



## Smart Food and Agribusiness

### WP700 - User Community Involvement & Dissemination

By:

- dr. András Sebők (Campden BRI Hungary - CBHU)
- István Gábor(Campden BRI Hungary - CBHU)
- Katalin Viola (Campden BRI Hungary - CBHU)

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Proposal Acronym: SmartAgriFood



## General objectives:

- To ensure an effective dialogue between
  - users – food chain members and ICT community – solution providers
  - for developing domain specific capabilities and conceptual prototypes – meeting the users' needs
- To make potential users aware of the advanced internet based capabilities

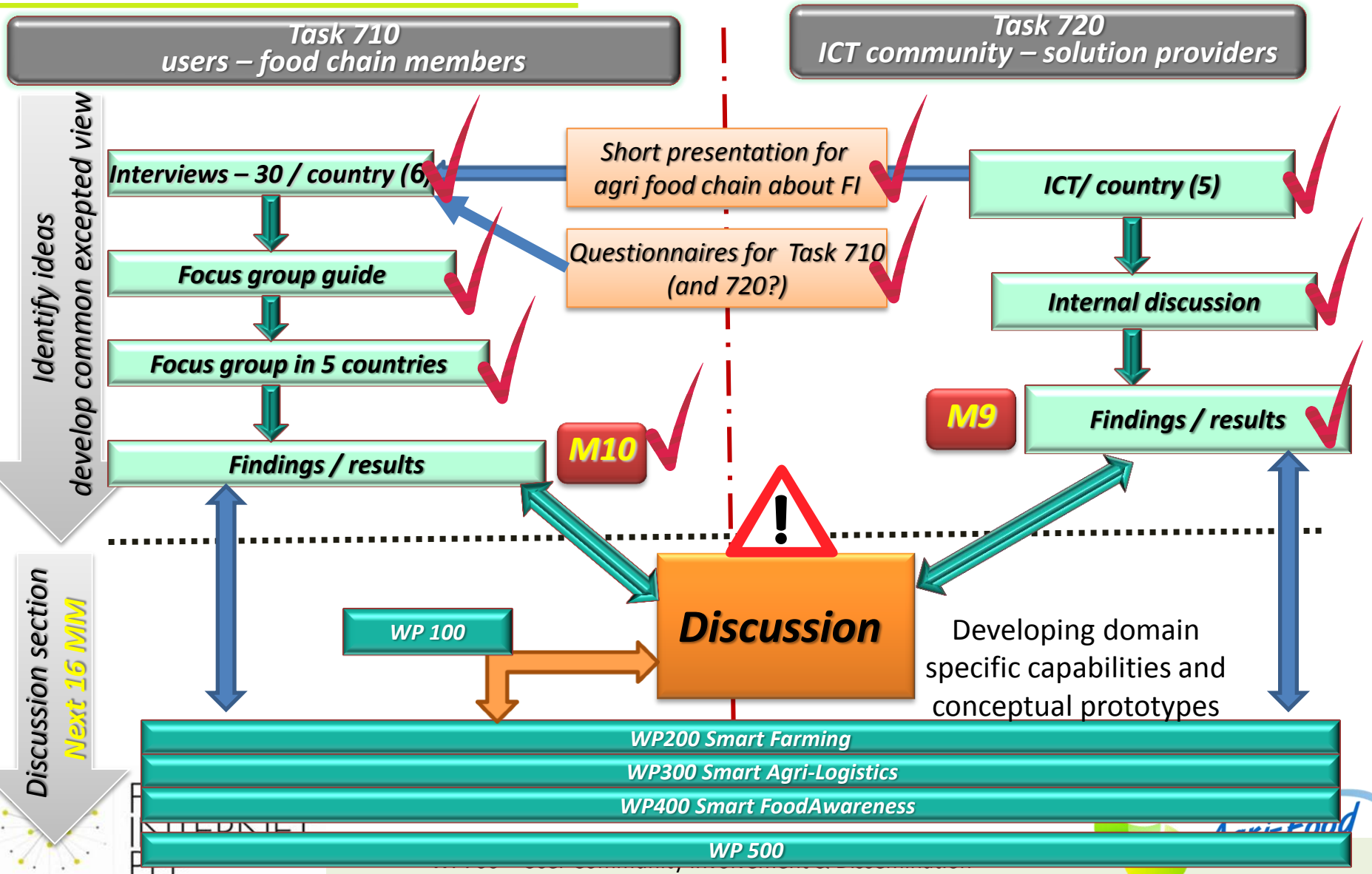
- To identify the future long and short term needs of the food sector for ICT solutions based on the Future Internet capabilities
  - make the ICT community aware of these needs
- To identify potential capabilities of the new internet
  - make the user community aware of these
- To organise systematic exchange of views between users and solution providers
- To convert the available and new knowledge on capabilities and potential functions of new internet into easily understandable format for users (SMEs)
  - distribute and transfer this knowledge

- Task 710 - User community involvement
- Task 720 - ICT community involvement
- Task 730 - Dissemination to broader stakeholder community
- Task 740 - Exploitation approach

Start m1 – End m24

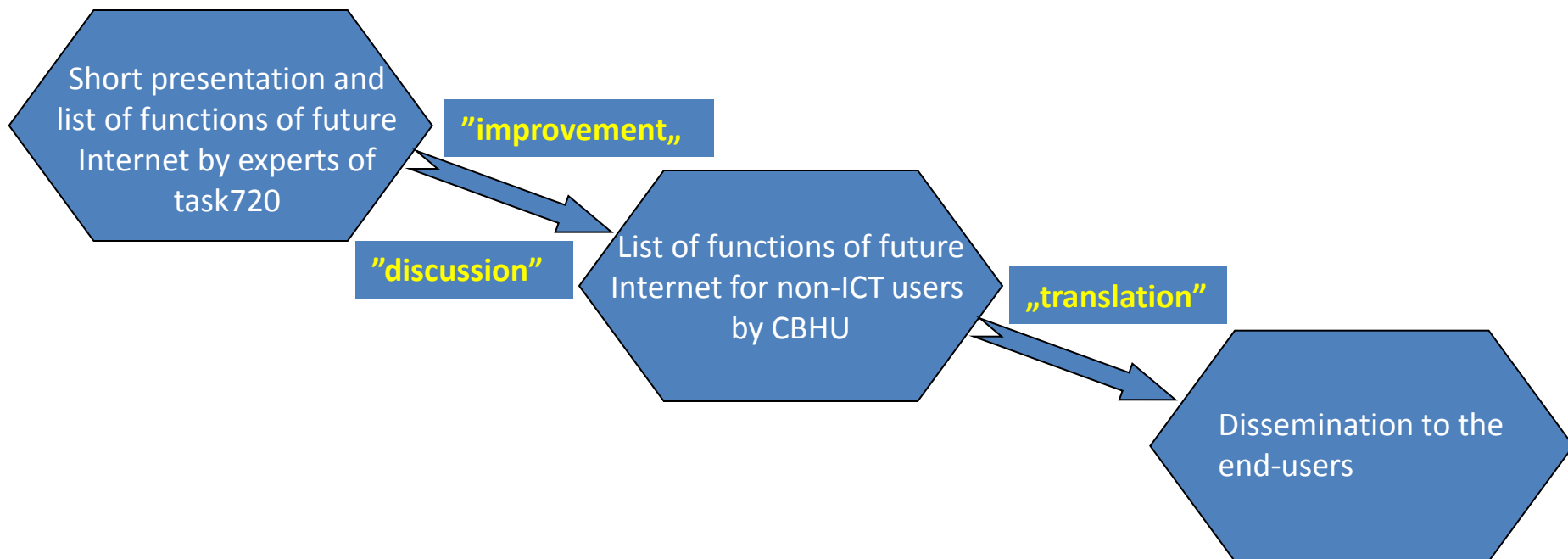
- Carrying out a questionnaire survey followed by focus groups on current and future needs of food chain members
  - in 6 countries – Finland, Germany, Spain, Hungary, Spain and UK - covering each part of the food chain
  - using a short presentation from Task 720 to increase awareness of potential capabilities
  - national reports → input for WP100, use cases WP200, WP300, WP400, and WP500 for specifications
- Organisation of user's regular national discussion panels with ICT solution providers in 5 countries
  - 4 consecutive discussions, 1 additional in the UK


# Task 710 - Methodology



## What can the Future Internet offer?

A key element for determination of users' requirements „our” current interpretation of the functions of future Internet for non-ICT professionals



- **135 interviews** in the questionnaire survey were carried out in six countries (Hungary, Finland, Germany, Greece, Spain and United Kingdom)
  - **8 focus group discussions with 69 participants** were done in five countries (Hungary, Finland, Germany, Greece and United Kingdom)
- 
- Inventory of long and short term future needs of food chain users for future functions of internet



The two most important functions for the users were:

- Higher privacy which is guarantees the protection of personal data
  - Key requirements
    - safety, reliability and security
    - regulated and controlled availability
- The Internet is not limited to self-standing PC-s – direct communication is possible between the machines, equipment, sensors, mobile phones, household refrigerators etc.
  - Key requirements
    - availability, remote control
    - applications and devices should be integrated and standardized

The two least important functions for the users were:

- Cloud computing
  - limited information about the new technologies
  - distrust
- Higher accuracy for exact identification of objects, and controlling of the (agricultural) machines, equipments
  - differences between the expectations in agricultural production, trading or logistics
  - this function is important only to the participants from agricultural areas
  - several similar technologies are already in existence
  - limited understanding
  - need to improve awareness

## Other important functions:

- Mobile phone works as each a data collector, a data viewer (display) and an information transmitter
- Quick and real-time exchange of large amount of data/video/3D information
  - Presentation of information by 3D technology – e.g. labels of a packaging can be readable by rotating in space
  - Virtual design facilities, 3D technologies
- Content based browsing - intelligent distribution and caching of content – each piece of information and each object gets an individual ID code.
  - We need to specify properly what we want to know, but we don't have to know where to find it

## Other important functions:

- Services of customized information – automatic integration of information on demand
  - users can determine the selection and filtering criteria what type of information should the information pack contain, what they receive
- Global data warehousing and management capability (application for diseases, pesticides, fertilizers, foreign body, reference samples, etc.)
- Requirements ↔ Monitoring → Set alarm in case of deviations
  - Data recording of conditions of food
  - Increased transparency – RFID, “smart shelf”, sensor gates
  - Broadband wireless connectivity in remote areas (e.g. farm land)
  - More use of video surveillance at premises to increase security

## Current use – in general

- Only a few respondents use really advanced technologies; the majority of the respondents use basic and simple systems and applications.

## Demands, expectations and ideas

### 1. Basic demands for the cost:

- currently the **price of the technologies required is too high** particularly for smaller businesses.

### 2. Basic demands for the accessibility and privacy:

- ensuring the accessibility to the data, which are **secure** and can be restricted
- availability of databases should be regulated and controlled to guarantee the data **security and protection**

## 3. Basic demands for the data exchange:

- **compatibility** of the different applied devices, programs and systems or **integrated systems** instead of different connected applications
- **longer range** in data exchange/transfer and in communication (to extend the range of currently used technologies like WiFi)
- **higher accuracy** in positioning: measured and recorded value should be delimited to an area as small as possible – for the more accurate estimations and control
- filtering and **systematic organization** of the received, stored, sent or browsed data, even on demand, by a predetermined profile
- **automatic transfer** of the recorded and received data to the right system or persons

## Main ideas and expected applications (in order of applicability by the users' opinion):

- System for selecting the cultivated plants based on a database
- Monitoring environment for farms and plants – Advisory system
- Barcode/RFID system -Traceability system facilities
- Improvement of the daily work of the farmer/breeder
- Shared infrastructure
- Yield information system
- Monitoring environment for animal welfare, sensors in barn/stable
- Risk assessment
- System for extraneous and foreign bodies' identification

# Results – Smart Farming (2)

## The most important requirements were:

- Getting as much information as possible, and collecting this information all together into a connected database.
- Using a network of sensors for an improved system, which will help the daily work of the farmer (automatic corrective actions, alarming, etc.).
- Getting the right information or sharing the information and knowledge with the neighbouring farmers – via a shared infrastructure

## One of the least applicable ideas was:

- Risk assessment - The users do not trust in the data security and privacy measures which could ensure the anonymity of information



## Main ideas and expected applications (in order of applicability by the users' opinion):

- Road monitoring application
- Dock reservation system
- Integrated freight and fleet management for vending machines and small retail outlets
- Secure banking system
- Flexible parking system for delivery to shops
- Smart household storage
- "Service-halls" in the basement of apartment buildings
- Small depots for personalized supply of perishable foods

## The most important requirements were:

- Same practical benefits: cost reduction, better coordination, better information for decision making, and the proactive control of processes leading to increasing efficiency and effectiveness.
- The systems of the future should give solutions for the problem of compatibility and standardization, and should provide a greater range for data transfer, thereby ensure the real-time operation.

## The least applicable ideass was:

- "Service-halls" and Small depots for personalized supply
  - these systems were seen as having quite high costs

## Main ideas and expected applications (in order of applicability by the users' opinion):

- Monitoring of food quality
- Improved awareness information system based on traceability
- Communication of product-related information towards the consumer
- Exchange of product-related information between agri-food enterprises
- Informed decisions of consumers based on tailor made information selected according to their criteria
- Profile specific newsletters and dissemination of information
- Virtual shops and virtual visits
- Connected automatic systems
- Improved diet and health through personalised nutrition
- Foreign material identification

## The most important findings were:

- All the participants thought that traceability and awareness will be important in the future. Consumers are interested in knowing what has happened to products on their way to the end user.
- There is a clear difference between the consumer attitude and the real buying and food handling behaviour (e.g. consumers do not pay satisfactory attention to time-temperature requirements in the cold chain till consumption).

## One of the least applicable functions was:

- Foreign material identification - the planned functionality was seen as too expensive due to its technological complexity

- The objective of the 4 consecutive panel meetings is to build up a regular dialogue between the user and the ICT communities and to discuss the capabilities and the envisaged functions of the FI and the use case scenarios.
- These panels will be composed from a relatively standard group of people made of external stakeholders not participating in the project, who meet regularly and discuss the developments from the project.
- Meetings will be organised in Germany, Hungary, Finland, Greece and one additional session in the UK,
  - 1.) March 2012
  - 2.) June-July 2012
  - 3.) September-October 2012
  - 4.) December 2012-January 2013

- Development of a short presentation for Task 710
- Inventory of future capabilities of Internet to meet future long and short term needs of the food sector
  - Collection of
    - available technical possibilities – not used for functions meeting users' needs (lack of interest - Agrifood, lack of understanding real needs – ICT)
    - envisaged advanced functions based on ICT expert views

# Task 730 - Dissemination to Broader Stakeholders Community (1)

Start m1 – End m24

- Press release targeted to local press and MEPs
  - local radio, TV, printed press
  - organise meeting with local MEPs to raise awareness of the impact of EU FP7
- Web-site with EU domain name + 2 years beyond the end of the project
  - Internal and external domains
- Logos: applied on all dissemination materials
- Preparation and maintenance of a Glossary to facilitate mutual understanding

# Task 730 - Dissemination to Broader Stakeholders Community (2)

- Detailed dissemination plan
- Contribution to dissemination of the whole programme
- National workshops in each participating countries in national language
- Research summary sheets on project results
  - practical approach - Concise presentation of results focused on application (user's, ICT community, policy makers) as they evolve, at least one for each WP
  - revised, extended regularly
  - for creating awareness (not between project partners!)
  - translated into 6 languages



- Start m1 – End m24

## Objective:

- to prepare a first approach of exploitation
- based on phase I. – collection of requirements and preparation of early trial
- developed further in phase II and III



- preparation of a business vision
- facilitating of identification of business models and business cases

- Planning routes from R+D to market
  - Development of an Exploitation Plan
    - early identification of exploitable results
    - SWOT analysis and preliminary exploitation strategies
  - Characterisation of market structures, segments, key players
  - Identification of business models and business cases
  - Approach to roadmap of the implementation of FI in the agri-food sector
  - Preparatory steps for implementation
    - deploying mock-up services
    - running demos to external partners (prospect customers and business partners)