

# RESER International Conference: Triple-Win: Beneficial Business Models For Health Prevention Beyond Changing Demographics.

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*The paper discusses why the market for health and wellness is a prospective one. Businesses may have the opportunity to benefit from providing health related services/solutions. However not only businesses benefit from that. Citizens, as customers of such services, might also benefit from the services and their results. If health for a sustainable period of time is the goal, and this goal is achieved, the entire society will benefit. Lower spending for health care will be of great importance not only in ageing societies. The paper provides a business model typology for businesses in the health market and presents a prototype service offering. The service prototype has been created using a service engineering approach.*

## 1. Change in demographics—chances or threats

The change in demographics that most western nations including Japan experience is a change towards something that is oftentimes described as „greying society” (e.g. Roseveare, D. et al., 1996; Boling, 1998). A question that unavoidably arises is how can a society afford to care for their elderly (Disney, 1996)? This holds especially true if we consider that as status quo elderly persons tend to suffer from more severe illnesses than the young. Doblhammer and Kytir provide evidence that the expectancy of a healthy life of aging populations might expand if the correct prophylactic measures are taken in time (Doblhammer, 2001). From any given perspective a human life is limited to a certain life span. Due to improvements in external factors (e.g. safer work environments, improved nutrition situations, advancements in medicine, etc.) this life span might be expanded. Yet at the same time it is uncertain which of the following cases might occur: a) the individual achieves a higher age but suffers from illnesses over an extended period of time at the end of his/her lifetime or b) the individual enjoys good health for a long time and only experiences a relatively short period of ill health at the end of his/her life.

Medical research suggests that a lot of individuals of today’s societies are en route towards case a) (cp. Antonovsky, 1979; Antonovsky, 1987; Leppin, 2009; et al.). This holds true since citizens of western nations adopted lifestyles of little physical activity, work related stress, bad eating habits and other unfavourable factors. An indicator for future health related problems and serious illnesses like diabetes and coronary heart

disease is the occurrence of the “Metabolic Syndrome”. The International Diabetes Federation IDF administered in 2006 the consensus worldwide definition of the metabolic syndrome as central obesity (defined as waist circumference above certain levels) and any two of the following raised triglycerides, reduced HDL cholesterol, raised blood pressure, raised fasting plasma glucose or already diagnosed type 2 diabetes.

On the other hand, medical research suggests as well that battling metabolic syndrome might be an excellent way to direct individuals toward an individual life scenario that will fall into case b) as described above (cp. World Health Organisation WHO 1986, 63; Leppin, 2009; Pfaff, 2006; et al.). Key to achieving improvements against the metabolic syndrome is adopting a healthier lifestyle. Changing human behaviour is a strenuous task. Getting the stereotypical “couch potato” of his couch and into activity and towards healthy or at least healthier eating habits takes time and individual determination. And in some cases even external assistance. This external assistance is something where the chances for new business models arise. Technological innovations may be one source, innovative services another, and/or a combination of the both.

## **2. Future health as today’s investment**

As mentioned in the first paragraph, personal health unfortunately is not something that is there indefinitely. If one does not want to face a future of being old and ill but wants to enjoy getting old and stay in good health, a certain invest has to be taken today. Adopting a healthy lifestyle of at least moderate levels of physical activity and good eating habits is something that unfortunately seems not to come natural anymore. During our productive years—i.e. between finishing education and retiring from work—a lot of individuals either have physically enduring jobs that put a lot of stress on their bodies or have jobs that force them not to move at all (the stereotypical 9-to-5 office job). In the former case physical activities that balance out these stresses are indicated. In the later case any type of physical activity might bring improvements. The understanding of healthy eating habits appears to be widely spread. Yet at the same time it is hard to observe. A lot of individuals who have low levels of physical activity in their daily lives show eating habits that would be suitable for hard labouring workers. Overcoming these habits and bringing about changes in individual lifestyles is a hard task. It takes determination. It takes incentives. It takes personal investment. (“It’s a case of use it or lose it.” (Solomon 2008, 86)

Readily available on the market is a wide variety of technological innovations like highly potent yet fairly affordable miniature devices that let individuals monitor their own vital signs. Blood pressure monitors, body weight scales, and heart rate monitors can be purchased for less than 50 EUR. The personal investment is relatively low in monetary terms. Putting these devices to use may be the real invest. It takes time and personal discipline to achieve a (daily) routine. If this determination is not present these devices just lay around serving little to no purpose.

What might help to install a personal (daily) routine and bring a real and sustainable change in individual lifestyle is external assistance. This might be a doctor’s advice to become more active—which we all know does usually not last very long—or it may

be a coaching program of 6 to 12 months. The individual both invests money and time and in the end is able to keep the adopted behaviour.

### 3. Triple benefits for all involved parties

Paragraphs 1 and 2 showed the individuals' benefits from adopting healthier lifestyles. The number one reason is undoubtedly greater quality of life for an extended period of time.

But what are the other benefits a healthier way of life brings? Healthy individuals are productive individuals. For employers this might be an incentive to sponsor their employees' efforts to participate in programs that assist them in becoming healthier. A healthy employee has less sick days, is capable of handling more stress and might as well be more motivated. Employers who offer cost coverage for health assistance programs show that they care for their employees and take social responsibility.

A greater number of healthy individuals also helps reduce costs for public health systems. The health economical challenge of prevention is to compress ill health into the later years of life and to increase the ratio of healthy years to life expectancy (cp. Fig. 1:). Healthy lifestyles from as early as possible reduce the risks of chronic and/or severe illnesses in later phases of life. If for example fewer people in their 30ies and 40ies suffer from metabolic syndrome, a significant lower number of people suffering from type 2 diabetes is expected. Thus in order to save themselves future costs today's health care providers and health insurance companies might do good in investing in assistance programs to get their members towards healthier lifestyles.

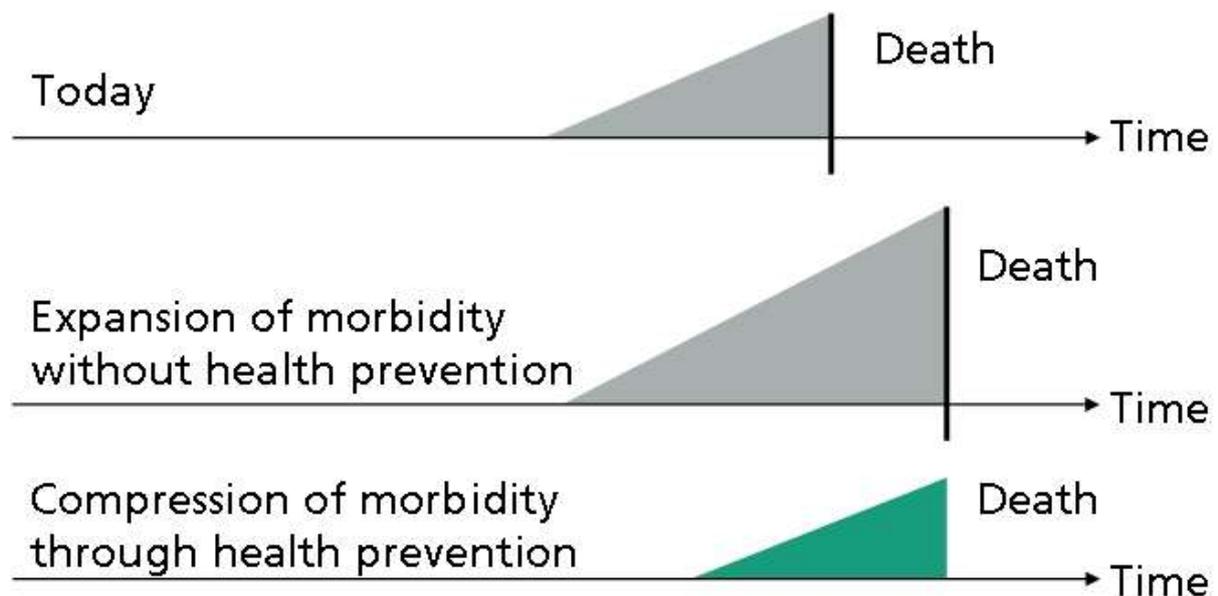


Fig. 1: Expansion vs. compression of ill health in human life span (cp.: Doblhammer, 2001).

It is obvious of course that it is not an easy decision who should be responsible for the individual health and a corresponding lifestyle. On the one side people enjoy their individuality, have freedom of choice and tend not to like being patronized by their

governments and/or institutions. Yet on the other side in countries like Germany—where a substantial public health system has been installed for generations—people have the tendency to project responsibility for health related issues onto their health care providers and/or insurances. The trouble with this: good health is like a consumption good. I.e. as long as the individual enjoys his/her health, he/she is not willing to invest in health prevention. However, if the individual health is impaired and illnesses do manifest the very same individuals want to have everything done to restore their previous health.

This is a dilemma: in times of individual good health the individual does not want to pay for activities that are capable of ensuring lasting good health (e.g. that new video game is so much more intriguing than the diet management class) but once the individual is (seriously) ill, e.g. suffering from type 2 diabetes or heart disease, the costs for treatment, cure, hospitalization, etc. should be covered by the individual's health insurance or the public health system. For the costs of one hospitalization a lot of prophylactic measures could have been covered.

## **4. Endless choice does not come out of a box**

Who is to pay for prophylactic measures to ensure good health in the future to come? Who is to provide assistance programs to ensure good health? What is the role of technological innovation in these programs? What are the effects on the future elderly?

### **4.1. The lifescience.biz research project**

The data for this research stems from the research project „lifescience.biz“. The project is kindly funded by the German Federal Ministry of Education and Research (BMBF), promotion code 01FC08063. The main goal is to identify successful business models in the German market for health prevention and wellness. In Germany this is still a very rather small market segment. However, it is considered a prospective market. Why is health prevention and wellness a prospective market? It is obvious that most western nations are facing changing demographics, i.e. people get older. Projecting today into the future shows that reaching older ages often means having to deal with serious diseases at one point or another (compare paragraph 1). This reduces the quality of life from an individual's point of view. For a public health system it means higher expenses. Today's best ager (people between age 40 and 65) will be tomorrow's senior citizens. Their present lifestyle determines to a large extent their future quality of life. Therefore a healthy lifestyle should be adopted. This is a chance for individual citizens, the public health system, and service providers.

What are the opportunities for service providers? People need both assistance and incentives for a healthy lifestyle. Assistance might be found in the field of technology, service, or both. Technology by itself does not seem to help much. Plenty of technological innovations have been designed and created. Yet rather few are available in the market. To get into regulated health markets—e.g. the German public health market—the innovation has to show its appropriateness in large scale medical and economic studies. Those studies are time and money consuming and pose a high

market entry barrier particularly for technical innovations. This is because of the short innovation cycles. The next generation of technology already emerges when the former is still in the process of approval. Apart from legal barriers, even more striking is the lack of adequate business models that make use of readily available technological innovations. A structured service development and design process must be followed to embed technologies into useful services and to handle the market entry barriers. Creating hybrid product-service bundles (a.k.a. hybrid services) seems to be the key to meet customers' demands. Considering customers' demands and needs leads to the development of new and innovative sales and marketing concepts. All these steps are cumulated into new business models. Since new business models offer new opportunities for revenue creation which is clearly a benefit.

With deep insights from desktop research as well as interview based findings the authors have been able to identify four distinguishing dimensions of business models:

- customers and market,
- value proposition,
- resources and competences, and
- financial aspects.

Each dimension consists of numerous sub-dimensions. Using a case study approach the findings in each case have been used to describe successful business models of the past. The findings are used in a generalized version to generate insight into future business model creation. To actually develop such future business models and the therein embedded services, a service engineering approach is suggested by the authors. An example case where the service engineering approach has been put into practice is part of the lifescience.biz project. Insights from a currently active pilot from the lifescience.biz project are presented in a later paragraph.

## **4.2. Case study lifescience.biz**

Within the research activities the authors have conducted a series of case study interviews. A total of 10 companies from various fields within the health and wellness market have been examined. Their service and/or product offerings range from sheer manufacturing of products to the exclusive provision of services. A trait that all examined companies have in common is a basic understanding for health issues, whether being it a medical background or a passion for sports, technical innovations or care related issues. Another common characteristic: a high level of entrepreneurship.

If all case studies are cross-examined in regard to their service offerings four distinct types become obvious. The following figure gives an overview of the different types (cp. Fig. 2):

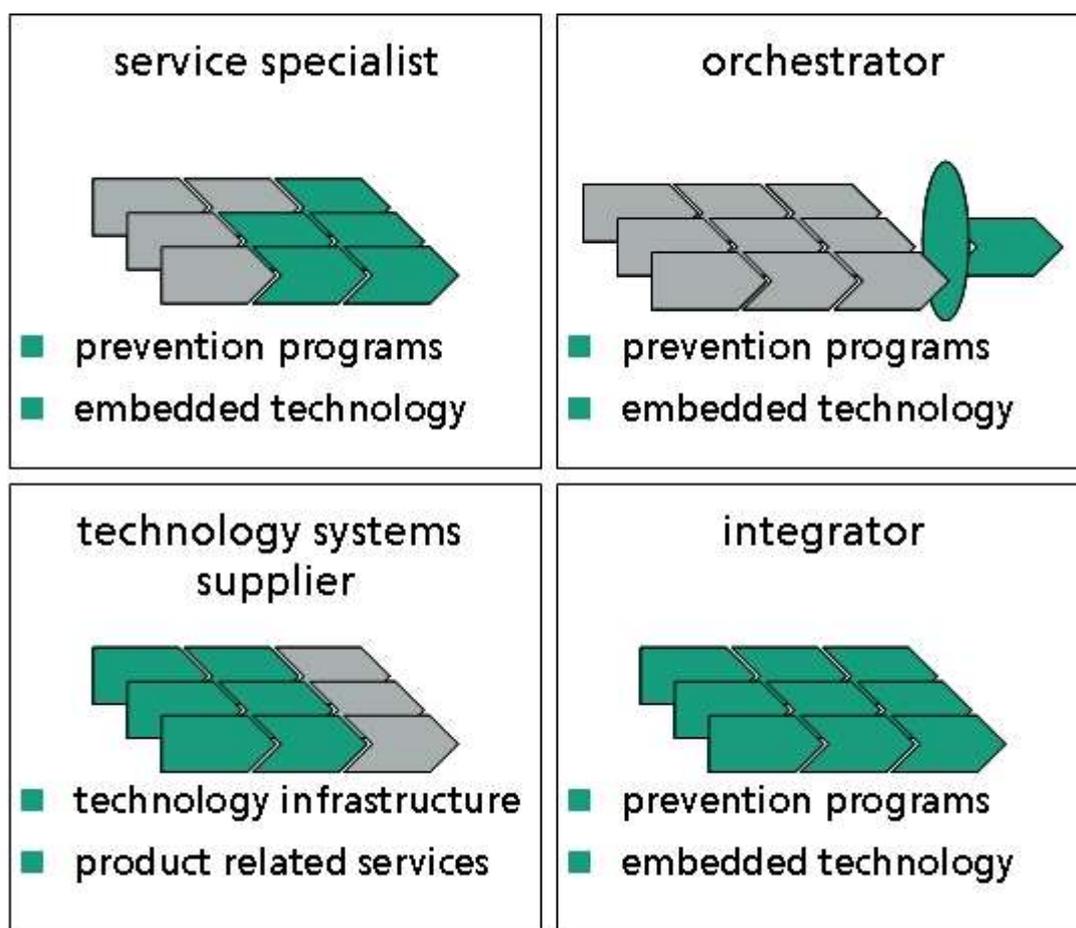


Fig. 2: Typology of business models in the health market (own source).

The first type has been labelled by the authors as „service specialist“. As the name implies the service specialist’s value creation is mostly done by the provision of service offerings. If the service provision requires the use of technology the service specialist refers to devices and systems that are readily available on the market. In the context of health prevention programs the service specialist faces the challenge that these programs are supposed to establish a customer relation only for a limited time. I.e. an individual makes use of the service offering—participates in a program—and after that is able to live independent again. Long term customer relations may only be achieved by offering a variety of services in sequence.

The second type has been labelled by the authors as „technology systems supplier“. This type focuses entirely on the development and offering of technological infrastructure, systems and devices. In order to provide its customers with optimum results a certain amount of product related services is also provided by the technology systems supplier. These services may be for example maintenance, set up, repair, hotline support, etc. A noteworthy fact: in the field of (personal) health systems innovation cycles and therefore product life cycles rotate at a very high pace. This forces technology systems provider to either sell large quantities of their products in short periods of time or to sell rather large systems.

The third type has been labelled by the authors as „integrator“. The integrator integrates different stages of the value creation process into a single organizational structure. This means that the integrator develops and maybe even manufactures

technological devices, runs the corresponding systems and employs these technologies to provide services. The integrator has a very high level of control of what the service he is offering looks and feels like. A direct link to the product development is inherent.

The fourth type is labelled by the authors as „orchestrator”. The orchestrator has a very unique position in this setting. He does not design or manufacture products nor does he provide services by himself. What the orchestrator does is something else: the orchestrator combines the products and services of other partners from a network and shapes them into a single offering. The involved network partners benefit from this since the orchestrator bundles demand from various customers. Both service specialists and technology systems providers get the chance to establish a steady, sustainable business relationship to one business partner in the form of an orchestrator. The alternative would be to establish business relations to individual (end) customers by themselves with a high marketing effort, rather sporadic time periods, and uncertain results.

What shapes the decision whether an enterprise becomes a service specialist, a technological systems provider, an integrator, or an orchestrator? Various parameters have an influence on this decision. They can be examined by looking at them in dimensions of a business model (cp. Fig. 3):

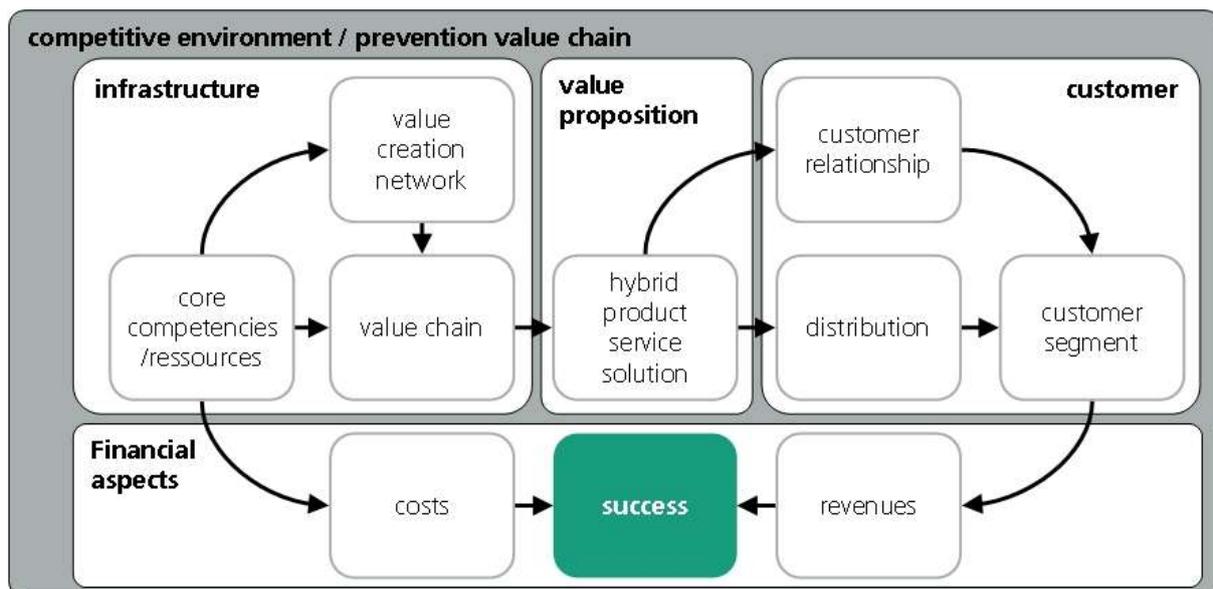


Fig. 3: Dimensions of the business model (Osterwalder, 2009)

The issue of infrastructure might direct an enterprise to become a technological systems supplier if there is a high level of engineering competencies, i.e. core competency within the enterprise. The same holds true for a service specialist who probably has access to a corresponding set of resources and/or competencies. The value creation itself is another dimension that shapes the decision process. Are there any technologies that are necessary to provide the solution? The dimension customer is crucial if the enterprise has direct access to its potential customers or if a demand bundling instance might be the only profitable market access. Last but not least are financial aspects something that effect the choice of business model.

## **5. In depth case study example**

In close cooperation with a public health insurance provider and a telehealth service provider the authors have developed a specified service concept. To design this health prevention program a service engineering method has been used.

### **5.1. Service engineering in the health market**

The service engineering approach consists of five archetypical phases: idea creation and idea assessment, requirements analysis, concept development, concept implementation, and roll out (Meiren 2002). All involved parties, public health insurance, the telehealth service provider and the authors, have in a joint effort brainstormed ideas on what might be attractive service offerings. Central to the discussion was the question on whether an idea has the potential to convince individuals to join such a program or not. In the following step a requirements analysis has been conducted to identify the needs of the market and the resources that are needed within the company for such a service offering. Since this is the creation of a pilot service offering some requirements, like actual market prices for the final service offering, have been postponed however. As of today, the service prototype is in its pilot phase. Approximately 100 volunteers are participating in the prototype program. Another 100 test persons are in a control group and another 100 are in a similar program controlling for the effects of different communication channels. The service engineering phase of roll out will be something that will take place after the project funding ends.

### **5.2. Fit today – fit tomorrow**

The goal of the public health insurance is to reduce spending in the long run. As a short term goal the positioning in the market as an innovative, customer oriented health insurance is of great importance. The telehealth service provider is looking for new opportunities to offer his services. Having the infrastructure, e.g. a fully operational call centre, as well as the human resources, e.g. trained medical staff as well as medical doctors, these assets might be used in an innovative way. New customer segments are targeted since the traditional service offerings are primarily directed at individuals that are already (severely) ill or go through rehabilitation phases. The jointly designed program „fit today – fit tomorrow” addresses individuals aged 35 to 65 (extended best age group) that suffer from metabolic syndrome. What makes it tricky is the fact that people who suffer from metabolic syndrome do not really „suffer”. Some are simply unaware of their condition, some are plain ignorant of their situation. Central obesity—the typical beer belly, love handles, muffin top—is commonly not seen as a problem. And by itself it is not one indeed. However if unfavourable blood parameters are combined with this it definitely is something one should start to worry about. And—more important—do something about it.

The first challenge of the public health insurance was to identify members who might suffer from metabolic syndrome. This is not an easy task for a German public health insurance, since they usually have no access to medical data of their members, unless the member consciously agrees to share that information. How to deal with this? The health insurance and the telehealth service provider designed information

events, where a basic awareness for the issue of metabolic syndrome and its negative consequence for future health have been raised. Central element has been a simple tape measure. If the measure was above the ICD parameter the individual has been offered to have his/her blood parameters checked. In order to reach as many individuals as possible simultaneously, the insurance and the service provider have chosen to offer the program to employers. The deal: the employer allows his employees to attend the information event on the company's premises and maybe even during working hours. The proposed benefit to the employer: immediate image gain towards a caring, innovative employer and healthier, more productive employees in the future.

The central element of the „fit today – fit tomorrow“ program is to bring about a sustainable change in the individual's lifestyle. To achieve behavioural change, the program deploys five phases: assess, advice, agree, assist, arrange (Clark, 2009). These phases are all covered by the telehealth service provider. The initial awareness building measure via the tape measure is the first step in the assessment phase. A potential program member shares this information with a specially trained call centre staff. The service provider has the information about the blood parameters of the individual. In a consultation the cooperatively assess the daily routines and behaviours. In the advice phase an awareness for the problem is created, educating the program member about potential risks of continuing the unhealthy behaviour and—even more important—the potential benefits from pursuing the behavioural change that is aimed for. On this basis certain goals are agreed upon between the program member and the telehealth service provider designated staff. Goals are divided in long term goals and short term objectives. These short term objectives are used to assist the program member to achieve success step by step. In the study group the program members have weekly calls with their individually assigned coaches from the telehealth service provider's staff. An activity sensor that is carried around by the program members helps in monitoring daily activity levels and caloric intake. The activity sensor is also believed to increase motivation (currently under study). Since the telehealth service provider, the public health insurance, and the program member have a high interest in bringing about the desired behavioural change within the program and after that leaving the then former program member to live independently a phase to steady the changes is crucial. This is achieved by educating the program member, some reminders, self incentives, etc.

The „fit today – fit tomorrow“ pilot program is currently around its halfway mark. Of course within a 12 months program there is no way of showing whether or not an individual with metabolic syndrome today will not suffer from type 2 diabetes and/or heart disease in the future. However it is possible to show biochemical benefits, i.e. improvements in the blood parameters of the test subjects.

## **6. Conclusion and further research**

Until today, recent monitoring has shown that there clearly is a lack of appropriate business models in the health prevention and wellness market in Germany. Most innovations are technology driven but yet do not address the targeted health prevention and wellness market adequately. The results from this study will be used to develop innovative approaches to the creation of new business models as well as new

services. The most interesting results should come from the description of value creation networks. A market that might have been intriguing for a service specialist but yet he was unable to obtain access to might be accessible if the service specialist joins forces with an orchestrator. The orchestrator provides a steady business partnership to the service specialist and has access to a great number of (end) customers.

The described service offering prototype “fit today – fit tomorrow” is an example for a behaviour oriented prevention measure. There are so far no sure ways of predicting the sustainability of such behaviour changes and long term health effects. However just doing nothing does not seem much more promising at all since there is indeed medical evidence that a healthy lifestyle increases one’s chances to grow old and stay healthy.

Subject to further and future research is the issue of payment models for services in the health market. Competition is tough. Medical offerings that are part of regulated markets on the one side, wellness and lifestyle oriented offerings, like gyms, spas, touristic offerings, etc., on the other hand make it extremely difficult to tell who is willing to pay what amounts for certain services.

In some countries like Switzerland health prevention programmes are already publicly funded. An issue the authors could not address is structural prevention. That is the design of public health systems, the shaping of policies, public spending, etc. to bring about changes in society. The awareness for health related issues is something that is correlated to personal income, levels of education and other socio-economic factors that go beyond this study.

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