

Research on Management Quality and Efficiency with a Project as the Minimum Value Reflection Unit

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Abstract: In recent years, facing increasing operating pressure, it is more and more important to improve the operating efficiency of the company. This paper integrates the industry and finance data, studies the collection and allocation logic of the income and cost of a single project, and realizes the benefit calculation of a single project. On this basis, it establishes the comprehensive benefit evaluation index system of the project, carries out the projected portrait, assists the company's business optimization, helps to optimize the company's resource allocation, and promotes high-quality development.

1 INTRODUCTION

On the one hand, with the deepening of the implementation of the transmission and distribution tariff reform and the impact of multiple factors such as the outbreak of COVID-19 and the reduction of industrial and commercial electricity prices at the national level, the power grid enterprises' growth in electricity consumption has slowed down, the profit level has dropped significantly and the cost expenditures have been continuously cut down, which directly affects the company's operating income and the operating pressure has increased significantly. On the other hand, the in-depth development of key work such as multi-dimensional lean management system reform and special action for quality and efficiency improvement puts forward higher requirements for the company's quality and efficiency improvement and lean management. In this context, the company began to comprehensively explore the application of business and financial data and value mining, divide small value reflection units, study the calculation logic of the benefits of a single project, carry out the company's operation quality and efficiency analysis at multiple levels on the basis of

realizing the calculation of the benefits of a single project, and on this basis, from the perspective of profitability Establish the comprehensive benefit evaluation index system of the project from the three aspects of development capacity and cost structure, carry out the quantitative scoring of the comprehensive benefit of the project, assist the company's business optimization, and provide reference for the company's resource allocation decision-making.

2 RESEARCH CONTENT

Firstly, the business types of the company are divided into market-oriented business and non-market-oriented business; Secondly, accurately collect the projected revenue and direct cost, set scientific and reasonable allocation rules, reasonably allocate the indirect cost of the project, and accurately calculate the income of a single project; Finally, the project comprehensive benefit evaluation model is established to evaluate and rank the comprehensive benefits of various projects to support the project optimization.

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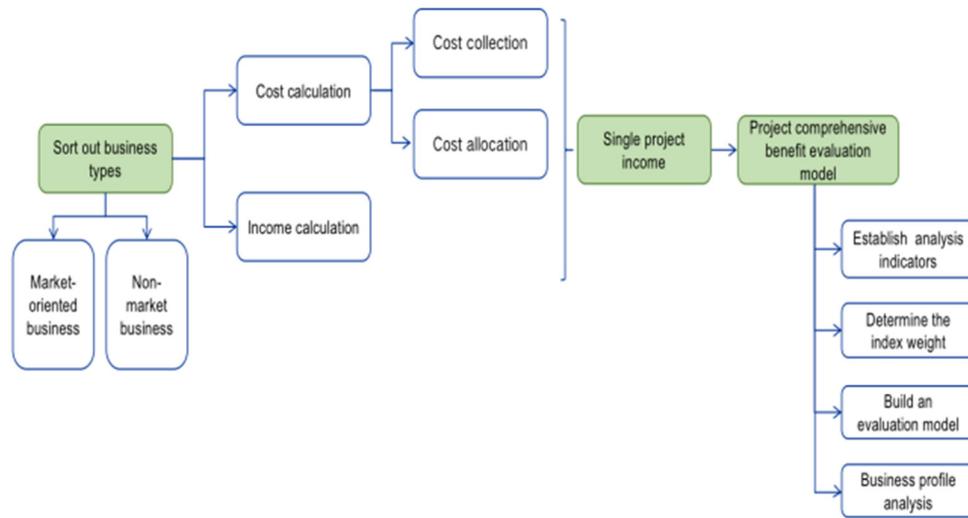


Figure 1: Quality and efficiency study of operation.

2.1 Sort Out Business Types

The company has five business departments, which are respectively responsible for the development and

implementation of different types of business. Based on the investigation of each department, the project types carried out by the five departments are sorted out and determined.

Table 1: Business types.

department	Project type	Business direction
Printing center	Printing services	printing
	Printing services	Typesetting processing
	Printing services	Sporadic printing
Logistics Service Center	Logistics services	estate management
	Logistics services	Vehicle service
Measurement Service Center	Measurement services	Measurement technology services
	Measurement services	Equipment overhaul and maintenance
	Logistics services	estate management
	Logistics services	Vehicle service
	Material services	Retail sales
	other	Other comprehensive
Engineering repair and test center	technical service	Detection and auxiliary services
	Rental services	Equipment and warehouse leasing
	Material services	Equipment purchase agent
Technology and R & D Center	technical service	Technical assistance
	technical service	R & D

2.2 Benefit Calculation of Single Project

Based on the income and cost data directly calculated by each project, as well as the apportioned indirect costs and public expenses of each project, the benefit calculation of a single project is carried out.

Project profit = project revenue - project direct cost - apportionment of indirect costs - apportionment of public expenses

Among them, the projected revenue and project direct cost have been calculated according to a single project and can be directly collected; The indirect cost of the project includes depreciation expense, amortization of intangible assets, research and

development expense, repair expense, amortization of low-value consumables, office expense, travel expense, labor protection expense, etc. it has been accounted to the business department, but not to a single project, so it needs to be apportioned among various projects; Public expenses include financial expenses and asset impairment losses, which are not accounted for to specific departments. They need to be split among business departments first and then allocated to a single item.

2.2.1 General Idea of Cost Allocation

Firstly, the public expenses and the costs incurred by the public sector are shared among the five business departments; Secondly, the cost calculated to the business department is allocated to every single project, so as to realize the cost accounting at the level of a single project.

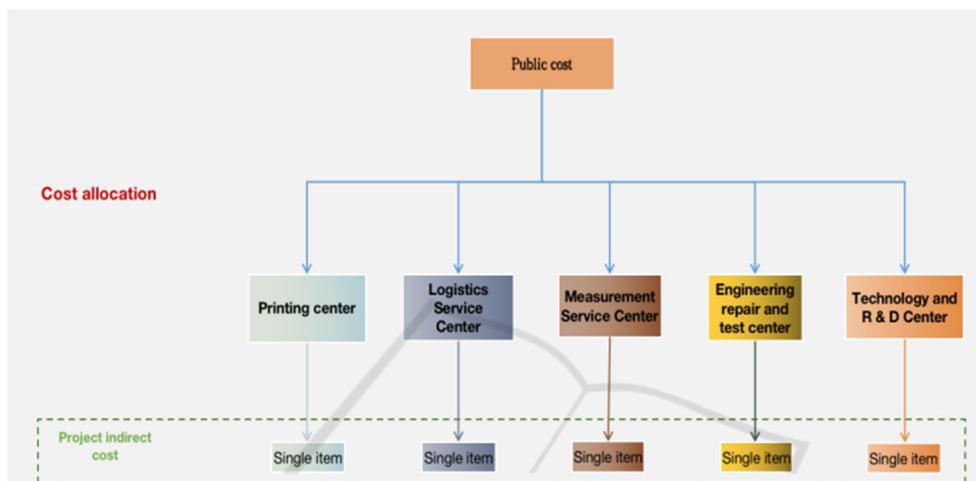


Figure 2: Cost allocation idea.

2.2.2 Cost Allocation Driver Settings at All Levels

Public expenses and public sector costs: distinguish different costs and cost drivers, and set allocation rules. Among them, the depreciation of fixed assets is apportioned according to the original value ratio of fixed assets of five business departments; Asset impairment loss shall be apportioned according to the proportion of accounts receivable balance of five business departments; Other expenses shall be

apportioned in proportion to the project income of the five business departments.

Project indirect cost: when the costs and expenses that have been calculated to each business department are allocated among individual projects, the allocation rules are set according to different costs and expense drivers. Among them, R & D expenses are only apportioned among R & D related projects according to the scale of project income; Other expenses shall be apportioned according to the income scale of each project.

Table 2: Public cost sharing motivation.

Allocation steps	Public expenses		Indirect cost							
	Public cost sharing motivation	Financial expenses	assets impairment loss	depreciation charge	repair cost	Office expenses	Travel expenses	Labor protection fee	Conference expenses	Business entertainment expenses
Revenue scale of each department		Accounts receivable scale of each department	Original value of fixed assets of each department	Revenue scale of each department						

2.2.3 Calculation Results

Combined with the combed business type framework and customer sources, select the projects

implemented by the company in 2020, collect the project basic data and the company's financial data, and carry out the benefit calculation of a single project.

Table 3: Example of benefit calculation results of single project (part).

department	entry name	Project type	Business direction	Customer source	Project income	Project direct cost	Project indirect cost	Labor cost	Project profit
Logistics Service Center	Item A	Logistics services	estate management	Within the system	29.11	2.00	3.32	7.92	15.86
Logistics Service Center	Item B	Logistics services	estate management	Within the system	142.61	50.90	16.28	38.82	36.62
Logistics Service Center	Item C	Logistics services	Vehicle service	Within the system	58.31	0.00	6.66	15.87	35.78

2.3 Build the Comprehensive Benefit Evaluation Model of the Project

2.3.1 Establish the Comprehensive Benefit Evaluation Index System of the Project

From the perspective of profitability, development capacity, and cost structure, the project benefit

evaluation index system is constructed. In terms of profitability, it mainly focuses on profit scale and profit margin, which comprehensively reflects the overall benefit level of the project. The development capacity mainly refers to the project revenue scale, reflecting the development space of this kind of business. The cost structure mainly includes the project cost scale and the proportion of the direct cost, reflecting the cost control ability of the project.

Table 4: project benefit evaluation index system.

Index category	Detailed indicators	Calculation formula
Profitability	Profit scale	Average profit of various projects
	profit margin	Average profit of various projects/Average income of the project
Development capacity	Income scale	Average income of various projects
cost structure	Cost scale	Average cost of various projects
	The proportion of direct cost	$(\text{Project direct cost}) / (\text{Project direct cost} + \text{Project indirect cost} + \text{Labor cost})$

2.3.2 Indicator Weight Setting and Scoring Rule Confirmation

The index weight is set according to the importance of the index, in which the weight of profit scale and profit margin is 30%, the weight of income scale is 20%, and the weight of cost scale and the direct cost is 10%.

Analyze the consistency between the change direction of various indicators and the company's strategic objectives. The larger the profit scale, profit margin, and income scale indicators, the smaller the cost scale indicators in the cost structure, and the

larger the direct cost proportion indicators, the better. Sort the index values of various projects and take the sorting number as the index score. Among them, the larger the index value, the better the index is sorted according to the larger the value and the larger the sorting number; The smaller the index value, the better. The smaller the index value and the larger the ranking number is, and the index scores of various projects are calculated.

2.3.3 Use the Evaluation Model for Comprehensive Scoring

The weighted comprehensive scores of various indicators of various projects are calculated according to the weight, and the comprehensive scores are sorted. The larger the comprehensive score, the higher the ranking. The top projects are those with better benefits, which are given priority under the same conditions.

2.3.4 Case Analysis

Firstly, based on the benefit calculation results of a single project, calculate the specific indicators such as project profit, profit margin, project income, project cost, and the proportion of project direct cost of various projects.

It can be seen from the calculation results: in addition to the sporadic printing services of the printing center, from the perspective of the average profit scale of the project, the vehicle service project of the logistics service center has the largest average profit scale; The second is the measurement technology service projects of the measurement service center. In terms of average profit margin, the top three are the vehicle service of the logistics service center, the measurement technical service of the measurement service center, and various projects of the printing center. The logistics service, material service, and other profit margins of the measurement service center are negative. In terms of average sales revenue, the top three projects are the property management of the measurement service center, the property management of the logistics service center, and the equipment purchase agent of the engineering repair and test center.

Table 5: Benefit calculation results of various projects.

department	Project type	Business direction	Profitability		Development capacity	cost structure	
			Profit scale	profit margin	Income scale	Cost scale	Proportion of direct cost
Printing center	Printing services	printing	5.25	16.58%	36.93	31.68	0.00%
		Typesetting processing	3.55	16.58%	25.00	21.45	0.00%
		Sporadic printing	34.07	16.58%	239.64	205.57	0.00%
Logistics Service Center	Logistics services	estate management	18.69	7.29%	275.23	256.54	58.55%
		Vehicle service	47.08	158.83%	76.72	29.64	0.00%
Measurement Service Center	Measurement services	Measurement technology services	19.19	24.52%	97.47	78.27	47.91%
		Equipment overhaul and maintenance	0.31	0.68%	46.22	45.91	57.88%
	Logistics services	estate management	-21.71	-6.30%	323.01	344.73	60.92%
		Vehicle service	-35.48	-24.99%	106.52	142.01	68.71%
	Material services	Retail sales	-5.90	-25.48%	17.26	23.16	68.92%
other	Other comprehensive	-5.49	-20.91%	20.77	26.26	67.01%	
Engineering repair and test center	technical service	Detection and auxiliary services	0.33	0.68%	48.27	47.94	0.00%
	Rental services	Equipment and warehouse leasing	0.46	1.09%	42.40	41.94	0.00%
	Material services	Equipment purchase agent	1.36	1.09%	126.34	124.98	0.00%
Technology and R & D Center	technical service	Technical assistance	0.49	3.96%	12.77	12.29	0.00%
		R & D	0.34	3.96%	8.96	8.62	0.00%

Then, sort and score according to various index attributes, calculate the comprehensive benefit score of various projects according to the set index weight and sort the calculation results in descending order. The results are shown in the table below.

From the comprehensive score, in addition to the sporadic printing services of the printing center, the

top three are the vehicle service of the logistics service center, the measurement technology service of the measurement service center, and the property management of the logistics service center. It is suggested to give priority to these projects under the constraints of resources.

Table 6: Benefit evaluation results of various projects.

department	Project type	Business direction	Profitability		Development capacity	cost structure		Comprehensive score	Comprehensive score ranking
			Profit scale	profit margin		Income scale	Cost scale		
weight			30%	30%	20%	10%	10%	—	—
Printing center	Printing services	printing	12	13	6	8	1	9.6	5
		Typesetting processing	11	13	5	8	1	9.1	6
		Sporadic printing	15	12	14	8	1	11.8	3
Logistics Service Center	Logistics services	estate management	13	11	15	2	12	11.6	4
		Vehicle service	16	16	10	8	1	12.5	1
Measurement Service Center	Measurement services	Measurement technology services	14	15	11	4	10	12.3	2
		Equipment overhaul and maintenance	5	5	8	5	11	6.2	12
	Logistics services	estate management	2	4	16	1	13	6.4	10
		Vehicle service	1	2	12	3	15	5.1	14
	Material services	Retail sales	3	1	3	7	16	4.1	16
	other	Other comprehensive	4	3	4	6	14	4.9	15
Engineering repair and test center	technical service	Detection and auxiliary services	6	6	9	8	1	6.3	11
	Rental services	Equipment and warehouse leasing	8	7	7	8	1	6.8	8
	Material services	Equipment purchase agent	10	8	13	8	1	8.9	7
Technology and R & D Center	technical service	Technical assistance	9	9	2	8	1	6.7	9
		R & D	7	10	1	8	1	6.2	12

3 CONCLUSIONS

Firstly, this study studies the rules of project revenue and expenditure collection and allocation to realize the accurate calculation of the income of a single project; Then, considering the profitability, development ability, and cost control level, establish the project comprehensive benefit evaluation index system, build the project comprehensive benefit evaluation model, carry out comprehensive evaluation and ranking of various projects, support project optimization, and provide data support for the company's resource allocation and the formulation of market strategy.

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