GROWING PAINS: CHALLENGES FACED BY THIRD WORLD CONSTRUCTORS

By

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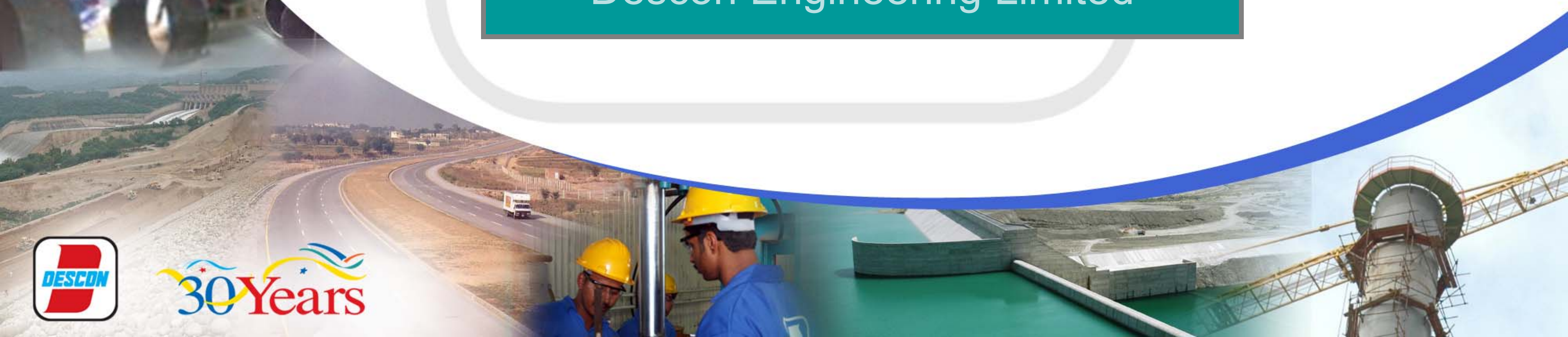


A LITTLE BIT ABOUT DESCON

Established in 1977, today we have the following credentials:

350 Million Man-Hours of Project Construction

06 Million Man-hours of Engineering

200,000 Tons of Engineered Process Equipment Manufacturing

15 Million Man-hours of Plant Maintenance

1600 Engineers & Professionals with current strength exceeding 26,000

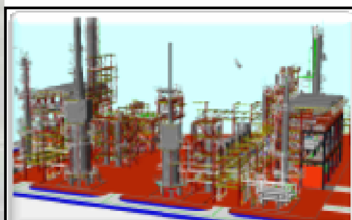
ACTIVITIES

EPC

Manufacturing

Construction

Maintenance



Engineering

BUSINESS SECTORS

Oil & Gas

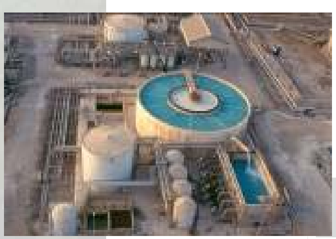
Chemical / Petrochemical

Fertilizer

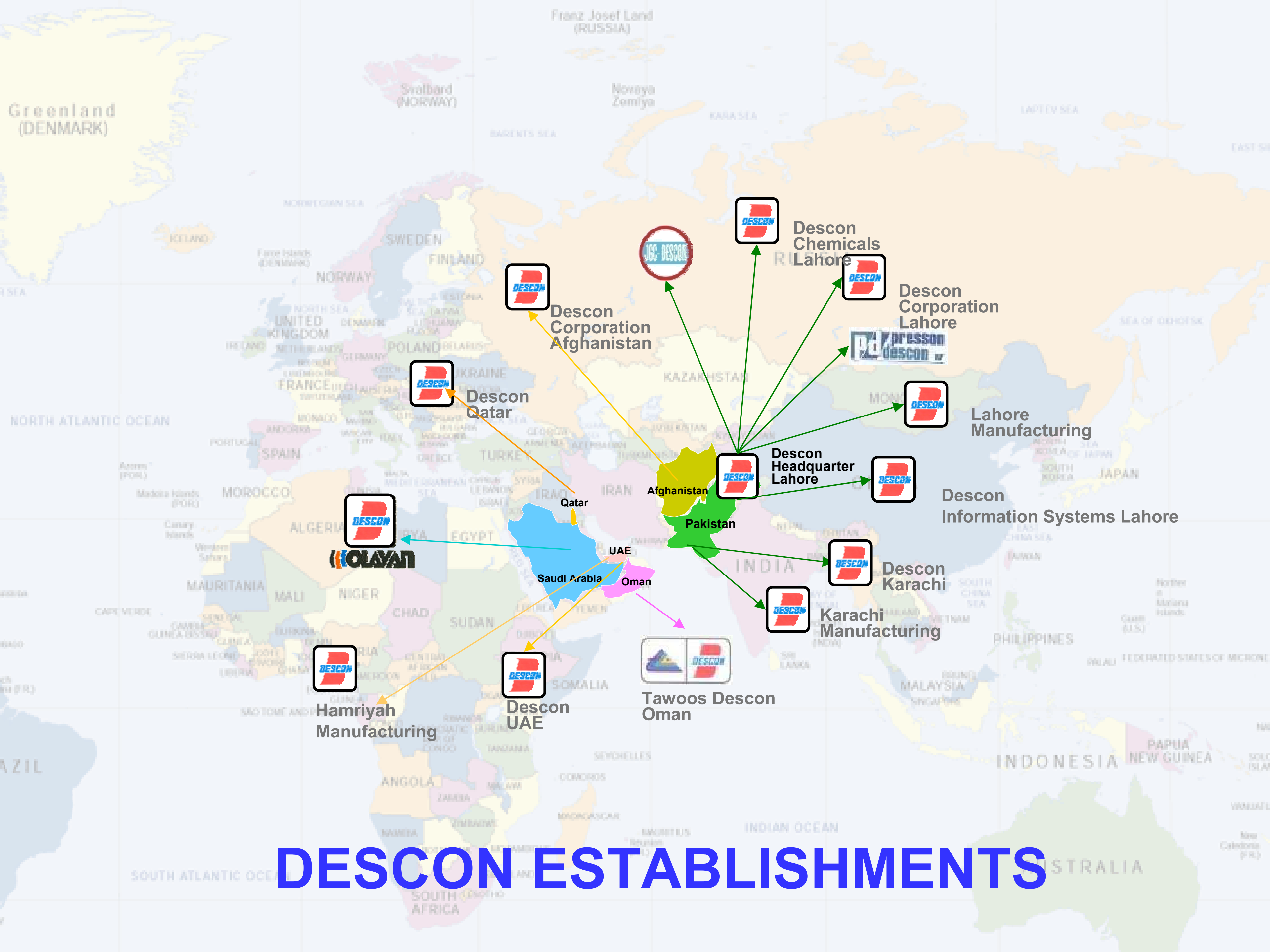
Power

Infrastructure

Cement

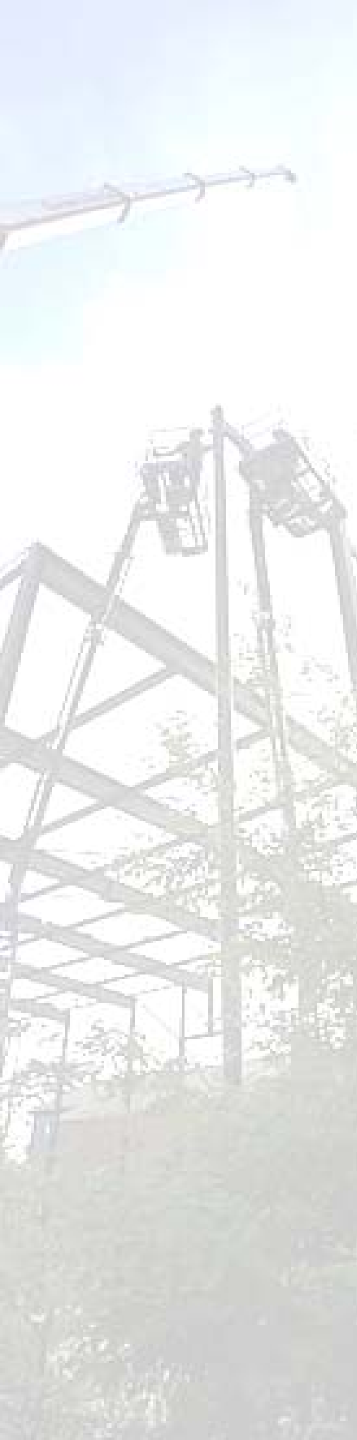


Water & Desalination



DESCON ESTABLISHMENTS

DESCON MANUFACTURING FACILITIES



MAJOR RESOURCES

- Over 26,000 personnel including 1600 engineers and professionals.
- 900,000 man-hours/year engineering capacity.
- 40 million man-hours/year construction capacity.
- 06 manufacturing shops in the region.
- Owned concrete production and haulage facilities.
- Owned heavy lift and rigging expertise – over 150 cranes.
- Customized project management system.
- Established QA/QC and HSE systems.

MANUFACTURING RANGE

Pressure Vessels
- Columns
- Separators / Knock-out Drums
- Slug Catchers

Heat Exchangers
- Shell and Tube
- Air Fin Coolers

Boilers
- Heat Recovery Steam Generators (HRSG)
- Once Through Steam Generators (OTSG)
- Direct Fired
- Process
- Fossil or Non-Fossil Fuel Fired

Pre-engineered Skid Packages
- Amine / TEG Units
- Dew Point Control Units
- Separator Packages

Field Erected Storage Tanks
Flare Stacks
Steel Structure
Piping Spools









Column

Steam Drum

Stainless Steel Pressure
Vessel

Desalter Vessel


Boilers


Pipe pre-fabrication


Steel Structure


Slug Catcher

IMPORTANCE OF E&C IN DEVELOPMENT

- Sizeable portion of most countries' GDP's
- Role in economic development
  - Facilities
  - Infrastructure
- Stimulates activity in other sectors

CONSEQUENCES OF INADEQUATE CONSTRUCTION TECHNOLOGY

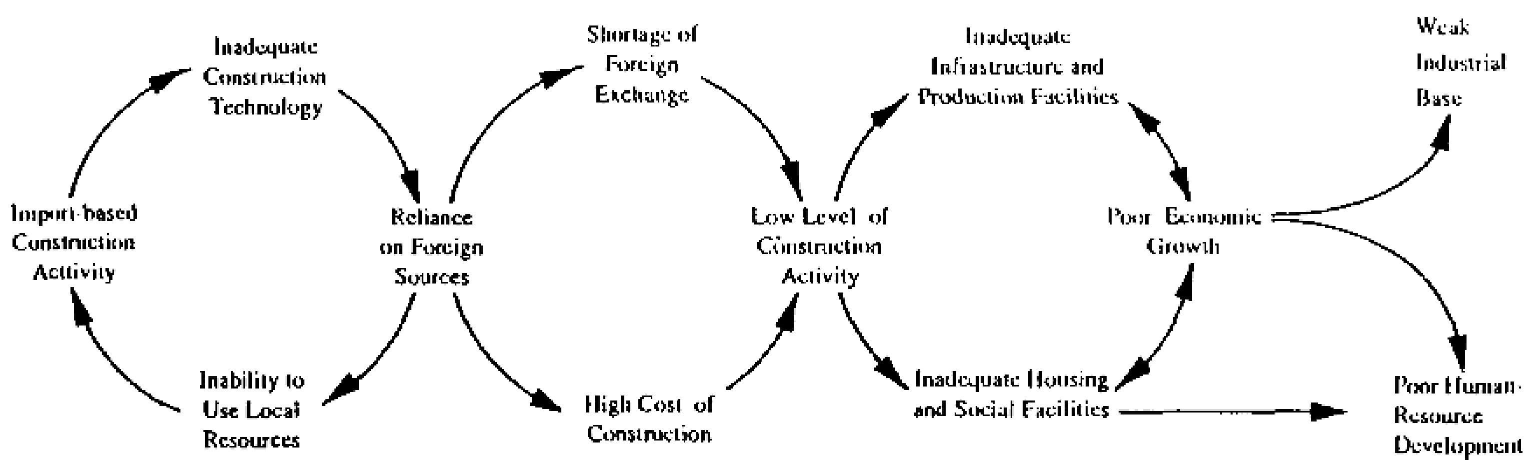


Figure 1 Consequences of inadequate construction technology in developing countries

DEVELOPMENT IN THE MIDDLE EAST AND ASIA

- Emergence of China and India as economic powerhouses
- Rising crude oil price
  - Stagnant production levels
  - Voracious demand
- Projects worth about USD260b in the GCC
  - All 3 industry sectors, upstream, midstream and downstream

➔ **GLUT OF PROJECTS**

GLOBAL TREND IN THE O&G INDUSTRY

- View of industry as a commodity business
- Long term investment flow into the M.E. and Asia
- Profitability will remain strong
- Technical personnel shortage
- Mixed views on growth rate of global refining capacity

CORRESPONDING TREND IN THE E&C INDUSTRY IN ASIA

- **Larger private sector participation;**
- **Increasing vertical integration in the packaging of projects;**
- **Increasing foreign participation.**

➔ **IMPORTED FOREIGN SERVICES GROW AT THE EXPENSE OF THE INDIGENOUS SERVICES**

CONCEPT OF EPC CONTRACTS

- certainty of price,
- single-point responsibility,
- a greater transfer of risk to the contractor,
- and a fast track to completion of a project.
- Contractor takes greater proportion of risks.

➔ RISKS AND CAPITAL INVESTMENT REQUIRED TOO GREAT FOR MOST 3rd WORLD CONSTRUCTORS.

MAJOR RISKS IN EPC CONTRACTS

- All risks normally associated with conventional contracts,
- Design risks,
- Logistics and bureaucracy,
- Fixed price vis-à-vis changes required by the Owner and/or Supplier,
- Owner involvement in the design process.

WHAT WOULD A MAJOR EPC CONTRACTOR DO?

➔ **SUB-LET THE LOW TECHNOLOGY CONSTRUCTION WORKS TO A 3rd WORLD CONSTRUCTOR**

- **Makes the 3rd World Constructors bid against each other to get the best prices;**
- **Passes on construction and other risks to the sub-contractor;**
- **Passes on responsibility for capital investment to the sub-contractor.**

STRATEGY ADOPTED BY EPC CONTRACTORS

- Collaboration with oil companies in development of new technology – cornering of market
- Creating alliances with major equipment suppliers – market monopoly

➔ 3RD WORLD CONSTRUCTORS CANNOT DEVELOP – OR EVEN PRE-QUALIFY TO BID

➔ ALWAYS REMAIN SUBSERVIENT TO MAJOR EPC CONTRACTORS

30 Years

STRATEGIC ALLIANCING

- **Horizontal vs. Vertical**
- **Sasol / Chevron-Texaco Joint Venture**
- **Sasol / Nissho Iwai – IHI Alliance**
- **Chevron-Texaco / Solar Turbines Alliance**
- **EPC Companies Engineering Houses in Third World Countries.**

30 Years

COOPERATIVE BUSINESS ARRANGEMENTS

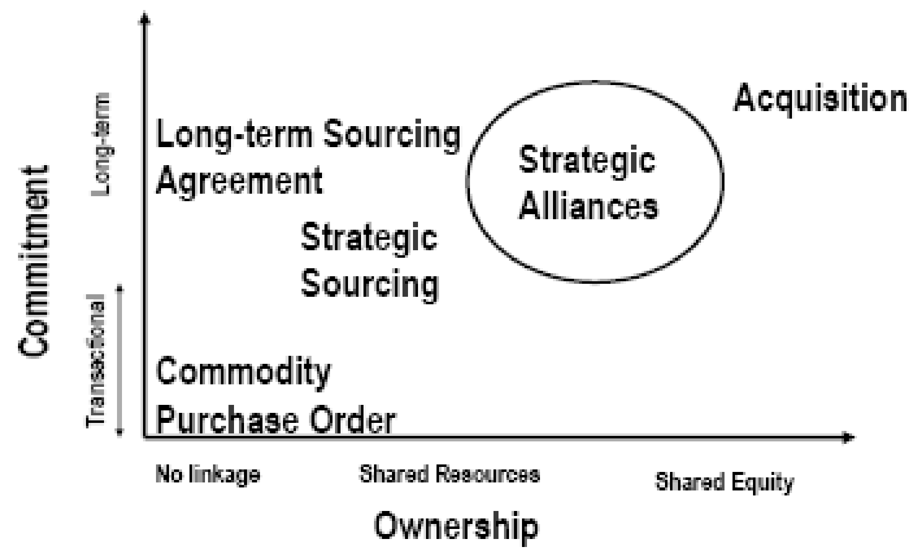


Figure 2-1 Extended Enterprise Segmentation[50]

CONCLUSION

- Project Owners and EPC contractors must acknowledge that 3rd World constructors as service providers.
- Shift from vertical to horizontal orientation.
- Project Owners should encourage EPC contractors and 3rd World constructors to go into strategic alliancing to get the best from both worlds.
- Construction and other risks should be distributed fairly.
- Efficiency can only be achieved by cooperation.
- Focus on long term joint ventures.