

OVERVIEW OF THE SERVICE with KEY POINTS (some have a detailed answer, some not yet)

Before launch of service:

- Define the zero collection's models
- Design the models on Shima's software
- Convert into 3d models
- Program web-site with social network capabilities
- Define Target and Price
- Define HR responsibilities and line of command
- Define Store Locations (precise location)
- Define Production Location (precise location)

The customer wants a customizable dress – 3 OPTIONS

Store

- How to take measures?
- How to handle waiting time (see slides)?
- Who interacts with the client?
- Store's layout and rooms
- Demonstrative exhibits
- Store functions also as pickup point

Temporary

- Where? (Squares, airports etc)
- New position announced through web
- What's the layout?
- Who interacts with the customer?
- How to take measures?
- Demonstrative exhibits

Web

- What's the layout like?
- What functions are available?
- How could he take his own measures?

Video-avatar creation

- Equipment needed
- What does the customer see? There's someone with him or not?
- What does he wear during recording time?
- Who places the motion tracking sticker dots?
- How do you select the 20s video?
- What movements are allowed for the customer during recording time?

Image-avatar creation
(it's a web-only alternative for customers far away from the city)

- What does the customer have to do with his web-cam?
- How to "attach" rendered dress to webcam image?

20s Video is ready

•What does the customer see after log-in?



Customer goes to our web-site and starts his customization experience from our templates



When done customizing there's the virtual try-on experience



•What are the templates?
•Available colors
•Available fabrics
•How much time for video rendering? Is price immediately available or on a second page?

•Flash web-site details and user interaction commands (possible to add lighting and other effects?)



Now the customer has 3 options

Buy the garment

Keep the rendered video but not buy it immediately

Erase the content



•You can save it on the web-site
•If you want you can share it on the social network part of the web-site
•You can also share it on other social networks – this will function also as advertising because people from other SNs will go to our site.



BUY?



•Payments methods
•Length of payment process
•What delivery choices are there?



The garment identifying code is sent to our production facility

- What web-protocols for safe delivery of the code?
- Customers delivery preferences should be sent as well



Code is handled by Shima's computers who load the pre-designed dress – then production starts

- First in first out or daily production planning?
- What are the phases of production? Are they the same for all fabrics?
- Where's the facility and why is it there?
- What is the equipment needed? (machines, computers etc.)
- Who's working there?
- What's the layout?
- How do we buy raw materials?



The product is ready and can be sent home or to the pickup points

- 3d party logistics provider?
- How much are delivery costs and how much do we charge the customer?
- Do we need an intermediate dispatching point?
- How do we handle returns?

Shop

In our project we think that is important to open a store in the centre of Milan in order to strengthen the image of our brand.

It will be the focal point of our identity.

However, it is not a traditional shop, since there are non garments on sale, but it is a place where customers can:

- create their video-avatar
- touch the quality of our fabrics
- watch our collections
- pick up the clothes that they have previously ordered.

Among these activities, the most important is that our client can create here their video avatar and be measured by our staff.



Shop

Before starting our fashion experience, our clients must book for his turn by web or by phone or directly at our shop.

When the client enters our shop:

- _ a staff member welcomes him and explains him what to do
- _ the client goes into the changing room
- _ then he goes into the “recording room” for the video-making
- _ after this, the staff member takes measurement of the client (height, shoulders, torso’s circumference, waist’s circumference and hip’s circumference)
- _ the client can change himself again in the changing room
- _ then he can choose on an iPad the best video among the three that have been recorded
- _ after, the shop assistant, under the client’s supervision, creates the customer’s account and webpage and uploads there the video and the measures.



This experience lasts about 20 minutes.

After this, the client can freely consult our collections through an iPad and can touch and appreciate the quality of our fabrics.

Shop

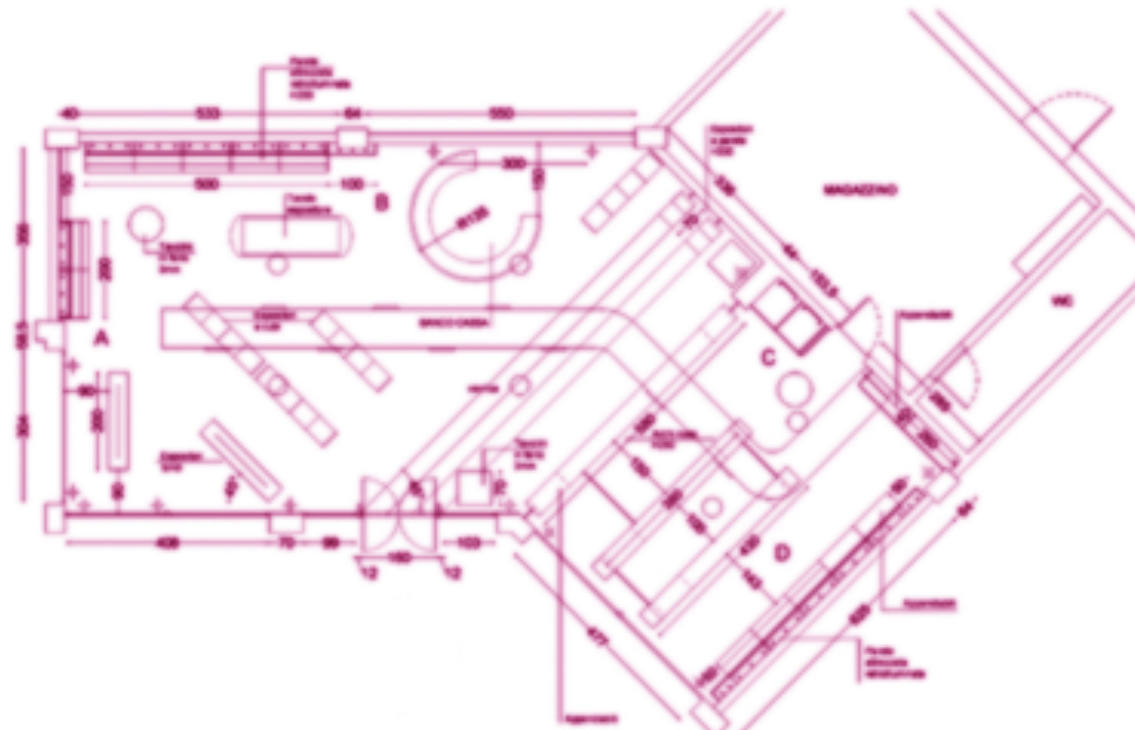
Layout:

The shop will be characterized by an up-to-date and refined design, according to the brand's image. The layout will be constituted by:

- _ two desks where the shop assistants wait for the client and help him create his account
- _ one desk where clients can pick up and (eventually) pay the garments that they have ordered
- _ two changing rooms + two recording rooms
- _ an exhibition area
- _ back-shop

At least 60/70 m²

Two shop assistants



Once you sign-in the website becomes personalized

Web Customizing App



Hello Laura !

[edit profile](#)

[change password](#)

...Loading video

start my design >

Visualize my video >

Choose a category >

men

women >

kids

Top

Dress >

Skirt

Accessories

start my design >

Visualize my video >

Choose a category >

Dress > Choose a base template >

Patrizia

Laura

Emily

Daniela

Elisa

Veronique >>

Sandra

Marilyn

Claudine

Paola

Francesca

Isabelle

Ilaria

Celine

Nancy



Template : Veronique



I visualize > Visualize the template on your video

I design > design your own dress choosing from a list of options

Neckline

polo
jewel
bateau
square
deep square
scoop
deep scoop
V
low V

Sleeve

sleeveless
cap
short
elbow
three-quarter
long

Skirt

a-line
full
straight

Length

knee
mid
long

Add-ons

flounce
low V-back
sexier sleeveless
square
deep square
scoop
deep scoop
V
low V

knitwear patterns

[click here](#) to visualize
all the patterns

knitwear yarns

[click here](#) to visualize
all types of yarns

knitwear colors

[click here](#) to visualize
all the colors

Neckline

- polo
- jewel
- bateau
- square
- deep square
- scoop
- deep scoop
- V
- low V

Sleeve

- sleeveless
- cap
- short
- elbow
- three-quarter
- long

Skirt

- a-line
- full
- straight

Length

- knee
- mid
- long

Add-ons

- flounce
- low V-back
- sexier sleeveless
- skirt ruffle

knitwear patterns

[click here](#) to visualize all the patterns

knitwear yarns

[click here](#) to visualize all the yarns

knitwear colors

[click here](#) to visualize all the colors

visualize it on your real video model



add polo neck

add sleeves

add 2 colors

maintain the pattern

make the skirt narrower

make it longer



Social Network

Social Network

The web-site, used primarily to customize and buy clothes will also function as a full-fledged social network

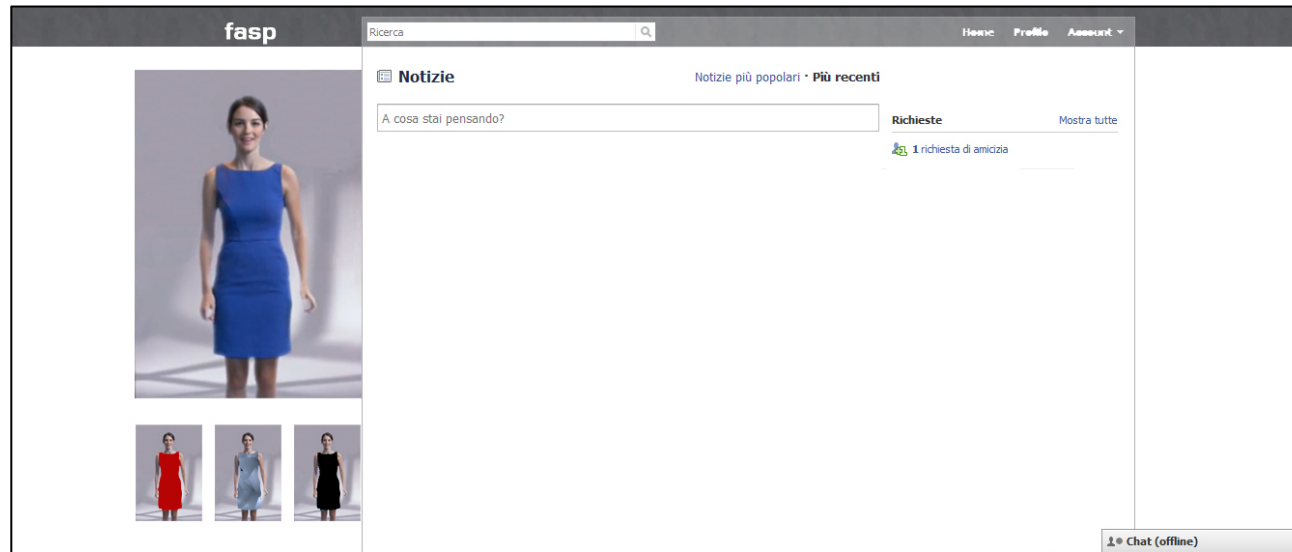
It will give any person the opportunity to:



- Share the customized garments on their 20s video
- Share ideas, images and website – this will create trending topics which will be used by our designer for new dresses.

Social Network

_ the homepage has more or less the same functions of the facebook's homepage (chat, wall, friends list...)



_ the client can add his personal data and photos and share them with his friends' list

_ the client can upload all the “profile videos” with the different garments in a specific section where friends can express their ideas about them

Our social network will be completely independent from the social network that are already existing. However, it offers the possibility to link on facebook all the videos, in order to share them with all the other friends who are not our clients

Collection design



Important characteristics:

- 3d prototyping (no need for the very long and costly real sampling)
- Possible to use 3d image on the recorded video of the customer
- Directly possible to automatically translate validated design into machine language

Create a 3d collection of variants obtained with the combination of subcomponents



For example for this specific dress concept the components would be:

Top part of the shirt → sub-dimensions: color, sleeves (long and short)

Bottom part of the shirt → sub-dimensions: pattern, color

ALL VARIANTS ARE GOING TO BE DESIGNED AND APPROVED FOR PRODUCTION
PRIOR THE OPENING OF THE SERVICE

The machine language version will wait for the order to arrive



Each 3d model has to be converted in a 3DS or FL3D format

Once converted thanks to the FreeSpin3D plugin
We can import and manipulate on the Flash based
app the 3d model

<http://www.freespin3d.com/support/documentation.html>

In this way the user has an experience of customization
but in reality all variants already exist.

Next challenge:

Solve TRADE-OFF

Number of variants vs. pre-design costs

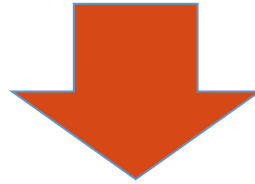
Sketch

Virtual sampling

- Virtual dummy
- Yarn print

Validation

- Physical elements (knitting, etc.)
- Visual elements (color, style)
- Technical elements (programming)



Ex-Novo design: max one day

- Variants of the ex-novo design take less time

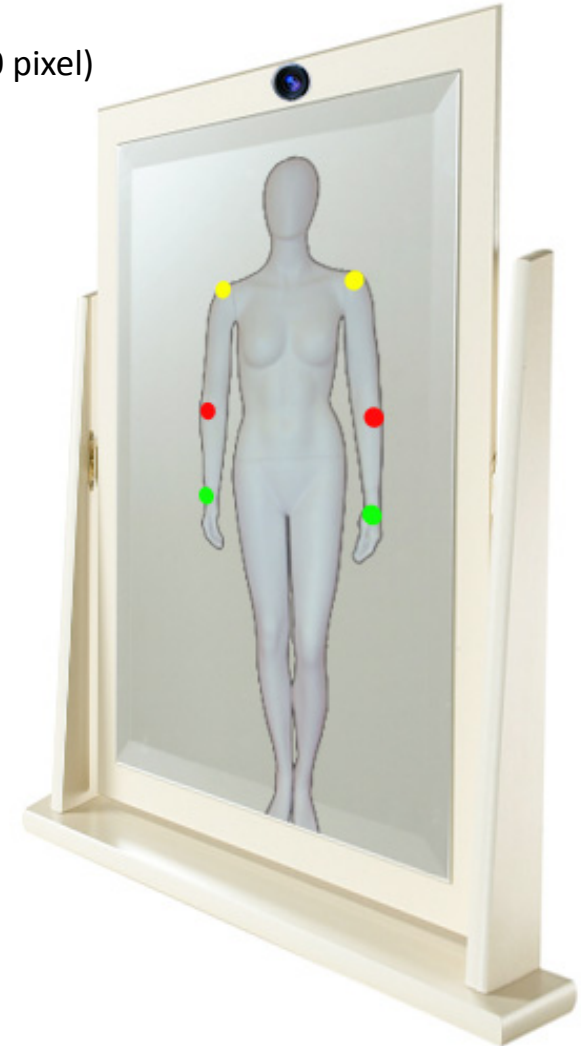
Video Avatar Creation

The store changing rooms have been re-thought, now being used by the user to record a video and select 20 seconds of it to be used as his/her avatar.

These are the main components needed:

- Ordinary mirror with an installed high resolution camera (e.g. RED: 4900x2580 pixel)
- Colored spots (applied to the user's body for the motion tracking)
- iPads (to be used as remote controls in the store)

A high resolution camera enables an easier image processing, which will retrieve the information of the user's motion through the tracking of the colored spots.



Video Handling with iPads

Available in the stores, they will be used as a remote control and will be furnished with the FasPOnSite application (available also for web-use), that will allow to:

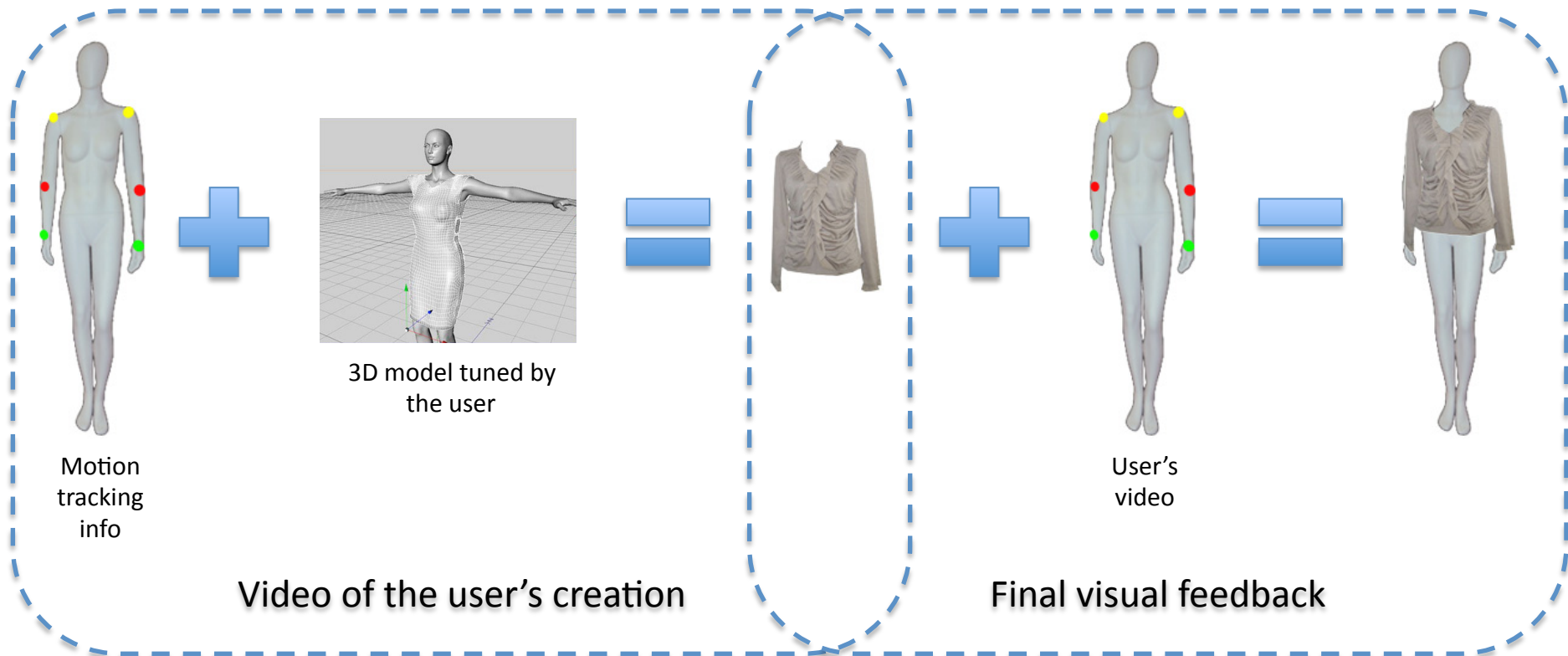
- Register as a new customer (the user will give information like address, generalities, credit card)
- Update customer's information (body measures, address, etc)
- Update the user avatar with a new video generated from the changing room
- Select the 20 seconds of the video to be used as avatar
- Design or purchase knitwear



Video Feedback

Before buying his/her creation, the user needs a visual feedback, possibly share-able with friends to have their opinion, in order to be able to decide whether to purchase it or make other changes.

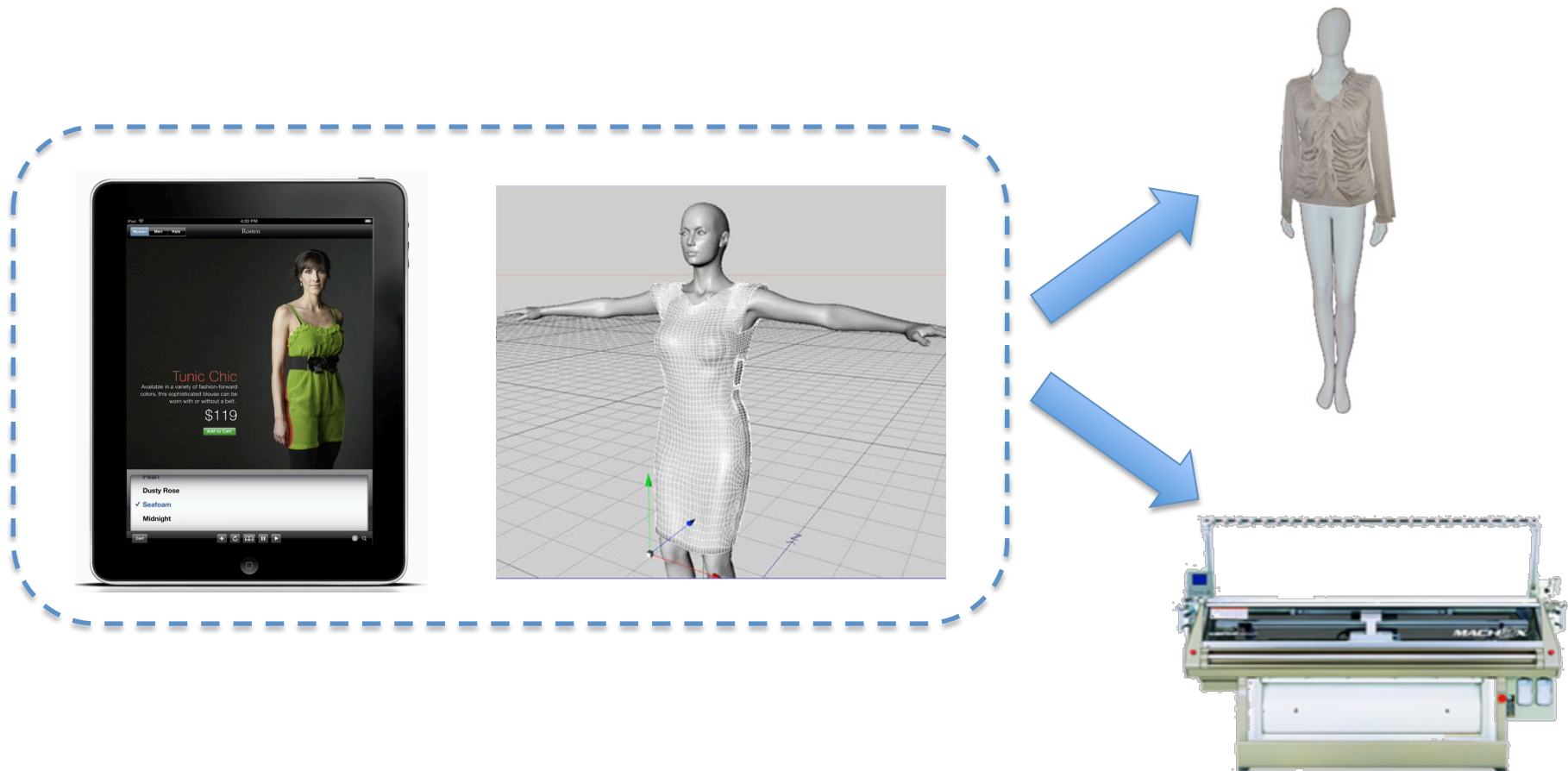
Our solution is to merge together the video of the user (avatar), the motion tracking information, plus the computer generated video of the personalized model the user has designed; the result obtained is a video of the user wearing his/her creation, that can be shared, commented and voted within the user's social networks.



Customization

The user will choose one model among the ones available, and tune its parameters according to his/her tastes (color, accessories); the level of customization will depend on the model variables available to the user.

The models will be created once and accessed and modified by users; they will be used both to generate the Shima Seiki machine's code, and to generate the video of the knitwear to be overlaid to the user's avatar video.



Personalization: Online User Interface

The User Interface (UI) can be developed in:

- HTML 5 (natively supported by browsers, but not yet a de-facto standard)
- Adobe Flash/Microsoft Silverlight (requires a plug-in to be visualized, offers libraries for 3D rendering like PaperVision3D)

The best choice is to develop the UI in HTML 5, in order to be correctly visualized also from mobile devices (iPad, iPhone, Android) without the requirement of additional plug-ins.

Unlike HTML 5, Adobe Flash offers API & libraries that can be used immediately, so for the first prototype we suggest an implementation in Flash, considering that the code will need to be re-written as soon as HTML 5 will support efficiently 3D rendering libraries.

Online User Interface to Machine Code

When the user purchases the knitwear, an XML file containing all the information about the user's creation will be generated and sent to the Shima's machines; a communication protocol must be implemented together with Shima to correctly communicate the data to the machines.

UI Input:

- 3D model of the knitwear chosen by the user
- User's modifications
- Avatar video & its motion tracking information
- Environment light conditions (retrieved once from the changing room, static values)

UI Processing:

- Apply the modifications to the 3D model (only for simple customization like color change)
- Render it using the avatar's motion tracking information & environment light conditions

UI Output:

- Two overlapped video streams, coherent & aligned in time and space (visual feedback)
- XML file containing all the information about the created knitwear (e.g. user id, model id, model modifications, etc..)

Production

In our project the production phase is no more on site
We have decided, in fact, to “delocalize” and “collect” the production phase in a specific place that will cover all the orders coming from a certain geographic area

Why this decision?

_ the project is no more based on an idea of “real time” production

_ therefore, since our shops will be located in the centre of the cities, there will be not the necessity to rent larger shops in order to place the production area inside them. **Save money!**

The pictures below show the difference between the fee for a shop in Milan and the fee for a shed in Segrate

Tipologia	Stato conservativo	Valore Mercato (€/mq)		Superficie (L/N)	Valori Locazione (€/mq x mese)		Superficie (L/N)
		Min	Max		Min	Max	
Magazzini	NORMALE	900	1300	L	5,4	7,8	L
Negozi	NORMALE	3500	4500	L	16	21	L
Negozi	Ottimo	6000	8500	L	28	39,5	L

Milano_zona corso Venezia (fonte Agenzia del Territorio)

Tipologia	Stato conservativo	Valore Mercato (€/mq)		Superficie (L/N)	Valori Locazione (€/mq x mese)		Superficie (L/N)
		Min	Max		Min	Max	
Capannoni industriali	NORMALE	740	840	L	4,4	5	L
Capannoni tipici	NORMALE	790	890	L	4,5	5	L
Laboratori	NORMALE	790	890	L	4,7	5,1	L

Segrate_zona cascina boffalora (fonte Agenzia del Territorio)

_ collecting the production phases in a single place allow us to exploit economies of scale (for the machineries, the employees, etc)

Production

As a consequence:

_ the production place could be located in suburban areas or outside the cities (for example Milan or Turin), where the rental are lower

Tipologia	Stato conservativo	Valore Mercato (€/mq)		Superficie (L/N)	Valori Locazione (€/mq x mese)		Superficie (L/N)
		Min	Max		Min	Max	
Capannoni industriali	OTTIMO	510	710	L	3,1	4,6	L
Laboratori	OTTIMO	860	1100	L	4,1	6,1	L

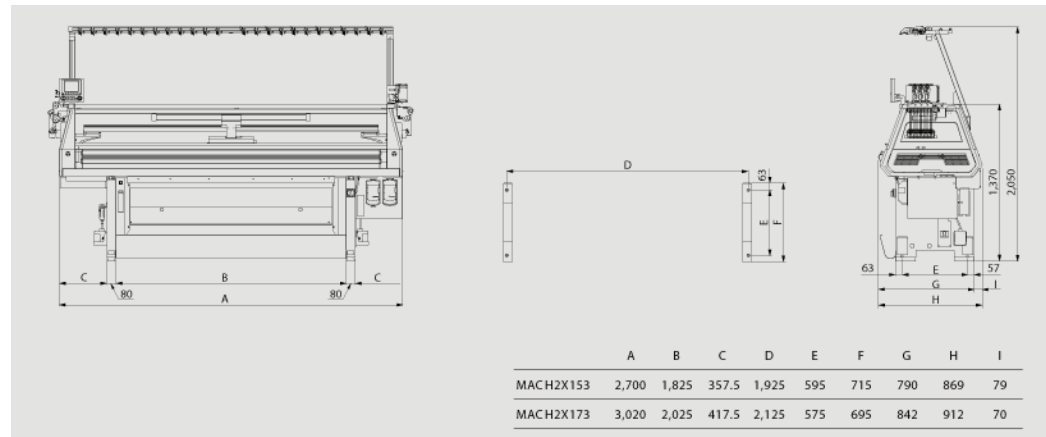
Venaria Reale_zona corso Garibaldi(fonte Agenzia del Territorio)

_ a single production place for covering all the Italian market(at least during the starting phase)

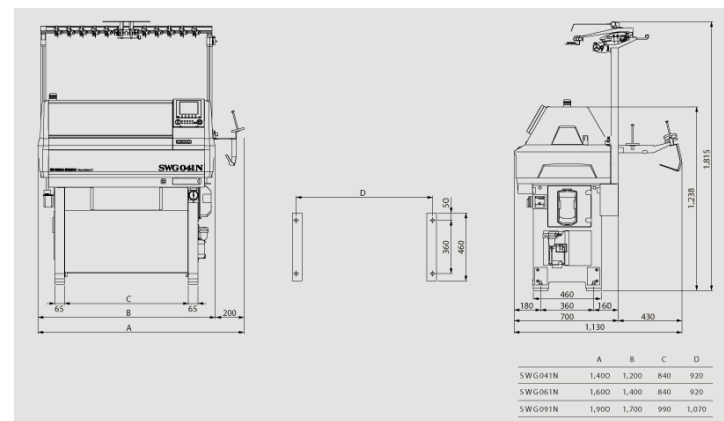
Production

What we need

_ at least 4 Shima Seiki knitting machines (type MACH2X), in order to cover 4 finenesses (18, 15, 10, 5)



_ 1 Shima Seiki knitting machine (type SWG041N) for the production of accessories



Production

What we need

_ 1/2 fulling machine → PW 6321 produced by Miele

PW 6321 - 32 Kg.
Volume tamburo 320 litri
Centrifugazione 1.000 giri/min.
Fattore g 448



50 PROGRAMMI SPECIALI PER FOLLATURA.

- Comando elettronico liberamente programmabile.
- Grande display, con guida utente chiaramente leggibile.
- Indicazione svolgimento programma e altre funzioni.
- Indicazione del livello.
- Indicazione della temperatura.

_ 1/2 dryers → PT 7801 produced by Miele

PT 7801 - 32 - 40 Kg.
Volume tamburo 800 litri



Comando Profitronic M

Il comando "Profitronic M" consente un preciso adattamento ai diversi tipi di maglieria per un'asciugatura delicata e appropriata delle fibre. 12 Programmi di cui due a tempo. L'elettronica, non soggetta ad usura, consente inoltre una rapida e semplice diagnosi di servizio per l'assistenza tecnica.

Production

What we need

_ 2 ironing presses → AUTOMATIC UTILITY PRESS 2300 (produced by Grandimpianti)



MODELLI			2300	MODELS	
Dimensioni	Larg.	mm	1400	Width	Dimensions
	Prof.	mm	1130	Depth	
	Alt.	mm	1420	Height	
Dimensioni imballo	Larg.	mm	1420	Width	Packing dimensions
	Prof.	mm	1150	Depth	
	Alt.	mm	1440	Height	
Volume	m ³		2,35	m ³	Volume
Peso netto/lorido	kg		300/350	kg	Net/gross weight
Aria aspirata	m ³ /h		80	m ³ /h	Air intake
Aria compressa	Litri/m ²		80	Litri/m ²	Compressed air
Consumo idrico	Litri/h		15	Litri/h	Water consumption
Consumo elettrico mod. autonomo	KW		9-12	KW	Electric consumption
Consumo vapore mod. vapore	Kg/h		20	Kg/h	Steam consumption

- _ 1 work-table
- _ 1 yarn stand
- _ 1 packaging stand
- _ 1 shelf for garments

Staff

- _ 2 technicians for the control of the knitting machines
- _ 3/4 employees for the finishing operations (fixing loose yarn ends, fulling, ironing, packaging)

Area

150/200 m²