Total Cost of Ownership

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Total Cost of Ownership (TCO) Definition

The present value of all costs associated with a material, service, or capital equipment that are incurred over its expected life.

What is Total Cost of Ownership?

- Total Cost of Ownership (TCO) goes beyond the purchase price
- TCO is a technique used by businesses to measure the cost of their assets and operating expenses
- TCO estimates the total cost over the lifetime of a product, asset, system, technology...
### Total Cost of Ownership

**Upfront Cost**

**Rerunning Cost**

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### TCO Introduction and Definition—What is meant by ALL COSTS?

<table>
<thead>
<tr>
<th>Pre-transaction costs</th>
<th>Definition</th>
<th>Examples of Cost Generating Activities</th>
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</table>
|                        | Pre-transaction costs include all costs that occur prior to the transaction, such as research and travel expenses to research the supplier. | • Identifying, investigating and qualifying sources and products  
• R&D, engineering and design  
• Developing a contract |

| Transaction costs | Transaction costs include all costs that occur to make an item usable and to transfer ownership to the buying organization. | • Price  
• Delivery/Transportation  
• Tariffs/Duties/Currency/Tax  
• Billing/Payment  
• Inspection, Parts Return, Corrective Action |

| Post-transaction costs | Post-transaction costs include all costs incurred by the buying organization after the ownership has been transferred. | • Scrap, warranty, part failure, reputation  
• Service and maintenance  
• Disposal/Salvage  
• Inventory |
Total Cost of Ownership

Definition of TCO

Total Cost of Ownership, AKA True Cost to Own

- General definition: Estimate of all direct and indirect costs associated with an asset or acquisition over its entire life cycle.

- **Depreciable life** (The number of years over which an asset will be depreciated).

- **Economic life** (The number of years in which the acquisition returns more value to the owner than it costs to own, operate, and maintain).

- **Service life** (The number of years the acquisition will actually be in service).
• Total cost of ownership is a philosophy for really understanding all supply chain related costs of doing business with a particular supplier for a particular good or service (Lisa Ellum, May 1999)

**Price vs Cost**
- Managers often use interchangeably
  - Price – Money coming in
  - Cost – Money going out
  - Profit – is the difference.

• The four elements of cost: Quality, Service, Delivery, and Price (QSDP)

TCO = Quality + Service + Delivery + Price

**EFFECTIVE NEGOTIATION:**
- Each element of QSDP has an impact on the TCO
- The importance of each element varies with the product or service being purchased
- The relative weight of each element depends upon our assessment of the TCO impact on business.
- The identity and weight of each element is an ongoing part of the continuous negotiation process.

TCO is a Management Oriented Approach
- TCO is most often used for the supplier selection decision
- It could also be used to evaluate a supplier’s performance
- to enhance the value delivered to the buying organization
- the assessment of the purchasing department itself and supporting negotiations with suppliers and volume allocation among suppliers.

### Three Components of Total Cost

- Acquisition Costs
- Ownership Costs
- Post-Ownership Costs

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**What is the Purpose of TCO?**

- TCO main purpose is for the evaluation of potential purchases by the business decision makers
- TCO is used for making purchasing decisions such as purchasing buildings, IT infrastructure, manufacturing equipment, and vehicles

**Why do you need to know your TCO**

- Budgeting & planning.
- Asset life cycle management.
- Prioritizing capital acquisition proposals.
- Vendor selection.
- Lease vs. buy decisions.
- Identify "hidden" costs of ownership.
- Put the spotlight on potential cost problems before they become problems.
- Know the service provisioning cost (chargeback)
If you were responsible for acquiring automobiles for the sales force of your company, what are some of the TCO elements you would need to consider beyond price?
**BENEFITS OF TOTAL COST OF OWNERSHIP**

- **PERFORMANCE MEASUREMENT**
  - Good framework to evaluate suppliers.
  - Concrete way to measure results of quality improvement efforts.
  - Excellent tool for benchmarking.

- **DECISION MAKING**
  - Forces purchasing to quantify trade-offs.
  - Good bias for making supplier selection decisions.
  - More informed decision making.
  - Creates a structured problem solving environment.

- **COMMUNICATION**
  - Excellent communication vehicle between firm and suppliers.
  - Way to get other functions involved in purchasing decisions.

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**TCO Analysis**

- **NPV analysis is frequently incorporated into TCO analyses**
- **NPV analyzes present values of the initial expenditure along with the likely future revenue and expenditure streams**
- **NPV greater than zero suggests accepting the investment**
- **NPV less than 0 suggests rejecting the investment**
- **NPV = 0 is the point of indifference**

- **INSIGHT/UNDERSTANDING**
  - Provides excellent data for trend analysis on costs, comparing supplier performance and negotiations.
  - Provides critical data for target pricing.
  - Requires purchasing to develop an awareness of the most significant non-price factors that contribute to TCO.
  - Long-term orientation by focusing on "big picture."

- **SUPPORTS CONTINUOUS IMPROVEMENT**
  - Identifies where suppliers should focus improvement efforts.
  - Drives suppliers to work on "right things."
  - Helps identify cost savings opportunities.
  - Forces firm to look at internal issues, how their own requirements/specifications may actually increase costs.
  - Encourages professional growth in purchasing personnel by broadening their perspective.

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**BARRIERS TO TCO**

- **CULTURAL ISSUES**
  - Cost is not important to "users."
  - Difficult to move away from a "price" orientation.
  - Resistance to change.

- **EDUCATION/TRAINING ISSUES**
  - Image of inflexibility of TCO approach.
  - Need tools/training.
  - Too theoretical.
  - Frustration of trying to quantify "soft" issues.
  - Lack of user expertise/confidence.
  - Define the scope of TCO modelling.
  - Identifying all relevant costs and benefits.

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**RESOURCE ISSUES**

- Lack of readily accessible data to support efforts/lack of systems.
- Labour intensive to develop and support.

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Total Cost of Ownership Process

**Prepare for Analysis:**
In this first preparation phase, the goal is to determine whether the purchase, process or outsourcing situation you are analyzing is a high potential project for analysis. You do a quick review on whether there are significant, hidden costs that you may be able to affect. If the project seems viable, you identify who will be on the analysis team.

**Map the Process:** Map the process involves gathering detailed information about how the item you are purchasing is used, and then drawing a picture of that process. This increases understanding and highlights potential opportunities.

**Identify Relevant Costs:** Identify relevant costs focuses on really understanding which costs are important and can be influenced in the total cost of ownership project being analyzed.

**Gather Data:** Gather data involves the pulling together of cost information based on history, external data and estimates.

**Perform Analysis:** Finally, with the information gathered in the previous four phases, you perform the total cost of ownership analysis.

TCO projects must be carefully selected

- TCO does not fit all purchasing situations
- It can be a very complex and time consuming process
- The intent is to apply TCO for:
  - Major Sourcing Projects (High $$$)
  - Major Issues with Supplier Performance
  - Examples:
    - Strategic Sourcing
    - Low Cost Country Sourcing
    - Major NPI / (Re)Sourcing / Outsourcing
    - Make / Buy / Import decision
**TCO Process—Part 1—Map the Process**

- Goal is to develop a good understanding of all of the activities associated with the acquisition, use and disposal of the material or service and identify stakeholders and required team members.
- Mapping will assist the team in understanding redundancy, inefficiency or other potential for improvement.
- Generating Process Maps:
  - Members of the TCO team should physically observe the process and interview people who participate in the process.
  - Members draw, review and modify the process map and send to process participants for their review.
  - Modification of map as needed.
- Scope Considerations:
  - Team lead determines where process begins and ends.
  - Keep scope manageable – make sure it includes all major elements of cost generating activity.
  - Team’s ability to affect costs must be considered.

**Criteria can be built into the TCO model based on QCLDM**

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<thead>
<tr>
<th>Identify Relevant Costs</th>
<th>Development Costs</th>
<th>Financial Risk</th>
<th>Capacity</th>
<th>Warranty Agreement</th>
<th>Additional Relevant Criteria</th>
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<td>Attitude &amp; Customer Focus</td>
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<td>Supplier Delivery Performance</td>
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TCO Process—Part 2—Gather Data

- Management
  - Development
- Logistics
- Quality
  - Handling
  - Repackaging
  - Warehousing
  - Transportation
  - Packaging
- Piece Price
- Research & Development

TCO Process—Part 2—Perform Analysis

- Develop TCO Spreadsheet and Calculations
- List Assumptions
- Provide Sensitivity Analysis
- Challenge Data Accuracy – Cross Functional Team Including Accounting and Finance
- Get Team Agreement
TCO – Critical to Decision Making

- Decision
  - To Build internally
  - Or License
- Fundamentals of decision
  - Maximise Shareholder Value
  - Maximise ROI on investment
- Three Pillars of ROI Analysis
  - T.C.O
  - Functional Capabilities
  - Project Risk

TCO Vs ROI

1. TCO analysis enables organizations to identify, project, measure, and track direct and indirect costs of a localization technology initiative.
2. As the TCO of a project increases, the ROI decreases.
3. There is an inverse relationship between TCO and ROI.

A low TCO not only reduces an organization's operational costs, but also effects the financial success of a localization technology initiative as measured by ROI.
The basics of TCO and ROI cases

An ROI Case
Return on Investment
Requested by those focused primarily on operating budget who want to save money
Generally limits you to a strict “hard dollar” view — if it won’t show up in the expenses lines, it won’t be in the case
- Tougher for applications like mobility for sales force productivity

A TCO Case
Total Cost of Ownership
Requested by those aligned with business strategy, marketing, lines of business who want to justify an investment to enhance the business
Opens up the possibility for productivity and revenue benefits
- Often the focus in contact center sales

- The majority of the effort is identical for both types of analysis.
- The more that the investment delivers productivity and revenue benefits, the more likely the focus will need to be on ROI