

FAST MOVING TECHNOLOGY

*STÄUBLI*

# Weaving – Economics & Trends

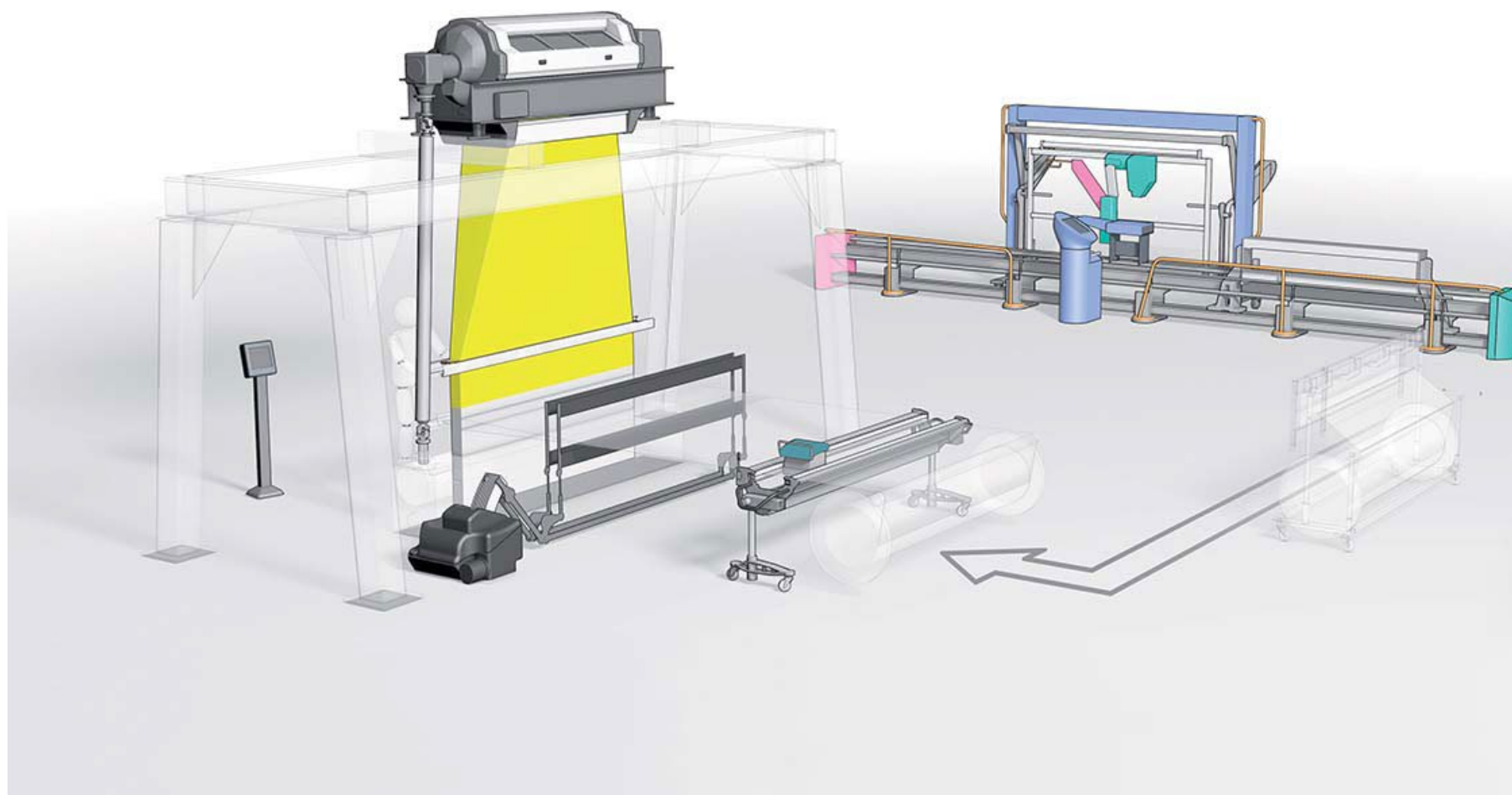


Synthetic Yarn and Fabric Association

2022 Spring Conference | April 20 & 21, 2022 | Oliver Meier

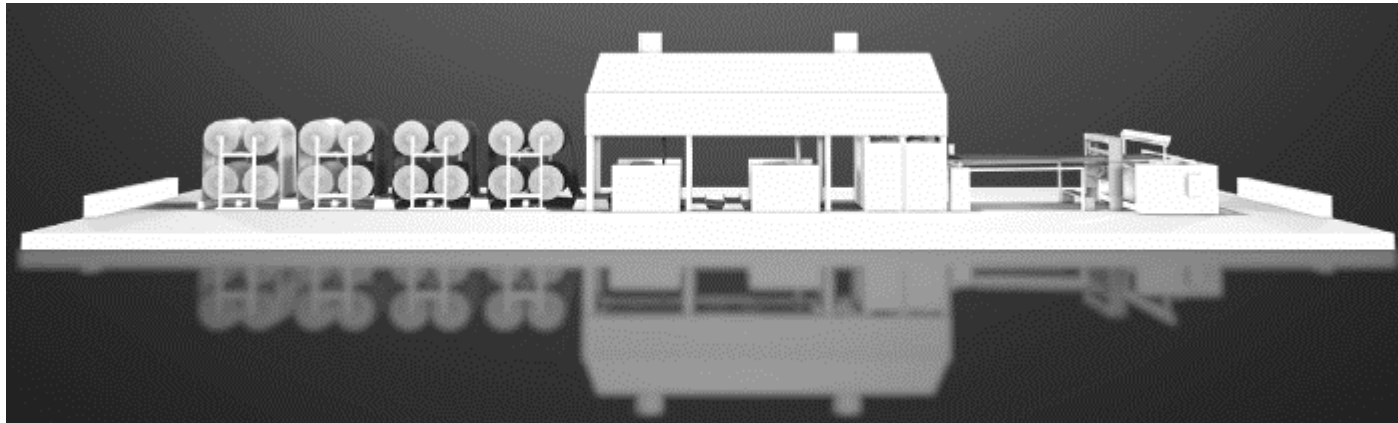


# TECHNOLOGY

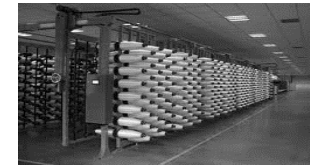


# Weaving

## From Yarn to Fabric

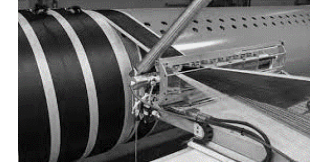


Creeling



**STÄUBLI**

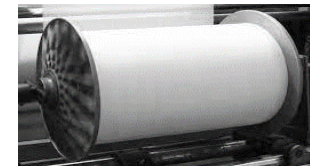
Sectional  
Warping



Sizing



Warping



Weaving



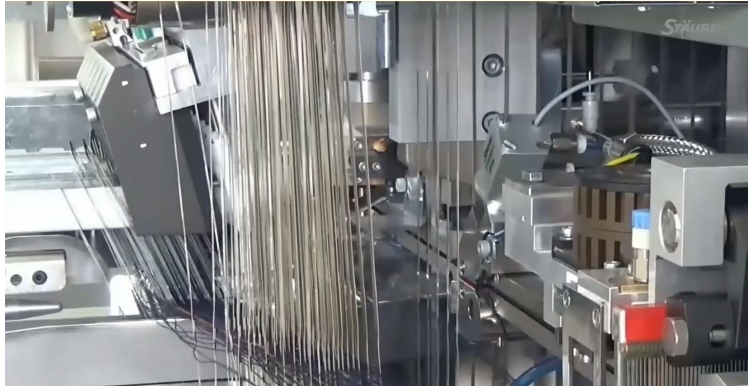
Finishing





# Automation + Weaving

## Today – Standalone Autonomous Processes



Warp  
Preparation



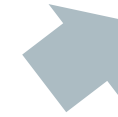
Warp Tying



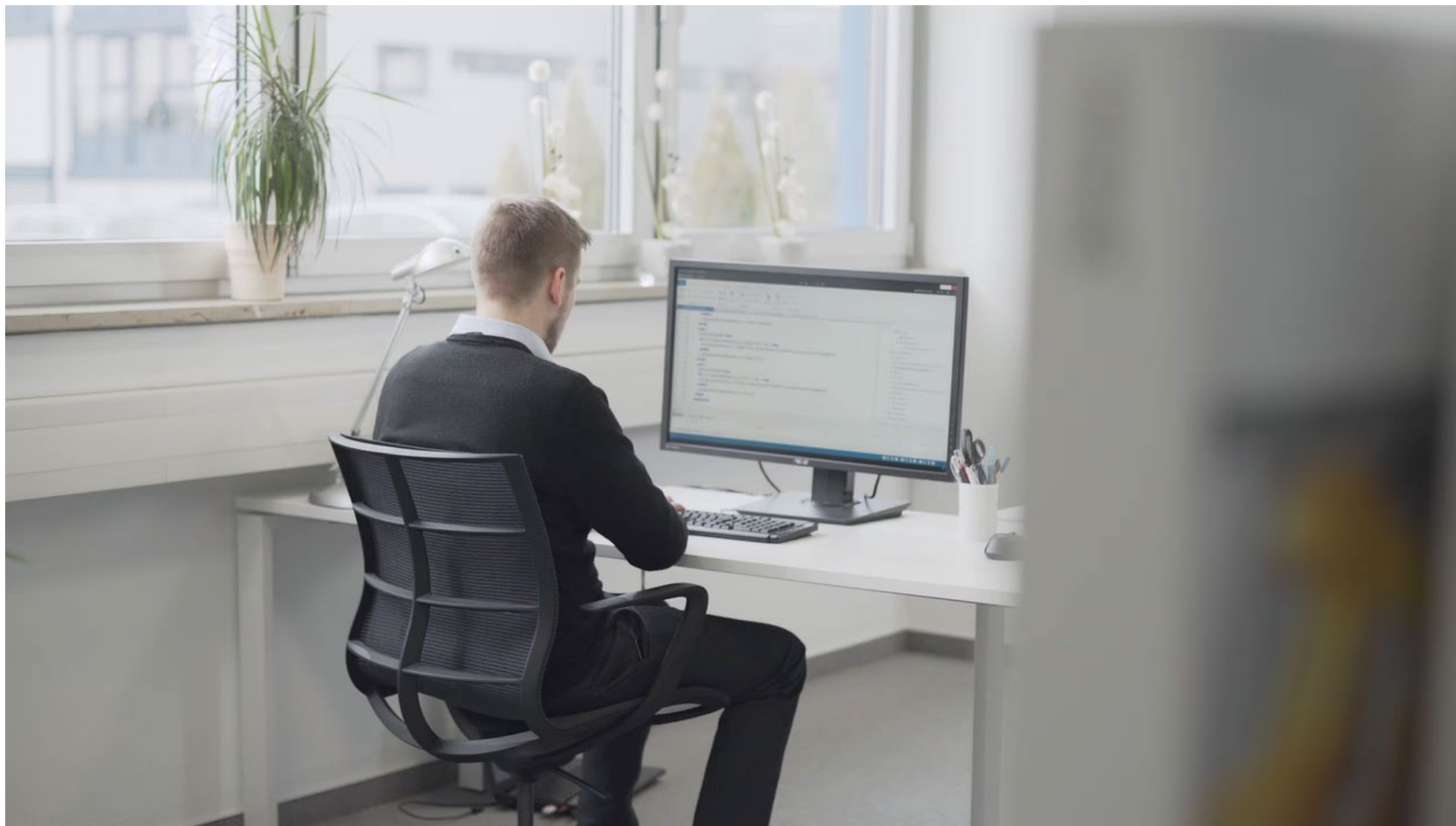
Weaving



Fabric  
Doffing



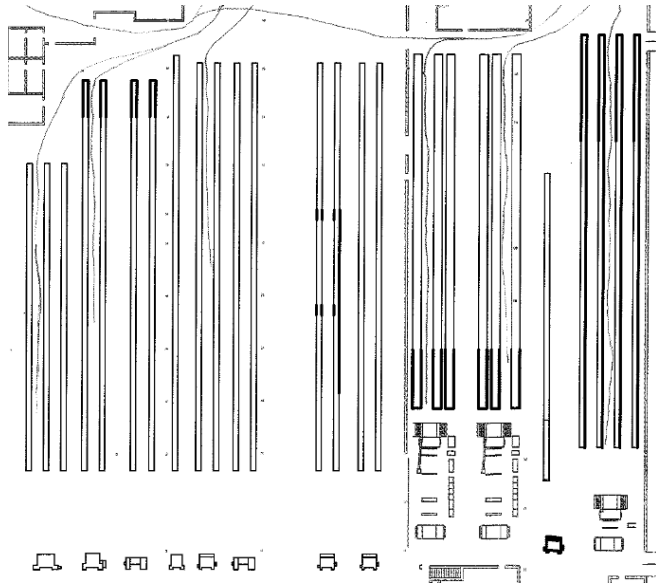
# Automation



# Automation + Weaving

## Challenges with integrating autonomous processes

### Infrastructure & Mill Layouts

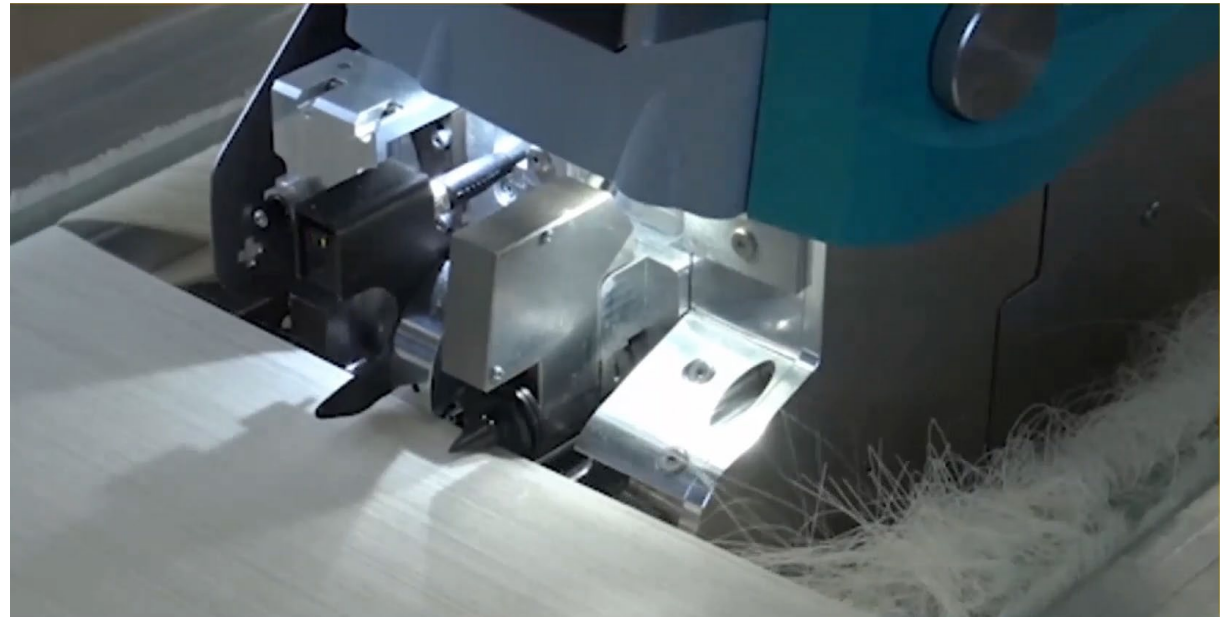




# Automation + Weaving

## Challenges with integrating autonomous processes

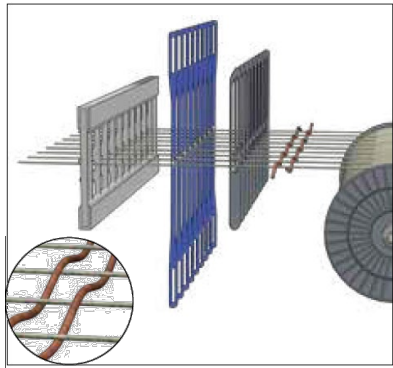
### Equipment Adaption



# Warp Drawing-In Process | Manual vs. Automation

## Challenges

- Fine yarn types
- Increasing number of ends
- Number of frames
- Pattern repeats
- Weaving accessories

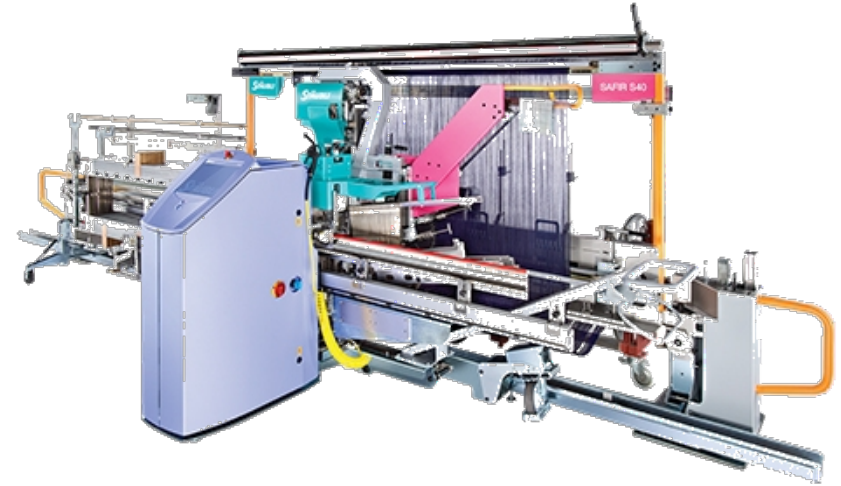


- Higher weaving speed ...  
Impacting Resources

## Manual Process



## Automated Process





# Warp Drawing-In Process

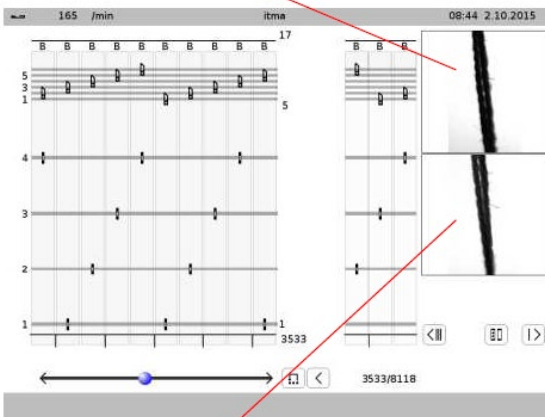
## • Automated Process

- Double end detection
- Repeat monitor
  - Yarn count detection
- Yarn repeat management
  - Color detection
  - Automatic yarn sorting
- Yarn type monitor – S/Z twist

## • Advantages

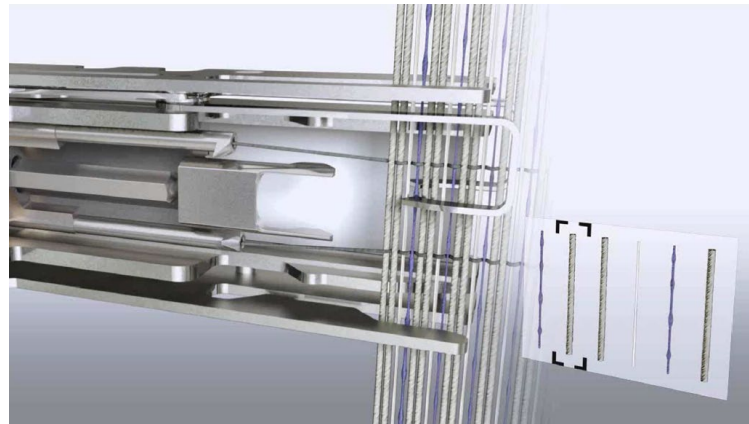
- No warp beam errors
- Increased WM efficiency
- Less idle item
- Reduction in operators
  - Higher number of WM/operator
- Reduction in 2<sup>nd</sup> quality
  - Increase in productivity

Picture cam 1



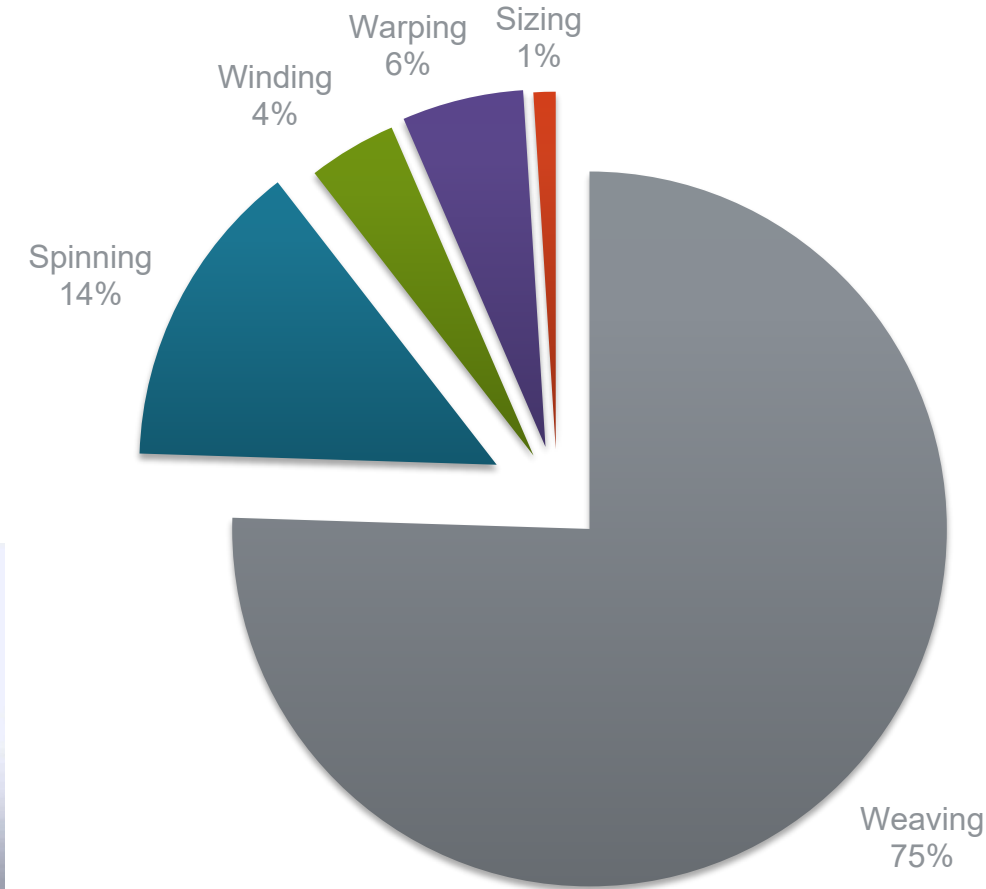
Picture cam 2

April 2022



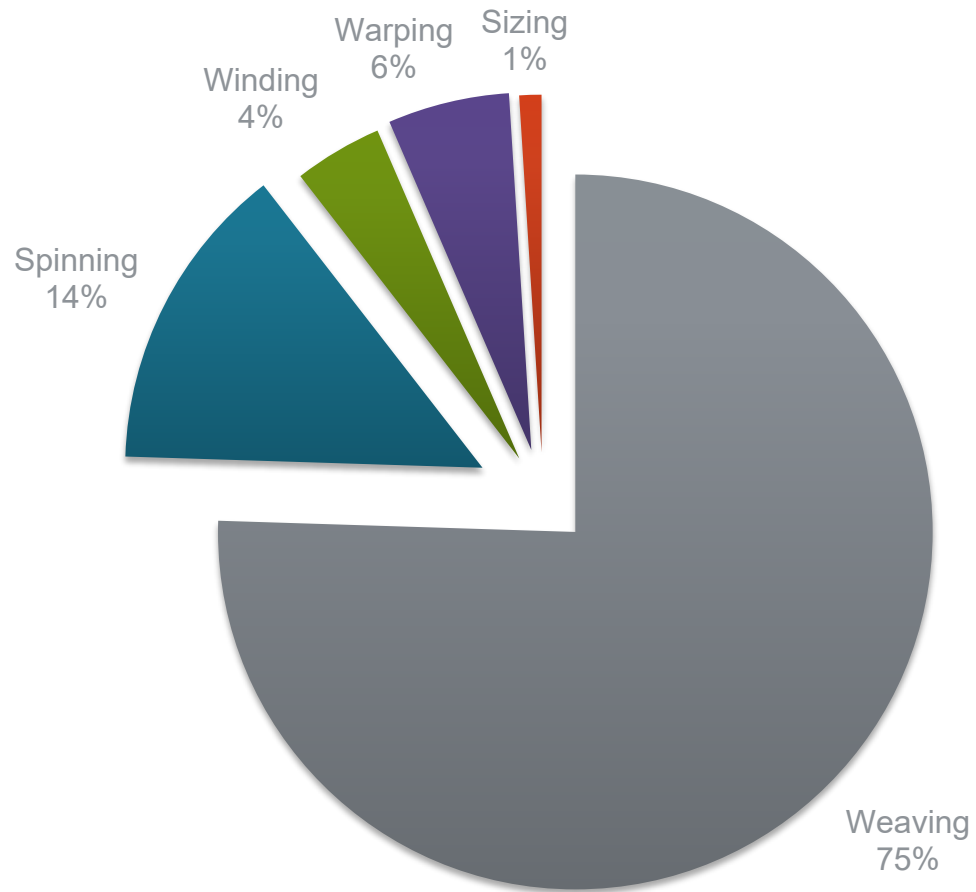
## • Cost of Yarn Breaks by Process

(Ring & Roto Yarn Combined)

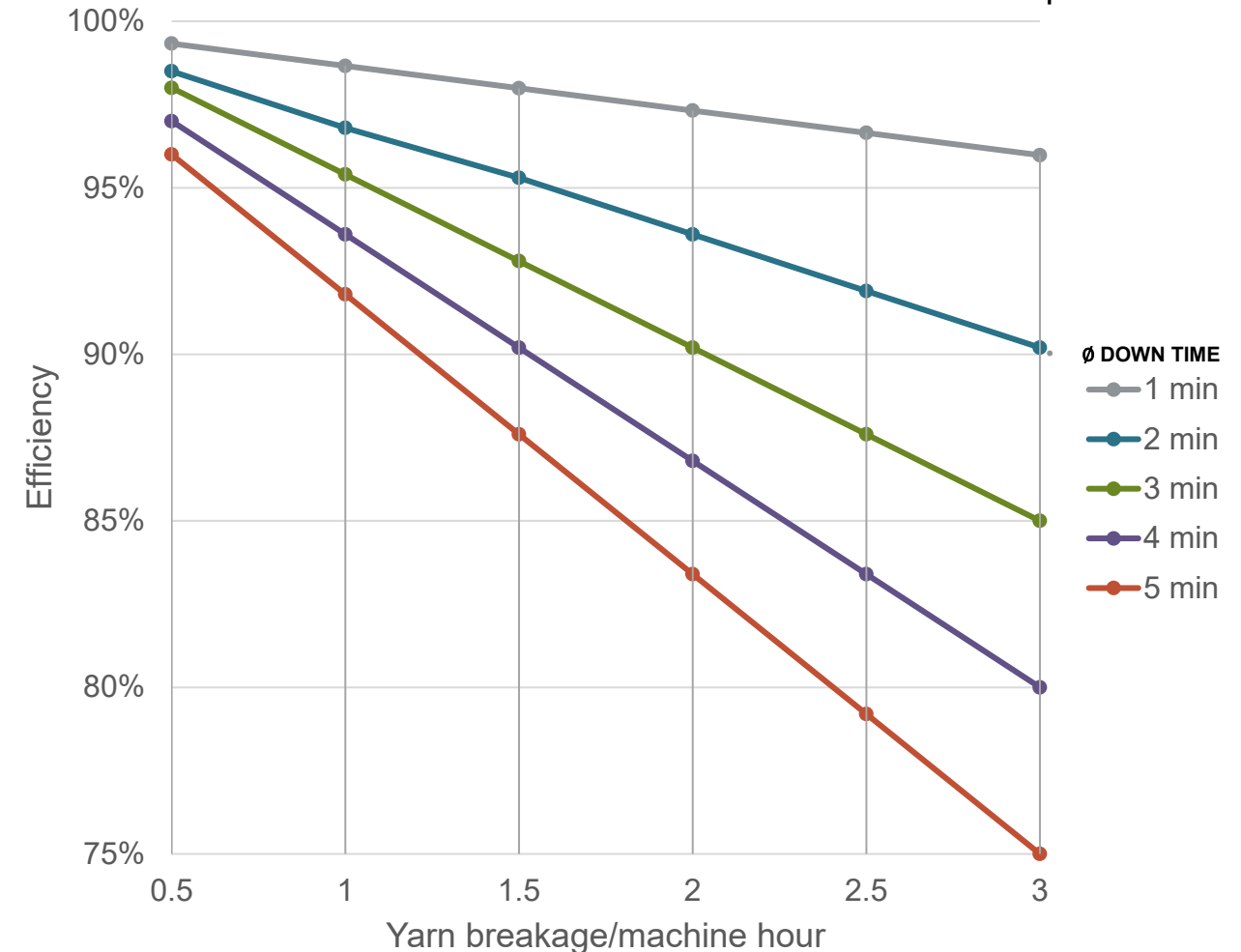


# Warp Preparation

- Cost of Yarn Breaks by Process**  
(Ring & Roto Yarn Combined)



- Loss in Efficiency Caused by Yarn Breakage in Weaving\***  
\*Warp & Weft Yarn



## Rule of Thumb

1 % efficiency gain in weaving equals  $\geq$  \$1k-2k in cost savings / WM / year

# Weaving technology focused on productivity



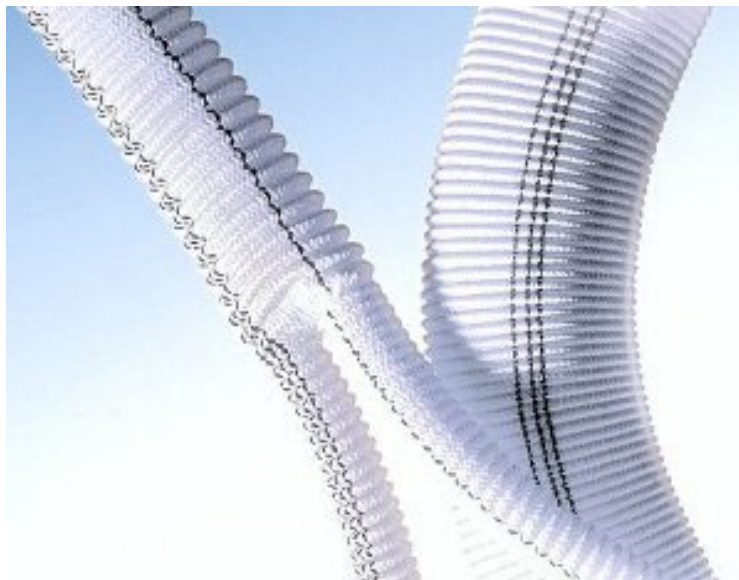


# Weaving | Yesterday – Today



# Weaving | Today

## Weaving Today



# Weaving | From OPW to PPE





# A passion for innovation

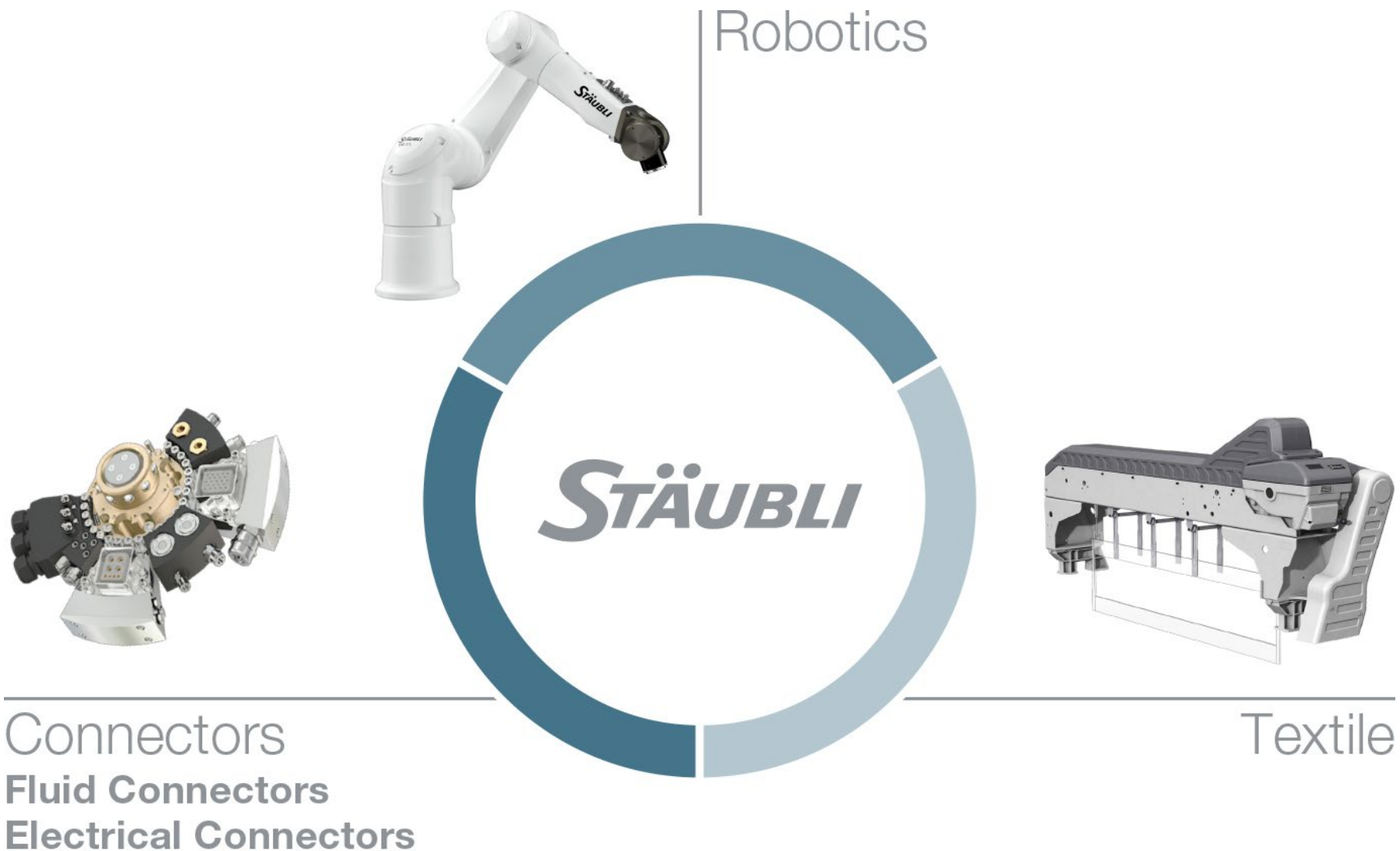
## Corporate Profile



# Stäubli Group at a glance



# Three activities – four divisions





# Questions



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Thank you for your attention!

