

# Disruptive Technology Associates, Ltd.

## Contract Manufacturing Assistance

How to make the most and best of your contract manufacturing relationship  
Services offered by Disruptive Technology Associates, Ltd.

September 2018

## About the Speaker

- Darryl Nelson, Senior Principal Engineer
- Contract Manufacturing Experience
  - Transitioning products and manufacturing expertise from domestic OEM to both domestic and offshore contract manufacturing
  - Transitions from one contract manufacturer to another both domestic and offshore
  - Built and operated successful contract manufacturing company earning an entrepreneur of the year award
  - Assessment and vetting capabilities of printed circuit fabrication, assembly/test, plastics molding, metal machining, and coating operations
  - What knowledge do I have to offer?
  - Extensive experience in both sides of the equation as a contract manufacturer and outsourcing to contract manufacturers
  - Seen and fixed lots of issues, in depth knowledge of the tricks of the trade
  - Successfully provided solutions for the issues discussed in the following slides

# Target Audience

- Companies that are:
  - Thinking about using Contract Manufacturing
    - Make the most of your CM arrangement
    - Understand what you are getting into and how to align goals
  - Currently Using Contract Manufacturers
    - Make the best of your CM arrangement
    - How to recognize issues
    - Understand how you improve your CM relationship

## I'm Thinking about using Contract Manufacturing...

- Let's walk through:
  - The internal decision process - goals, risks
  - Understand the CM's Goals
  - Shopping for CM Do's and Don'ts
  - How to deal with your CM
- If are already using CM, this portion of the presentation may still contain some eye-openers

## Why Outsource Manufacturing? - The internal process

- **Financial benefits**—Clean up your balance sheet by eliminating assets, improve labor utilization, and have a more stable cash flow
- **Strategic optimization**—Think about your company's core mission and whether it is relevant to continue certain manufacturing operations
- **Better management of the outsourced activity**—In theory, you can choose a supplier that is a leader in the field
- **Market discipline**—You can align your costs with those of suppliers in the field
- **Technology**—In theory, you gain access to state-of-the-art technologies
- **Flexibility**—The resources no longer used in one area can be redirected to the company's core operations

## Risks with outsourcing

- **Loss of expertise**—You lose know-how and skills that may prove critical to your long-term competitiveness
- **IP Concerns**—Intellectual Property (IP) management is a very real problem with outsourcing both domestically and offshore
- **Communication**—Miscommunication of your specific needs and requirements, including language barriers when dealing with foreign manufacturing
  - Communication issues sometimes happen even in the same office, and can introduce more difficulties when dealing with another company, culture or time zone
- **Dependence on the supplier**—Once you have outsourced manufacturing, it will not be easy to bring it back in house
  - If the supplier's service deteriorates or prices increase, it is more costly to bring the operations back in-house for all of the reasons that caused you to outsource it in the first place and then some

## Risks with outsourcing (continued)

- **Portability**—Extensive use of outsourcing can lead to a loss of ability to move manufacturing to suit changing business needs
- **Loss of control over costs**—Too frequently the quoted per unit cost is only a portion of the overall cost of outsourcing
  - All of the costs need to be assessed; shipping, tariffs, logistics, schedule slip, and many other factors contribute to overall cost
- **Loss of control over production operations**—The contract manufacturer controls how your product is built, which manufacturing equipment to use, what training to provide operators

## What are your CM's goals?

- To maximize their revenue and margin from all of their customers
- This means they are incentivized to:
  - Focus their efforts on their high volume/margin customers
  - Minimize their labor cost
  - Substitute less expensive (higher margin) components
  - Make it difficult for existing customers to move to another CM or “take back” their manufacturing



## Shopping for a CM: Maximize Your Probability of Success!

- Stay organized, have a strategy and communicate openly with your prospective outsourcing partner
- Communicate clearly from the beginning
- Look for compatible goals
- Focus on the best solution, not the lowest price
- Use a very specific contract and up-to-date legal experts
- Sensibly share risks
- Involve key players on both sides
- Document the transition phase
- Use knowledgeable experts that understand both sides of the customer/CM relationship

## The Typical CM sales pitch:

- Our purchasing agreements with major component vendors allows us to provide your widget at X% lower than your manufacturing
- Contracting all of your products with us can provide substantially more savings
- Let us provide alternates and second source your existing bill of materials
- Our solutions experts can guide you to a lower cost and more robust product
- If you can supply your design criteria, we can drastically improve your design for manufacturability and lower your costs even more

## How to avoid common pitfalls

- Understand your portion of your CM's total revenue stream
- Know your total cost of manufacturing
- Have complete and accurate documentation for the products that you are outsourcing
- Have a strategy for customer support for outsourced products
- Be able to accurately forecast product volume
- Know that CM pricing is based on multiple best case scenarios stacked on top of one another
- Understand inventory liability, parts aging, grey market/counterfeit parts
- Evaluate the viability of the CM's sourcing of critical components

## Design For Manufacturability

- Have clear Design For Manufacturability (DFM) criteria derived from an in-depth understanding of your manufacturing capabilities.
- Feed this information into your design efforts
- This will lower your design and manufacturing costs and reduce returns due to manufacturing issues while removing one of the primary excuses used by contract manufacturers

## Schedules

- Understand and maintain achievable and realistic production schedules based on the contracted manufacturing process capabilities and capacities
- Incorporate schedule estimates with proper rewards/penalties and clear evaluation criteria in your manufacturing contracts
- Require in-depth cause and corrective action report for any and all missed delivery dates or quality issues

## I'm using CM now, how do I recognize and fix problems?

- How do I know I need help?
- Can I fix this myself?
- It is not always your problem - But it is
- Common issues and some things you can do about them

## How do I know I need help?

- Let's assume you have already outsourced your manufacturing
  - Are you experiencing ongoing pricing, delivery, quality, or supply chain issues and can't seem to get them under control?
  - Are your On Time Delivery and Yield metrics too low?
  - Does your CM always have an excuse (a way to blame you) for these issues?
  - Are you thinking about changing your CM and need to vet CM facilities and/or services?
  - If you answered “yes” you could probably use some help

## Can I fix this myself?

- Many companies struggle with these issues, frequently lacking the expertise or key personnel to provide the necessary oversight in the form of onsite presence, reporting, and analysis
- Often the primary issue is that you have staffed your company to design and engineer a top-quality product, while trusting the actual manufacturing to an outside source that is quick to assure you that they have your best interests in mind
- Re-tasking your in-house engineering design team to solve manufacturing and quality issues in the field may not be an effective use of their time or a good match for their skills



## It is not always your problem - But it is

- Even if the root of a problem lies with your contract manufacturer, it is still your problem and impacts your customers & your bottom line
- Your contract manufacturer has little incentive to solve problems unless the problem directly impacts their revenue
- Contract manufacturers make money from your problems
  - More effort = more revenue for them
  - CM's may charge you for Nonrecurring Engineering (NRE) to solve problems

## Common issues:

- On-time delivery (OTD) not meeting expectations
  - OTD is an indicator of how capable a manufacturer is to meet your need in terms of the requested delivery date in relation to the committed date
  - It is also an indicator of more serious issues
  - Beware of component substitution “solutions”
- Factory and field return rates not meeting expectations
  - Return/rework rates may indicate the quality capabilities of the supply chain has issues or manufacturability issues based on design
- Late deliveries and low yield/quality issues cost you money and may ultimately cost you customers

## How to address common issues

- **You must remove the excuses**
  - Excuses allow your CM to play the blame game which does not help you at all
- Know your selected outsource manufacturers true capabilities
- Recognize when a negative trend or problem develops with delivery and/or return rates
  - Measure and track the true OTD and quality metrics
  - Track metrics over time (score card system) to highlight trends and spot issues early
- When an issues comes up, **get the root cause quickly**
  - Gather & analyze the data and work with the key stakeholders to develop and implement the changes required resolve the root cause
  - Monitor the results and adjust as necessary
- Know what the issues with your CM are costing you
  - This will help you know when it is time to find another contract manufacturer

## Who we are:

- Disruptive Technology Associates, Ltd. is an independent engineering service firm that offers engineering and project management assistance to our customers
  - We are not a contract manufacturer
  - We don't want to do your product design work - but we can help with it if you need it
- Disruptive Tech's experts have worked extensively in both OEM and contract manufacturing
- We understand what drives and motivates outsourced and contract manufacturing companies
  - Our experts have been solving issues with domestic and overseas manufacturing for decades
- Disruptive Tech is ready to work directly with you and your vendors to understand and analyze the root causes of any manufacturing problem
- Our objective is to help you make more money by increasing delivery and quality while keeping your costs under control
  - Like your accountant, it is up to us to save you much more than we cost

## What we offer:

- In depth determination of your needs and issues along with clear, concise advice and solutions
- Onsite audit and accurate reporting of outsourced manufacturing capabilities, operator skill levels, quality issues, logistics, and planning assessment
- Value stream mapping of the production and fulfillment process
- Design for manufacturability feedback based on design maturity and the outsource vendors true capabilities
- Recommendations for process & procedure improvements, highlighting areas of concern, providing a clear picture of your results in contract manufacturing
- Guidance and assistance in selecting and vetting a new outsource or contract manufacturers
- Metrics programs to ensure continued success
- This is just a portion of what we offer to help you get the most from your manufacturing

## Summary

- Selecting and working with Contract Manufacturers can be challenging at times
- It is important that you maintain ownership of the relationship with your CM
- Alignment of goals with your CM is critical to success
- Issues must be identified and resolved as early as possible
- Disruptive Tech can assist you with establishing and maintaining a productive relationship with your CM

## Contact Information

- Contact Information

- Address: 1345 East Chandler Blvd.  
Number 111  
Phoenix, Arizona 85048

- Point of Contact: Darryl Nelson  
(480) 249-9562  
Darryl.Nelson@DisruptiveTech-Ltd.com

- Web Site: [www.DisruptiveTech-Ltd.com](http://www.DisruptiveTech-Ltd.com)