IJORECA
INTERNATIONAL JOURNAL OF
RURAL EMPOWERMENT AND COMMUNITY ADVANCEMENT

International Journal of
Rural Empowerment and Community Advancement
Volume xx : xx-xx, Month Year
E-ISSN: xxxx-xxxx | https://doi.org/xx/ijoreca.xx

Improvement of Human Resources in Capital Expenditure and Operational Expenditure Planning for Bottled Drinking Water Production at CV Tirta X

Bayu Wardhana[1], Ismoyo Soemarlan[2], Cuk Taruna Hendrajaya[3], M. Faturahman[4]
Institut Teknologi dan Bisnis Muhammadiyah Bali
*Corresponding author: entrepreneurship@bim.ac.id

A B S T R A C T

This research was conducted to find out the steps that must be taken by human resources at CV. Tirta X in making capital expenditures and operational expenditures. In supporting business and operational activities at CV. Tirta X needs planning and realization in capital expenditure and operational expenditure activities. Capital Expenditure can be interpreted as expenses made by companies with the aim of multiplying, maintaining and buying long-term assets such as factory equipment and company buildings. While operating expenses or opex can be interpreted as costs incurred in the daily operational costs of the company. The method used in this research is descriptive qualitative with data collection using three collection techniques, namely interviews, documentation accompanied by literature study. The results of the study resulted in several discussions which could be concluded that to plan capital expenditure and operational expenditure, several standard variable competency quality human resources were needed to understand the planning and realization of capital expenditure and operational expenditure.

A R T I C L E I N F O

Article history:
Received: Month 1st, Year
Revised: Month 1st, Year
Accepted: Month 1st, Year
Published: Month 1st, Year

Keywords: Capital Expenditure, Operational Expenditure, Human Resources

1. INTRODUCTION

Operational Expenditure, also known as operational costs, is the amount of money a company must pay to support its operations or activities (Rady et al., 2021) (Yuwanto, 2017). Operational costs typically include sales and administrative costs to boost revenue, and do not include expenses already calculated in the cost of goods sold (COGS) or depreciation factors (Wiser et al., 2019) (Khalil & Biyanto, 2018). Operational costs can also be considered the costs required to process raw materials into ready-to-sell products. Examples include machine depreciation, raw material purchases, and employee salaries (Pearson et al., 2021) (Marlitha, 2017). Jusuf defines operational costs as operating costs or business costs that are not directly related to the company's product activities but are related to the company's daily operational activities (Köhler et al., 2020). This research is based on the activity of making capital expenditure and operational expenditure budgets at CV. Tirta X located in Pasuruan Regency which focuses on the production of Bottled Drinking Water (AMDK). During this time, in planning capital expenditure and operational expenditure at CV. Tirta X, the Plan Manager coordinates with managers of several divisions, including the Production Manager, PPIC Manager, HRGA Manager, Purchasing Manager, Engineering Manager, Marketing Manager, and Warehouse Manager. Capital expenditure and operational expenditure planning is a major issue because this planning will affect the absorption of capital expenditure (Capex) and operational expenditure (Opex) (Putra, 2016). Slow absorption of capex and opex and low absorption will have an accumulative impact and accumulate in the first semester in a company (J. Sun, Zhu, et al., 2018). The impact of the planning and absorption of capital expenditure and operational expenditure that tends to be low in the first semester will hamper operational activities which result in stagnant business growth of the company (Saputra & Krisnadi, 2019). Planning and absorption of capital expenditure and operational expenditure can be said to be good if it takes place proportionally throughout the year so that it will provide a stimulus for growth, stability and equality of business activities and company operations (J. Sun, Sun, et al., 2018). On the other hand, the ability to plan and absorb capital expenditure and operational expenditure is considered good and successful if the

realization of budget absorption is in accordance with the actual physical work that can be completed, with the assumption that the actual physical work is relatively the same as the planned work completion target (G. Sun et al., 2018). Planning and absorption of capital expenditure and operational expenditure need to be a special concern for management in a company because it is important to encourage the creation of a multiplier effect on the growth and business activities of the company, so that it is dominant as a driver of growth in the company's financial condition (Zhao et al., 2017). Therefore, planning and absorption of capital expenditure and operational expenditure are the main drivers for accelerating the growth of the company's business (Hidayat, 2020). As long as capital expenditure and operational expenditure planning and absorption activities involve the interests of the organization as a whole, it can be said that the better the planning and absorption of capital expenditure and operational expenditure, the more quickly the stimulus effect will be felt by the organization (Zuldian, 2020).

Another impact if the planning and absorption of capital expenditure and operational expenditure experience delays, the company's business is harmed because it delays receiving the benefits from the implementation of the planning and absorption of capital expenditure and operational expenditure. In other words, money is sitting idle without benefit (Ullah et al., 2020). In the planning and absorption of capital expenditure and operational expenditure, two aspects can be observed: budget absorption, which is realized at the end of the year compared to the budget ceiling, and disproportionate budget absorption, which is characterized by slowness at the beginning of the year and a buildup at the end of the year (Choupin et al., 2022). The difference between the budget and the actual budget for capital expenditure and operational expenditure can be used as an indicator of the organization's level of accuracy in planning and realizing capital expenditure and operational expenditure. A smaller difference indicates that the organization can accurately estimate revenue and expenditure absorption.

2. METHODS

The method used in this study is a descriptive qualitative method with data collection carried out through in-depth interviews, namely by conducting direct questions and answers with management and other sections related to the research topic being raised. The second step is a literature study to see and find out what steps must be taken by management in formulating capex and opex. The object of the research was carried out at one of the Bottled Drinking Water (AMDK) companies, namely CV. Tirta X located in Pasuruan Regency. The data used in this study is primary data with collection carried out directly in the field. Primary data in this study is in the form of employee competency data, planning and realization of capital expenditure and operational expenditure at CV. Tirta X. Furthermore, this study also uses secondary data derived from several studies. The selection of informants in this study was carried out using a purposive sampling technique, namely the selection of informants who are considered to understand the topic being studied. The informants in this study include Plant Manager, Production Manager, PPIC Manager, HRGA Manager, Purchasing Manager, Engineering Manager, Marketing Manager, Warehouse Manager and employees.

3. RESULTS AND DISCUSSION

Capex and Opex Implementation Plan at CV. Tirta X

Economic analysis is a key element in assessing the feasibility of a company's establishment and planning. Each manager responsible for the design and implementation of Capex and Opex at CV. Tirta X must be able to determine the indicators, techniques, and analyses that management must employ to determine Capex and Opex. In developing Capex, the steps required by CV. Tirta X management include determining indicators related to Net Present Value, Return on Investment, Minimum Payback Period, and Break-Even Point. The analysis process for establishing Capex is as follows:

1. Capital Expenditure (CAPEX) and Operating Expense (OPEX)

Capital expenditures are costs incurred to acquire fixed assets, increase operational efficiency and productive capacity, and extend the useful life of fixed assets. These costs are typically substantial (material) but infrequent. Operating expenses are expenses typically incurred by a company to meet operational needs. This analysis is conducted initially because the results of the capex and opex analysis will also be used in other calculations, as explained previously. The management of CV. Tirta X must be able to formulate capex and opex early on to avoid errors in subsequent analysis stages.

2. Net Present Value (NPV)

Net present value can be defined as the difference between cash inflows and cash outflows over a period of time. NPV is used when calculating capital expenditures to analyze the potential profitability of a project or investment. A positive NPV indicates that the factory's future revenue projections will generate profits, while a negative NPV indicates losses. Calculating NPV is useful for assessing a company's ability and potential to manage its investments over the next few years, particularly when currency fluctuations directly impact the company's cash flow.

3. **Internal Rate of Return (IRR)**

   The internal rate of return based on the discounted cash flow method is the specific interest rate at which all revenues will exactly cover the entire capital expenditure. In other words, the Internal Rate of Return (IRR) is defined as the rate of return on equity capital used to run a business. The Internal Rate of Return measures the utilization of equity capital to generate profits. If the Internal Rate of Return is greater than the bank interest rate, the business is considered eligible for bank credit. Conversely, if the Internal Rate of Return is less than the bank interest rate, the company is considered unsuitable for bank credit. The IRR can be calculated using the discounted cash flow method, which is the same cash flow projected to the present.

4. **Minimum Payback Time (POT)**

   The minimum payback time is the time required to recoup a factory's capital, calculated by dividing the capital by profit and depreciation. Payback time is also defined as the time required to pay back the capital based on the profits achieved. This calculation is necessary to determine how many years it will take to recoup the investment. The payback time calculation that can be used is as follows:

5. **Break-Even Point (BEP)**

   Break-even analysis is used to determine the production capacity at which total production costs equal sales revenue. Fixed costs (FC), variable costs (VC), semi-variable costs (SVC), and total costs are not affected by production capacity. The break-even point (BEP) can also be interpreted as the break-even point, indicating the point at which costs and revenues are equal. With BEP, we can determine the minimum selling price and number of units that must be sold, as well as the price and unit sales that must be achieved to achieve a profit.

Meanwhile, preparing Opex requires the following preparation techniques:

1. **Creating a sales forecast**

   The sales budget is the basis for planning general company activities. The sales budget is prepared first, followed by other budget components, to create a comprehensive budget plan. The factors that influence budget preparation are:

   a. Internal factors: data, information, and experience from within the company within certain limits that can be adjusted to meet the desires and needs of the upcoming budget period.
   b. External factors: information and experience obtained from outside the company but that have an impact on the company's sustainability, for example, competitive factors.

4. CONCLUSIONS

CV. Tirta X is a company that produces bottled drinking water located in Pasuruan Regency, one of the issues that always becomes the main topic is regarding capex and opex planning. The human resources involved in planning capital expenditure and operational expenditure at CV. Tirta X, is the Plan Manager and involves several division managers including the Production Manager, PPIC Manager, HRGA Manager, Purchasing Manager, Engineering Manager, Marketing Manager and Warehouse Manager. The steps that must be taken by the company management of CV. Tirta X in making Capex and Opex is by increasing the knowledge of human resources involved in making Capex and Opex, In planning the making of Capex, human resources must know and be able to perform analysis and calculation techniques on Net Present Value, Internal Rate of Return (IRR), Minimum Capital Return Time (POT), Break Even Point (BEP) while in Opex planning the human resources involved must be able and know the techniques of preparing Opex as follows: making sales forecasts, making production budgets, making raw material budgets, making labor budgets, making factory overhead budgets, making general budgets and administrative costs, making production and sales costs and making profit and loss projections.

REFERENCES

Adha, R. N., Qomariah, N., & Hafidzi, A. H. (2019). Pengaruh Motivasi Kerja, Lingkungan Kerja, Budaya Kerja Terhadap Kinerja Karyawan Dinas Sosial Kabupaten Jember. *Jurnal Penelitian Ipteks*, *4*(1). Https://Doi.Org/10.32528/Ipteks.V4i1.2109

Ambrose, B. W., & Steiner, E. (2022). Economic Fundamentals, Capital Expenditures And Asset Dispositions. *Journal Of Real Estate Finance And Economics*, *64*(3). Https://Doi.Org/10.1007/S11146-019-09698-9

Anwar, A. (2021). Pengaruh Organizational Citizenship Behavior (Ocb) Terhadap Kepuasan Kerja Dan Kinerja Karyawan. *Juripol*, *4*(1). Https://Doi.Org/10.33395/Juripol.V4i1.10963

Bae, J., Biddle, G. C., & Park, C. W. (2022). Managerial Learning From Analyst Feedback To Voluntary Capex Guidance, Investment Efficiency, And Firm Performance. *Management Science*, *68*(1). Https://Doi.Org/10.1287/Mnsc.2020.3896

Baghban, H., Huang, C. Y., & Hsu, C. H. (2020). Resource Provisioning Towards Opex Optimization In Horizontal Edge Federation. *Computer Communications*, *158*. Https://Doi.Org/10.1016/J.Comcom.2020.04.009

Brunekreeft, G., & Rammerstorfer, M. (2021). Opex-Risk As A Source Of Capex-Bias In Monopoly Regulation. *Competition And Regulation In Network Industries*, *22*(1). Https://Doi.Org/10.1177/1783591720983184

Choupin, O., Henriksen, M., & Tomlinson, R. (2022). Interrelationship Between Variables For Wave Direction-Dependent Wec/Site-Configuration Pairs Using The Capex Method. *Energy*, *248*. Https://Doi.Org/10.1016/J.Energy.2022.123552

Etezadi, E., Beyranvand, H., & Salehi, J. A. (2022). Latency-Aware Service Provisioning In Survivable Multilayer Ip-Over-Elastic Optical Networks To Support Multi-Class Of Service Transmission. *Computer Communications*, *183*. Https://Doi.Org/10.1016/J.Comcom.2021.12.003

Hidayat, M. U. (2020). Analisa Efektifitas Ran Sharing Pada Perusahaan Telekomunikasi (Studi Kasus Ran Sharing Xl-Indosat). *Jurnal Telekomunikasi Dan Komputer*, *10*(1). Https://Doi.Org/10.22441/Incomtech.V10i1.7410

Iglesias, R., Simón, P., Moragas, L., Arce, A., & Rodriguez-Roda, I. (2017). Cost Comparison Of Full-Scale Water Reclamation Technologies With An Emphasis On Membrane Bioreactors. *Water Science And Technology*, *75*(11). Https://Doi.Org/10.2166/Wst.2017.132

Ioannou, A., Angus, A., & Brennan, F. (2018). Parametric Capex, Opex, And Lcoe Expressions For Offshore Wind Farms Based On Global Deployment Parameters. *Energy Sources, Part B: Economics, Planning And Policy*, *13*(5). Https://Doi.Org/10.1080/15567249.2018.1461150

Jufrizen, & Hadi, F. P. (2021). Pengaruh Fasilitas Kerja Dan Disiplin Kerja Terhadap Kinerja Karyawan Melalui Motivasi Kerja. *Jurnal Sains Manajemen*, *7*(1).

Khalil, M., & Biyanto, T. R. (2018). Optimisasi Co 2 Captured Dan Distribusi Untuk Enhanced Oil Recovery. *Departemen Teknik Fisika Nstitut Teknologi Sepuluh Nopember (Its)*, *1*(Capture Co2).

Khotimah, D. P. (2021). Analisis Disiplin Kerja Karyawan. *Jurnal Akuntansi Dan Manajemen*, *18*(1), 22–38. Https:/Ejournar.Stie.Ac.Id/Index.Php/Jam/Article/View/375

Köhler, S., Friedli, T., & Basu, P. (2020). Operational Excellence In Pharmaceutical Quality Control Labs: Driver Of An Effective Quality System. *Journal Of Pharmaceutical Innovation*, *15*(1). Https://Doi.Org/10.1007/S12247-019-09376-6

Macedo, S. F., & Peyerl, D. (2022). Prospects And Economic Feasibility Analysis Of Wind And Solar Photovoltaic Hybrid Systems For Hydrogen Production And Storage: A Case Study Of The Brazilian Electric Power Sector. *International Journal Of Hydrogen Energy*, *47*(19). Https://Doi.Org/10.1016/J.Ijhydene.2022.01.133

Marlitha, D. (2017). Komparasi Skema Pembiayaan Psc Dan Tbs Proyek Lng Terapung Di Indonesia. *Universitas Indonesia*.

Martinez-Luengo, M., & Shafiee, M. (2019). Guidelines And Cost-Benefit Analysis Of The Structural Health Monitoring Implementation In Offshore Wind Turbine Support Structures. In *Energies* (Vol. 12, Issue 6). Https://Doi.Org/10.3390/En12061176

Noll, B., Del Val, S., Schmidt, T. S., & Steffen, B. (2022). Analyzing The Competitiveness Of Low-Carbon Drive-Technologies In Road-Freight: A Total Cost Of Ownership Analysis In Europe. *Applied Energy*, *306*. Https://Doi.Org/10.1016/J.Apenergy.2021.118079

Nthunya, L. N., Bopape, M. F., Mahlangu, O. T., Mamba, B. B., Van Der Bruggen, B., Quist-Jensen, C. A., & Richards, H. (2022). Fouling, Performance And Cost Analysis Of Membrane-Based Water Desalination Technologies: A Critical Review. In *Journal Of Environmental Management* (Vol. 301). Https://Doi.Org/10.1016/J.Jenvman.2021.113922

Pearson, J. L., Michael, P. R., Ghaffour, N., & Missimer, T. M. (2021). Economics And Energy Consumption Of Brackish Water Reverse Osmosis Desalination: Innovations And Impacts Of Feedwater Quality. *Membranes*, *11*(8). Https://Doi.Org/10.3390/Membranes11080616

Putra, M. A. S. D. (2016). Desain Rantai Pasok Gas Alam Cair (Lng) Untuk Kebutuhan Pembangkit Listrik Di Indonesia Bagian Timur. *Jurnal Teknik Its*, *5*(2). Https://Doi.Org/10.12962/J23373539.V5i2.19120

Rady, M., Georges, J. P., & Lepage, F. (2021). Can Energy Optimization Lead To Economic And Environmental Waste In Lpwan Architectures? *Etri Journal*, *43*(2). Https://Doi.Org/10.4218/Etrij.2019-0524

Ruark, E., Münz, M., Clarke, M., Renwick, A., Ramsay, E., Elliott, A., Seal, S., Lunter, G., & Rahman, N. (2016). Opex-A Validated, Automated Pipeline Optimised For Clinical Exome Sequence Analysis. *Scientific Reports*, *6*. Https://Doi.Org/10.1038/Srep31029

Samola, W. N. E., & Tumewu, F. J. (2022). The Impact Of Green Human Resource Management On Employee Performance. *Jurnal Emba*, *10*(2), 429–472.

Saputra, B. B. B., & Krisnadi, I. (2019). Analisa Strategi Pemasaran Bisnis Untuk Solusi Ict Pt Indosat Tbk. *Universitas Mercubuana, Manajemen Ict*, *April*.

Sens, L., Neuling, U., & Kaltschmitt, M. (2022). Capital Expenditure And Levelized Cost Of Electricity Of Photovoltaic Plants And Wind Turbines – Development By 2050. *Renewable Energy*, *185*. Https://Doi.Org/10.1016/J.Renene.2021.12.042

Setyawan, A. (2018). Analisis Faktor-Faktor Yang Mempengaruhi Kinerja Karyawan (Studi Kasus Pada Tiga Perusahaan Fabrikasi Lepas Pantai Di Batam Dan Karimun). *Journal Of Accounting & Management Innovation*, *2*(1).

Sihaloho, R. D., & Siregar, H. (2019). Pengaruh Lingkungan Kerja Terhadap Kinerja Karyawan Pada Pt Super Setia Sagita Medan. *Jurnal Ilmiah Socio Secretum*, *9*(2).

Sun, G., Li, Y., Zhu, G., Liao, D., & Chang, V. (2018). Energy-Efficient Service Function Chain Provisioning In Multi-Domain Networks. *Iotbds 2018 - Proceedings Of The 3rd International Conference On Internet Of Things, Big Data And Security*, *2018-March*. Https://Doi.Org/10.5220/0006770301440152

Sun, J., Sun, G., Liao, D., Li, Y., Ramachandran, M., & Chang, V. (2018). Reliable And Efficient Deployment For Virtual Network Functions. *Lecture Notes In Computer Science (Including Subseries Lecture Notes In Artificial Intelligence And Lecture Notes In Bioinformatics)*, *10699 Lncs*. Https://Doi.Org/10.1007/978-3-319-73830-7_37

Sun, J., Zhu, G., Sun, G., Liao, D., Li, Y., Sangaiah, A. K., Ramachandran, M., & Chang, V. (2018). A Reliability-Aware Approach For Resource Efficient Virtual Network Function Deployment. *Ieee Access*, *6*. Https://Doi.Org/10.1109/Access.2018.2815614

Tyagi, V. K., Kapoor, A., Arora, P., Banu, J. R., Das, S., Pipesh, S., & Kazmi, A. A. (2021). Mechanical-Biological Treatment Of Municipal Solid Waste: Case Study Of 100 Tpd Goa Plant, India. *Journal Of Environmental Management*, *292*. Https://Doi.Org/10.1016/J.Jenvman.2021.112741

Ullah, K., Bagh, T., Bloch, D. A., Prasad, Brian Neal, S., Ayaz, A., Yanartaş, M., Indonesia, U., Ekonomi, F., Studi, P., Manajemen, M., Maggadani, B. P., Farmasi, F., Doktor, P., Studi, P., Farmasi, I., Ninla Elmawati Falabiba, Suroyo, H., Amin, Z., Trojanowska, J., Israeli, D. (2020). Financial Reporting In The Oil And Gas Industry. *Review Of Accounting Studies*, *13*(3).

Wiser, R., Bolinger, M., & Lantz, E. (2019). Assessing Wind Power Operating Costs In The United States: Results From A Survey Of Wind Industry Experts. *Renewable Energy Focus*, *30*. Https://Doi.Org/10.1016/J.Ref.2019.05.003

Yeannie, & Handayani, R. (2017). Internal Cash Flow , Insider Ownership Terhadap Capital Expenditure : Perspective Pecking Order Theory. *Jurnal Bisnis Dan Akuntansi*, *9*(2), 153–164.

Yuwanto, T. (2017). Analisis Tekno Ekonomi Biaya Capex Dan Opex Implementasi Jaringan Long Term Evolution Area Banten. *Jurnal Telekomunikasi Dan Komputer*, *8*(1). Https://Doi.Org/10.22441/Incomtech.V8i1.214

Zhao, D., Sun, G., Liao, D., Iqbal, R., & Chang, V. (2017). Live Migration For Service Function Chaining. *Iotbds 2017 - Proceedings Of The 2nd International Conference On Internet Of Things, Big Data And Security*. Https://Doi.Org/10.5220/0006364701490156

Zuldian, P. (2020). Potensi Pemanf Aa T An Biohidrogen Dan Biomet Anadari Pome Untuk Ketenagalistrikan P Ada Analisis Prototipe 3 Biohythane Kap Asit As 1 M /Hari. *Jurnal Energi Dan Lingkungan (Enerlink)*, *13*(1). Https://Doi.Org/10.29122/Elk.V13i1.4256