



CLEAN /LEAN MANUFACTURING

Working for a clean
environment through
Lean Manufacturing



Who are we?

- Originally a stand alone Puerto Rican company, recently acquired by Keller Crescent.
- Started operations on 1986.
- Located in Juncos, PR.
- Approximately 100 employees
- Turn over < 2%.

Our Products

- Inserts
 - Roll inserts
 - Flat inserts
 - Folded inserts
 - RTA folded outserts
- Labels
 - Pressure sensitive labels
 - Anti-counterfeiting labels
 - Special applications
- Printing mats / Plates
- Insert multi-pack presentations
- Vinyl pouches



Our Major Customers

Customer	Products	Years of Service
Pfizer (Wyeth)	Inserts / outserts, Labels	24 years
Combe	Inserts / Labels	24 years
Fenwal (PR & Dominican Republic)	Inserts / outserts, labels	15years
Baxter	Labels / Printing mats	15 years
Suiza Foods. Inc.	Labels	15 years
Vaquería Tres Monjitas	Labels	10 years
Edwards Lifesciences	Labels, & printing mats	10 years
Patheon	Inserts / outserts & labels	8 years
Legacy	Inserts / outserts & Labels	8 years
Abbott	Labels / Printing mats	7 years
Typenex Medical	Labels	3 years
Warner Chilcott	Vinyl pouches	1 year
Cristalia	Labels	1 year
Hewlett Packard	Labels	1 year

Facilities



- 48,000 sq. ft
- We will add a second building this year
- Electrical emergency power generator
- Water reserve supplies
- Full sprinkler system

Our Vision



- **We are the preferred supplier for highly controlled printed components and graphic arts services. Our commitment is to provide Total Customer Satisfaction (TCS).**
- **We add value by using advanced technology and sharing mutual knowledge.**
- **We provide a stable working environment, promoting growth for our Organization and associates.**

Market Trends - Opportunities

- **Product Patents Expiration**
- **Large size Outsert**
- **Vision Systems**
- **New Bar Codes– RSS / Data Matrix**
- **Supply Chain Management**
- **Anti-counterfeiting measures**
- **Electronic inserts**
- **Labels Print on Demand or Digital Applications**
- **Six sigma quality program**
- **Lean manufacturing application**
- **Electronic files management**
- **ISO Standards**
- **Stringent FDA Regulations**

The Business of Paradigms

We have to change the way we do business



"NO! I don't have time to see any crazy salesman – we've got a battle to fight!"

Our New Paradigm...

Clean Lean Manufacturing

Our Goals Today

- Present the Clean Lean Manufacturing Concept as an element of a bigger business philosophy.
- Give a testimony that a small company can apply the concept without investing a lot of money.
- That we can be productive and still protect the environment.

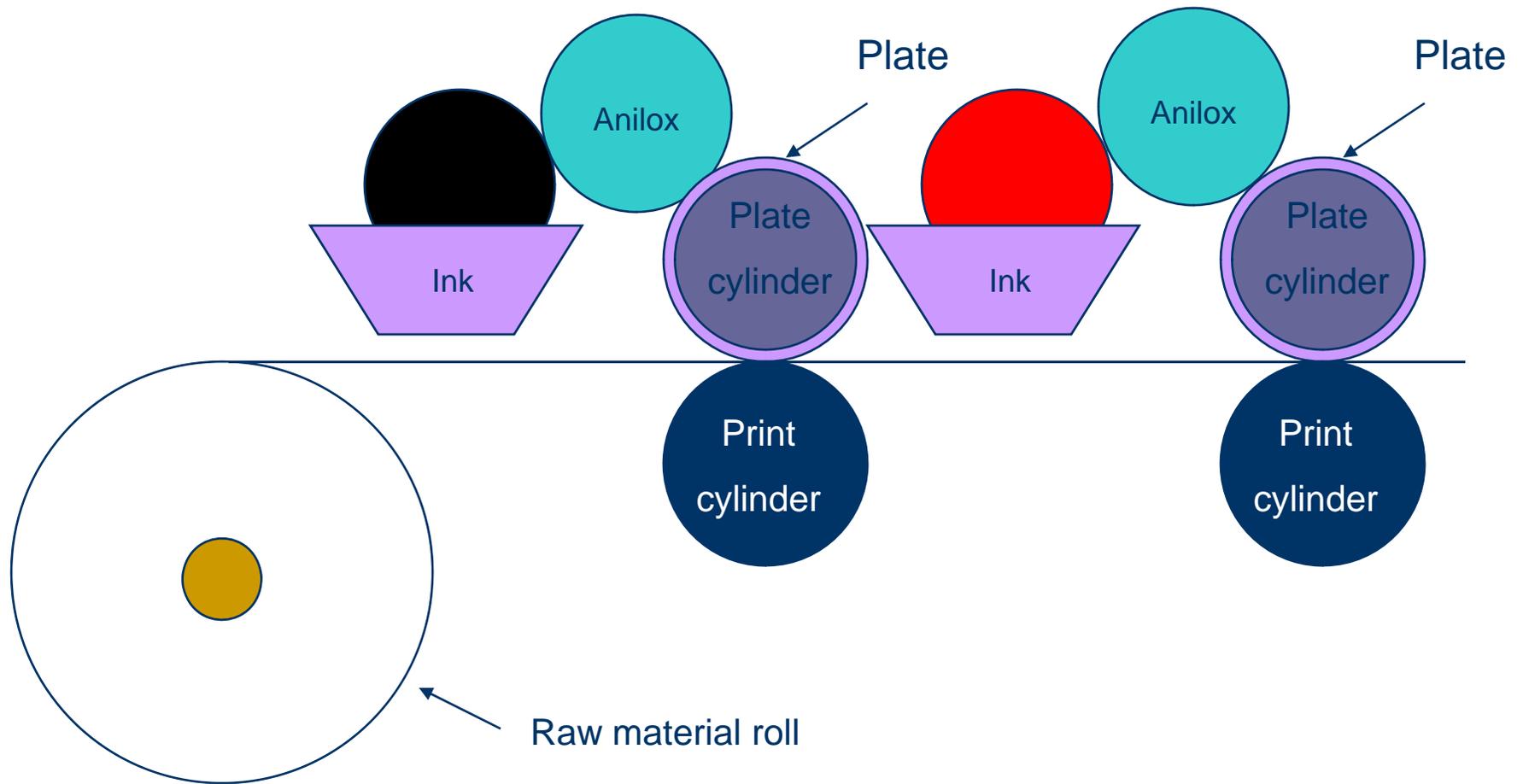
What is Lean?

- A systematic way to:
 - Identify and eliminate waste (no added value activities) through continuous improvement
 - Force the product flow as the customer pulls it
 - Look for perfection on the manufacturing processes.

Lean Manufacturing Process Steps

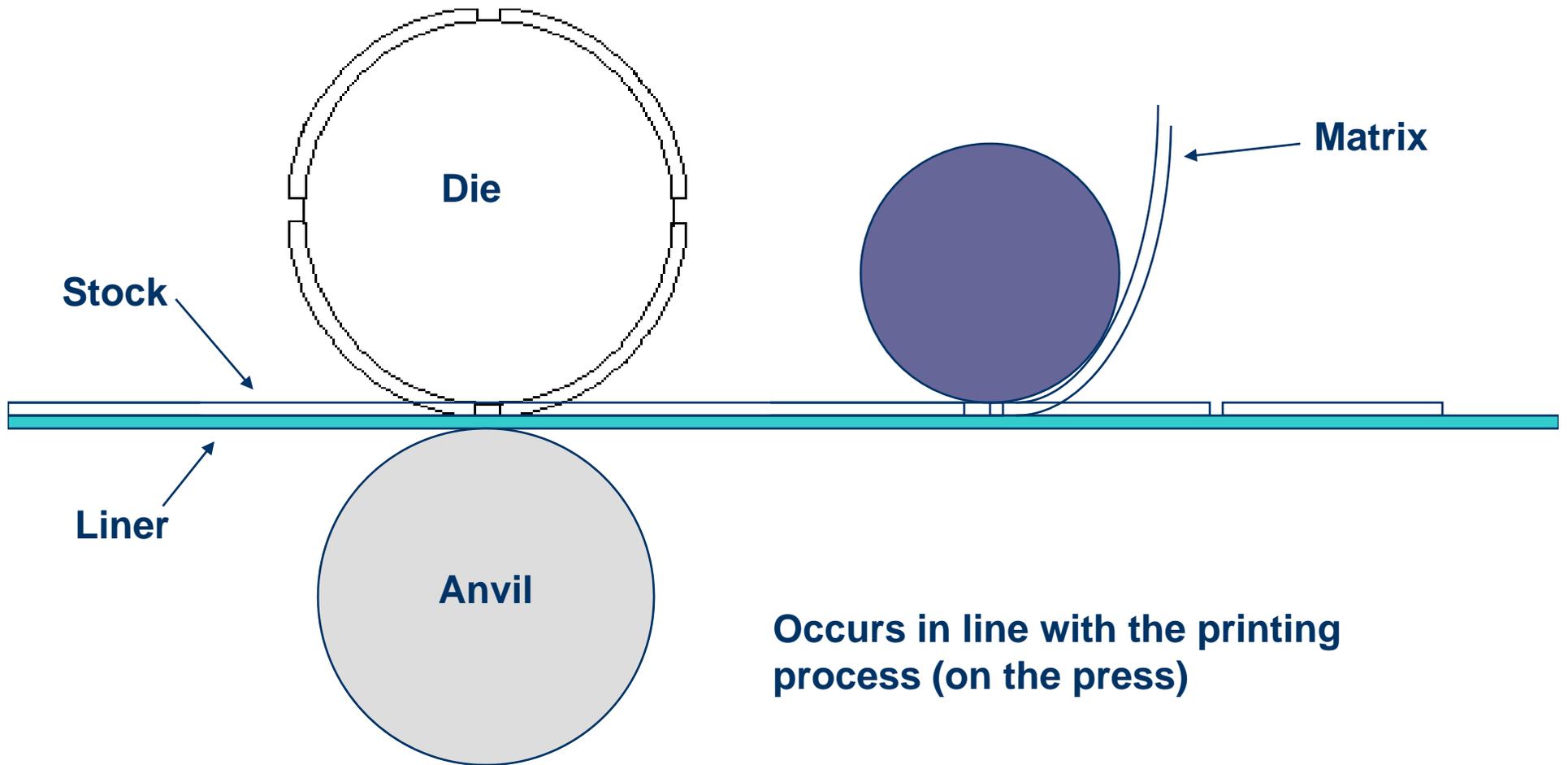
- Selected an area for the Pilot Program (Blood Bag labels)
 - Represents 48% of the total sales for Labels.
 - It has an 89% uptime on press and 47% uptime on the slitting / inspection process.
 - Customer wants for us to reduce the lead time.
 - It has a dedicated area, making it appropriate to implement a self directed team concept.

Printing Process

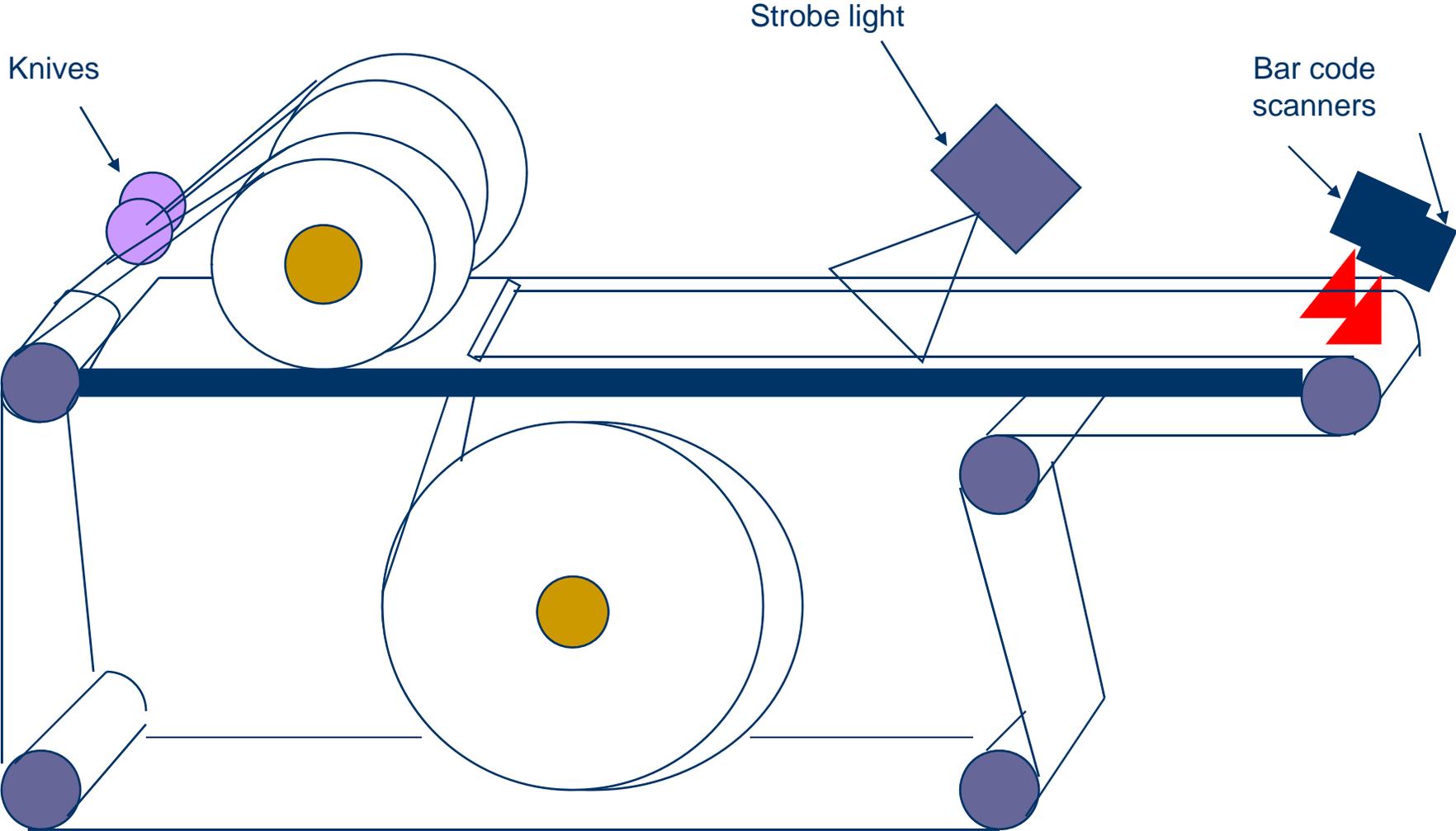




Die cutting process



Slitting and Inspection Process





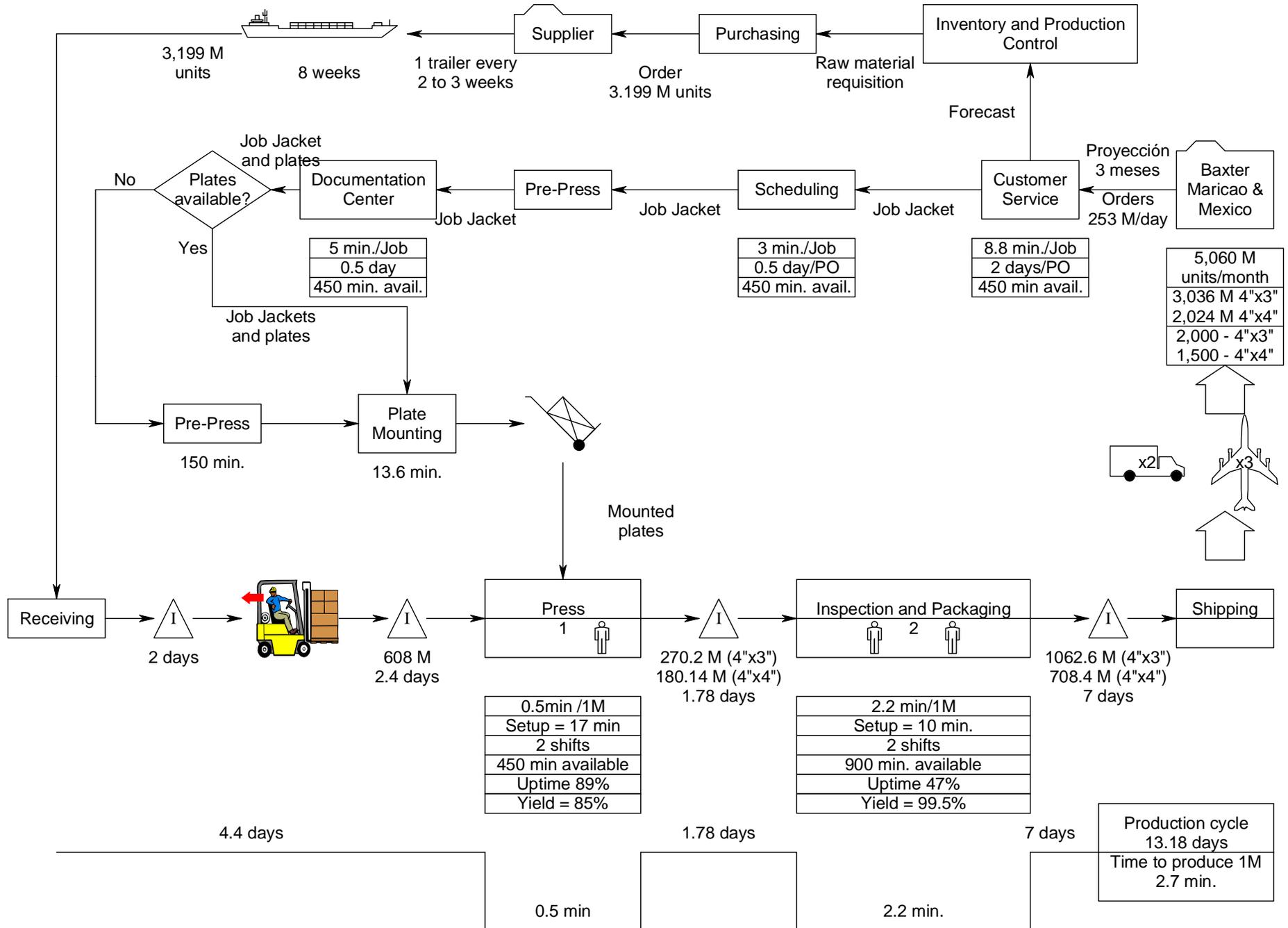
Lean Manufacturing Process Steps

- Conducted awareness session
- Created core team
- Educated core team
- Prepared Value Stream Mapping
- Conducted brainstorming sessions
- Developed future mapping

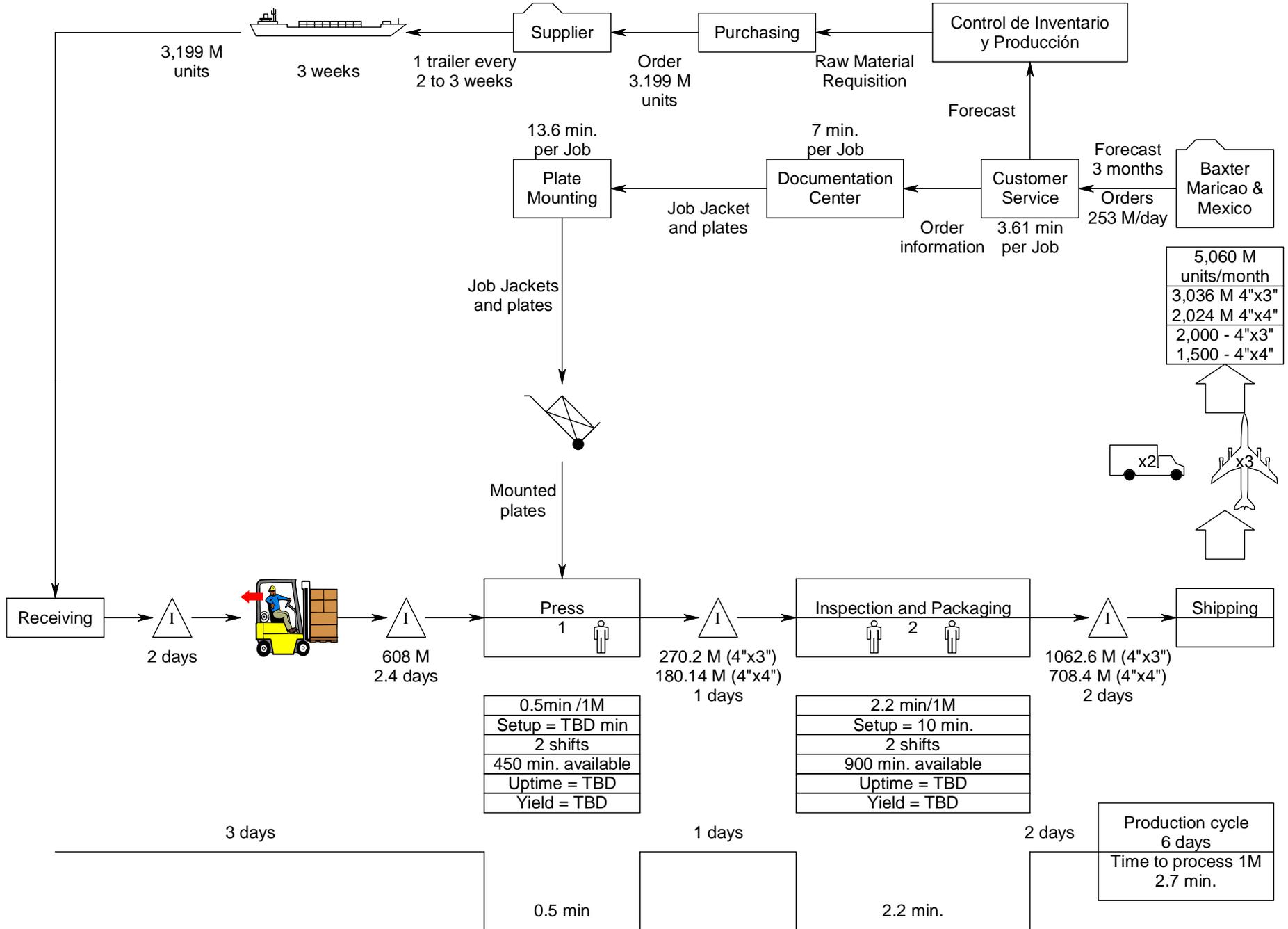
Core Team



VALUE STREAM MAPING - BLOOD BAG PROCESS



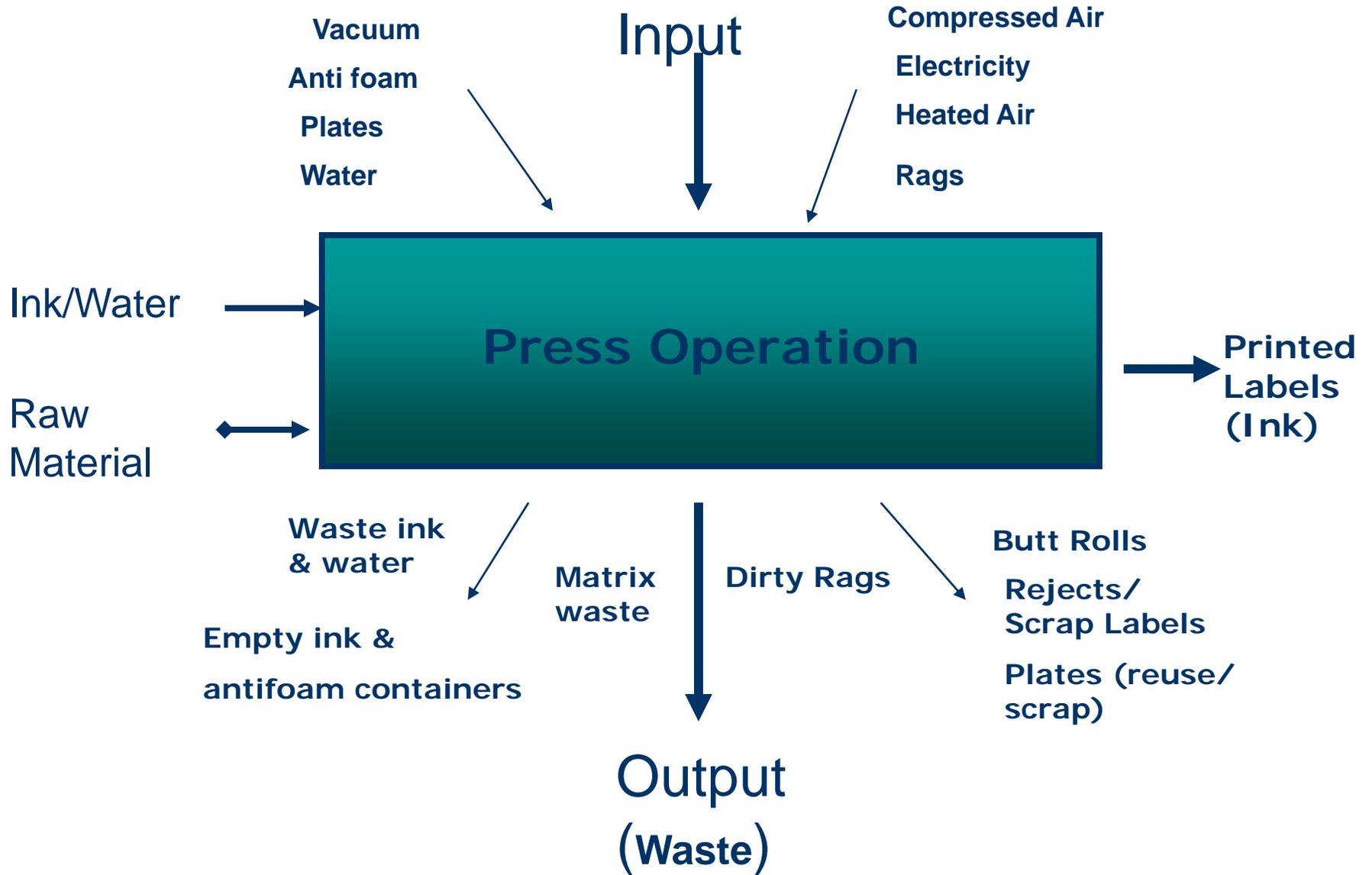
FUTURE MAP - BLOOD BAG AREA



Lean Manufacturing Process Steps

- Received the visit of EPA Assessor to assist in process mapping development from the environmental aspect point of view.
- Educated another seventeen (17) associates, that will participate in the working teams.
- Create sub-working teams.
- Continuous Improvement

Label Printing Operation



Lean Manufacturing Process Steps

- Identified three major goals:
 - Reduce material waste by 7%
 - Reduce process down time by 47%
 - Improve material planning process to reduce inventory level
- Developed action plan

Material Waste Reduction

Action	% Reduction	\$ Value / Year
Limit switch adjustment	1%	\$9,651
Raw material handling	3%	\$28,953
Setup improvements	2%	\$19,302
Tooling improvements (plates quality, press counter accuracy)	1%	\$9,651
Total	7%	\$67,557

Down Time Reduction

- Operators waste too much time to get the materials needed to perform their operations.
- Only 1 QA Inspector available at the area for the 3 stations (1 press and 2 slitting). This causes down time at the stations waiting for the availability of the QA to certify line clearances, OK to run and closing of an operation.

Down Time Reduction

- Shortened distance from raw material staging to the press.
- Installed cages inside the press station to have tooling required for next job already available.
- Combined QA Inspector and Packer function at the slitting stations to avoid down time waiting for the QA approval.

Material Planning

- Our raw material supplier is located in France
 - Their raw material is provided from the USA
 - This creates a 3 month lead time to ship
 - Additional 4 to 5 weeks in transit due to intermediate port used and change on cargo ship.
 - 3 to 5 days to clear US Customs
- Found faster shipping alternative from France directly to PR
 - Reduction of 3 weeks in transit time

Other Program Benefits

- Reduction of raw material and miscellaneous materials usage cost.
- Reduction of material disposition expenses.
 - Waste management cost
 - Hazardous material disposition services
 - Incineration
 - Disposition service companies
 - Shredding cost
- Reduction of utilities consumption
- Reduction of storage and transportation costs.