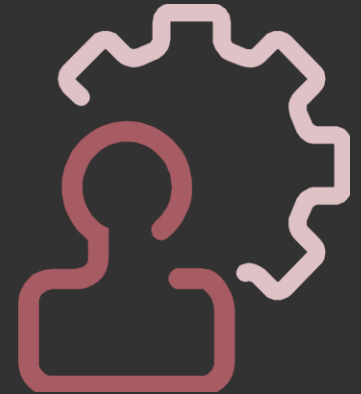


Presented by **Advanced
Machine & Fabrication,
Inc.**



minds that manufacture

**2010 CEDC Advanced Manufacturing
Awards Application
for
Best Process Improvement Project**

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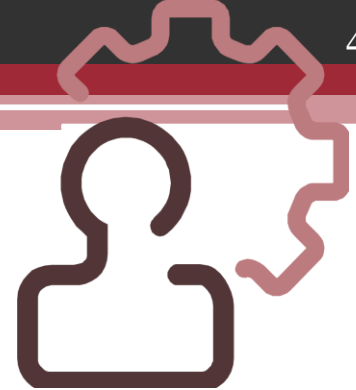
Company description



- North Carolina “C” corporation since 1999
- Wholly-owned precision CNC machining centers capable of holding extremely close tolerances. Short to medium production runs
- Built a solid and loyal customer base while earning preferred supplier status
- Benefit of strong management team in Mike and Elizabeth Barr
- Tackling overseas competition by:
 - focusing on niche market
 - seeking customers who realize efficiencies in manufacturing locally
 - developing and maintaining strong quality management program

Process improvement:

ISO 9001 and AS 9100



- Limited knowledge of ISO Standards before training BUT knew it was important in today's manufacturing environment
- Began training with Gaston College and Cardin Associates in April 2009
- Started immediately building quality manual, procedures and documentation
- 3 key employees working on compliance from inception
- Measured improvement seen in on-time delivery - now at 94%
- Notable improvements seen in production process flow, employee communication, training and morale, financial
- Results of customer satisfaction survey was a 100% rating of excellence *
- 65.4% increase in machining income from May '09 to May '10

* Results taken March 10, 2010 using SurveyMonkey.com

Project context:

why ISO 9001:2008/AS9100 certification?

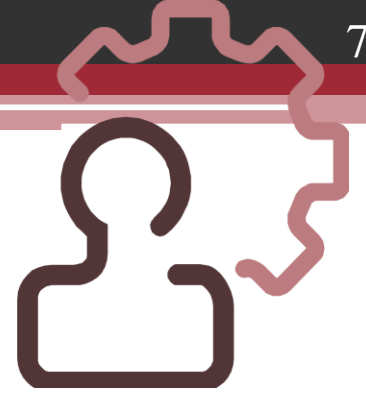


- **It unlocks the door to more industry and opportunity**
 - Certification increasingly being required by more customers
- **It allows for sustainable growth through effective quality management**
 - Quality Management = efficiency = more work = profit = growth
 - Growth = employment opportunities and longevity of company
- **It promotes accountability and proven results**
 - Stated quality objectives must be measured and documented
- **It teaches superior management skills**
 - i.e. Must conduct regular management review meetings to ensure quality procedures are followed
- **It enforces continual improvement in all areas**
 - Company closely monitors corrective and preventive actions



Introduction to **the Project:** process improvement achieves planned results

- **Maximization of quality and efficiency** achieved through established processes and guidelines
- **Increased productivity and improved financial performance** resulting from careful planning and data analysis
- **Increased employee morale** through defined roles and responsibilities
- **Factual approach to decision making** based on clear directives for audits and process reviews. Information is always data-based
- **Improved supplier relationships** through mutually beneficial evaluation practices
- **Documentation** ensures consistency throughout production with accountability and traceability of all processes, changes, errors and non-conformances
- **Customers satisfaction** occurs as company's ability to maintain quality grows while adhering to universally accepted ISO standards
- **Best practices** by company are ensured as improvement processes are planned and implemented based on facts and collected data



Understanding **the Problem: looking for a solution**

- **Foundation**

Wanted to put “house in order” for potential new customers

- **Structure**

A quality management system was needed in order to be a viable employer within community

- **Movement**

Advanced Machine needed to “advance” and take the next big step

- **Development**

Needed competitive edge to grow customer base

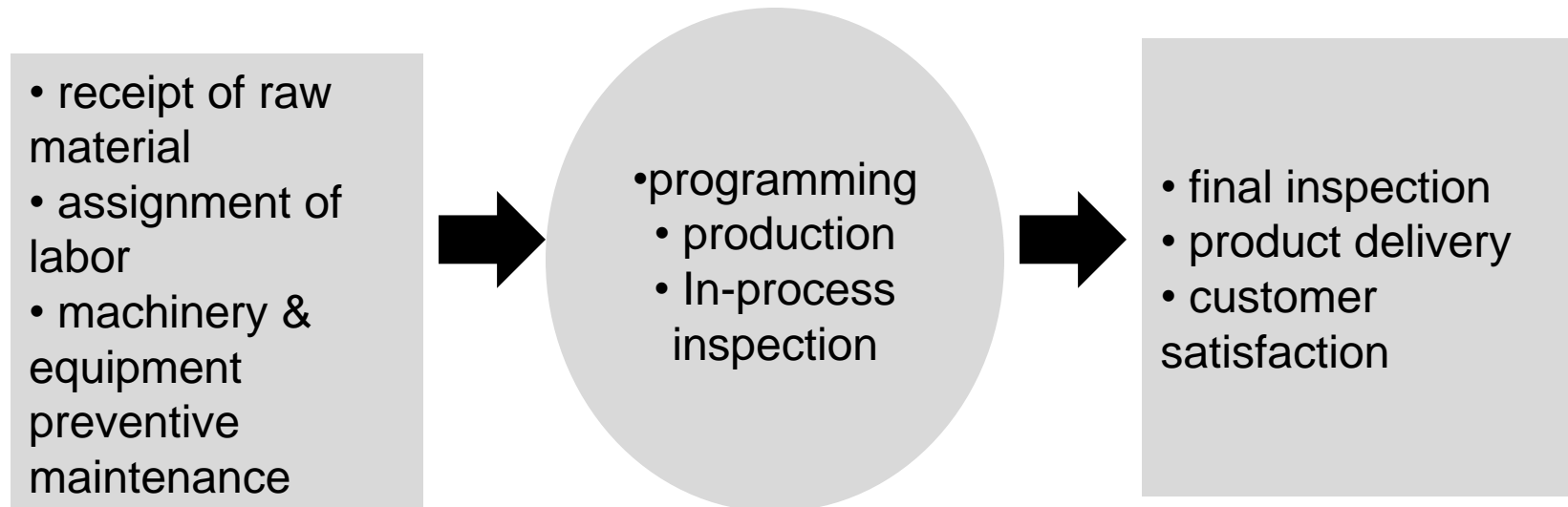
- **Containment**

Efficient production practices needed to pass on reduced costs to customer

Understanding the Existing processes



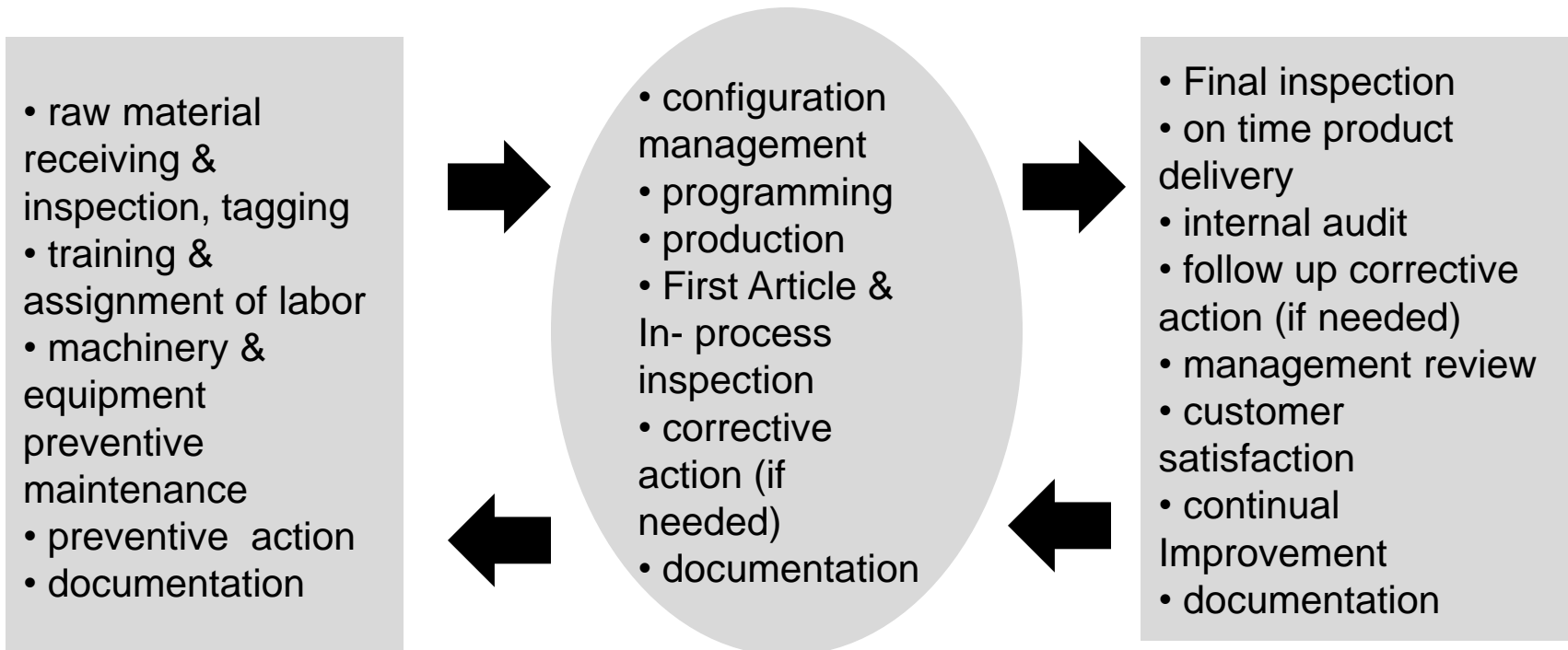
Key production processes *before* ISO 9001/AS9100 training





Understanding the Existing processes

Key production processes *after* ISO 9001/AS9100 training



Identifying the causes



- **Strong management but lacking framework**
- **Employees need training and direction**
- **Company longevity not sustainable without growth**
- **Globalization of manufacturing necessitates creative, proactive and competitive procurement strategies**
- **Target customers require ISO 9001/AS9100 certification**

Steps to **Implementing the solution**

- 1. Research ISO certification and training**
Budget for out of pocket costs close to \$40,000
- 2. Choosing qualified trainer**
Selected Gaston College and Cardin Associates as training providers
- 3. Procuring grant funds for training**
Awarded Incumbent Workforce Development Grant for \$25,000
in collaboration with Calico Coatings
- 4. Committing time and staff to training**
1 year training schedule planned from April 2009 thru March 2010
- 5. Building a Quality Management System**
Wrote customized Quality Policy Manual, Quality Procedures and Quality Records
- 6. Establishing documentation**
Defined processes in areas of document control, management responsibility,
resource management, product realization, and measurement, analysis and improvement
- 7. Mock Audit Procedure**
Internal dress rehearsal for the real thing
- 8. Shopping for a Registrar**
AQA International, accredited auditors, selected as our registration company
- 9. Setting the 3rd party audit date**
October 11 and 12, 2010
- 10. Certification planned for year end 2010**



Maintaining the benefit



- **Management review process**

Review meetings planned quarterly throughout year to go over quality management system

- **Continual improvement practice**

Addressed in ongoing manner but also at management review meetings where putting “pen to paper” keeps issues front and center

- **Scheduled training for employees**

Both formal and informal sessions conducted regularly

- **Internal audits**

Planned and scheduled audits for all process areas by year-end

- **Customer satisfaction**

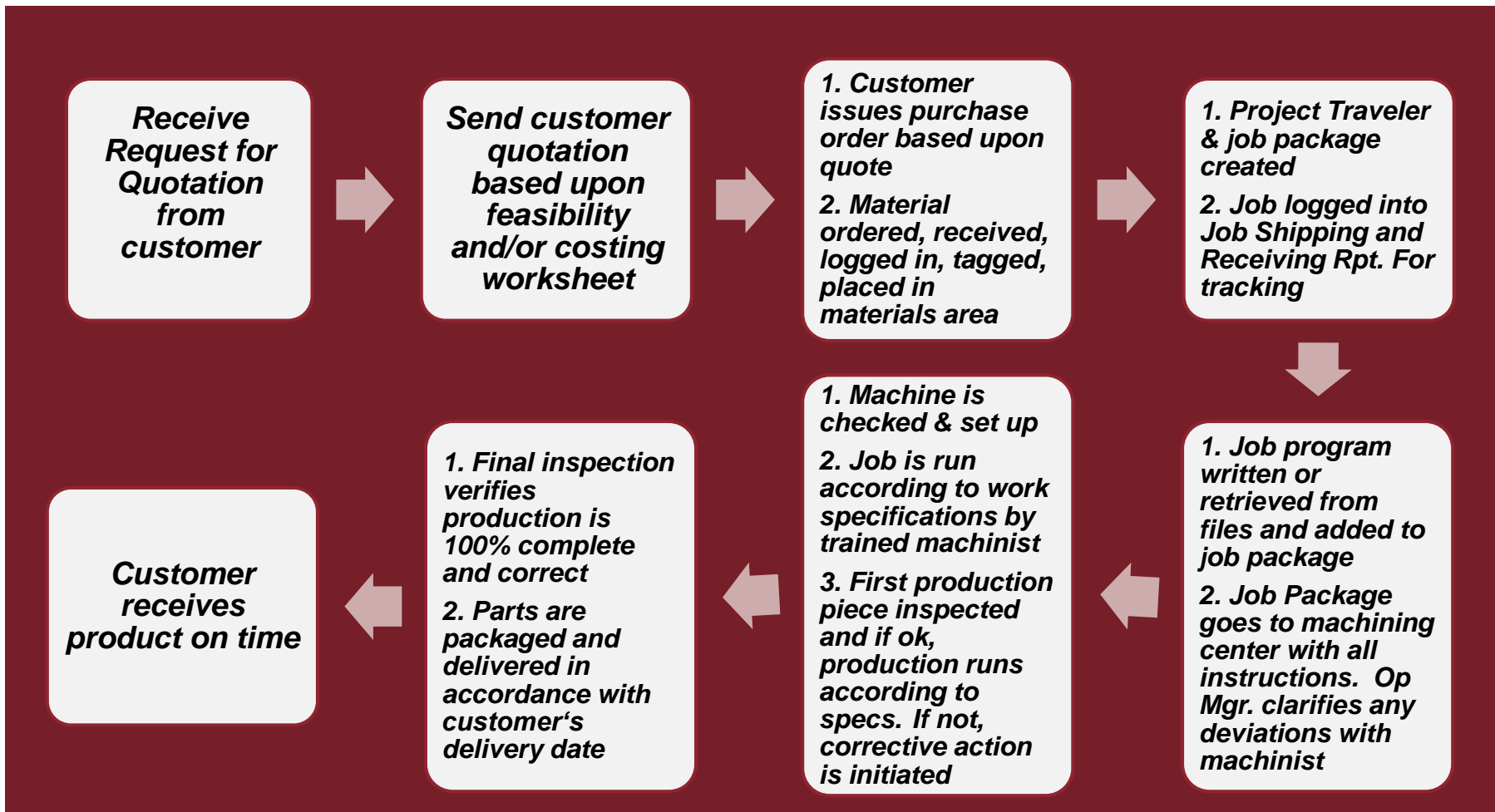
Satisfaction surveys sent out 2-4 times per year. Results are measured.

- **Supplier Evaluation and Performance Reviews**

Evaluated initially and reviewed annually

- **3rd Party Re-certification Audit** conducted after 3 years

Replication of results: **Work Flow procedures**





Connect invent thrive

Advanced Machine & Fabrication, Inc. would like to thank the Gaston College Dept. of Corporate Education, and particularly Ms. Diane Metcalfe, Director, for nominating us for a 2010 CEDC Advanced Manufacturing Award.

Elizabeth Barr
President

"The test of the artist does not lie in the will with which he goes to work, but in the excellence of the work he produces." --Thomas Aquinas

The End