

HOMEra



by Al Weiner / Yujie Wang / Wenbo Zhang

Home Textiles

“What makes home a home?”

“Places to lay”

“Kitchen and making places”

“Lighting and scents”



Decorative pillows



Throw blankets



Bedding



Bathroom textiles



Baby textiles



Textiles for kids



Kitchen linens & textiles



Outdoor cushions



Sewing products & material



Clothing & accessories



Chair pads

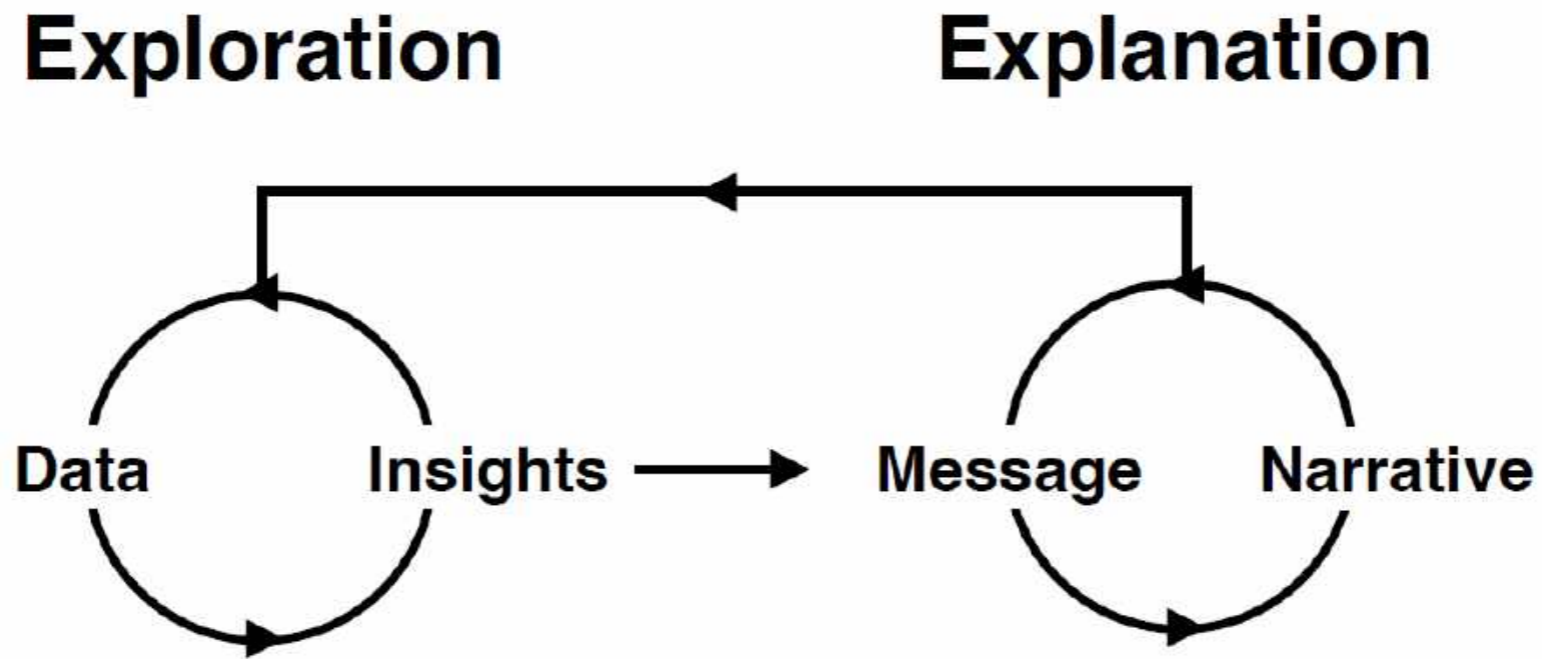


Rugs

Meet the Team



Opportunity



Dataset-IKEA Catalogs 1964-2021



©IKEA Catalogue

Exploration Questions

Macro:

How do **social events** shape home furnishing companies' choices?

How might we predict and explore the **future of household textiles**?

Mezzo:

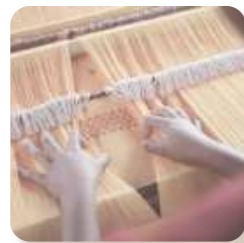
How does the **presence of textiles** in home interior image datasets reveal the **home life over time**?

Micro:

How might we extend the data visualization of textiles to embody their **tactile nature**?

Design Principles

Exploratory Empathic Tactile & Intimate



IKEA Catalogue Images



IKEA Catalog

AI-generated images

Midjourney/DALL-E

1960s

1970s

1980s

1990s

2000s

2010s

2020s

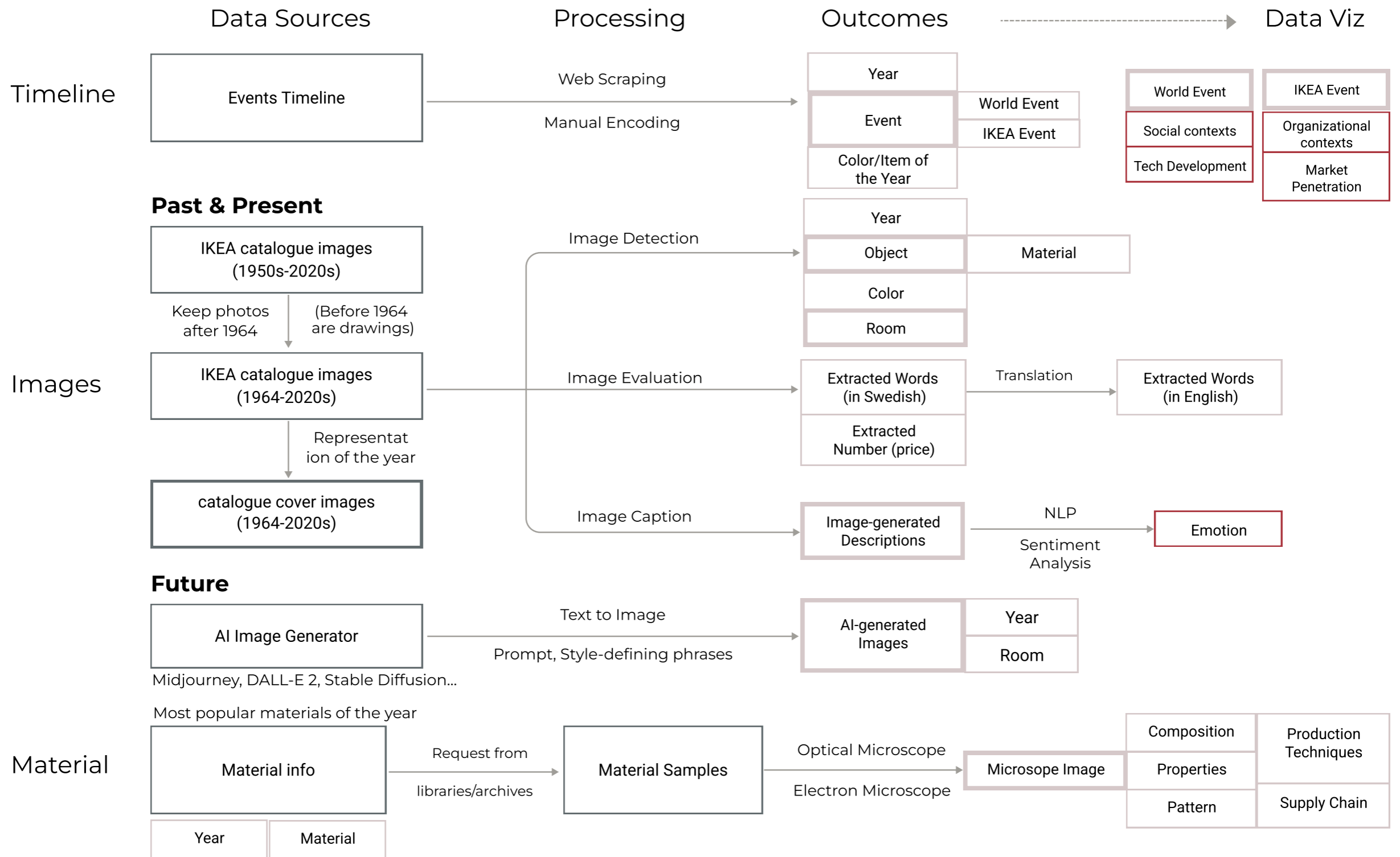
2050s

Past

Present

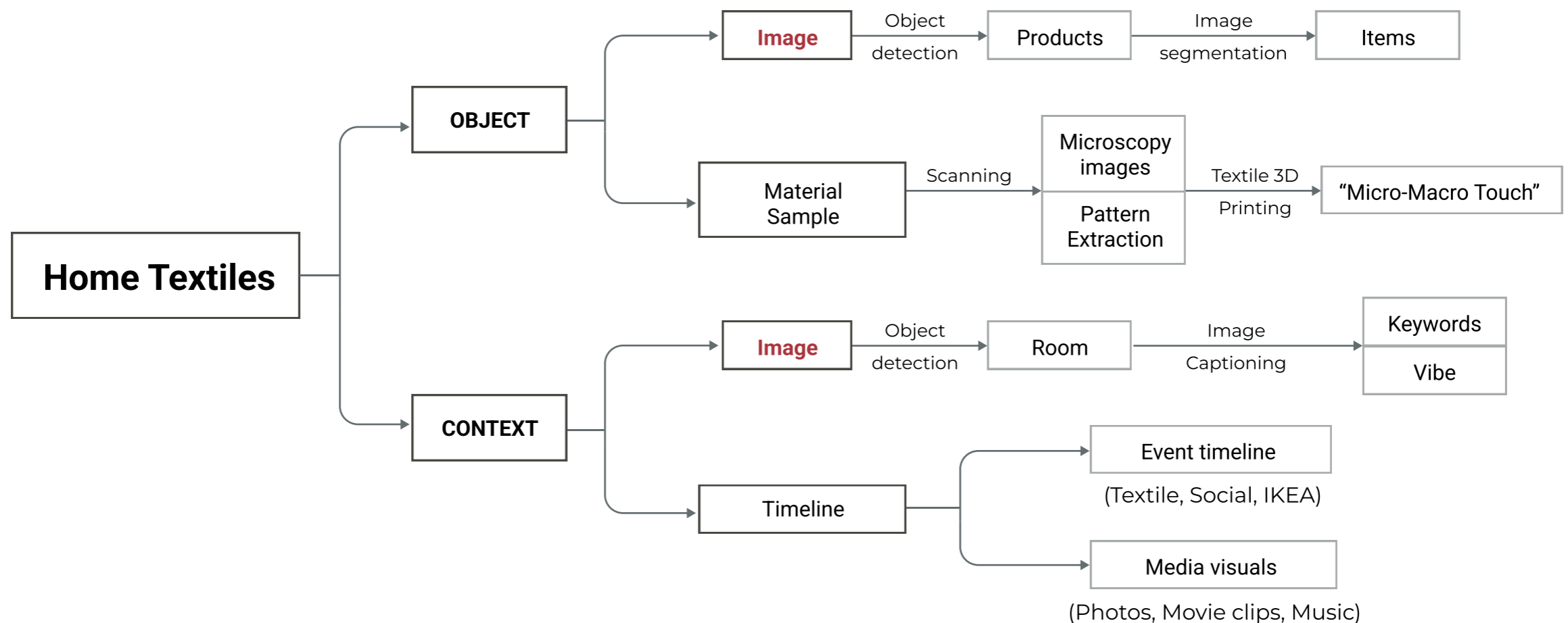
Future

Data Pipeline



Process - Combine Abstract & Contextual Interpretation

Enhancing our understanding of objects and contexts for home textiles



Skills, Tools, Resources

Data Collection +
Web Scrapping



Material
Acquisition

Exploratory Data
Analysis (EDA)



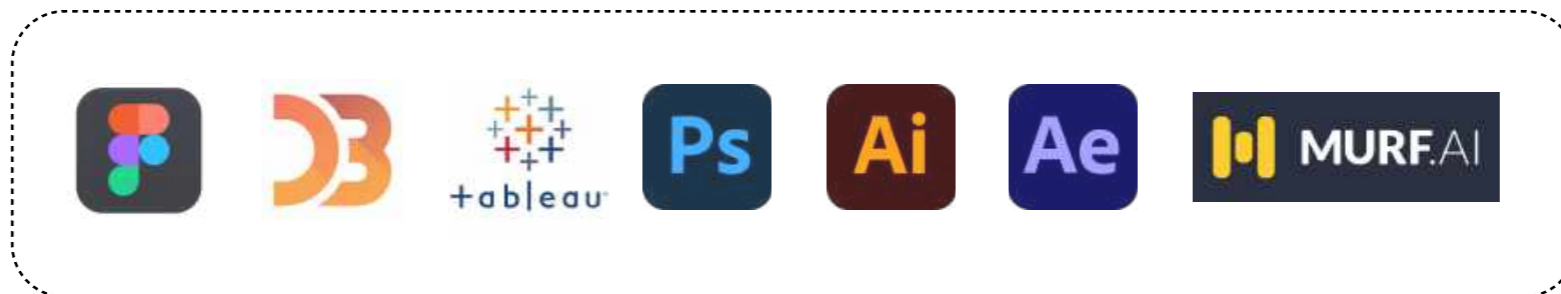
Data Processing/
Wrangling + Analysis

Machine Learning +
AI-Generated Media



Parametric Design
+ Digital Fabrication

Wireframe, Prototype
& Visualization



Graphics and
Video Editing

Process: Macro

Events

-Industrial & Social Context

IKEA:

-Branding development

-Hometextile culture

Textile industry:

-Material development

-Knitting technologies

Social events:

-Economic and technology events

-Culture change



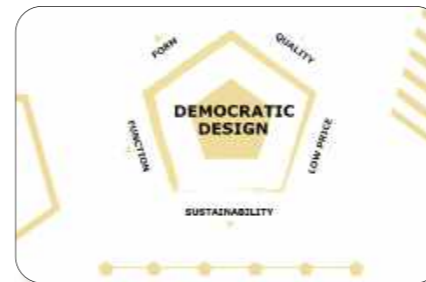
1976
Puts pen to paper



1971
Knitting Machine



1977
Rise of the PC



1995
"Democratic Design"



1981
Robot introduced



1993
The EU Becomes Reality



2017
All-in with LED

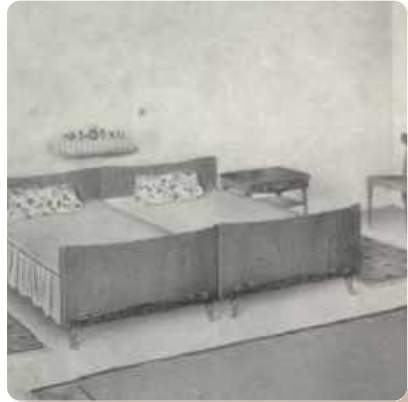


1989
High Speed looms



1994
Amazon.com is Born

Process: Mezzo



1950/60s

1970s

1980s

1990s

2000s

2010s

IKEA Catalogue Image Samples

Object Detection

(Retrained on YOLOv4 model)

Images: 10257

Objects: 25175

Sample:

Context: Bedroom

Objects:

Pillows x5

Curtains x2

Bed x1

Rug x1

Shelves x1

Light x2

Table x1

Blanket x1

Chair x0

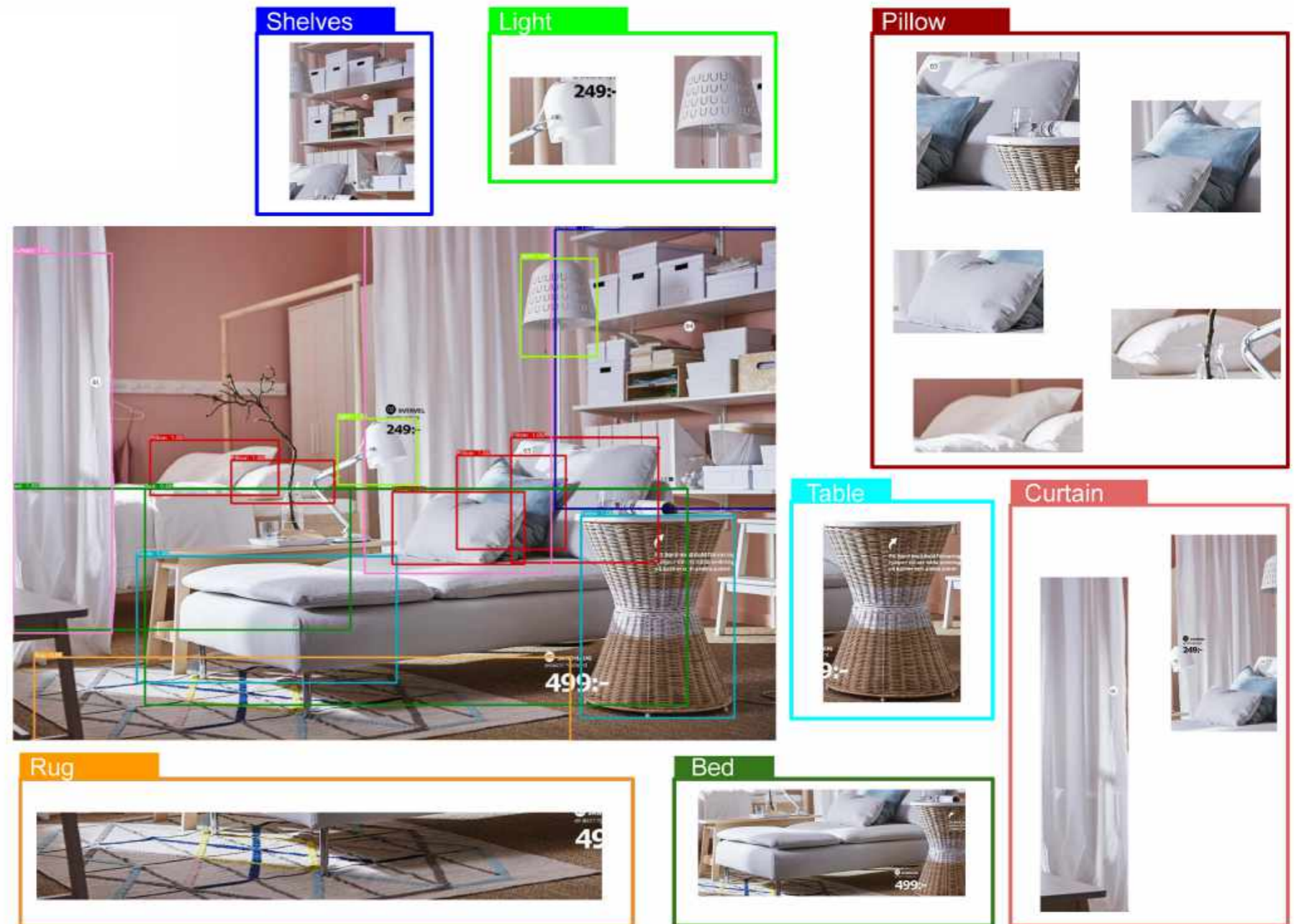
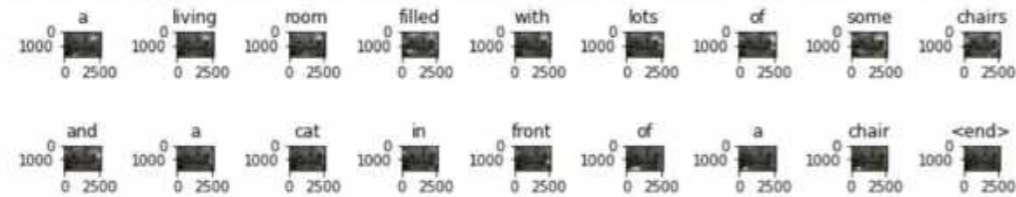


Image Captioning

(Trained on MMF model on MS-COCO dataset)



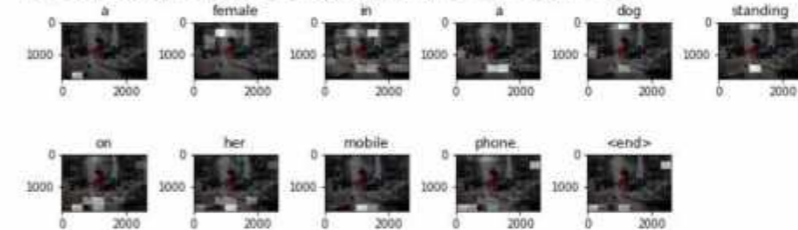
Prediction Caption: a living room filled with lots of some chairs and a cat in front of a chair <end>



Prediction Caption:

“A living room filled with lots of some chairs and a cat in front of a chair”

Prediction Caption: a female in a dog standing on her mobile phone. <end>



Prediction Caption:

“A female in a dog standing on her mobile phone”

Speculating the Future

Co-created with Midjourney



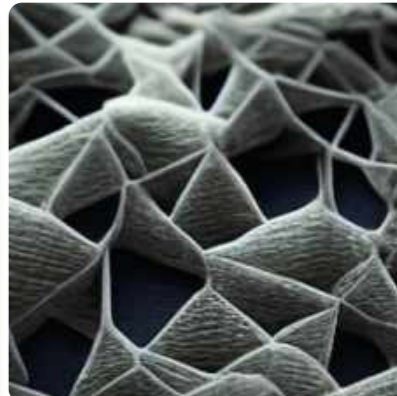
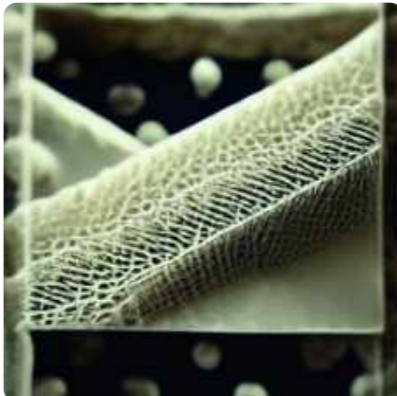
Macro

Prompt: City of 2050



Mezzo

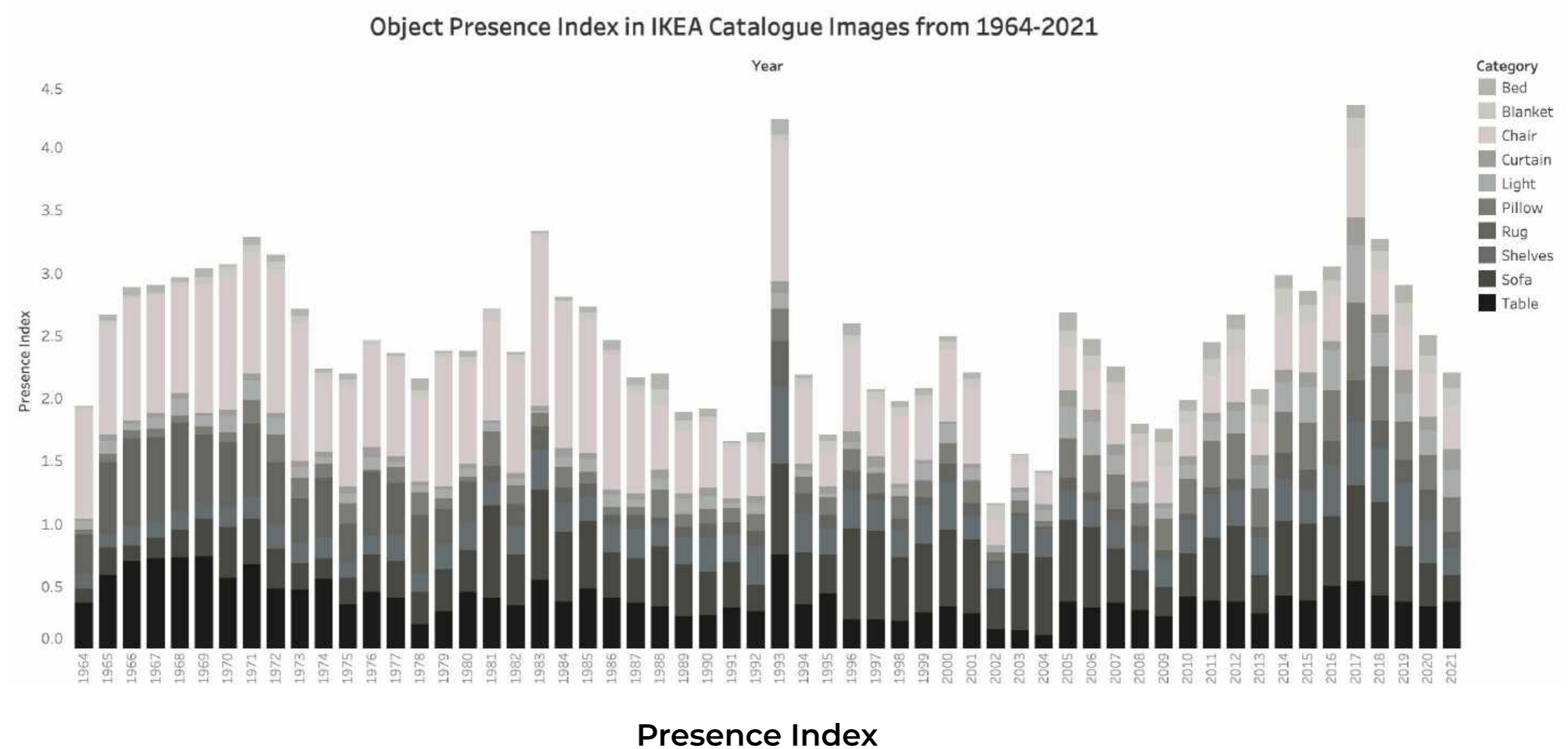
Prompt: Future bedroom/living room image at IKEA catalogue in 2030 / 2050



Micro

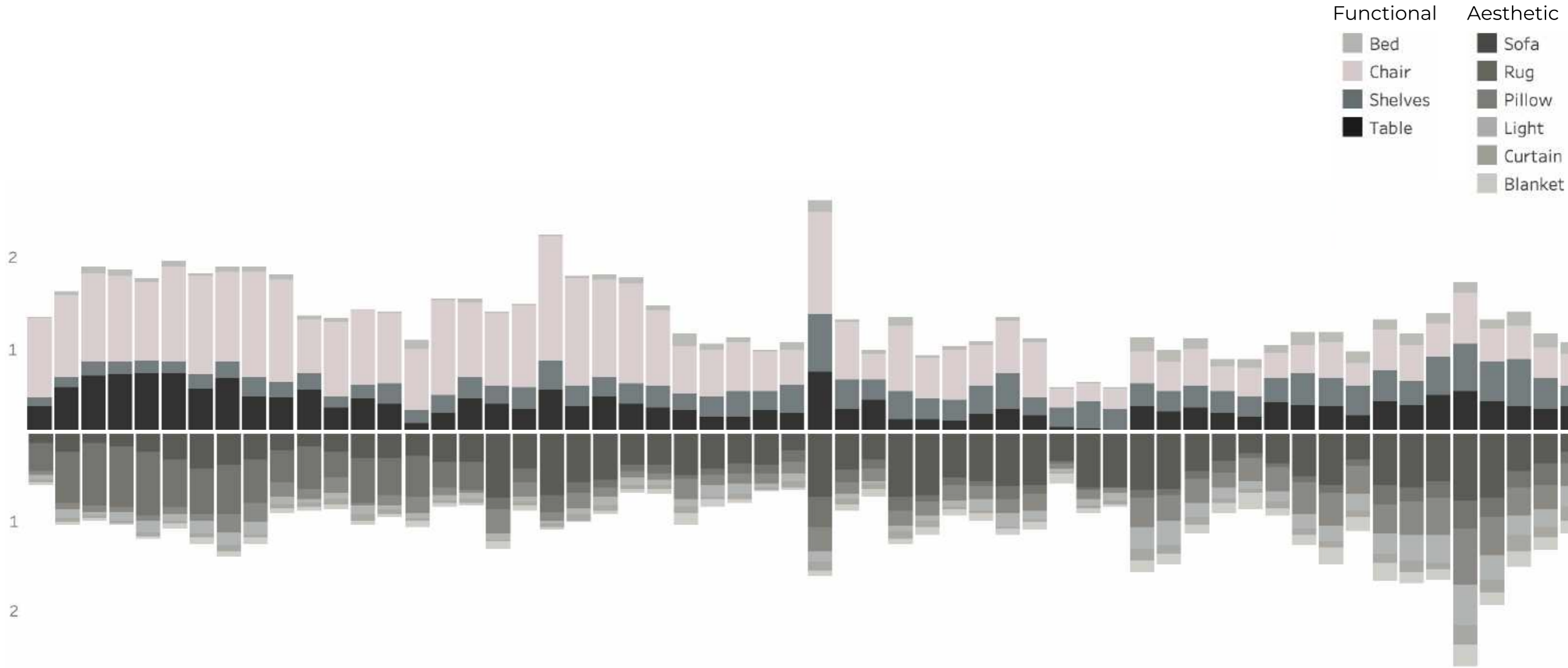
Prompt: Micro structure of future home textile

Visualization - Presence Analysis



Presence Index = total object count / total number of pages

Visualization - Functional vs Aesthetic



Functional products vs Aesthetic products

Visualization - Representation Analysis



Image dominant page

Pages with images covering over 50%



Text dominant page

Pages with texts covering over 50%

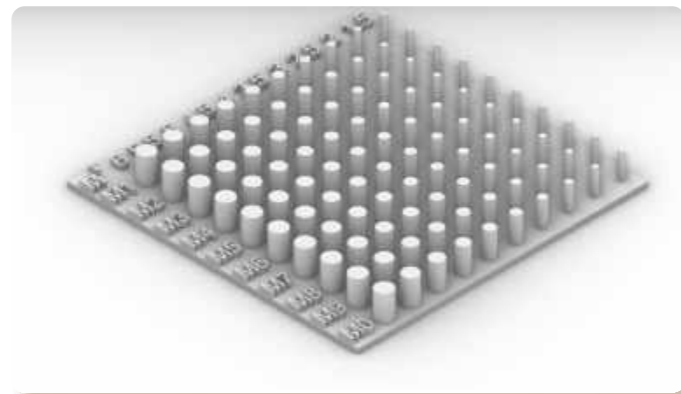
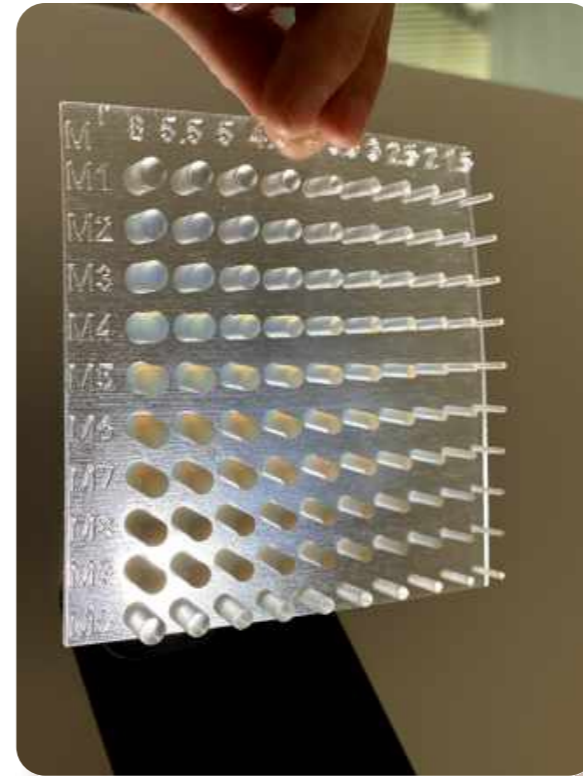
Representation Analysis-Image vs Text Ratio



Image vs Text Ratio

Image vs text ration = image dominant page count / text dominant page count

Process: Micro



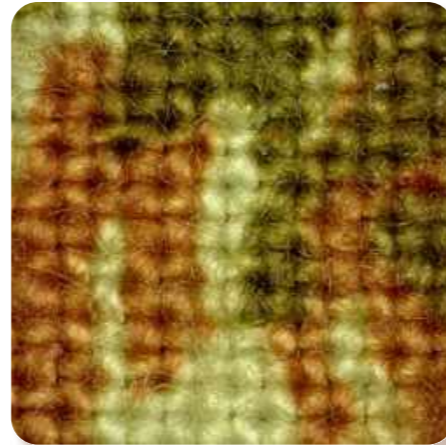
Axon-view of digital modeling

We sought to bring the **tactile nature of textiles** into a visualization and used **multimaterial 3D printing** that was available to us as inspiration to scan materials through the ages.

Process: Micro

Taking inspiration from Scanning Electron Microscopy (SEM), we zoomed in on the images to understand their weave patterns beyond the naked eye

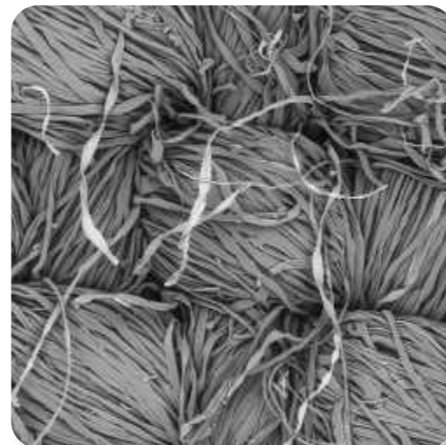
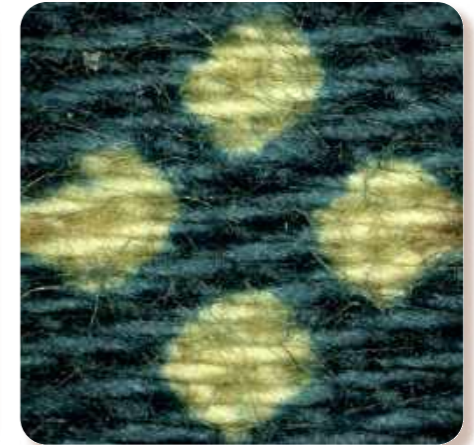
1960s



1970s



1980s



Process: Micro

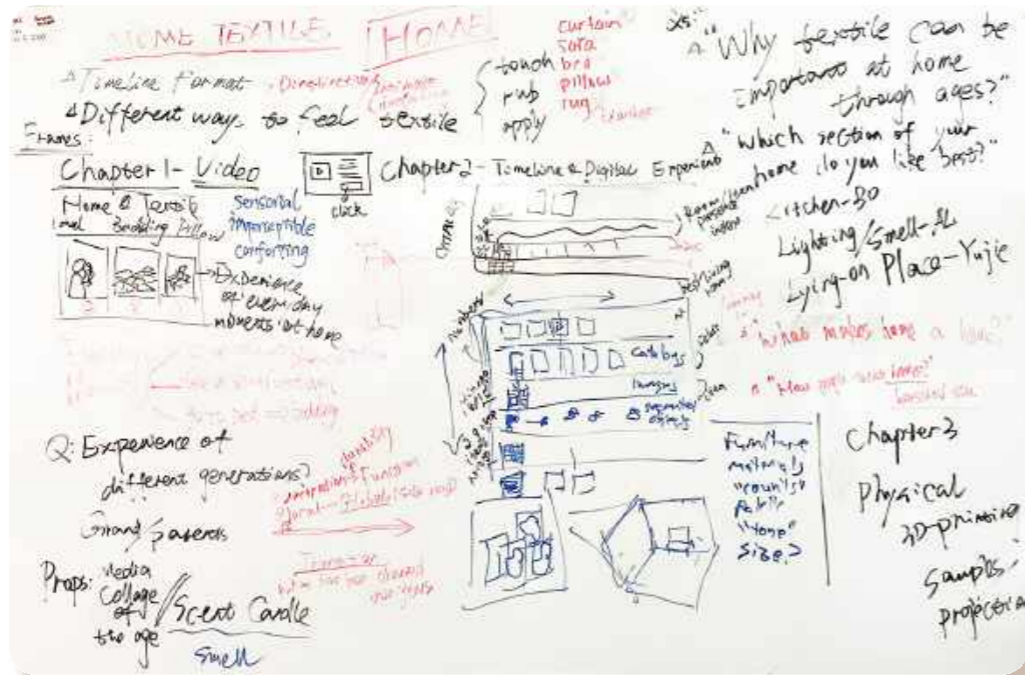


HOMEra Samples

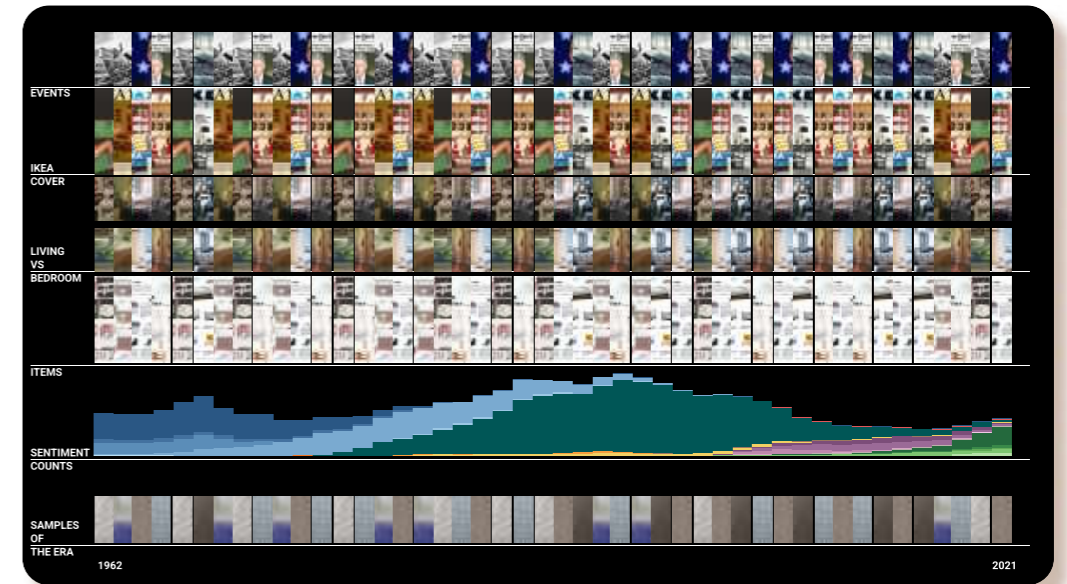
The collection of hometextile samples from 1960s to 2010s with conceptual 3D printing sample of Microscopy images

Visualization - Development & Sketches

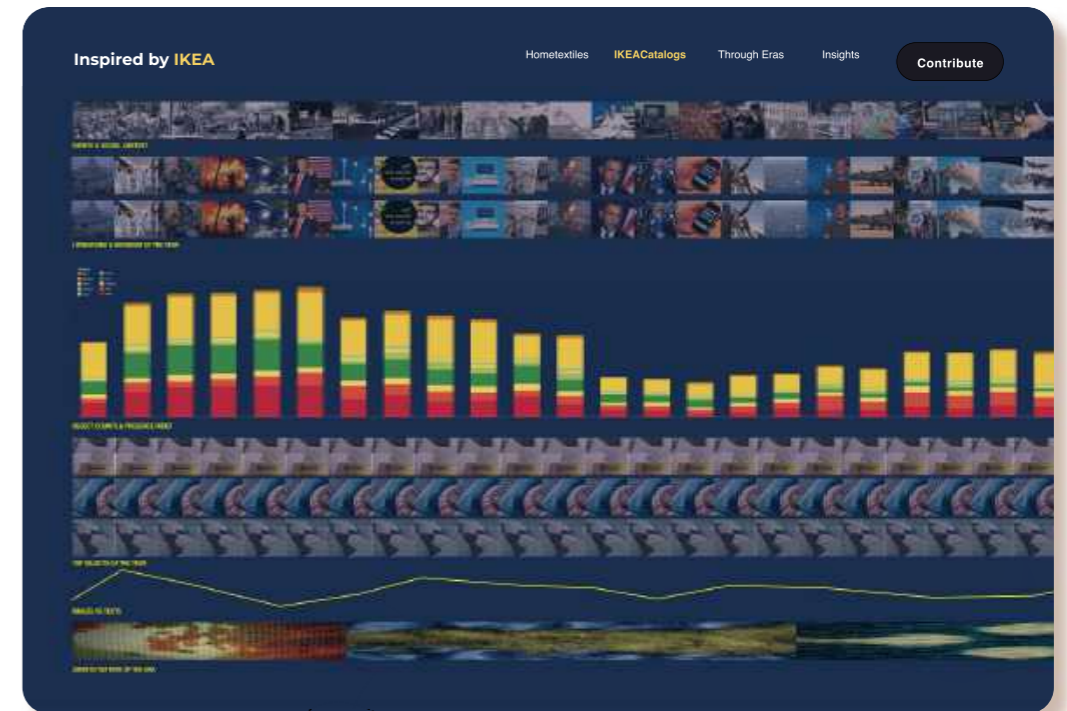
Development sketches



Timeline prototype-1

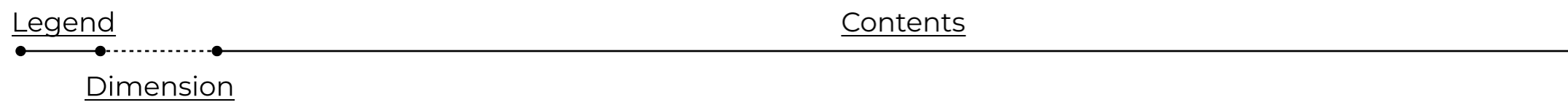
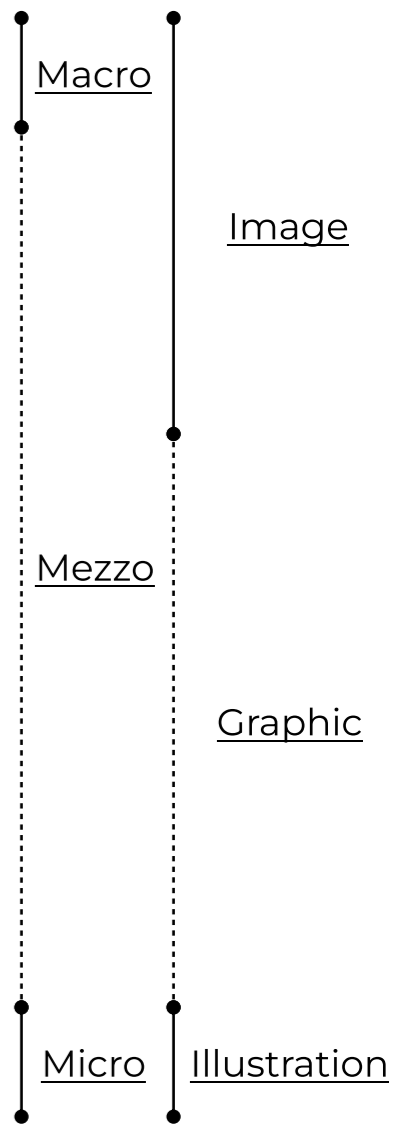
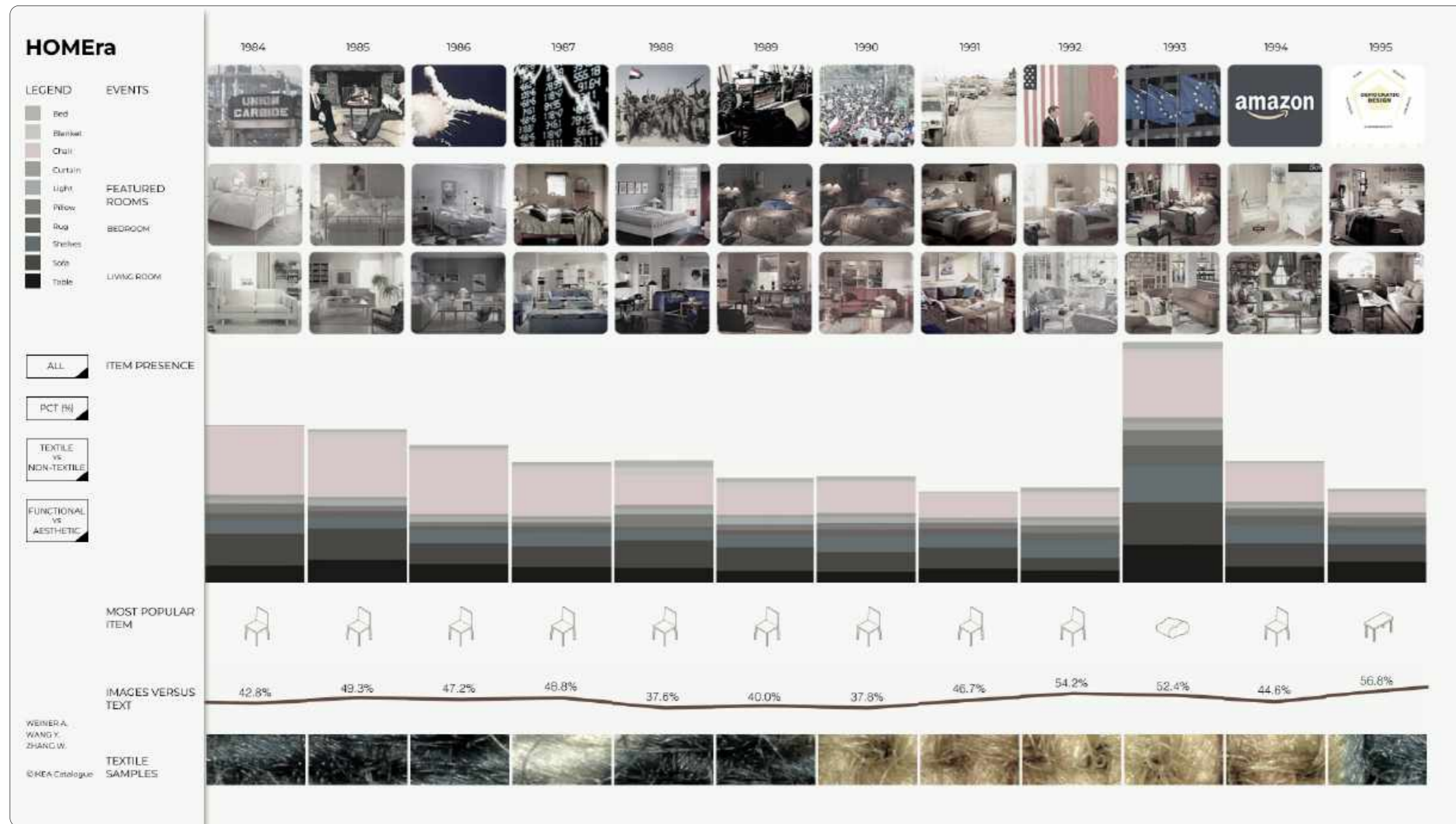


Timeline prototype-2

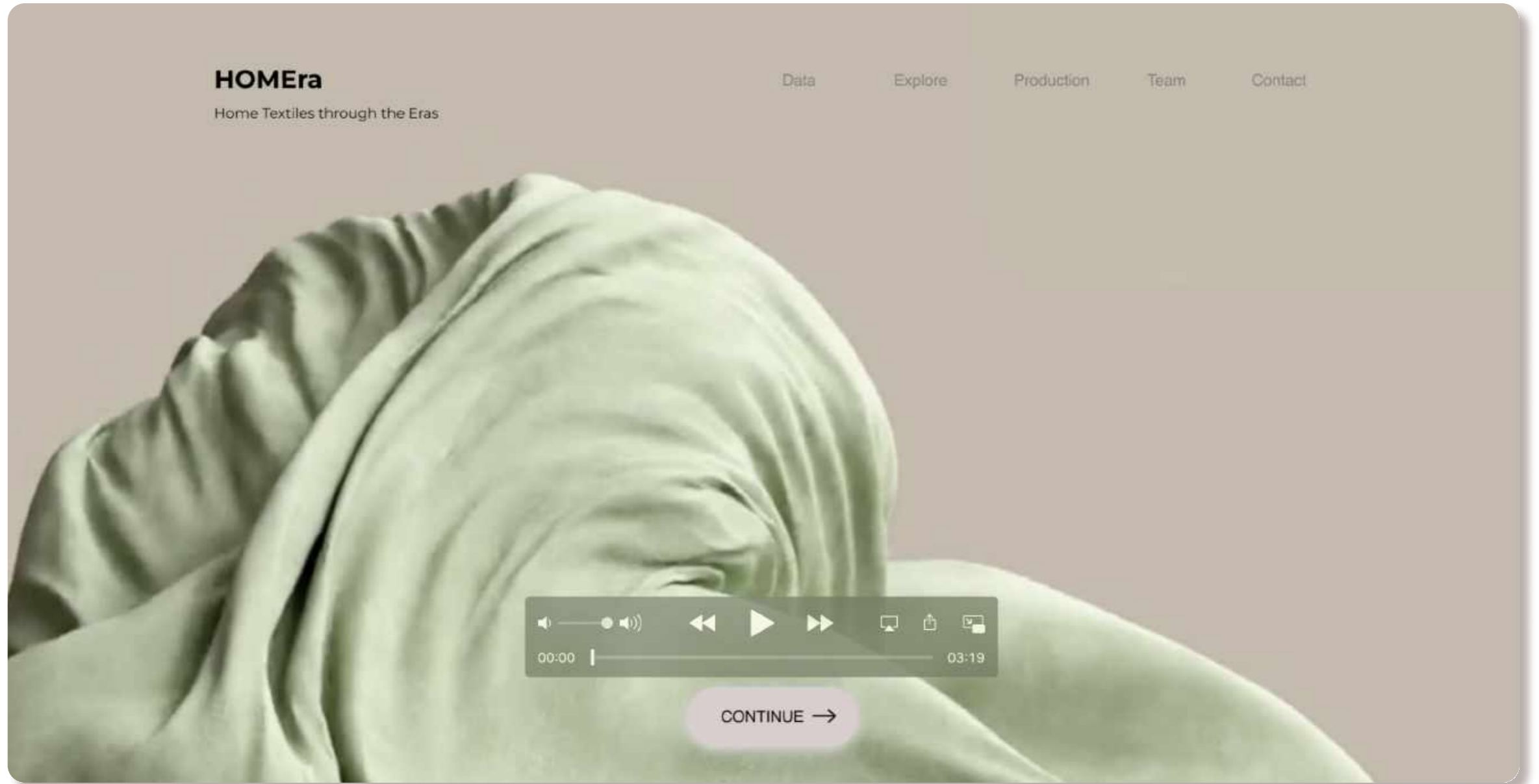


Visualization - Format Structure

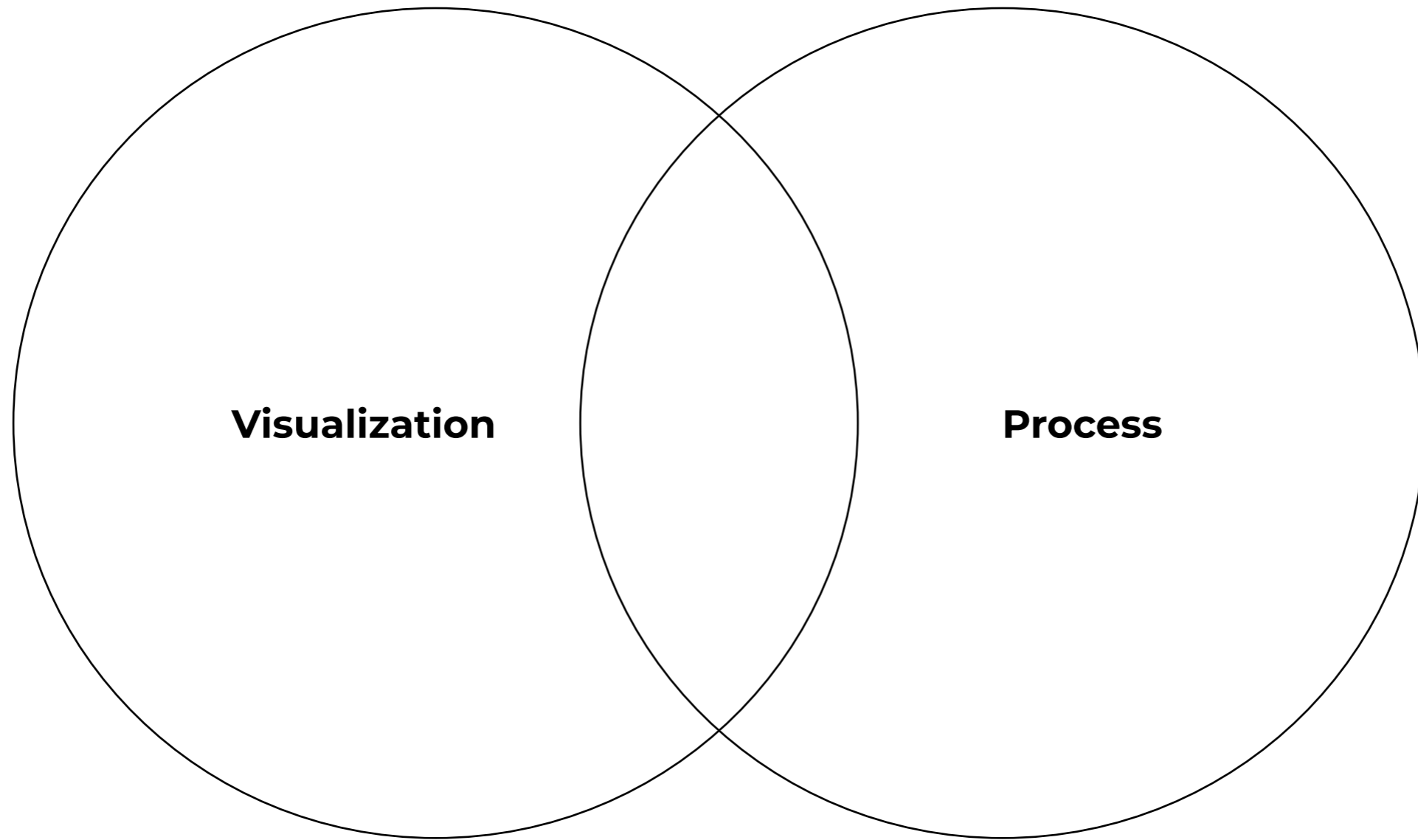
Timeline through the eras / across the scales




DEMO




Learnings



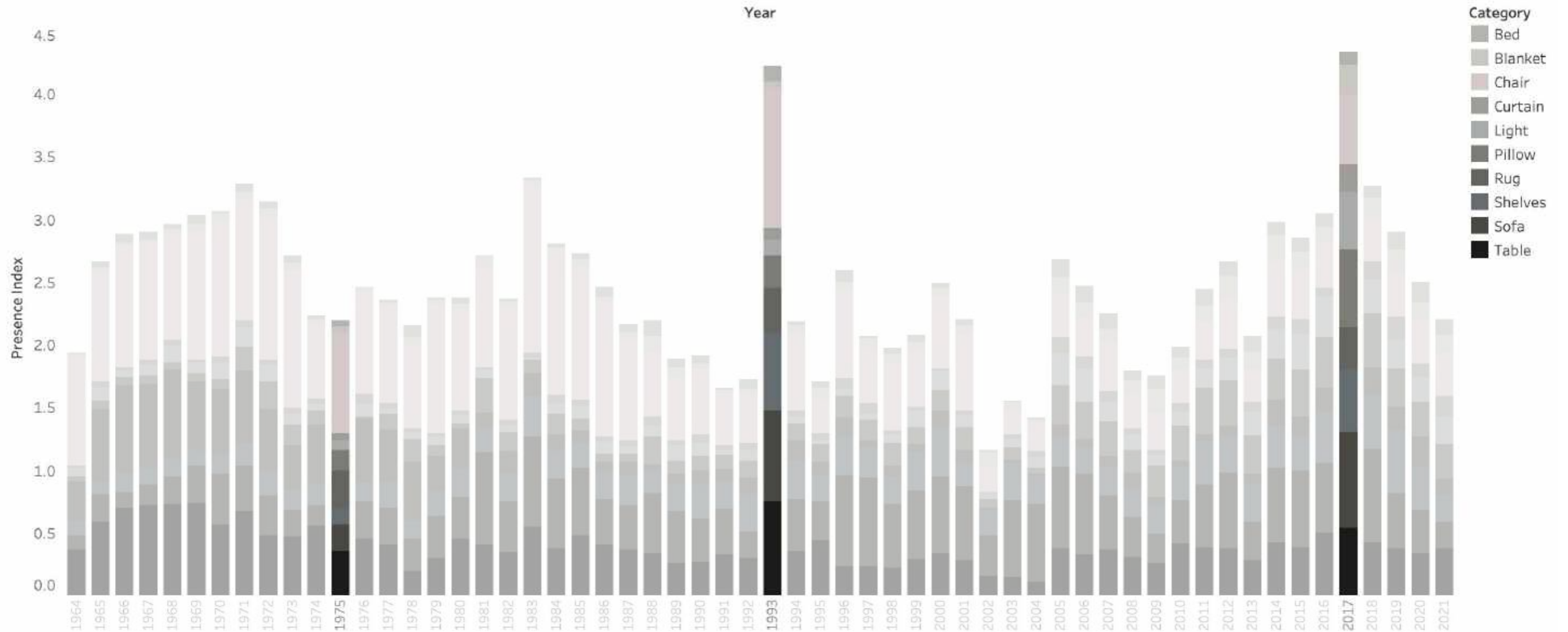
Learnings

Functional  Aesthetics

Texts  Visuals

Learnings: Social relationships

Object Presence Index in IKEA Catalogue Images from 1964-2021



1976 Puts pen to paper

Ingvar Kamprad writes "The Testament of a Furniture Dealer"



The EU Becomes Reality

The Treaty of the European Union goes into effect in November.



2017 All-in with LED

Switch is made to light-emitting diodes (LEDs) for all lighting sold globally.

Audience

Those interested in image datasets and ways interpret and understand them

Textile historians who are seeking to learn more about the home context

IKEA and similar businesses for historical Learnings and art

Open questions

How might we **combine additional forms of image analysis** to generate new Learnings?

What might **world events tell us about the future** of home textiles?

How might we **engage with our customers** in new and interesting ways?

HOMEra

