



FBD_BMODEL
FASHION BIG DATA BUSINESS MODEL

D3.1

Definition of consumer data requirements



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Dissemination Level

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|-----------|--|---|
| PU | Public | |
| PP | Restricted to other programme participants (incl. Commission Services) | |
| RE | Restricted to a group specified by the consortium (incl. Commission Services) | |
| CO | Confidential, only for the members of the consortium (incl. Commission Services) | ✓ |

Document Log

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1 Executive Summary

The aim in deliverable 3.1 is to develop deep understanding of consumers' needs for the purpose to deliver personalized fashion products and services from the fashion textile supply chain as the first database in the digital platform of big data for developing novel business models. To achieve this aim, the consumer purchase process was carefully analyzed to develop information flow in e-shopping gateways for deriving the key data required. This approach was proposed to the business partners in a series of project meetings, which were discussed and agreed by project partners. In July 2018, the GZE organized a meeting for WP7, in which UoM team presented detailed on-line data acquisition to define consumer's purchase requirements for the business cases of Bivolino, AZADORA, Kuvera Spa and BESTE separately. Meanwhile, the risk of connecting the given data to individual person when he/she logs in and give information for the purchase was discussed among project partners in relation to personal data protection and management. Detailed data management plan has been developed to avoid direct connection of personal data with the cloud database servers and computational servers by imposing strict security to protect personal data at the on-line e-shopping interfaces/gateways by the individual business partners and/or the IT service providers as reported in D2.4. **The personal data with individual identity will be only accessible by the consumers and their authorized business product/services providers (D2.4 page 42).** Their personal identify data will be removed and coded before sending to the cloud database servers and computational servers. The targeting consumer data profile for each business case was defined and further action plan was discussed and agreed. The identified consumer profile is also used in deliverable D1.1 to identify the Ethics Requirements and personal data protection.

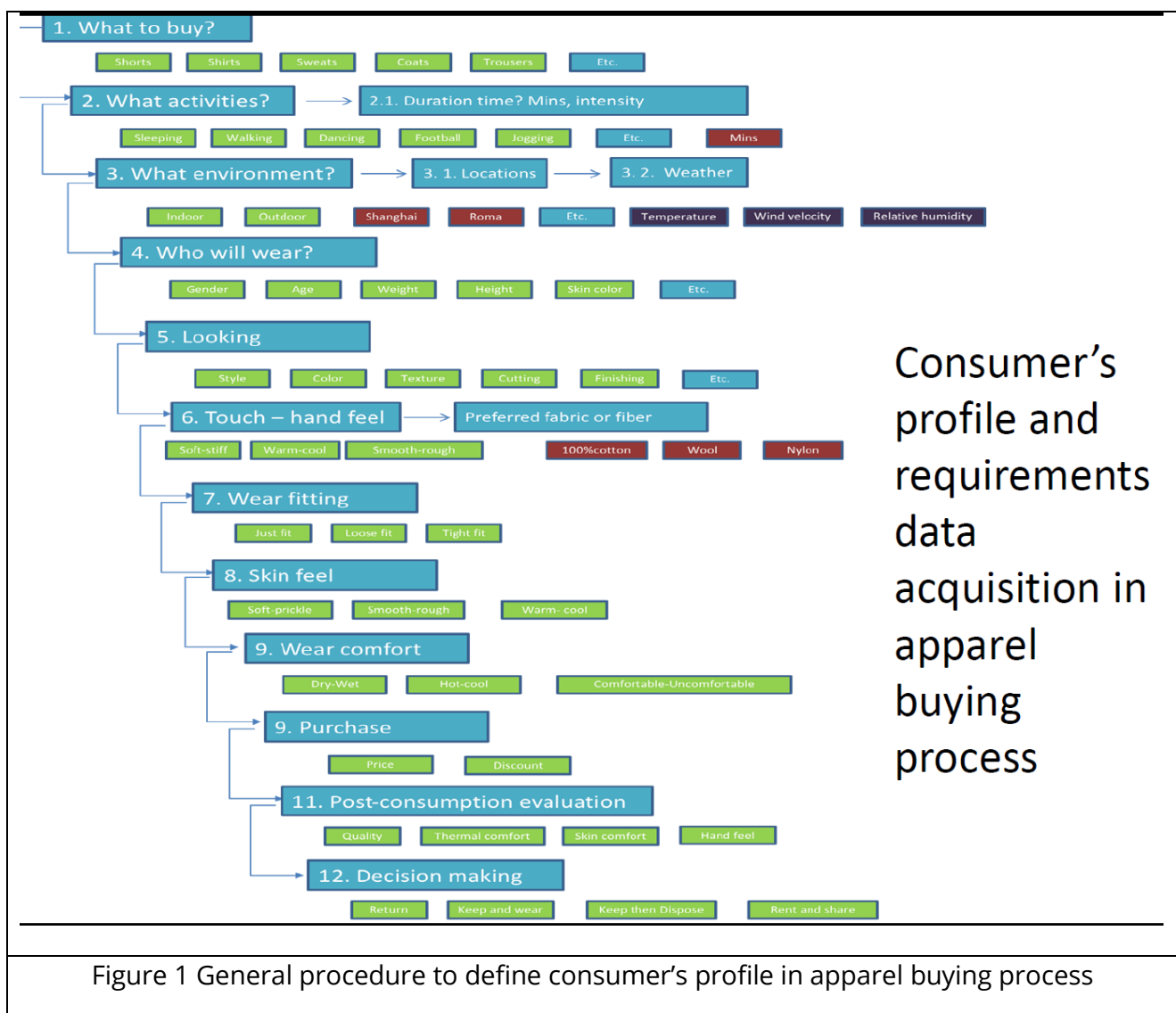
2 Introduction and Approach

To define consumer data requirements, different survey approaches have been considered, including:

- Traditional survey questionnaires such as paper or electronic document based questionnaire survey;
- Internet survey/on-line questionnaire survey;
- E-shopping website data acquisition in the quidded purchasing process;
- Mobile App data acquisition in the quidded buying process.

For the purpose of developing novel business models by creating a bid data digital technology platform and complete Task 3.2 for the purpose of deriving consumer database outlined in Task 4.1, UoM suggested to conduct the consumer survey with the project partners by the following approaches:

- Integrate the consumer profile data acquisition with the existing e-shopping websites and business processes of Bivolino, AZADORA, Kuvera Spa-YAMAMAY and BESTE-MONOBİ separately;
- Integrate the consumer profile data acquisition into Fitizzy's fitting website;
- Integrate the consumer profile data acquisition into DSS' Mobile App development.
- Detailed suggestions have been sent to individual partners based on the general procedure outlined in Figure 1.



This approach was presented to the business partners in a series of project meetings, which were discussed and agreed by project partners. In July 2018, the GZE organized a meeting for WP7, in which UoM team presented detailed on-line data acquisition to define consumer's

purchase requirements for the business cases of Bivolino, AZADORA, Kuvera Spa and BESTE separately.

Comparing the general procedure to define consumer's profile in apparel buying process as shown in Figure 1 with the existing on-line shopping practices such as Bivolino's website, the key personal data acquired are essentially the same:

- No.1: What to buy
- No.4: Who will wear
- No.5: Looking-outlook
- No.7: Wear-Fitting
- No.9: Purchase
- No.11: Post purchase evaluation
- No.12: Post purchase decision making.

The following additional information is acquired to obtain better understanding consumers' needs and provide better product and services, including:

- No.2: What activities
- No. 3: What environments
- No.6: Touch-hand feel
- No.8: Skin feel
- No.10: Wear comfort.

As the key personal data and these personal lifestyle and sensory preferences are acquired at the interfaces of individual business partners, data protection and data management plan needs to be designed, developed and implemented at the points of consumers' personal account with individual business partners. To dress these critical issues, detailed data management plan has been discussed and agreed among project partners to provide personal protection as reported in D2.4.

3 Consumer selection and consumer profile formalization

Subtask 3.2.1: Consumer selection and consumer profile formalization (M1-M3):

This task was completed according to the four business cases identified in the project proposal. A variety of target consumers concerned by the business cases were selected for

needs analysis. The specifications review and further surveys for their targeting consumers were carried with business professional partners. The profile of the selected consumers will include:

- his/her personal body parameters,
- his/her lifestyle activity features, the concerned environmental factors, as well as functional and fashion requirements. concretely, it will be composed of:
- metabolisms of the human body at various level of physical exercises;
- geographical locations and environmental conditions such as temperature, humidity and air velocity;
- human anthropological and physiological data such as height and other body measurements, weight, gender and age;
- personalized expectations for functional and fashion performances.

An appropriate mathematical formalization of data acquisition has been developed for representing this consumer profile in order to further study relations between different consumers. The profile of the consumers, which serve as an input to CC_IDS development, include:

- Demographic profile: gender, age, skin colour
- Anthropological profile: body parameters-height and weights and other body measurements
- Lifestyle profile: lifestyle activities, the environmental factors, as well as functional and fashion requirements, variety and intensity levels of physical activities;
- Geographical profile: locations and environmental conditions such as temperature, humidity and air velocity;
- Psychographic profile: personalized expectations for functional and fashion performances.
- Economic profile: income and price sensitivity.

More specifically, the following consumer's profile and requirements in apparel buying process will be obtained:

1. Decision on **what for**:

- What purpose of the purchase?
- For what activities? Type/Duration/Intensity

2. Decision on **where to wear**:

- Where to wear? Indoor/outdoor
- Which environment? temperature, humidity and wind speed, weather conditions, weather

3. Decision on **who will wear**:

- Buy for whom?
- Gender?
- Age?

- Skin colour?
 - Height?
 - Built? Weight?
4. Decision on **what to buy**:
 - Look: style, colour, texture, cutting, ...
 - Touch: hand feel-soft/smooth/warm/cool
 - Fitting: size checking, fitting wear,
 - Feel: skin feel: soft/prickle/warm/cool...
 - Cost: price checking
 5. Decision on purchase de: place the order with payment
 6. Decision on wear performance: outlook endurance, thermal comfort and skin comfort
 7. Decision after sale: keep/return/wear/not wear/satisfaction/loyalty
 8. Personal data protection (reported in D2.4):
 - Personal data protection
 - Data access control in business partners' own databases and central cloud database
 - Data reuse.

4 Functional and consumer requirement specifications

Subtask 3.2.2: consumers' Functional and sensory comfort requirement specifications: (M3-M5):

This task was completed based upon the product data sheet of the data-based services identified in the project as shown in Figure 4 on page 10 of the proposal. Surveys were conducted with both end customers and EU fashion retailers, aimed at evaluating the functional and consumer requirement specifications of the SCPMS, which were reported in D5.1, including:

- Virtual fashion design and product development (CCIDS2): Tables 4-7,
- Thermal comfort-related parameters (CCIDS3.1): Table 10. CCIDS 3.1 output datasheet
- Tactile comfort-related parameters (CCIDS3.2): Table 12. CCIDS 3.2 output datasheet
- Pressure comfort-related parameters (CCIDS3.3): Table 14. CCIDS 3.3 output datasheet.

5 Consumer profiles of business cases

Working with business partners in WP7, UoM team presented detailed on-line data acquisition to define consumer's purchase requirements for the business cases of Bivolino, AZADORA, Kuvera Spa and BESTE separately. The business partners defined their targeting consumer profiles as shown in the following figures.

Consumer's profile and requirements data acquisition in apparel buying process

use case: **AZADORA**

CATEGORY OF PRODUCTS

what to buy?

WOMENS WEAR _ SEASONLESS COAT

SHOPS BY PRODUCTS

activity type / duration / intensity

DAILYWEAR / WALKING / RAINWEAR / H12 / MODERATE

environment / location / weather

URBAN / CENTRAL EUROPE / 10°C - 25 °C

IMAGES AND DESCRIPTION



The coat is a "multifunctional garment" designed using technical textiles and sewing free assembling technologies, that can be worn in all the seasons.

The main characteristics are:

- Thermal regulation
- Breathability
- Light weight
- Windproof
- Waterproof
- Stain and oil resistance

For the production of the model, innovative technologies will be used as the ultrasounds seam and the termo welding, that will give more resistance, elasticity and softness to the coat, melting the various materials in an only, making it lighter and waterproof, but in the same time, maintaining the traditional seams to give it more particularity.

Idea is also that to be able it modular, so that to make personalizes it, having the opportunity to remove the hood a/o the sleeves.
"Dora" will be a coat addressed to women since 25 a 50 years around, and the fabric will determine the seasonality and the cost, for which it will develop in various bands of price.

OPTIONS FOR INNER FACE OF GARMENT

skin feel: soft-prickle / smoot-rough / warm-cool

SOFT - SMOOTH - WARM

OPTIONS FOR GARMENT SURFACE

*touch - hand feel / preferred materials*SMOOTH DENSE SURFACE -
POLYAMMIDE, POLYESTER, PU MEMBRANE
PU-COTTON

CONSUMER BASIC INFO

*who will wear it?**gender / age / weight / heigh / skin colour*

WOMAN / 25-50 YEARS OLD / 50-70KG / 1.55-1.75

FITTING EFFECTS

*wear fitting?**regular / tight / loose fit*

LOOSE-REGULAR FIT

WEAR COMFORT

dry-wet / hot-cool / comfortable-uncomfortable

DRY - THERMAL COMFORT - COMFORTABLE

Figure 2 Defined targeting consumer profile by AZADORA

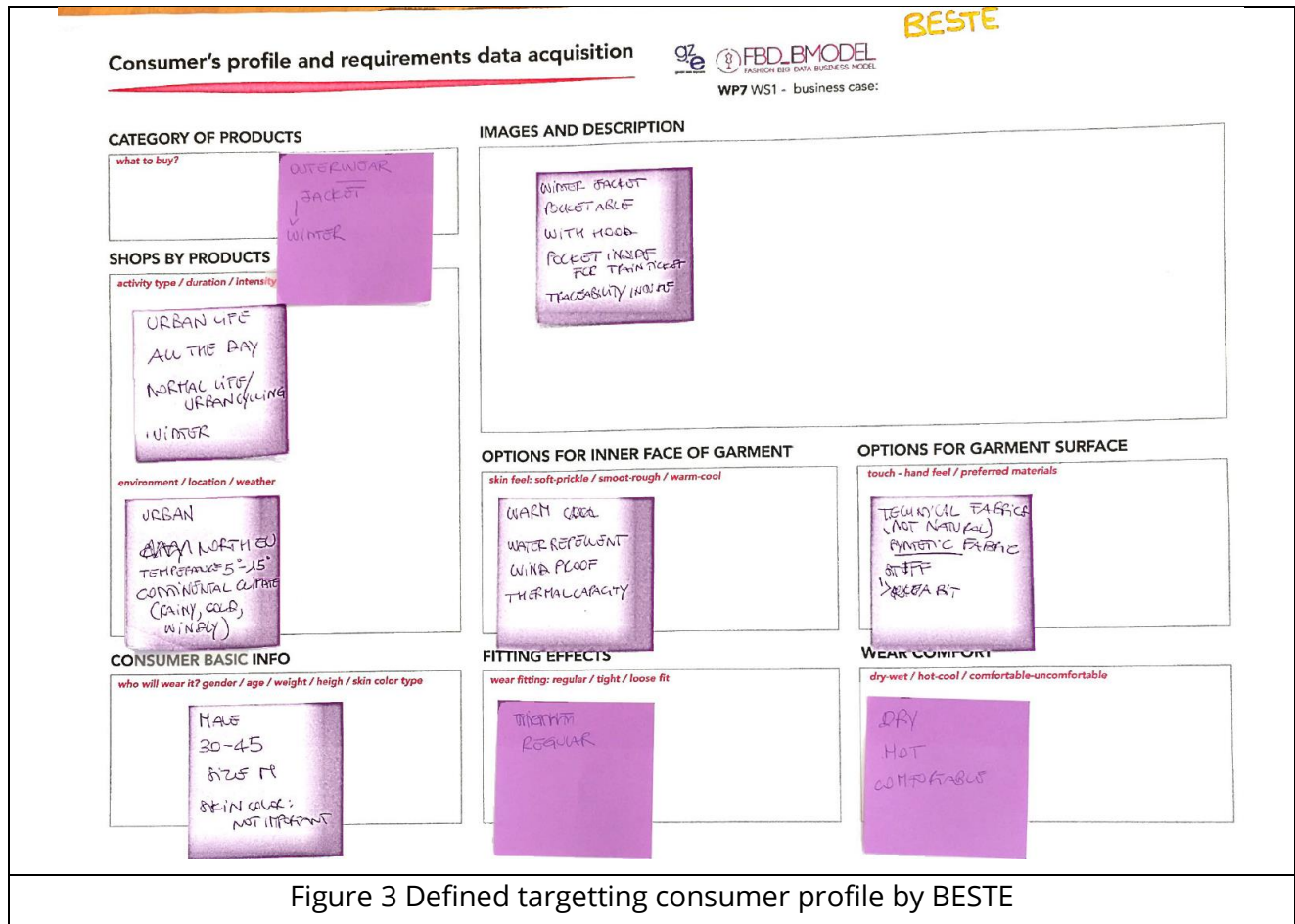


Figure 3 Defined targeting consumer profile by BESTE

Consumer's profile and requirements data acquisition

BIVOLINO

WP7 WS1 - business case:

CATEGORY OF PRODUCTS

what to buy?

SHIRTS
MEN

3 DAYS / WEEK
8 HOURS / DAY

environment / location / weather

SUMMER
17° - 30°
50 - 70%
HUMIDITY
0.1 WIND

EVERYWHERE
- OFFICE
- IN-OUTSIDE
- TRAIN - CAR
- RAINY - SHINE
ALL WEATHER TYPES

IMAGES AND DESCRIPTION

MADE TO MEASURE
SHIRTS
- CONSUMER IS
DESIGNER
- BIOMETRIC
SHIRT

OPTIONS FOR INNER FACE OF GARMENT

skin feel: soft-prickle / smooth-rough / warm-cool

COLLAR
SLEEVE
BODY
FRONT PANEL
BACK PANEL

OPTIONS FOR GARMENT SURFACE

touch - hand feel / preferred materials

COTTON 100%
- BREATHABLE
- IRON FREE
- LIGHT TO WEAR

CONSUMER BASIC INFO

who will wear it? gender / age / weight / height / skin color type

GENDER: 4 QUESTIONS
AGE
WEIGHT
HEIGHT
COLLAR SIZE
ADDRESS: PAYMENT / MODE
DELIVERY

FITTING EFFECTS

wear fitting: regular / tight / loose fit

REGULAR FIT
LOOSE FIT
SLIM FIT
SUPER SLIM FIT


WEAR COMFORT

dry-wet / hot-cool / comfortable-uncomfortable

COMFORTABLE
• WEATHER DEPENDENT
• WINTER - SUMMER

Figure 4 Defined targeting consumer profile by BIVOLTNO

Consumer's profile and requirements data acquisition

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 WP7 WS1 - business case:

YAMAMAY - JAKED

CATEGORY OF PRODUCTS
 what to buy?
 T-SHIRT (YAMAMAY / JAKED)

SHOPS BY PRODUCTS
 activity type / duration / intensity

ACTIVITY TYPE:
 * WORK
 * SPORT
 * PHYSIOTHERAPY
 * FREETIME

environment / location / weather

ENVIRONMENT:
 * OUTDOOR
 * IN DOOR WITH OR WITHOUT CLIMATIZING AREA

LOCATION:
 * SNOW * SEA
 * DESERTIC AREA
 * MOUNTAIN

WEATHER:
 * THE DIFFERENT SEASONS
 * DIFFERENT WEATHER CONDITION (SUNNY, RAINY...)

CONSUMER BASIC INFO
 who will wear it? gender / age / weight / height / skin color type

GENDER:
 * MALE
 * FEMALE

AGE:
 NOT IMPORTANT

MEASURES DETECTED BY BODY SCANNER

IMAGES AND DESCRIPTION

OPTIONS FOR INNER FACE OF GARMENT
 skin feel: soft-prickle / smooth-rough / warm-cool

* SEAMLESS OR NOT
 * WARM - COOL
 * BREATHABLE OR NOT
 * SOFT OR ~~ROUGH~~ PRICKLE

OPTIONS FOR GARMENT SURFACE
 touch - hand feel / preferred materials

* DESIGN
 * STYLE
 * COLORS
 * PATTERN

PREFERRED MATERIALS:
 * NYLON
 * POLYESTER
 * NYLON
 * COTTON
 * RECYCLED POLYESTER
 * NEOPRENE
 * CORDURA NYLON
 * PET BASED FABRIC

FITTING EFFECTS
 wear fitting: regular / tight / loose fit

WEAR FITTING:
 * REGULAR
 * TIGHT
 * LOOSE FIT
 * SHORT OR LONG OR MEDIUM

SLEEVES:
 LONG, MEDIUM OR SHORT

WEAR COMFORT
 dry-wet / hot-cool / comfortable-uncomfortable

* DEODORANT EFFECT
 * DRY FEELING
 * HOT OR COOL
 * FABRIC ELASTICITY

Figure 5 Defined targeting consumer profile by YAMAMAY

6 Conclusions and Outlook

Definition and acquisition of consumer's profile and requirements are the most important interface of FBD_BModel technology platform to establish the first and most important database (CDB). This is essential for providing the relevant data to the computational servers of CC_IDS to perform scientific computer simulations and generate digital images and data to predict and visualize the fitting, outlook, hand feel, skin comfort and thermal wear comfort of the apparel products for the business partners. Therefore, the commitment of business partners to design and implement the data acquisition in their own business processes (on-line or off line) is critically important for the success of this project to develop big data for implementing new digitized supply chain management business models.

At the same time, the risk of personal data misusages are high as the given data of individual persons when he/she logs in and gives information for the purchase of the products

and/services. Personal data protection and management is a serious issue, which have been considered and discussed among project partners. Detailed data management plan has been developed to avoid direct connection of personal data with the cloud database servers and computational servers by imposing strict security to protect personal data at the on-line e-shopping interfaces/gateways by the individual business partners and/or the IT service providers as reported in D2.4 and D1.1. The personal data with individual identity will be only accessible by the consumers and their authorized business product/services providers (D2.4). Their personal identify data will be removed and coded before sending to the cloud database servers and computational servers personal data protection and management. This issue needs to be carefully considered and implemented in the WP4, WP5, WP6 and WP7.