



# Story of MyHealth&Awareness

WP 400

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## Introduction

There is a growing consumer demand for healthier, but still enjoyable diet, where personalized needs can be taken into consideration and served. The foreseen development of the personalized food production system, supported by the advanced information processing and transferring capabilities of the future internet can provide new opportunities for consumers to find a sound balance between their desire for more pleasure from eating, their lifestyle and the specific nutritional requirements of their body for a healthier diet. The easy availability of target oriented information meeting personalized needs of consumers at all places, where they make the key decisions regarding their diet will enable them to make informed decisions, contribute to make the healthy choice the easy choice (ETP 'Food for Life', SRA 2007) and increase consumer satisfaction through enhancing the preparation of being properly informed.

## Our future in personalized food production

The vision of ETP 'Food for Life' provides a detailed description for the PAN concept which can be developed further for a story providing on input for a use case scenario.

“Knowledge and research investment will lead to new and innovative products with added value, and so contribute substantially to market success. Tailor-made, personal nutrition will provide better, healthier foods, ingredients or supplement that will form part of a diet with improved health attributes. Consumers' expectations for a more efficient use of the world's resources, environmental protection and animal welfare will be met through a more sustainable approach to food production. All consumers will have a greater choice of healthy food and drink options that are appealing and safe, and will promote healthy ageing. Society as a whole will benefit from the improvements in the health status and thus the quality of life of European citizens will be enhanced”(ETP 'Food for Life' Implementation Action Plan 2008).

The European Technology Platform 'Food for life' has defined a priority research area in Key thrust 1 “Improving health, well-being, and longevity” which is organized in three pillars (based on ETP 'Food for life' Implementation Action Plan 2008):

- 1) Optimal development, wellness and ageing
- 2) Intestinal health and immune functions
- 3) Weight management and obesity

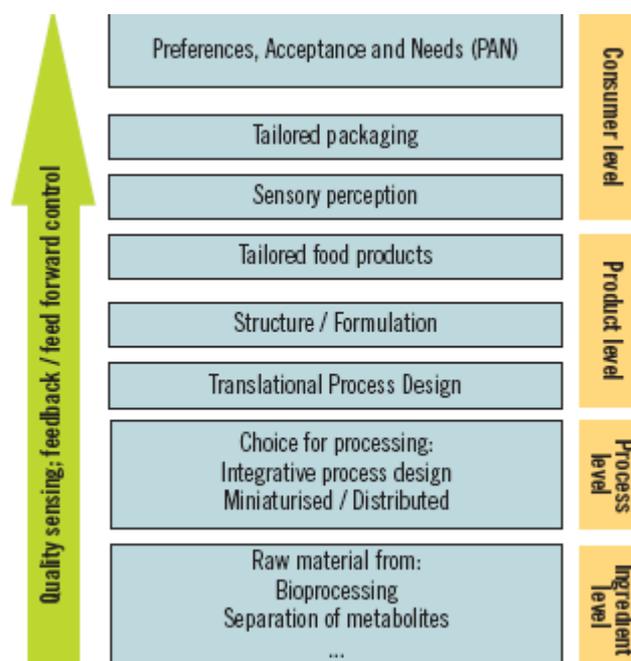
These three pillars are formed for the groups of people with different needs and requirements to develop processing, packaging and distribution aspects of convenient, personalized food products attractive to the consumer. Personalization can take many forms, and might refer to individual health or lifestyle aspects and address personal preferences regarding quality, portion size or cost, convenience, packaging, taste or pleasure, or it might concern specific target groups.

Processing of personalized foods, their delivery to consumers at the point of purchase, and their preparation at the point of consumption and the creation of tailor-made food products that encompass all consumer preferences, acceptance and nutritional needs, requires a complete redesign of the way food is presently produced.

“Food in 2020 will be tailor-made to the specific Preference, Acceptance and Needs (PAN) of consumers. Consumer science will deliver reliable data on consumer preferences and acceptances and provide a basis for a new product development. Nutritional science will deliver the needs with respect to energy intake and also identify any need to fortify foods with bio-ingredients and suggest appropriate levels of fortification”(ETP 'Food for Life' SRA 2007).

“The PAN concept was developed in the Strategic Research Agenda 2007-2020 of European Technology Platform 'Food for Life'. It should evolve in a long term to a completely reserved

engineering approach, in which the total product development is modeled back through the chain from consumer to raw material. This innovation will lead to transfer product development and more flexible processing possibilities” (ETP ‘Food for Life’ SRA 2007).



a. Schematic presentation of the food production process (ETP ‘Food for Life’ SRA 2007)

“The greater choice of healthy options of consumers will encourage the promotion of healthy ageing in the future. The increased knowledge base on the impact of individual food constituents on human health will affect the appearance of more new requirements:

- Safer and more effective consumer products that will meet people's needs and improve their quality of life, by lowering risks, providing for health benefits and optimising health and well-being.
- Tailor-made, personal nutrition (nutraceuticals, functional foods, food ingredients and supplements) that will provide better, healthier foods that will form part of a diet with improved health attributes.
- Foods designed for special consumer groups, e.g. the elderly, and to promote health and prevent diseases.
- Consumer expectations for a more efficient use of the world's resources, environmental protection and animal welfare will be met through a more sustainable approach to food production” (ETP ‘Food for Life’ SRA 2007).

“Moreover external contacts will be necessary to most fully exploit the diversity of plant raw materials and incorporate their components within traditional, novel and ethnic foods. Ultimately, the PAN approach could be used to identify quality targets for plant scientists, agronomists and breeders. In addition to plants, other dietary sources of bioactive compounds will be explored, including those of animal and microbial origin” (ETP ‘Food for Life’ SRA 2007).

In this scenario we propose the idea of a communication system of the equipment of the households, stores, shops, and personal health and nutrition care devices of the consumers. This communication system can monitor consumers’ purchasing and the quantity of the reduction of stocks in the households, the needed specific nutrients, dietary advice, and provide the amount of the consumed food and compare the Guideline Daily Amounts (GDA).

### How does it work?

Nearly all consumers should have to pay regular attention to their health and weight. However a large proportion of the population has a tendency of neglecting diet, health and weight management issues and not taking preventative measures until the first signs of overweight and/ or diseases are not visible. The problem is they avoid prevention and only take up the question if there are visible signs of a disease. It would be better to prevent these problems and to have a regular diet, health and lifestyle review and get advice and assistance to change it into the right direction if it is necessary. If the food consumption of the individual is properly recorded and monitored and compared to the recommended daily allowance significant improvements may be achieved. Typical examples include the monitoring of energy intake, for elderly people the amount of specific nutrients they need on their diet, for allergic patients avoidance of specific products which contain ingredients for which they are sensitive etc.

### At home

The communication system will start with a data carrier which has all the information is relevant for the person. The information will be recorded in a data carrier built into an armband. When you are at home and put products into the fridge with the RFID tag (or elsewhere you want to store them and which is equipped with sensors) the sensors will identify the type of the product and record the information of it. The system will monitor that you take out food for direct consumption or for cooking meals (you need to enter the number of people who consumed the food) and measures the amount of the reduction of the volume of your food-stocks by optical sensors in the fridge (or on a specific board or a specific larder with sensors). It will warn you if the product is getting to reach or beyond the indicated shelf-life date. If you run out of some product, the communication system will warn you with that kind of advice what you prefer (short message on the board of the fridge, message to smartphone, etc.).

This system will calculate (according to your diet, your age, and health review, etc.) how much calories have you taken since each morning, and how much more can you take in. It gives opportunities to choose the best way to keep your diet in line with health requirements or to intake as much nutrients as you need. The system can provide you advice with different levels of stringency from recommendations through gentle warning till strong warning.

### Shopping

At the store or shops you can use your armband to find the products you need on the shelves. The system can create you a “shopping-route plan”, where you can find the products and which is the time-effective way to reach them.

This system is important because in this rapid life prevention has increasing significance. That is why this system can help our life.