The background of the slide is a photograph of a paper mill. It shows large rolls of paper being processed by machinery, with rollers and conveyor belts visible. The lighting is bright, and the overall scene is industrial.

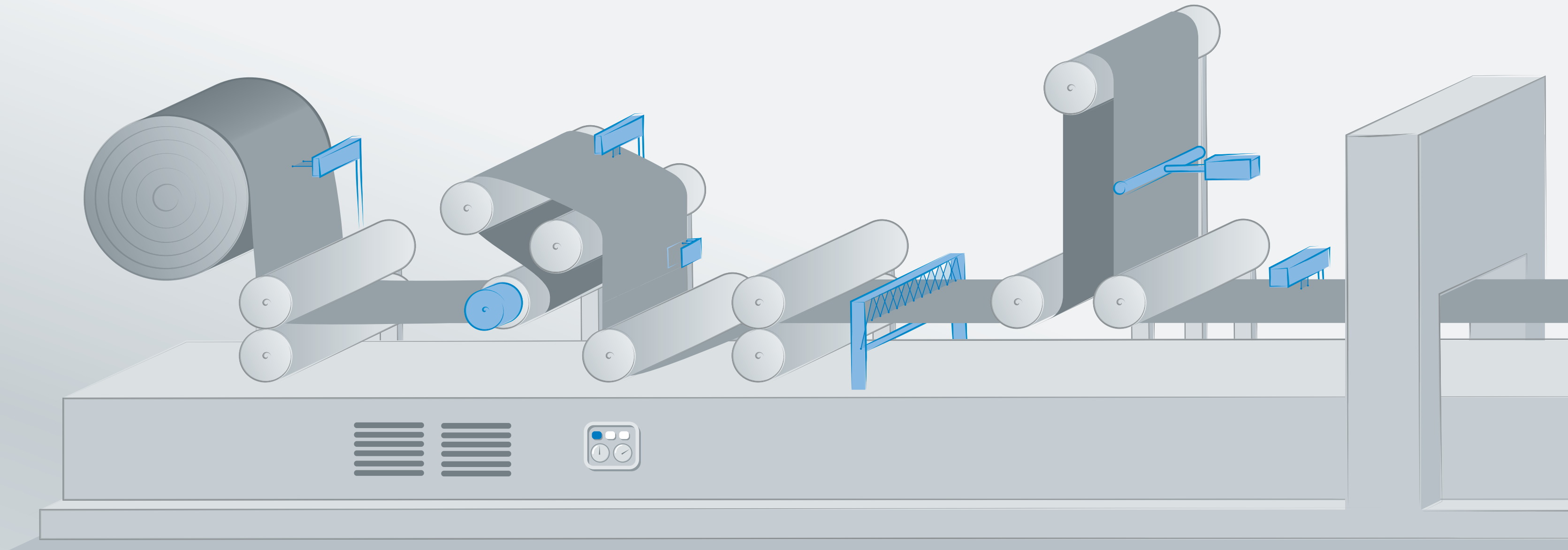
# Sensor solutions for efficient processing of a wide variety of web materials

7 benefits for the consumer goods industry



Benefits

# 7 Benefits along the value chain



## Material properties

# Material properties

## Consumer goods industry

Sensors play a crucial role in the automation of paper, printing and packaging machines. They provide valuable data on the basis of which upstream and downstream processes can be optimally coordinated. However, the variety of materials and their properties often make it difficult to select the right sensor, in order to obtain the correct values.

### **Sensor solutions for efficient processing of web material tailored to the material surface**

With its broad portfolio of sensor solutions, SICK offers a comprehensive range of solutions for the efficient processing of web materials. It makes no difference whether the web material is a dark, glossy or transparent packaging material, or even one with a sensitive surface such as cellulose.

## Material properties

# 1. Monitoring the material supply

### Reliable monitoring even with dark and shiny material surfaces

Monitoring the material feed enables web material to be exchanged at the right time. Downtimes can therefore be avoided, which leads to an increase in the productivity. The ability to calculate material consumption in advance, also enables the responsible use of resources.

### Materials & surface properties:

Sensors from SICK detect reliable dark and shiny material surfaces of film packaging.

### Sensor solution (example):

Distance sensor Dx35

- Precise monitoring, regardless of the color of the material
- Compact sensor design enables flexible mounting, even in confined spaces



## 2. Measuring the speed of web material

### Precise measurement even with sensitive material surfaces

The precise speed measurement of web material enables optimized control of upstream and downstream process steps and leads to high process quality. Effectively coordinated production steps also lead to an increase in productivity.

### Materials & surface properties:

Sensors from SICK are suitable for precise web speed detection with a wide range of material properties.

### Sensor solution (example):

Measuring wheel system MWS120

- High flexibility thanks to individually adjustable contact pressure and various measuring wheel surfaces
- Simple integration



## Material properties

### 3. Measuring the length of web material

**Precise measurement on any material surface**

Knowledge of the length of web material is crucial for the responsible use of resources as it enables the correct replacement of roll material, for example. By precisely measuring the length of web material, upstream and downstream process steps can also be coordinated efficiently, which leads to an increase in productivity.

**Materials & surface properties:**

Sensors from SICK are also suitable for measuring web length for materials whose surface is very sensitive and therefore can't or shouldn't be touched.

**Sensor solution (example):**

SPEETEC surface motion sensor

- Accurate, non-contact measurement with laser class 1
- No slippage



## Material properties

## 4. Correct guidance of the web material based on web edge detection

### Reliable detection even with transparent material surfaces

Reliable detection of web edges is crucial for the correct guidance of web material and enables high process quality. Reliable detection of web edges also speeds up processes and reduces downtime, which leads to an increase in productivity.

#### Materials & surface properties:

Sensors from SICK reliably detect even transparent material web edges.

#### Sensor solution (example):

Array sensor AS30

- Precise web edge detection with reflector
- Stable processes thanks to teach-in of contrast edges





## Material properties

## 5. Correct guidance of the web material based on the web width measurement

### Precise measurement on any material surface

Measuring the web width is a decisive factor for the correct positioning of the web material. By ensuring correct positioning, the risk of unplanned downtime can be reduced. Correct positioning of the web material also has a positive effect on the productivity of the system.

### Materials & surface properties:

Sensors from SICK reliably detect the web width of various materials, such as cardboard & paper, or cellulose material.

### Sensor solution (example):

MLG-2 WebChecker automation light grid

- Simultaneous measurement of up to 5 web widths
- Edge position detection for webs from 145 mm to 3,150 mm with a measuring accuracy of  $\pm 0.3$  mm





## 6. Ensuring the correct web tension

### Reliable monitoring even with dark and shiny material surfaces

Consistent web tension is crucial for high product and process quality. Continuous monitoring of the web tension also helps to avoid costly downtime caused by tension that is too high or too low.

#### Materials & surface properties:

Sensors from SICK reliably detect even dark and shiny material surfaces of film packaging.

#### Sensor solution (example):

Magnetic position sensor MPS

- Simple installation without additional mechanical components and positioning elements
- Quick device replacement through “drop-in”



## Material properties

## 7. Detection of cut and print marks

### Reliable detection even with dark and shiny material surfaces

Detection of print and cut marks – even at high process speeds – ensures high product and process quality. To ensure precise cutting in the right place and thus avoid rejects, the cutting, punching or embossing position usually provided with a print mark.

### Materials & surface properties:

Sensors from SICK detect print and cut marks even on dark and shiny material surfaces reliably.

### Sensor solution (example):

Contrast sensor KTM Prime

- Small housing design enables installation in confined spaces
- Powerful, fast contrast sensor for high machine throughput



Digital services

## Digital services

Unleash the power of your data

### Datafloor

Unlock the full potential of your data with digital services from SICK

### Shopfloor

Sensor solutions from SICK enable you to collect valuable data on the entire web processing procedure

