

CASE STUDY

PERSONAL & HOME CARE

**Client**

A Manufacturer of Polyester Medical Face Masks

Outcome

\$940,000 savings in annual labor costs and a yield increase of 10 million linear yards.

Challenge

Our partner, a manufacturer of polyester medical face masks, was facing intense price pressure from both competition and managed care providers. Internal measures to reduce costs and streamline operations did not achieve the desired savings and throughput improvements, and the scale of their operations (over 50 machines spread across multiple locations) prevented wholesale upgrades of their production lines due to costs.

Existing manufacturing bottlenecks compounded their challenges. Their equipment used “pancake rolls” to feed material into the mask-making machines. At full run rates, these pancake rolls would run out every ten minutes, and a new roll would have to be spliced into the production line. The built-in splicing operation on many of their machines did not function correctly, and the resulting weak or misapplied splices later broke during the manufacturing process, halting production and generating waste.

Overall, the client’s management was under pressure to reduce costs through labor and material savings, increased productivity, higher production throughput, and improved product quality.

Solutions

Web Industries’ experts collaborated with the client to evaluate their existing production process, beginning with a solid cost analysis, including labor, benefits, overhead, machine depreciation, and space allocation. After studying the data, we jointly developed a set of comprehensive solutions to the client’s manufacturing problems:

- **Spools Instead of Pancakes Rolls:** We advised replacing the pancake rolls with spooled material to achieve an immediate throughput increase. Spools would only need to be changed once every two hours instead of once every ten minutes, reducing the overall number of splices, splice-based machine downtime, and splice-based waste product.
- **New Unwind Machinery:** The client’s existing production lines were built to use narrow pancake rolls, so Web’s engineering team assisted in designing unwind stands that would allow spools to feed into the manufacturing equipment. After an on-site demonstration proved the viability of our proposal, we sourced a vendor to fabricate the custom unwind stands for the client.

- **Standard Components:** Our solution was designed to use standard components wherever possible. This reduced the amount and type of equipment that had to be purchased and kept capital costs under control.
- **Providing Spooled Material:** To support the client's updated manufacturing process, Web's precision converting services provided slit and spooled material custom-formatted for maximum efficiency.

Results

Web Industries supplied a new technology (spooling), and our expertise in all aspects of slitting enabled us to pull together a set of products, services, and suppliers that made the project successful. This joint effort produced nearly \$1 million of annual labor savings, reduced overall waste, and increased material yield by 10 million linear yards per year. This was accomplished with a customer investment of approximately \$1 million, less than 5% of the cost to convert the entire production line to new equipment.

Web's Services

One of the services Web Industries provides is outsource flexible material converting, including "slitting and spooling." Spooling uses a special winding process to place narrow width material on a high-capacity spool instead of a relatively low capacity planetary or "pancake" roll. A spool can often hold ten times the capacity of a pancake roll, which greatly reduces the amount of splicing, roll swaps, and machine downtime needed during long production runs. This makes consumer product manufacturing more efficient and more cost-effective.

Challenges

- High manufacturing costs
- Inefficient workflow
- Low production throughput
- Low material yields

Solutions

- Switch to spooled material to reduce splices
- Re-engineer existing equipment to accept spools utilizing standard components to keep costs low
- On-site demonstration to prove viability of proposed solution
- Assemble team of suppliers and service providers to support the new workflow

Results

- Number of splices per production run reduced by a factor of 20
- Splice-based downtime reduced significantly
- Improved production uptime
- Reduced waste
- Increased yields



About Web Industries

An employee-owned company, Web Industries, Inc., is one of the largest and most diverse providers of precision converting and outsource manufacturing. We help customers in the Medical, Personal & Home Care, Aerospace, and Industrial markets bridge their capability gaps and accelerate their go-to-market success by leveraging close, trust-based relationships to develop ingenious solutions precisely tailored to their needs. From project inception through commercialization, Web offers creative problem-solving backed by deep technical and operational expertise.

The world's top manufacturers trust our innovative engineering, converting, and manufacturing solutions to improve their products and get them to market ahead of the competition. Contact Web Industries at **+1 508.573.7979** or **sales@webindustries.com** to learn more.

