



# Energy Efficiency . . . Process vs. Program

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# Discussion Outline

- **Introduction**
- **Topic Definition**
- **Case Study Example**
- **Concluding Remarks**



# Introduction

- **Pfizer** – The world's leading producer of pharmaceutical products . . . With Kalamazoo, MI as it's largest global manufacturing facility (Formerly known as Upjohn and Pharmacia)
- **Armstrong International** – A 104 year old, privately held, global company focused on delivering Intelligent System Solutions for Steam, Air and Hot Water Utilities.  
(Providing Products to Providing Utilities)

# Definition

- **Program** – A plan for a coherent sequence of incidents (A start and stop!)
- **Process** – A progressively continuing operation that consists of a series of controlled actions systematically directed toward a particular result



# Process vs. Program at the Kalamazoo, MI facility



- In 1980's, trap testing eliminated from the maintenance budget as a well intentioned cost savings (6000 steam traps) **Program Ends!**
- Armstrong performed pilot study (5 years later) with resulting economics justifying a budget from management



# Process vs. Program

- Armstrong assisted testing and replacement of all 6000 traps and provided software for steam loss measurement
- First year savings: \$479,000
  - Production time improved in some areas
- First year investment: \$110,000 (all costs)
- Management created budget for future years from "fuel saved"

**(The Process Begins!)**



# Process vs. Program

- Subsequent years Pfizer staffed one person to test and monitor traps
- Every year management realized a net positive cash flow from the "Process" (annual savings \$50,000 - \$100,000)
- Due to retirement, Armstrong provided the on-site technician for last 3 years with similar financial results
- Armstrong's on-site technician also provides total steam system troubleshooting
- Over 10 years Pfizer/Armstrong have recognized more than \$1,000,000 in savings from just this "PROCESS"



# Other Pfizer/Armstrong Energy Initiatives



- Armstrong has gone on to provide complete steam system audits at Pfizer's Puerto Rico and Italy facilities
- These audits have recognized an additional \$1 million dollars in energy conservation projects
- Armstrong also conducted a turnkey implementation of heat pipes for "free" cooling for HVAC make-up air in Puerto Rico





# Concluding Comments

Pick It  
Again

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Pick it 'over' again . . . the low-hanging fruit grows back!



# Concluding Comments

(cont'd)



- Develop **Processes not Programs** when dealing with energy initiatives
- Because many energy projects have attractive paybacks, **form partnerships with vendors** that can stretch your resources and accomplish your cost reduction objectives
- Remember . . . **Low-hanging fruit . . . Grows again!**



# Other Armstrong Solutions



- Steam and Condensate System Optimization
- Hot Water System Optimization
- Process Air System Optimization
- Turnkey Project Services
- Energy Project Financing Services
- Operation and Maintenance Services
- Asset Management Services

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# Pfizer/Armstrong



**“A Process Partnership”!**