

# Lecture #7

**Prof. John W. Sutherland**

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# **Point 10: "Eliminate slogans, exhortations, and targets for the workforce that ask for zero defects and new levels of productivity"**

- **Fundamental problem - words of management don't match their actions**
- **Remember the Bill Conway example - motivation not enough**
- **Zero defects - not consistent with never-ending improvement concept**

# **Point 11: "Eliminate work standards on the factory floor"**

- **Work standard - sets rate at which people should work. Penalties for not meeting the standard**
- **According to Deming - work standards set a cap on productivity - they are not consistent with philosophy of never-ending improvement**
- **Straight-scale grading system**

# **Point 12: "Remove the barriers that rob employees at all levels in the company of their right to pride of workmanship"**

- **Need to look at more than just productivity**
- **How do we judge performance?**
- **Dependent on management "leadership"**

# **Point 13: "Institute a vigorous program of education and self-improvement"**

- **Previous point: job-related training important**
- **Employees are assets not commodities!**
- **Invest in the future**

# **Point 14: "Put everybody in the organization to work to accomplish the transformation"**

- **Management must lead the transformation**
- **Get everyone involved**
- **All organizational systems must be critically examined**

# Traditional Definitions of Quality

- **Fitness for use**
- **Degree to which a product satisfies wants of the customer**
- **Conformance to engineering specifications**
- **Characteristics that distinguish one item from another**
- **Meeting customer expectations at a cost that represents customer value**

# Problems with Traditional Definitions

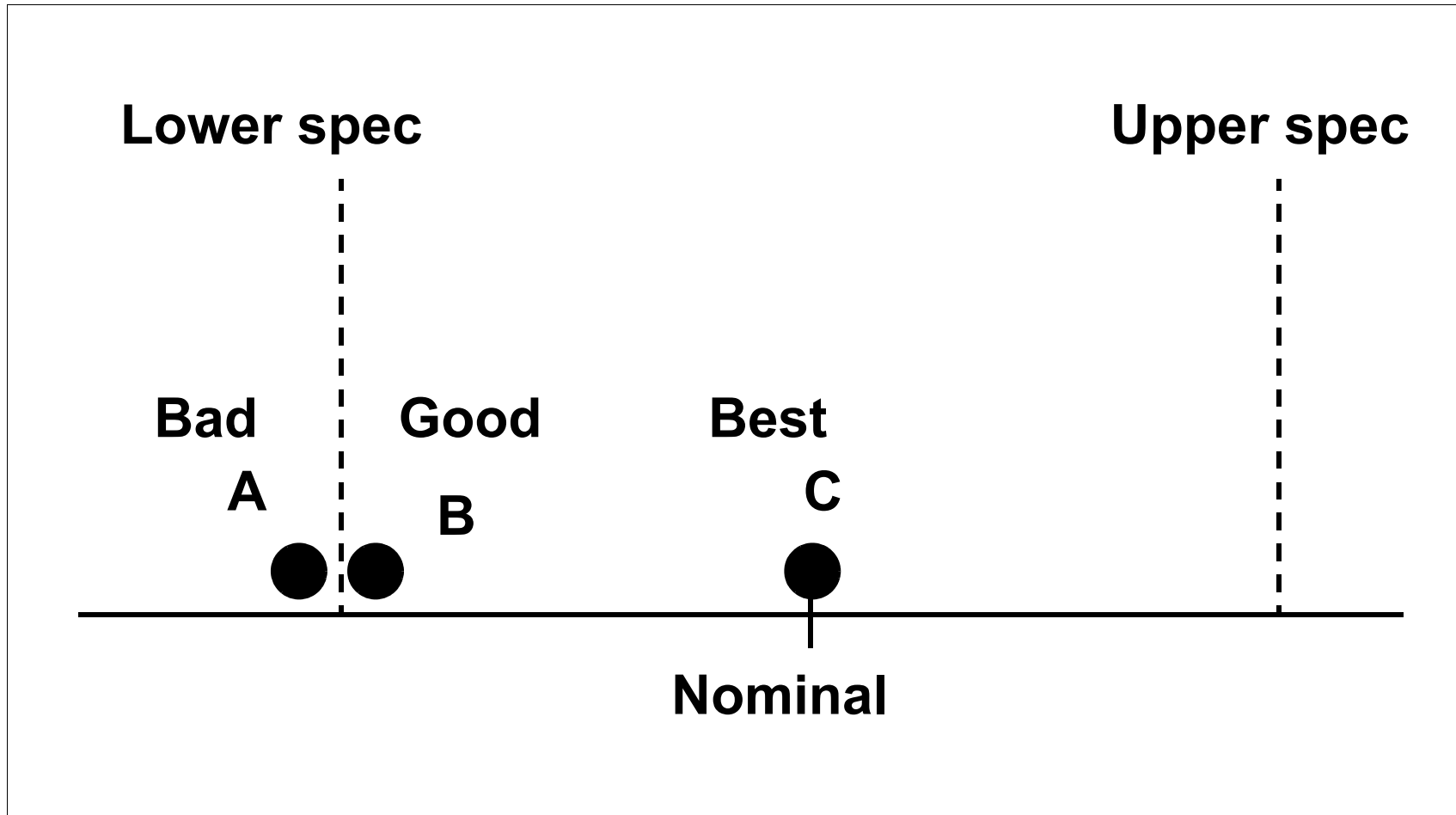
- They are attribute-based or qualitative in nature
- They are manufacturing rather than design based
- They do not establish the link between customer expectations and product function



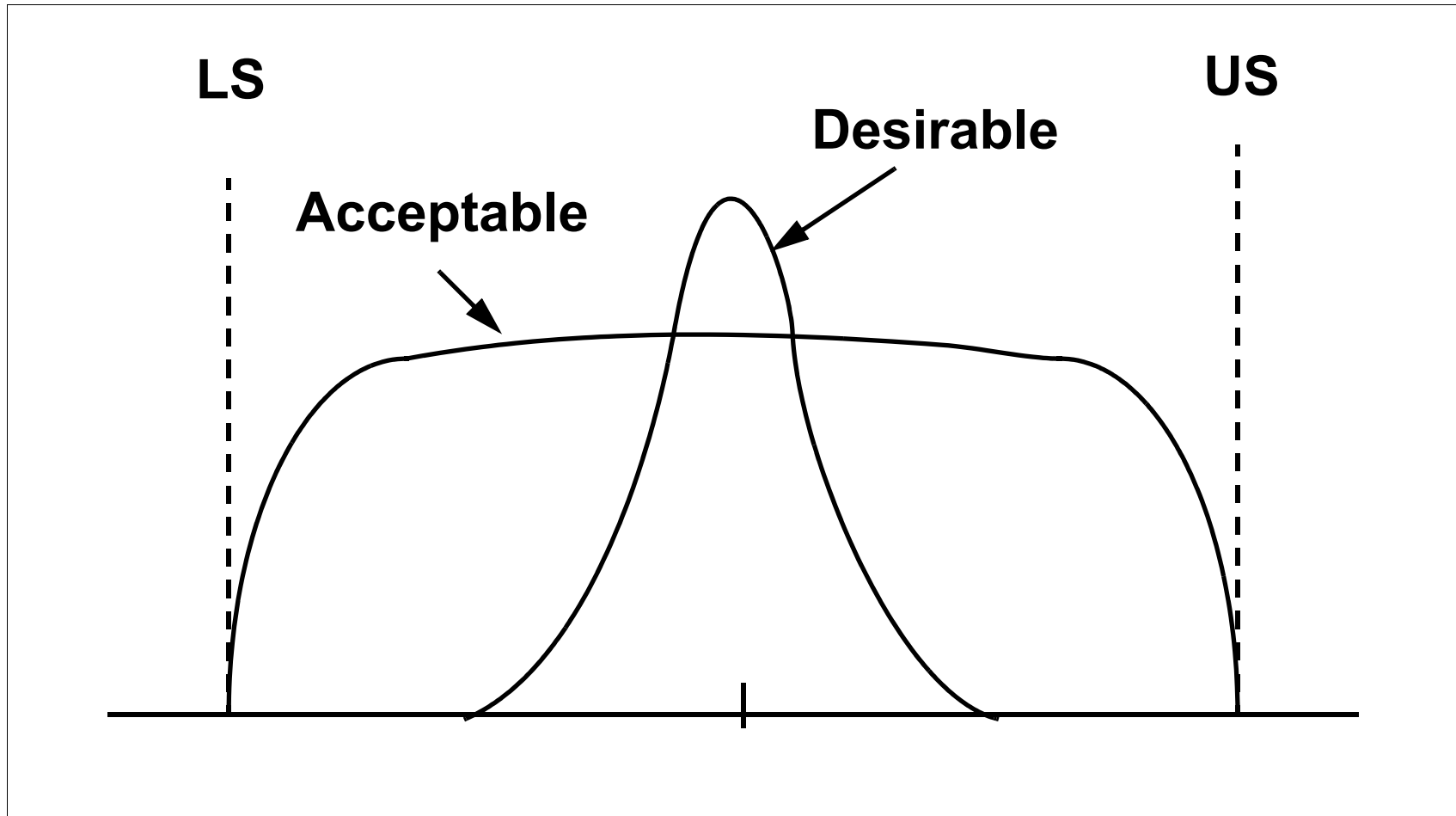
# Our Definition of Quality Should...

- **Provide a quantitative basis to move the quality issue upstream to engineering design**
- **Promote focus on the process - not the product**
- **Be tied to productivity and therefore promote continual pursuit of never-ending improvement**
- **Quantify loss to customer as a result of poor quality rather than loss imparted to the producer - consumer versus producer focus**

# Quality - Engineering Specifications

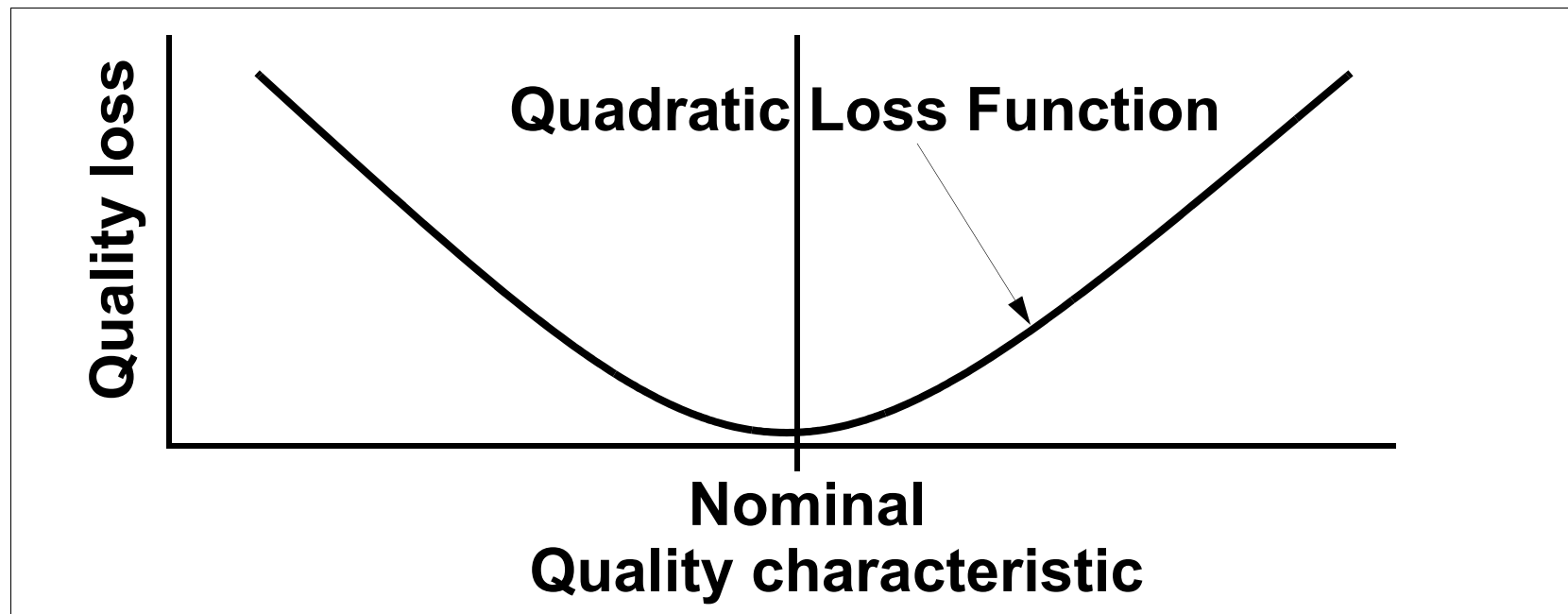


# More on Quality & Engr. Specs.

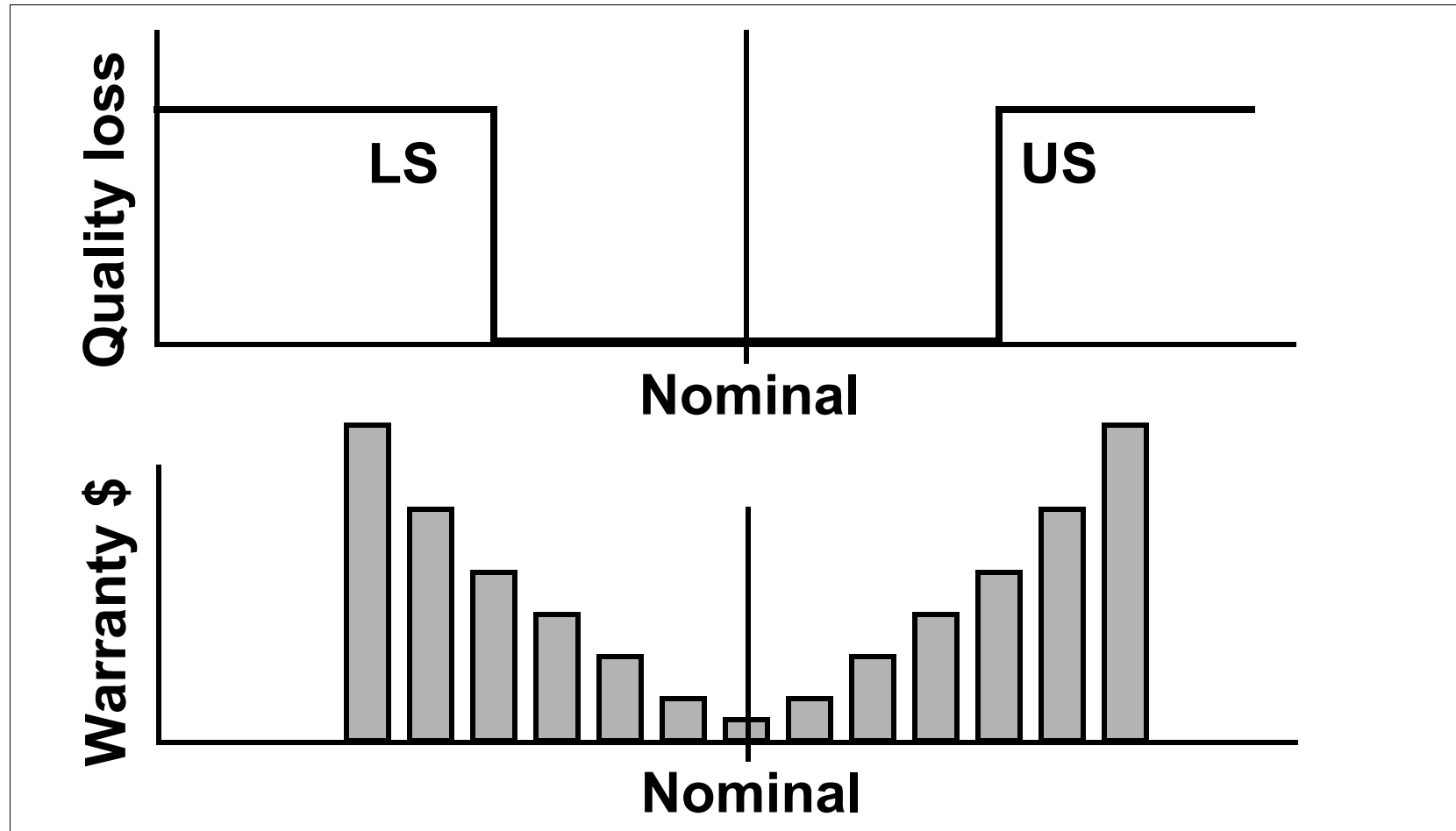


# Taguchi's Loss Function

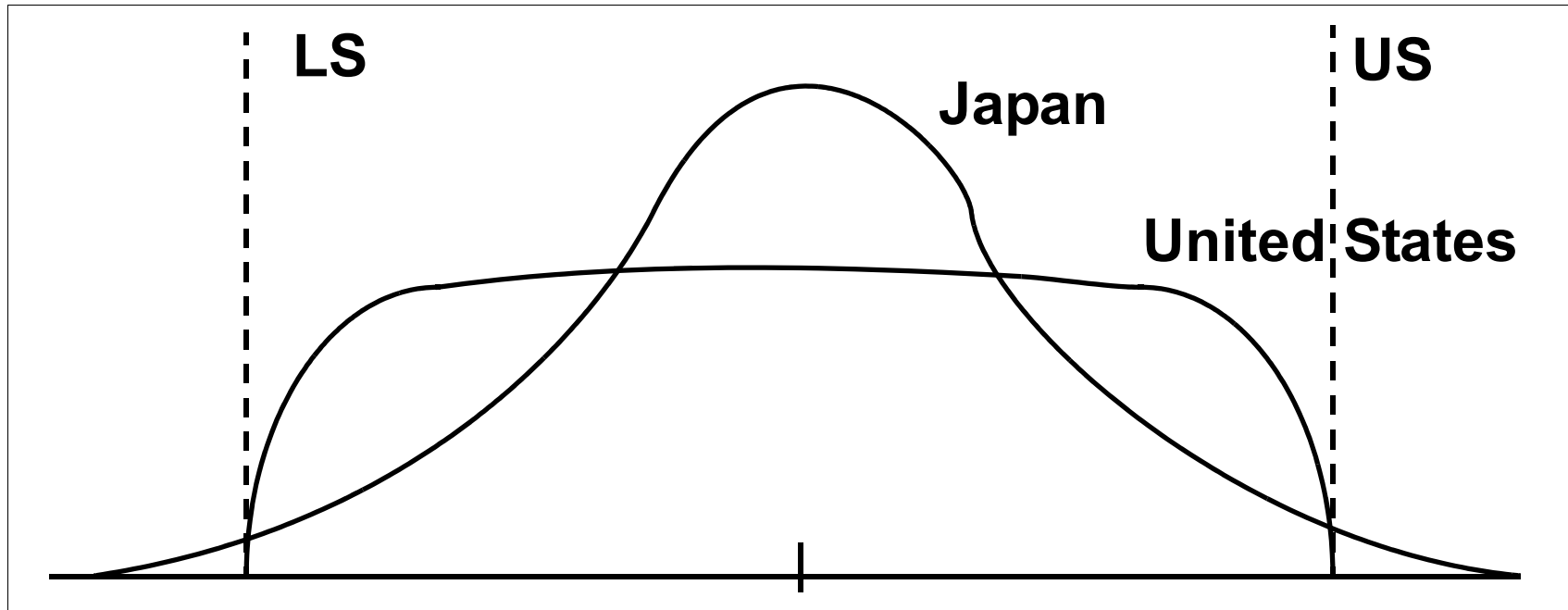
**Quality Loss** - "Loss imparted to society during product use as a result of functional variation and harmful effects."



# Justifying the Loss Function Form

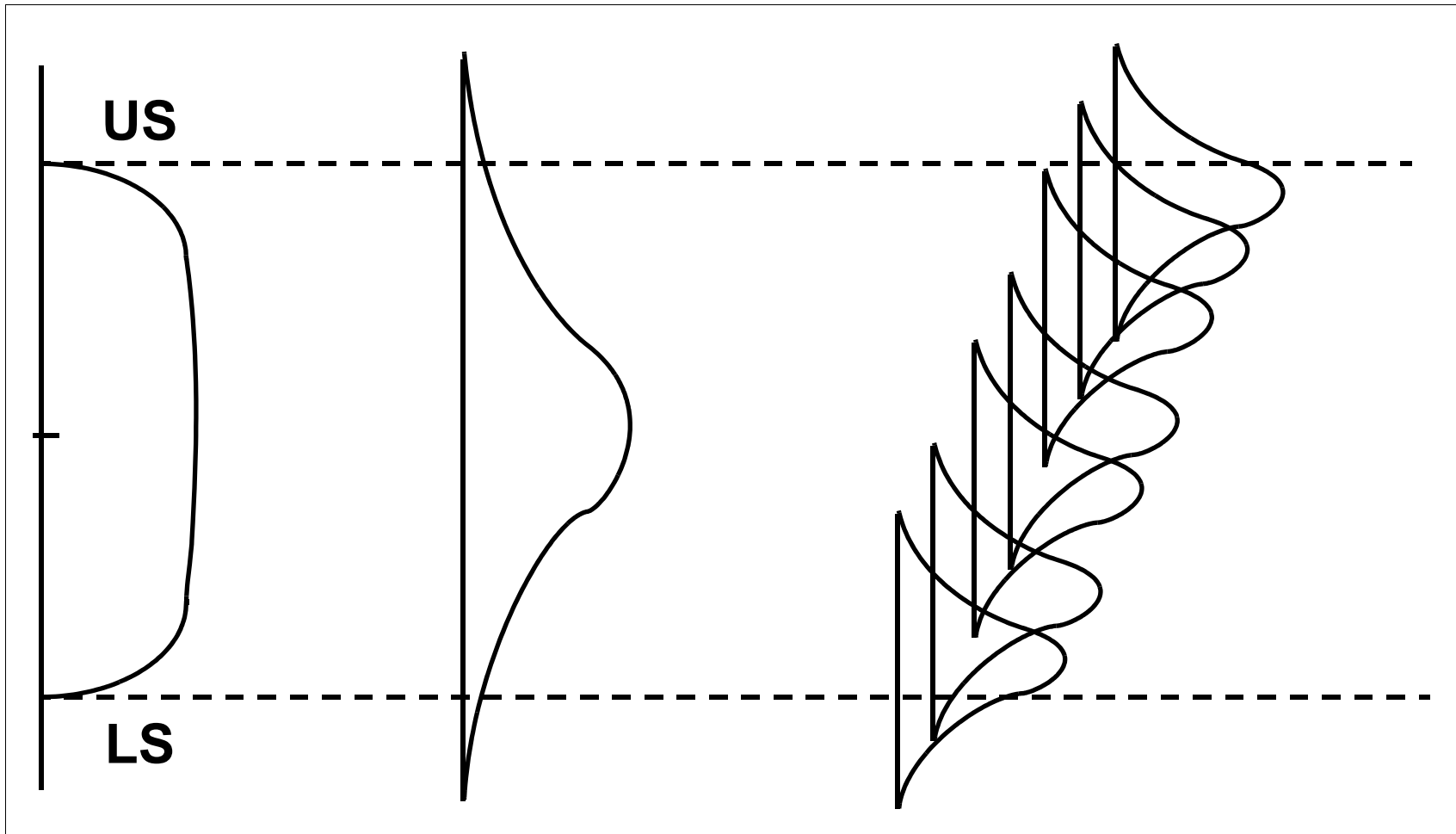


# TV Set Example

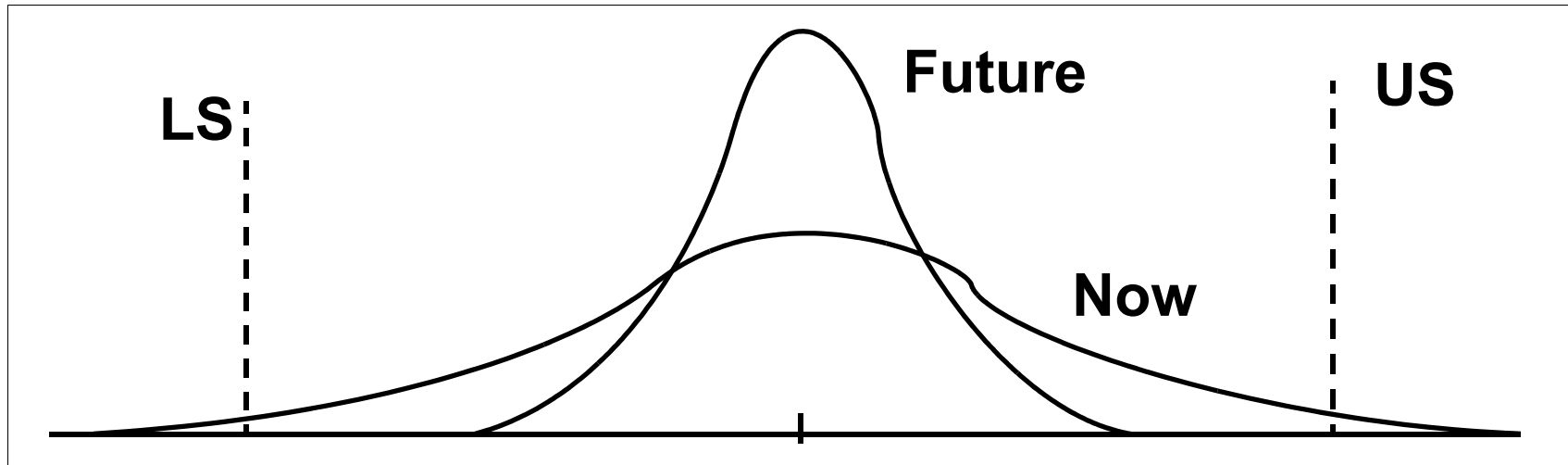


- Japan vs. United States -- which is better?? Loss fcn.
- Why the loaf-shaped distribution??

# Causes for Loaf Shape



# The Future



- What motivates us to reduce the variation? What about the costs?
- With process control - eliminate faults - variation and costs reduced - focus on cost of not having quality