



**Best Practices for Target Costing & Should Costing**

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BS Electrical Engineering  
BA Economics  
ME Systems Engineering



The University of Chicago Booth School of Business

MBA Finance & Economics



A Tektronix Company

Applications Engineering  
Product Marketing  
Ex-pat in UK



Started in 2004

Positions in:

- Operations
- Project Management
- Supply Management

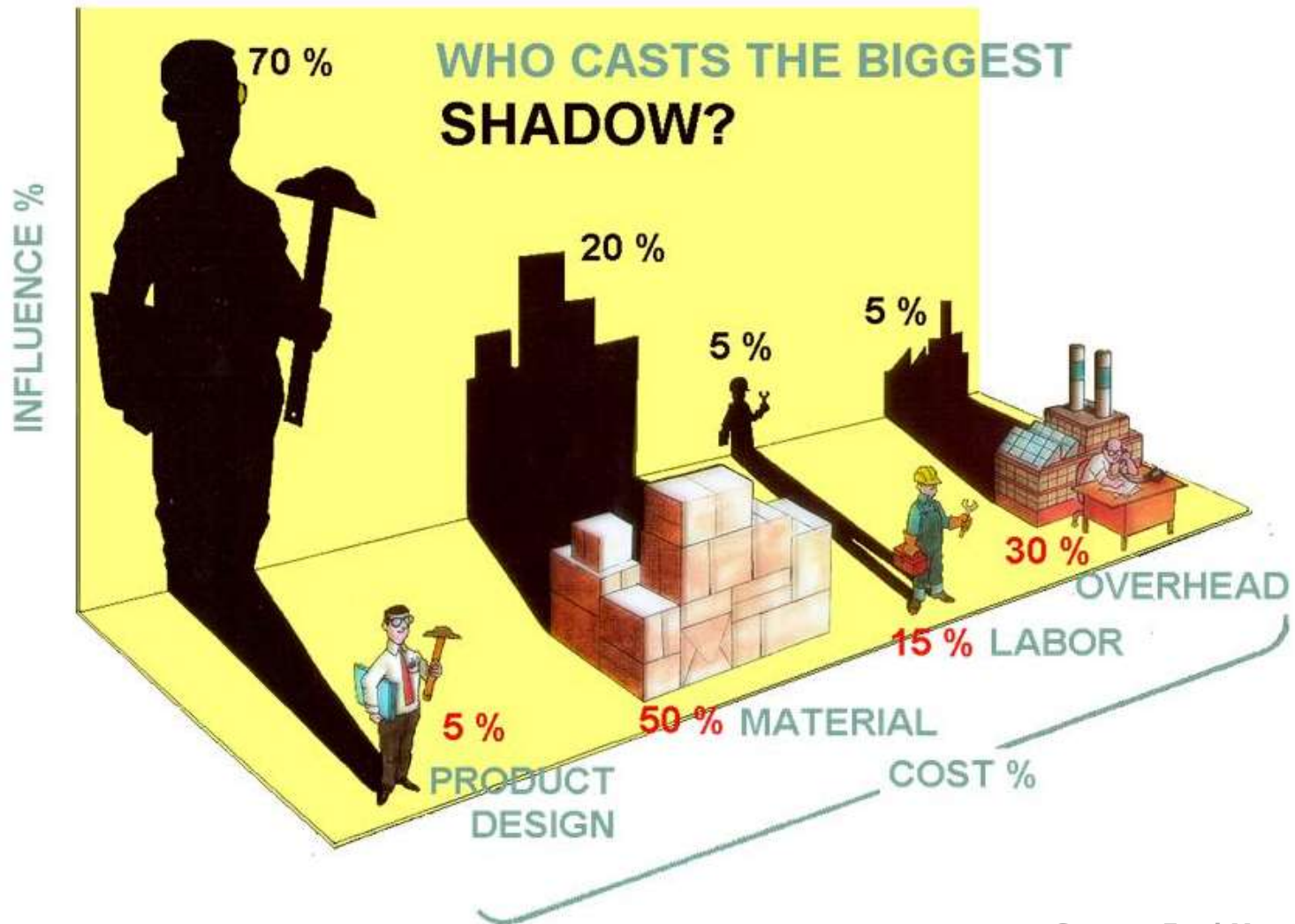
Current role since 2014

Ex-pat in Germany

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**How do you know you're paying a fair price?**

# Designing for Cost

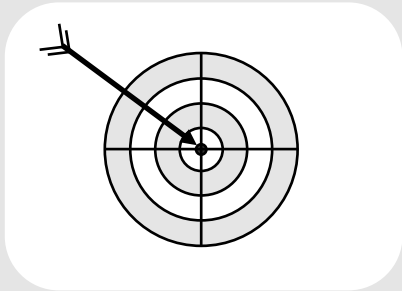


Source: Ford Motor Company

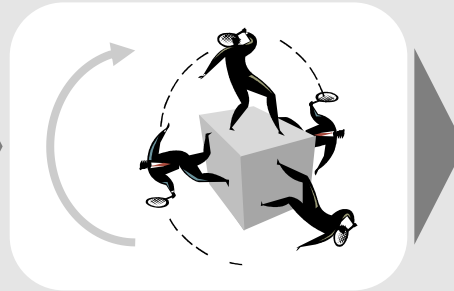
# Total Cost Management During New Product Development

Early in the Development Process, integrate ...

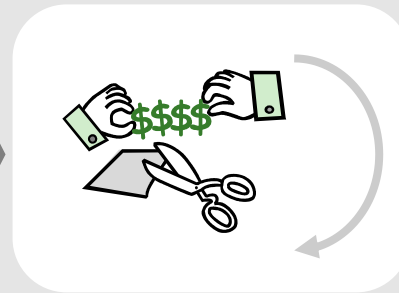
... cost management tools, methods, processes and people to new product programs in order to help meeting the program cost and capital targets



Set targets based on product specification



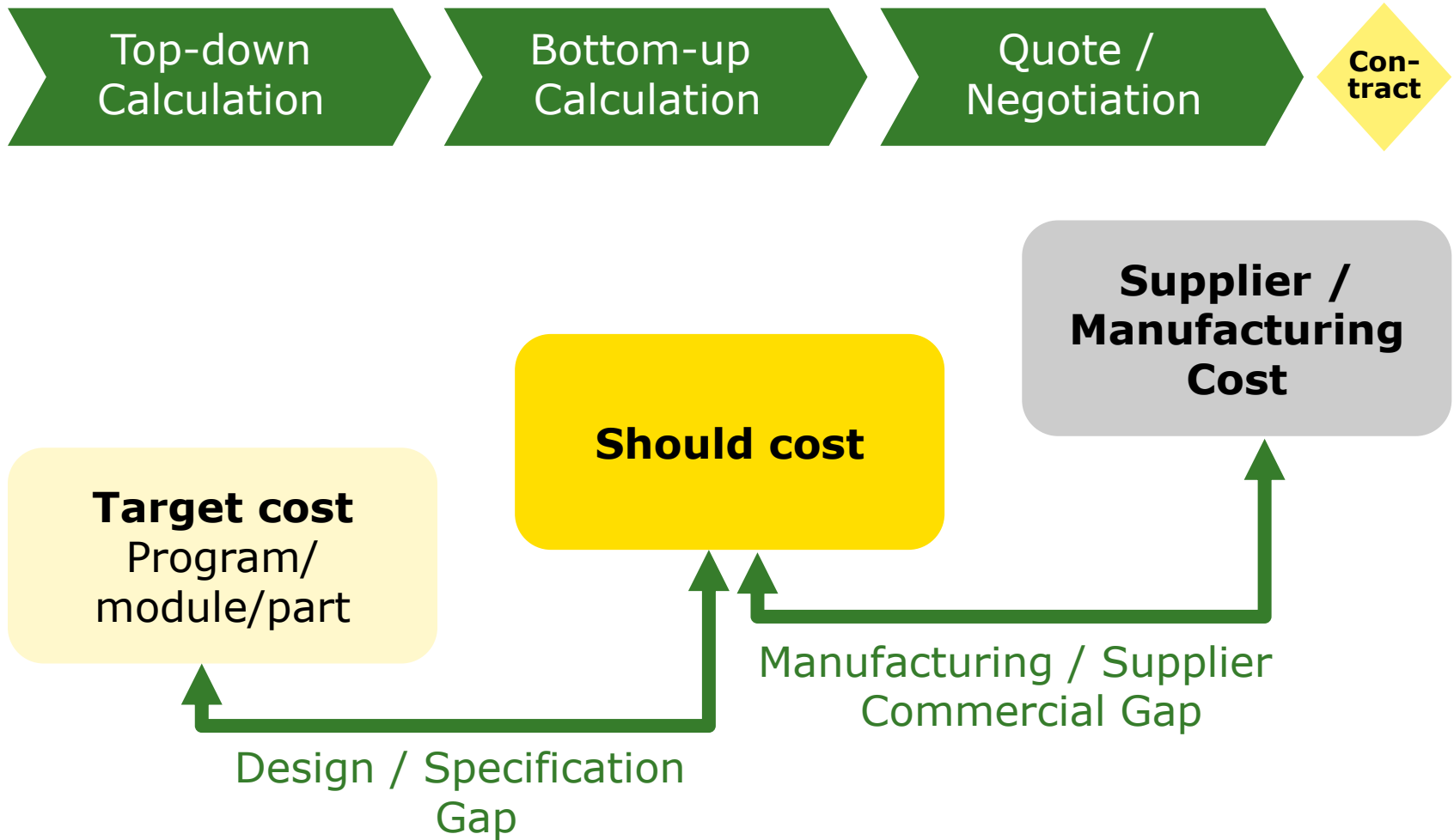
Design / source concepts to target



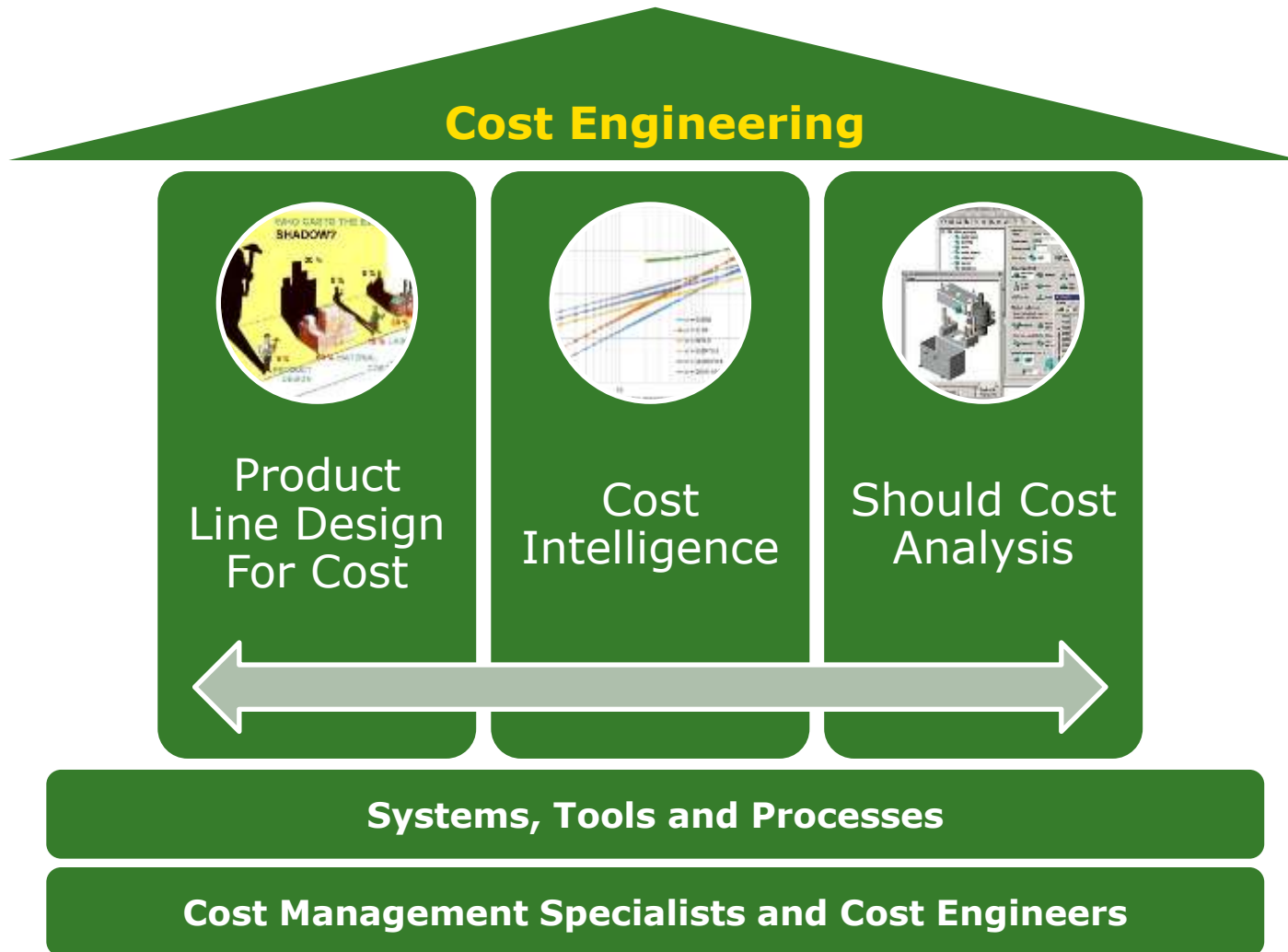
Analyze cost



# Top-down/Bottom-up Cost Calculation



# Cost Engineering at John Deere



# Cost Intelligence

Suite of tools and libraries across all suppliers and commodities

Supplier, Process or Commodity level benchmark data

Determines supplier cost structure versus Best-in-class (BIC)

Develop portfolio of tools and approaches to gather and analyze supplier and industry cost structures

Deploy tools and libraries across all commodities and product lines globally

Not “one size fits all”





# Cost Analysis

Gain an understanding of the cost structure for a purchased good or service

Evaluate each cost element that makes up the purchase price, including profit

Direct Material  
Direct Labor  
+ Manufacturing Overhead  
*Cost of Goods Sold*  
SG&A and Other  
+ Profit Before Taxes  
**PURCHASE PRICE**

Later, extend to all other elements included in the "Total Cost of Ownership"

Purchase Price  
Acquisition Cost  
Usage Cost  
+ End of Life Cost  
**TOTAL COST OF OWNERSHIP**

Source: Anklesaria Group

# Cost Models

Set of modeling techniques for single-source or competitive situations

## Types of models

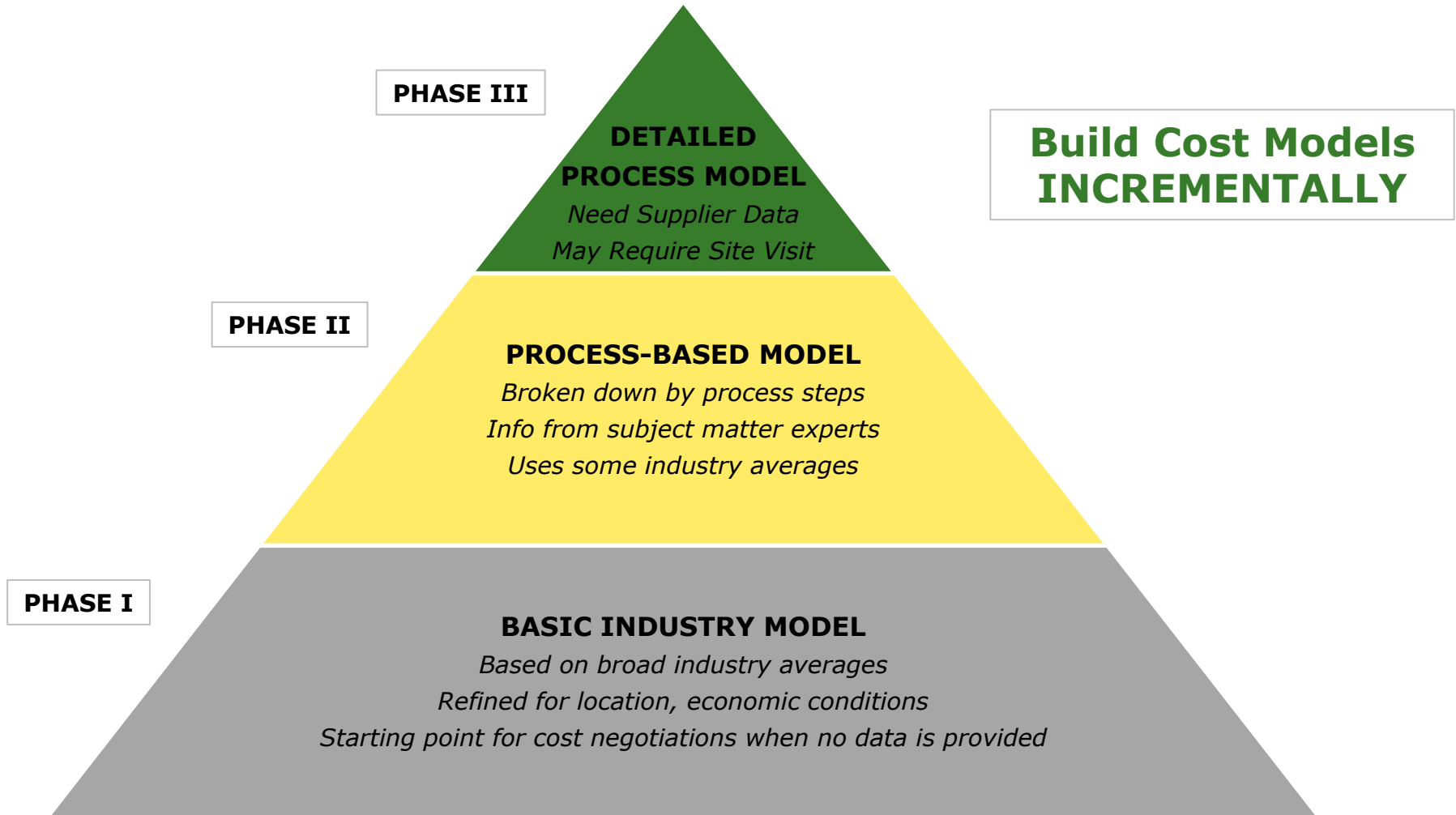
Model	Objective	Use
<b>Should Cost</b>	Evaluate Purchase Price	<ul style="list-style-type: none"><li>• Evaluate quotes from multiple suppliers who have provided cost data</li><li>• New product/service sourcing</li></ul>
<b>Price Discipline</b>	Evaluate change in purchase price	<ul style="list-style-type: none"><li>• Evaluate a request for a change in price from an existing supplier</li><li>• Set up long term contracts</li></ul>
<b>Total Cost of Ownership</b>	Evaluate life cycle costs	<ul style="list-style-type: none"><li>• Select the "right" supplier during sourcing</li></ul>

## The power of cost models

- Understand the cost structure of a product/service being procured (cost, not price)
- Engage a supplier that has not provided any cost information
- Validate cost information provided by suppliers
- Increase transparency to ensure that pricing decisions are based on facts and logic
- Build credibility and respect for well informed buyers

Source: Anklesaria Group

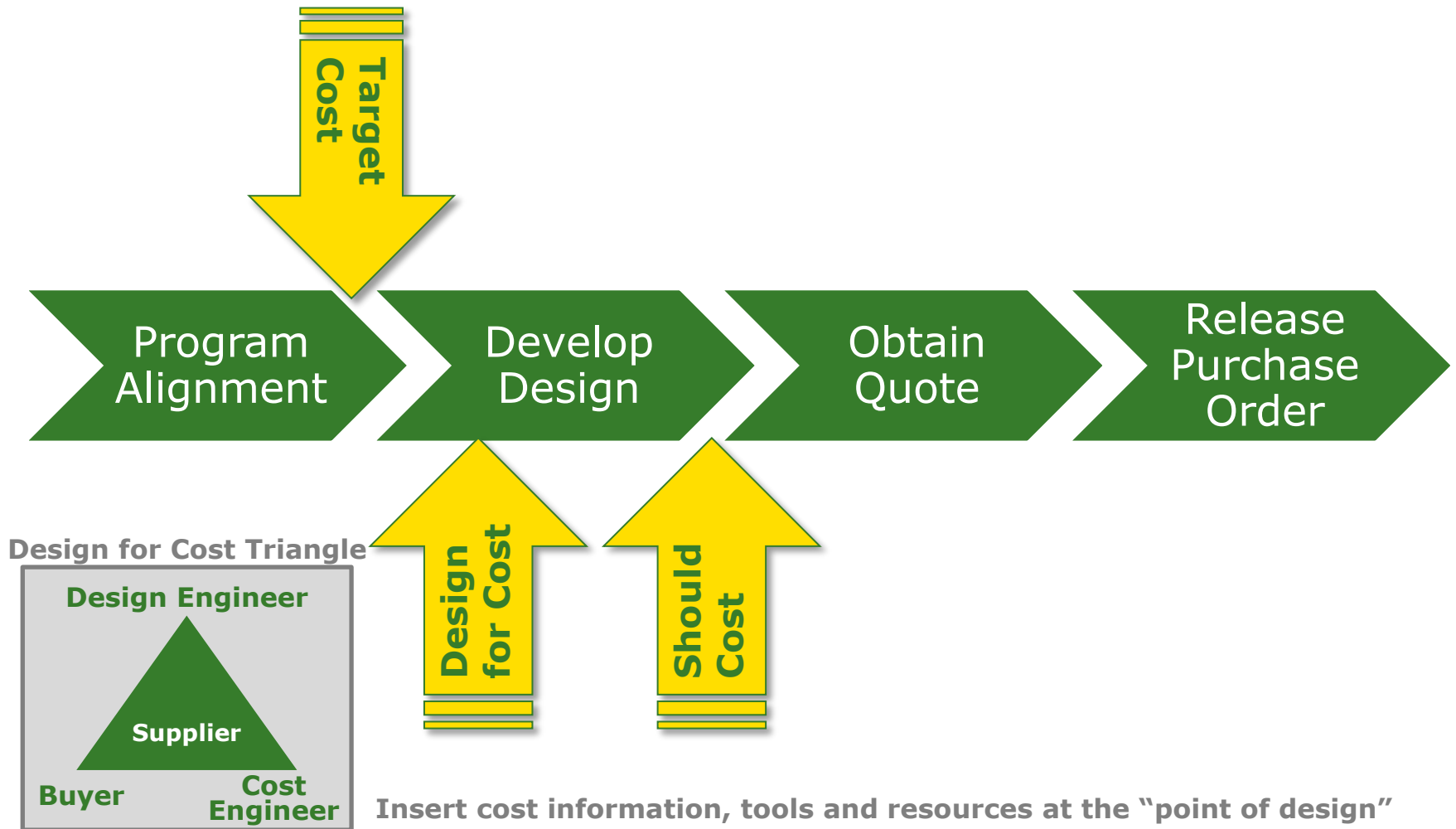
# Cost Model Phases



Source: Anklesaria Group

# Product Line Cost Engineering at John Deere

Supporting new product development



# Basic Cost Models

## Regression & Data Analytics

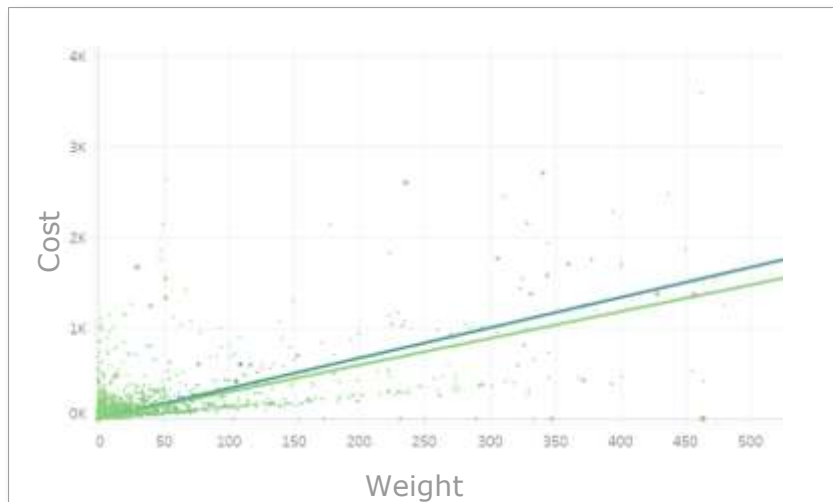
Quickly analyze thousands of parts

Identify “low hanging fruit”

Relies on data quality

Easily connect datasets

Simple in Excel or Tableau



## Industry Cost Profile

Utilizes public databases and industry codes for high level cost structure understanding

Example Data Sources:

- NAICS (NA), NACE (EU), NIC (India)
- Bureau of Labor Statistics
- Risk Management Association
- Dun & Bradstreet
- Hoovers

Industry Cost Profile - Metal Stamping (figures in %):

Element	%
Direct Material	49.5%
Direct Labor	13.4%
Manufacturing Overhead	18.4%
Cost of Goods Sold	81.3%
GSA & Other Expenses	13.0%
Profit Before Tax	5.7%
<b>PRICE</b>	<b>100%</b>

Source: Anklesaria Group

# Software Solutions for Should Costing

We know the design



- Software solution that imports design (CAD) and user data to quickly provide should cost estimates
- Deterministic routings generate the lowest cost production method as defined in a Virtual Production Environment (VPE)
- Supports numerous manufacturing process groups via standard and custom data libraries



BOOTHROYD DEWHURST

- Software tool to aid with design for manufacturability *and cost*
- Allows for cost estimation of more complicated designs and assemblies
- Higher integration with design tools
- Does not require 3D geometry to generate cost estimate
- Requires higher skilled operator

# VAVE Forensic Teardown

We only have the physical parts; no drawings or specs

## Value Analysis & Value Engineering (VAVE)

- Multidisciplinary team approach
- Reverse engineer product, process, system, design, or service
- Assess required performance, reliability, availability, quality and safety
- Generate cost estimate



# Supplier Collaboration Approaches

## Process Models

- Detailed process flow
- Develop manufacturing process assumptions
- Assign cost routings



## Open Book

- Similar to process models
- Cost routings based on supplier general ledger data
- Requires full supplier alignment
- Provides meaningful cost transparency to reduce quoting/negotiating waste

## Supplier Owned Cost Model

- Supplier owns, maintains and submits quotes using agreed upon cost model

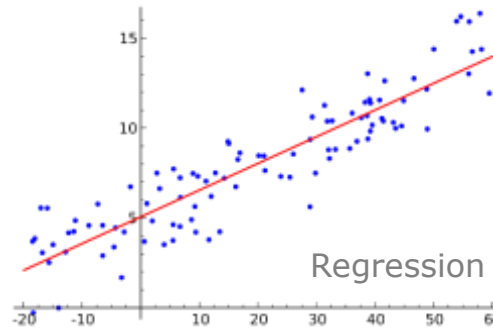


# Where to Start

## Training



## Tool Awareness and Development



## Build Competency



**Internal and External  
Resources and  
Capabilities**





**JOHN DEERE**