

Week-05-L-04

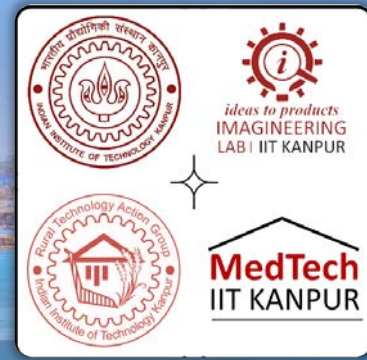
Value Engineering Agricultural Plan

Development and Implementation Phase

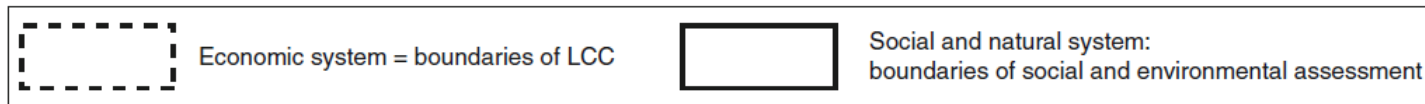
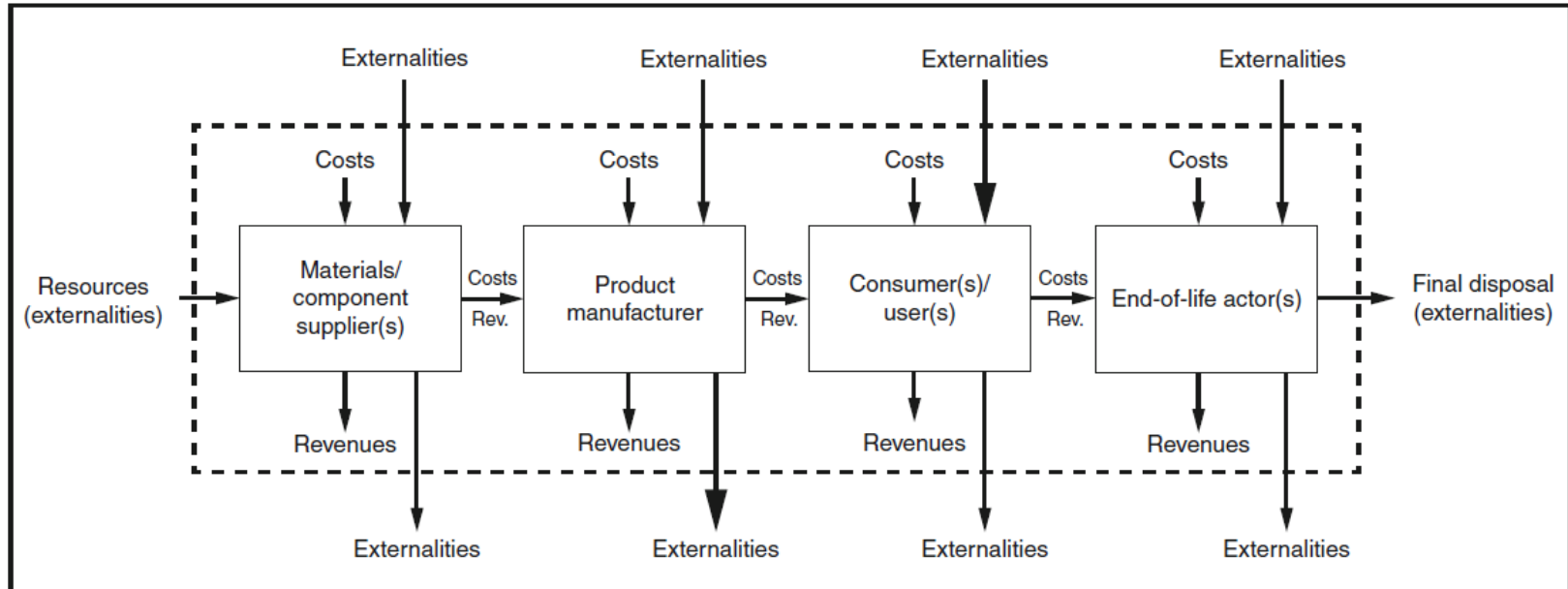
Life Cycle Costing Analysis

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Framework of LCC



- Life cycle cost analysis involves several key steps to comprehensively evaluate costs throughout a product's life cycle.

Cost Breakdown Structure

Step 1: Cost Breakdown Structure

- CBS identifies all associated cost elements and sets the boundaries of the LCC analysis.
- Prevents omissions and double counting of cost elements.

Step 2: Cost Estimating

- Each cost element must be estimated using different approaches:
- Known factors with known accuracy.
- Predictions based on historical or empirical data.
- Expert opinions supported by assumptions.
- All costs, including future ones, are converted into present values.

Step 3: Discounting

- Discounting is the percentage change in the value of money over time.
- Determines the importance of present versus future costs.
- Influenced by variables like inflation, cost of capital, investment opportunities, and personal preferences.

Inflation & Sensitivity Analysis

- Inflation may be considered in LCC when multiple commodities are involved, like oil prices and man-hour rates.
- Sensitivity analysis assesses the cost model's uncertainty.
- LCC categorizes costs into five major groups:
 1. Direct manufacturing costs (e.g., capital investment).
 2. Hidden corporate and manufacturing site overhead costs (e.g., outsourced services).
 3. Future and contingent liability costs (e.g., personal injury and property damage liabilities).
 4. Internal intangible costs (e.g., customer loyalty and corporate image).
 5. External social costs.

Some Notable Tools

Concept	Definitions/description	Cost categories
Full Cost Accounting (FCA)	Identifies and quantifies the full range of costs throughout the life cycle of the product, product line, process, service, or activity (Spitzer et al. 1993)	Identifies and quantifies (1) direct, (2) indirect, and (3) intangible costs
Full cost environmental accounting (FCEA)	Embodies the same concept as FCA but highlights the environmental elements (US EPA 742-R-95-001 1995)	Varying
Total cost assessment (TCA) (I)	Long-term, comprehensive financial analysis of the full range of internal costs and savings of an investment (White and Becker 1992; Spitzer et al. 1993)	(1) Internal costs and savings
Total cost accounting (TCA) (II)	Term used as a synonym for either the definition given to FCA or as a synonym for TCA (Spitzer et al. 1993)	(1) Conventional costs, (2) hidden costs, (3) liability costs, (4) less tangible costs
Life cycle accounting (LCA)	The assignment or analysis of product-specific costs within a life cycle framework (EPA 1993)	(1) Usual costs, (2) hidden costs, (3) liability costs, (4) less tangible costs

Thank You

