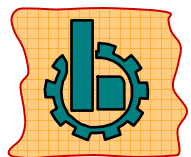




ASSET MANAGEMENT

Asset management refers to the management process through which the utilization of assets is effectively managed to ensure the most optimum Return on Investment.

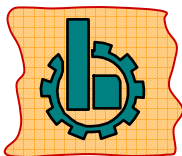
 **Jagdeep Verma**
Holtec Consulting, India



Typical Concerns

- **Are the assets adequate?**
- **Are these sustainably healthy?**
- **Are they being utilised to their full potential?**
- **How do their performance compare against industry benchmarks?**
- **How can the returns on these be enhanced?**





Asset Categories

Intangible Assets:
Information, permits,
clearances, licenses

Input Materials:
Limestone, Other raw
materials, Fuel, etc

Land

**Equipment
Assets**

Hidden Assets: Heat
& dust emissions,
Revenue & cost
leakages

Human Assets:
Knowledge-skill
inventory,
Headcount, etc

Utility Assets:
Captive power,
Water sources, etc

Market Assets:
Distribution channel,
Brand image, Sales
Force, etc

Logistical Assets:
Transport fleet,
Warehouses, etc



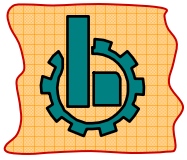
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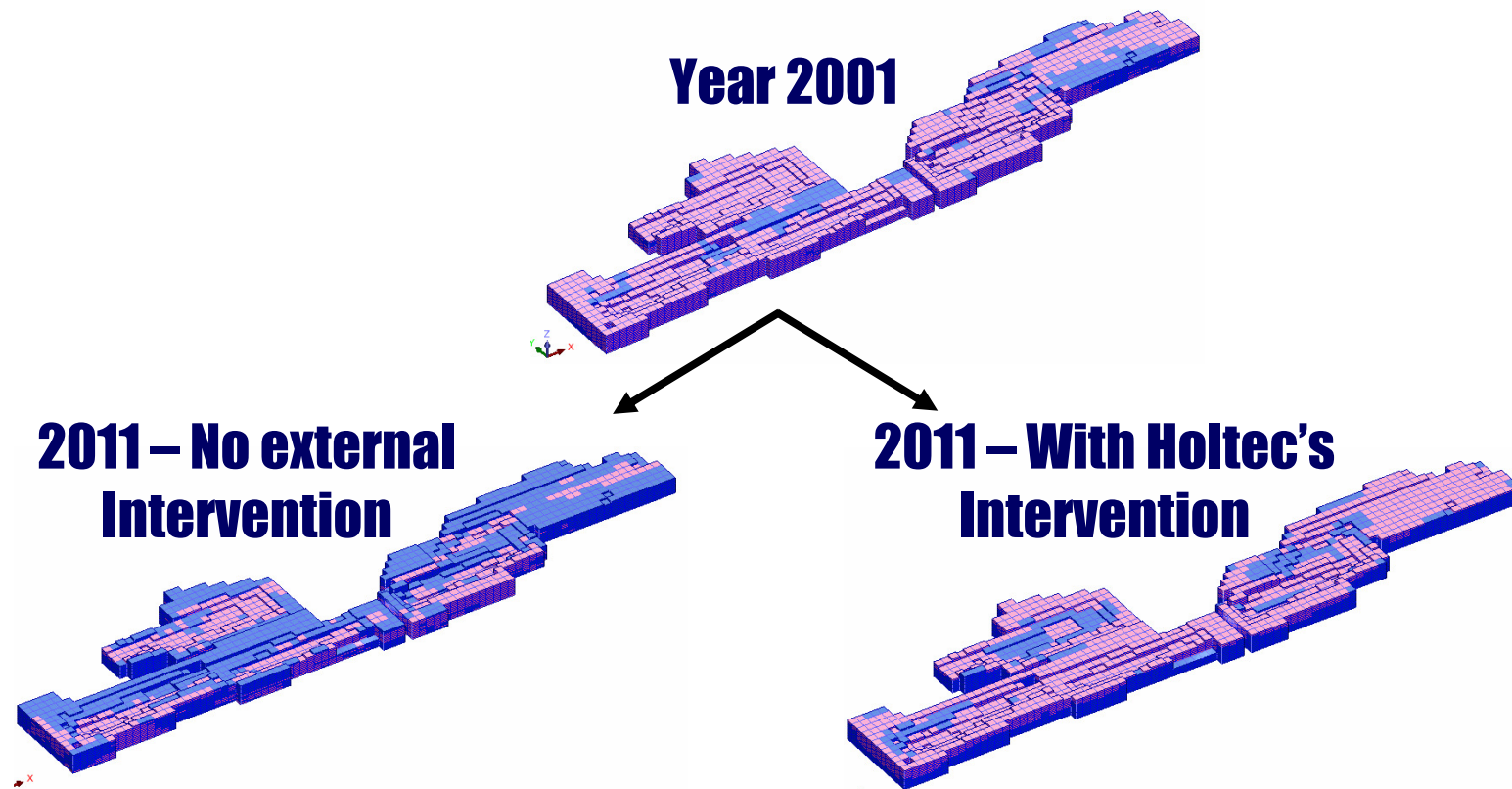
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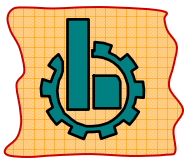


Raw Materials – Mines Optimisation

Evaluate the usage of captive reserves include Limestone, other Raw Materials, Fuel, etc to assure higher longevity, adequate quality and lower unit costs



Deposit life increased by homogenous limestone usage. CADE and QSO were used as optimisation tools



Raw Materials - Cost Analysis



Cost Influencers

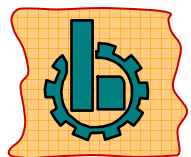
1. Quantity of excavation (TPH)
2. Operating efficiency
3. Maintenance (% availability)
4. Operation shifts per day
5. Operating days per week/ year
6. Hard/ soft material

Activities

1. Drilling
2. Blasting
3. Excavation
4. Transport

5. Reject Handling and Rehandling
6. Mines Development
7. Environmental Management
8. Quality Control





Raw Materials - Cost Analysis

Cost Head – Activity Matrix



Cost Heads Activities	Stores & Spares	Consumables	Fuel	Power	Total Cost
Drilling					
Blasting					
Excavation					
Transport					

OBJECTIVE: Influence key drivers to ↓ Raising Cost = ↑ RoI



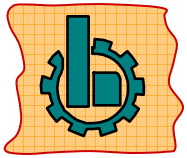
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Equipment Assets



**Capacity
Utilisation**



**Power
Consumption**



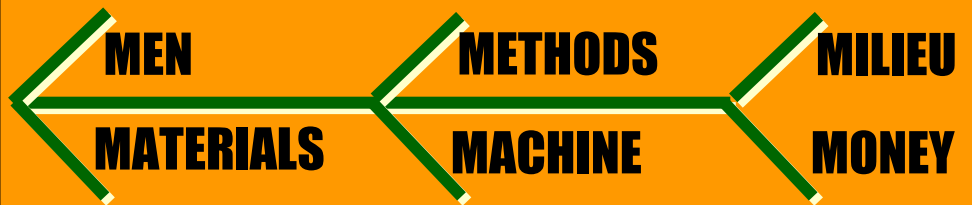
**Fuel
Consumption**



Quality (C₃S)

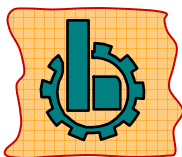


FISHBONE ANALYSIS



OBJECTIVE

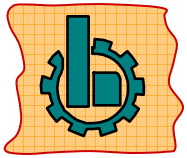
Influence key drivers to
↓ Operating Cost = ↑ RoI



Typical KPIs to monitor progress

Key Performance Indicators (KPI)	Unit
Overall Equipment Efficiency (OEE)	%
Mean Time Between Failure (MTBF)	h
Highest Clinker Production	t/d
Thermal Energy	kCal/ kg Clinker
Electrical Energy	kWh/ t Cement
Clinker Production	t/a
Clinker Factor	%
Cement Production	t/a
Labour Productivity	manhours/ t
Specific Variable Cost	\$/ t
Specific Fixed Cost	\$/ t
Total Cost	\$/ t





Market Assets

Need to increase market share?

Market share is stagnant?

Adequate Premium?

Increase our Direct Dispatches share?

Number and quality of Distribution Partners?

Increase our Service Levels - Technical Assistance, Delivery Time, etc?

Brand Image and Recall adequate?

Product Mix Optimum?

OBJECTIVE: Influence key drivers to $\uparrow$ REVENUE = $\uparrow$ RoI



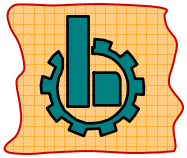
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Logistical Assets

Current dispatch mix optimum?

Inwards logistics cost optimised?

Warehouses strategically located?

Outward freight cost a competitive advantage?

Terminal will increase reach and reduce freight?

Optimize cement dispatch to increase volumes?

Captive transport fleet?



OBJECTIVE: Influence key drivers to ↓ Logistics Cost = ↑ RoI



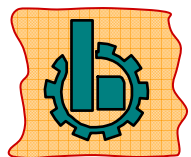
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Execution Strategy

EXECUTION ROAD MAP

**Land
Asset**

**Equipment
Asset**

**Human
Asset**

**Market
Asset**

**Logistical
Asset**

**Utility
Asset**

**Intangible
Asset**

**Captive
Reserves**

TWO ALTERNATE APPROACHES

**IDENTIFICATION OF ASSET CLASS BY
CLIENT BASED ON EXPERIENCE**

**PRELIMINARY DIAGNOSTIC STUDY:
A 7-10 DAYS SITE VISIT BY HOLTEC TEAM**

DETAILED ANALYSIS USING HOLTEC TOOLS & TECHNIQUES

PERFORMANCE IMPROVEMENT STEPS TO BE UNDERTAKEN

ACTION STEP 1

ACTION STEP 2

ACTION STEP 3

ACTION STEP.. n

**SCOPE OF
IMPROVEMENT**

**EXTENT OF
IMPROVEMENT**

FEASIBILITY

RETURNS EXPECTED

**CAPITAL
BUDGET
CONSTRAINT**

INTERLINKAGES

CONTINUED ON NEXT SLIDE



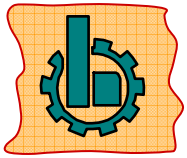
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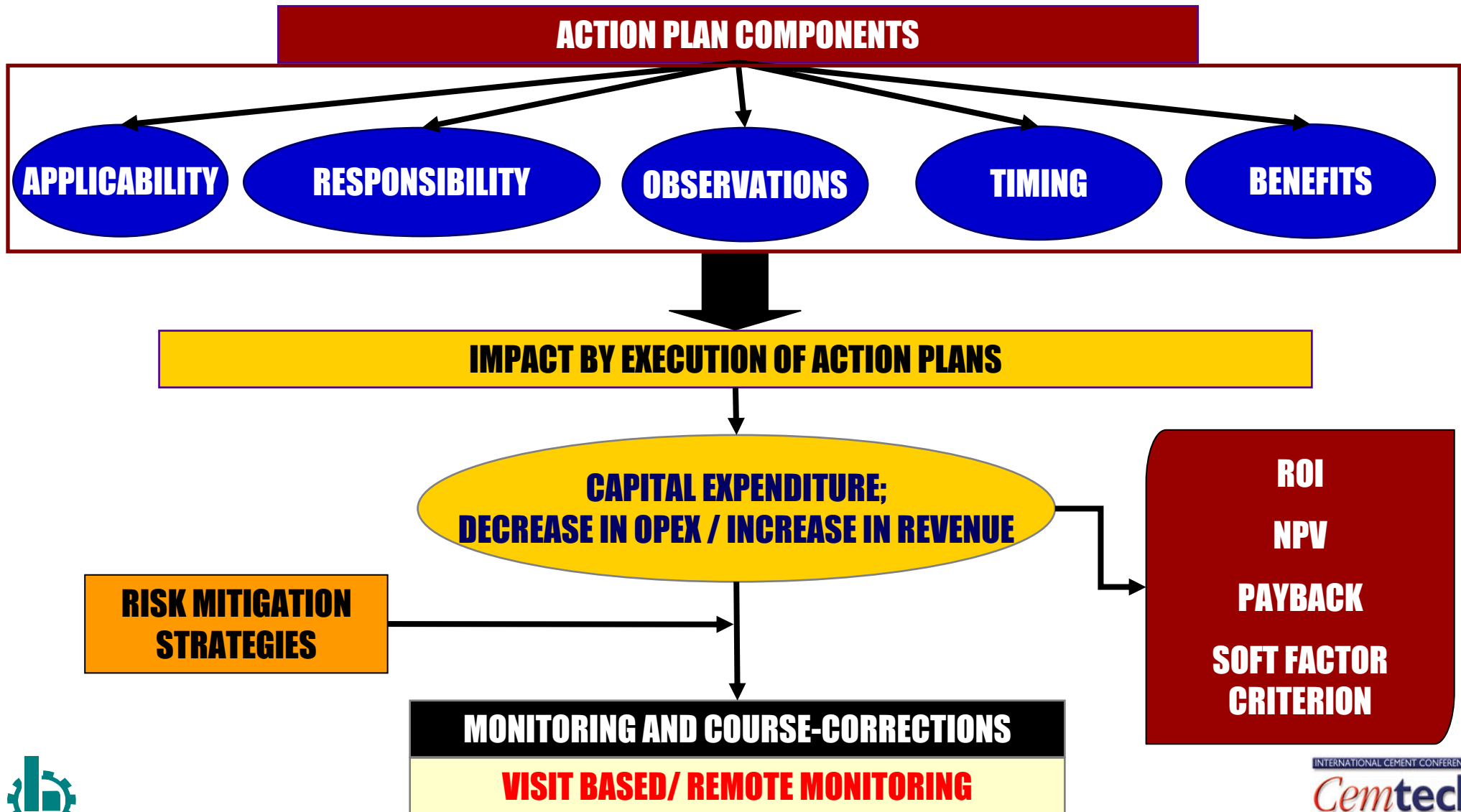
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Execution Strategy (continued)



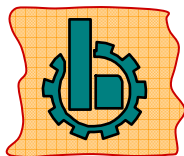
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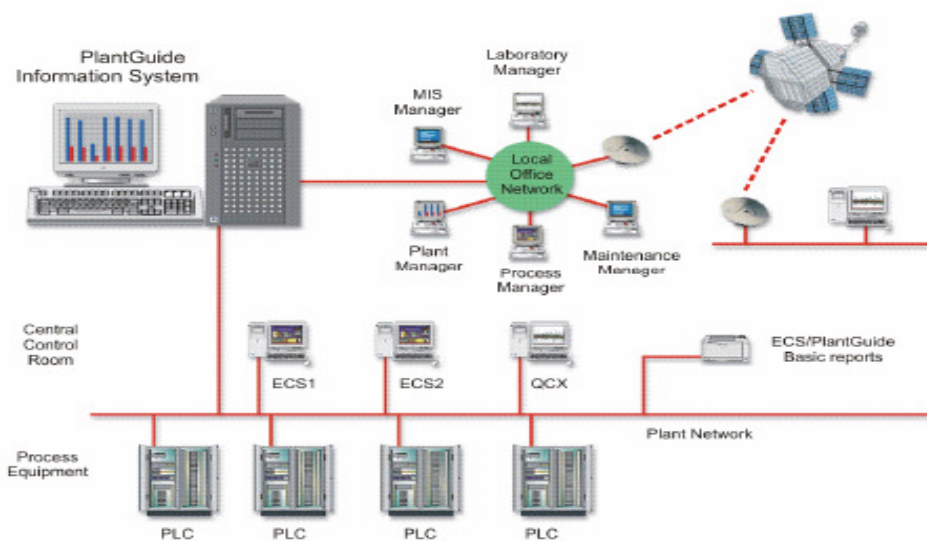
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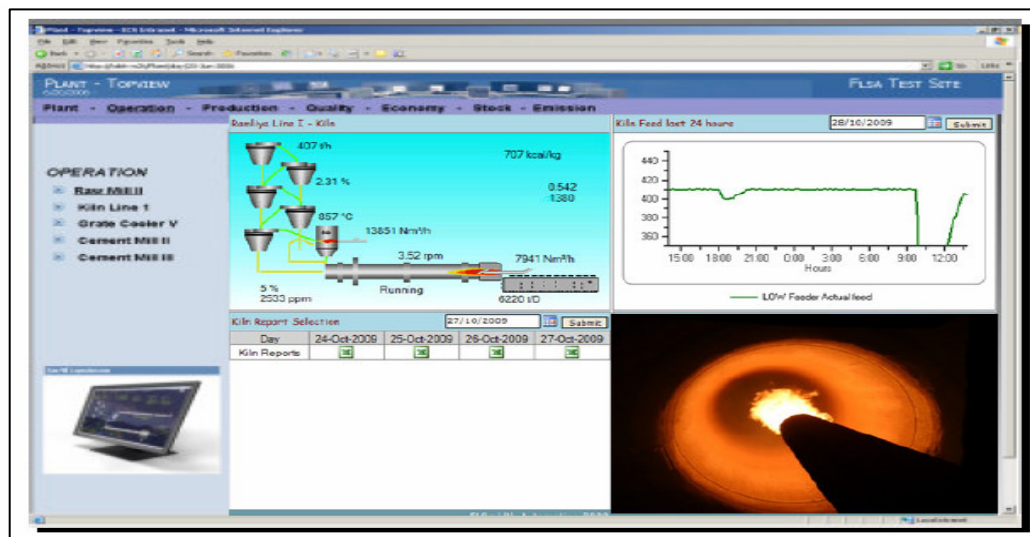


Remote Monitoring Set Up

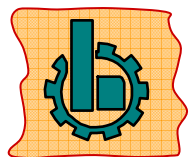
Integration of Information system through Plant Control System, MIS, Lab Management System etc. in Local Server (Plant)



Real Time Data Display with help of HMI Graphics , Data Logger, Historian, Trends and Video Display



Data Analysis & Action Plans by Experts at Holtec Information Centre



Deliverables

➤ **Current Status (KPIs)**

➤ **Improvement Areas Identification through detailed plant visit**

➤ **Improvement Areas' Prioritisation**

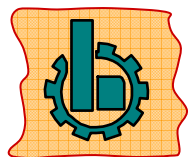
➤ **Cost Benefit Analysis**

➤ **Action Plans Formulation**

➤ **Action Plans “buy-in” by client’s team**

➤ **Implementation Assistance**

➤ **KPI Monitoring and Course Corrections**



Success Stories

**Started
in year
1967**

**1,000+
Clients**

**Worked
in 85+
countries**

**End to
End
Solutions**



Holtec

✓ **De-bottlenecking critical equipment. Production from 0.89 mio tpa to 1.04 mio tpa i.e. 17 % ↑ (Middle East)**

✓ **Improved energy efficiency. Reduced 820 kCal/ kg of clinker to 790 kCal/ kg of clinker, ↓ by 30 kCal/ kg of clinker (Asia and many more)**

✓ **Heat energy utilization. Lower energy cost by WHR (Many in Middle East)**

✓ **Process improvement. Consistent clinker quality & 11% ↑ in production. Production increased from 1.20 mio tpa to 1.33 mio tpa (India)**

✓ **Plant maintenance. ↓ number of shut-down thereby ensuring higher up-time (Asia)**

✓ **Quarry management. Limestone raising cost ↓ from US\$ 2.4/ t to US\$ 2.2/ t i.e. ↓'ed by US\$ 0.2/ t (India)**

✓ **Logistics optimization. Ex-factory Price ↑ from US\$ 56.2/ t to US\$ 58.0/ t i.e. improved by US\$ 1.8/ t (India)**

✓ **Inventory management. Less stock outs and ↓ US\$ 2.1 mio WC (Africa)**

✓ **Distribution network. ↑ market share by 3-5% for an existing player (Asia)**

✓ **Organization Structure redesigning. ↑ output/ person (Asia)**

1650+ Assignments in India and 750+ Overseas

**Strong
execution
processes
(ISO
certified)**

**Strong
Execution
Team**

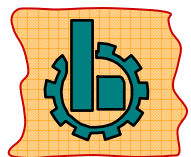
**500+
Professio
nals**

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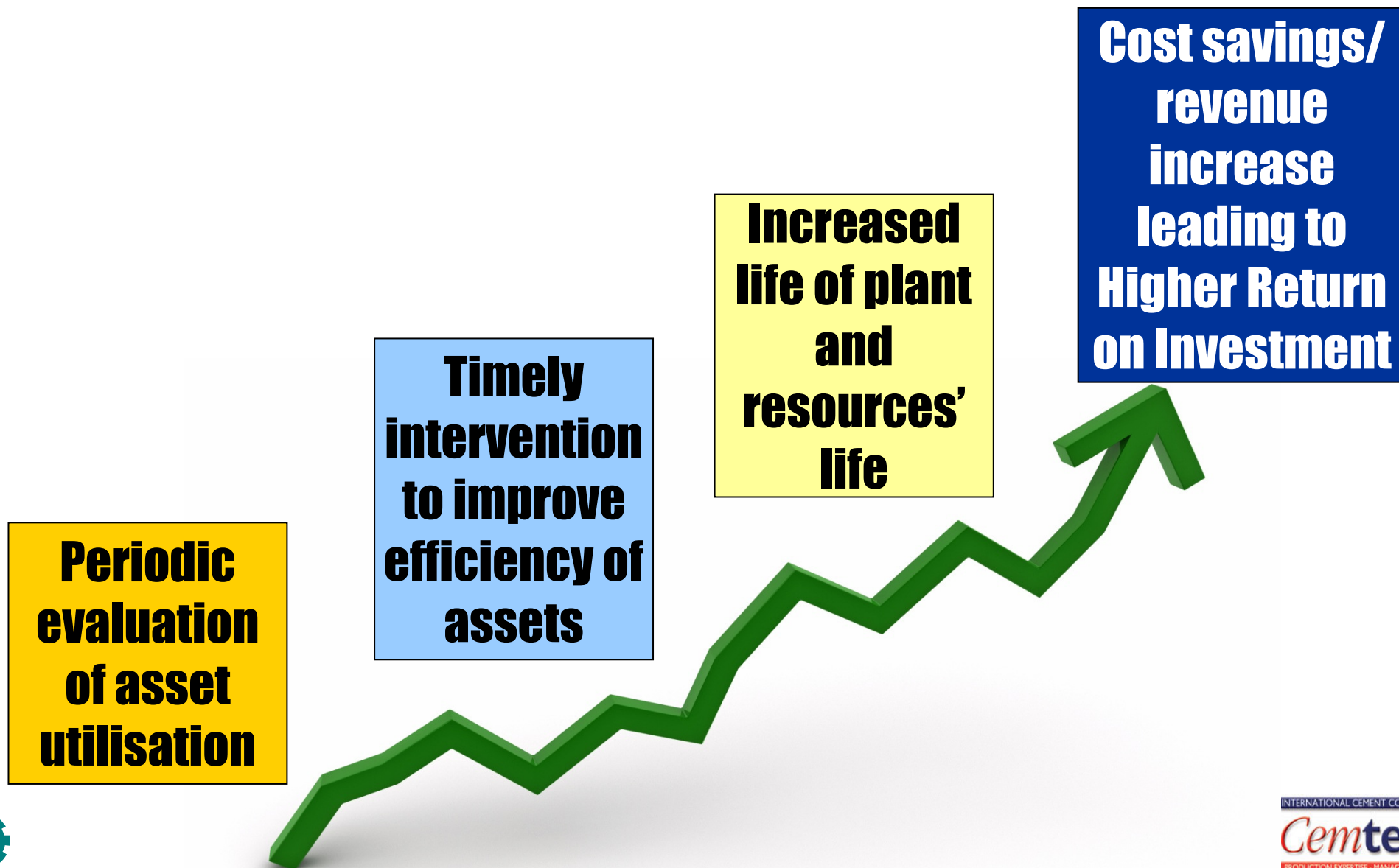
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Benefits



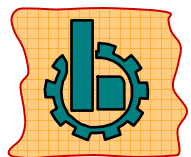
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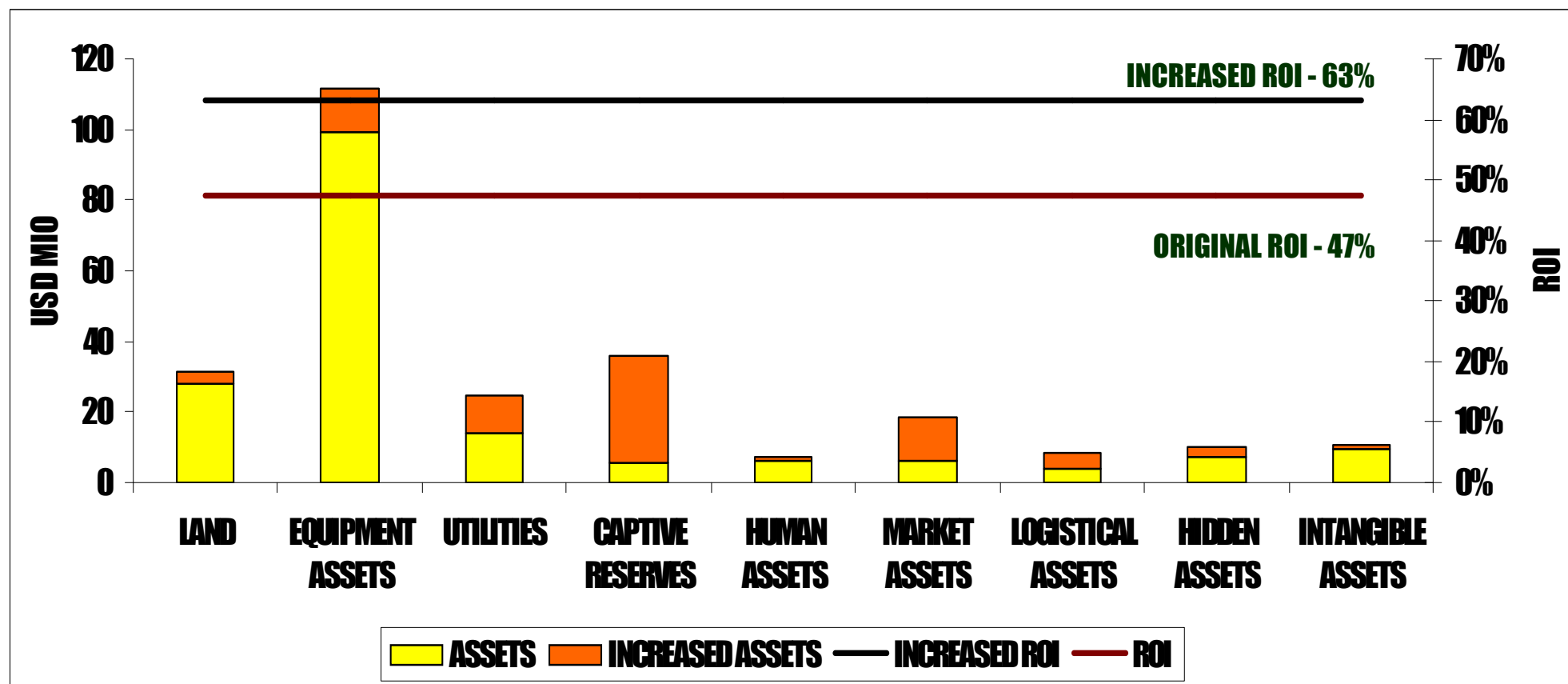
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ROI after Action Plans Implementation



Based on diagnostic intervention, assets' effectiveness increased by improving the processes and/ or by additional investment in some sub-asset classes.



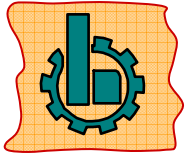
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THANK YOU



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