Food & Health

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1 Introduction

Food and health are fundamental matters in everybody’s lifes. When we speak about food it has to be examined from different perspectives. A big problem is the issue of producing enough food for all people on earth. As an instrument to tackle this challenge the United Nations publish the Sustainable Development Goals (SDG). In particular Goals 2 and 3 are important for the issues of food and health. Goal 2 is about ending hunger, achieving food security, improving nutrition and promoting sustainable agriculture. Goal 3 handles the insurance of healthy lives and promoting of well-being for all at all ages (UNITED NATIONS).

In the developed countries it doesn't seem to be a problem to provide food for everyone. On the basis of this luxury the awareness of what to eat and how it is produced is pushed in the background. In the framework of the Sailing Course 2017 of the Baltic University Program it is aimed to motivate the students to discuss the topic in detail. It became quickly obvious that there are plenty of approaches to deal with the issue. To stay within the bounds of the course it seemed to be important to reduce the problem to the most demanding aspect. Doing this, it is suggested to link the topic of food with the intention of a healthy lifestyle and well-being.

As a first step to come closer to the topic, some of us measured how much they ate on board for five days using scales. Afterwards, with the results we calculated an average food consumption per person and day. The conclusion of this examination showed that everybody consumes an amount of 1000 to 2000 grams of food per day. To calculate the entire need of food on board the ship during the sailing this figures are multiplied with the number of days of the trip - which is 14 - and the number of people on board - which is 50. It made a result of 700 to 1400 kilograms for the whole journey. If we take a population size of seven billions as a starting point and assume that everybody on earth has the same average need for food of 1.5 kilograms per day it is easily to calculate that there is a requirement for about 10.5 millions tons of food per day. To produce this high amount of food it is obvious that there is a huge need of area to run farming and stockbreeding. These numbers make clear that there is a high urgency to deal with the issue. It not only concerns all people, but also has an enormous meaning for the environment.

Although the topic is this urgent, it seems that only a few people in the developed countries have it in their mind. We set ourself the goal to go over this problem.
2 Material and methods

2.1 Measurement

The food consumption was measured by using the food scales (Fig.1). The main meals were weighted during the day. However, the measurements are not very precise. For example, during sailing through high waves the weight of one meal varied from 200 to 400 grams. It was effected by the motion of the ship. The final food consumption can be a bit higher, because small snacks were not measured.

Fig. 1: Scale

2.2 Design Thinking

To deal with the nature of our task we used the methodology of Design Thinking. It is "a practical, human-centered, prototype-driven methodology for innovation that tackles business challenges in creative ways" (ZNAIDÉK). It is divided in six separately steps: Understand and Observe, which were often connected and called Empathize, Define, Ideate, Prototype and Test (ZNAIDÉK).

To empathize with potential customers we have chosen six of our fellow sailors and interviewed them. We inquired into their attitudes to healthy food and asked them about their feeding habits and general problems connected to the topics food and health. To ensure a balanced diversity of various views we chose interview partners from different countries with different professions of different ages and sexes. By interviewing vegetarians and vegans we set store on different diets as well. As each of our interview partners had his own conception of the topic individual discussions took place. We noticed that in particular vegetarians and vegans are conscious of what they eat. They told us that they often check the ingredients and origin of food before buying and that they prefer to get vegetables from local farmers instead from the supermarket, cause they don’t trust the big companies. But this conscious acting seems to be exceptional. In fact by observing our interview partners we got the impression that the general education about healthy food issues is rather low. Although many people receive their information from internet and TV, they are heavy influenced by the behaviour and the opinions of their relatives and friends. Besides, many people we asked know about health risks caused by medicines, cigarettes and alcohol they can’t do without. Also the high amount of thrown away food is well-known, but not much people make effort to change this fact.

We collected the answers of the different people, observed their reactions and behaviour patterns and transfered it to an imaginary customer. This is the step of Define. Let us assume that this customer unites all needs of the interviewed people in one persona. Afterwards, we figured out his Point of View (POV) the topic concerned. To describe this POV in one sentence we wrote this: "Person X needs to have more correct and independent information from different resources and analyse them, to let him make his own decisions, because he wants to feel healthy, feel better, feel more productive and provides himself a better future and a better quality of life".
The next phase of Design Thinking process is the idealization of the defined problem to find ideas for its solution. After the interviews it became clear that there is a big lack of information about the subjects of food and health. To work on this issue we decided to find a possibility to increase the education concerning to the problem. As an approach to unite all the fields of healthy feeding and lifestyle in one institution, we created the idea to found a company which should promote health and food issues. Our idea about this company is explained below in chapter 3.

The company could be divided in several departments. Within the departments there are many possible ways to create innovative developments and inventions to make progress in consciousness of a healthy lifestyle. How the prototypes of this developments could look like and if they fit to the needs of the customers is described in chapter 4.

3 The Company

To tackle our challenge we will start up a company with the mission to provide sustainable healthy food for everyone. It is an international food technology service and research company, which will provide our customers with different services around the world. The company is named LiveForever® (further LF) and will register as an international company in San Francisco. In sense of the mission we formulated several goals on the basis of SDGs. We describe them as follows:

- Promote healthy lifestyle to improve the general well-being and create a new generation of healthy people
- Provide access to healthy and sustainable produced food for all
- Achieve food security and improved nutrition to ensure healthy lives
- Provide information about food and health by using new technology devices and services to increase knowledge and consciousness of these topics

Fig. 2: Structure of the company
To reach these goals we divide our company in 10 departments with own competences (*Fig.2*):

1. *Research institute* will involve professionals with different background from all over the world to make researches in areas of food and health. It will also provide other units of the company, institutes, NGOs and governments with results of scientific studies. This department will include the biggest health and food community as well.

2. *Food production department* will provide our customers with new healthy products. Ingredients of our food will be produced by local farmers by using sustainable agriculture methods. The whole production process will be environment-friendly and therefore it will reduce the ecological footprint.

3. *Global help department* will take care about world issues and will try to help countries to solve their food and health problems. Among other things this point involved delivery of food to poor countries supported by donations.

4. *Event agency* will organize different activities on local and global levels. It will include meals on wheels, education tours, training camps and events at school - like lectures and seminars. Conferences and meetings, which participate heads of states, ministers of health and other public figures who have influence on world health and food policy, will be carried out as well.

5. *Publishing agency* will publish books, journals with articles of researches from scientific institutes and information booklets about food and health.

6. *IT department* will create games and applications for mobile, PC and other devices to promote and inform about healthy lifestyle.

7. *Technological department* will create innovative food and health related gadgets to integrate these issues in daily routine.

8. *Entertainment department* will shoot movies, TV shows and commercials to promote products and mission of the company and to inform people about healthy food matters.

9. *Marketing Department* will work close with Entertainment department. It will promote all departments of the company to create strong brands and strategies. Besides, it will build up an international network of people and institutions involved in food industry and health service.

10. *Fundraising department* will gather money for developing the company, for example to improve products, upgrade the capacity and share money for global food and health issues.
4 Prototype and Test

How shown further up there exist many sectors in which the company could work. One of these sectors is the development of technologies and gadgets for controlling customer's state of health. In an ideal way they should give him information about quality and healthiness of food's ingredients and advices for a sustainable and healthy feeding as well.

In our opinion healthy feeding should be an issue of general awareness. To achieve this goal we created the idea to combine health devices with everyday objects, for example, phones and watches. Keeping this in mind, our researchers developed the LiveForever® Healthy Watch® as a revolutionary comprehensive invention for total health controlling (Fig. 3). We chose the watch to produce a prototype of it. Because of its direct connection to wrist of the user it can measure health values, and that is a great gain.

The Healthy Watch® works in a smart way. It owns pre-installed applications for scanning food and monitoring user's health state. Besides, it has the possibility to measure a number of bodily functions, like blood pressure, puls rate and dates of respiration. By scanning QR- or barcodes it displays where the food is from and which ingredients it contains. A connection to the Internet allows the wearer to get more information about healthiness of ingredients and the sustainability of production. Apart from that it offers the opportunity to install additional apps. The app can create a personal profile based on individual user preferences, taking into account all the relevant information about his condition. By scanning foods during shopping The Healthy Watch® gives suggestions of recipes and user specific feeding advices. For example, it warns the user if he has food allergies, food related diseases or indigestibilities. Foodstuff which has no packing, like fruits and vegetables, can be photographed and will be identified automatically. By using a laser thermometer The Healthy Watch® can measure the temperature of the food as well. To simplify operation of the watch we developed a capable input system. In concrete terms we invented a kind of display, which is beamed on from the watch to the arm of the user. So he can control apps by touching control elements which are projected to his arm.

Our designer team constructed a prototype of the watch and presented it to our potential customers. This is what we call Test phase. From the reactions of our subjects we deduced that there is a need for a high interlinked system of information sharing. Beside inclusion of the watch's users, for example by forums for discussions, an online platform with healthy food related games and the possibility to upload one's diet plan, recipes and own health values, the food producers and sellers should also be involved in the network. Using this network could offer an user-friendly solution for the customers to check quality and healthiness of their food. For all consumers who doesn't use The LiveForever® Healthy Watch® shops could install devices which also are able to scan products and display necessary information about them.

Fig. 3: Prototype of LiveForever® Healthy Watch®
5 Conclusion and outlook

LiveForever® Healthy Watch® and Application have great future perspectives, not only clearing up the topic of food, but also improving our health, changing our eating habits, reducing environmental impact of food consumption or even expanding our life time. This technology, with some improvements - like measurement of blood values to show if there is a lack of particular nutrients, creation of a health state database, sensors implanted into the body, and powerful algorithms - could detect serious diseases or other physiological changes in early stages and inform owner about it.

The LiveForever® company will generate incomes by sale of The Healthy Watch® and so it creates the possibility to support global health improving and food information programs. This step plays part in reaching the UN Sustainable Development Goals as well.

References
