

### **Enabler for Profitability:**

#### **Dynamics and Operability**

The ability to evaluate the impact of plant design changes and production requirement changes on long term profitability through providing risk analysis and management tools. Plant operability / performance trouble shooting, de-bottlenecking, availability are some of the potential applications. Operator training, certification, and abnormal situation management.

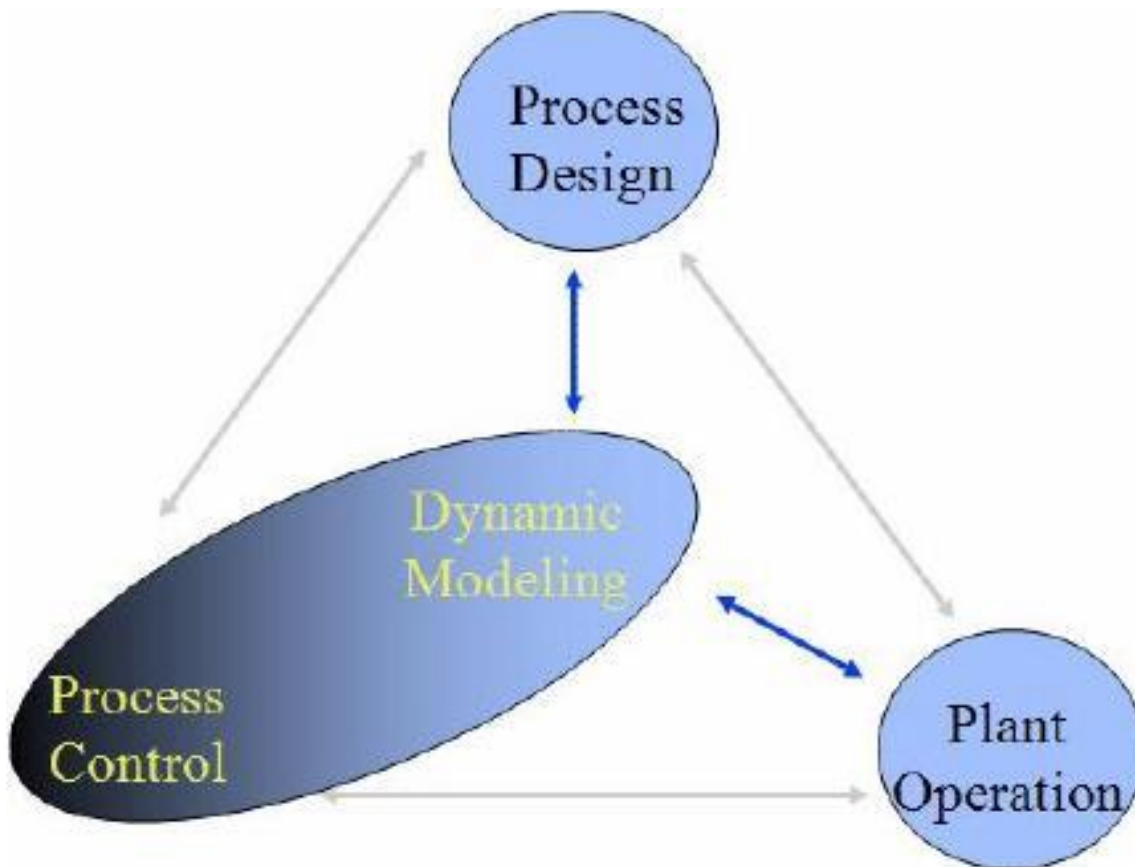
#### **Operational Technology**

Technology that is used to assist industrial gases manufacturers in maximizing profitability of existing plant investment through optimization, control , and operational methods.

#### **Dynamic Modeling - Process Control:**

Rigorous Dynamic Plant Models provide:

- Assess efficacy of Control strategy Vs Operational needs
- Design Plant-Wide Controls including Customer Processes
- Minimize development and implementation time of Advanced Controls and Optimization projects through the reduction of plant testing needs
- Emergency Shutdown system design and analysis



### Operational Technology - Case Study

An example in real-time power optimization requirements using the technology and modeling provides:

- Accurate and fast modeling of the plant power response to production changes
- Accurate process modeling of production constraints
- Stochastic forecasting of the power cost and storage tank levels
- Flexible optimization engine