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Deliverable D4.3**

**Report on the synthesis of the findings for WP8-10**

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## Summary

The aim of this deliverable is to summarise the outcomes of the Phase 2 activities to inform the ongoing Phase 3 activities with respect to data and technical considerations (WP11), governance/ethical considerations, (WP13) business model considerations (WP12) by providing recommendations to inform the final design of the proposed RICHFIELDS RI/data platform. The main recommendations arising from this synthesis report are summarised below:

### *Data, standardisation and technical considerations*

- Build links between existing RIs in the food and health domain and the RICHFIELDS RI/data platform.
- Develop a RICHFIELDS ontology and harmonize entities, food classification and description systems. This is fundamental to facilitate future data access/exchange between existing and new RIs.
- At the outset RICHFIELDS should establish authoritative materials and standards for research data relevant to the food and health domain e.g. data catalogues, data management protocols, research protocols etc. This is essential to ensure best practice and to help shape the research community moving forward with data sharing activities.
- Provide sufficient support and training to laboratories and experimental facilities operating in the food and health domain in order to maximise future sharing opportunities of standardized data.
- The RICHFIELDS data platform must be flexible by design to be able to respond to a dynamic ICT environment (e.g. developments in consumer location sensing technologies, neuromarketing technologies). This will ensure it is able to link with new data streams as they emerge in the commercial world
- Create quick wins for the RICHFIELDS RI for data acquisition from business by exploiting the existing APIs (Application Programming Interfaces) for sharing data between businesses (e.g. Tesco in the UK).
- Establish relationships with developers/owners of AGGREGATORS already in the marketplace (e.g. Fitnesssyncer, GoogleFit etc.) to facilitate access to a wider breadth of consumer data.

### *Governance /ethical considerations*

- Ensure that the data sharing activities RICHFIELDS promotes are legally and ethically compliant (e.g. with GDPR and the Helsinki Principles etc.), and that intellectual property rights and competitive advantage are not compromised. Without this trust,

the willingness to share data with the proposed RI/data platform will be severely impacted.

- Appropriate metadata must be assigned to data such that the possibility of non-compliant sharing from either a legal/ethical or data owner requirement is eliminated. The variety of data sources potentially involved and the varying levels of consent they carry with them present significant challenges to the open access vision of RICHFIELDS.
- Re-purposing of data needs to be carefully scrutinized and controlled such that ethical compliance with the original participants' consent is always maintained.
- The governance structure must be fully transparent and the roles and responsibilities within it well-defined. This is especially important in a public-private business model scenario when there is often differing drivers and a different set of guiding principles in terms of ethics.
- Establish processes for the appropriate academic acknowledgement of the original data owner within any research publications arising from data acquired

#### *Business Model considerations*

- It is imperative that sufficient incentives/services are offered to motivate data providers from the various business stakeholder groups (retail, public procurement, market research, APPS and AGGREGATORS) to share their data with the proposed RI/data platform.
- Establish RICHFIELDS as the authoritative, 'go-to' resource for research materials and data within the domain of food behavior determinants. In order to achieve this, provision of authoritative and best-practice materials must be considered equally as important as the provision of the data connectivity.
- Provide training services (online or physical courses) and consultancy on a one-to-one basis to enhance RICHFIELDS future potential to support high quality research.
- Establish feedback and engagement mechanisms from users/stakeholders to ensure RICHFIELDS continues to satisfy ever-changing needs.
- Establish an annual conference to disseminate the benefits of utilizing the proposed data platform in research activities. By communicating successful outcomes of research utilizing RICHFIELDS to the wider research community, the impact and credibility of the RI/data platform will be substantially increased. The visibility of the proposed RI/data platform with its stakeholders is key to its success and sustainability.

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## 1 Introduction

The vision of the RICHFIELDS project is to design a Research Infrastructure (RI) to collect, align and share consumer, business and research data in order to provide the scientific research community access to innovative data sets and the ability to generate new knowledge and breakthroughs in the consumer food and health domain. This will enable policymakers and other stakeholders to develop, evaluate and implement effective food and health strategies at the level of both individuals and populations.

It is proposed that the RI will provide an unprecedented opportunity to address the determinants of consumer behaviour relevant to food and health across three distinct instances of behaviour: purchase, preparation and consumption. By building on determinants and intake ('DI' components) of the proposed DISH-RI ([www.eurodish.eu](http://www.eurodish.eu)), the design proposal arising from the RICHFIELDS project will be an important building block for subsequently constructing an ESFRI roadmap proposal for a pan- European Food Nutrition and Health Research Infrastructure (FNH-RI).

In order to identify and fully exploit all additional connections and possible linkages towards the design of the proposed RI/Consumer Data Platform and the data it could potentially harness, Phase 2 explored

- best practices for extracting purchase and procurement behaviour from existing business data sources and the potential use of new technologies and devices in the farm to fork supply chain: retail, food service and E-commerce that could be potentially useful (WP8). Business interest in sharing data was also explored.
- potential linkages and data sharing opportunities with
  - existing RIs and (European) projects that generate and monitor the data on EU consumers in the food and health domain (WP9).
  - research related laboratory and experimental settings and the data they generate (WP10)

### 1.1 Aim

The purpose of this deliverable, being prepared as part of the WP4 workplan, is to provide input to the final design of the proposed RICHFIELDS RI by Phase 3 and insight for the development of the wider roadmap proposal for the FNH-RI by

- 1) synthesising the findings across the three work streams within Phase 2 in relation to availability and usefulness of their data (WP8 – Business data, WP9 – Research Infrastructures and WP10 – Laboratories and experimental facilities)
- 2) identifying potential opportunities/issues that are relevant for the final design of the RICHFIELDS RI/data platform (Phase 3), but which may not be covered specifically in the Phase 2 deliverables.

## 1.2 Summary of Phase 2 activities

### 1.2.1 Business Data (WP8)

The purpose of the WP8 workpackage has been to investigate how different institutions collect data about consumer behaviour (i.e. business generated data). The main focus was on data users and providers studying the business to consumer (B2C) interface and data users and providers looking at the business to government interface (B2G) in Sweden and Denmark. The findings aimed to cover following three important topic areas:

- best practices of collecting data;
- ICT technology used for data collection;
- stakeholder perspectives for sharing of data in data pools.

Fuller details on methodologies and outcomes can be accessed in the specific deliverables: Business Generated Data Case Studies (D8.1), ICT used for extracting business generated data (D8.2) and Stakeholders workshop report (D8.3).

### 1.2.2 Existing Research Infrastructures (WP9)

Within WP9, existing Research Infrastructures, networks and tools in the food and health domain were studied (e.g. GloboDiet, ELIXIR, EUROFIR, PRECIOUS) and their approaches to data access, data linking, governance and business models were reviewed. This exploration was organised into four case studies

- Food composition and food attributes (Case study 9.1)
- Standardized food intake from population based survey (Case study 9.2);
- Clinical intervention (Case study 9.3);
- Consumer diet, health and lifestyle (Case study 9.4).

The intended outcome of these case studies was to define the conceptual connection of these existing RIs towards the proposed RICHFIELDS RI/Consumer Data Platform. Fuller details on methodologies and outcomes can be accessed by referring to deliverable D9.1 Integrated report on four case studies and proposed data outputs for RI Consumer Data Platform. Fuller details on methodologies and outcomes can be accessed in the specific deliverables D9.1 and D9.2.

### 1.2.3 Laboratories and experimental settings (WP10)

The WP10 workpackage was focussed on identifying and studying laboratories and other research facilities across Europe that are used for studying consumer behavior under controlled conditions – and with the use of sensorics technology. It explored their



structures, purposes and technical specificities, to better understand their needs and wants, but also what they might have to offer to a research infrastructure (RI) such as the one planned in RICHFIELDS. Within this framework, case studies were performed

- Fake Food Buffet (FFB) at ETH Zurich<sup>1</sup>
- FoodScape Lab (FSL) at Aalborg University<sup>2</sup>;
- Restaurant of the Future (RoF) at Wageningen University<sup>3</sup>

Additionally, a mapping exercise was carried out to identify further laboratories and research facilities across the EU dealing with research into consumers, food and health behaviours. Of these, two were selected for in-depth interviews (Nestlé Research Centre, Lausanne, and Paul Bocuse Institute, Lyon). The interviews covered a description of these facilities, their day-to-day business, but also their potential interest in a RICHFIELDS infrastructure (data needs and wants, what they could offer, what they would want in return etc.). Fuller details on methodologies and outcomes can be accessed in the specific deliverables D10.1, D10.2 and D10.3.

## 2 Method

To develop this deliverable, a desk-based review of the deliverables arising from the Phase 2 activities was performed by WP4. The documentation reviewed are detailed in Table 1. The results section of this deliverable focusses on synthesising the relevant Phase 2 outcomes in terms of the scientific usefulness of the data for the proposed RICHFIELDS RI/data platform and the opportunities and limitations for linkage and data sharing activities.

The discussion section seeks to summarise the outcomes to inform the data and technical considerations (WP11), governance/ethical considerations, (WP13) business model implications (WP12) and finally provide recommendations to inform the final design of the RI/data platform.

For specific information on the methodologies utilised by Phase 2 reference should be made back to the deliverables detailed in Table 1.



Table 1 – Phase 2 Documentation reviewed for development of this synthesis report D 4.3\*

Domain	Deliv. No.	Deliverable Title
WP8 – Business/retail data	D8.1	Report from case studies
	D8.2	Report on IC options
	D8.3	Report on 4 cases stakeholder workshop
	D8.4	Report on recommendations on future research and policy
WP9 – Existing RIs	D9.1	Integrated report on four case studies and proposed data outputs for RI Consumer Data Platform
	D9.2	Final report with recommendations for a new framework for future collaboration and interfacing between existing RIs and the RI Consumer Data Platform
WP10– Labs and experimental facilities	D10.1	Position document ‘Laboratories and research facilities in the field of food and health consumer behaviour and lifestyle’
	D10.2	Vision document ‘Purchase behaviour data and information for the RI Consumer Data Platform ‘
	D10.3	Vision document ‘Out of home consumption data and information for the RI Consumer Data Platform’
	D10.4	Integrated report of WP10 activities for Synthesis Report of Task 4.2

\*Information provided by Phase 2 at the mid-term review both in the scientific reporting and in presentation form were also utilised to assist with the development of this synthesis report.

## 3 Results and Discussion

As a result of the extensive engagement activities undertaken and critical review on a range of different data sources, Phase 2 have identified a number of opportunities and challenges for the proposed RICHFIELDS RI/data platform. These are discussed below:

### 3.1 Data and technical considerations

The scientific reach of the proposed RI/data platform is dependent on the diversity of data available to it and these include

- **Research data** from other Research Infrastructures, Laboratories and Experimental facilities.
- **Business data** (e.g. data from retailers, public procurement companies, statistical institutions and market organizations).
- **Consumer-generated data** from APPS (Smartphone and tablet applications) and sensors

With such diversity, it is more likely to successfully support innovation in food systems and research activities addressing the Global Challenges research agenda. However, each of

these domains present particular issues and considerations for the design of the proposed RI/data platform. Figure 1 illustrates the links between different types of data related to food intake and nutrition. The data types can be referred to as reference data (e.g. food composition data), observational data (e.g. food intake data, physical activity), or data that is transformed into output data (e.g. nutrient intake, dietary patterns). These types of data have been investigated in the various case studies included in Phase 2.

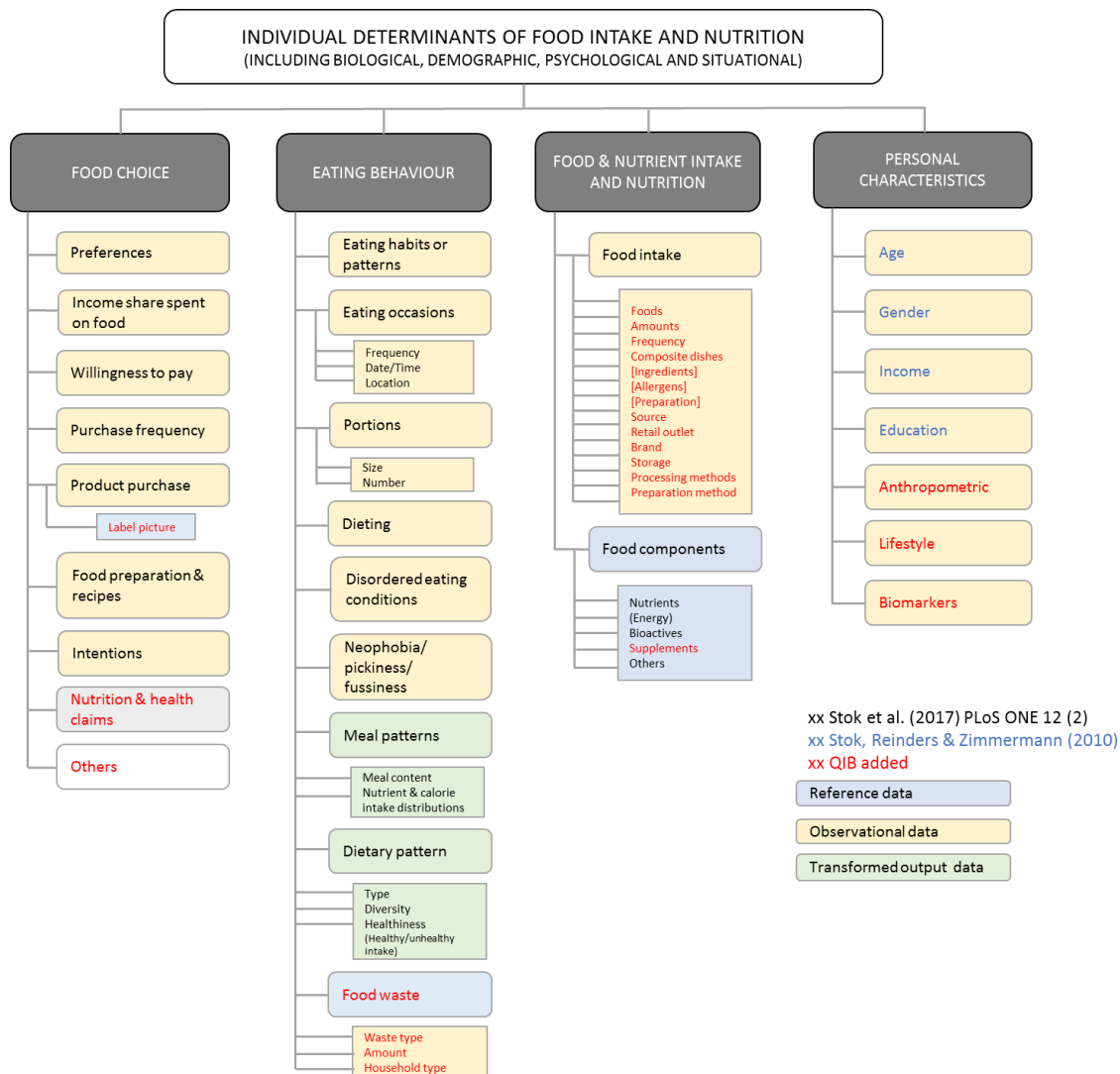


Figure 1 – Determinants of food intake and nutrition (Source D9.2)

### 3.1.1 Research Data

Case studies reported in WP 9 (D 9.1 and 9.2) have demonstrated that structures are in place to facilitate linking between some of the existing RIs in the food and health domain and the RICHFIELDS RI/data platform and therefore data from these sources is possibly the most accessible form of research data for RICHFIELDS. However, the development of a RICHFIELDS ontology and the harmonization of entities, food classification and description

systems will be fundamental to facilitate future data access/exchange between existing and new RIs. The development of authoritative materials and standards must be a fundamental component of the RICHFIELDS offering to establish best practice and to help shape the research community moving forwards thus making future data sharing activities easier. Some of this work has already been established so Richfields needs to work with existing RI networks/experts to build on these.

### ***3.1.2 Laboratory/Experimental facility Data***

Thirty nine facilities in Europe involved in consumer research in the food and health domain were identified (D10.1). Based on the subset of case studies performed in WP10 (D10.1, 10.2, 10.3 and 10.4) it would appear that the majority of data collected in the past by these types of facilities is proprietary and typically not formatted, standardised or stored in a manner conducive to sharing outside the original purposes of the research study undertaken. In addition, the diversity of data generating devices including video and audio results in a wide variety of data types and thus increases the difficulty of post-hoc data integration. However, that is not to say that in the future data from these types of facilities could not be incorporated into the RICHFIELDS RI providing that sufficient support is given to standardise their future data collection in such a way as to be more easily shared with the wider research community via the RICHFIELDS RI. This would involve the development of harmonised Standard Operating procedures (SOPs), data management protocols, including calibration/standardisation protocols and improved approaches to obtaining ethical consent at the outset of the studies for future sharing with the wider research community. There is great potential if the proposed RICHFIELDS RI can develop a smooth and operational infrastructure that allows the different labs to cooperate, optimise on the use of their expertise and share some of the burden of operating their high cost facilities.

### ***3.1.3 Business data***

In terms of business data, the results of the interviews and literature study performed in WP8 (D8.1, 8.2, 8.3 and 8.4) identified that the ICT landscape is fast-paced, driven by an increasing connectivity of devices, increasing numbers of mobile devices used by consumers and cheaper and better sensors. Table 2 gives an overview of modern IC technology either being used or with the potential for future data collection.

It is therefore clear that the proposed RI/data platform must be flexible enough to be able to respond to this dynamic ICT environment, however, careful consideration is needed on a case by case basis about the extent to which the data captured is reflective of the proposed research concepts, and of sufficient quality to be treated as a useful variable for the RICHFIELD RI/data platform.

The Case studies suggest that data collection may be significantly impacted by business purpose (e.g. policies to control suppliers or for organic procurement etc.) which may limit the potential usefulness of the data for scientific purposes within the proposed RICHFIELDS RI. However, there is clearly value in obtaining access to data from retailers or market research organisations as this type of data typically provides a broader consumer perspective on day to day food activities. The proposed RICHFIELDS RI therefore needs to ensure data source diversity but balance this with a clear understanding of the value of the different types of data generated within businesses. Furthermore, a number of retailers may have already developed APIs (Application Programming Interfaces) for sharing data (e.g. Tesco in the UK) and these are potentially quick wins for the RICHFIELDS RI in terms of data acquisition from business that could be most readily exploited.

### *3.1.4 Consumer-generated Data*

Whilst we typically talk about data collected via APPS and sensors (e.g. Fitbit) as being consumer-generated in reality unless the data is being shared directly from the consumer to RICHFIELDS this type of data must also be considered business data. Use of this type of data for research purposes is somewhat fraught with the same limitations as that of other business data in that the purpose for its generation may impact its usefulness however, again, a number of these APPS have developed APIs and there is the potential to capitalise on these for data acquisition by the RICHFIELDS RI/data platform. In addition, there is significant potential to connect to developers/owners of AGGREGATORS already in the marketplace for the further development of the RICHFIELDS technical data infrastructure and to facilitate access to a wider breadth of consumer data. Careful consideration should again be given to identifying datasets that are of scientific relevance and sufficient quality to support the proposed research concepts in the RICHFIELDS science case. This is more fully discussed in Deliverable D4.2 (Synthesis Report – Phase 1).

Table 2 – Overview of IC technology used by retail and market research organisations (Source D8.2 report on IC options)

Sector	Type of technology	Data capturing technology	Devices facilitating data capture	Type of data collected	Case studies
Retail	Consumer location sensing technologies	Geo-fencing	Smartphones, GPS-devices	Location data involving a location-sensitive device (eg. smartphones with GPS)	RetailNext (Aurora, Mobile Engage), Euclid (Traffic, Insight), Shopkick (shopBeacon), Brickstream (Brickstream 3D+), Axper (3D vision, Sentinel), PathTracker
		Wi-Fi	Smartphones, tablets	Location data of smartphones connected to Wi-Fi	
		Bluetooth Low Energy (BLE)	iBeacon-compatible transmitters, smartphones	Proximity data to Bluetooth beacons of enabled smartphones	
		Visual systems	Analog or IP cameras, infrared cameras	Visual tracking data	
		RFID Technology	Smartphone RFID reader, RFID sensors	Consumer real-time product choice and purchasing data. Aggregated shopper tracking data to determine shopping speed, purchasing speed, and geography of trips.	
		Combination of technologies mentioned above	Several sensors available that combines different data capturing technologies. E.g., Aurora from Retailnext combines video technology with BLE and WIFI.		
	e-commerce and mCommerce	Online analytic tools for personal computers	Smartphone, personal computer, tablet	Web browsing patterns and online shopping patterns (Cookie data), online purchasing data	Adobe marketing cloud (Adobe), Virtual stores (Walmart)
		Online analytic tools for mobile devices	smartphone, personal computer, tablet	Mobile phone data	
	Social media			Social media sentiment analysis data	Kellogg's tweet shop
	Point of sale technologies	Barcode Technology	Digital barcode scanner, Smartphone barcode app (mobile point of sale), self-service checkouts, tablets, NFC tags	Consumer grocery shopping data	GfK ConsumerScan "Mini-Danmark, Mobile Point-of-Sale (SCANDIT), NFC tags in Casino supermarkets (France)



		Other point of sale hardware	Payment terminals, weighing sensors, cash registers	Amount owned, weight, money transactions	
		Cloud based Point-of-sale software	uses data from devices mentioned in barcode technology and other point of sale hardware		Epos Now, Lightspeed Retail, Revel Systems, Lavu iPad POS
		Traditional point of sale software	uses data from devices mentioned in barcode technology and other point of sale hardware (except smartphone barcode scanners)		AIMsi, AmberPOS, RetailSTAR
Market Research Organization	Automated Voice Response and Voice Recognition	Interactive Voice Response survey	Touchscreen, freephone, post-call transfer to survey line, computer aided telephone interviews, web, email and SMS	Consumer feedback on product purchased and used	Vision OneTotalRecall
	Digital Observation and video	Digital diary and video recording	Webcam, smartphone, tablets, video camera, or some other type of digital audio/video recording device.	Consumer can either speak into the camera to describe a situation or feeling, or can take us on a tour, so to speak.	Olinger digital video diary
	Geo-location	GPS technology	Smart phone using apps with image, video capturing and survey questionnaire and integrated location	Photograph and record in-the-moment data in a specific location.	SSI's mobile QuickThoughts® 2.0 app. Geo-Intercepts app with features such as: GeoValidation, GeoIntensity and GeoNotification®.
	Neuromarketing research	Neuromarketing Techniques	Smart phone, tablet and laptops using facial recognition and other neuro analytics software	Captures the expressions and emotions people exhibited towards using a product	Face Reader- Noldus IREACT and Eye tracking- One vision

### 3.2 Governance/ethical considerations

It is evident from the stakeholder engagement activities performed in Phase 2 (Case studies with both laboratories/experimental facilities D10.1 and also business D8.1) that trust in the ability of the emergent RICHFIELDS governance structure to ensure that the data sharing activities it promotes are legally and ethically compliant, and that intellectual property rights and competitive advantage are not compromised is a fundamental requirement. Without this trust, the willingness to share data with the proposed RI/data platform will be severely compromised. This can be achieved by the establishment of a well-defined governance and management structure supported by scientific and business stakeholder advisory boards.

The variety of data sources potentially involved and the varying levels of consent they carry with them present significant challenges to the open access vision of RICHFIELDS. In reality, the datasets RICHFIELDS obtains or connects to, will need to be evaluated on a case by case basis and the appropriate metadata assigned to them such that the possibility of non-compliant sharing from either a legal/ethical or data owner requirement is eliminated. Re-purposing of data needs to be carefully scrutinized and controlled such that ethical compliance with the original participants' consent is always maintained.

Transparency is one means of engendering trust and it is recommended that the governance structure is fully transparent and the roles and responsibilities within it are well-defined. This is especially important in a public-private business model scenario when there is often differing drivers and a different set of guiding principles in terms of ethics. Similarly, processes for acknowledgement of the original data owner within any research publications arising from data acquired will be an important factor for data donators from the research community but it may be that data donators from the business community prefer to keep their involvement less visible and therefore balancing all of these requirements in a robust and effective way will be an ongoing challenge.

### 3.3 Business Model considerations

Stakeholder engagement activities across Phase 2 have emphasized the importance of satisfying the needs of the potential data providers in the development of the proposed RICHFIELDS RI/data platform. Clearly, there are aligned objectives and therefore obvious benefits for other established and emerging RIs, laboratories and experimental facilities working in the public domain to share their data with the proposed RICHFIELDS RI/data platform and these include; the potential for innovation by linking diverse datasets, standardization of protocols and data collection activities thus increasing on re-use and integration/enrichment of data/tools/models, increased visibility of and the potential to collaborate with other RIs, labs and experimental facilities operating in a similar research



domain (c.f. D9.1, D9.2). However, it should be noted that many laboratories and experimental facilities undertake both publicly funded and industry/business funded research it is unlikely that the business data they generate will be as readily accessible to the RI/platform (D10.1. D10.4)

Whilst many of the stakeholders from within the business community acknowledge their responsibility to improve public health as an incentive to data sharing it is unlikely that they will invest the necessary time and resources to actively share their data for purely altruistic reasons (Case studies in D8.1 and stakeholder workshop D8.4). Therefore, it is imperative that sufficient services are offered to further motivate data providers from the various business stakeholder groups (retail, public procurement, market research, APPS and AGGREGATORS) to share their data with the proposed RI/data platform. This is especially important since access to data from the platform for them may well have to be quite limited compared to users from the publicly funded research community for ethical reasons.

The RICHFIELDS RI/data platform will need to establish itself as the authoritative, 'go-to' resource for data, tools and services within the domain of food behavior determinants (c.f. D4.4). This means that in order to be successful and appeal to the widest user base, the provision of authoritative and best-practice materials must be considered to be equally as important as the provision of the data connectivity and should therefore form an essential part of the service offering within the proposed RICHFIELDS RI business model.

Furthermore, to enhance its future potential to support high quality research it is important that RICHFIELDS provides training services either via online or physical courses and possibly even consultancy on a one-to-one basis to build the research community. This type of service offering, sharing expertise and best practice, will not only raise the quality of data being collected from consumers and by business for the future, but also enhance capabilities to perform high quality research within this domain. However, this will need to be costed in to the business model and the capacity built-in from the start.

Finally, the continued visibility of the proposed RI/data platform within the wider research and business community is key to its success and sustainability. The value of regularly engaging with and inviting feedback from users/stakeholders is an established way of ensuring a products or services continue to satisfy ever-changing needs. It also helps to ensure continued engagement from data providers, data users and other stakeholders who are more likely to feel valued if they have a voice within the organization. Consideration within the business model should also be given to establishing an annual conference to disseminate the benefits of utilizing the proposed data platform in research activities. By communicating successful outcomes of research utilizing RICHFIELDS to the wider research community, the impact and credibility of the RI/data platform will be substantially increased.

## 4 Conclusions and recommendations

The main recommendations arising from this synthesis report are summarised below:

### *Data, standardisation and technical considerations*

- Build links between existing RIs in the food and health domain and the RICHFIELDS RI/data platform.
- Develop a RICHFIELDS ontology and harmonize entities, food classification and description systems. This is fundamental to facilitate future data access/exchange between existing and new RIs.
- At the outset RICHFIELDS should establish authoritative materials and standards for research data relevant to the food and health domain e.g. data catalogues, data management protocols, research protocols etc. This is essential to ensure best practice and to help shape the research community moving forward with data sharing activities.
- Provide sufficient support and training to laboratories and experimental facilities operating in the food and health domain in order to maximise future sharing opportunities of standardized data.
- The RICHFIELDS data platform must be flexible by design to be able to respond to a dynamic ICT environment (e.g. developments in consumer location sensing technologies, neuromarketing technologies). This will ensure it is able to link with new data streams as they emerge in the commercial world
- Create quick wins for the RICHFIELDS RI for data acquisition from business by exploiting the existing APIs (Application Programming Interfaces) for sharing data between businesses (e.g. Tesco in the UK).
- Establish relationships with developers/owners of AGGREGATORS already in the marketplace (e.g. Fitnesssyncer, GoogleFit etc.) to facilitate access to a wider breadth of consumer data.

### *Governance /ethical considerations*

- Ensure that the data sharing activities RICHFIELDS promotes are legally and ethically compliant (e.g. with GDPR and the Helsinki Principles etc.), and that intellectual property rights and competitive advantage are not compromised. Without this trust, the willingness to share data with the proposed RI/data platform will be severely impacted.
- Appropriate metadata must be assigned to data such that the possibility of non-compliant sharing from either a legal/ethical or data owner requirement is

eliminated. The variety of data sources potentially involved and the varying levels of consent they carry with them present significant challenges to the open access vision of RICHFIELDS.

- Re-purposing of data needs to be carefully scrutinized and controlled such that ethical compliance with the original participants' consent is always maintained.
- The governance structure must be fully transparent and the roles and responsibilities within it well-defined. This is especially important in a public-private business model scenario when there is often differing drivers and a different set of guiding principles in terms of ethics.
- Establish processes for the appropriate academic acknowledgement of the original data owner within any research publications arising from data acquired

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- It is imperative that sufficient incentives/services are offered to motivate data providers from the various business stakeholder groups (retail, public procurement, market research, APPS and AGGREGATORS) to share their data with the proposed RI/data platform.
- Establish RICHFIELDS as the authoritative, 'go-to' resource for research materials and data within the domain of food behavior determinants. In order to achieve this, provision of authoritative and best-practice materials must be considered equally as important as the provision of the data connectivity.
- Provide training services (online or physical courses) and consultancy on a one-to-one basis to enhance RICHFIELDS future potential to support high quality research.
- Establish feedback and engagement mechanisms from users/stakeholders to ensure RICHFIELDS continues to satisfy ever-changing needs.
- Establish an annual conference to disseminate the benefits of utilizing the proposed data platform in research activities. By communicating successful outcomes of research utilizing RICHFIELDS to the wider research community, the impact and credibility of the RI/data platform will be substantially increased. The visibility of the proposed RI/data platform with its stakeholders is key to its success and sustainability.

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