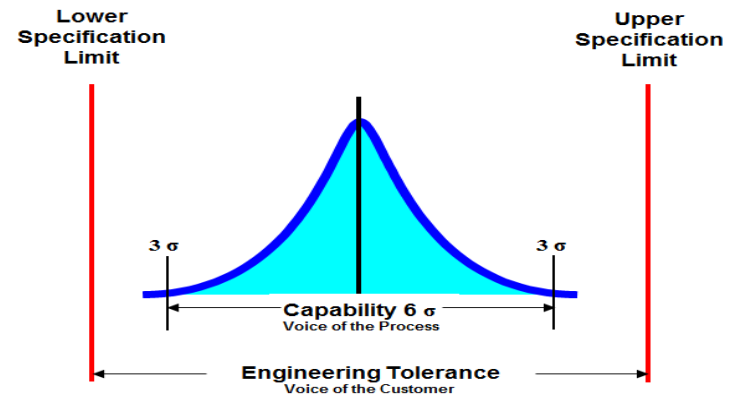
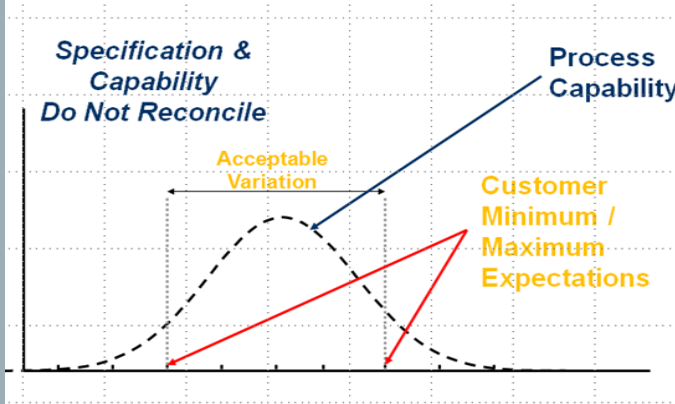


# INNOVATION MEETING THE MANUFACTURING PROCESS: IT CAN BE A DANGEROUS MIX!

## What Delights the Customer VOC=VOP



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## WHAT ITS REALLY ALL ABOUT

- Listening to the consumer and their needs/wants (VOC)
- Taking that information, getting facility and management buy in
- Designing the product (Design by X) and Critical to X
- Consumer trials and panels
- Product capability

# VOICE OF THE CUSTOMER

- Customers want **consistency** in their products and services. They want the product or service, they have come to depend upon, to be consistent and the quality and product attributes to be **predictable**.
- In today's world, every consumer is searching for the next biggest trend. Social media plays a heavy presence in how we introduce new product and has the ability to make a product "go viral" for better or for worse.
- The *consumer* wants a **consistent** product so they can depend on its quality, flavor and appearance to be the same each time they purchase it.

“The voice of the customer guides world-class leaders’ every action and decision” – Yu Sang Chang, George Labovitz, and Victor Rosansky

# SO HOW DO WE KNOW IF THEY LIKE IT?

- There are multiple ways to measure consumer satisfaction
  - Internal Customer Complaints (most direct method of satisfaction)
  - Social Media Presence
  - Consumer Panels
  - Surveys
  - Interviews
  - Observations
  - Company Reputation



- Ensure that the data being collected is quantifiable. Qualitative data is also useful but without any means of measurement, you're collecting information just to collect information

## NOW THAT WE HAVE THE INFORMATION, WHAT DO WE DO WITH IT?

- Because we know everything varies, those product attributes that are important to the consumer must be measured and that data statistically studied. With this information we can then **predict** what each process should act like when running that product.
- Statistical Process Control (SPC) and proper data analysis will be able to identify where the problem lies in the consumer good.
- Companies will tailor product using SPC as well as QFD (Quality Function Deployment) if a redesign is required

# QUALITY FUNCTION DEPLOYMENT



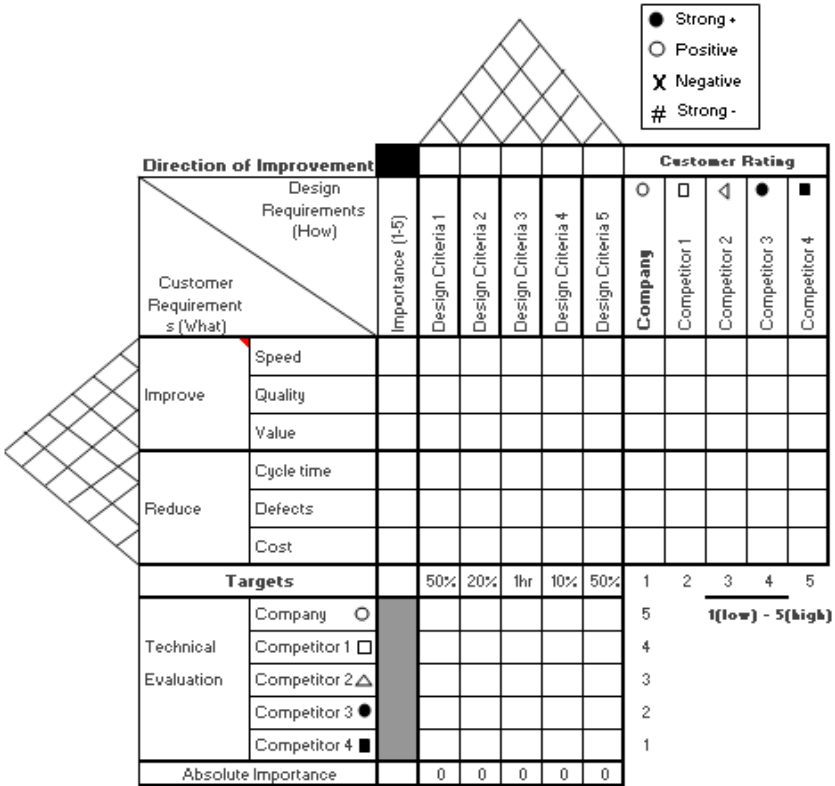
Also known as “House of Quality” due to its house-like diagram structure



Factors in customer needs which are translated to product characteristics and attributes



Takes several factors into a single figure and acts as a prioritization matrix for CTQs



# PROBLEMS ARE INEVITABLE

- All of us have experienced new product launches or transfers which have not been smooth for various reasons: raw material supply issues, equipment limitations, insufficient up-front notifications, lack of clarity on what is critical-to-quality (CTQ) to name a few.....
- Continue to think outside the box and ensure everyone is aligned with decision making. Management buy-in is key to successful projects
- Avoid scope creep and stay focused on the common goal
- QFD will help in identifying problems and variables to better the product or service when problems occur

# COMMERCIALIZATION PROCESS

Process Capability is a risk-based model that:

- Provides a simple statistical tool to help the Plants better understand the risks and the minimum number of Plant trials needed for complex new products or transferred products.
- Capturing the **voice of customer** and **critical to quality attributes**.
  - These attributes drive comprehensive and accessible **product specifications**.
  - **Verifying product quality** through test plans.
  - Tools and analytics to facilitate **root cause analysis** and **corrective actions**.



# PROCESS CAPABILITY

## **Challenges**

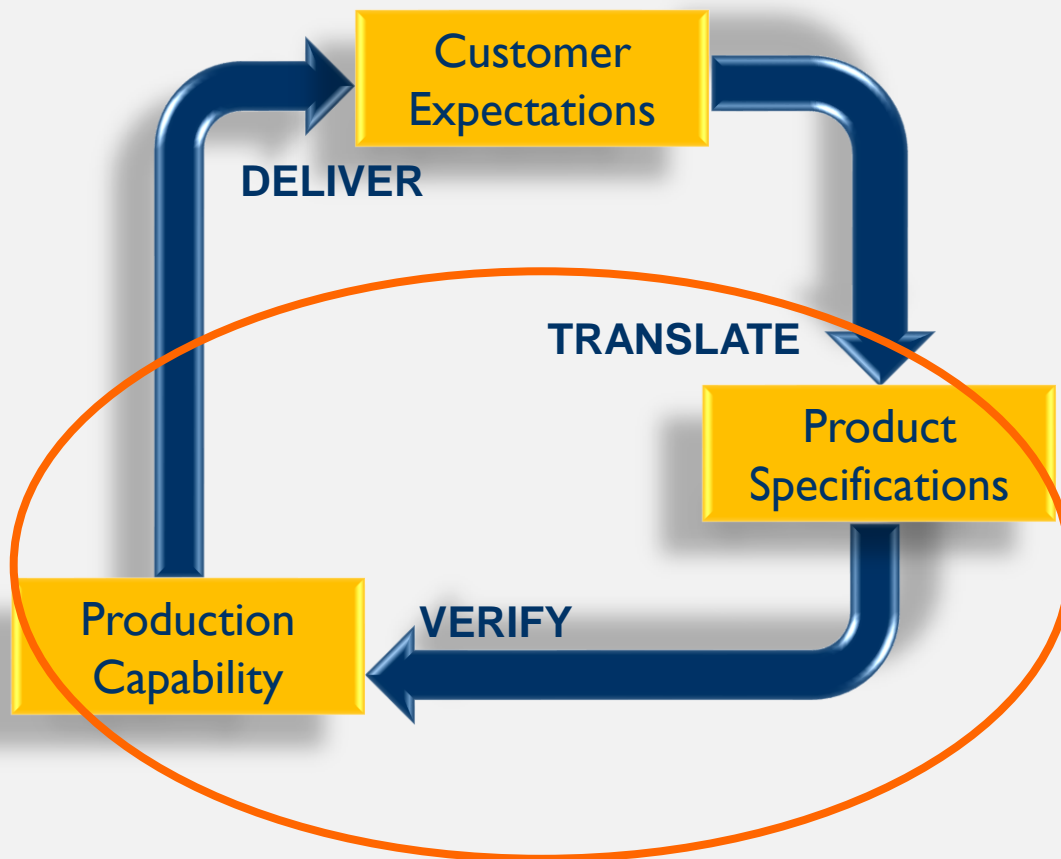
- Inconsistent defining of “Voice Of The Customer” (VOC) limits our ability to translate customer expectations to process and manufacturing “Critical to Quality” (CTQ) attributes that consistently deliver quality products to our customers.

## **Support “Innovation Meets The Manufacturing Process” by:**

- Improve customer satisfaction through product and process design that delivers the key critical to quality (CTQ) attributes desired by the customer (VOC).
- Improved consistency of delivery and conformance to specification.
- Deliver common Product Quality processes and tools that will:
  - Effectively capture and communicate the VOC
  - Provide real time data that supports Operations in achieving CTQ requirements
  - Drive continuous improvement through a reduction in product/process variation

# DESIGN IN QUALITY - COMMERCIALIZATION

***Translate > Verify > Deliver***

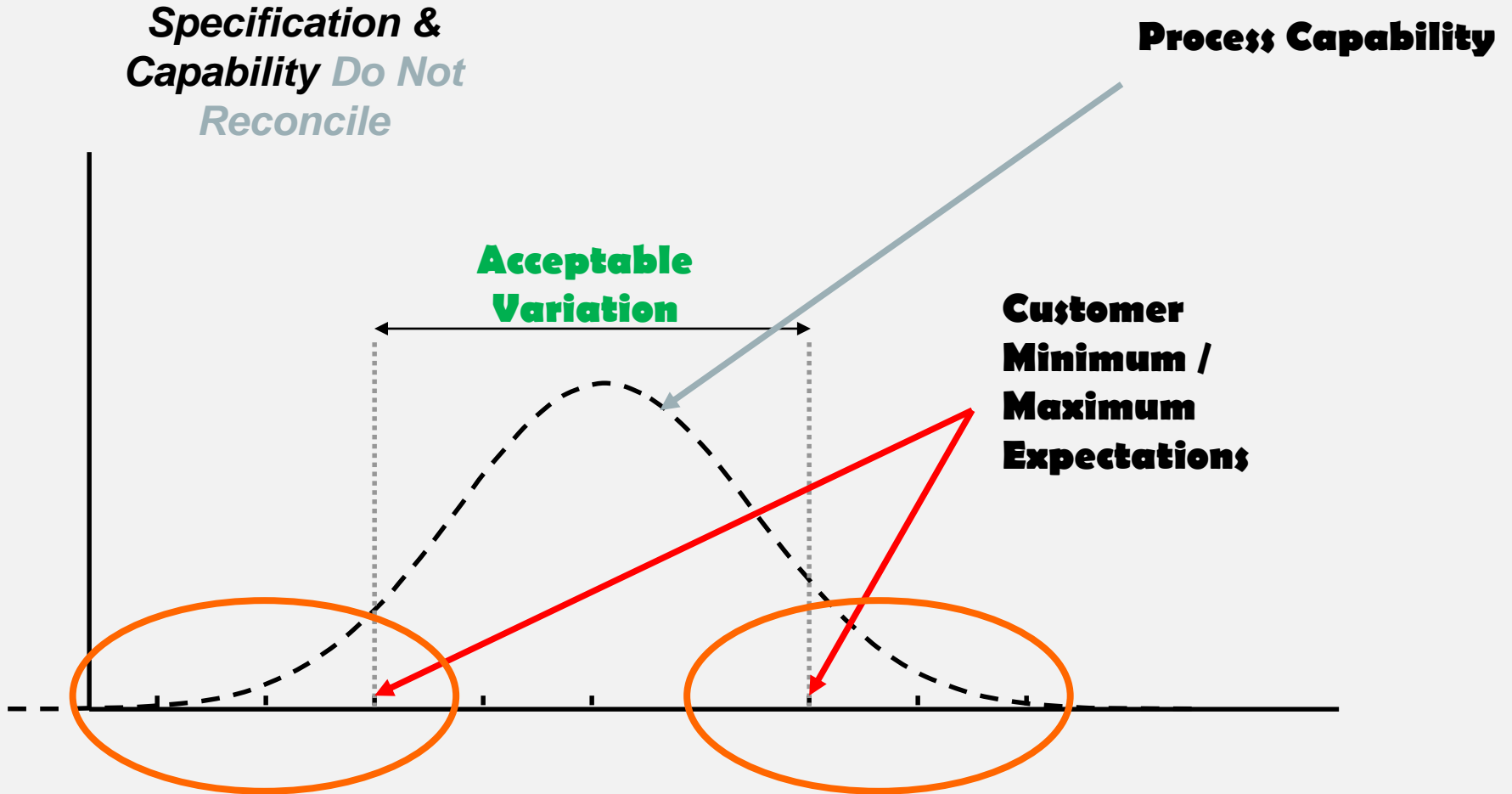


Typically products are designed and appear to fit the needs of the customer during the bench trials.

However, when it is time to run it at the manufacturing plant there can be some quality drift on the key attributes (Viscosity Target, Weight Target) that do not meet the customer's expectations as designed.

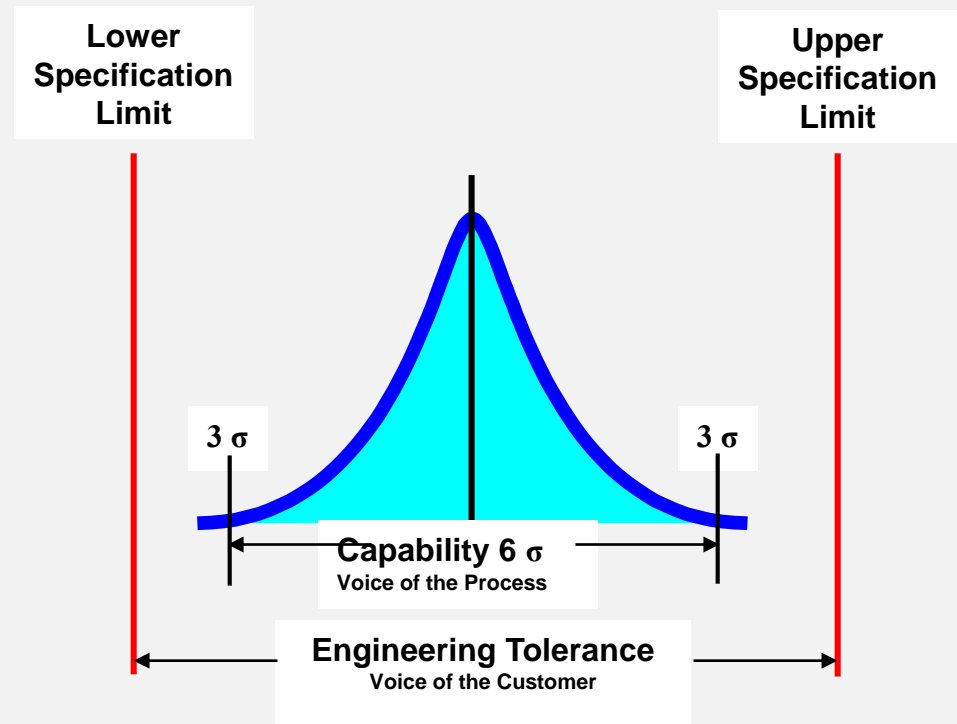
The goal is to use the objective tools and apply data driven decisions.

# CONSIDER A CUSTOMER EXPECTATION FOR LENGTH



# VOICE OF THE PROCESS/CUSTOMER

**Control limits** are determined by the capability of the process, whereas **specification limits** are determined by the customer's needs.



# CONTROL LIMITS VS SPECIFICATION LIMITS – CUSTOMER NEEDS

Specification Limits directly involve the voice of the customer. These are the characteristics that you tailor your product or service to.

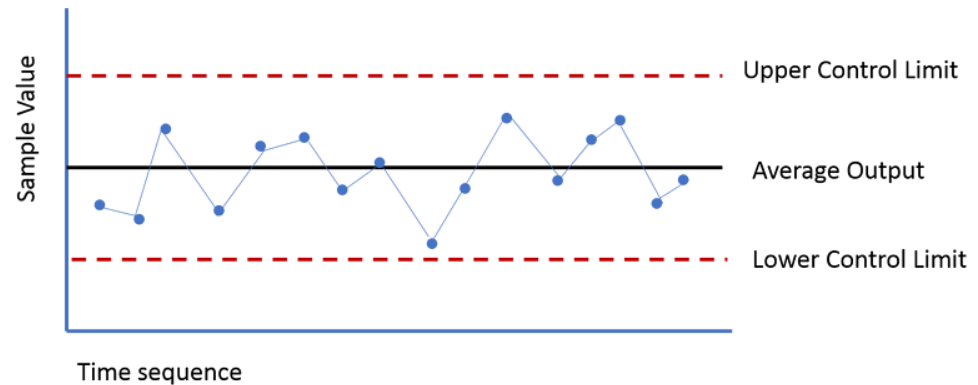
Control Limits go hand in hand with them setting acceptable deviations from your target spec. This will be the minimum and maximum allowable variance for characteristic specification limits.

Control limits will translate directly to the shop floor for production

“Effective SPC is 10% statistics and 90% management action” –John Hradesky

# CONTROL IN THE PROCESS

- Product or process control is key for continual success
- Eliminate any kind of variation in the process
- Continue to collect data on the process, using control charts this will help maintain low variation and keep consistency within the product or process



## STABILITY AND CUSTOMERS

- Customers want **consistency** in their products and services. They want the product or service, they have come to depend upon, to be consistent and the quality and product attributes to be **predictable**.
- The *consumer* wants a **consistent** product so they can depend on its quality, flavor and appearance to be the same each time they purchase it.

# CUSTOMER RETENTION

Using VOC continuously to adapt product or service to meet expectations

Use modern technology and advancements to understand how to tailor product or service





# NEXT STEPS

- Now that we have a product or a service in place, we need to think how we can keep customer interested.
- Watch for customer trends in complaints or reviews
- Use Benchmarking to keep an eye out for competitor trends and what is working best in the market.
- **Most importantly, do not remain complacent and keep pushing for continuous improvement.**



# SUMMARY: THE BENEFITS OF PROCESS CAPABILITY

- Delivers the key attributes desired by the customer (VOC) and improved consistency of delivery and conformance to specification.
- Provide real time data that supports Operations in achieving CTQ requirements.
- Drive continuous improvement through a reduction in product and process variation.
- Predictable results...The more precise and predictable we can be then the more accurate we will be with our accounting and inventory.
  - Ability to increase productivity while keeping costs down

QUESTIONS?

## What Delights the Customer VOC=VOP

