



Energy Management Training: Developing Compelling Efficiency Business Cases



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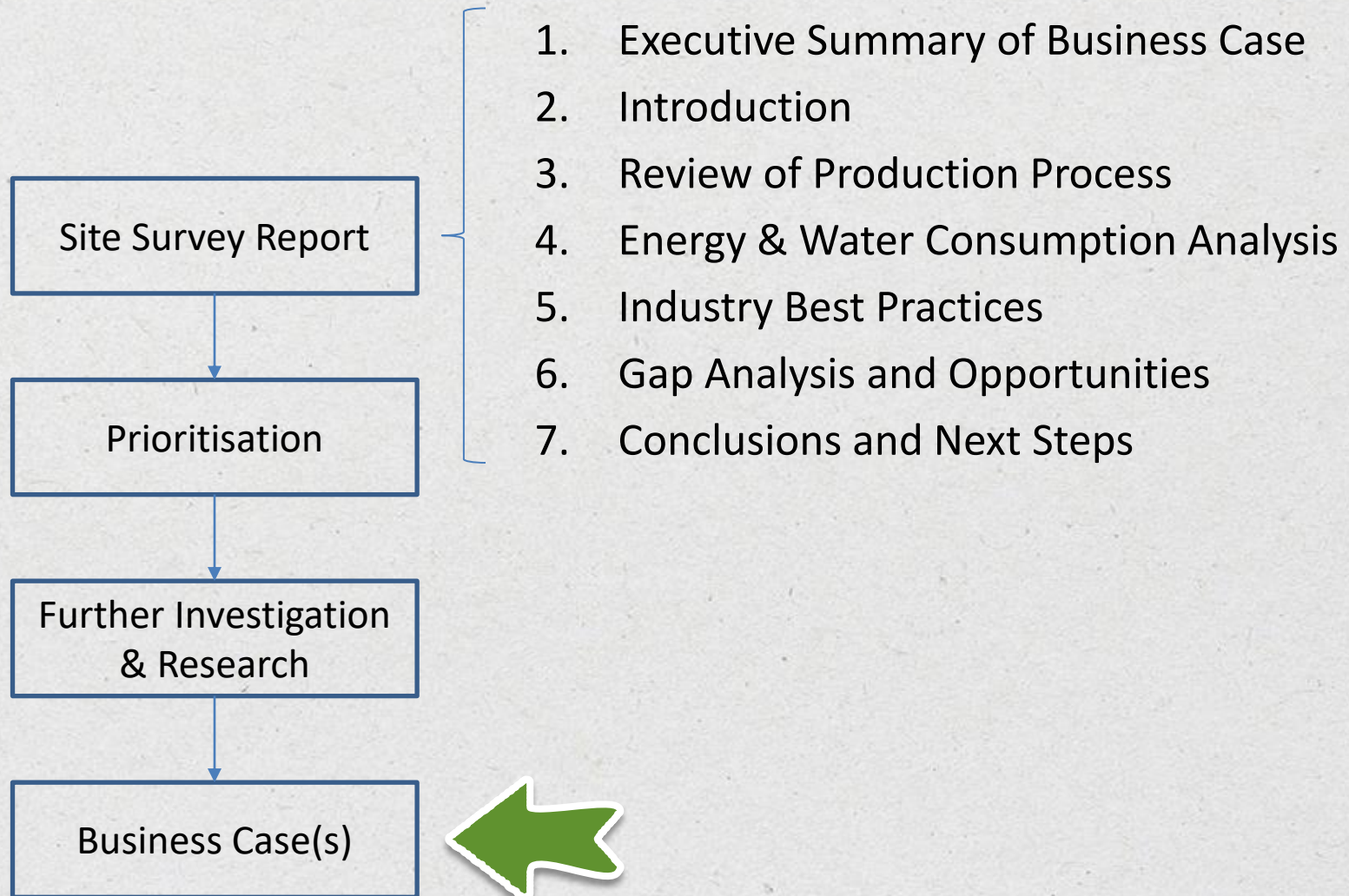
Content

- Understanding how to best present a case for investment.
- An example of a structure for a business case.
- Understanding additional types of value that can support the case.
- How to show that risks are properly considered.
- The basics of accounting for efficiency savings.
- Financial metrics for a business case.

Overview of Business Case

- Presents and sells the case for change.
- Defines the context.
- Shows relationships with other initiatives.
- Shows clear alignment with corporate goals:
 - Financial – cost savings and returns.
 - Market – better cost competitiveness.
 - Quality – improved process control.
 - Health & safety – upgrades, better controllability.
 - Reputational – delivering environmental credentials.
- Where possible links back to corporate documents or agreements:
 - For example agreed financial thresholds or capital budgets for energy efficiency proposals.

Business cases are built from the site survey findings



A typical business case structure

1. Executive Summary of Business Case
2. This Business Case:
 - a. Statement of who prepared the case and under what authority.
3. Current Status:
 - a. Position of issue in process flow.
 - b. Nature of present arrangements.
 - c. Relation to global best practice.
4. Proposed Changes:
 - a. What will be changed and how savings will be delivered.
 - b. How change will be introduced and managed.
 - c. Outline of timeline to introduce change.
 - d. Risks and mitigation.
5. Consumption Savings and Values:
 - a. Baseline consumption and assumptions.
 - b. Consumption post changes and assumptions.
 - c. Other values considered.
 - d. Sensitivities.
6. Financial Analysis:
 - a. Key metrics and calculation assumptions.
7. Measurement of Success
 - a. Monitoring measures for verifying savings.
 - b. Feedback and response mechanisms.
8. Recommendations:
 - a. Next steps for management to approve.

Ensure that key enablers are engaged

Key enablers should be visible in the business case:

- Buy-in from plant level management and staff.
 - Clear contributions from plant staff in developing the document.
- Buy-in from finance
 - Clear statement of the thresholds of return that satisfy set financial goals
 - Reference to source within finance department.
- Evidence of buy-in from other functions, such as stated interests:
 - Production Team goals – quality, throughput etc.
 - Health and Safety Team goals – reductions in lost time accidents.
 - Marketing Team goals - public image.
- Track record of proposed change:
 - Referenced case studies of previous successes – preferably amongst global leaders.
 - First-of-a-kind proposals do have a place..... but not early on or on the critical path!

Rigour and attention to detail

- Dependence on arbitrary assumptions should be minimised.
- A crucial subtext for each section is that risks are well understood.
- Statistics and constants should be derived from referenced sources:
 - Predicted performances should be based on statistics from similar plant.
- Safety factors should be conservative but sensible:
 - Base safety factors on reality.
 - Adding safety factors on top of safety factors can kill good opportunities.
- Ensure that process assumptions and risk assessments are credible:
 - Must visibly come from the production or sales teams.
 - Use known fluctuations in throughput, known equipment efficiencies etc.
 - Use official internal documents as sources.

A clear and concise executive summary

- The executive summary is a sales pitch. It sells the project benefits against the costs and risks of implementation.
- Gives the key financial metrics up front, including investment volume, payback, IRR and NPV.
- Gives a high level description of the proposed changes relative to the status quo.
- Explains that forecasts have been based on conservative assumptions.
- Gives comfort that risks have been researched and properly mitigated.
- References the later sections that contain the details.

A clear general context for the proposed change

- Show the overall process flow.
- Define where this particular issue sits:
 - Site utilities or in the core process.
- Position on the critical path.
 - The context in terms of risk to throughput or quality.
- How present embodiment differs from best practice:
 - Technology and installation.
 - Operation and controls.

Detailed descriptions of proposed changes

- Clear description of proposed changes – and how they will deliver savings:
 - Physical changes.
 - Control changes.
 - Operational changes.
 - Systems changes.
 - Behavioural changes.
- Change plan:
 - High level description of timeline.
 - Project ownership and control.
- Risks and mitigation:
 - Impact and mitigation for each risk.
 - Traceability back to case studies.

Consumption Savings and Values

- Baseline consumption and values:
 - Based on defined representative throughput.
 - Based on optimised current state - incremental benefit, not prior to any improvements having been made.
 - Based on valid energy prices and projections.
- Predicted consumption and values post changes:
 - Based on same conditions as for the baseline period.
 - Referenced performance improvements.
 - Builds in all monetisable values where possible, eg CO_{2e}.
 - Commentary on non-monetary values and magnitudes.
- Include sensitivity analysis:
 - Base sensitivity on history of variations or predictive statements from production and sales staff.

Clear and traceable inputs to financial analysis

- List constants:

Constant	Unit	Value	Source
Inflation rate (UAE)	Percent	3.0%	Median of 1984 - 2019 (all complete years to date) UAE inflation rate from IMF
Discount Rate	Percent	8.5%	Corporate figure
Period for IRR & NPV	Years	10	Corporate figure
Cost Contingency	Percent	10%?	Can be based on historic variations
Savings Contingency	Percent	10%?	Based on variations seen in case studies

Use familiar financial metrics

Metric	Advantage	Disadvantage
Capex	Defines scale and call on financial resources	No information on returns
Simple payback	Defines payback, simple to understand	No time value of money – short term only.
Return on Investment	Clear comparison of profitability	No time horizon
Net Present Value	Value over time – often 10 years, adjusted for time value of money	Long time horizons lead to errors
Internal Rate of Return	Comparison of rate of return – often 10 years, illustrates time value of money	Can show odd behaviour
Marginal Cost Per Unit Saved	Good for comparing measures for environmental purposes.	Says nothing about time or returns

The metrics often presented are:

- Capex.
- Simple Payback.
- IRR.
- NPV.

Identify how to measure success

- Crucial for building confidence in the efficiency programme:
 - Success breeds success.
- Can be linked to IPMVP[®], but be cautious!
 - A requirement to generate a certified IPMVP[®] report is costly! May be 3% of investment, 15% of savings value.
 - Overkill for internal purposes.
 - Only necessary for Energy Performance Contracts.
- Methodology statement:
 - How baseline consumption is constructed.
 - How ongoing consumption is monitored.
 - How baseline and consumptions are normalised.
 - How consumption differences are reconciled and calculated.
 - How financial values will be calculated.
 - Reporting method and frequency.

The recommendations section

- The final section that gives a brief summary:
 - A longer version of the Executive Summary.
 - Contains more explanation but should not be too long!
- Clear explanation of what needs to happen next.
 - To enable managers to perform actions to take the opportunity forward and into implementation.
 - Reiteration of timeline but with the emphasis on the management decisions that are necessary, such as allocation of budget, procurement processes, etc.

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