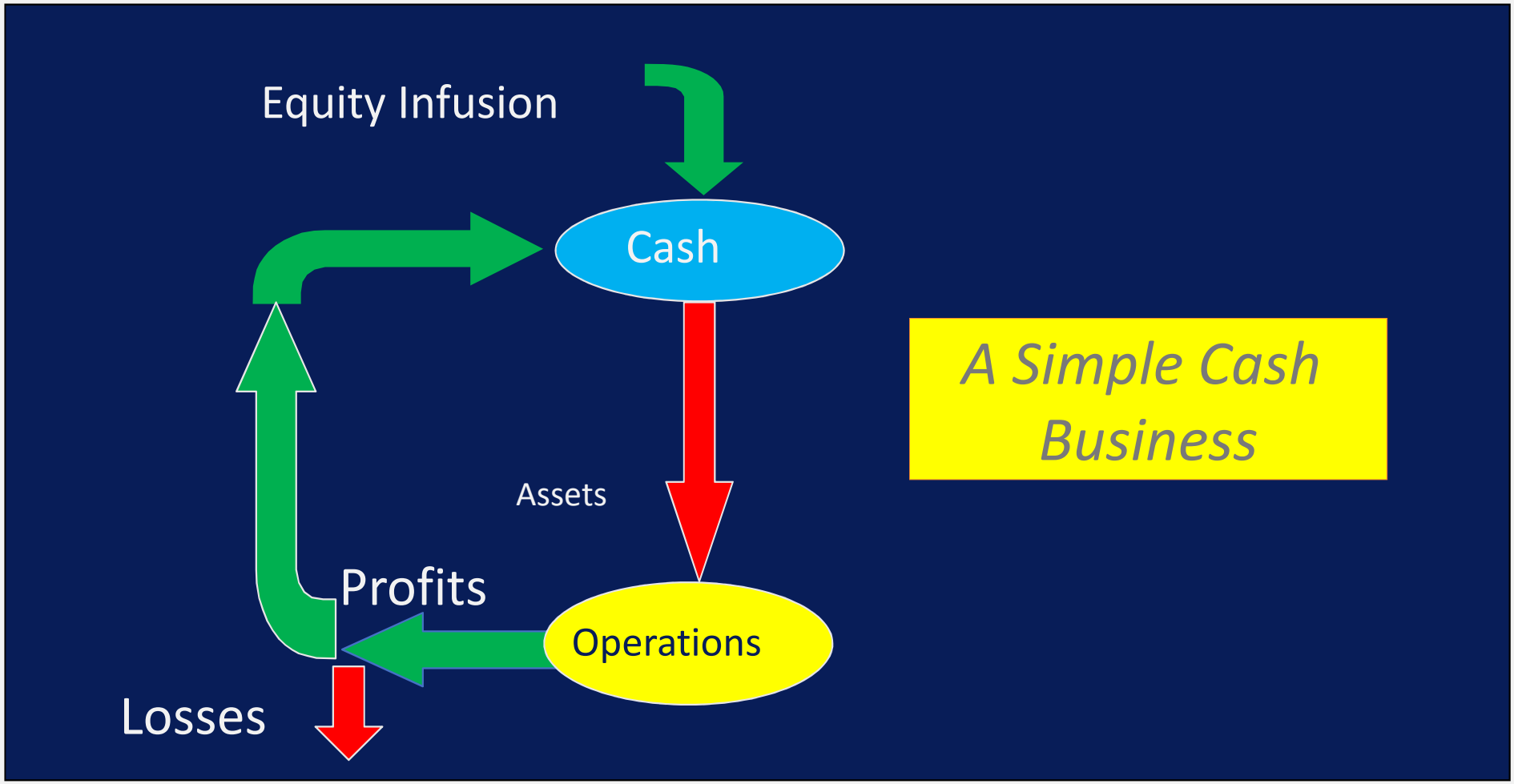
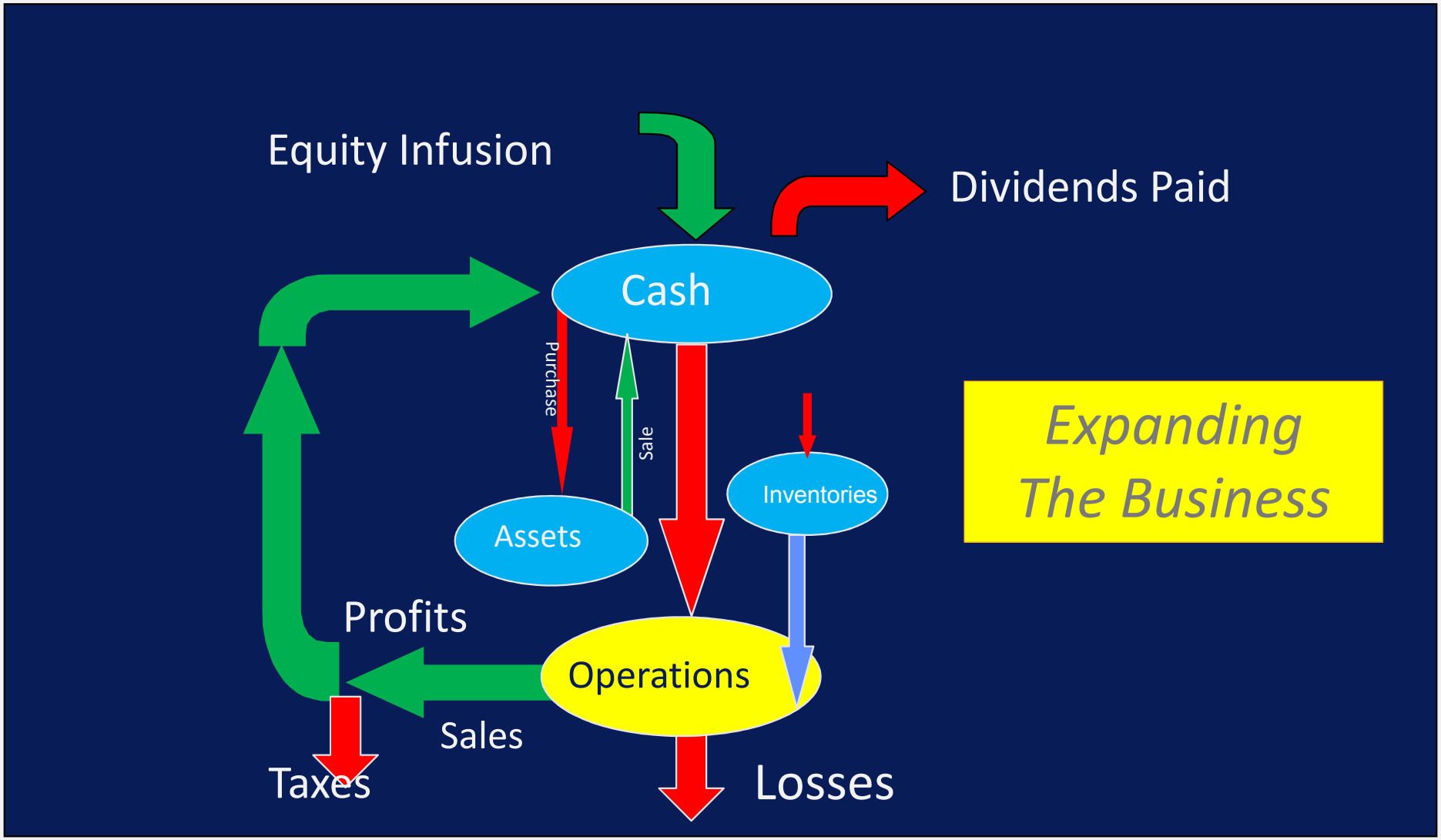
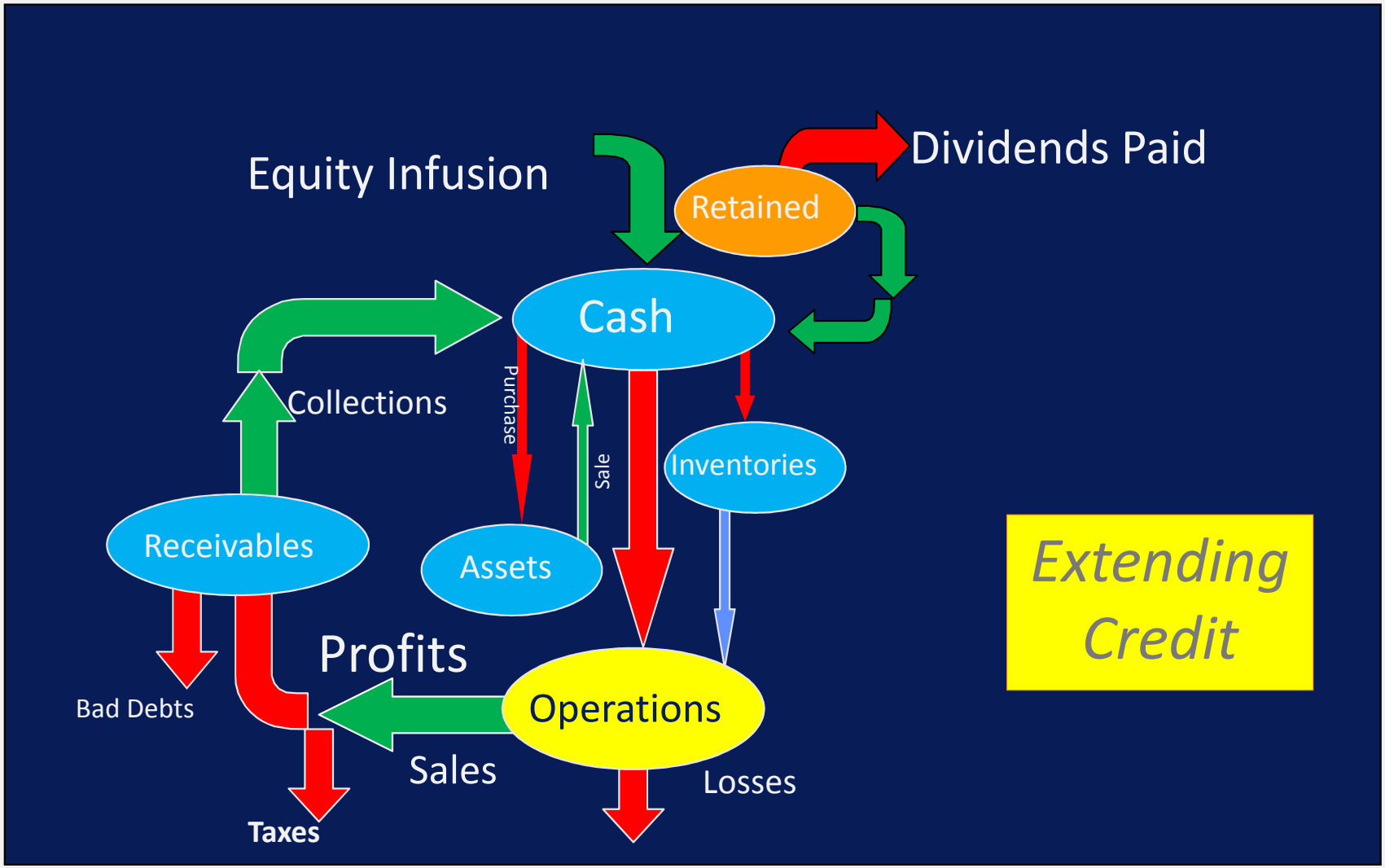
Measuring Historical Financial Performance

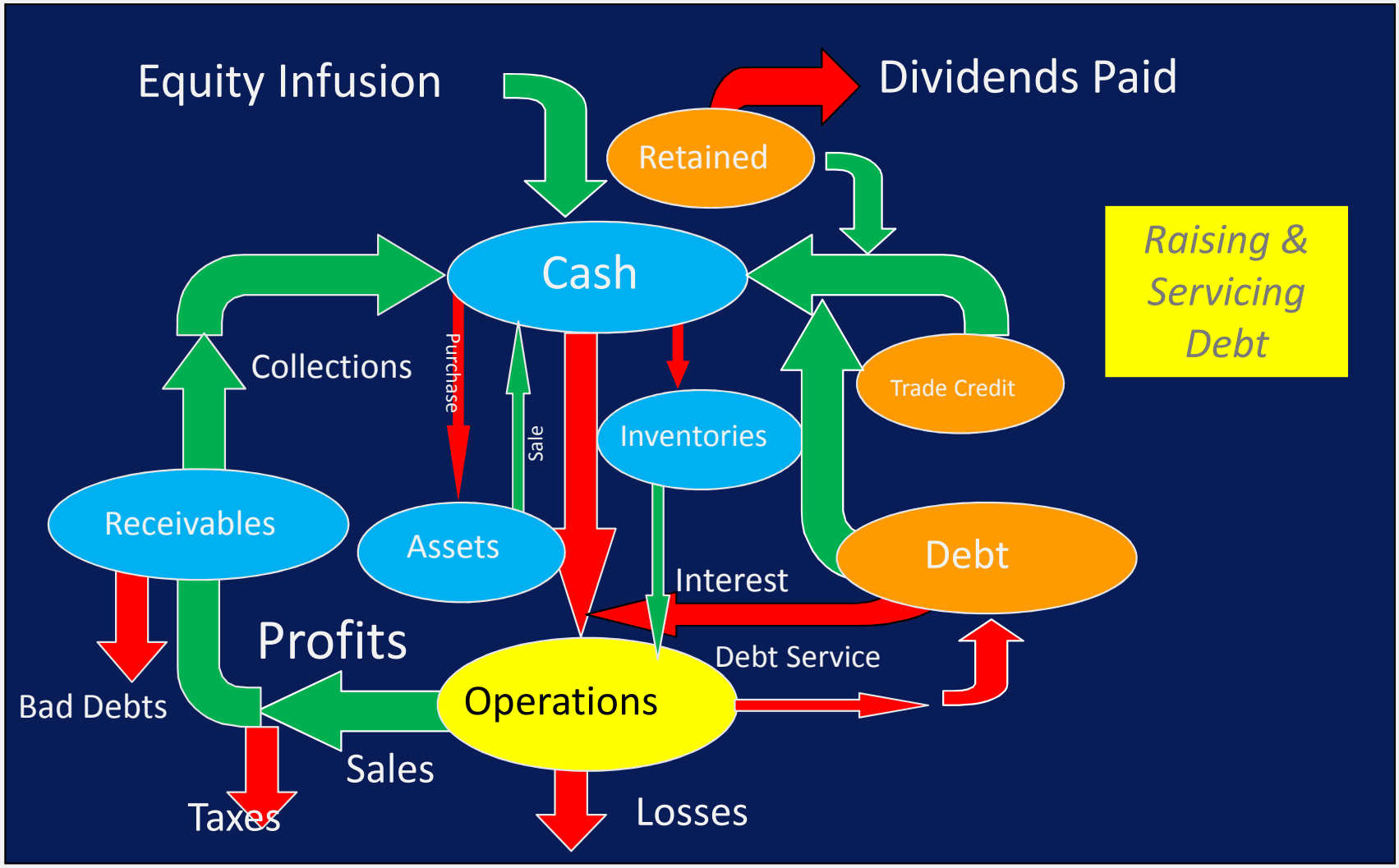
Let’s Start With Understanding the Financial System!

The Funds Flow System




Equity Infusion
Dividends Paid
Cash
Purchase
Sale
Assets
Inventories
Expanding
The Business
Profits
Operations
Sales
Taxes
Losses


Equity Infusion
Dividends Paid
Retained
Cash
Collections
Purchase
Sale
Inventories
Receivables
Assets
Profits
Bad Debts
Operations
Sales
Losses
Taxes
Extending Credit


Equity Infusion
Dividends Paid
Retained
Raising & Servicing Debt
Cash
Collections
Purchase
Sale
Trade Credit
Inventories
Receivables
Assets
Debt
Interest
Profits
Debt Service
Bad Debts
Operations
Sales
Taxes
Losses

Essentially a Financial System is Interrelated so Most Financial and Technical Indicators also Relate to Each Other

Financial Statement Analysis

- The Income Statement reflects the operating performance for the period – i.e. production and sales which lead to either profit or losses. Income Statements need to be properly formatted for quick assessment.
- The Balance Sheet reflects the balance of the different accounts which are either assets, liabilities or equity. The balance sheet is a snapshot at any point in time.
- The Cash Flow Statement reflects the movement of cash during the year and is the bridge between the income statement and the balance sheet.
- The balance sheet is always reported at end or the reporting period while income and cash flow statements are for the entire reporting period usually a year.

Income Statement

Good Format

Operating Revenues

Less: Operating Expenses

- Power
- Chemicals
- Maintenance
- Direct Labor
- Other direct Costs

Contribution Margin

Less: General And Administrative Expenses

Gross Profit Before Interest, Depreciation & Other Non-Operating Income

Less: Interest Expense

Less: Depreciation

Plus: Non Operating Income

Profit Before Taxes

Less: Income Taxes

Net Profit

Poor Format

Revenues

Less: Power

Chemicals

Labor

Maintenance

Travel

Transportation

Interest

Depreciation

Taxes

Provident Fund

Net Profit

Balance Sheet

Good Format

ASSETS

Cash

Accounts Receivables

Inventories

Other Current

Total Current

Fixed Assets

Total Assets

LIABILITIES & EQUITY

Accounts Payable

Other Payables

Current Portion of Long-Term Debt

Total Current liabilities

Long Term Debt

Total Liabilities

Equity

Paid in Capital

Retained Earnings

Total Capital

Total Liabilities & Equity

Poor Format

ASSETS

Cash

Accounts Receivables

Inventories

Other Current

Land

Plant in Service

CWIP

Total Assets

LIABILITIES & EQUITY

Accounts Payable

Other Payables

Long Term Debt

Total Liabilities

Total Capital

Total Liabilities & Equity

Cash Flow

Good Format

Internal Cash Generation

Net Income Before Interest

Add: Depreciation

Operating Cash Flow

Add: Beginning Cash Position

Changes in Working Capital (Inc./(Dec.)

- Inventories
- Accounts Receivables
- Prepaid Expenses
- Accounts Payable

Cash Before Debt Service

Add: Interest Charges

Principal Repayments

Total Debt Service

Cash After Debt Service

Investment Operations

Sale of Assets

CAPEX

Interest During Construction

Annual Capital Investments

Cash After Investment Operations

Sources of Financing

Loans

Capital Grants

Subsidies

Funds From Loans & Grants

Cash Ending Balance

Poor Format

Fund Sources

Year-End Profits

Depreciation

Reduction in Inventories

Increase in Accounts Payables

Loan Disbursements

Grants and Subsidies

Sale of Assets

Depreciation Expense

Total Sources of Cash

Fund Uses

Increase in Accounts Receivables

Increase in Prepaid Expenses

Capital Expenditures

Interest During Construction

Principal Repayments

Total Uses of Cash

Add: Beginning Balance

Cash Ending Balance

Financial Statement Analysis

- If you analyze the income statement and balance sheet but not the cash flow you are missing a big part of the analysis.
- That’s because whatever is earned or expensed is nor necessarily converted to cash - Case in point receivables and payables.
- So first thing you have to figure out is whether the utility follows cash or accrual accounting.
- Assets use up cash while liabilities release cash. Ultimately if the business is cash starved it will go bankrupt if there is no external support.

About Diagnosing Performance of a Utility

- To be truly effective you need to understand the financial system of the utility and the interrelationship of the three main statements.
- Don’t get bogged down with too many indicators.
- Performance Indicators and financial ratios are helpful but can lead you to the wrong conclusions and don’t give you the full information.
- Benchmarking system can also be helpful but not all utilities are homogeneous. Their systems vary widely and also how investments are financed.
- Best benchmark for a utility is its own year-to-year variance, but careful if the utility on a fast growth curve.
- Closely study the Audit Report particularly the notes to the statements.
- Always Ask what’s included in accounts you do not understand.

A Good Diagnostic is Not Just about Finance!

Components of Historical Diagnostic

- Demographic Overview
- System/Network Characteristics
- Characteristics of Consumer Base and Coverage Area
- Operating and Technical Performance
- Financial Performance
- Management, Institutional & Other Issues

- Summary of Debt Situation
- Sanitation and Wastewater Profile
- External Governance Profile
- Strategic Objectives
- Investment Priorities
- Action Items to Improve Performance
- Financing Requirements

Summary Data & Indicators

Operating & Technical Performance

Identify key operating performance in terms of water quality and service performance.
Provide annual comparison for key operating indicators including:

	2016	2017	2018
Water Produced			
Water Sold			
Service Connections			
Population Served			
Staff/Connection (000)			
Average Tariff			
Non Revenue Water			
Of which: commercial losses			
Operating Ratio			
Explanation of importance changes between the years			

Summary Data & Indicators

Financial Performance

Identify key financial information and performance. Provide annual comparison for indicators including:

	2016	2017	2018
Operating Results			
Operating Revenue			
Operating Expenses			
Interest Expense			
Depreciation Expense			
Net Income			
Operating Cash Flow			
Debt Payments			
Total Assets			
Current Assets			
Current Liabilities			
Working Capital			
Financial Indicators			
Collection Ratio			
Current Ratio			
Debt Service Coverage Ratio			

Key Performance Indicators

- NRW
- Operating Cost Coverage Ratio
- Collection Ratio
- Debt Service Coverage Ratio
- Net Profit Ratio
- Return on Fixed Assets
- Tariff Adequacy

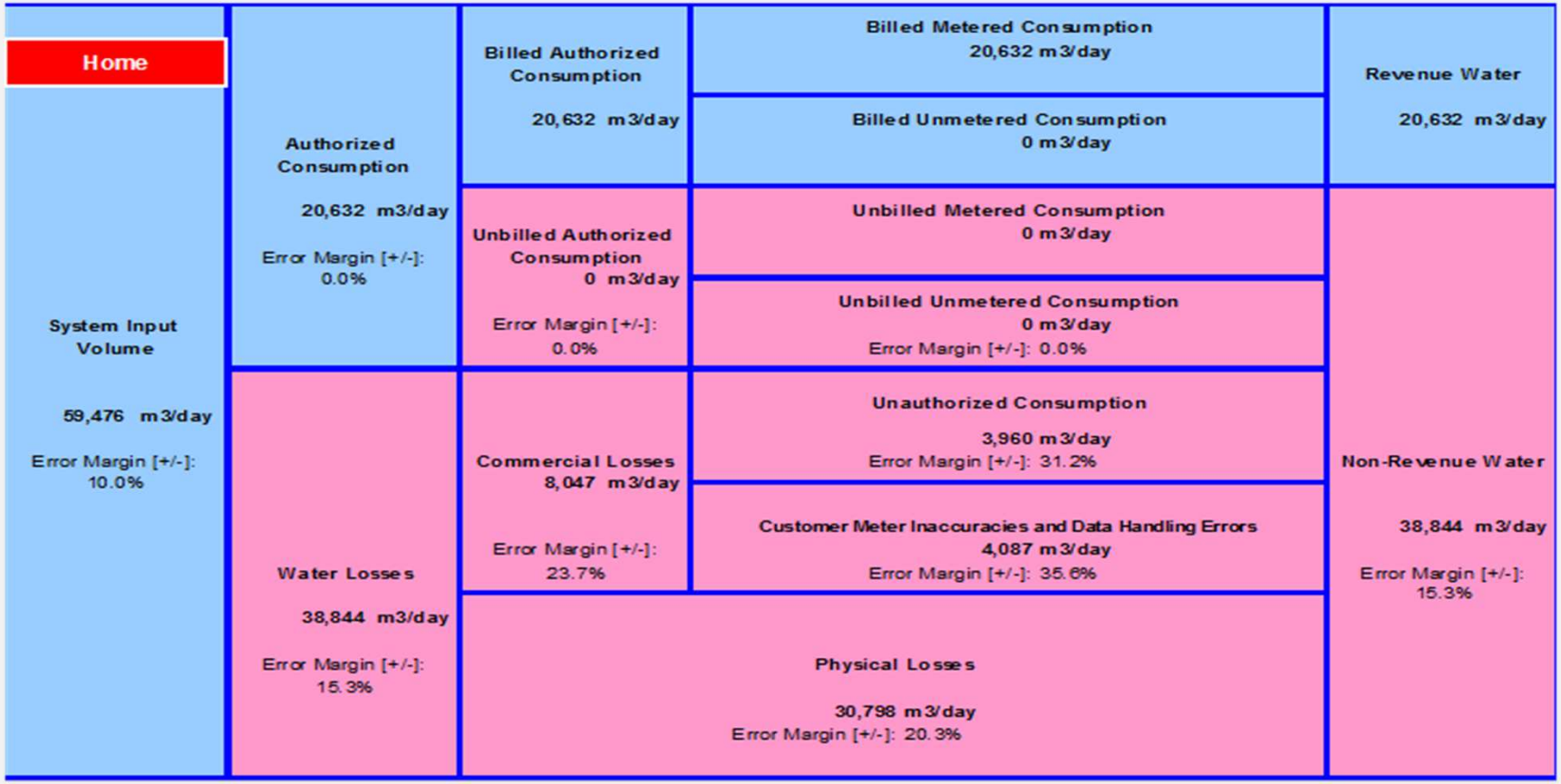
Non Revenue Water

- NRW is perhaps one of the more important indicators for water utilities as it measures both technical and commercial efficiency.
- High NRW levels may not necessarily lower operating costs substantially, particularly in gravity fed systems with low pumping costs, but for they may still greatly reduce investment efficiency if the entity is reaching its water resource capacity and requires new investments for developing a new water source.
- Analysis of the financial impacts of high NRW are necessary to develop appropriate remedial actions, if necessary.

NRW (*in its simplest form*)

$$1 - \left(\frac{\text{Water Produced}}{\text{Water Billed}} \right)$$

Water Balance

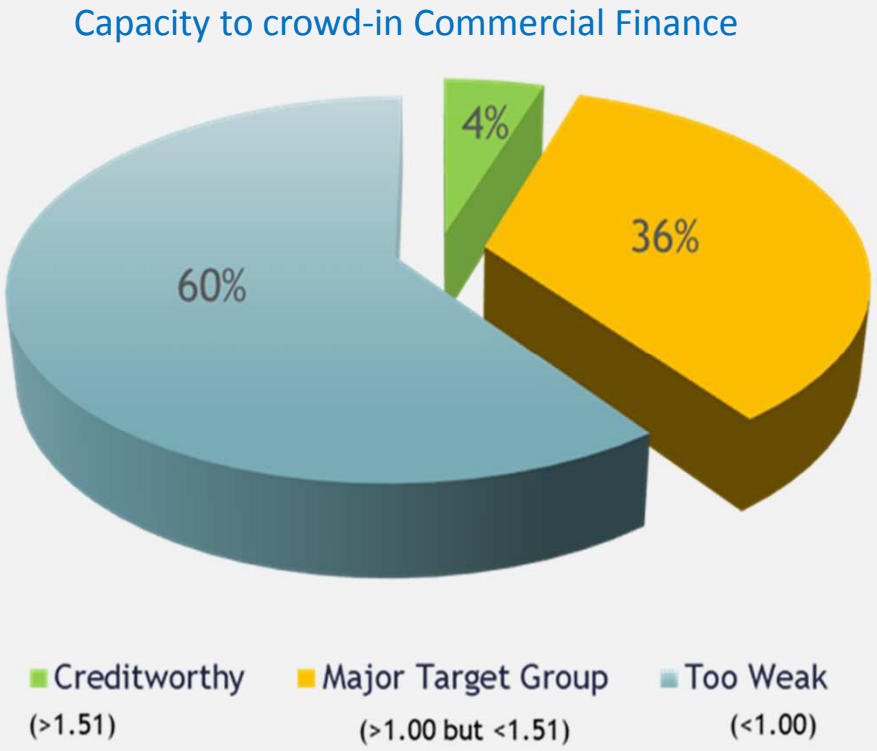


Operating Cost Coverage Ratio (OCCR)

- This is a key indicator for determining the entities overall revenue requirement and to what extent, that entity is recovering its operating and maintenance expenses. The ratio should be calculated strictly by comparing variable OPEX to Water and Sewerage Sales, also variable. Should not include depreciation, interest charges or general administrative expenses.
- Generally, a OCCR ratio or less than 1.0 means that any expansion in coverage will reduce the financial health of the entity, while a ratio of 1.5 and above will typically enhance it.
- In between these two points, there are opportunities for performance improvement and financing strategies that can bridge the financing gap by enhancing the financial health of the entities.
- Such opportunities need to be investigated with more thorough analysis to identify the financial impacts of improving performance of key indicators.

Operating Cost Coverage Ratio (OCCR)

$$\frac{\text{Operating Revenues}}{\text{Operating Costs}}$$



Collection Ratio

- The amount of revenue collected from water billed to customers can have substantial impact on the overall health of the WSP.
- In a sense, it has the same effects as Non-Revenue Water in reducing the financial health of the utility. Uncollected bills have the same effects as commercial water losses as they increase the revenue requirement and lower the OCCR.
- Low Collection ratios should be investigated by analyzing consumer accounts and by assessing and ageing analysis of outstanding receivables.
- The typical culprits in paying bills are other Government agencies and the military.
- High inflation can lead to overstatement of collections performance, particularly if using the collection period as ratio.

Collection Ratios

$$\frac{\text{Billed Subscriber Revenue}}{\text{Collections from Subscriber}}$$

$$\frac{\text{Accounts Receivables Balance}}{\text{Sales Revenue}} \times 365$$

Debt Service Coverage Ratio (DSCR)

- The DSCR provides added information on the entity's capacity to borrow as it measures the service debt after O&M and working capital requirements are met.
- Most certainly, WSPs with OCCRs at 1.0 or below will not be even able to satisfy increases in working capital for running the operation – a phenomena that typically results in the entity delaying payments to its suppliers and increasing other liabilities beyond prudent levels.
- Lenders are particularly concerned with the DSCR but while it may be important from an historical perspective it is more indicative from a prospective perspective. Depending on the volatility of the operations a DSCR can be adequate between 1.1 and 1.2 over operating cash flow. But each lender has its own criteria based on past history of the entity and its own risk tolerance.

Debt Service Coverage Ratio (DSCR)

$$\frac{\text{Operating Cash Flow}}{\text{Debt \& Interest Payments}}$$

Operating Cash Flow = Net Income Before Interest + Depreciation

Net Profit Ratio

- The relationship of net income to total revenue is a good indicator for assessing the overall profitability of the entity.
- However, this ratio can also be misleading in event the entity follows accrual accounting principles and much of the billed revenue is uncollected.
- As such, key to a true assessment of profitability must consider the financial results on a cash basis whereby, only cash collections and non-cash items such as depreciation expenses are factored into the assessment.

Net Profit Ratio

$$\frac{\text{Net Profits}}{\text{Total Revenues}}$$

Return on Fixed Assets

- Measures the return to assets that have been specifically commissioned to produce operating revenues and provides an indication of the efficiency of the WSS plant and equipment in generating revenues for the utility.
- Low returns may indicate that either the fixed assets are not fully utilized or that the system is overbuilt or that tariff are not appropriate levels.
- Low consumer consumption rates would also indicate an underutilized system and poor investment planning.

Take the Example of the Gia Lam Water Treatment Plant

- Capacity of 30,000 cubic meters a day, but
- Output limited to 5,000 to 10,000 cubic meters because of inadequate transmission network

=

- High Overhead Costs,
- Additional Maintenance Expenses
- Increased Debt Service Requirements
- Low Return on Fixed Assets

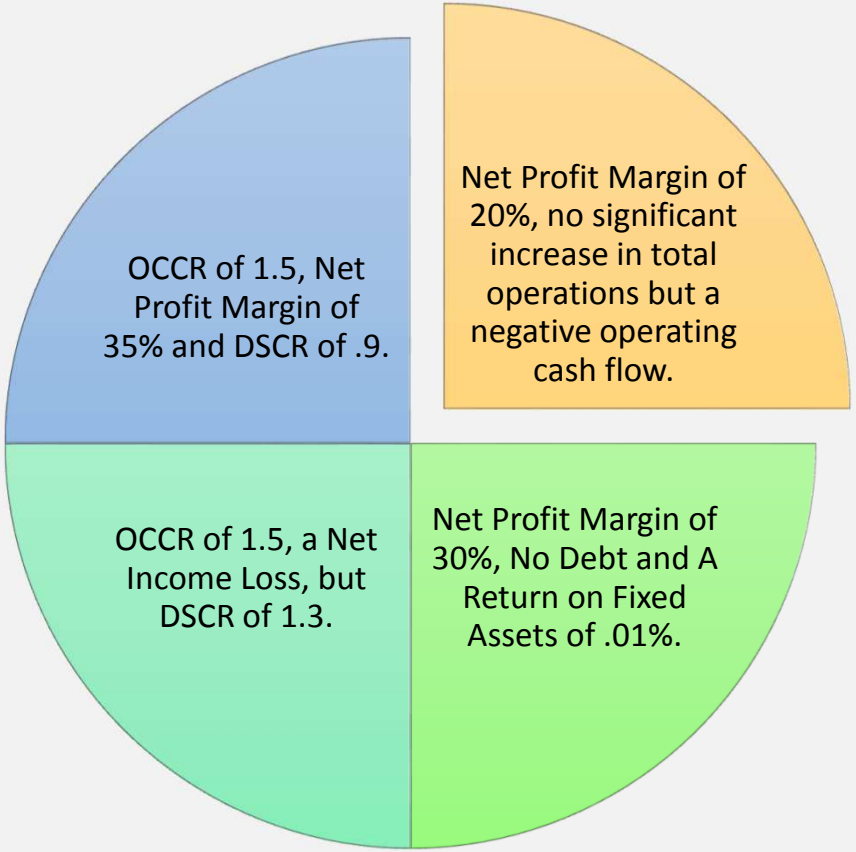
Return on Fixed Assets

$$\frac{\text{Gross Profits}}{\text{Fixed Assets}}$$

Gross Profits = Operating Revenues – Operating Costs

Questions For Discussion

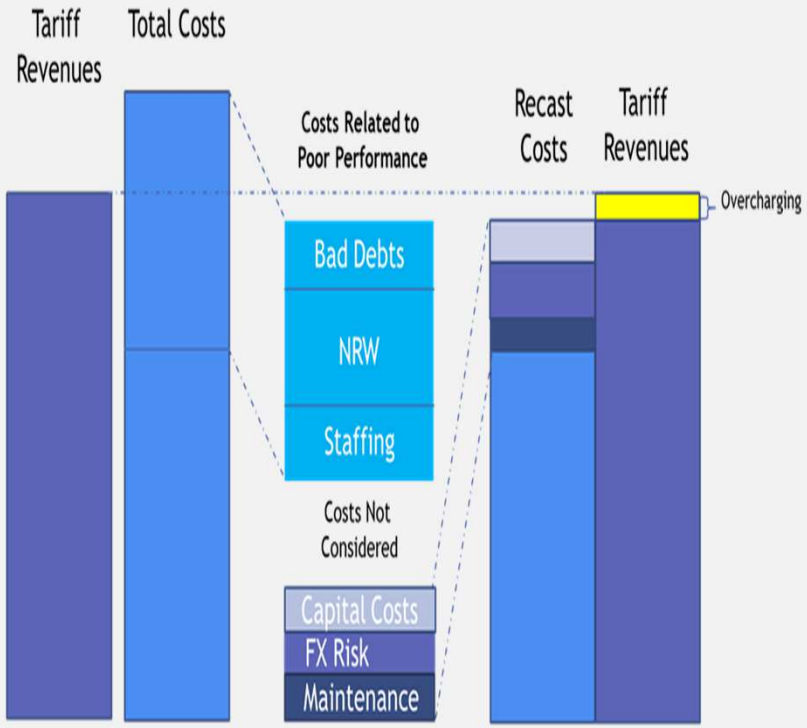
What is your initial assessment if the utility shows the following indicators

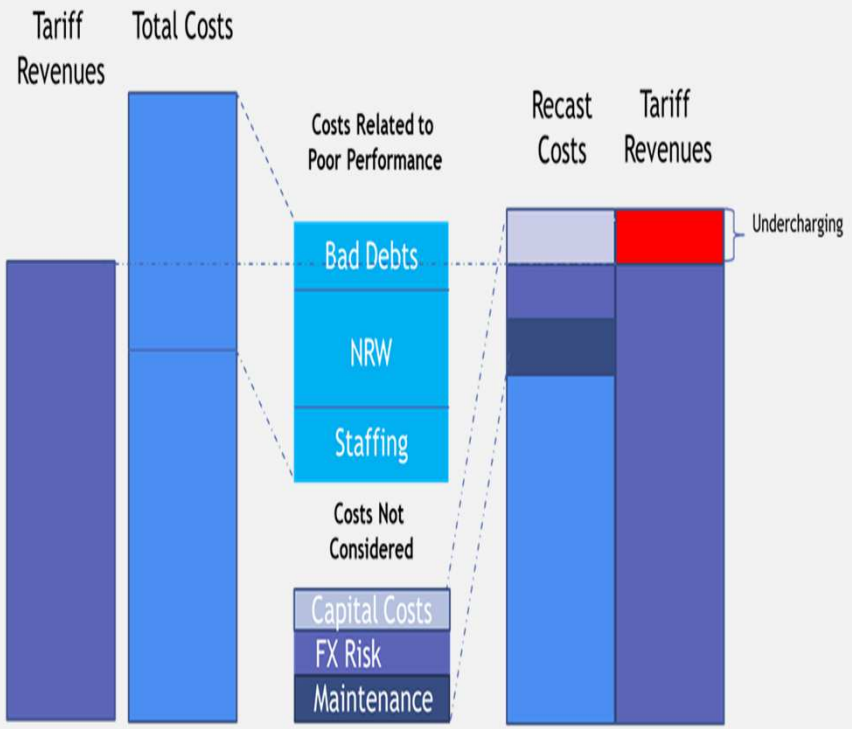


Tariff Adequacy

- Tariff Adequacy goes beyond the simple concept of cost recovery tariffs since it assesses whether a tariff is justified assuming operational improvements.
- The importance of this concept cannot be overstressed because many WSPs with high inefficiency continually seek to request tariff increases to recover cost; but such costs can also include high inefficiencies.
- Policy makers and oversight agencies will typically accommodate these requests to reduce their requirement for operational subsidy payments, but the customer is essentially being overcharged.
- Customers find themselves not only paying for legitimate expenses, but also for such inefficiencies. A proper assessment of the adequacy of the tariff can then yield important information on whether the entity can significantly improve its overall financial health by simply correcting the performance levels.

Tariff Adequacy





Tariff Adequacy Analysis

Average Tariff (Indonesian Rupiah)	3,660	3,660	
Average Tariff (In US $ Equivalent)	0.37	0.37	
Performance Parameters			
NRW	66%	20%	-70%
Bad Debt Expense	15%	2%	-87%
Connectrion Per Employee	225	500	122%
Inventory Levels (months of OPEX)	5	2	-60%
Water Shortage/Surplus	(2322)	12238	
Return on Fixed Assets	-37%	25%	
Revenues	28,621	31,511	10%
Operating Expense			
Chemical Treatment	1,725	807	-53%
Power Costs	7,130	3,336	-53%
Repairs & Maintenance	790	1,200	52%
Depreciation of Operating Assets	4,025	4,025	
Operating Labor	4,050	1,820	-55%
Other OPEX	104	104	
Production Costs	17,824	11,292	-37%
ADMIN EXPENSES AND OVERHEAD			
General & Administrative	13,421	13,421	
Bad Debt Expense	4,293	630	-85%
Depreciation Office Equipment	1,350	1,350	
Total Administrative Charges	19,064	9,000	
Total Expenses	36,888	20,292	-45%
NET OPERATING PROFIT	(8,267)	11,219	19,486
Interest	3,386	3,386	
NET PROFIT/ (LOSS)	(11,653)	7,833	
Operating Cash Flow	(3,514)	14,412	17,926
Working Cap Inc/(Dec)	6,100	(3,849)	(9,949)
CASH BEFORE DEBT SERVICE	(7,566)	20,644	28,210
CASH AFTER DEBT SERVICE	(12,738)	16,149	28,887

Tariff Adequacy Analysis – An Example

- Following a recast of performance indicators, the $.37/m3 is more than adequate.
- Which indicator provides additional basis for the justified tariff?

What About Creditworthiness?

- Generally, creditworthiness measures the capacity of a borrower to fulfill all its financial obligations, including debt repayment.
- Creditworthiness is a valuation performed by lenders to determine the possibility a borrower may default on his debt obligations.
- A creditworthy borrower is one that can demonstrate long term financial strength and ability to pay its financial obligations in full and on time.

So how do you determine long term financial strength and is the creditworthiness test a relative or absolute assessment?

CWASA Case Study