

# The Quisper Platform for Personalised Nutrition Services

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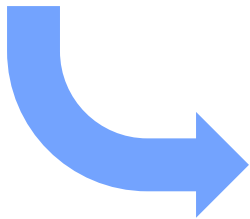


*Dr. Jo Goossens*  
*EuroFIR Food Symposium:*  
*Food & Health Research Infrastructure*  
*Brussels – 5 April 2017*

# EU FP7 projects at the basis of Quisper



- Explore barriers and opportunities in scientific, business and consumer aspects of personalised nutrition
- To consider the future of health and nutrition and develop novel business model concepts for personalised nutrition
- 2011-2015



QuaLiFY  
[www.qualify-fp7.eu](http://www.qualify-fp7.eu)

- Create an operational platform as a basis for business and research initiatives in personalised dietary and lifestyle advice services
- Integrating data and results from previous EU-projects with existing and new commercial activities of SMEs
- 2014-2015



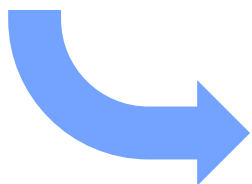
Quisper

# EU FP7 projects at the basis of Quisper

## SMEs



## Research Partners:



Quisper

# *Personalised nutrition offers a new way to deal with this complex and difficult issue*



We have never known more about what food is good for health...

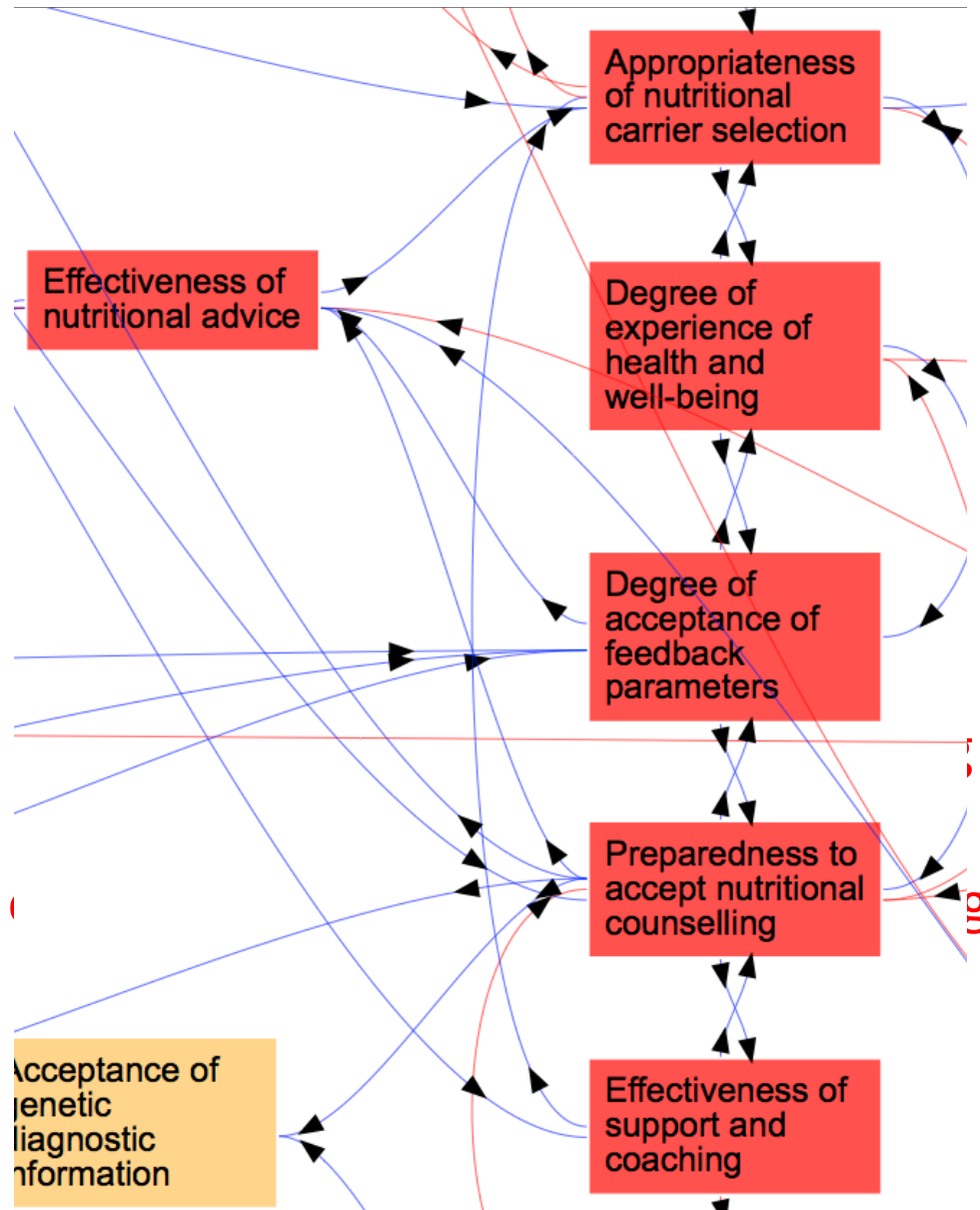
... but having the freedom to make the right choices seems to create problems

# Two key issues that people are increasingly facing

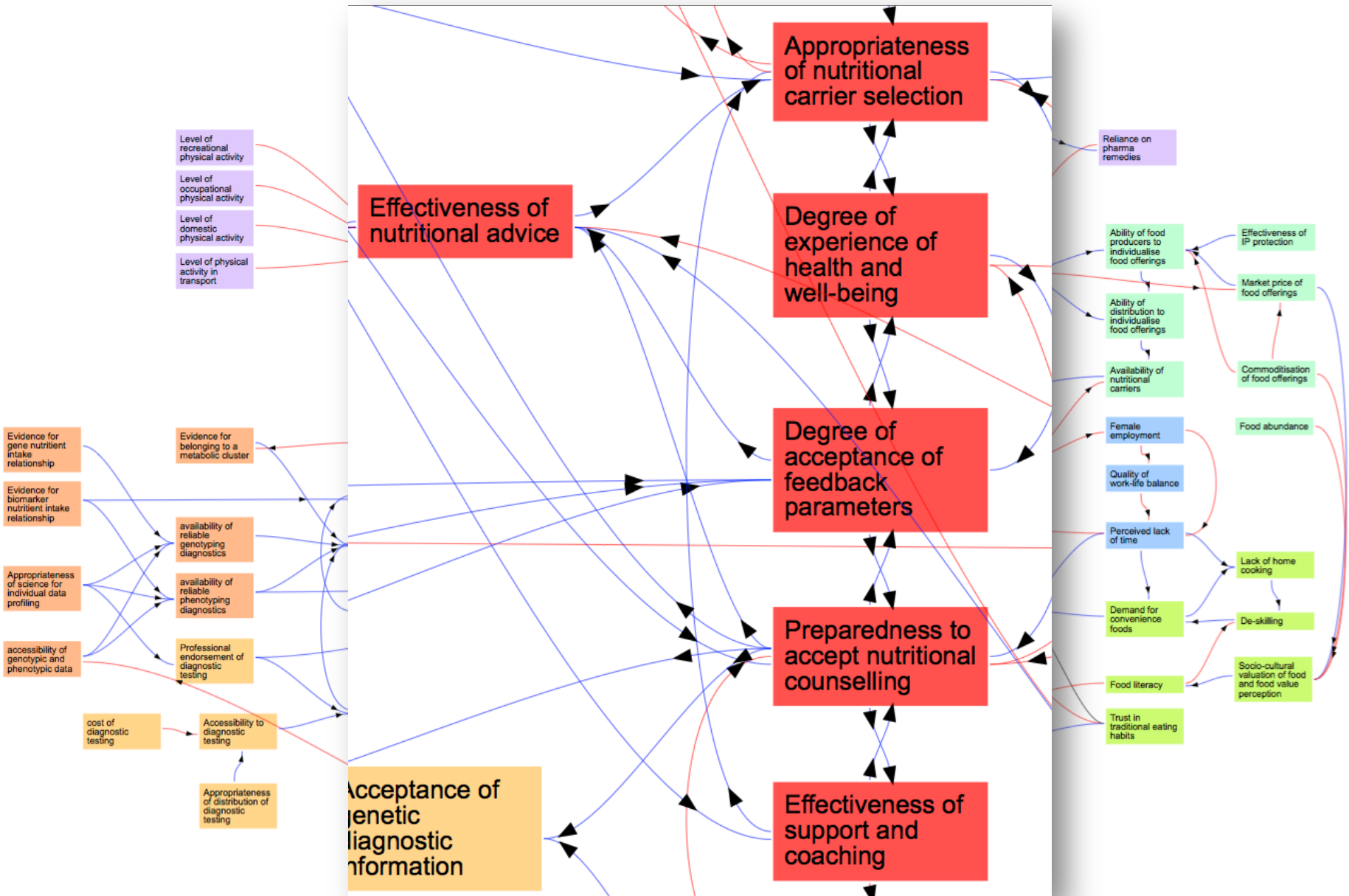
*What foods and what eating patterns are right for ME to have stable and good health in order to allow me to do what I would like to do ?*

*How do I go about changing my behaviour to adopt these recommendations ?*

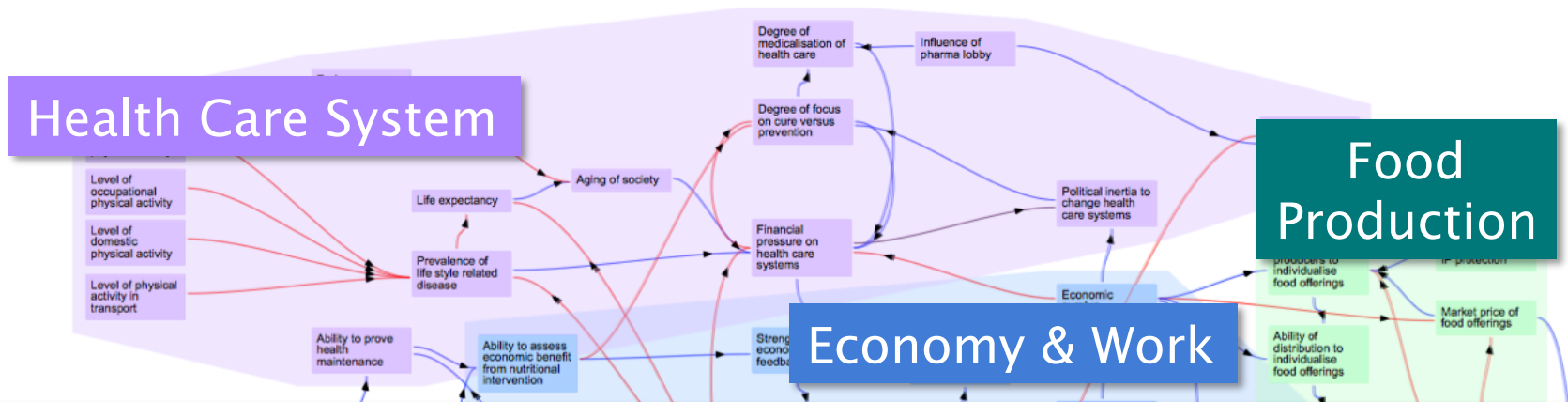
# Personalised nutrition is aimed at lasting dietary behaviour change



# The personalised nutrition system



# The personalised nutrition system



**The personalised nutrition system is deeply rooted in the societal tissue**

**Value creation concepts for personalised nutrition will be facing important societal issues**





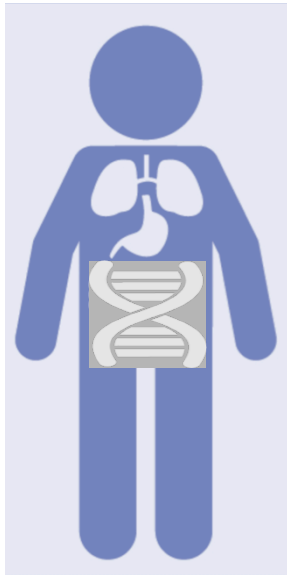
# The **real challenge** of personalised nutrition



*is not to build sound nutritional advice,  
but to **make it applicable in real life situations***

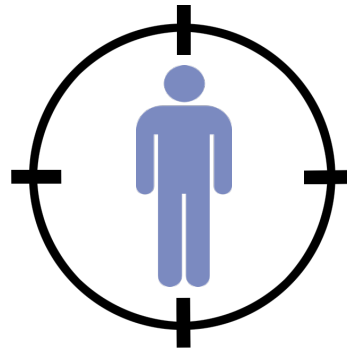
# The essence of personalised nutrition

## Metabolic factors

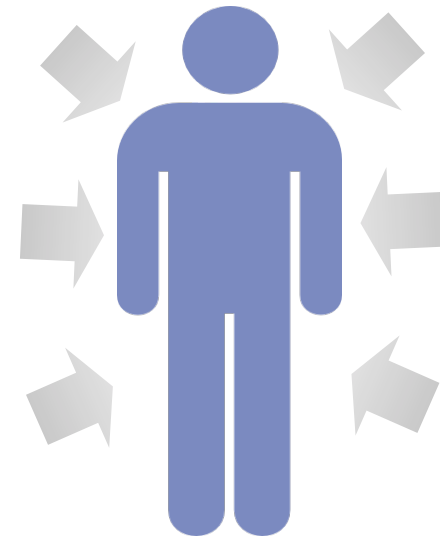


### Biological status

- Physical (weight,...)
- Genetics (SNPs)
- Physiological (biomarkers)



## Behavioral factors



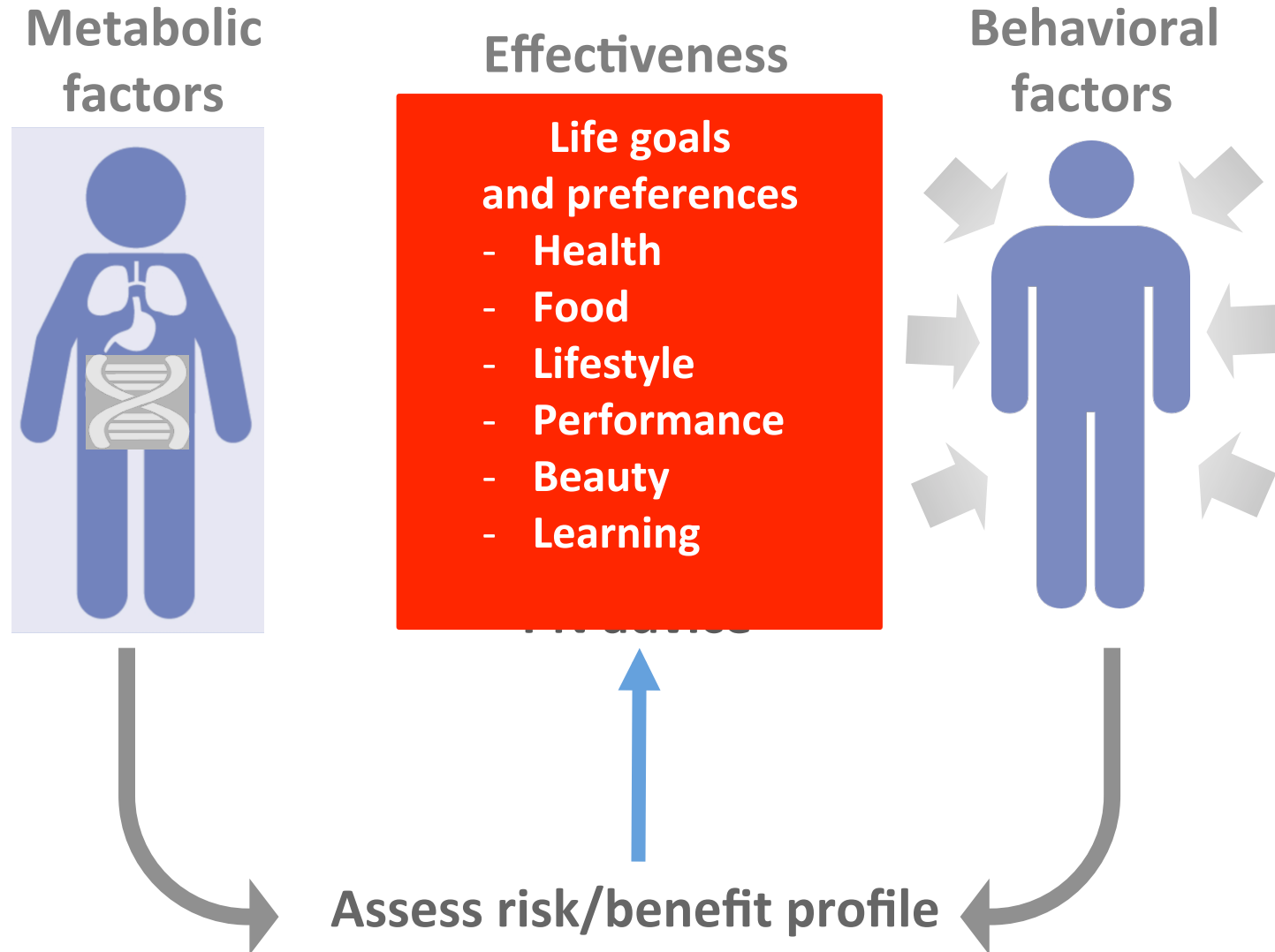
### Nutrition behaviour

- food choices
- eating patterns

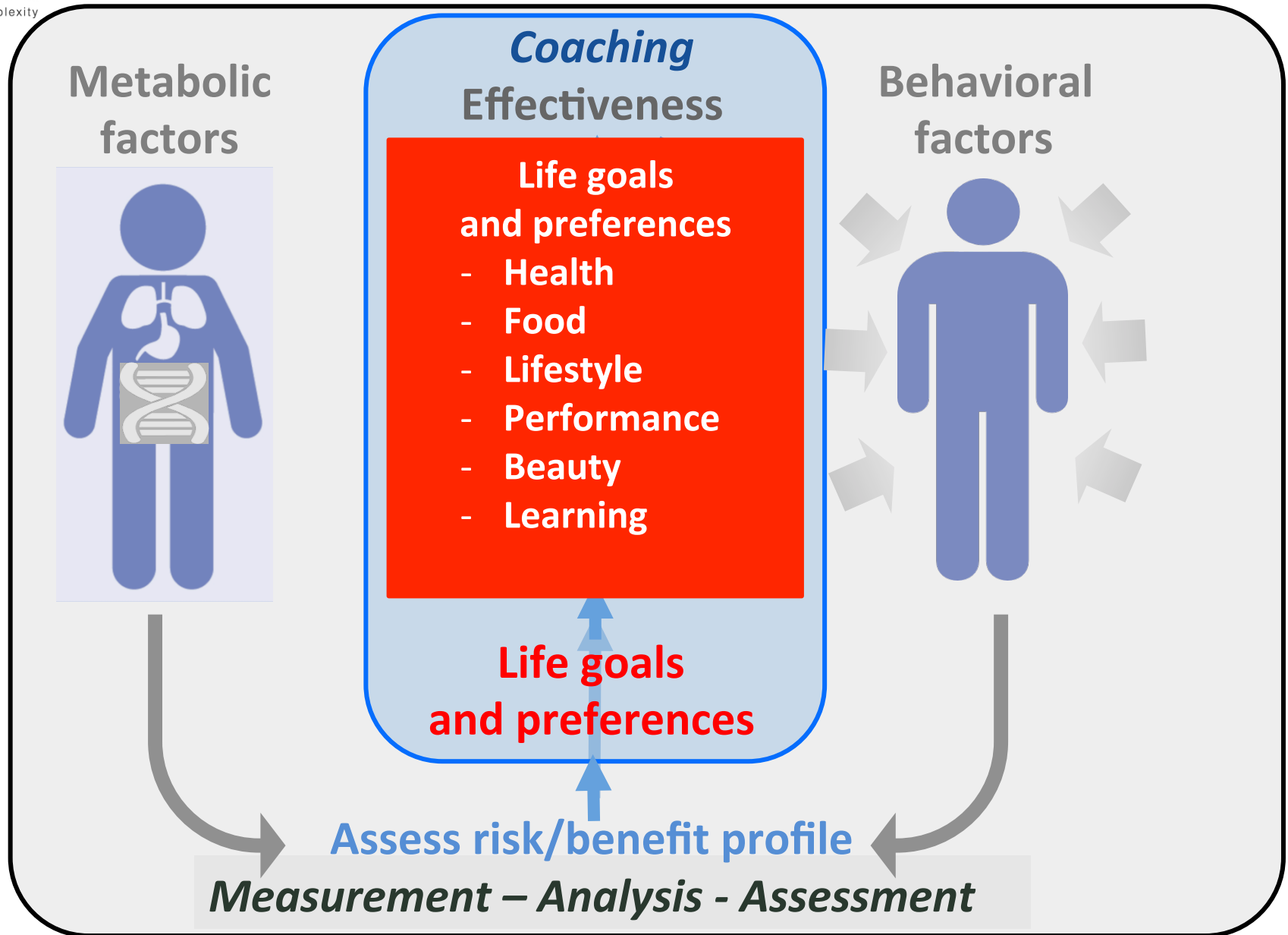
### Lifestyle

- physical
- psychological
- emotional
- societal

# The essence of personalised nutrition



# The essence of personalised nutrition



# 3 types of personalisation

## Personalised nutrition



interface, tools, feedback preferences, psycho-social factors

Individual recommendation for dietary behaviour

*individual level*



dietary intake  
food preferences  
lifestyle preferences

Basic personal nutritional recommendations



*metabolic group level*

phenotyping  
(physical parameters and biomarkers)  
genotyping  
(SNP profile)

Optimal nutrient requirements

biomarkers <> nutrient <> genotype  
interactions

# Personalised nutrition – two pillars

Significant improvement of the reliability and appropriateness of the dietary advice

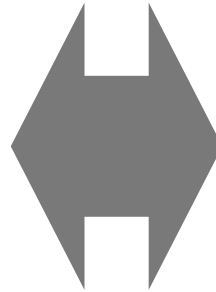
*Genetic background*

*Metabolic profile*

*Influence of external factors*

*Evolution over time*

*Actual condition (biomarker analysis)*



Tools and coaching approaches that allow adopting a lasting dietary behaviour change

*Food preferences*

*Lifestyle preferences*

*Feedback mechanisms (monitoring and analysis)*

*Interface preferences*

*Socio-psychological factors*

# A constellation of activities

## Information collection

biological status

lifestyle/food, habits & preferences

quantified self



questionnaires

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
2	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
3	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
4	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
5	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
6	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
7	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
8	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
9	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
10	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
11	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
12	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
13	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
14	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
15	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
16	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
17	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
18	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
19	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
20	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91

sampling



monitoring tools



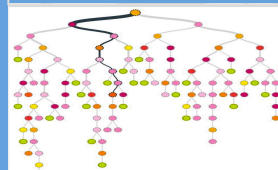
analytics



Risk/  
benefit  
–  
Advice  
generation

coherent  
science based  
interpretation

algorithms



databases



Delivery  
feedback  
interface

mobile tools



personal  
contact



Behaviour  
supporting  
tools

intelligent  
kitchen



shopping  
assistants



personalised  
food delivery



## A constellation of activities

*Who will handle all of these activities?*

*A new networked system is likely to emerge*

...

*it will affect all food and health related systems,  
from the entire food chain*

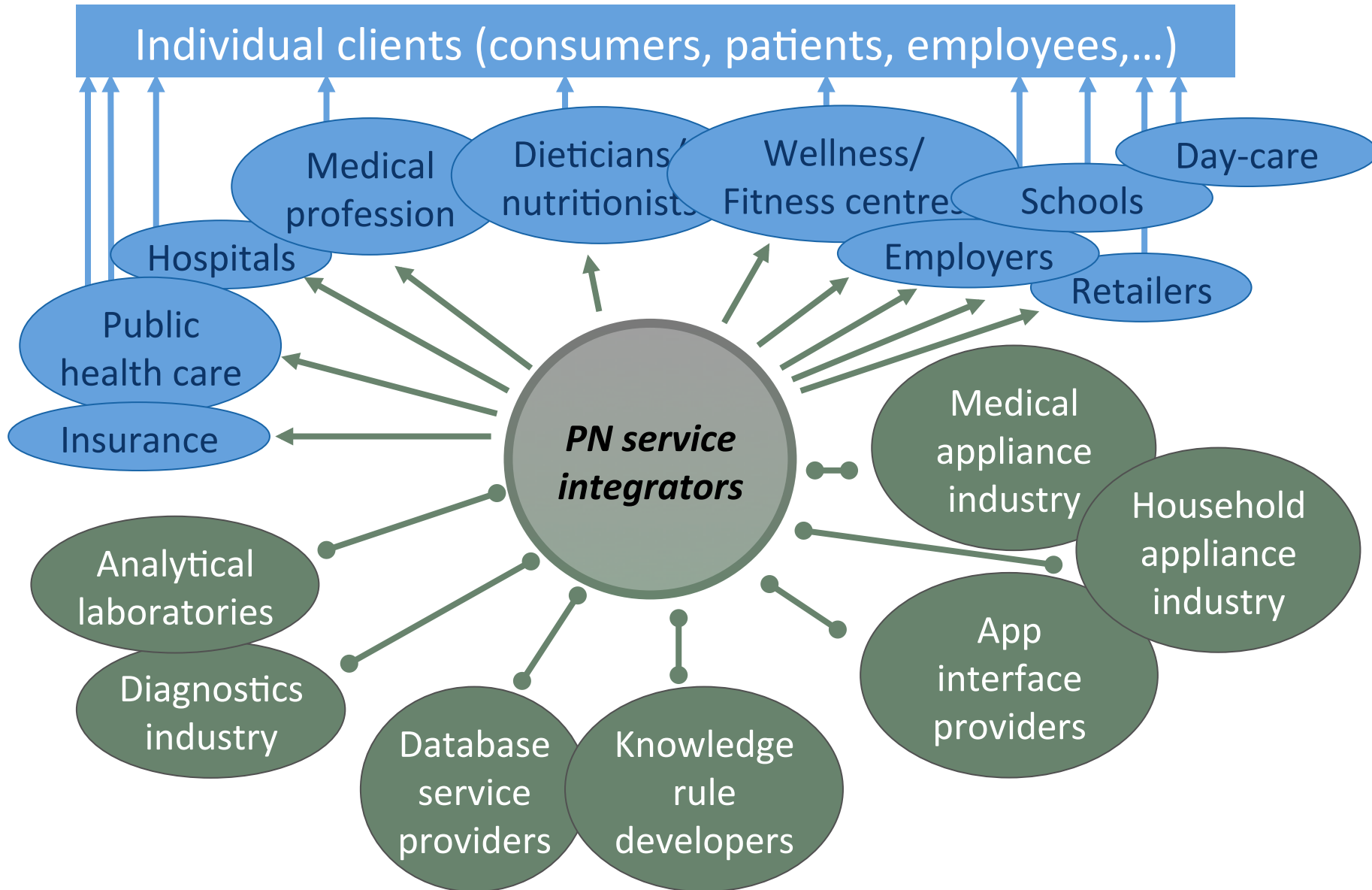
*to the pharmaceutical and medical world,  
from doctors and dieticians*

*to employers, teachers, caterers, social workers*

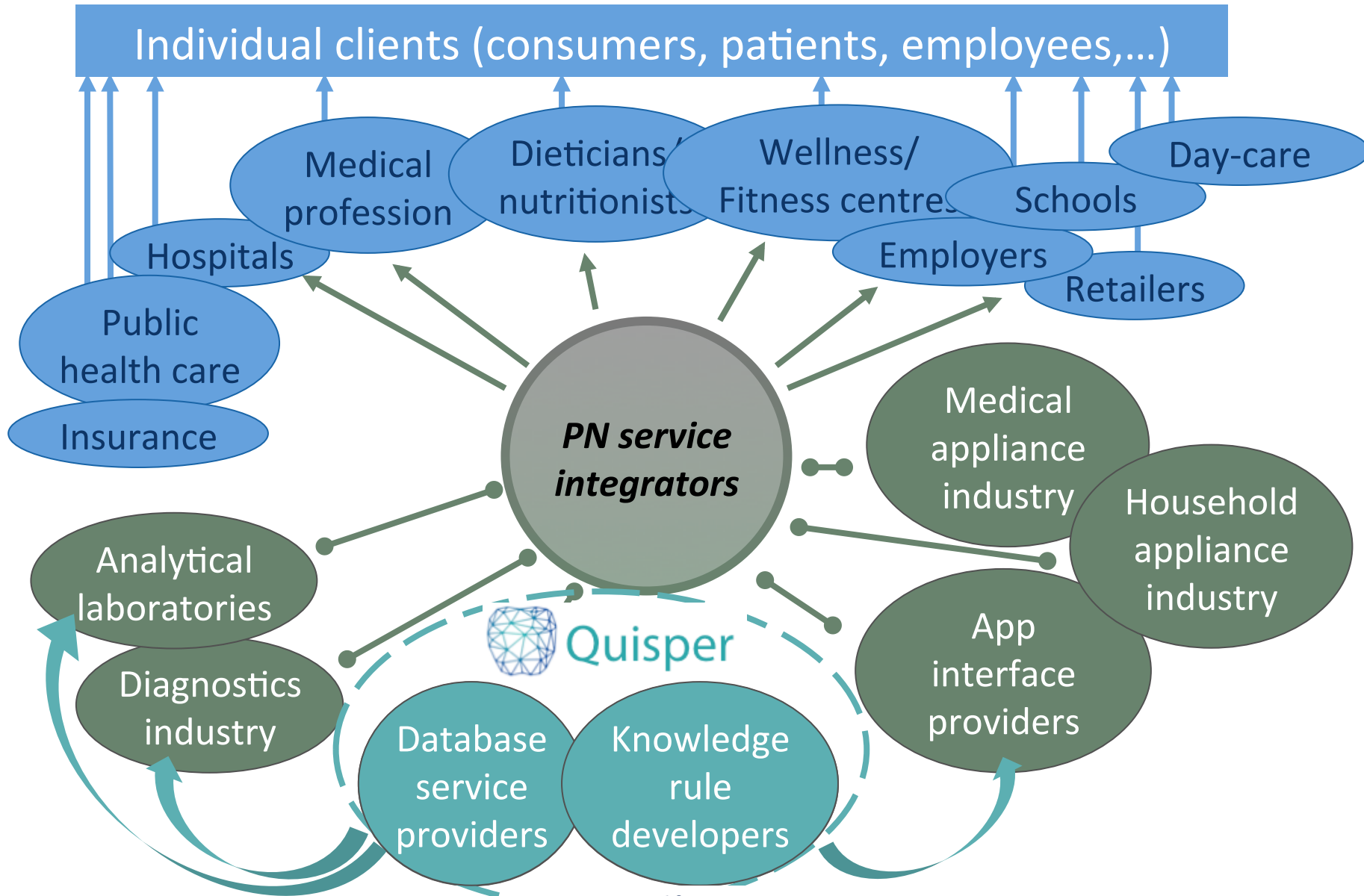
*... profoundly impacting how our society perceives the  
food and health relationship*



# New business models – new integrating actors

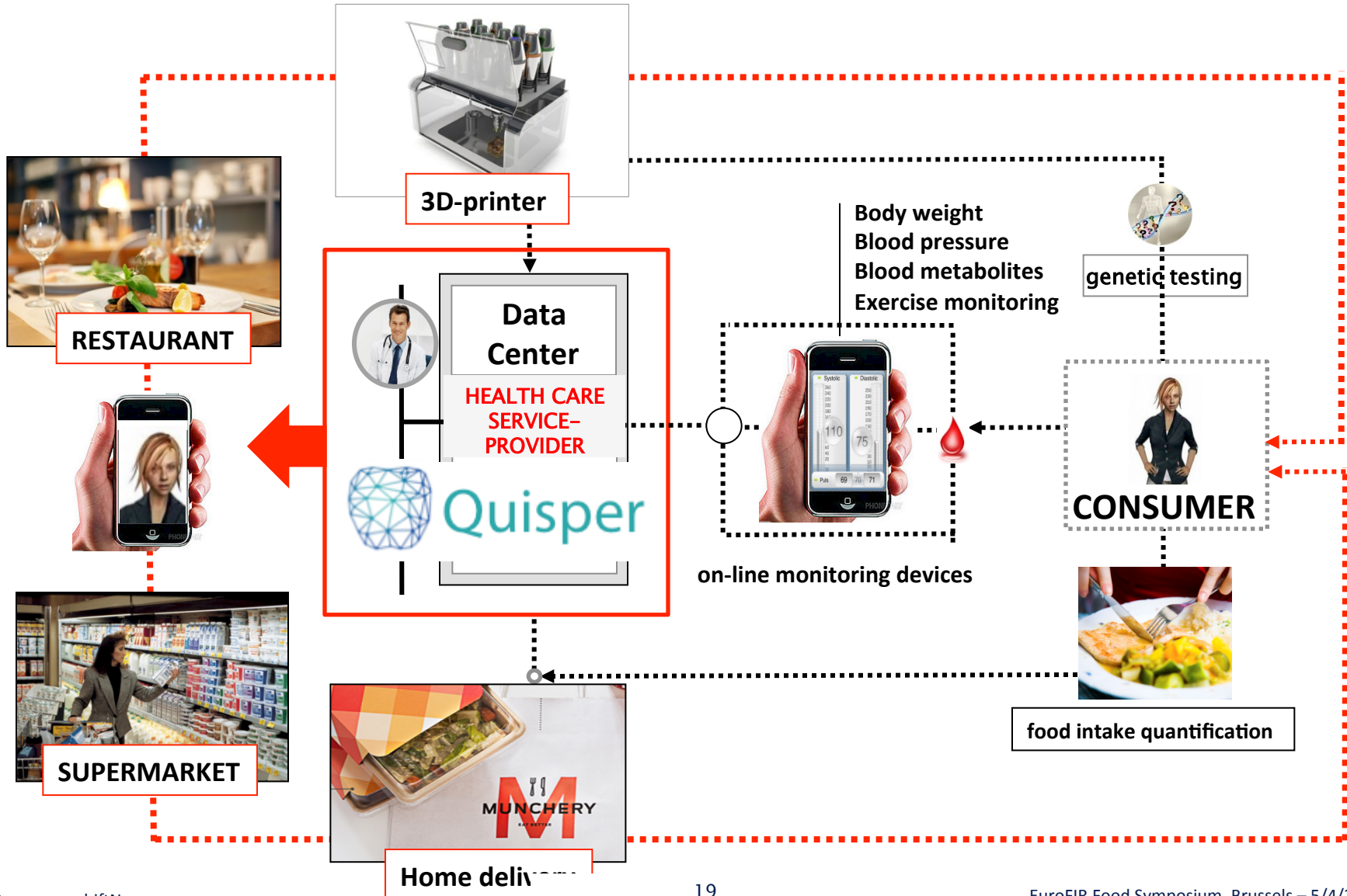


# An example - a new integrating service platform



# A vision of the future

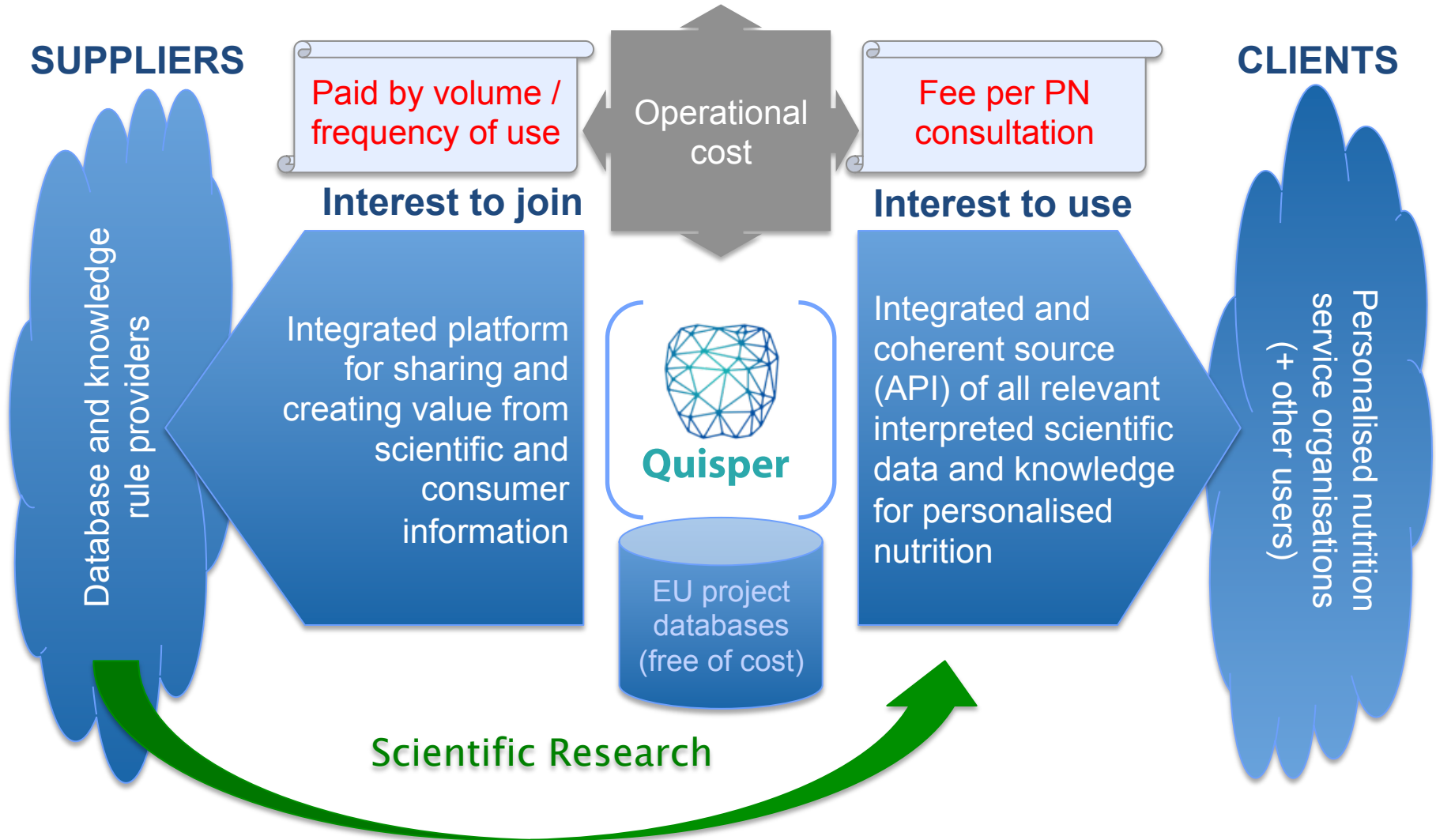
## Technology helps to integrate many aspects





# Quisper Service Principle

**Cost covered by membership  
and % of consultation fees**



# Quisper interface

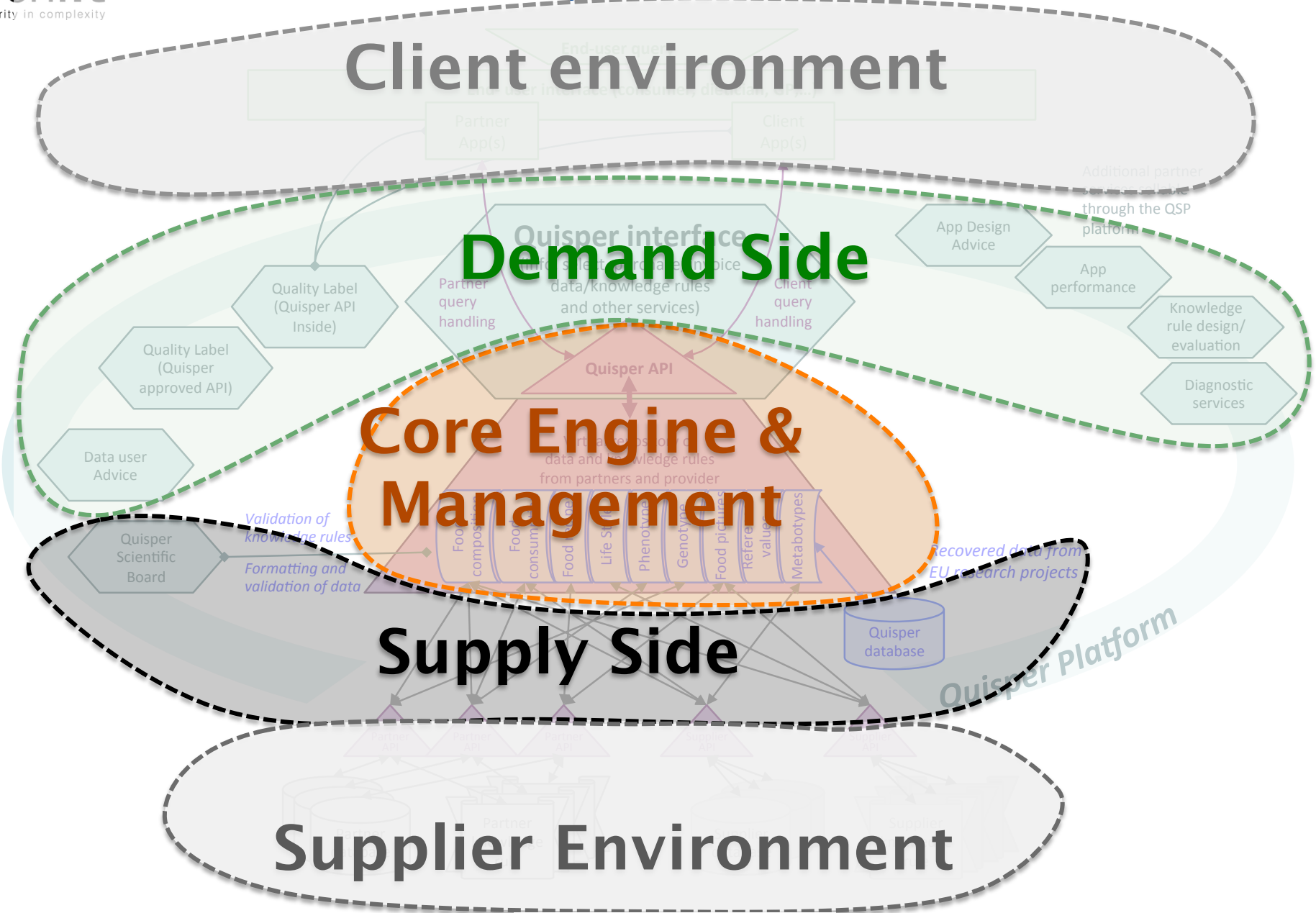
## Client environment

## Demand Side

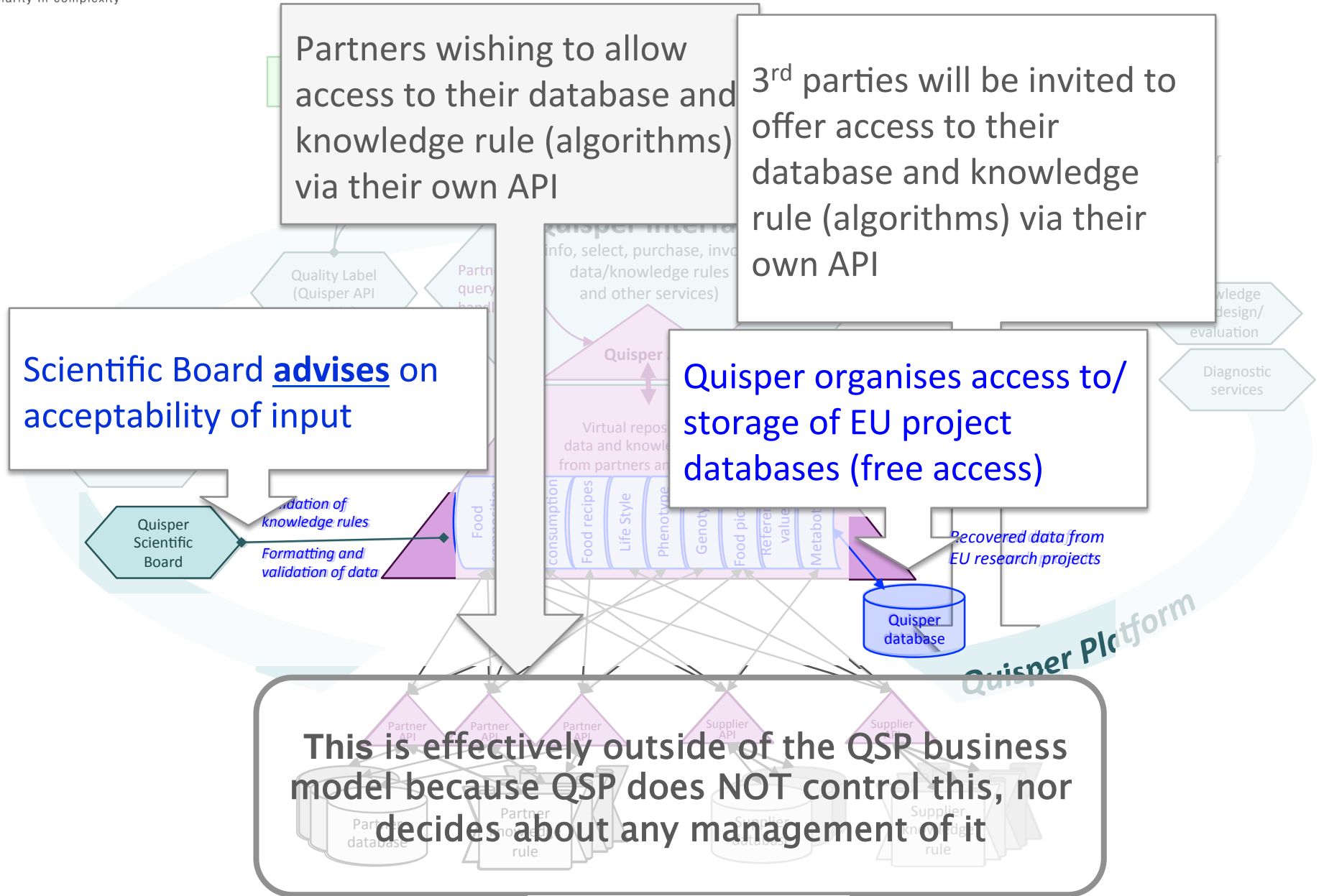
## Core Engine & Management

## Supply Side

## Supplier Environment



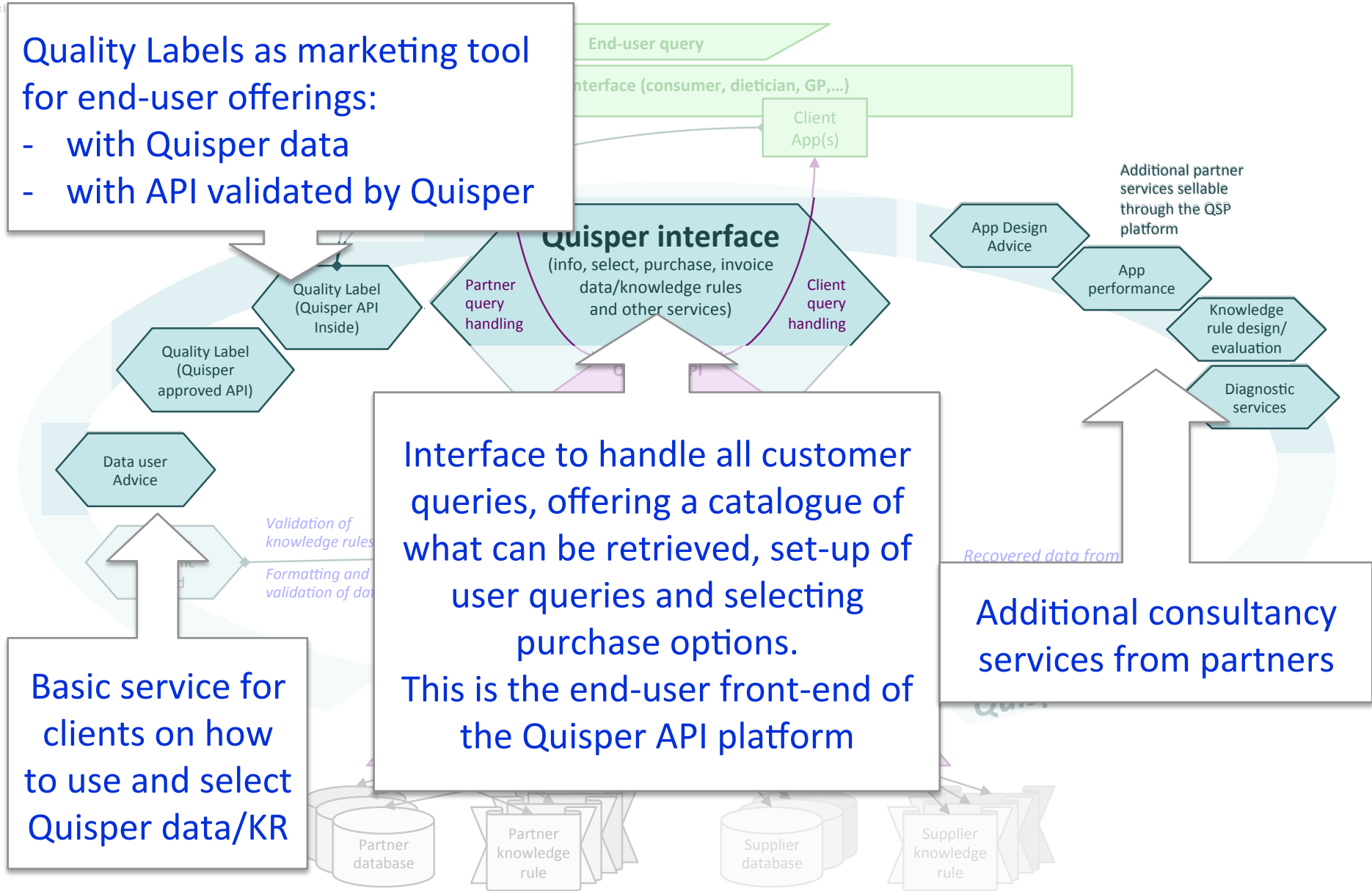
# Quisper interface – supply side



# Quisper interface – demand side

Quality Labels as marketing tool for end-user offerings:

- with Quisper data
- with API validated by Quisper

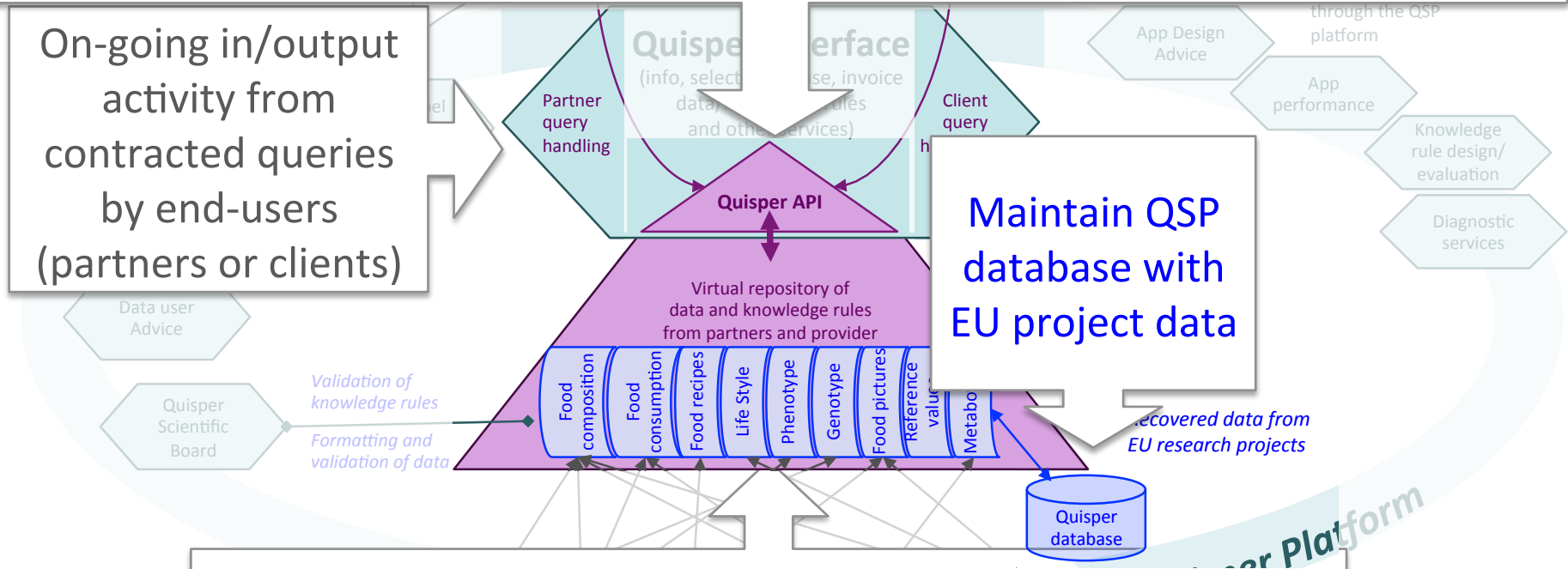


Interface to handle all customer queries, offering a catalogue of what can be retrieved, set-up of user queries and selecting purchase options.  
This is the end-user front-end of the Quisper API platform

Basic service for clients on how to use and select Quisper data/KR

# Quisper interface – core engine

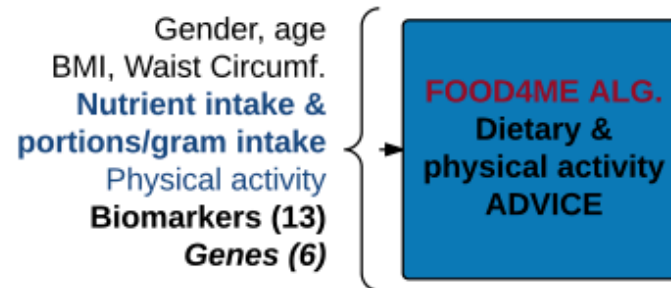
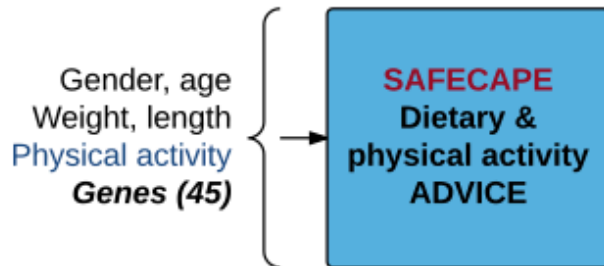
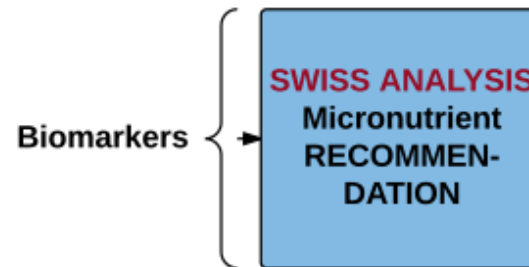
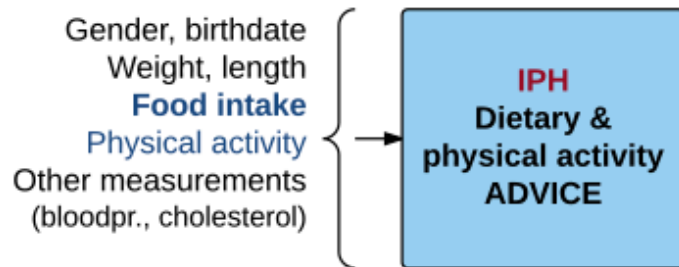
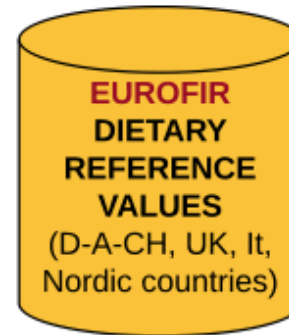
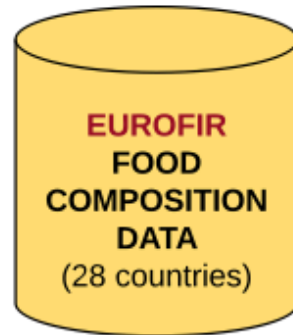
The core program holding all algorithms to operate the gateway between end-user queries and the virtual data-repository, in line with SAB recommendations. It controls user interface options and feeds user statistics,



The virtual data repository **symbolises** all available data, connections between them and knowledge rules to interpret them, accessible through the Quisper API. It exists only virtually as the collection of API algorithms.



# Quisper services foreseen at start

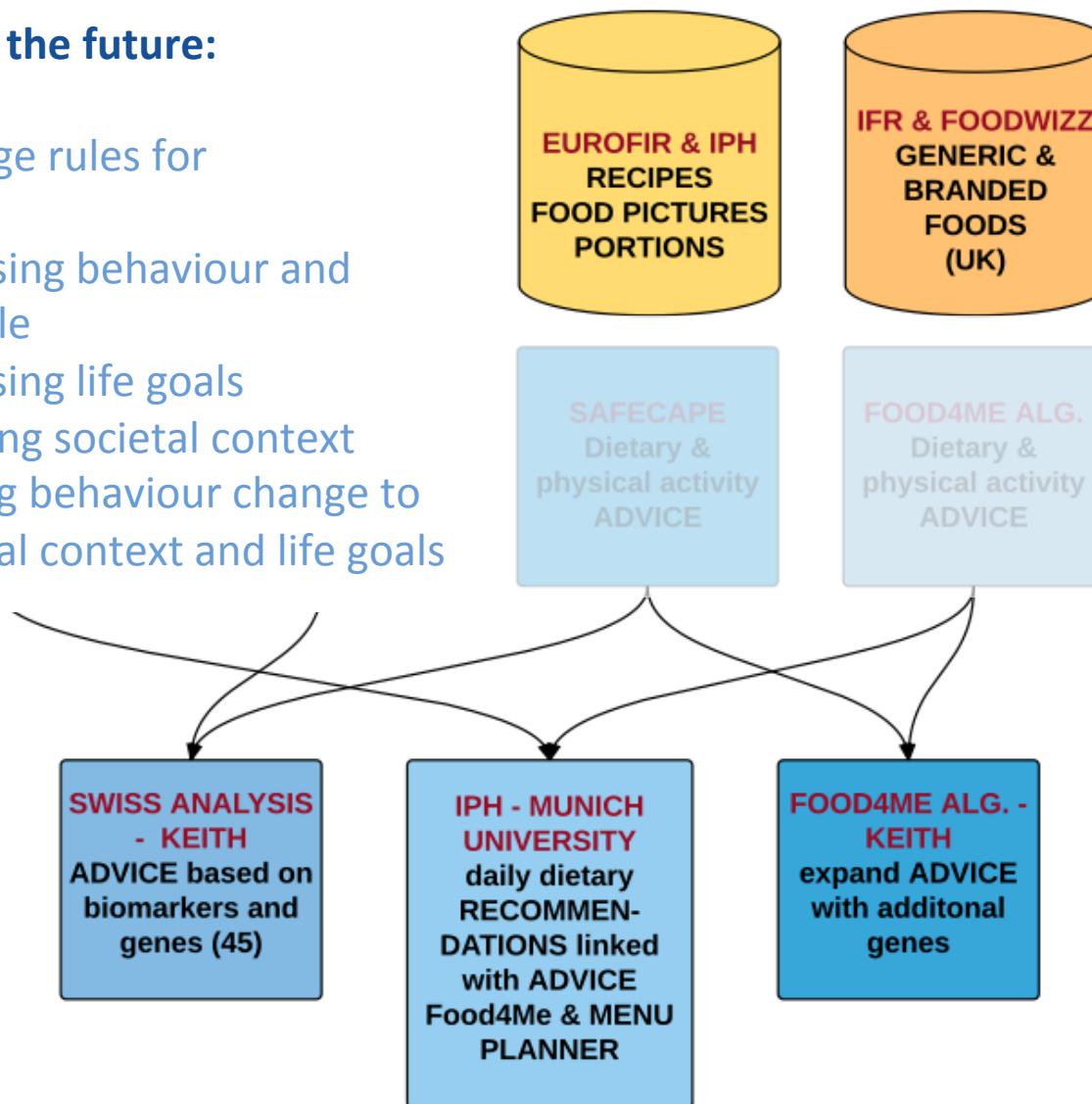


# New services to be developed

## Ideas for the future:

### Knowledge rules for

- Assessing behaviour and lifestyle
- Assessing life goals
- Defining societal context
- Linking behaviour change to societal context and life goals





**Personalised nutrition**



interface, tools, feedback preferences, psycho-social factors

Individual recommendation for dietary behaviour



dietary intake  
food preferences  
lifestyle preferences

*individual level*

Basic personal nutritional recommendations



phenotyping  
(physical parameters and biomarkers)  
genotyping  
(SNP profile)

*metabolic group level*

Optimal nutrient requirements

biomarkers <> nutrient <> genotype  
interactions



- **Pre-beta version was designed in QuaLiFY (not publicly available)**
- **Quisper Foundation – not for profit structure**
- **Looking for investor(s)/funds to shape the digital platform into a full beta version – estimated budget required 300k Eur**
- **Membership fee** to use the platform
- **Consultation fee** for each query:
  - Data queries: based on volume (cost/datapoint)
  - Knowledge rule queries: based on frequency (cost/consultation)
    - different types of knowledge rules: daily/weekly – monthly – yearly
  - Other services by members can be offered via the platform:
    - app development support, knowledge rule development support, app performance measurement
- **Platform can become self-sufficient within 3 years (non-profit)**



# Quisper - 4 key advantages

- **Single unified portal for accessing** data and knowledge rules to interpret personal health/diet/lifestyle information to generate a personalised nutrition advice
- **Neutral validation of the scientific appropriateness** of the data and knowledge rules offered through Quisper (scientific advisory board and evaluation procedures)
- **Harmonisation of the data and knowledge rules** originating from different sources when accessed through Quisper (strict quality requirements from suppliers)
- **Information exchange and learning platform** for personalised nutrition developments



**Thank you**

*Jo Goossens*

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