

Open services innovation through an app to assist “Sport for All”

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Abstract

The author and the company have launched an application named A-three (“the App”) that allows athletes and sports enthusiasts in all generations to utilize physical and other services to implement safe and effective physical activities. The role of the App is to be an open platform, which can match athletes who seek assistance by experts and various service providers who can offer one-on-one sessions based on sports-related sciences. The target geographic market at the initial stage is a vicinity of the Osaka area, where reliable and well-trained service providers are procured and are able to travel to the client within an hour. This app will be available in the targeted Osaka area by March 2019.

Keywords: open services innovation, platform for service providers, integrated assist for athletes, sports medicine and science

1. Introduction

The author and the company have launched an app, named A-three, as an open platform where people can find experts offering sports-related science-based services. Experts who register in A-three offer their skills and knowledge as associates through individual service to athletes and other users who have connected through the App.

In the last decades, sports-related sciences, such as muscle strengthening and mental training, have developed and advanced academically in society because of the need to improve the performance of elite athletes. Many developed countries have established national training centers, and even some countries send experts and equipment to the Olympics venues to provide integrated support, including physical, mental and nutritional assistance, to delegates. For example, in PyeongChang 2018 Winter Olympics, Japan Sports Agency and Japan Sport Council set up “High-Performance Support Center” in near game sites and provided integrated services to the athletes (Japanese Olympic Committee, 2018).

Contrary to elite athletes, it is not easy for grass-root level sports enthusiasts and most student-athletes to get integrated assistance. There is not enough information on service providers and channels to allow these users to access in a community. In baseball clubs and football clubs for boys and girls in a local Japanese community, for example, it is common that managers with experience in the same or similar sports offer training to pupils, without any knowledge of sports-related sciences. Aside from this, senior citizens enjoy mild physical activities for health promotion without preventive measures for falls and other injuries. Therefore, there is a need to offer science-based services to non-elite athletes, adolescents, sports enthusiasts and seniors to prevent unnecessary

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injuries and train efficiently.

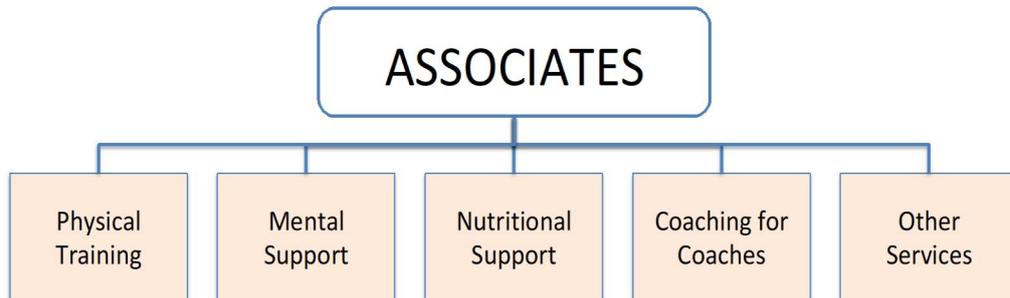
It is noted that the number of well-educated experts has been increasing because universities for sports-related sciences have become popular in recent years. People also have begun to recognize the role of sports-related sciences for physical training and dietary habits. This recognition, along with sufficient experts in the field, allows greater access to sports-related sciences to the general public.

2. An app as an open platform to connect athletes and service providers

2.1 Design and structure of the App

The App is named “A-three,” meaning “athletes assist associates.” “Associates” in A-three consist of service providers. Hence, in the associates’ categories, there are various kinds of experts such as athletic trainers, mental trainers, sports nutritionists, and nail care specialists, etc. However, to make associates’ skill and knowledge clear for clients, A-three provides five courses, which are physical training, mental support, nutritional support, coaching for coaches, and other services as shown in Figure 1.

Figure 1. Structure of A-three service providers



Each associate is registered in a course, and each associate offers several programs depending on his/her skill. For example, an associate who is an athletic trainer specialized in baseball injuries is registered under “Physical Training” course and provides “Throwing for Baseball Players” program, as seen in Table 1.

Table 1. Programs in each course

| Course | Physical Training | Mental Support | Nutritional Support | Coaching for Coaches | Other Services |
|----------|--|--|---|---|---|
| Programs | <ul style="list-style-type: none"> • Performance Improvement • Injuries Prevention • Facilitate Recovery • Throwing for Baseball Players | <ul style="list-style-type: none"> • Performance Improvement • Recovery from Slump • Strengthen Mentality • Meditation | <ul style="list-style-type: none"> • Growth Support • Strengthen Bones and Muscles • Healthy Cooking | <ul style="list-style-type: none"> • Professional Coaching | <ul style="list-style-type: none"> • Yoga • Pilates • Tai Chi • Qigong • Nail Care • Gymnastics |

A client can find an appropriate associate based on the information provided in A-three. Once a client finds a suitable associate, the client contacts the associate through communication services such as phone calls, SNS, or email. After the intake conversation, the associate conducts a one-on-one 30-minute session with the client. The charge for matching in A-three is ¥6,000 per session. A-three provides a unique platform where a wide variety of sports-related science associates can deliver services to assist the clients' activities, through easy access via the App.

Using the App, athletic trainers can coach the clients on how to build up muscles to improve their performance; Physiotherapists assist the clients to recover and to prevent from injuries; Nutritionists help athletes and their parents to choose healthy diets and even support them to improve their dietary habits; Mental training experts provide mental coaching as well as slump recovery sessions. There is also a provision for Yoga instructors, and physical exercise instructors who offer mild exercises to all generations requiring specific exercise regimes, especially for senior citizens.

2.2 Registration and quality assurance of the service providers

Sport-related science disciplines are broad reaching, and therefore it is acknowledged that registered associates in A-three have a wide array of licenses. It is vital that the associate can be recognized as a right service provider and has a professionally recognized reputation in the community. Therefore, all associates are subject to an evaluation panel before registration. After being confirmed as an appropriate associate, each of them is registered in A-three. We also ask clients to rate the associates each time on a five-point rating system so that future A-three clients can select one based on their rating.

In order to improve the quality of associates, seminars are conducted as well as a mentoring system is provided to the associates to give them opportunities to learn and upgrade through courses within and across disciplines. With the extensive panel-approved network in A-three, associates can refer their clients to appropriate associates if necessary. Therefore, we are trying to establish an open community among associates.

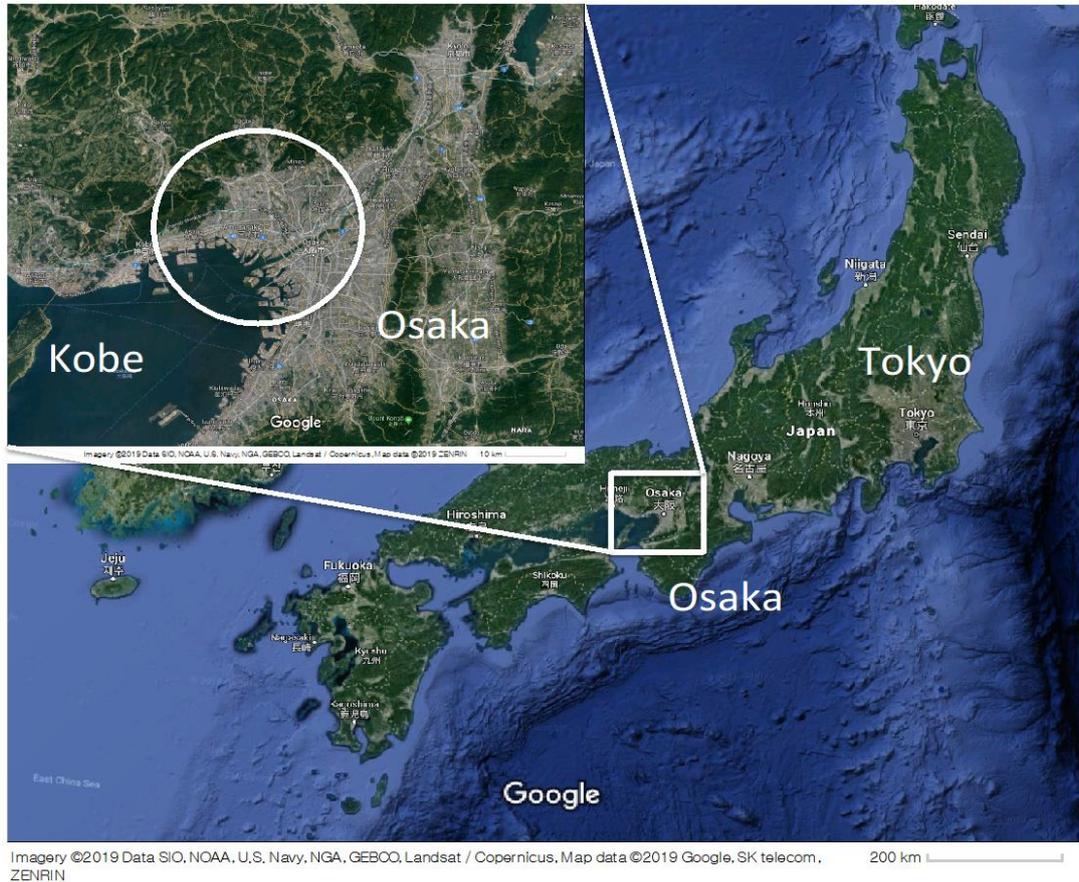
2.3 Geographical targeting market

Figure 2 shows a geographical targeting market. As an open platform, it is crucial for A-three to assemble reliable associates as well as to be reputable within a community.

The author has been working as a sports doctor for more than thirty years in Osaka and Kobe areas in Japan. Therefore geographical targeting market is set in the area encircled about a 10-kilometers radius, including part of Osaka and Kobe. The author's existing network including athletic trainers, mental trainers, nutritionists and other service providers for athletes are the specific resources of A-three in the immediate future. Within the target area, the population is about two million.

To be recognized by possible users, we have distributed the App through school teachers, sports club instructors, sports goods shops and athletes in the community. Associates are also considered strong distributors for A-three. Aside from these, word-of-mouth marketing through clients will be seen as a powerful distributing tool.

Figure 2. Geographical targeting market



3. Discussion

3.1 Development and diversification of sports-related sciences

3.1.1 Dawn of sports-related sciences

According to a sociological study in 1999, modern sports have developed along with civilization and establishment of nation-states (Dunning, 1999). Throughout the 19th century in the United Kingdom, the United States and European countries, various sports now we enjoy were founded and standardized rules were created. Meanwhile, medicine also advanced exponentially in the 19th century due to the invention of anesthesia, X-ray and the development of antiseptic methods.

In the early 20th century, along with the growing popularity of Olympic games and other sports competitions, sports medicine and related academic societies were founded in Germany, the UK, and the USA. Following the rise, sports medicine became to include exercise physiology, nutrition, psychology, and pharmacology for the sake of athletes' performance enhancement (Dunning, 1999).

3.1.2 Diversification of sports-related sciences in the late 20th and 21st century

In the second half of the 20th century, with the Tokyo Olympic Games in 1964, Japanese sports-related sciences became to grow in universities. Most sports doctors, however, were more interested in sports-related disorders and injuries, so that performance-enhancing training was left for sports physiologists and other scientists. Waddington noted that the commercialization of sport in the late 20th century is one of the factors that athletes became to seek performance-enhancing methods. Commercialization after the Los Angeles Olympics, in particular, influenced sports societies in many western countries as well as Japan and sports societies became more competitive. Hence, some high-performance athletes and teams began to hire trainers who had studied exercise physiology (Waddington and Smith, 2009).

Furthermore, athletes came to demand diverse scientific supports, such as mental training, muscle strengthening and nutritional advice, to enhance their performance. This trend has grown in the 21st century. Today, it is not possible for team physicians to provide every support that athletes and sports teams need. Instead, physicians' role in professional teams is to refer to and coordinate every specialist the teams and athletes require.

The number of physical treatment practitioners, nutritionists, and psychologists have been increasing for the last several decades in Japan. For example, since Japan Sport Association, which is under the umbrella of Ministry of Education, Culture, Sports, Science, and Technology (MEXT), started to certify Athletic Trainers (AT) in the 1990s, the number of ATs has reached about 4,000 in 2018. Similarly, Physiotherapists (PT), who are certified by the Ministry of Health, Labour and Welfare (MHLW), have been increasing every year. Even though most PTs work in hospitals and clinics, some of them are interested in taking care of athletes. Furthermore, there are bonesetters, acupuncture practitioners, and masseurs who are also certified by MHLW. Interestingly, both MEXT and MHLW approve schools for bonesetters. The number of bonesetter schools grew from 14 in 1998 to 109 in 2015. In addition to license holders approved by Japanese ministries, there are more than 300 National Athletic Trainers Association (USA) accredited trainers. Most of them are working for high-level sports teams, such as university teams and professional teams.

Based on the curricula of each course, skills and knowledge for sports-related sciences are well taught to them as physical service providers. Hence, there currently seems to be a sufficient number of physical care and training support providers in the community. As those physical experts are recently developed, they have not yet been well recognized by grass-root level sports team instructors, athletes, and their parents. Based on previous examples of brand involvement and relationship marketing (Andersen, 2005), there is an acknowledgment that once potential users recognize how experts work to improve non-elite athletes' performance, users will be more ready to seek experts' support. Nutritionists and psychological service providers have also required as much education as PTs and ATs. Although most workplaces for them have been healthcare institutions such as clinics, hospitals, and long-term care facilities, they could also provide services to adolescent and grass-root athletes in a community.

3.2 Demographic change and "Sport for All"

3.2.1 From aging society to super-aged society in Japan and Asia

According to the World Health Organization(WHO) definition, a country whose population consists of more than 7% of 65-year-old and older is called an aging society, and more than 14% becomes an aged society. Most of the European countries took more than 50 years to become aged societies from aging societies. On the contrary, Asian countries took and are taking a much shorter time to become aged societies. For example, Japan, whose elderly population already accounts for more than 25% and therefore now called super-aged society, took only 26 years from 1970 to 1995. Following Japan, Singapore, South Korea, Thailand, and China are anticipated

to become aged societies more rapidly within two decades from now.

In the aging societies and aged societies, however, disease patterns have changed. Instead of a single disease that can effectively be treated in hospitals, seniors have more than two chronic diseases or physical disorders simultaneously. Those diseases and disorders are not immediately life-threatening, but eventually, they lead the person to death, if not, bedridden.

As aging population increases, people have become healthier and less vulnerable compared to the same age group in earlier decades. Although in general the elderly have become more vigorous, human beings face a frail and weak stage at the end of life. Meanwhile, in many countries, family structure has changed from extended to nuclear type. Therefore, there are two aims that governments and communities have to take on in aging societies. Firstly, it is crucial to keep the elderly healthy as long as possible. Governments should initiate promotion of physical activities and dietary habits to extend healthy life expectancy. Secondly, communities should prepare measures to support the frail elderly population not only physically but also socially, including spiritual support, until the end of life. Communities and local governments may have to provide house chores assistance, such as cooking, doing laundry, cleaning houses, and helping to bathe, etc. Social activities such as opportunities for conversation in the family or community are essential ways to support the elderly both emotionally and spiritually. Hence, elderly care today should be community-based and integrate everything related to people's life. Modern medicine still takes the critical position of integrated elderly care, but not central. Maintaining physical activity has become much more crucial for seniors to continue having a healthy life in a community (Iwasaki, 2018).

3.2.2 Role of physical activities to prevent non-communicable diseases

The World Health Organization and most countries have been promoting physical activity for health (WHO, 2010). Diseases patterns in many countries have changed, and we have to prevent non-communicable diseases, such as diabetes and strokes, most of which are partially caused by physical inactivity. According to the recommendation by WHO, all age group should do at least 60-150 minutes of moderate-intensity physical activities per week depending on age group. In a population-based approach, which targets all the citizens in the group to improve average health condition, people in communities should be provided reasonable and reliable opportunities for physical activities.

3.2.3 Physical activities and “Sport for All”

“Sport for All” initiative originally started in the 1970s in the UK. Now many countries support the initiative through promotion programs and financial aids (Sports Development, 2019). The government of the US states that the initiative means not only for the effect of physical activity but also for social and personal development and health throughout life (U.S. Department of Health & Human Services, 2019). Japan Sports Agency has been promoting a life-long sports society through “Sport for All” initiative (Japan Sports Agency, 2015). Hence, “Sport for All” initiative takes roles in both individual health and peace of society.

3.3 Needs of integrated assistance for athletes in all generations

3.3.1 Integrated assistance for elite athletes

In Japan, many elite athletes were affiliated to or employed by private companies that supported them financially. Alternatively, some elite athletes worked at high schools and universities as teachers, where they had easy access to practice venues. After the economic bubble burst in the early 1990s, many companies withdrew their support for sports clubs and elite athletes. Today, they are well supported through government

budget, which is underpinned by the Basic Act on Sport and the Second Sport Basic Plan issued in 2011 and 2017, respectively. For example, elite athletes such as the Olympic candidates are allowed to access the National Training Center where a variety of experts work for the elite athletes. Although some athletes may be dissatisfied with the quality of services in the center, it provides sports doctors, physiotherapists, athletic trainers, certified mental trainers, nutritionists and accommodation including the athletes-oriented cafeteria. Once elite athletes are deployed for the Olympic games, they are allowed to utilize the “High-Performance Support Center,” which is set in nearby Olympic venues so that they can prepare for the performances and they are well protected from various risks such as food allergy and anti-doping misconducts. Hence, elite athletes have easy access to integrated assistance both in domestic and international venues.

Since the establishment of the Japan Sports Agency in 2015, many of the sports-related policies were moved from the MEXT to the Agency. One of the aims of the Agency’s policies is, as mentioned above, “Sport for All,” which targets “a life-long sport society where everyone can enjoy sport whenever, wherever and for however long they want” (Japan Sports Agency, 2015). Also, the Agency has made a policy to revitalize regional communities and the economy through sport, in which sports are integrated and expanded along with other industries. Meanwhile, thanks to the national budget and facilities for elite athletes that have developed in the last several decades, sports-related sciences have also advanced. Researchers and practitioners in communities have also improved their skills and knowledge in various scientific fields. Today, many university sports clubs incorporate athletic trainers and nutritionists. Even some elite high school baseball teams hire not only athletic trainers but also nutritionists and mental trainers.

3.3.2 Demand of integrated assistance for non-elite athletes

Until recently in Japan, sports activities in junior and senior high schools are organized under the national education system where teachers are assigned to oversee sports clubs in school. Some teachers are enthusiastic and would support students to improve their performance. It is also noted that there may be a reluctance to this responsibility. An important point to note is that most of them are not experts in the physical and mental condition of students. There is a movement that sports activities be taught and enjoyed outside of schools. Because most teachers are not experts in sports, athletes and parents would like to join sports clubs outside of school where well-experienced instructors teach them. Since 2004, many grass-root sports clubs have sprung up across the country with political support by Japan Sport Association (JSPO), a public interest incorporated foundation, which governs National Sports Festivals, and certifies sports instructors. There are also a lot of grass-root sports clubs that are run privately. Besides sport-specific skills, athletes in the clubs demand integrated assistance to prevent injuries and slumps and improve strength and performance.

Unfortunately, there is a mismatch between demand and supply in sports-related sciences experts provision in communities, although the number of well-educated experts are increasing. Those who can find full-time jobs as a trainer are very few. Some trainers provide part-time services to clients through word-of-mouth. Others cannot make a living as trainers. One of the reasons why well-educated and skilled practitioners cannot find clients is that there has not been a market place where demand and supply match.

3.3.3 Service providers for athletes

Integrated assistance for athletes includes fundamentally physical training, mental support, and nutritional support. We exclude medical and dental treatment for athletes from associates in A-three because doctors and dentists offer conventional treatments authorized by the national insurance scheme in Japan. The procedures are delivered only in certified medical facilities such as hospitals and clinics.

Outside of the national insurance system, athletes can obtain physical assistance to enhance physical

performance by bonesetters, masseurs, acupuncture practitioners and private-qualified trainers such as strength coaches. Athletic trainers can also provide various physical exercises. Besides those physical practitioners, athletes sometimes desire mental, psychological and even spiritual assistance. There are several licenses for psychological care, including sports mental training practitioners licensed by Japanese Society of Sport Psychology, certified clinical psychologists, etc. For nutritional support, there are sports nutritionists, certified nutritionists. Physical, mental and nutritional assistance are the primary services that most athletes and parents of adolescents seek. Instructors for grass-root sports clubs may have a strong demand for coaching regarding their coaching skills because most of them have not had proper education and training on how to coach their pupils. Therefore, professional coaches can offer some advice to sports coaches. Under the movement towards “Sports for All,” athletes in all generations and even ordinary senior citizens may need various services providers, such as Yoga, Pilates, Tai Chi, general-gymnastics instructors, nail care specialists, and meditation instructors.

Too fragmented services and too broad definition of service provision cannot create values to the clients in healthcare services (Christensen, Grossman and Hwang, 2009). Hence, integrated services with several experts are essential in the care cycle for patients (Porter and Teisberg, 2006). This is also true for athletes who seek holistic support. Christensen, Porter and Teisberg predicted that advancement of technology can also help to provide integrated services.

3.4 Open services innovation through A-three

What A-three provides to a community is a platform where various associates meet and provide innovative services based on their skills, knowledge, and experience to clients.

Chesbrough stated that economic activities in the world have been shifting from manufacture to services in the late 20th and 21st centuries (Chesbrough, 2011). He also notified that open services innovation would become breakthrough in the next decades. Unlike goods, services, in general, require clients’ participation to improve the quality and complete the processes (Kotler, Bloom and Hayes, 2002). Chesbrough took up the case of iPhone and Google. Contrary to the previous mobile phone companies that had tried strictly to put as many software as possible into their products, what iPhone and Google had provided was platforms where third-parties and services developers openly participated and offered new services through an individual mobile phone. For example in healthcare, there have been many developed blood-sugar levels recording apps and blood pressure recording apps, which allow anyone to record their data electronically. Countries like Singapore provide online health records to citizens (HospitalInsider by GovInsider, 2019).

As the role of A-three is to provide a platform for associates who deliver human services based on their skills and knowledge, one of the ordeals of human services is that most of the value is invisible and intangible. Furthermore, unlike sold goods, the clients may not perceive the benefit soon after the delivery. According to the service-dominant logic of marketing, however, the application of skills and knowledge is the fundamental unit of economic value exchange. And the clients are always co-creators of value; therefore it is crucial for associates to cultivate a reliable relationship with them (Lusch and Vargo, 2015).

3.5 Technology in A-three and future innovation for marketing

Aside from registrations of associates in A-three, we utilize the technology for cashless payment system. Because associates would not handle cash on sites, users pay their service fee through A-three based on the price agreement with service providers. A-three accepts credit card payment, payment at convenience stores, and Japan Post offices. Hence, the payment system allows A-three to be used in a wide range of locations.

Although the current system of users' profile recognition does not allow A-three to recommend associates to users based on their profile, the next version of A-three with artificial intelligence technologies will be able to bring up several recommendations based on users' profile.

4. Conclusion

A-three provides a platform for associates who have strong skills and knowledge based on sports-related sciences. More importantly, the role of A-three is to integrate all associates so that athletes can get holistic services to improve their performance by preventing adverse events. In other words, A-three offers breakthrough services for athletes with open services innovation. Furthermore, with the advancement of technologies for A-three, such as data mining and cashless payment systems, users will be able to easily utilize a wide variety of human services that are only provided through direct contact.

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