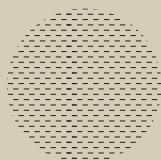
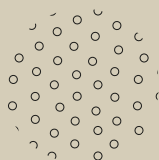


GLASS



METALS



RESINS

# MAKING MOLDS

## CRAFT PROCESSES IMPACTED

lost wax  
microcasting  
cast glass

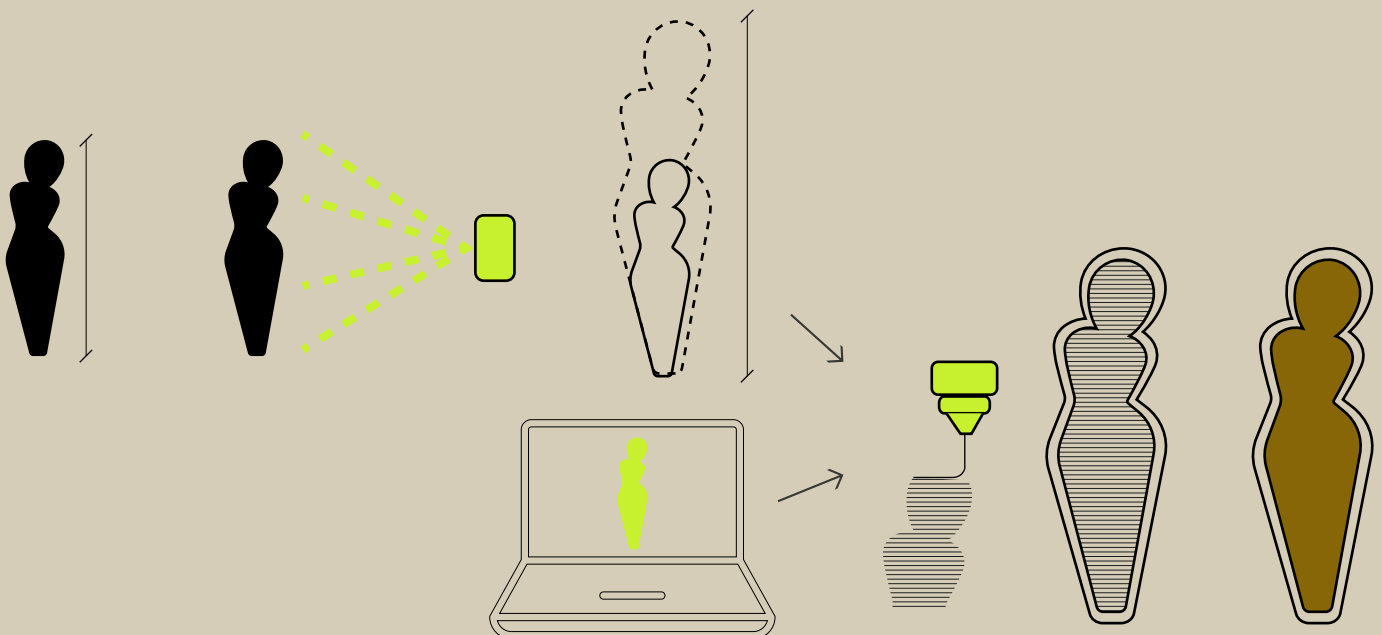
## DIGITAL TECHNOLOGIES

3d scanning  
3d modelling  
3d printing / laser engraving / cnc milling

## SCOPE and DESCRIPTION

Creating bespoke physical objects that can be used to shape positive or negative molds for various casting processes.

The starting point could be an existing object or a completely new digital model. Once the a virtual version of the object is produced, this can be altered, scaled, modified according to the necessities and then 3d printed. The printed model is the basis for the mold shaping, usually using silicone and gypsum or wax and earth material.

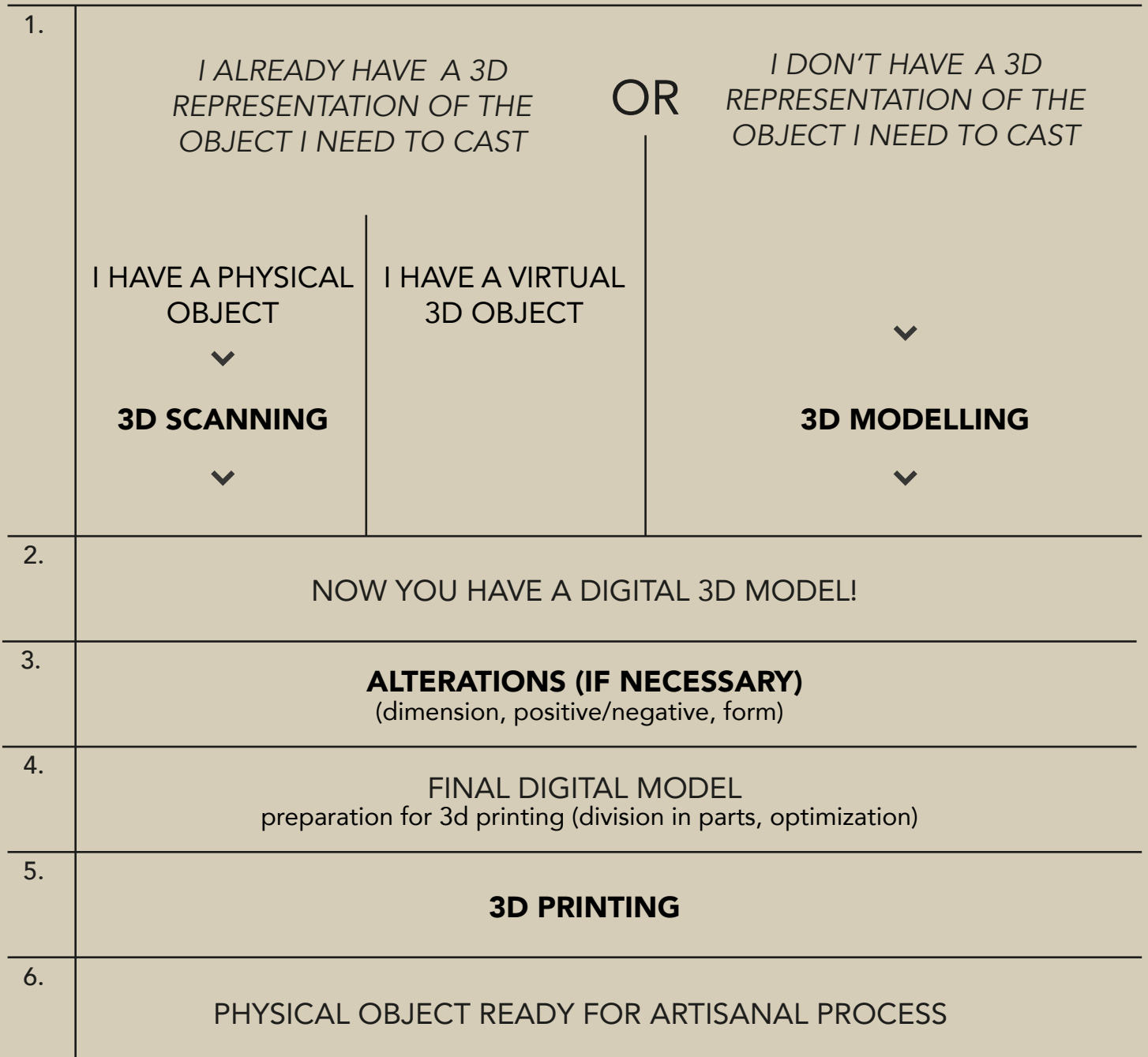


## PROs

- + rapid
- + very detailed reproduction
- + the physical support can be re-used
- + very convenient for bigger projects
- + possibility to engineer the project dividing it in parts for easier casting
- + possibility to precisely scale it for technical purposes (e.g. against shrinkage for foundry processes)

## CONs

- less convenient for smaller objects



TIME

EFFECTIVENESS

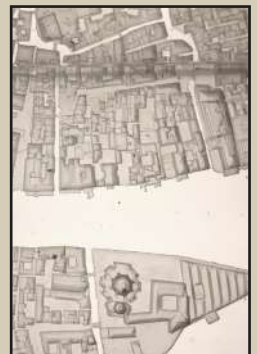
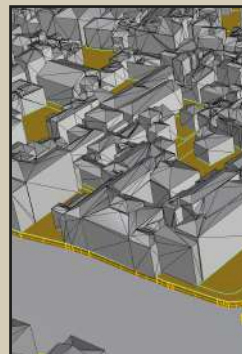


perceived saved time, in respect to traditional processes



level of satisfaction of the artisans, in respect to traditional processes

IMAGES





VARIOUS

# REPLICAS OF CULTURAL HERITAGE

## CRAFT PROCESSES IMPACTED

restoration  
sculpting

## DIGITAL TECHNOLOGIES

3d scanning + postproduction, casting  
3d printing  
cnc milling

## SCOPE and DESCRIPTION

Physical replicas of arts and cultural object can be extremely useful to allow a more direct understanding and knowledge of the heritage. This is particularly important for people with mental or sensory disabilities.

Arifacts needs to be digitized (see also digital archives card) and then can be reproduced using various technologies.

Post-production processes (varnishing, patinas, materic cladding) can be used to replicate the sensation and the outer aspect of particular finishing and material.



## PROs

- + rapid
- + very detailed reproduction
- + the digital twin can be used for other purposes (see archives card)
- + inclusion and new ways to experience heritage

## CONs

- + lack of existng regulations on replicas

*I NEED TO PRODUCE THE REPLICA OF AN ARTIFACT  
BUT DUE TO CONSERVATION PURPOSES I CANNOT  
TOUCH IT*

1.	<b>3D SCANNING</b>
2.	<b>3D PRINTING / MILLING</b>
3.	CASTING OR POST-PRODUCTION PROCESSES
4.	PROTECTIVE COATING

TIME



perceived saved time, in respect to traditional processes

EFFECTIVENESS



level of satisfaction of the artisans, in respect to traditional processes

IMAGES





VARIOUS

## CRAFT PROCESSES IMPACTED

restoration

## DIGITAL TECHNOLOGIES

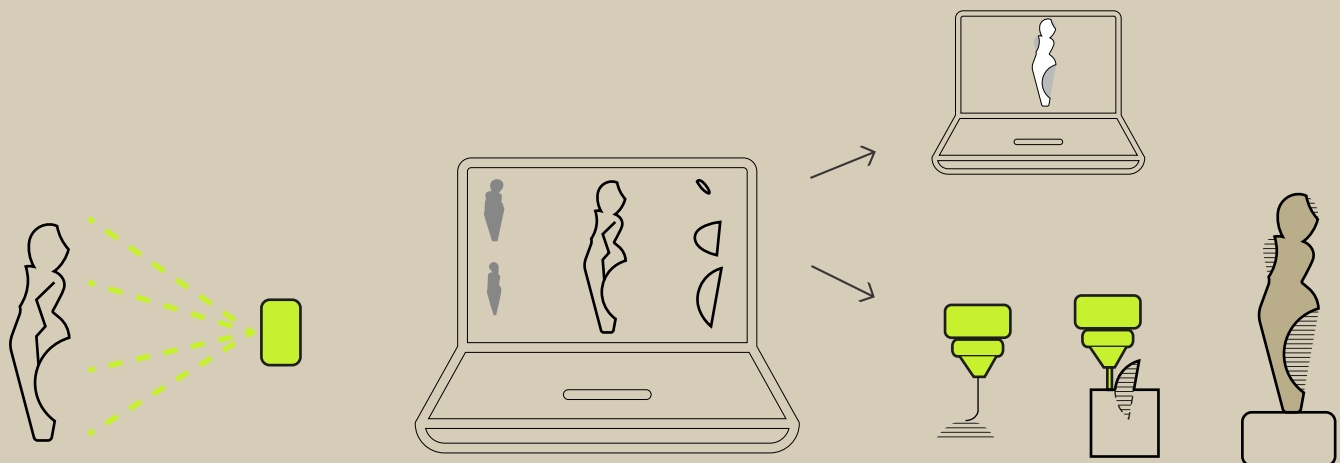
3d scanning + postproduction, casting  
3d printing  
cnc milling

## SCOPE and DESCRIPTION

Preservation and valorization of cultural heritage can take advantage from digital technologies both for physical and virtual restoration processes.

For physical restoration, objects can be partially or completely digitized, lacking parts can be 3d modeled in accordance with the remains and can be digitally fabricated with high level of precision. Fabricated parts can then be directly used in restoration or be the basis for casting replicas in different materials.

Virtual restoration can be performed starting from the digitization of the existing pieces, that can be reorganized, integrated with missing parts or digitally enhanced to reconfigure the original aspect of the object. Virtually restored pieces can be explored digitally or reproduced.



## PROs

- + rapid
- + very detailed reproduction
- + the digital twin can be used for other purposes (see archives card)
- + inclusion and new ways to experience heritage

## CONs

- + lack of existing regulations on replicas

	<p><i>I NEED TO PRODUCE AN IMAGE OF THE ORIGINAL ASPECT OF A DAMAGED ARTIFACT</i></p> <p>VIRTUAL RESTORATION</p>	<p><i>I NEED TO PHYSICALLY RESTORE A DAMAGED ARTIFACT THAT HAS SOME MISSING PIECES</i></p> <p>PHYSICAL RESTORATION</p>
1.	<b>3D SCANNING</b>	
2.	<b>3D MODELLING</b> missing pieces (aided by historians, historic resources)	<b>3D MODELLING</b> missing pieces (aided by historians, historic resources)
3.	<b>TEXTURIZATION, RENDERINGS</b>	<b>CNC PRODUCTION</b> of the missing pieces (3d printing/milling)
4.	VISUALIZATION OF THE COMPLETE OBJECT	CASTING AND/OR POST-PRODUCTION of the pieces
5.		inclusion of the pieces in the restored artifact

TIME



perceived saved time, in respect to traditional processes

EFFECTIVENESS



level of satisfaction of the artisans, in respect to traditional processes

IMAGES



CRAFT MATERIALS



VARIOUS

# MAKING CRAFT <sup>TA4</sup> REPLICAS / GADGETS

CRAFT PROCESSES IMPACTED

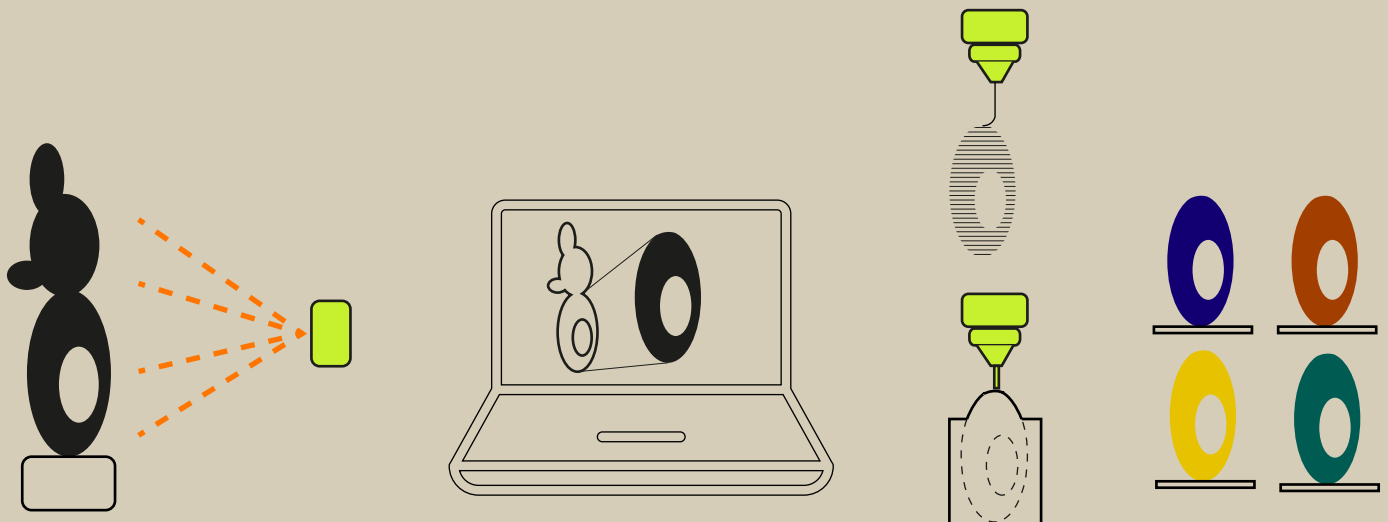
DIGITAL TECHNOLOGIES

3d scanning  
3d modelling  
3d printing / laser cutting / cnc milling

## SCOPE and DESCRIPTION

With the aid of digital fabrication new ways to market and sell craft inspired products and art can be found, even to different target clients, while still maintaining an high standard of quality and perceived value.

Cornerstone products or historical patterns and objects can be transformend into more simplified and affordable versions, small collections or artist copies.



### PROs

- + wide range of creative declinations
- + possibility to amplify the customer base

### CONs

- resistance to the alteration of well established valuable products
- threat of lower perceived value of digitally fabricated object

I WOULD LIKE TO PRODUCE A SET OF SMALLER/LESS ELABORATE OBJECTS INSPIRED BY MY MAIN COLLECTION

1.	<b>3D SCANNING</b>
2.	<b>3D PRINTING / MILLING</b>
3.	POST-PRODUCTION / FINISHING

TIME



perceived saved time, in respect to traditional processes

EFFECTIVENESS



level of satisfaction of the artisans, in respect to traditional processes

IMAGES





CRAFT MATERIALS



VARIOUS

# VISUALIZATIONS<sup>TA5</sup> DIGITAL ARCHIVES VR

CRAFT PROCESSES IMPACTED

(marketing)

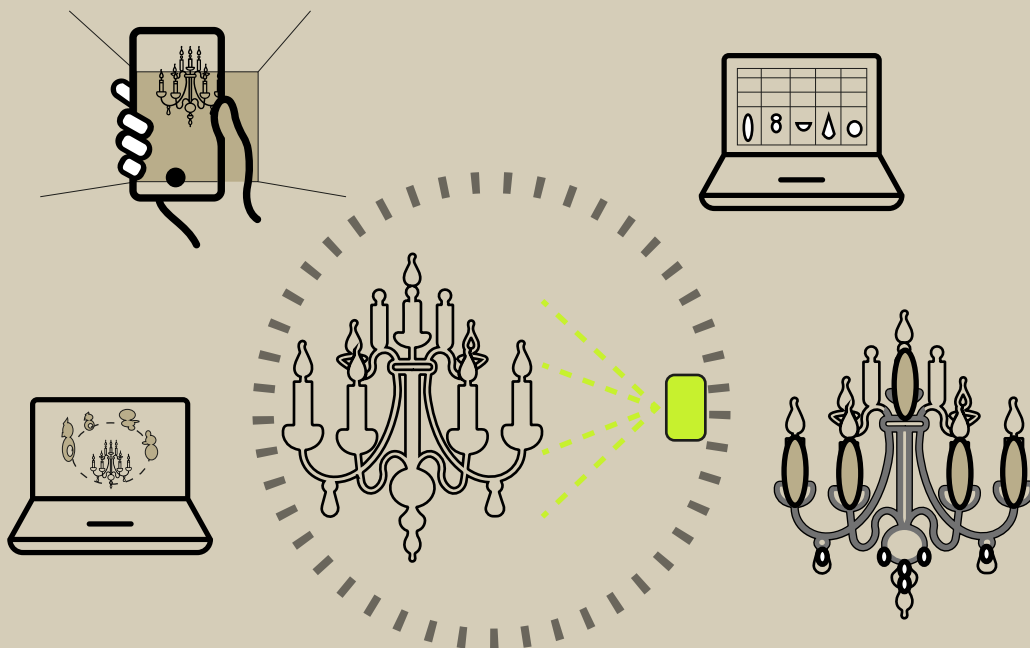
DIGITAL TECHNOLOGIES

3d scanning

3d modelling

## SCOPE and DESCRIPTION

Having a digital copy of a craft and art object allows for many different uses: remote visualization (for clients at home, during fairs and exhibitions), virtual product placement (visualizing the object in a specific context through augmented reality), archival and documentation purposes, creative purposes (remixing parts and elements to create new projects).



## PROs

- + wide range of creative declinations
- + possibility to amplify the customer base

## CONs

- resistance to the alteration of well established valuable products
- threat of lower perceived value of digitally fabricated object

*I NEED TO DIGITIZE MY ARCHIVE  
 I WOULD LIKE TO MAKE AN ONLINE REPOSITORY FOR  
 MY CLIENTS/FOR INTERNAL PURPOSES  
 I'D LIKE MY CLIENTS TO SEE HOW MY PRODUCT FITS IN THEIR HOUSE*

1.	<b>3D SCANNING / 3D MODELLING EX NOVO</b>
2.	ADJUSTING THE MODEL FOR VISUALIZATION

TIME



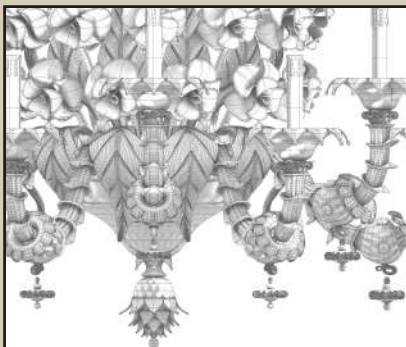
perceived saved time, in respect to traditional processes

EFFECTIVENESS



level of satisfaction of the artisans, in respect to traditional processes

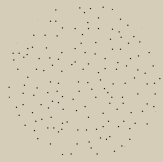
IMAGES



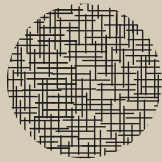
## CRAFT MATERIALS



WOOD



STONE



TEXTILE

TA6

# ENGRAVINGS PREPARATORY WORK + BRANDING AND CUSTOMIZATION

## CRAFT PROCESSES IMPACTED

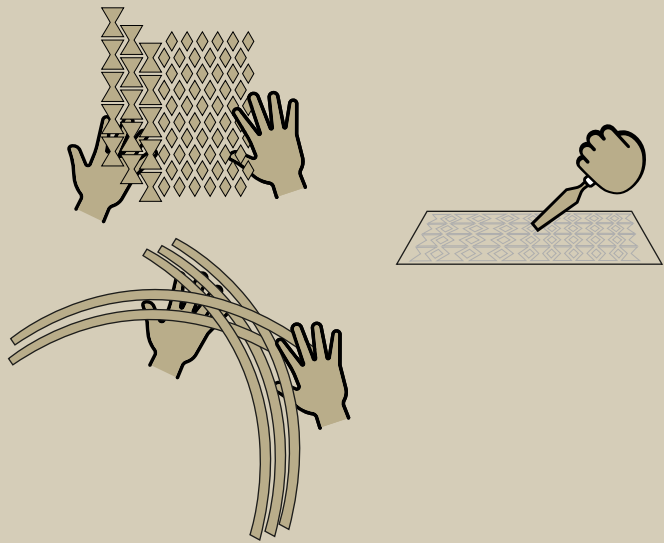
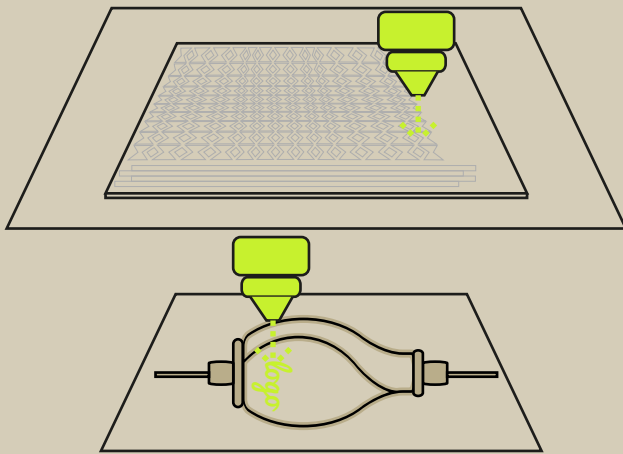
preparatory tasks (cutting, engraving, tracing shapes)

## DIGITAL TECHNOLOGIES

laser cutting/engraving

## SCOPE and DESCRIPTION

Craft making encompasses various phases, some of them are not related to creativity or tied to the most valuable craft skills and know-how of the artisans. It can be convenient to use laser cutting and engraving techniques to perform some time consuming, labor intensive or even boring tasks such as: tracing preliminary shapes for sculpting or deeper engraving, cutting high number of pieces, cutting harder materials.



## PROs

- + very quick and precise output
- + better capacity to handle certain materials

## CONs

- craft makers lose agency on part of the process

I WOULD LIKE TO SPEED UP A REALLY TIME CONSUMING PROCESS

1.

**direct LASER CUTTING /ENGRAVING**

TIME



perceived saved time, in respect to traditional processes

EFFECTIVENESS



level of satisfaction of the artisans, in respect to traditional processes

IMAGES





VARIOUS

# NEW PRODUCTS DESIGN

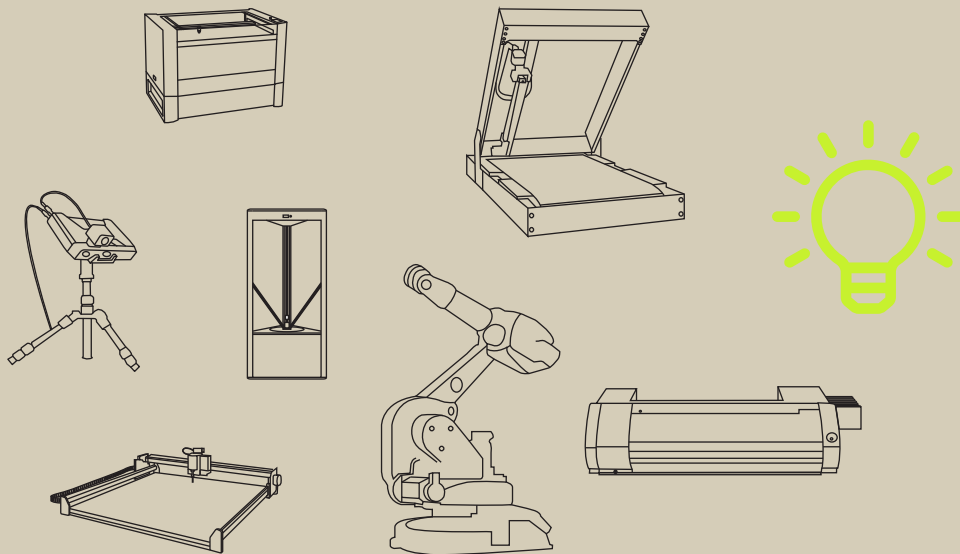
CRAFT PROCESSES IMPACTED  
(design)

DIGITAL TECHNOLOGIES  
all

## SCOPE and DESCRIPTION

The relationship between new fabrication technologies and craft making can be very fruitful for the development of contemporary art and craft products. Technologies can provide new creative opportunities, to experiment with new shapes, develop articulated forms and overcome technical challenges.

It is fundamental to understand how new machines and material work together, which are the limits and the strengths of these processes, to exploit the creative potential at best and develop truly contemporary and coherent new objects.



### PROs

- + very quick and precise output
- + better capacity to handle certain materials

### CONs

- craft makers lose agency on part of the process

I WOULD LIKE TO EXPLORE THE CREATIVE POTENTIAL OF THIS TECHNOLOGY FOR MY ACTIVITY

1.	<b>DISCOVER HOW THE MACHINES WORK</b>
2.	<b>BRAINSTORM, EXPERIMENT AND PROTOTYPE</b>

IMAGES

