Although servitization as a transformation process is being recognized by an increasing number of firms as a source of competitive advantage, the role of economic evaluations in service strategy formulation has so far attracted limited attention and predominantly from the manufacturer perspective. This paper assesses how the analysis of costs and benefits of Product-Service Systems (PSS) as servitized offerings influences the formulation of service strategies in the shipping industry. The study examines both the manufacturer and customer perspectives using two case studies from the shipping sector. Life Cycle Costing (LCC) was used as a tool to assess the associated costs and benefits of two proposed PSS. Based on the results of the LCC, the drivers and barriers of the actual transformation processes were explored through workshops and interviews served to map the perspectives of both manufacturers and customers. For both case studies the LCC revealed that, while the PSS resulted in a decrease in life cycle costs and a possible revenue opportunity, there was also a lack of fundamental demand for PSS that could complicate the formulation of service strategies. Towards formulating service strategies, the analysis of costs and benefits highlighted the importance of the abilities of both the customer and the manufacturer to deliver and implement a PSS. Moreover, the customer perspective highlighted the importance of internal functions and capabilities that allowed the customer to implement and benefit from service strategies.