



Welcome To The
QUARRY ACADEMY®

Improving Processes. Instilling Expertise.

DYNO
Dyno Nobel

SANDVIK

Program Overview

- **Faculty – Over 500 + Years of Experience**
- **Value Chain / Lean Thinking Concept**
- **3 day Curriculum – Full Value Chain Approach**
 - ✓ **Lean Enterprise Thinking Applied - “Rock Factory”**
 - ✓ **Best Process and Practices - Sandvik / Volvo / Dyno Nobel**
 - ✓ **Keynote – Astronaut Mike Mullane - “Rocket Factory”**

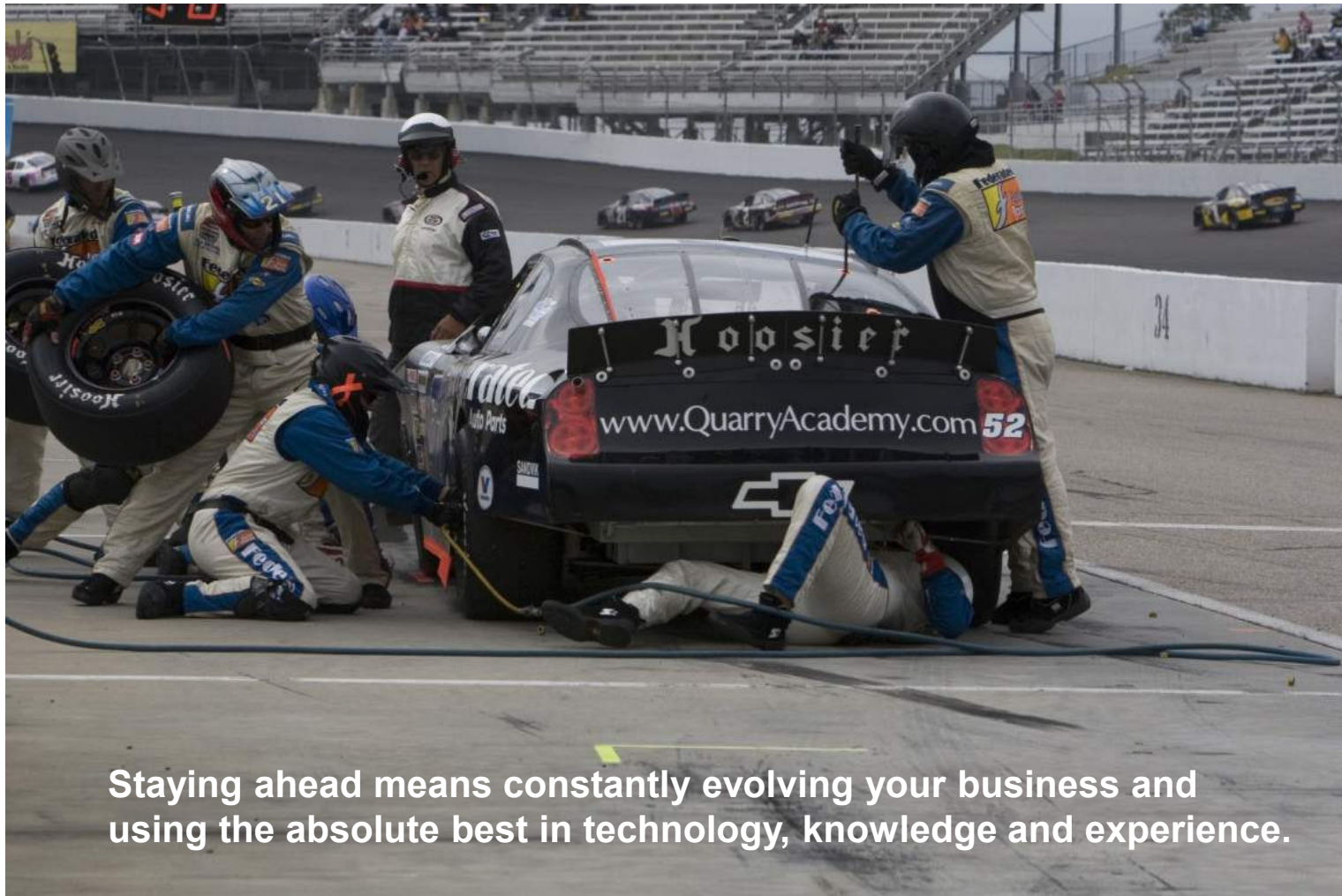


Program Approach

- Lectures on critical “mass” issues – “Best Practice”
- Workshops for specific focus / individual interest
- Field trip for “hands on” exposure
- What’s on YOUR mind... Interactive “Clicker” Questions
- Link it together – Total Value Chain Thinking
- Refer Course Outlines and Bios – 2010

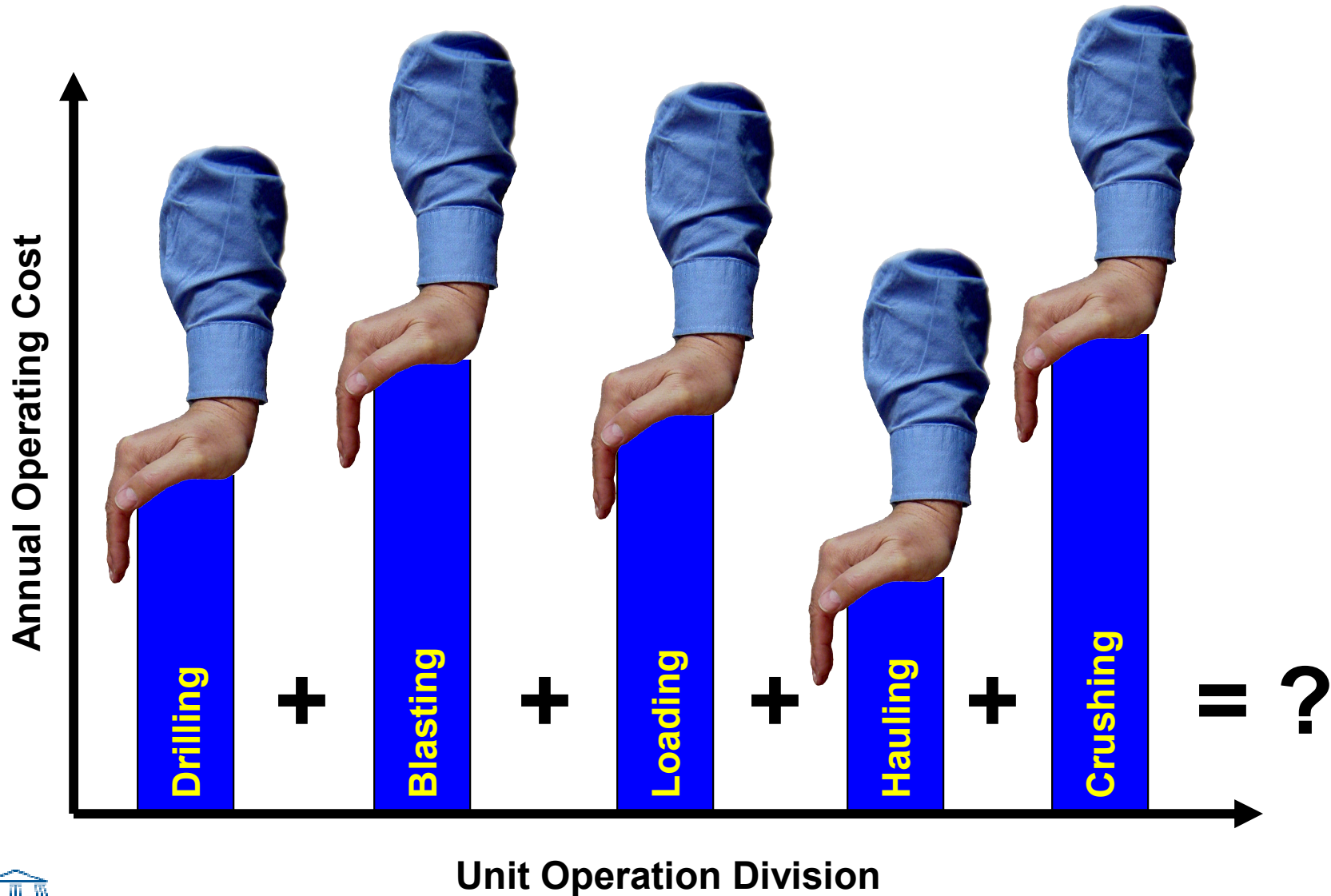


Its Still Competitive Out There...

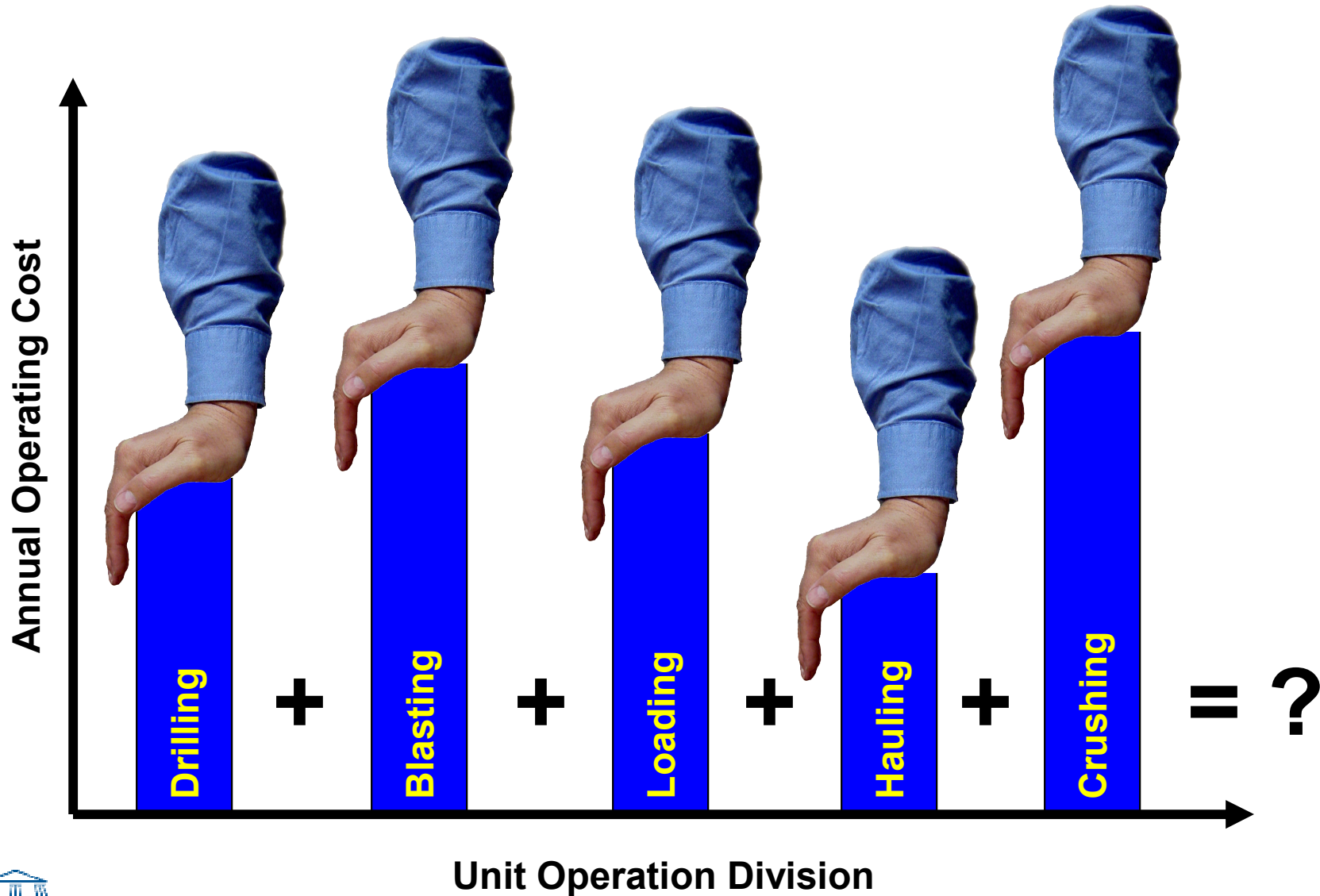


Staying ahead means constantly evolving your business and using the absolute best in technology, knowledge and experience.

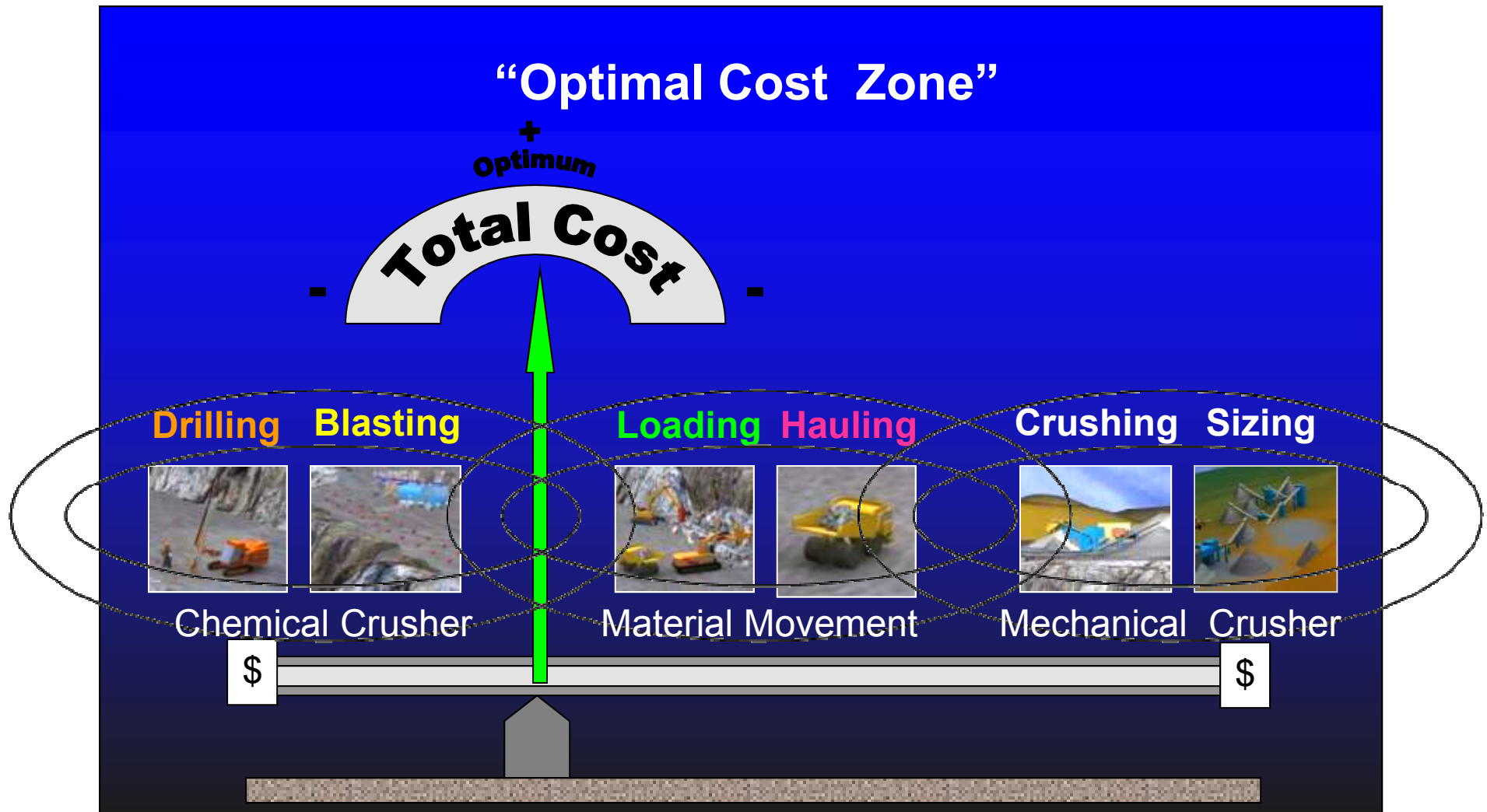
The “Silo” Costing Approach



The “Silo” Costing Approach



Getting the Right Balance





It's Competitive Out There...

In today's economic environment, conditions can change fast. Staying ahead means constantly **evolving** your business and using the absolute best in technology, knowledge and experience.

That's what we're here for...

Understand The Full Customer Value Chain

Lean Thinking Applied...



Our “Link” to a Competitive Advantage...
and we believe yours too!



Lean Thinking Applied

Bill Ristch



QUARRY
ACADEMY

Improving Processes. Instilling Expertise.

DYNO
Dyno Nobel



Course Agenda

- **What is Not Lean / What is Lean**
- **What is Value**
- **Measuring the Process**
- **Applying to Quarrying – A Rock Factory**
- **Paradigm Shift**
- **Conclusions / Take-Aways**

What is NOT... Lean?

- 5S
- Setup Reduction
- One Piece Flow
- Poke Yoke (mistake proofing)
- Kanban
- Batch Size Reduction
- Just In Time
- Kaizen

What is Lean?

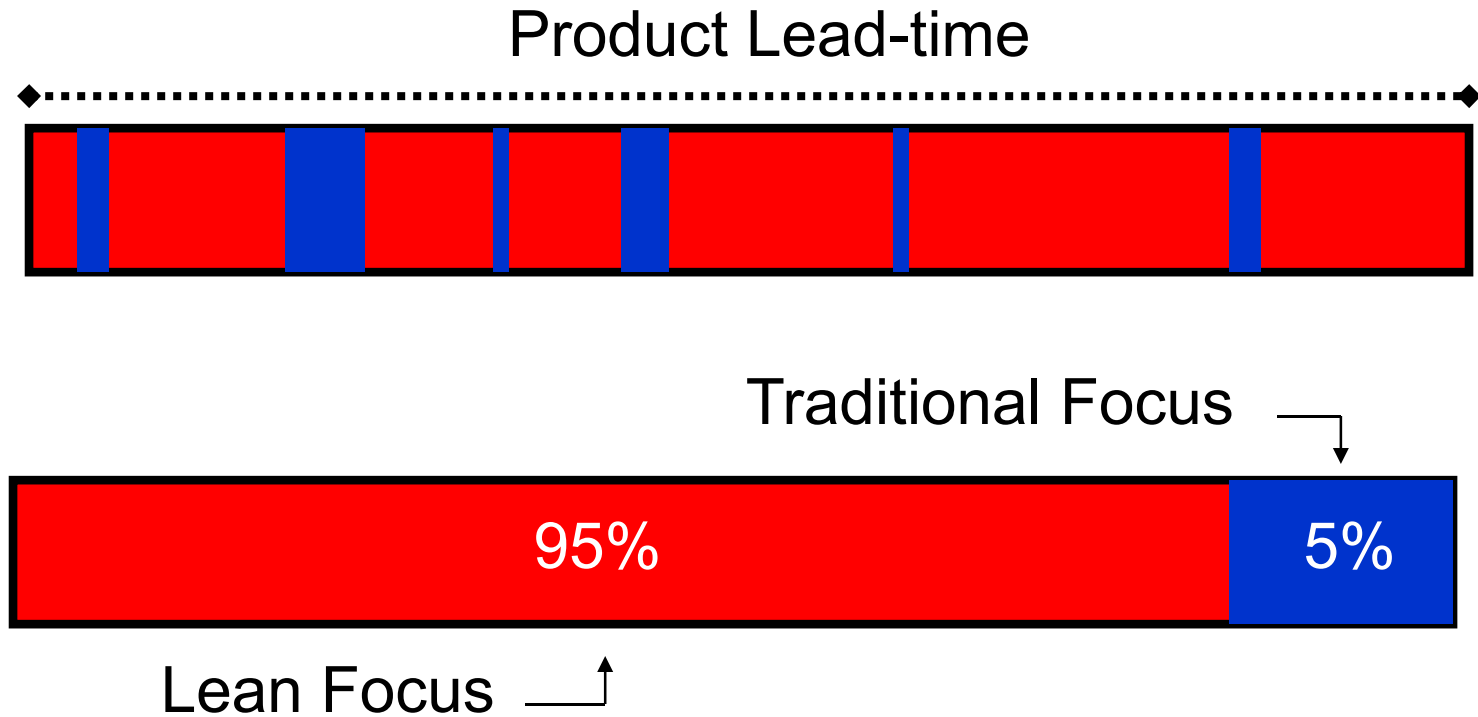
- ☑ **Customer Focused**
- ☑ **Process Focused**
- ☑ **Culture Driven**
- ☑ **Stresses Creativity**
- ☑ **Value Driven**

What is value?

Value = Transformation



Waste in a Typical Process



Non-Value Adding activities

Value Adding activities

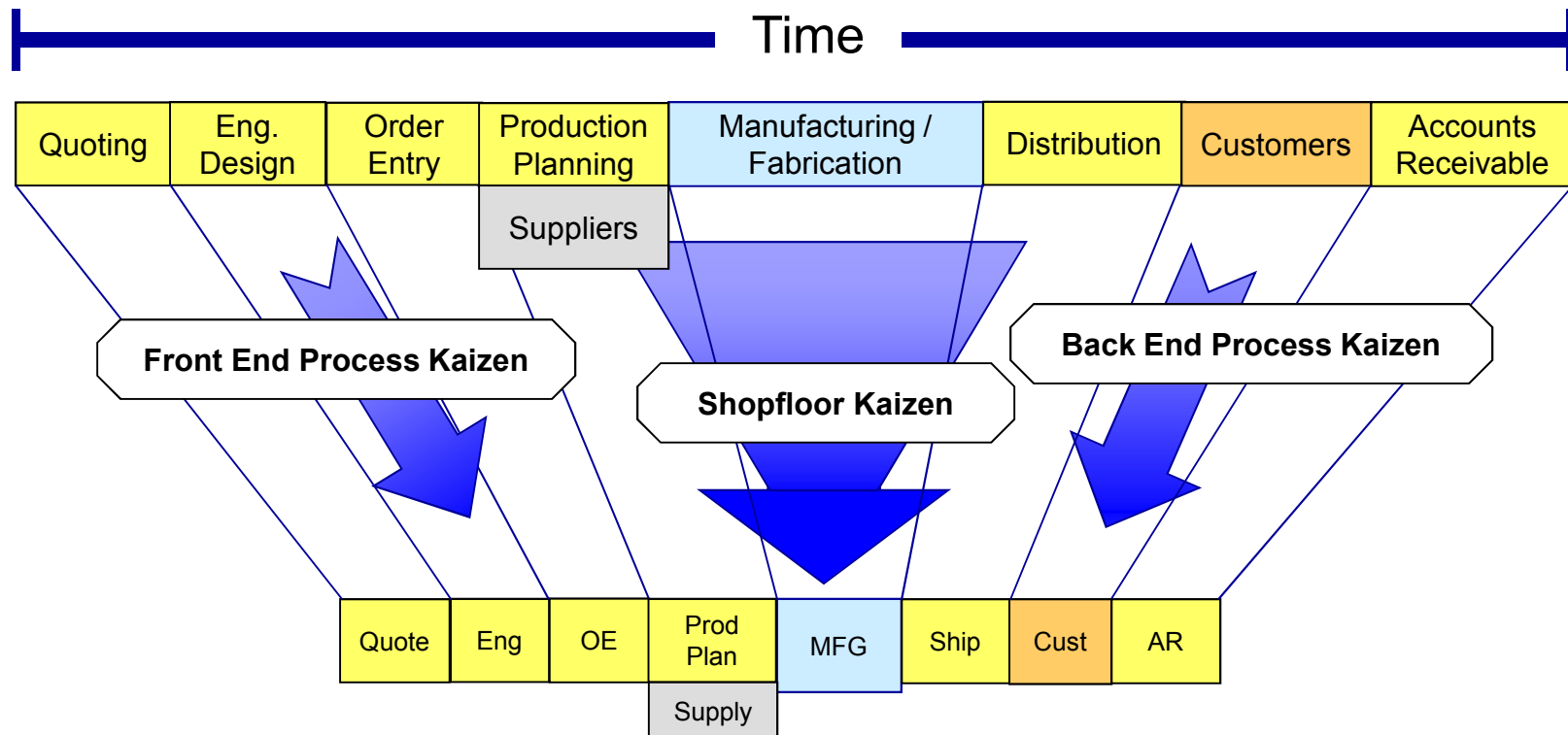
Foundation of Lean

“One of the most noteworthy accomplishments in keeping the price of Ford products low is the gradual shortening of the production cycle. The longer an article is in the process of manufacture and the more it is moved about, the greater is its ultimate cost.”

Henry Ford

Measuring a Process

Efficiency -- Reducing Lead time across entire Value Stream

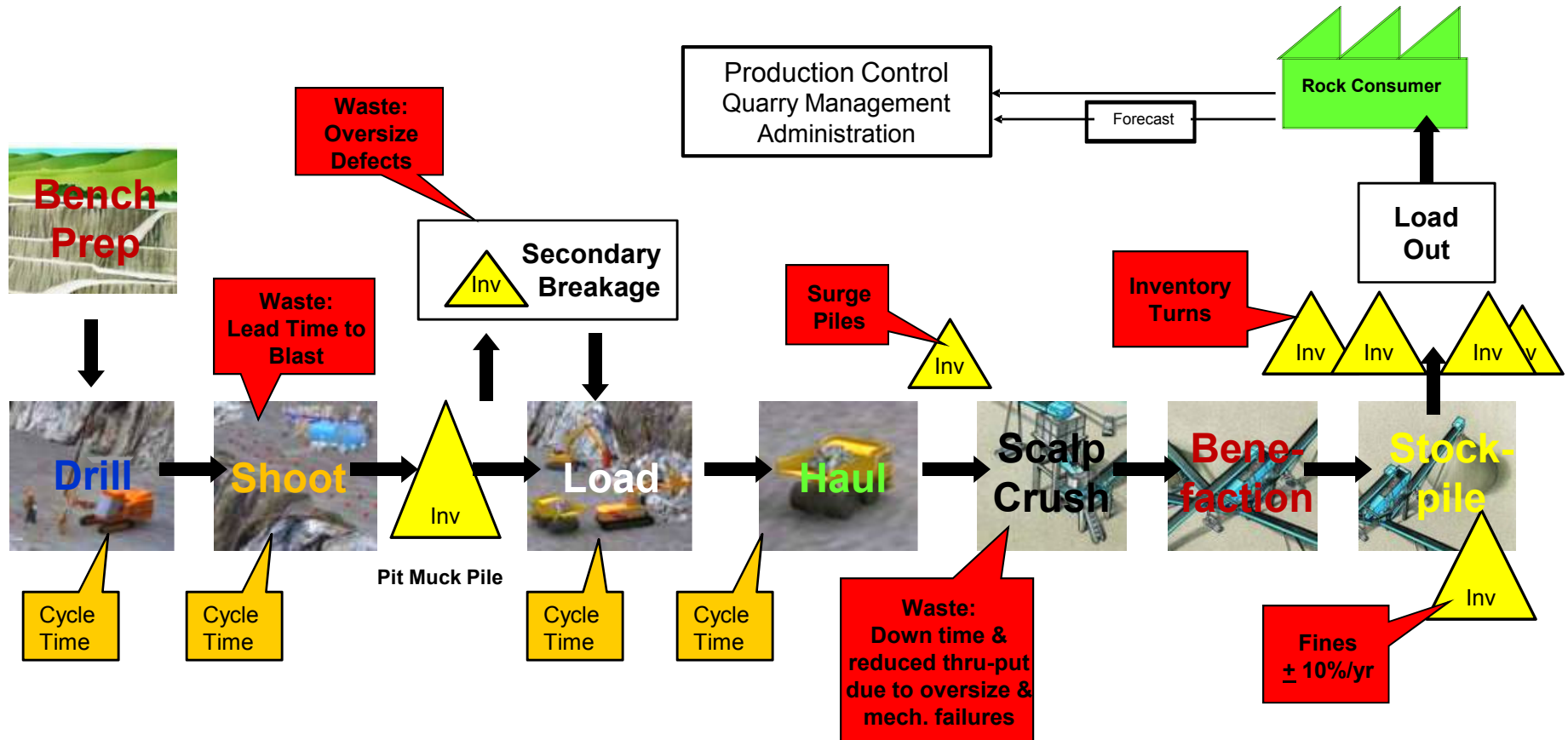


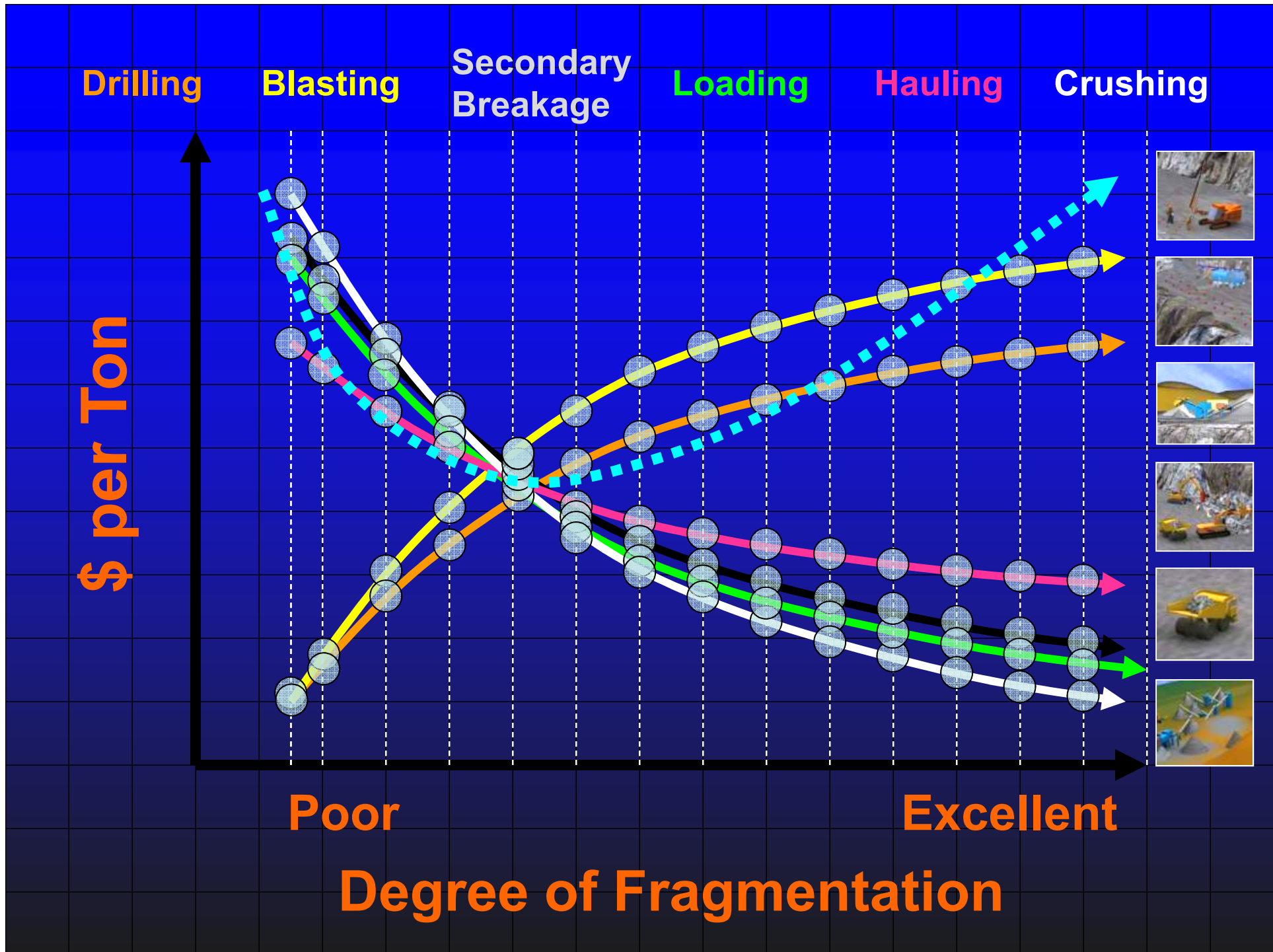
The Value Chain – Lean Thinking



© 2010 Quarry Academy

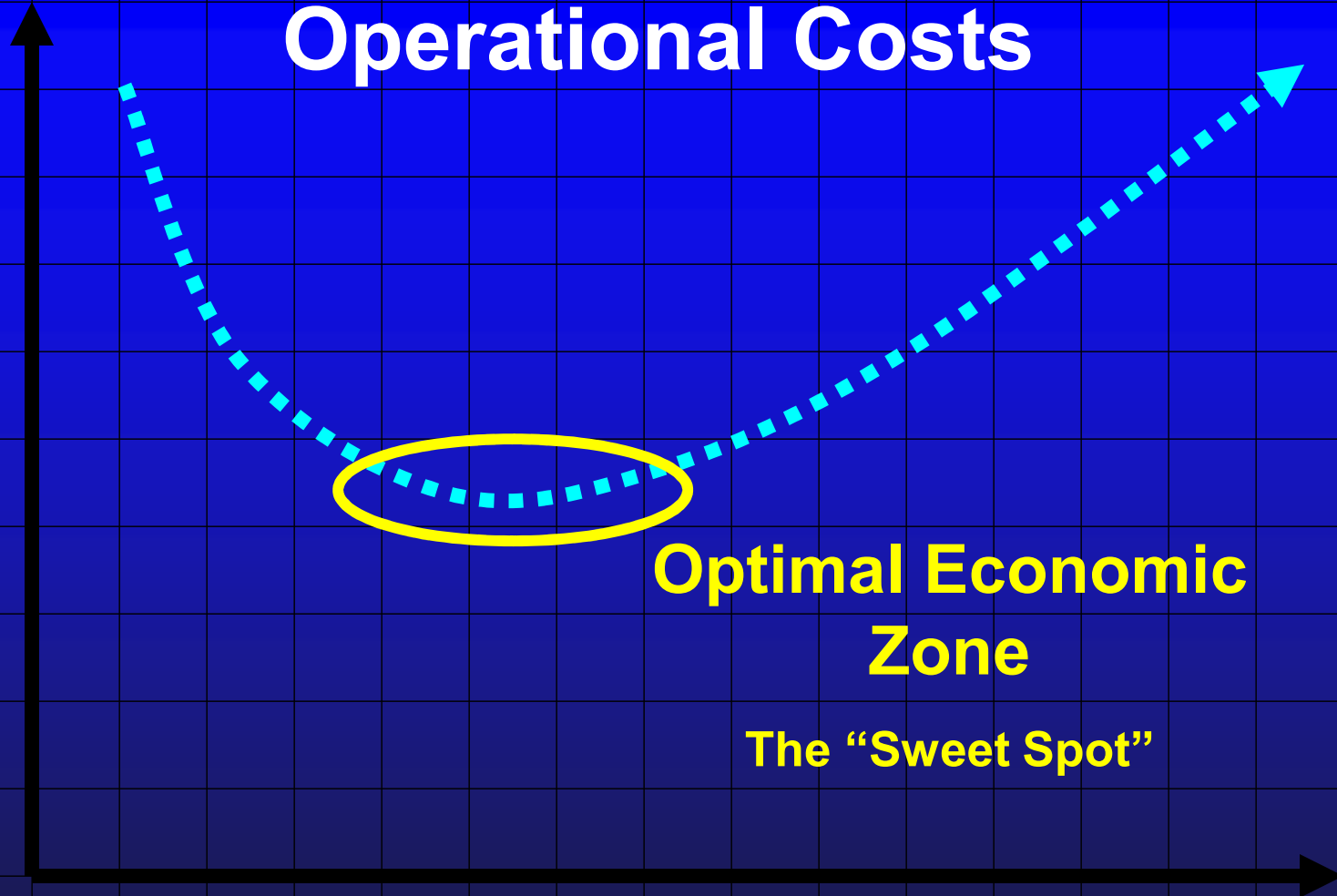
Quarry Operations – Rock factory





Combined Unit Operational Costs

\$ per Ton

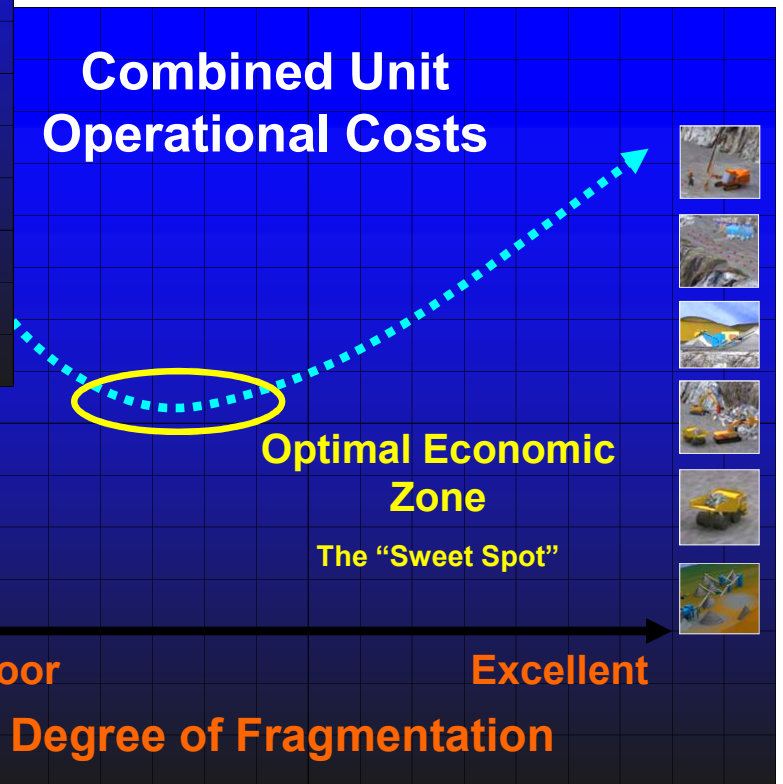
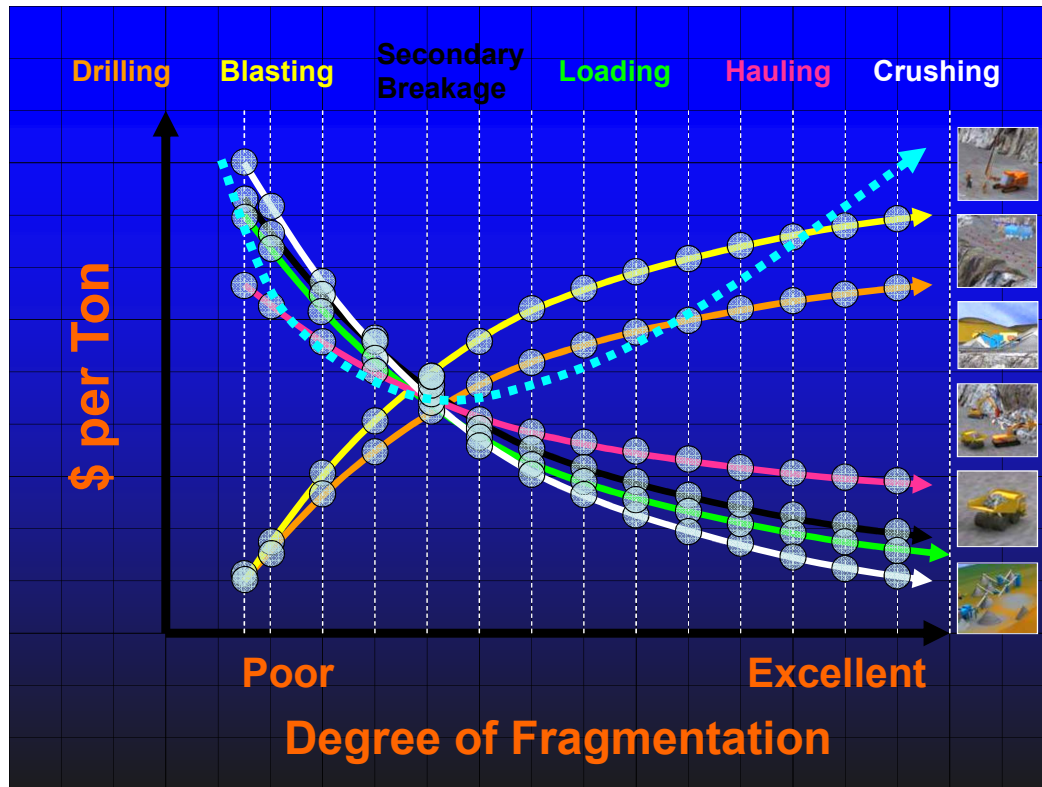


Poor

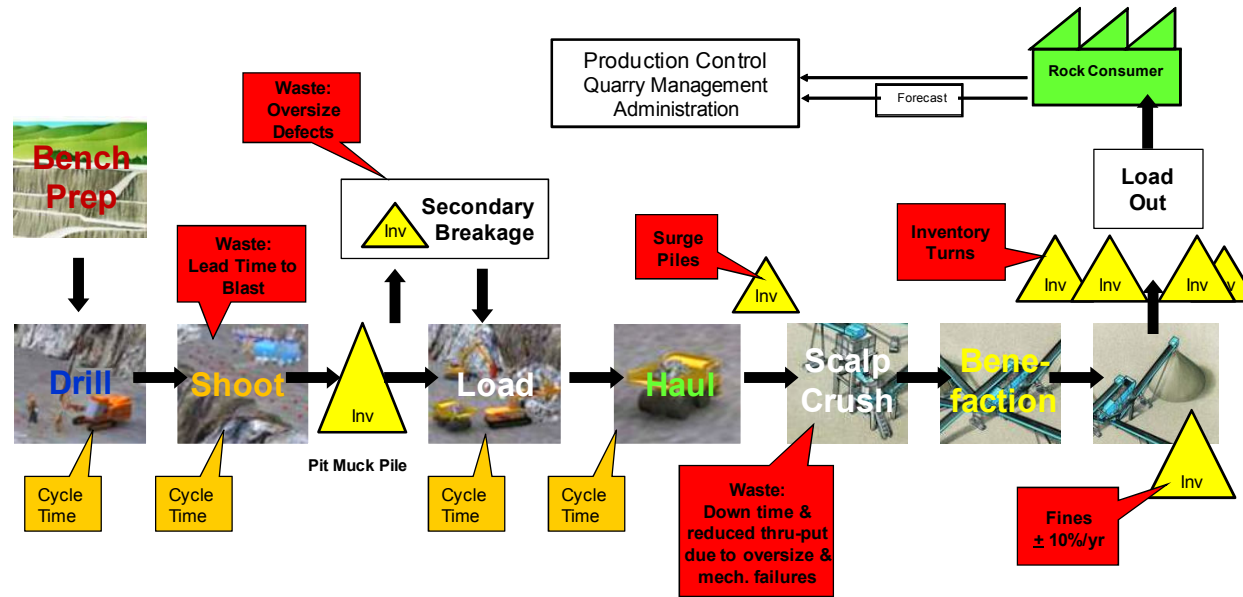
Excellent

Degree of Fragmentation

The Goal... Improve Competitiveness



The Value Chain / Rock Factory



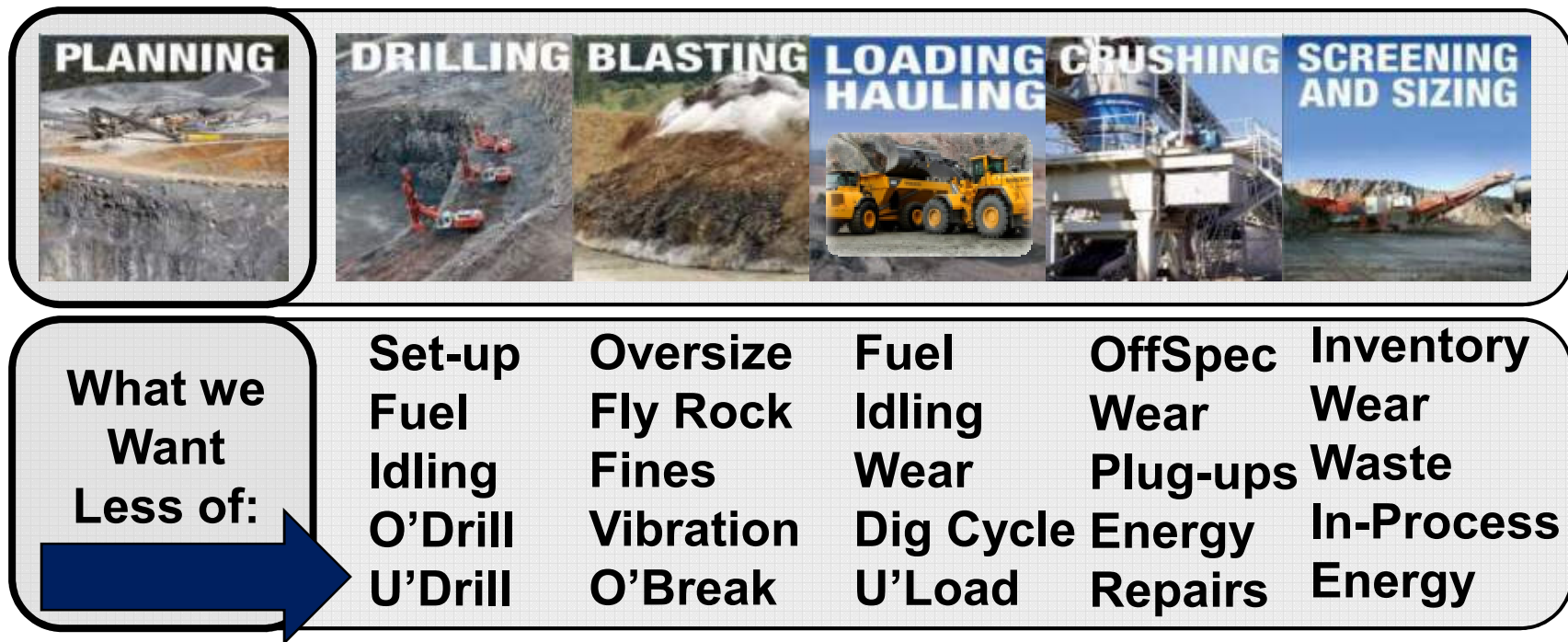
PROCESS FLOW →



← **COMMUNICATION**

Get the Waste Out of the Process...

- ✓ Time
- ✓ Movement / Motion
- ✓ Inventory
- ✓ Over-Production
- ✓ Out of Spec Product
- ✓ Under-Production



Paradigm Shift

**How to size
operations to expand
and contract to meet
demand?**

Conclusions

- **Lean is a culture**
 - ✓ Improvement is a Bonus
- **Need to grasp Value = Transformation**
- **Value Stream is measured by time and should be structured to meet demand**

Questions?

Bill Ritsch

Georgia Tech – Enterprise Innovation Institute

*Web: innovate.gatech.edu
gtlean.org*

Resources / Materials: <http://www.nist.gov/mep/>

Lean Thinking

Learning to See

Andy and Me

Authors: Womack and Jones

Authors: Rother and Shook

Author: Dennis

www.quarryacademy.com



Improving Processes. Instilling Expertise.

DYNO
Dyno Nobel

