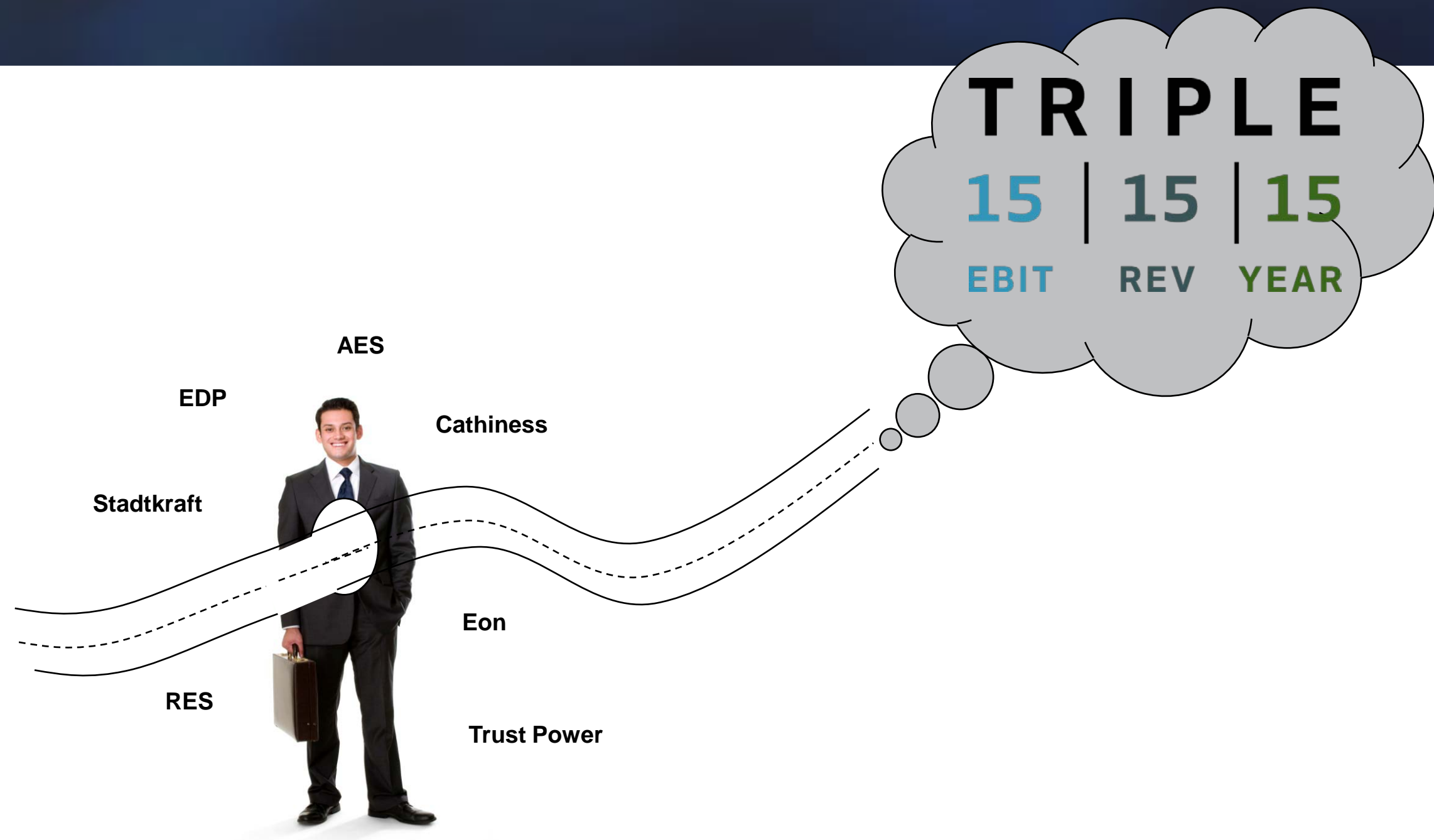


Bob Fritz  
SVP VWS Quality

# The Customer & Triple15

# The road to Triple15 goes through the Customer



Vestas can either:

**Compete  
on Price**

**or**

**Differentiate  
on Value**

Vestas can either:

**Com  
on P**

**Price wars are "desperation"  
strategy. Who wins ?**

**We choose the Price we will Sell at !**

**The owner chooses the Value they  
will Buy at !**

**entiate  
Value**

**The smart  
guys know  
the RIGHT  
answer !!!**

# Discussion about the Owner (s)



- **Most wind generation projects are financed on a non-recourse, off balance sheet basis.**
- **60%-70% of the project cost is financed.**
- **Financiers have altered their risk acceptance levels... Recent global issues...**
  - *Greater focus on revenue/cost variables..*
    - *Higher acceptable wind probabilities*
    - *More "in depth" query on machine/ component capability*
    - *More sensitivity to "new technology"*

# How does the Owner(s) make the decision???



## **BUSINESS CASE CERTAINTY.....**

- Confidence in, or high probability of the Investment producing the expected financial returns...
  - Primary variables
    - Revenue predictability
    - Cost predictability

## **COST OF ENERGY.....**

- The PV total cost of the kWhr produced over the financial life of the Investment.
  - Primary variables
    - Price (cost)
    - Performance to specification

# How does the Owner(s) make the decision???

AKA; the voice of the customer



## BUSINESS CASE CERTAINTY.....

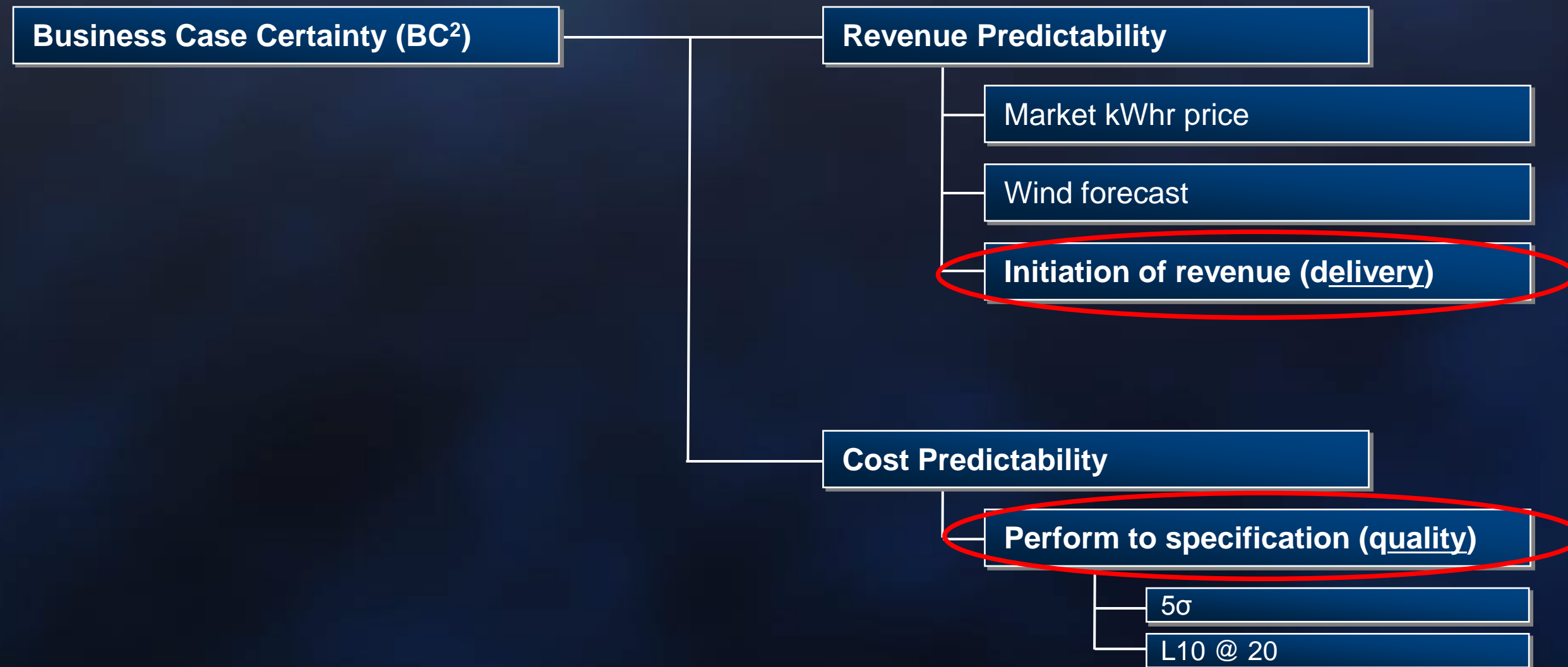
- Confidence in, or high probability of the investment  
Expected financial returns...
  - Primary variables
    - Revenue predictability
    - Cost predictability

The turbine represents about 70% of the initial project cost and almost 100% of the Business Case Certainty, depends on its performance.

## COST OF ENERGY.....

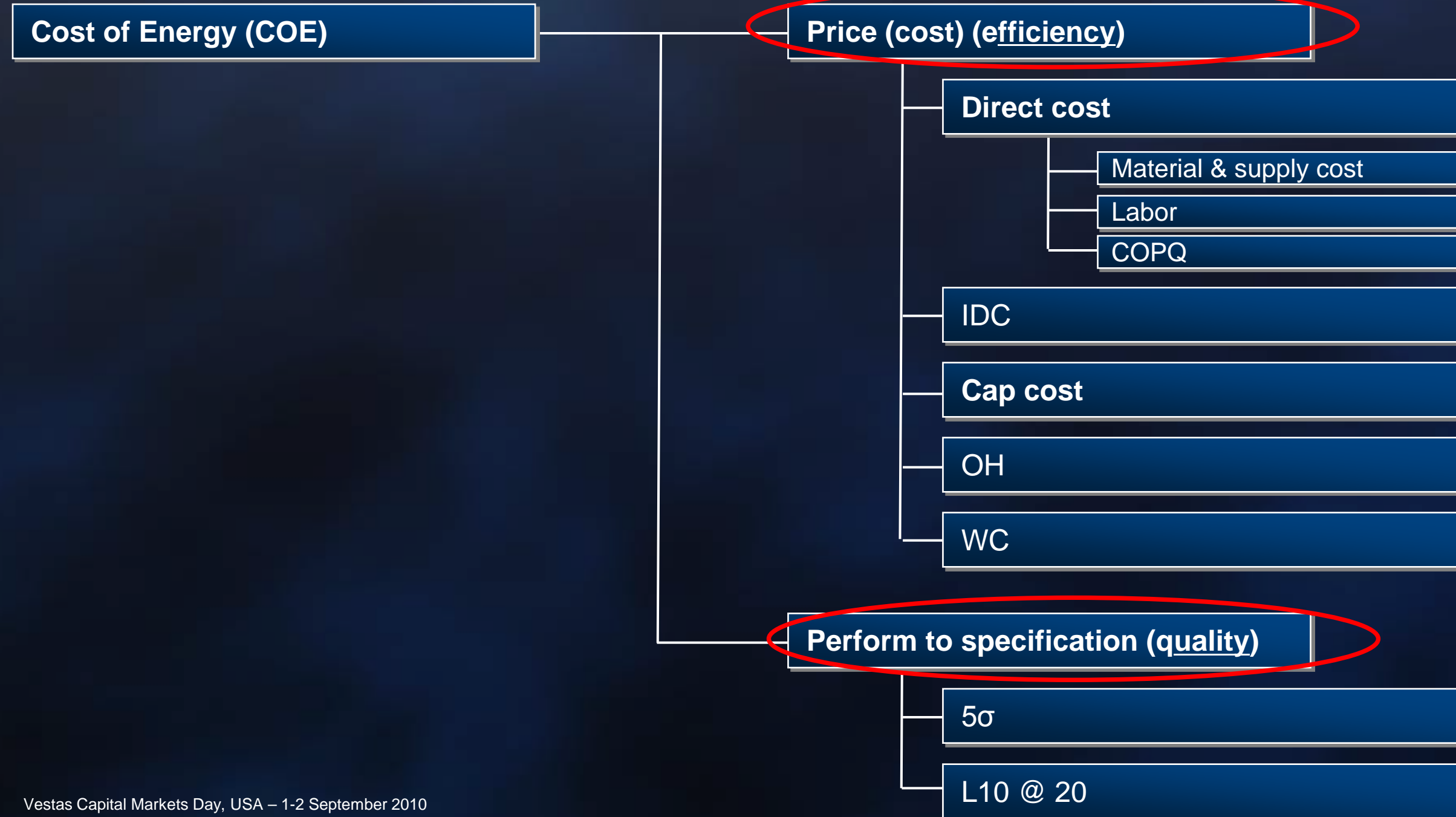
- The PV total cost of the kWhr produced over the financial life of the Investment.
  - Primary variables
    - Price (cost)
    - Performance to specification

# Expectations controlled / Influenced by suppliers





# Expectations controlled / Influenced by supplier



# Expectations controlled / Influenced by supplier



# Expectations controlled / Influenced by supplier

**Perform to specification (quality)**

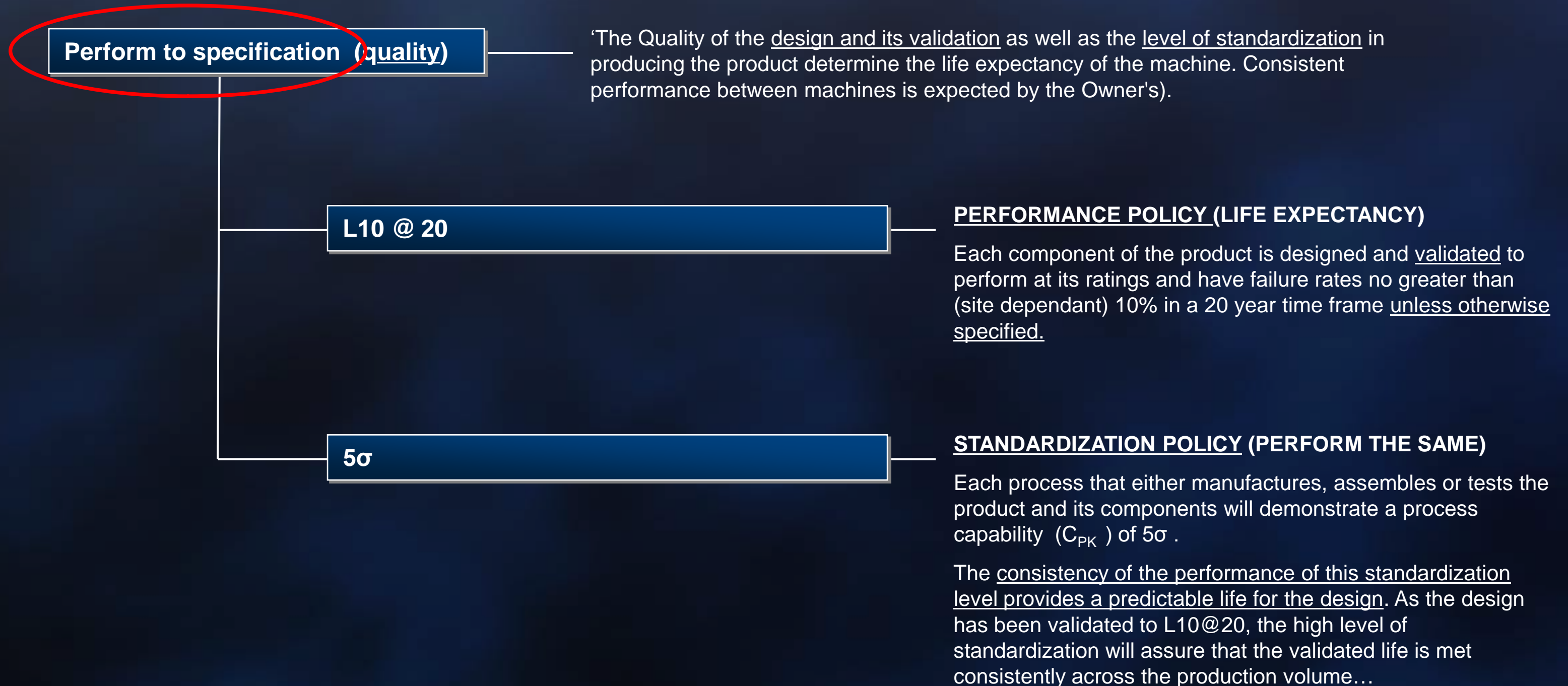
'The Quality of the design and its validation as well as the level of standardization in producing the product determine the life expectancy of the machine. Consistent performance between machines is expected by the Owner's).

## REMEMBER:

Owner (s) making an investment

- Expects a Return on the Investment
- The size and the confidence of the return determines If & What they will invest in !
- The Size of the return is COE (cost of energy)
- The Confidence of the return is the predictability of the performance (life expectancy)

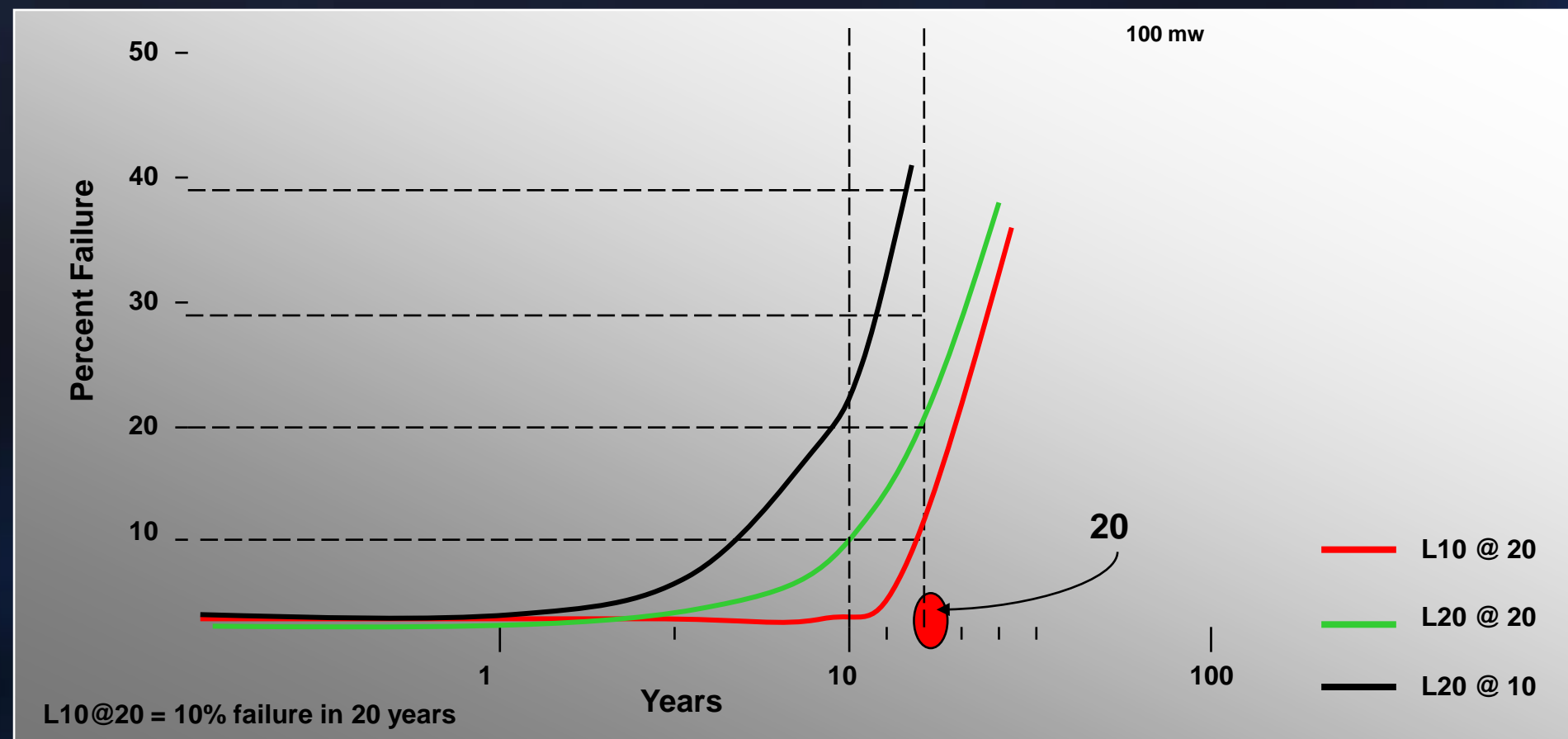
# Expectations controlled / Influenced by supplier



# L10 @ 20

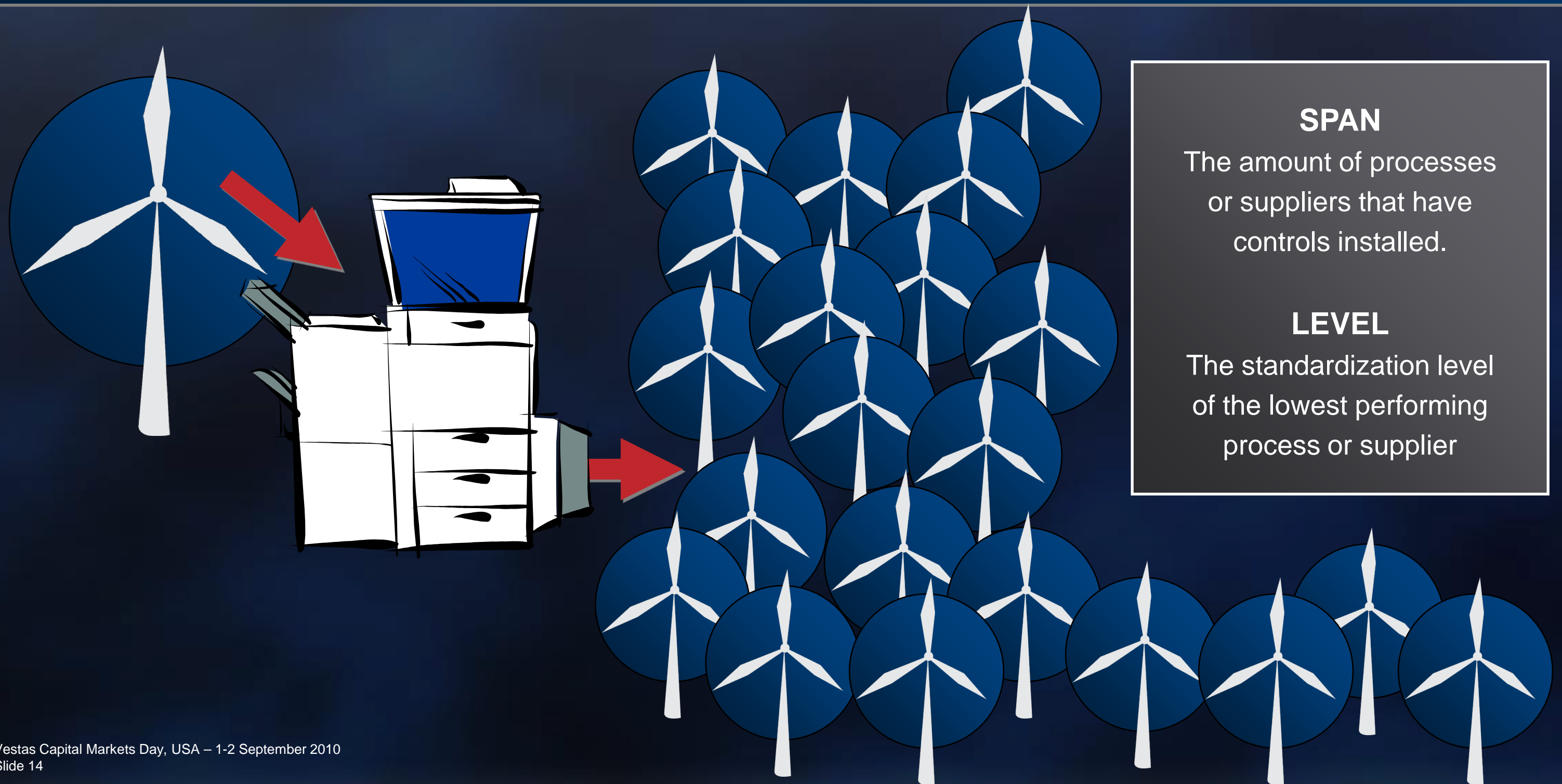
L 20 @ 20 has 18- 30 M€ greater cost than L10 @ 20

L 20 @ 10 has 40- 61M€ greater cost than L10 @ 20

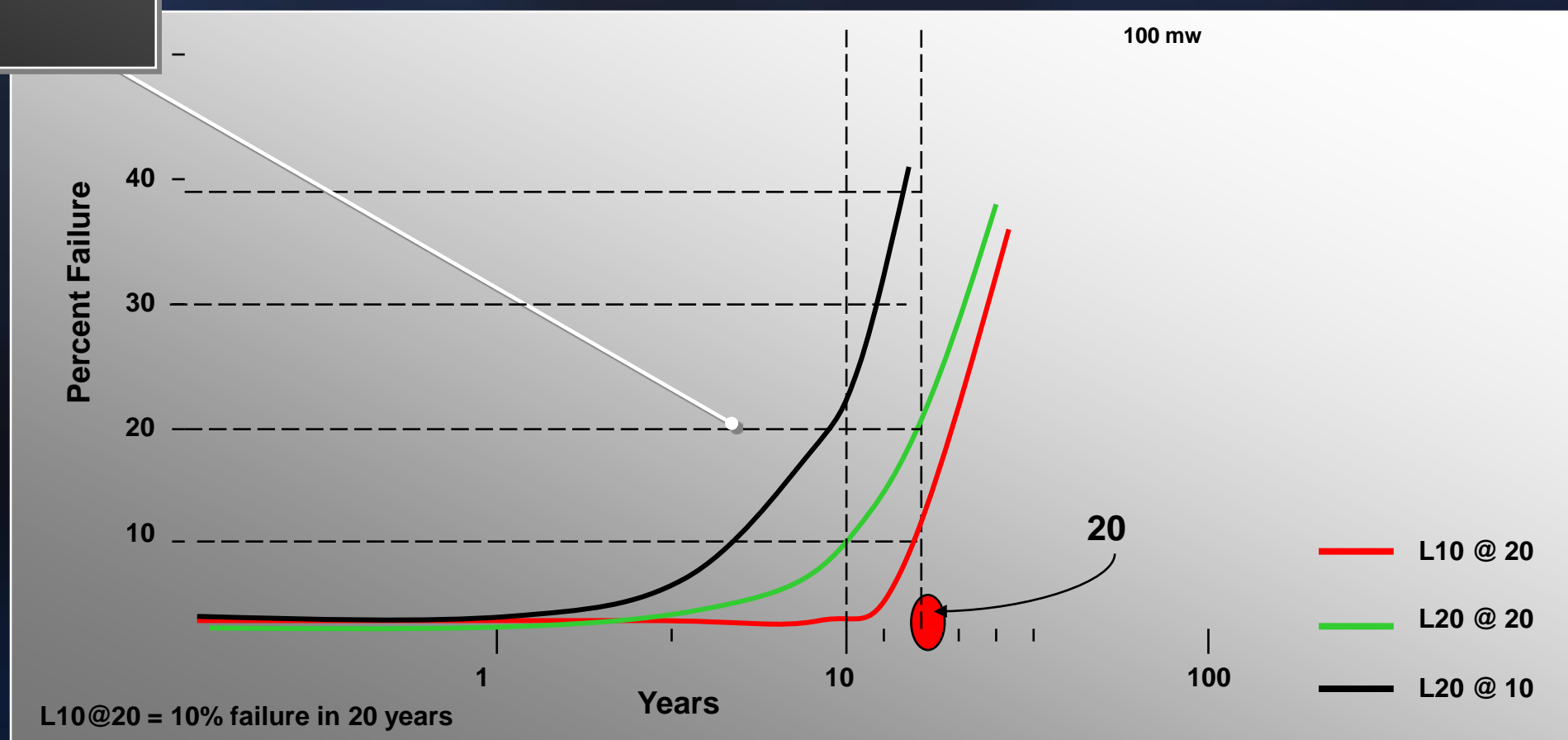


# 5 $\sigma$ standardization

Degree of standardization control



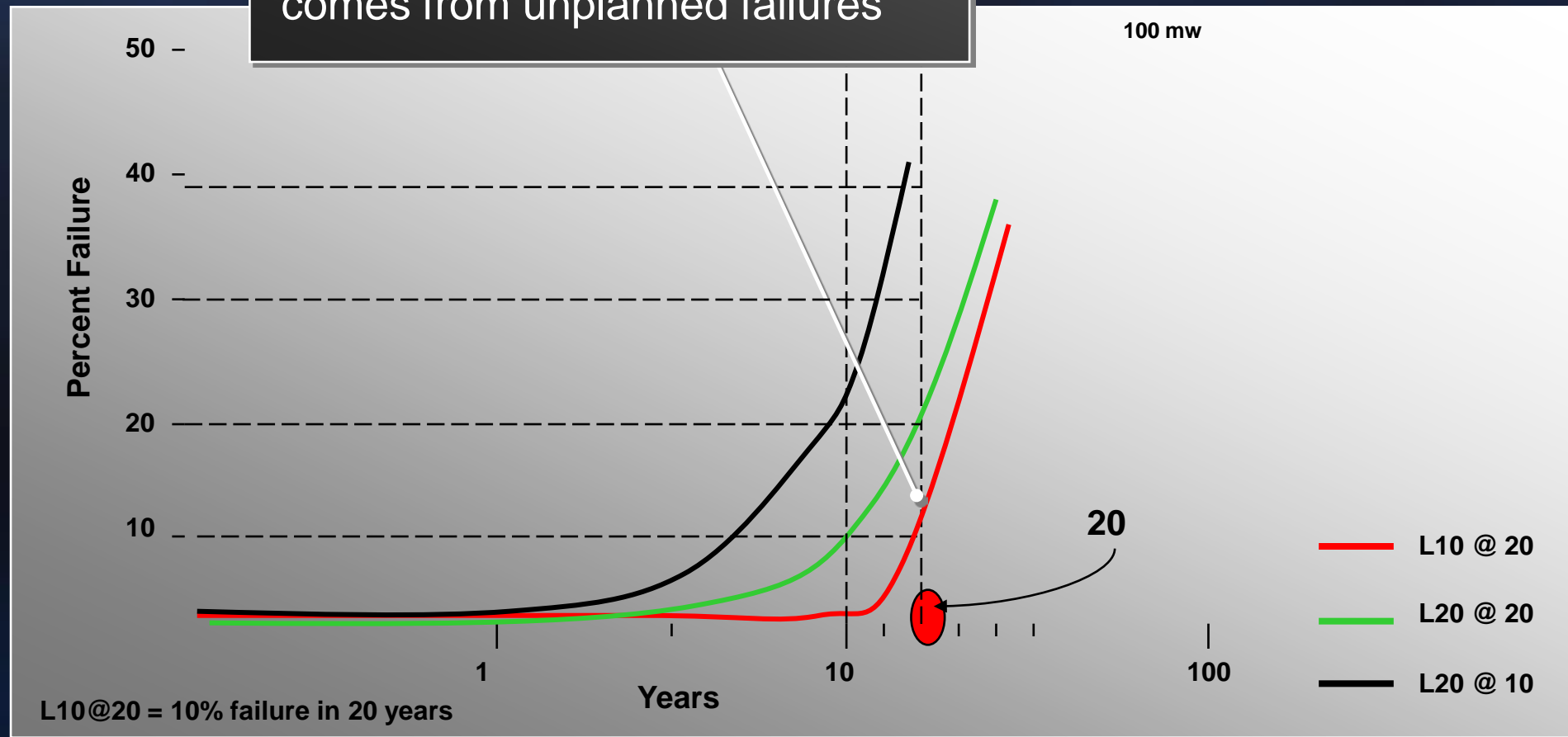
The actual performance achieved is a combination of both design & production control



Given a validated Design, "early" Unplanned failures become the result of manufacturing variation (the absence of "control")

**REMEMBER:**

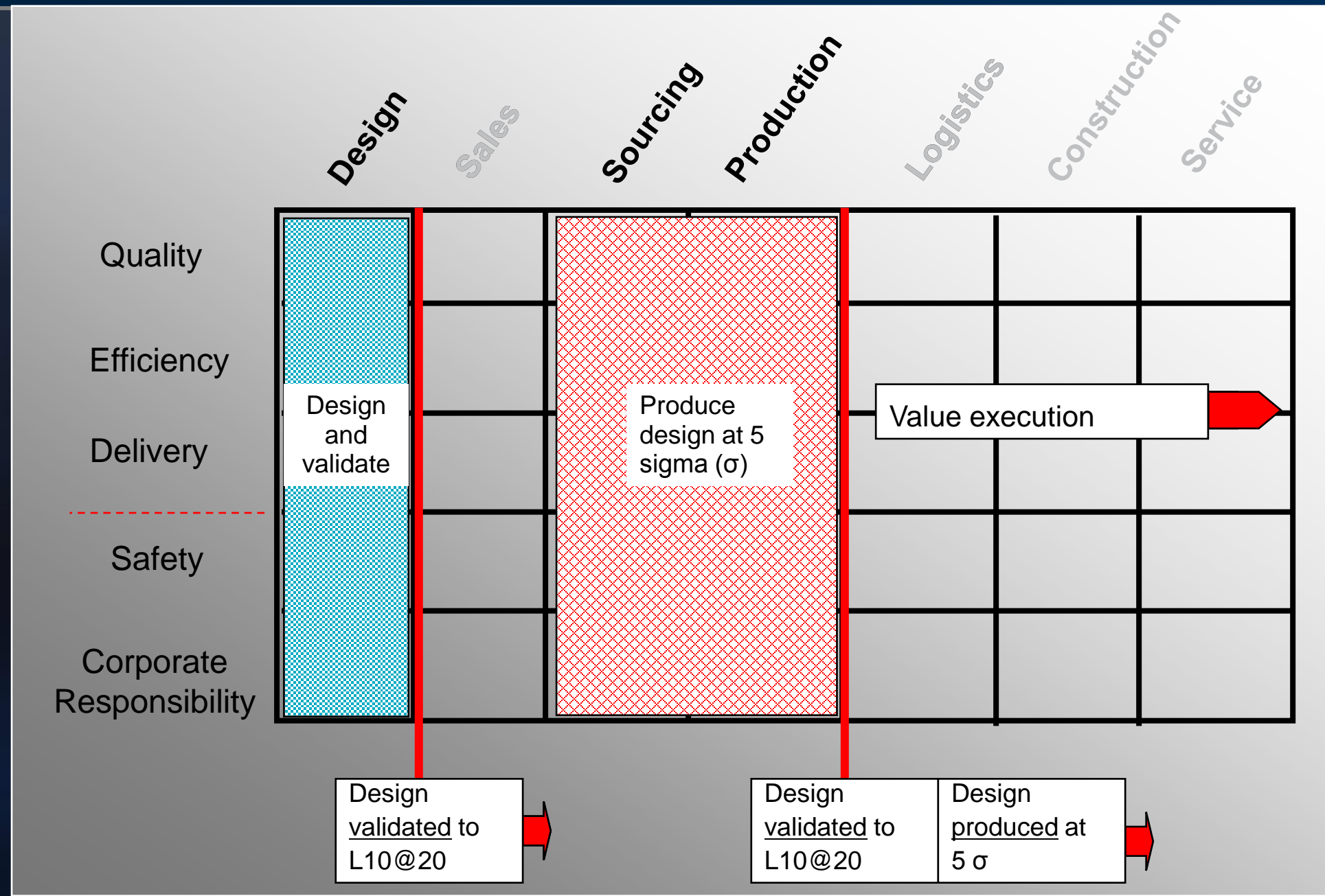
Owners cost forecast is "flat" until late years. Only variation comes from unplanned failures



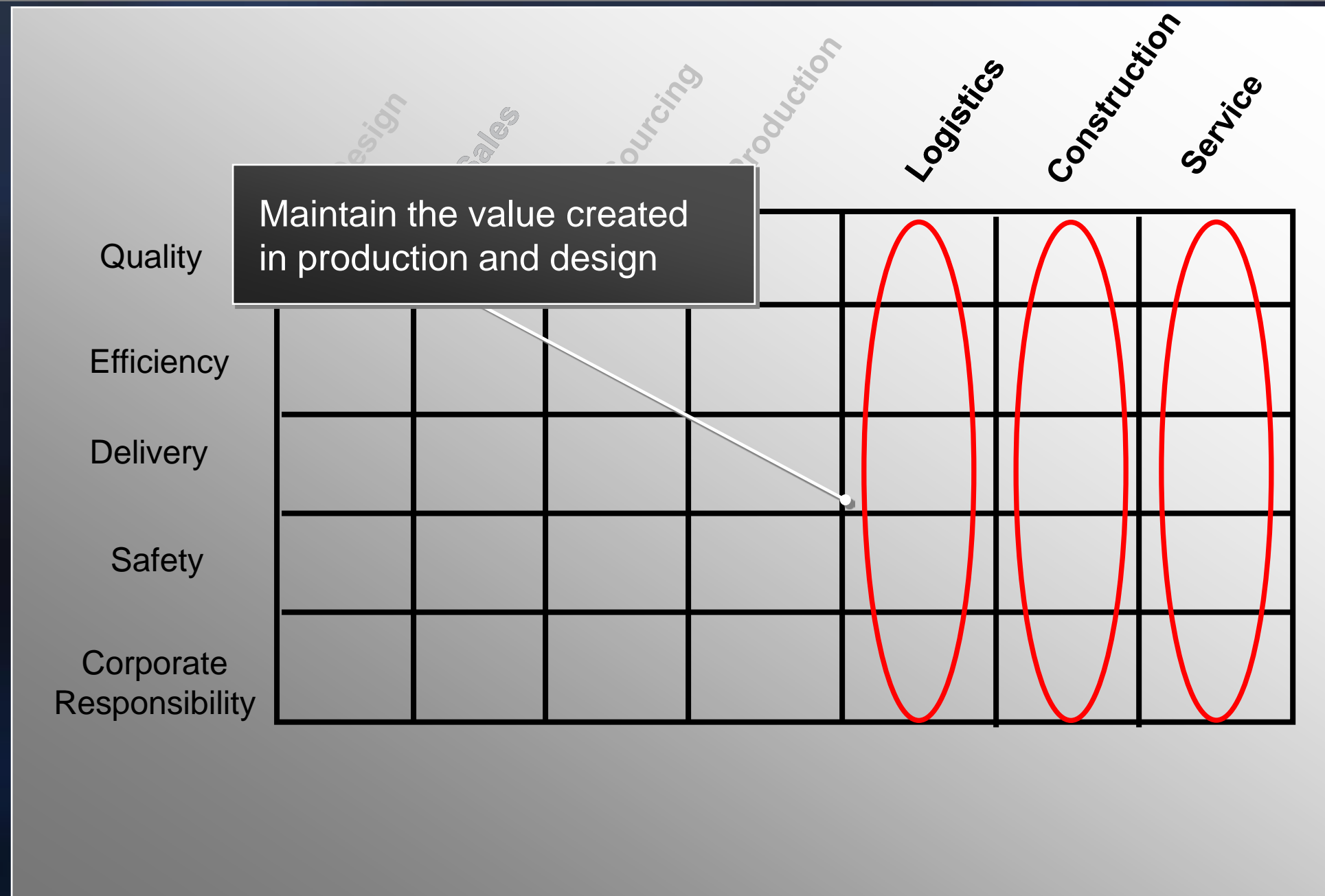
Given a validated design, "early" unplanned failures become the result of manufacturing variation (the absence of "control")



# Excellence matrix



# Excellence matrix – The "How"!



Grandfather told me that:

“When it comes to Quality,  
a little Paranoia never  
hurt anybody”

**TODAY’S INTERPRETATION:**

If you can’t find a process or performance  
to improve..... Look Harder !

## Victim Phobia

### POWERFUL

8. Get on with it!
7. Find solutions
6. "Own it"
5. Acknowledge reality

Organizations with Control of Quality demonstrate characteristics ABOVE THE LINE

### POWERLESS

4. Wait and hope
3. "I can't" excuses
2. Blame others
1. Unaware

## Unconscious

# How do I Qualify as "with control"....

## IN SHORT

We must embrace Quality as a prime characteristic of your product.

We must have the determination to establish, control, improve the control AND sustain the improved control of the product production... and its performance.

This is a leadership issue....  
The leaders must decide whether Quality is a part of their brand characteristic...

# Q & A