirectly [42].

Downstream competitiveness lies not in the organization but in external relationships that we develop with our customers and sales partners. This often provides information about the market or customer behavior embedded in customer interaction relationships [39]. In contrast, the upstream strategy answers the question of what else we can produce and sell. Such innovation happened when the Nucor steel company producing low-margin simple products started to produce more differentiated products [43]. Upstream is an important source for innovation, especially in commodity-type industries [44]. The downward strategy focuses on what we can do for the customer. An upstream strategy favors the cheapest suppliers in terms of resources, reduces costs by maximizing volume and throughput; optimizes production and distribution chains, and aims to produce better products through innovation. A downstream strategy shapes customer perception, defines the criteria of competitiveness, builds confidence and changes criteria in production. Innovations in downstream are tailored to the needs of the customer and seek to reduce the risk and cost for the customer; they try to achieve competitive advantage, leveraging network effects, and striving for accurate collection of customer data. A good example of this is the success of Facebook, where the success does not come from human resources, but from networking and detailed information about the customers [39, 45].

3.2. Main types of innovation

Adam Smith (1806) showed that clever division of labor leads to far greater results than one employee completing a complete product or operation. His insight reflects the Industrial Revolution, which was about process innovation: reducing waste and increasing productivity by developing using new technologies [46]. Ideally, efficient and innovative work organization influenced productivity more than individual effort, specialization is essentially an advantage that is underlying in modern management science.

Pisano and Shih (2012) conclude that the new factor is the innovation-based competition, where the USA should face competition with countries such as China, Brazil, India and countries from the Eastern European region [47]. The USA can improve its competitive position by government support of research and development and education. Pisano and Shih (2012) discuss the relationship between innovation and production, which can be defined in four ways: (1) low-level product innovation, (2) low-level process innovation, (3) in-process innovation, (4) process-driven innovation [47]. A research of African and Latin-American companies show that process innovation is less likely in developing countries than product innovation. It is easier to introduce new products in these economies than innovating processes. [9] A study of Brazilian manufacturing companies conclude that buying modern technology proved to be more successful in these cases than internally innovating the technology [48]. A study of Latin American companies revealed that this is particularly common for low-tech industries [49].

In further research Pisano (2015) develops his idea and examines the relationship between business model and technological innovation. Technological innovation creates economic value and it is a driving force in achieving competitive advantage, but there can be other sources of competitiveness [29]. For example, in case of Netflix, Amazon, LinkedIn, Uber companies the innovation is in their business models. Geissdoerfer et al. (2017) developed an eight step model to facilitate business model innovation [50]. Ibarra et al. (2018) suggest four different business model innovation ways for the digital transformation of manufacturing companies towards Industry 4.0 [51]. William Abernathy and his colleagues [52] developed an innovation map that can differentiate the types of innovations by two dimensions. One dimension is the degree of technological change and the other is the degree of change in the business model. Based on the dimensions defined by the authors, the following types of innovations can be defined [29]:

Routine innovation: minor changes in business model and technology. For example, newer versions of Microsoft Windows and different versions of Apple iPhone. The question may arise how Intel could earn large part of its income by only routine innovations? Intel has not implemented a breakthrough innovation on its processors since the development of the first i386 chip. Similar is the case with Microsoft and Apple, as there are no radical innovations in new products, they are still improving previous version of their products [29]. Qihoo 360, a Chinese internet security company, could achieve high growth using micro-innovations [27]. These small-dimensional innovations are often fragmented innovations which only affects one function of the company [7].

Disruptive innovation: Innovation which revolutionizes the economic structure destroying the old methods [59]. The invention of disc brakes made useless all the investments of the automotive sector in drum brakes [42]. Disruptive innovation cannot be only for technological reasons. Big changes can occur in the business models. Google's free Android operating system compared to Windows and Apple's similar mobile

operating systems is a disruptive innovation, as Google's Android is demolishing their market share with its innovative business model. According to Christensen et al. (2015), we should be careful about disruptive innovation because it is not useful for all companies and different innovation methods require different strategic approaches. In disruptive innovation success is not only the result of a revolutionary newness, since the Uber service is a taxiing service, which is a traditional one. The product itself cannot be regarded innovative, but the business model in this industry is revolutionary [52].

Radical innovation: In this case a radical technological innovation happens, but the business model itself is not changed much. An example of this can be the pharmaceutical biotechnology developments in the 1970s and 1980s or nowadays the spread of smart products, which constantly collect information about the users and the environment [51]. Five organizational processes are needed for radical innovation: (1) technology super-scouting throughout the supply chain, (2) search heuristics, (3) sustainability performance metrics, (4) championing the value chain for product innovation and (5) use of open innovation [53].

Architectural innovation: This kind of innovation results in the renewal of both technology and the business models, so it can be considered two-dimensional. Kodak and Polaroid have been forced for architectural innovation with the spread of digital cameras, as technological innovation changed their source of revenue: instead of film rolls and related services, profits are gained from selling digital cameras [29].

Companies have to decide which type of innovation to use, how to build it into their business models and what resources to use [29]. A survey of 159 companies in Spain show that innovation is encouraged by organizational memory and learning capabilities [54]. Among these types of innovations, disruptive, architectural and radical innovations are helped by growth, routine innovation makes the company a follower in the best scenario, or bankruptcy in the worst scenario [29]. We need strategic thinking and to be able to find the optimal balance between the four innovation type [29]. It is suggested to use key performance indicators (KPIs) to effectively measure innovation [55, 56]. Measuring innovation capacities depends on strategy, organization, learning, processes and networks [57, 58].

3.3. Innovation through Customer Relationship Management

There is definitely a need of advanced information systems to support and process ideas [29]. One way of collecting customer information is using CRM (Customer Relationship Management), which collects important customer information for the company through the internet, call centres, resellers and dealers. Siebel had set up a comprehensive customer information system (CRM), which was world-class and had a market share of around 50%. Compared to Oracle the secret of success lies in continuous communication with customers, taking the individual customer needs into consideration [60].

Modern technology has a major role in collecting information and studying customer behaviour. From the

customers' side technology readiness is needed to adopt and use new innovative technologies [61]. Not only information can be collected with the help of IT infrastructure, but the customer may become self-serviced, saving labour costs. Those companies that took advantage of IT possibilities such as IBM, GE and Intel were able to survive, but those not taking it seriously, disappeared, such as Zenith, American Motors and RCA. Some companies used an intermediate way instead of making radical innovations, so the change was not effective, such as in case of General Motors and Xerox [62].

Another option next to idea collection is the product or process created by involving the customer. Although companies working closely with customers do not always notice the possibilities of innovation. To be able to succeed customers have to understand the basis of the production process and the parameters of manufacturing [29]. A survey of 192 Australian companies shows that acquired knowledge will not lead to customer-focused solutions directly. Using the knowledge gained from customers, new knowledge configurations need to be developed [63].

3.4. Open innovation

Effective innovation cannot guarantee the success, but has a positive influence on the innovation success rate [55]. A clear innovation strategy helps to understand which practices will be appropriate for the company. One popular solution is crowdsourcing which is a method of collecting solutions from employees and customers [29]. Open innovation is another way to increase the rate of innovation and decrease the according risks. The possibilities of single SME companies for innovation are limited. Open innovation refers to external knowledge flowing into, and internal innovation flowing out the company [64]. Coopetition is also a solution for sharing innovations [65]. Companies using open innovation strategy are using external knowledge are also willing to share their knowledge with other [66]. External knowledge is not sufficient, it should be integrated with existing knowledge in the company and linked with the core business model [63, 67]. External and internal innovations are not complementary. A longitudinal research of Irish manufacturing plants between 1991-2008 shows that using the open innovation strategy increases the innovation outputs as well. [68] A study of 265 Chinese companies shows that open innovation speeds up new product development [69]. External innovation typically increases the profit of a company [70]. Idea generation inside the organization is essential as well. The Temporal Think Tank (T3) idea creates temporary groups of people to incubate new processes and products. Participating people are from various parts of the organization. At intervals, the members of the group can be replaced to further encourage new ideas. [71]

Exploiting the market pulling forces can be a good solution but it has also risks because it is bounded to the will and conceptions of customers. The main idea of market push strategy is that companies first define their innovation strategies and find markets for them, such as it happened in case of the Novartis pharmaceutical company. This strategy may

involve risks such as excessive consideration of customer demand, lag behind new technological development trends or developing new technologies without real market demand for them [29, 72].

4. The Alibaba case: Radically changing the manufacturing sector

Alibaba, couple with Beijing's "Made in China 2025" plan to radically change the manufacturing sector globally. The B2B platforms, such as the platform of Alibaba forces industrial companies to rethink their business models. Companies have to look beyond just making product and controlling the pipeline for selling them through traditional marketing channels. B2B platforms can create network effects changing industrial value chains. Open platforms open to third-party contributors, such as Alibaba makes the openness a part of the value proposition. [73]

Alibaba is a Chinese multinational conglomerate holding company in the e-commerce sector with B2B, B2C and C2C open platforms. These platforms are decreasing costs by eliminating the complexity and building a more effective network [74]. Innovative companies like Alibaba needs a new approach of management, which is based on iteration and coevolution as declared by Ming Zeng, the CEO of Alibaba: "Never let an MBA near a marketplace that can run itself" [74, 75].

The common points of innovation, strategy, technology and quality can be summarized in the case of Alibaba's subsidiary company, Ant Financial, which is stated as one of the world's most valuable fintech companies in the World Development Report 2019 [76]. The company is one of the most valuable affiliate company of the Alibaba Group. Ant Financial uses automation to improve quality and efficiency. Credit assessment is done automatically without human labour based on algorithms. This allows faster operations at cheaper costs which is seen as a quality improvement by the customers. Traditionally saving costs and increasing quality was against each other. As the Ant Finance case shows, innovation using technology can increase quality and save cost at the same time.

Alipay, which was rebranded as Ant Financial in 2014, was founded in 2004, is able to handle financial transactions easily and reliably. These were uncommon when it was founded. The customers' legal protection in China was very weak. Alipay was the Chinese answer to the American PayPal. Alibaba Group wanted to increase the trading volume by using Alipay. The vision of Ant Finance is to bring small but positive changes to the world by making financial transactions easier. This is made possible by digital technology, which enhances the transformation of business models and the revitalization of existing financial sector infrastructure. This can result in costs savings, changes in the business model, changes of the company strategic goals. [77] If the technology migrates rapidly, proactively changing the business model improves value creation. In case of slower-spreading technologic changes a secondary business model launched within the company can work very well. [78]

The transformation of Alibaba into a digital giant can be an example of the right combination of innovation and business strategy, where the company shifted its traditional commerce activity to online e-commerce using the radical advancement in digitalization. IPOs can have an impact on the decision system of a company decreasing the focus on innovation strategies [79]. In case of Alibaba we see that this effect did not happen. In 2014 the IPO of Alibaba was the largest stock market entry. Today the company is in the global top 10 with sales exceeding Wal-Mart. Founded in 1999, the company has achieved tremendous growth in e-commerce. However, this was not yet clear in 2007. With the advancement of technology, several business functions became online-based, such as marketing, logistics and finance. [80] The success of Alibaba lies in creating a platform that hosted an innovation for creating a network effect of manufacturers, which transformed the Chinese retail system. Alibaba manages organizational functions online by a data driven network of manufacturers, vendors, service providers and logistics organizations. Alibaba realized in China that was done by Amazon, eBay, PayPal, Google and FedEx in the USA. Most of the highest-valued online businesses, such as Amazon, Google and Facebook from the US, Alibaba and Tencent from China were established in the last few decades. These companies grew rapidly as they took advantage of new capabilities such as networking and data intelligence.

Many high-tech organizations could successfully include the innovation in their organizational culture [81]. As the case of Alibaba shows it is very important for the organization to develop an appropriate strategy and a related innovation strategy. A good strategy usually determines how each function, such as manufacturing, marketing, finance, or R&D supports the overall company strategy [72, 82]. The success of Alibaba comes from implementing what is called smart manufacturing [83] as they automate as many processes as possible using the following: they record customer behavior; connect software solutions for each operation activity; share information by streaming; master the best working algorithms [80]. Overall, the case of Alibaba represents a data-driven disruptive innovation [56, 73].

5. Conclusions

The paper had the purpose to discuss innovation strategies. Literature research was used as a research method. The findings show that while planning the business strategy, successful companies should consider the importance of innovation as an answer to constant changes in technology and business trends, the shortening of product life-cycles and risks appearing because of these reasons and the suddenly changing environment. Main goal of innovations is to increase quality, decrease costs, increase customer satisfaction and increase the competitiveness of the company. Using modern technology, it becomes possible to achieve all of these goals together. Companies can choose from several innovation methods, like routine, disruptive, radical and architectural innovation. Disruptive innovations have the most radical effect on the

industry. Products, processes or business models can be the subjects of innovation. Open innovation helps flowing into, and internal innovation flowing out the company. The technology change allows such radical business model innovations that was unimaginable before. The scope of the innovation should be specified by the company specialties, the industry and the environment. Companies should develop such a strategy which is a coherent set of interdependent processes and structures; determines how the company seeks and solves the problem at an organizational level, synthesizes ideas, concepts and design into business strategy; and defines the concepts to be implemented.

The Alibaba case was discussed in details to identify what innovation strategy it uses. Alibaba is planning to change the manufacturing industry with its online platform using disruptive innovation. This case underlines the importance of developing an appropriate strategy and a related innovation strategy to successfully compete with competitors. The success of Alibaba lies in creating a platform that hosted an innovation for creating a network effect of manufacturers. The case also highlights that an Alibaba subsidiary, Ant Financial successfully increased its quality through innovation while at the same time decreased its costs. The Alibaba case can be used by managers as an example of a successful innovation strategy, which includes strategy, technology, quality and business model transformation.

References

- [1] Vörös J. Termelés- és szolgáltatásmenedzsment. Átdolgozott kiadás. Budapest: Akadémiai Kiadó, 2018
- [2] Windler K, Jüttner U, Michel S, MacDonald EK. Identifying the Right Solution to Customers: A Managerial Methodology. *Industrial Marketing Management* 2017;60:173-186.
- [3] Karabulut AT. Effects of Innovation Strategy on Firm Performance: A Study Conducted on Manufacturing Firms in Turkey. *Procedia - Social and Behavioral Sciences* 2015;195:1338-1347. DOI 10.1016/j.sbspro.2015.06.314
- [4] Cai L, Chen B, Chen J, Bruton GD. Dysfunctional Competition & Innovation Strategy of New Ventures as They Mature. *Journal of Business Research* 2017;78:111-118. DOI 10.1016/j.jbusres.2017.05.008
- [5] Stock T, Obenaus M, Slaymaker A, Seliger G. A Model for the Development of Sustainable Innovations for the Early Phase of the Innovation Process. *Procedia Manufacturing* 2017;8:215-222. DOI 10.1016/j.promfg.2017.02.027
- [6] Van Fossen K, Morfin J, Evans S. A Local Learning Market to Explore Innovation Platforms. *Procedia Manufacturing* 2018;21:607-614. DOI 10.1016/j.promfg.2018.02.162
- [7] Birkie SE. Exploring Business Model Innovation for Sustainable Production: Lessons from Swedish Manufacturers. *Procedia Manufacturing* 2018;25:247-254. DOI 10.1016/j.promfg.2018.06.080
- [8] Hammer M. Deep Change: How Operational Innovation can Transform Your Company? *Harvard Business Review* 2004;April:85-93.
- [9] Mendi P, Costamagna R. Managing Innovation under Competitive Pressure from Informal Producers. *Technological Forecasting & Social Change* 2017;114:192-202. DOI 10.1016/j.techfore.2016.08.013
- [10] Gittel JH, Rogelio O. Southwest Airlines in Baltimore. *Harvard Business School Case Study* 9-602-156. 2002;1-23.
- [11] Porter ME: What is Strategy?, *Harvard Business Review* 1996;November-December:61-78.
- [12] Prendeville S, Bocken N. Sustainable Business Models through Service Design. *Procedia Manufacturing* 2017;8:292-299. DOI 10.1016/j.promfg.2017.02.037
- [13] Sakakibara S, Flynn BB, Schroeder RG, Morris WT. The Impact of Just-In-Time Manufacturing and Its Infrastructure on Manufacturing Performance. *Management Science*, 1997;September:1246-1258.
- [14] Herron C, Hicks C. The Transfer of Selected Lean Manufacturing Techniques from Japanese Automotive Manufacturing into General Manufacturing (UK) through Change Agents. *Robotics and Computer-Integrated Manufacturing* 2008;24:524-531. DOI 10.1016/j.rcim.2007.07.014
- [15] Kendrick BA, Dhokia V, Newman ST. Strategies to Realize Decentralized Manufacture through Hybrid Manufacturing Platforms. *Robotics and Computer-Integrated Manufacturing* 2017;43:68-78. DOI 10.1016/j.rcim.2015.11.007
- [16] Hammond JH. Barilla SpA (A). Revised. *Harvard Business School* 2008;March:1-21.
- [17] Vörös J. On the Risk Based Aggregate Planning for Seasonal Products, *International Journal of Production Economics* 1999;59(1-3):195-201. DOI 10.1016/S0925-5273(98)00100-5
- [18] Vörös J. Economic Order and Production Quantity Models without Constraint on the Percentage of Defective Items. *Central European Journal of Operations Research* 2013;21:867-885.
- [19] Amasaka K. Applying New JIT – Toyota’s Global Production Strategy: Epoch Making Innovation of the Work Environment. *Robotics and Computer-Integrated Manufacturing* 2007;23:285-293. DOI 10.1016/j.rcim.2006.02.001
- [20] Madonsela NS, Mukwakungu SC, Mbohwa C. Continuous Innovation as Fundamental Enabler for Sustainable Business Practices. *Procedia Manufacturing* 8:278-283. DOI doi: 10.1016/j.promfg.2017.02.035
- [21] Fisher ML. What is the Right Supply Chain for Your Product? *Harvard Business Review* 1997;March-April:105-115.
- [22] Kylläheiko K, Jantunen A, Puumalainen K, Saarenketo S, Tuppur A. Innovation and Internationalization as Growth Strategies: The Role of Technological Capabilities and Appropriability. *International Business Review*. 2011;20:508-520. DOI 10.1016/j.ibusrev.2010.09.004
- [23] Navarro JGC, Papa A, Garcia-Perez A, Fiano F. An Open-Minded Strategy Towards Eco-Innovation: A Key to Sustainable Growth in a Global Enterprise. *Technological Forecasting & Social Change* 2019;148:112717 DOI 10.1016/j.techfore.2019.119727
- [24] Yuan X, Shen L, Ashayeri J. Dynamic Simulation Assessment of Collaboration Strategies to Manage Demand Gap in High-Tech Production Diffusion. *Robotics and Computer-Integrated Manufacturing* 2010;26:647-657. DOI 10.1016/j.rcim.2010.06.020
- [25] Garvin DA. Competing on the Eight Dimensions of Quality. *Harvard Business Review* 1987;November-December:101-109
- [26] Guan JC, Yam RCM, Tang EPY, Lau AKW. Innovation Strategy and Performance During Economic Transition. *Research Policy*. 2009;38:802-812. DOI 10.1016/j.respol.2008.12.009
- [27] Wang W, Cao Q, Qin L, Zhang Y, Feng T, Feng L. Uncertain Environment, Dynamic Innovation Capabilities and Innovation Strategies: A Case Study on Qihoo 360. *Computers in Human Behavior* 2019;95:284-294. DOI 10.1016/j.chb.2018.06.029
- [28] Villa A. Product-Process Design and Continuing Innovation. *Robotics and Computer-Integrated Manufacturing* 1998;14:393-401.
- [29] Pisano GP. You Need an Innovation Strategy. *Harvard Business Review* 2015;June:44-54.
- [30] Hayes RH, Pisano GP. Beyond World-Class: The New Manufacturing Strategy. *Harvard Business Review* 1994;January-February:77-86.
- [31] De Souza R. Tool-Provisioning Strategies for Flexible Manufacturing Systems. *Robotics and Computer-Integrated Manufacturing* 1997;13(1):31-39.
- [32] Younge KA, Tong TW. Competitive Pressure on the Rate and Scope of Innovation. *Journal of Economic Behavior and Organization* 2018;150:162-181. DOI 10.1016/j.jebo.2018.03.026
- [33] Jia N. The Impact of Accounting Restatements on Corporate Innovation Strategy 2019;38:219-237. DOI 10.1016/j.jaccpubpol.2019.05.00
- [34] Pisano GP, Shih WC. Restoring American Competitiveness. *Harvard Business Review* 2009;July-August:114-125.
- [35] Lohtander M, Aholainen A, Volotinen J, Peltokoski M, Ratava J. Location Independent Manufacturing – Case-Based Blue Ocean Strategy. *Procedia Manufacturing* 2017;11:2034-2041. DOI 10.1016/j.promfg.2017.07.355

- [36] Jarjabka Á. A stratégia fogalmának modern jelentéstartalma. Vezetéstudomány / Budapest Management Review 2001;32(7-8):25-32.
- [37] Kim WC, Mauborgne R. Blue Ocean Strategy. Harvard Business Review 2004;October:76-84.
- [38] Ioanid A, Deselnicu DC, Militaru G. The Impact of Social Networks on SME's Innovation Potential. Procedia Manufacturing 2018;22:936-941. DOI 10.1016/j.promfg.2018.03.133
- [39] Dawar N.. When Marketing is Strategy. Harvard Business Review 2013;December:3-10.
- [40] Wise R., Baumgartner P. Go Downstream: The New Profit Imperative in Manufacturing. Harvard Business Review 1999;September-October:133-141.
- [41] Porter ME: The Five Competitive Forces That Shape Strategy. Harvard Business Review 2008;86(1):78-93
- [42] Teece DJ, Pisano G, Shuen A. Dynamic Capabilities and Strategic Management. Strategic Management Journal 1997;18(7):509-533
- [43] David C, Montgomery A. Competing on Resources: Strategy in the 1990s. Harvard Business Review 1995;73(July-August):118-128.
- [44] Rama R. Empirical Study on Sources of Innovation in International Food and Beverage Industry. Agribusiness 1996;12(2):123-134.
- [45] Porter ME, Millar VE. How Information Gives You Competitive Advantage. Harvard Business Review 1985;63(July-August):149-160.
- [46] Smith A. An Inquiry into the Nature and Causes of the Wealth of Nations. Edinburgh:Crech; Mundell, Doig and Stevenson Arch. Constable Company, and London: T. Ostell, 1806
- [47] Pisano GP, Shih WC. Does America Really Need Manufacturing? Harvard Business Review 2012;March:94-102.
- [48] Goedhuys M, Veugelers R. Innovation Strategies, Process and Product Innovations and Growth: Firm-Level Evidence from Brazil. Structural Change and Economic Dynamics 2012;23:516-529. DOI 10.1016/j.strueco.2011.01.004
- [49] Zuniga P, Crespi G. Innovation Strategies and Employment in Latin American Firms. Structural Change and Economic Dynamics 2013;24:1-17. DOI 10.1016/j.strueco.2012.11.001
- [50] Geissdoerfer M, Paulo S, Steve E. The Cambridge Business Model Innovation Process. Procedia Manufacturing 2017;8:262-269. DOI 10.1016/j.promfg.2017.02.033
- [51] Ibarra D, Ganzarain J, Igartua JI. Business Model Innovation through Industry 4.0: A Review. Procedia Manufacturing 2018;22:4-10. DOI 10.1016/j.promfg.2018.03.002
- [52] Christensen CM, Raynor ME, McDonald R. What is Disruptive Innovation? Harvard Business Review 2015;December:44-53.
- [53] Kennedy S, Whiteman G, van den Ende J. Radical Innovation for Sustainability: The Power of Strategy and Open Innovation. Long Range Planning 2017;50:712-725. DOI 10.1016/j.lrp.2016.05.004
- [54] Camisón C, Villar-López A. Non-Technical Innovation: Organizational Memory and Learning Capabilities as Antecedent Factors with Effects on Sustained Competitive Advantage. Industrial Marketing Management 2011;40:1294-1304. DOI 10.1016/j.indmarman.2011.10.001
- [55] Banu GS. Measuring Innovation Using Key Performance Indicators. Procedia Manufacturing 2018;22:906-911. DOI 10.1016/j.promfg.2018.03.128
- [56] Schrage M. Smart Strategies Require Smarter KPIs. MIT Sloan Management Review 16 September 2019
- [57] Tidd J, Bessant J. Managing Innovation: Integrating Technological, Market, and Organizational Change. Chichester, England: John Wiley & Sons, 2009
- [58] Ferreira JJM, Fernandes CI, Alves H, Raposo ML. Drivers of Innovation Strategies: Testing the Tidd and Bessant (2009) Model. Journal of Business Research 2015;68:1395-1403. DOI 10.1016/j.jbusres.2015.01.021
- [59] Schumpeter JA. Capitalism, Socialism and Democracy. London: Allen & Unwin, 1942
- [60] Simons R, Dávila A. Siebel Systems: Organizing for the Customer, Harvard Business School Case Study 9-103-0142. 2002;1-25.
- [61] Kim SH, Hwang KH. Journal of Business Research 2011;64:1147-1150. DOI 10.1016/j.jbusres.2011.06.013
- [62] Karmarkar U. Will You Survive the Service Revolution? Harvard Business Review 2004;June:101-107.
- [63] Salunke S, Weerawardena J, McColl-Kennedy JR. The Central Role of Knowledge Integration Capability in Service Innovation-Based Competitive Strategy. Industrial Marketing Management 2019;76:144-156. DOI 10.1016/j.indmarman.2018.07.004
- [64] Haapalainen P, Kantola J. Taxonomy of Knowledge Management in Open Innovations. Procedia Manufacturing 2013;3:688-695. DOI 10.1016/j.promfg.2015.07.307
- [65] Navio-Marco J, Bujidos-Casado M, Rodrigo-Moya B. Cooperation as an Innovation Strategy in the European Union: Analysis of the German Case. Industrial Marketing Management 2019;82:9-14. DOI 10.1016/j.indmarman.2019.05.014
- [66] Smieth, M, Raffo J. What Makes Companies Pursue an Open Science Strategy? Research Policy 2013;42:1531-1543. DOI: 10.1016/j.respol.2013.05.007
- [67] Saebi T, Foss NJ. Business Model for Open Innovation: Matching Heterogeneous Open Innovation Strategies with Business Model Dimensions. European Business Model Journal 2015;33:201-213. DOI 10.1016/j.emj.2014.11.002
- [68] Love JH, Roper S, Vahter P. Dynamic Complementarities in Innovation Strategies. Research Policy 2014;46:1774-1784. DOI 10.1016/j.respol.2014.05.005
- [69] Zhu X, Xiao Z, Dong MC, Gu J. The Fit between Firms' Open Innovation and Business Model for New Product Development Speed: A Contingent Perspective 2019;86-87:75-85. DOI 10.1016/j.technov.2019.05.005
- [70] Mata J, Woerter M. Risky Innovation: The Impact of Internal and External R&D Strategies upon the Distribution of Returns. Research Policy 2013;42:495-501. DOI 10.1016/j.respol.2012.08.004
- [71] Lindeke RR, Wyrick DA, Chen H. Creating Change and Driving Innovation in Highly Automated and Lean Organizations. Robotics and Computer-Integrated Manufacturing 2009;25:879-887. DOI 10.1016/j.rcim.2009.04.007
- [72] Ellis JR, Williams D. International Business Strategy. London: Pitman; 1995
- [73] Falk S, Riemensperger F. Platform Markets are Suddenly all the rage with B2B Companies. And for Good Reason. MIT Sloan Management Review 5 August 2019
- [74] Fuller J, Jacobides MG, Reeves M. The Myths and Realities of Business Ecosystems. MIT Sloan Management Review 25 February 2019
- [75] Reeves M, Zeng M, Venjara A. The Self-Tuning Enterprise. Harvard Business Review 2015;93(6):76-83.
- [76] World Bank. World Development Report. 2019
- [77] Zhu F, Zhang Y, Palepu KG, Woo AK, Dai NH. Ant Financial (A). Revised. Harvard Business School Case 617-060 2019;March:1-31
- [78] Hacklin F, Björkdahl J, Wallin MW. Strategies for Business Model Innovation: How Firms Reel in Migrating Value. Long Range Planning 2018;51:82-110. DOI 10.1016/j.lrp.2017.06.009
- [79] Galloway TL, Miller DR, Sahaym A, Arthurs JD. Journal of Business Research 2017;71:55-65. DOI 10.1016/j.jbusres.2016.10.017
- [80] Zeng M. Alibaba and the Future of Business, Harvard Business Review 2018;September-October:88-96.
- [81] Alexe CG, Alexe CM. Similarities and Differences at the Level of the Industries in Acquiring an Organizational Culture in Innovation. Procedia Manufacturing 2018;22:317-324. DOI 10.1016/j.promfg.2018.03.048
- [82] Fine CH, Hax AC. Designing a Manufacturing Strategy. Robotics and Computer-Integrated Manufacturing 1984;1(3-4):423-429.
- [83] Lyu Z, Lin P, Guo D, Huang GQ. Towards Zero-Warehousing Smart Manufacturing from Zero-Inventory Just-In-Time Production. Robotics and Computer-Integrated Manufacturing 2020;64:101932 DOI: 10.1016/j.rcim.2020.101932