



FACILITIES MANAGEMENT AND LIFE CYCLE COSTING

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LIFE CYCLE COST

Introduction

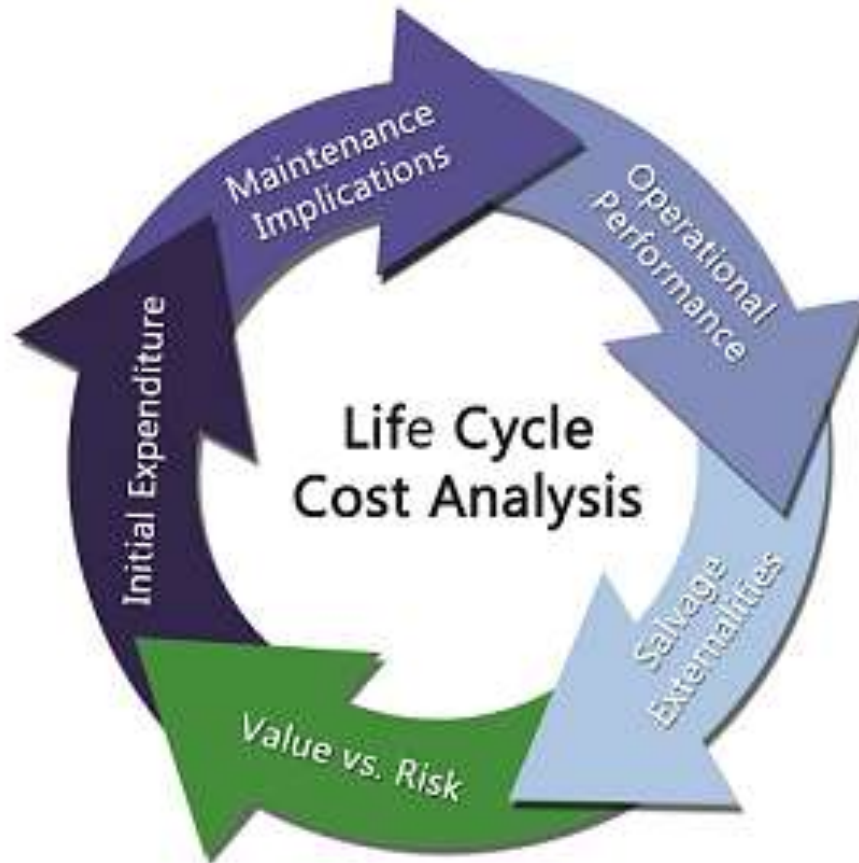
LCC was developed in the mid-1960s at the U.S Department of Defense for the military equipment procurement purposes.

LIFE CYCLE COST

Definition

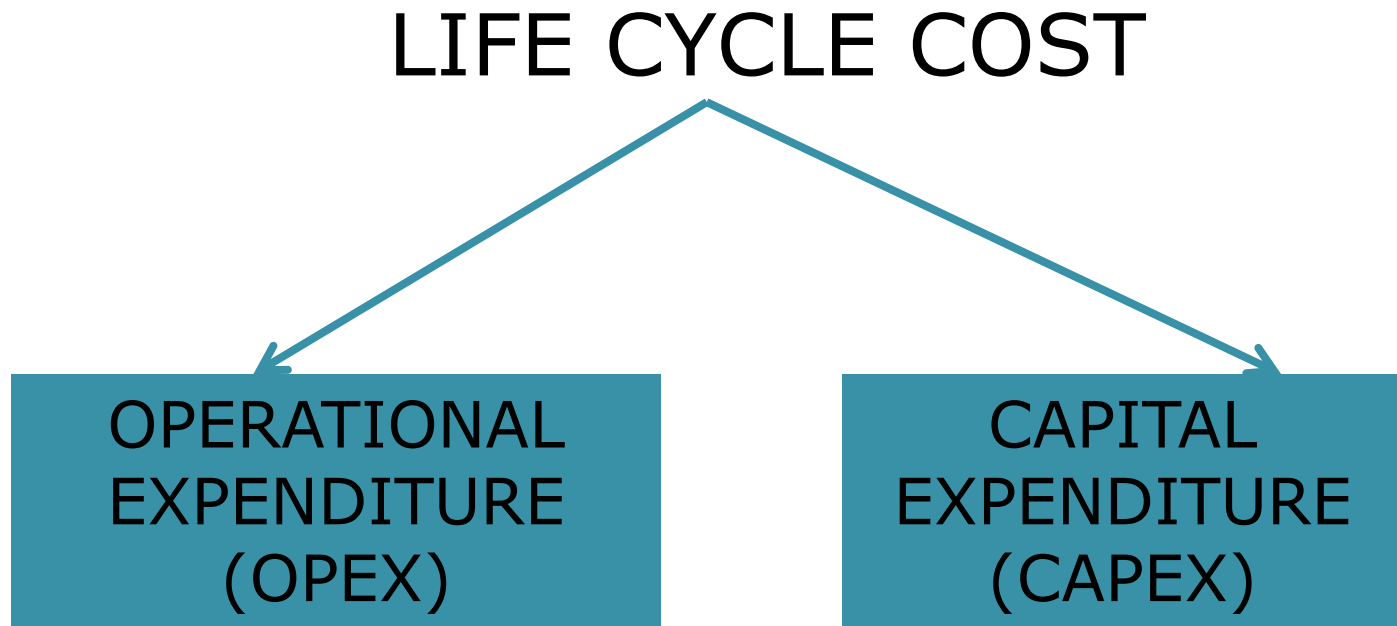
Life cycle costs are the total costs estimated to be incurred in the design, development, production, operation, maintenance, support, and final disposition of a major system over its anticipated useful **life span** (DOE1995).

LIFE CYCLE COST



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Introduction



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OPEX :

Is expenditure incurred as a result of the day-to day operations of building. Opex might include expenditure such as wages, utilities costs, maintenance and repairs, general and administrative expenses.

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CAPEX :

Is one-off expenditure creating future benefits that results in the acquisition, construction or enhancement of significant fixed assets including land, buildings and equipment that will be use or benefit for more than one financial year.

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• $OPEX + CAPEX = \text{WHOLE LIFE COST}$

All costs associated with the life of a building including:

- ❖ Acquisition,
- ❖ Fees,
- ❖ Construction,
- ❖ Insurance, inflation and financing.
- ❖ Fixtures, fittings and equipment.
- ❖ Relocation.
- ❖ Operation.
- ❖ Disposal.

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Benefit:

This Life Cycle Costing Tool has been developed to assist asset managers in decision making based on performing a systematic assessment of the life cycle costs of selected water and wastewater assets, glass or mix of brickwall and glass.

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Benefit:

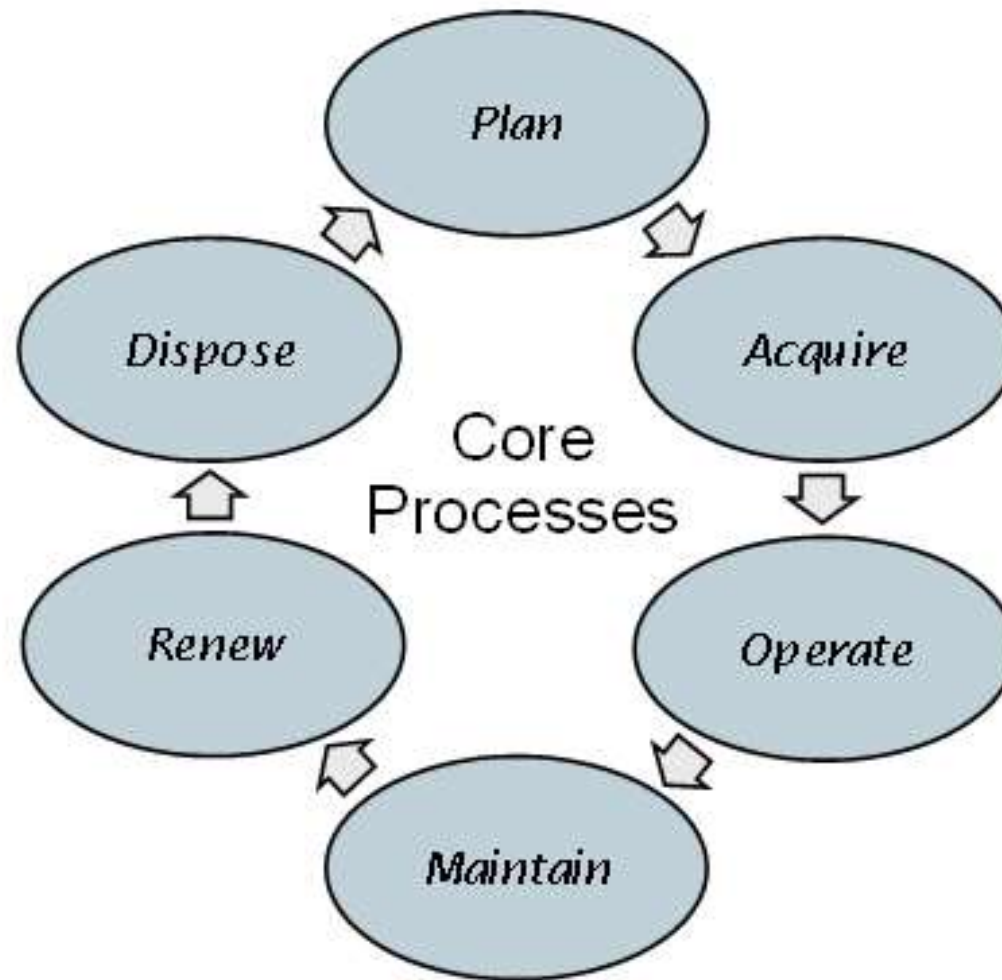
Owners, users and managers need to make decisions on the acquisition and ongoing use of many different assets including items of equipment and the facilities to house them. The initial capital outlay cost is usually clearly defined and is often a key factor influencing the choice of asset given a number of alternatives from which to select.



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The initial capital outlay cost is, however, only a portion of the costs over an asset's life cycle that needs to be considered in making the right choice for asset investment. The process of identifying and documenting all the costs involved over the life of an asset is known as Life Cycle Costing (LCC).

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LIFE CYCLE COST

Importance:

An important component of a Utility's activities is prioritizing the Capital Improvement Program, so that it can meet its most pressing needs. This prioritization occurs at the end of the capital project development process, which consists of Project Identification/Initial Validation, Risk Reduction, and Life Cycle Cost analysis, all of which are used to establish the final Business Case for each project. As can be seen in the Figure 1, the Life Cycle Cost analysis is undertaken as part of the Business Case preparation.

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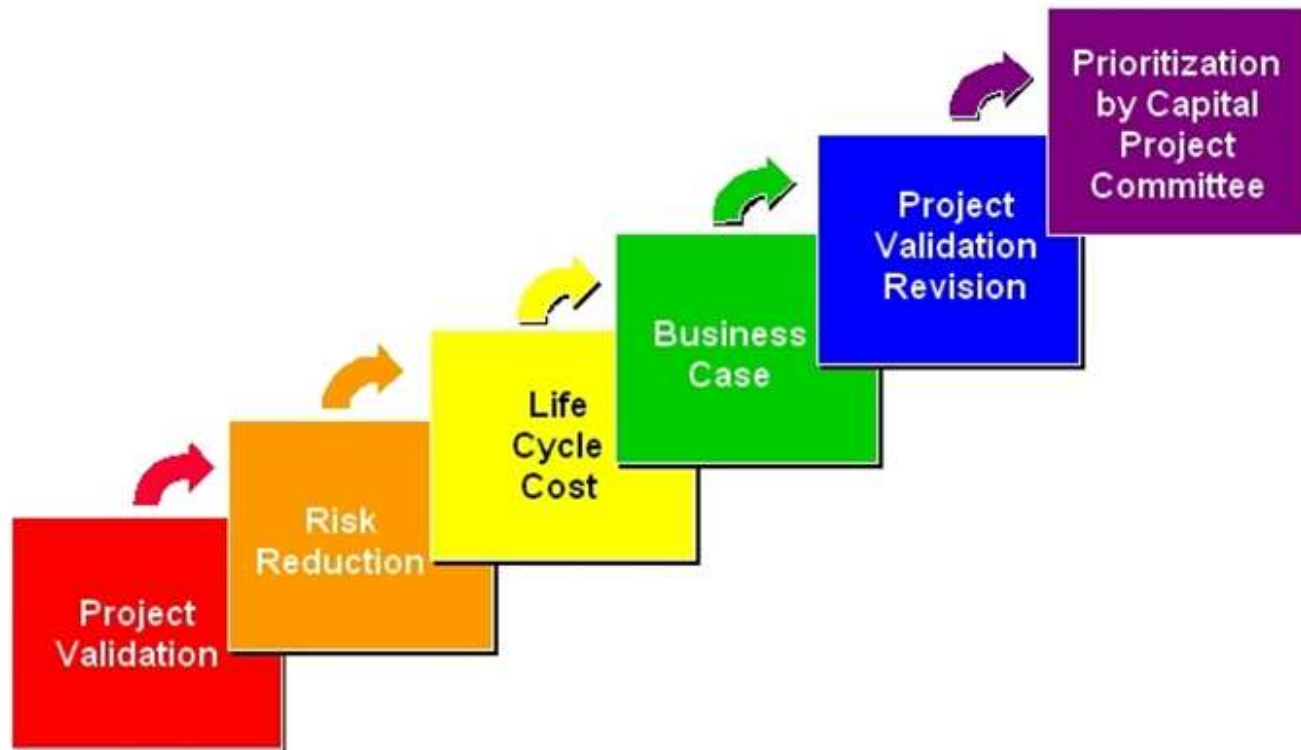


Figure 1 → Capital Project Development Process Steps



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The Life Cycle Cost analysis allows the Utility to examine projected life cycle costs for comparing competing capital and O&M project solutions and allows for appropriate comparison of alternatives of different capital values, and lengths of time.

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Given the condition of the Utility's assets, the amount of capital available from the budget, and historical evidence, the project manager must decide which project alternatives will incur the least life cycle costs over the life cycle of the assets involved while delivering performance at or above a defined level.

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As a result, this analysis will enable the Utility to:

- make decisions for capital and O&M investments based on least life cycle costs,
- rank each of the projects based on total cost of ownership,

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- combine the costing data with the Project Validation (See the Capital Project Validation and Prioritization Tool for an in-depth discussion of project validation concepts and practices) and Risk Reduction (See the Business Risk Exposure Tool for an in-depth discussion of risk) scores to prioritize the projects,
- make more informed decisions, and
- allow better reporting to key stakeholders.

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Benefit:

- i. Set and defend the maintenance budgets
- ii. Mitigating risks and liabilities
- iii. Driving maintenance prioritization
- iv. Targeting investment in asset renewals
- v. Informing wider estate planning studies
- vi. Inputting into environmental / sustainability
- vii. Capturing feedback for future construction projects



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