

# /// Metrics Catalog

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# Metrics Value Tree

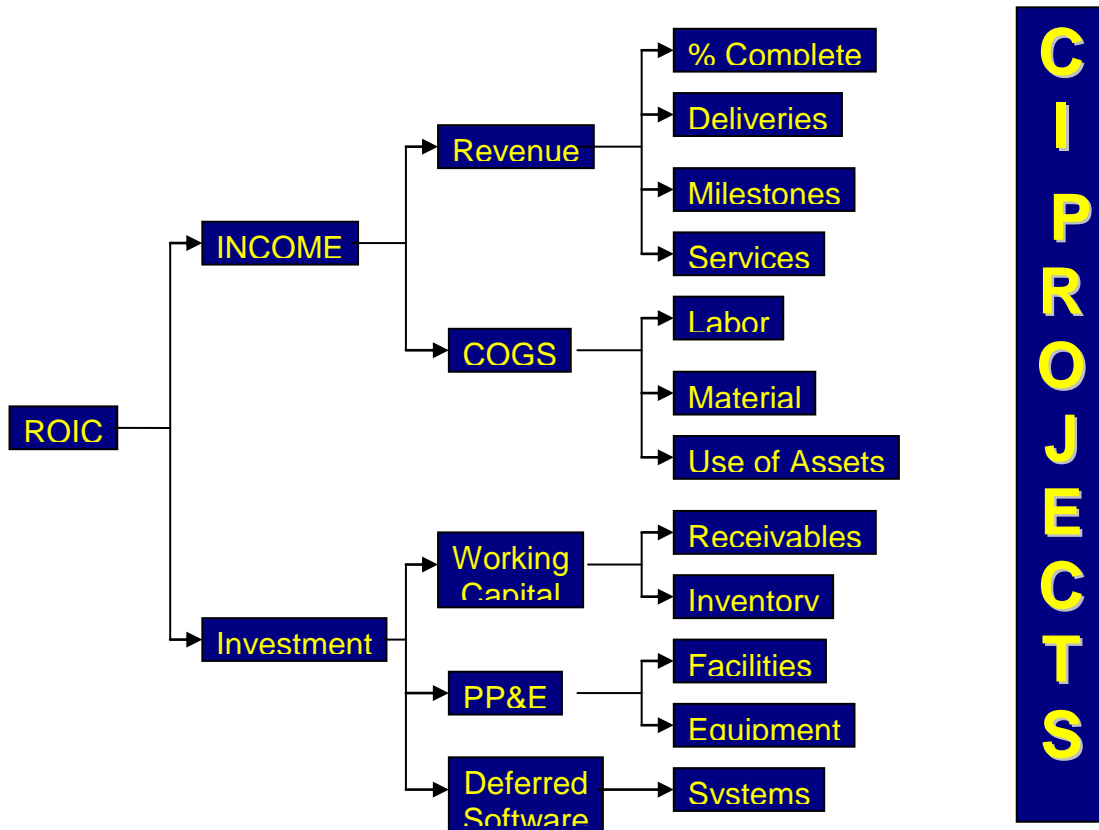


Figure 1 – Value Tree

# Metrics Catalog

## Section A – Financial Performance Metrics

**Objective:** Drive continuous improvement through events that are measured via the corporate GAAP financial reporting system.

**Definitions:** The definitions (arithmetic expressions) for the Financial Performance Metrics are to be consistent with the Corporate Accounting and LRP definitions.

**Report/Review Requirements:** Quarterly Performance Reviews (QPRs), Contract Status Reviews (CSRs).

### 1. Financial Objective: Orders

#### a. Orders/Sales

**Definition:** Orders divided by Sales, as a decimal.

**Application:** Business Area, Site, Line of Business, Program

#### b. Competitive Win Rate \$

**Definition:** Competitive Instant Contract dollars won divided by proposed contract dollars.

**Application:** Business Area, Site, Line of Business, Program

#### c. Book to Bill

**Definition:** Orders divided by Sales expressed as a decimal.

**Application:** Business Area, Site, Line of Business, Program

### 2. Financial Objective: Sales

#### a. Sales Growth Rate

**Definition:** Year to year increase (decrease), as a percentage

**Application:** Business Area, Site, Line of Business, Program

#### b. Sales per Employee

**Definition:** Sales divided by number of employees, calculated for both gross and net sales

**Application:** Business Area, Site, Line of Business

#### c. Sales per Square Foot

**Definition:** Sales divided by square foot of facilities occupied, calculated for both gross and net sales

**Application:** Business Area, Site, Line of Business

### 3. Financial Objective: EBIT

#### a. Return on Sales

**Definition:** EBIT divided by Sales, external

**Application:** Business Area, Site, Line of Business, Program

- b. Unallowable Cost/EBIT**  
**Definition:** Unallowable cost divided by EBIT, as a percent  
**Application:** Business Area, Site, Line of Business, Program
- c. EBIT Growth Rate**  
**Definition:** Year to year increase (decrease), as a percentage  
**Application:** Business Area, Site, Line of Business, Program
- 4. Financial Objective: Cash**
  - a. Cash/EBIT**  
**Definition:** Cash divided by EBIT, as a decimal  
**Application:** Business Area, Site, Line of Business, Program
  - b. Cash Conversion Cycle**  
**Definition:**  $(DSO+DIO+DUO) - (DPO+DAO)$  = Measure of cash efficiency. (See below (5) for definitions for DSO, DIO, etc).  
**Application:** Business Area, Site, Line of Business, Program
- 5. Financial Objective: Assets**
  - a. ROIC A**  
**Definition:** NOPAT/Average Invested Capital (excluding goodwill), consistent with LRP instructions (Schedule 21 – ROIC)  
**Application:** Business Area, Site
  - b. ROIC B**  
**Definition:** NOPAT/Average Invested Capital (including goodwill), consistent with LRP instructions (Schedule 21 – ROIC)  
**Application:** Business Area, Site
  - c. Capital Turnover**  
**Definition:** Annual Sales divided by Net PP&E, both gross and net sales  
**Application:** Business Area, Site
  - d. Inventory Turnover**  
**Definition:** Annual Sales divided by Net Inventory, both gross and net sales  
**Application:** Business Area, Site
  - e. Days Working Capital (DWC)**  
**Definition:** Working Capital divided by Annual Sales multiplied by 365 days, both gross and net sales  
**Application:** Business Area, Site
  - f. Days Unbilled Outstanding (DUO)**  
**Definition:** Unbilled receivables divided by Annual Sales multiplied by 365 days, both gross and net sales  
**Application:** Business Area, Site

- g. Days Sales Outstanding (DSO)**  
**Definition:** Billed receivables divided by Annual Sales multiplied by 365 days, both gross and net sales  
**Application:** Business Area, Site
  - h. Days Advances Outstanding (DAO)**  
**Definition:** Customer Advances divided by Annual Sales multiplied by 365 days, both gross and net sales  
**Application:** Business Area, Site
  - i. Days Payables Outstanding (DPO)**  
**Definition:** Payables divided by Annual Sales multiplied by 365 days, both gross and net sales  
**Application:** Business Area, Site
  - j. Days Inventory Outstanding (DIO)**  
**Definition:** Inventory divided by Annual Sales multiplied by 365 days, both gross and net sales  
**Application:** Business Area, Site
  - k. CAPEX/Depreciation**  
**Definition:** Capital Expenditure divided by Depreciation  
**Application:** Business Area, Site
- 6. Financial Objective: Cost Drivers**
- a. Direct Labor/Sales**  
**Definition:** Direct labor cost divided by sales, expressed as a percent  
**Application:** Business Area, Site, Line of Business, Program
  - b. Overhead/Sales**  
**Definition:** Overhead and G&A expense divided by sales, expressed as a percent  
**Application:** Business Area, Site, Line of Business
  - c. Material/Sales**  
**Definition:** Material cost divided by sales, expressed as a percent  
**Application:** Business Area, Site, Line of Business, Program
  - d. Subcontract/Sales**  
**Definition:** Subcontract cost divided by sales, expressed as a percent  
**Application:** Business Area, Site, Line of Business, Program
  - e. Occupancy Cost/Employee**  
**Definition:** Total occupancy cost divided by total employees, expressed as a percent  
**Application:** Business Area, Site, Line of Business, Program

**f. Occupancy Cost/Sales**

**Definition:** Total occupancy cost divided by total sales, gross and net sales, expressed as a percent

**Application:** Business Area, Site, Line of Business, Program

## **Section B – Productivity Metrics**

**Objective:** Drive continuous improvement through RIE events that are measured via existing site, line of business, and program and functional measurements. The metrics in this section are organized by the elements of the Value Tree in figure 1.

**Examples:** The Productivity Metrics in this section are meant to be examples of common measurements that are currently in existence across the corporation. This is not meant to be comprehensive or exhaustive, but merely the types of metrics available at a given site. The Black-belt should use the “local” measurement that applies.

**1. Value Tree Element: Percent Complete**

**a. Metric: Schedule Performance Index**

**Example:** Events that target improvement in the SPI by reducing cycle time.

**b. Metric: Standards Earned**

**Example:** Standard hours earned as a percent of total

**c. Metric: Behind schedule hours**

**Example:** Hours behind schedule as a percent of total.

**2. Value Tree Element: Deliveries**

**a. Metric: Cycle Time**

**Example:** Cycle time of a process, from start to finish, in days, etc.

**b. Metric: Units delivered per time period**

**Example:** CDRLs, products, etc. per month

**3. Value Tree Element: Milestones**

**a. Metric: Late Milestones**

**Example:** Late milestones as a percent of total

**b. Metric: Critical Path Days Late**

**Example:** Days late on critical path

**4. Value Tree Element: Services**

**a. Metric: Service Level Agreement**

**Example:** Percent level of service delivered versus contract requirement

**b. Metric: Time and Material Hours Delivered**

**Example:** T&M hours delivered as percent of contract requirement



## 5. Value Tree Element: Labor

### a. **Metric: Software Productivity**

**Examples:** SLOC per hour, Function Point per hour

### b. **Metric: Software Defects (DRs, PTRs etc)**

**Examples:** Defects per SLOC, Defects per Function Point

### c. **Metric: Software Size**

**Examples:** Track the size of delivered product over time versus plan

### d. **Metric: Defect Discovery Profile (SW and HW)**

**Examples:** Track discovery of defects in the product life cycle – the earlier the better.

### e. **Metric: Hours Per Unit**

**Example:** Time/labor hours spent to complete each unit, e.g. Hours per drawing.

### f. **Metric: Hardware Defects: (ECNs, DRs, etc)**

**Example:** Engineering Change Notices (ECN, DRs, or similar) divided by Drawing count (or subassembly count, etc)

### g. **Metric: Effort to Detect Defects**

**Example:** Time/labor hours spent to detect defects

### h. **Metric: Effort to Correct Defects**

**Example:** Time/labor hours spent to correct defects

### i. **Metric: Supply Chain Labor Productivity**

**Example:** Material commitments by major material type divided by average sourcing headcount

### j. **Metric: Supply Chain Operational Efficiency**

**Example:** Procurement organization cost divided by Base (moving average)

### k. **Metric: Buyer-less Transactions**

**Example:** Buyer-less transactions divided by total transactions

### l. **Metric: Allocation Factor (Overhead, G&A, etc.)**

**Example:** Percent of allocation to direct labor

### m. **Metric: Direct on Indirect Labor**

**Example:** Direct labor charged to Indirect labor, as a percent of total DL.

### n. **Metric: Direct Hours Delivered**

**Example:** Direct hours delivered as a percent of contract requirement

- o. **Metric: Overtime Percent**  
**Example:** Percent of overtime hours to total direct hours
  - p. **Metric: HR – Voluntary Attrition by Length of Service**  
**Example:** Number of voluntary attritions per service – 1 to 2 years, 3 – 5 years
6. **Value Tree Element: Material and Subcontracts**
- a. **Metric: Supply Chain Cost Reduction to Budget/EAC**  
**Example:** Cost reduction on procurements, only applicable when calculated against the program or overhead budget/EAC.
  - b. **Metric: On time deliveries**  
**Example:** On time deliveries as a percent of total deliveries
  - c. **Metric: Defect and/or reject rates**  
**Example:** Defects and/or rejects a percent of total deliveries
  - d. **Metric: Supplier Cost Performance or Schedule Performance Indices**  
**Example:** CPI or SPI of a supplier
  - e. **Metric: Parts Obsolescence**  
**Example:** Parts obsolescence as a percent of total parts
  - f. **Metric: Kit Accuracy**  
**Example:** Accurate kits a percent of total kits
  - g. **Metric: Part Shortages**  
**Example:** Parts short as a percent of total
7. **Value Tree Element: Use of Assets**
- a. **Metric: Percent Reused Product (SW and HW)**  
**Example:** Amount of reused product in the delivered product
  - b. **Metric: Machine Utilization/Down Time**  
**Example:** Machine utilization as a percent of total (or inverse of downtime)
  - c. **Metric: Set Up Time**  
**Example:** Set Up time as a percent of run time
  - d. **Metric: Lease Occupancy**  
**Example:** Total lease cost divided by headcount
  - e. **Metric: Utilities Consumption Factor**  
**Example:** Energy cost per month

- f. **Metric: Transportation Costs**  
**Example:** Transportation cost per month
  
- 8. **Value Tree Element: Receivables**
  - a. **Metric: Billing Cycle**  
**Example:** Number of days that it takes to submit a billing to customer
  
  - b. **Metric: Billing Reject Rate**  
**Example:** Number of rejected billings as a percent of total
  
- 9. **Value Tree Element: Inventory**
  - a. **Metric: Inventory Balance**  
**Example:** Dollar amount of inventory at a point in time
  
  - b. **Metric: Parts Scrap Factor**  
**Example:** Number of parts scrapped as a percent of total
  
  - c. **Metric: Lost Parts Factor**  
**Example:** Number of lost parts as a percent of total
  
  - d. **Metric: Work-In-Process**  
**Example:** Work in process included in COS inventory.
  
- 10. **Value Tree Element: Facilities**
  - a. **Metric: Square Footage Owned/Leased**  
**Example:** Square footage
  
  - b. **Metric: Capital Improvement Cost**  
**Example:** Cost of capital improvements over time
  
  - c. **Metric: Square Footage Utilized**  
**Example:** Square footage utilized as a percent of total
  
- 11. **Value Tree Element: Equipment**
  - a. **Metric: IT Infrastructure Cost**  
**Example:** IT Infrastructure cost over time
  
  - b. **Metric: Equipment Utilization**  
**Example:** Time equipment is utilized as percent of total.
  
  - c. **Metric: Surplus Equipment Screening**  
**Example:** Surplus equipment screened as percent of total surplus
  
  - d. **Metric: Lost Property**  
**Example:** Number of lost property line items as percent of total.
  
  - e. **Metric: Calibration**  
**Example:** Number of pieces of equipment out of calibration as percent of total

**12. Value Tree Element: Systems**

**a. Metric: S/W License Utilization**

**Example:** S/W License utilized as percent of total.

**b. Metric: S/W Refresh Rate**

**Example:** Rate of S/W refresh over time.

**c. Metric: O & M cost**

**Example:** O & M cost per license.

**13. Value Tree Element: COGS**

**a. Metric: Cost Performance Index and/or EAC**

**Example:** Events that target improvement in the CPI and/or reduction in the program Estimate at Completion.

**14. Value Tree Elements: COGS and PP&E**

**a. Metric: Risks**

**Example:** Events that target reduction in the number of program risks.

**b. Metric: Opportunities**

**Example:** Events that target realization of program opportunities

**15. Value Tree Element; Revenue**

**a. Metric: Customer Satisfaction**

**Example:** Award Fee Score or CPAR Score

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