

Together We Can Change the World

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Do you ever think about helping to solve the biggest challenges our world faces?

What are the World's biggest challenges?

- ❖ Energy
- ❖ Water
- ❖ Food
- ❖ Environment
- ❖ Health
- ❖ Chemicals & Minerals
- ❖ Material goods

A career in industrial automation will be a career designed to help meet and solve these daunting challenges!

History of The Value of People in Industry

1. Era 1 - Early manufacturing

2. Era 2 - Industrialization

3. Era 3 - Automation

4. Era 4 - Technology

5. Era 5 - Empowerment

The Earliest Industries



People were the heart of the business

Manager

Miller

Buyer

Sales

Marketing

Maintenance



Role and Value of People

1. Era 1 - Early manufacturing

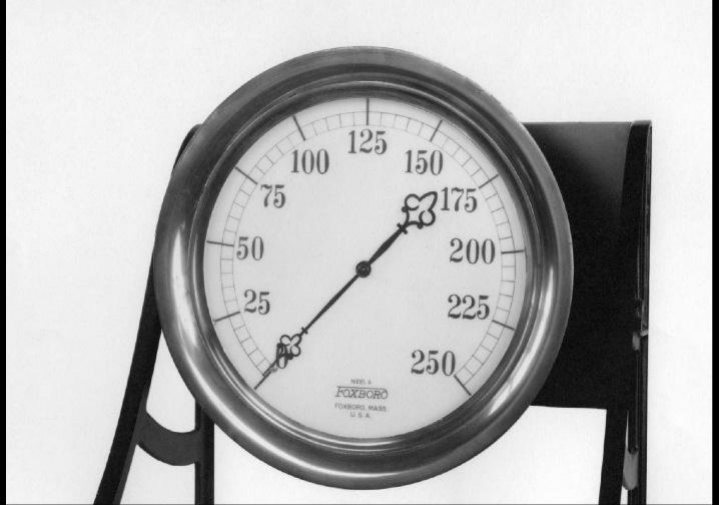
2. Era 2 - Industrialization

3. Era 3 - Automation

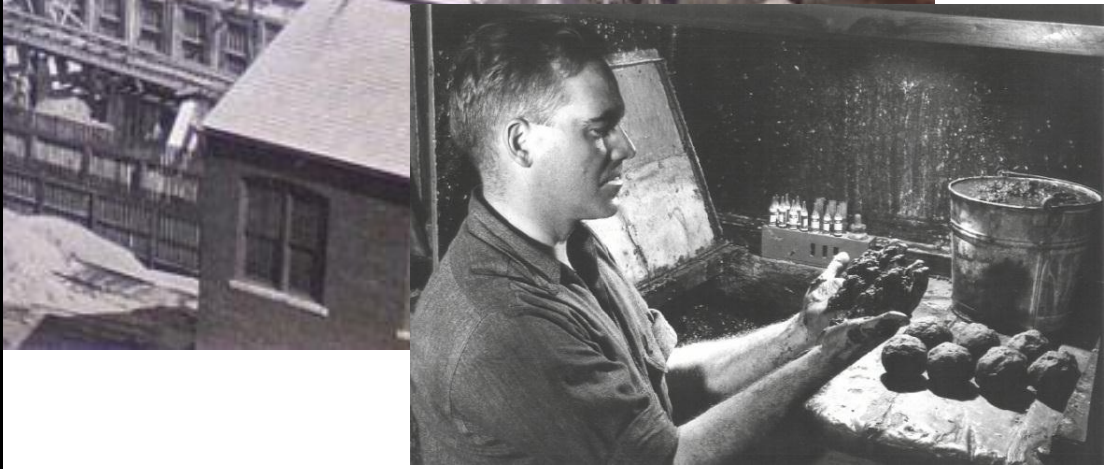
4. Era 4 - Technology

5. Era 5 - Empowerment

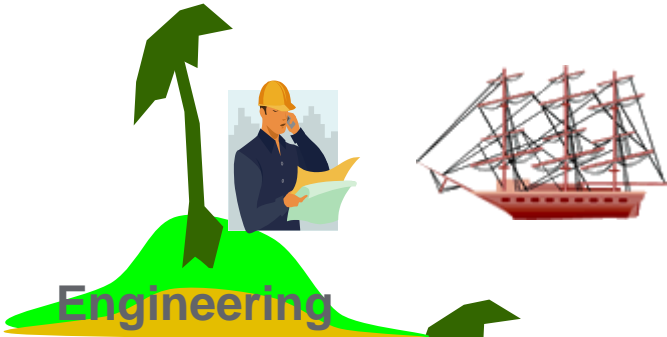
Exponential Increase in Complexity



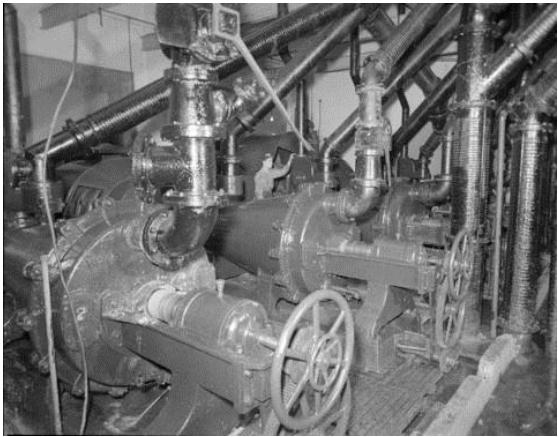
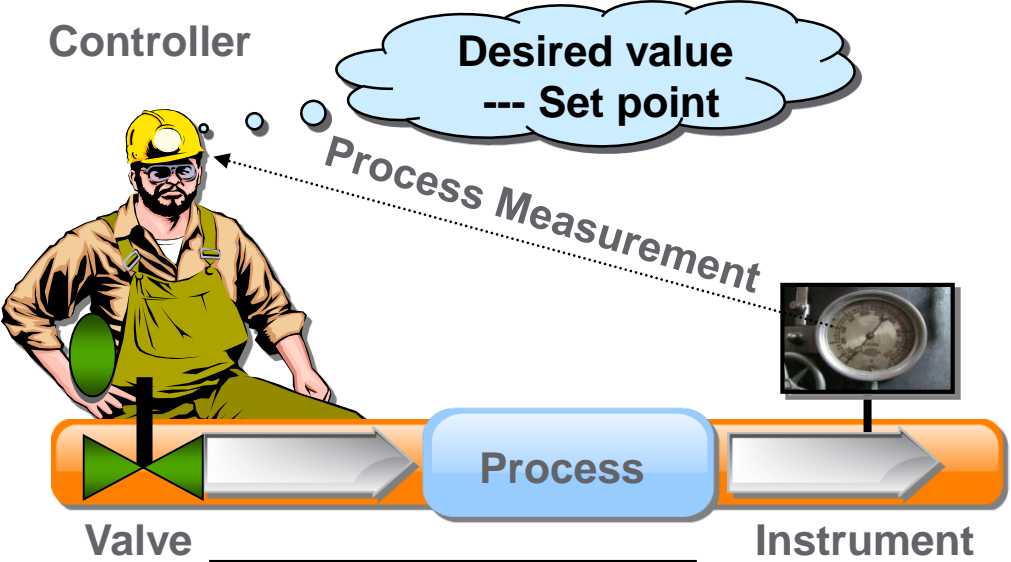
10 inch Gauge with Illuminated Dial Made at Foxboro c1914
Schneider Electric - Division - Name - Date



Specialization



People were in Control!

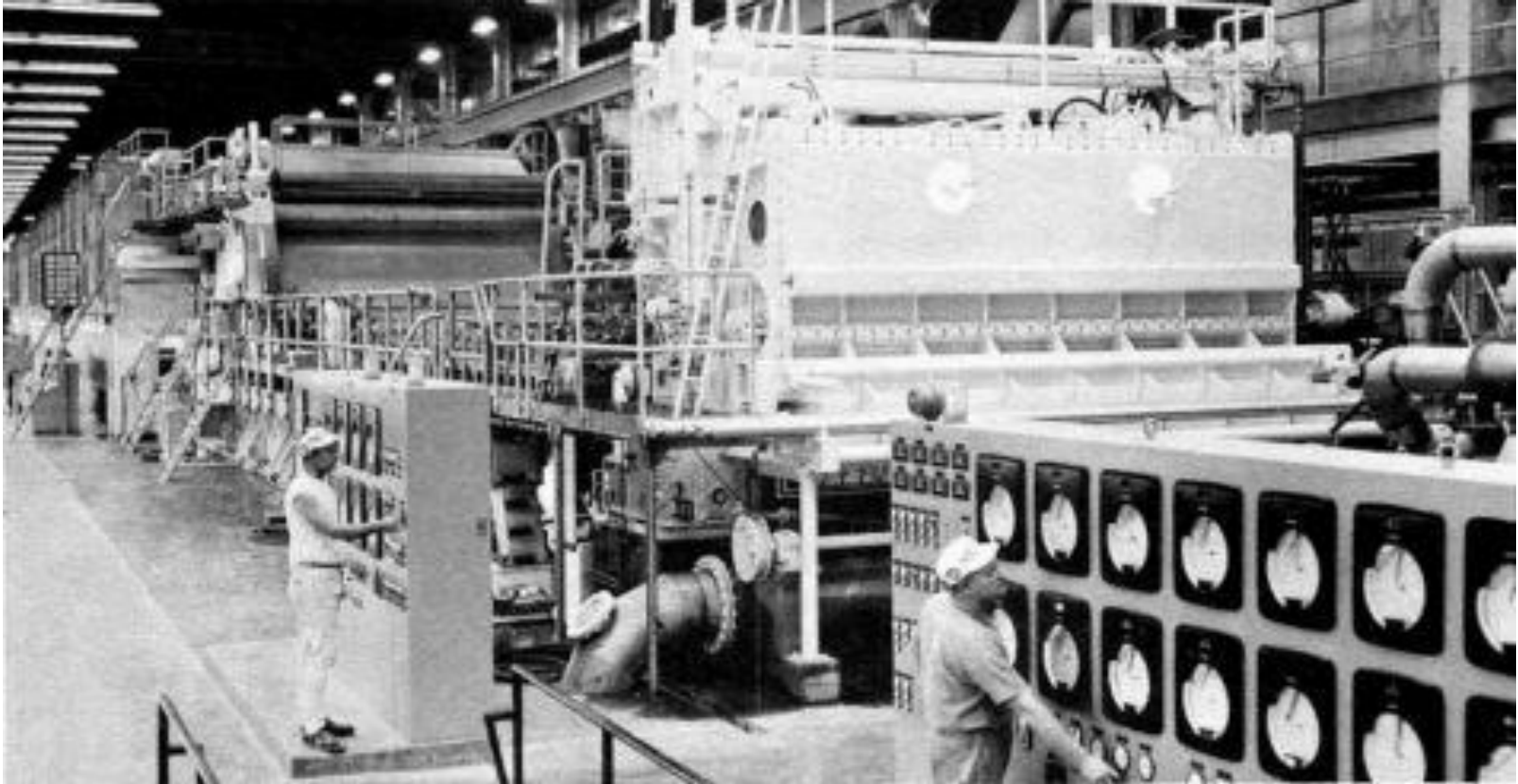


Mission – Safely increase efficiency

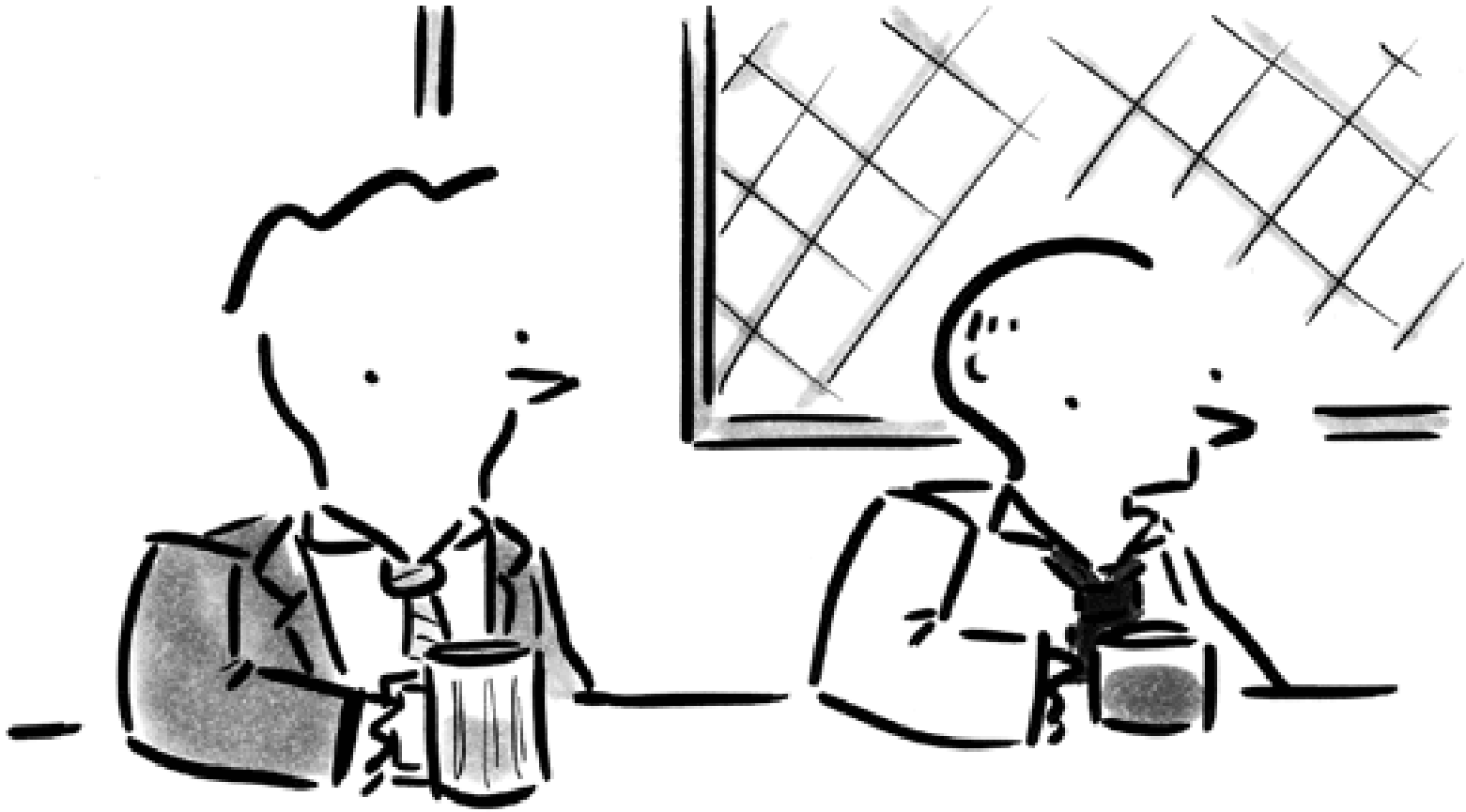
Role and Value of People

1. **Era 1 - Early manufacturing**
2. **Era 2 - Industrialization**
3. **Era 3 - Automation**
4. **Era 4 - Technology**
5. **Era 5 - Empowerment**

Fewer Operators – Broader View



Becoming Information Craftsmen



ANDERSON

“They replaced me with a controller”

Solution Perspective

Challenge

Solution

Technology enabler

Talent



Foxboro Manometer Type Flow Meters at Texas Oil Co c1950



Edgar Bristol & Greg Shinskey Discuss Control Strategy c1981

Role and Value of People

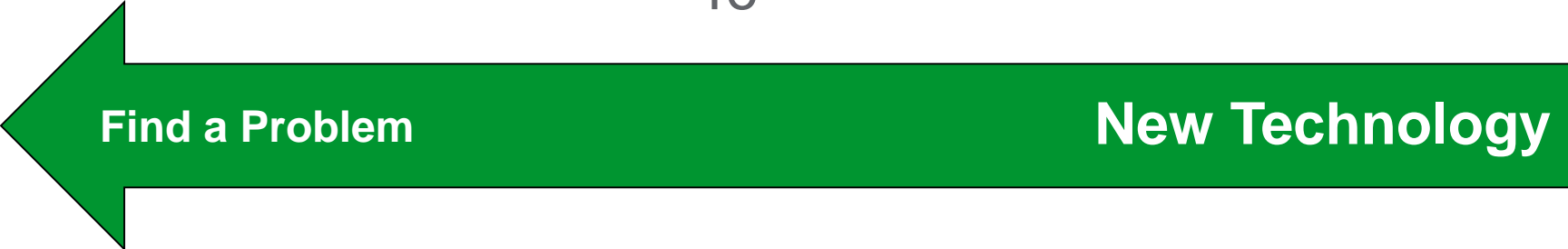
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- 4. Era 4 - Technology**
- 5. Era 5 - Empowerment**

A Change in Perspective Occurred

From



To





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Throw Technology at It!

MAP **Bandwidth** **Artificial Intelligence**
Expert Systems
SPC-SQC **Dashboards** **OPC**
Scorecards **6 σ** **CIM** **3D Graphics**
Object Orientation **Lights-Out** **Pixel Resolution**
Fieldbus **Intelligent Instruments** **Internet**
Client-Server **Ethernet**
E-Manufacturing.com

**Technology has great value –
only if applied to solve a problem!!!**

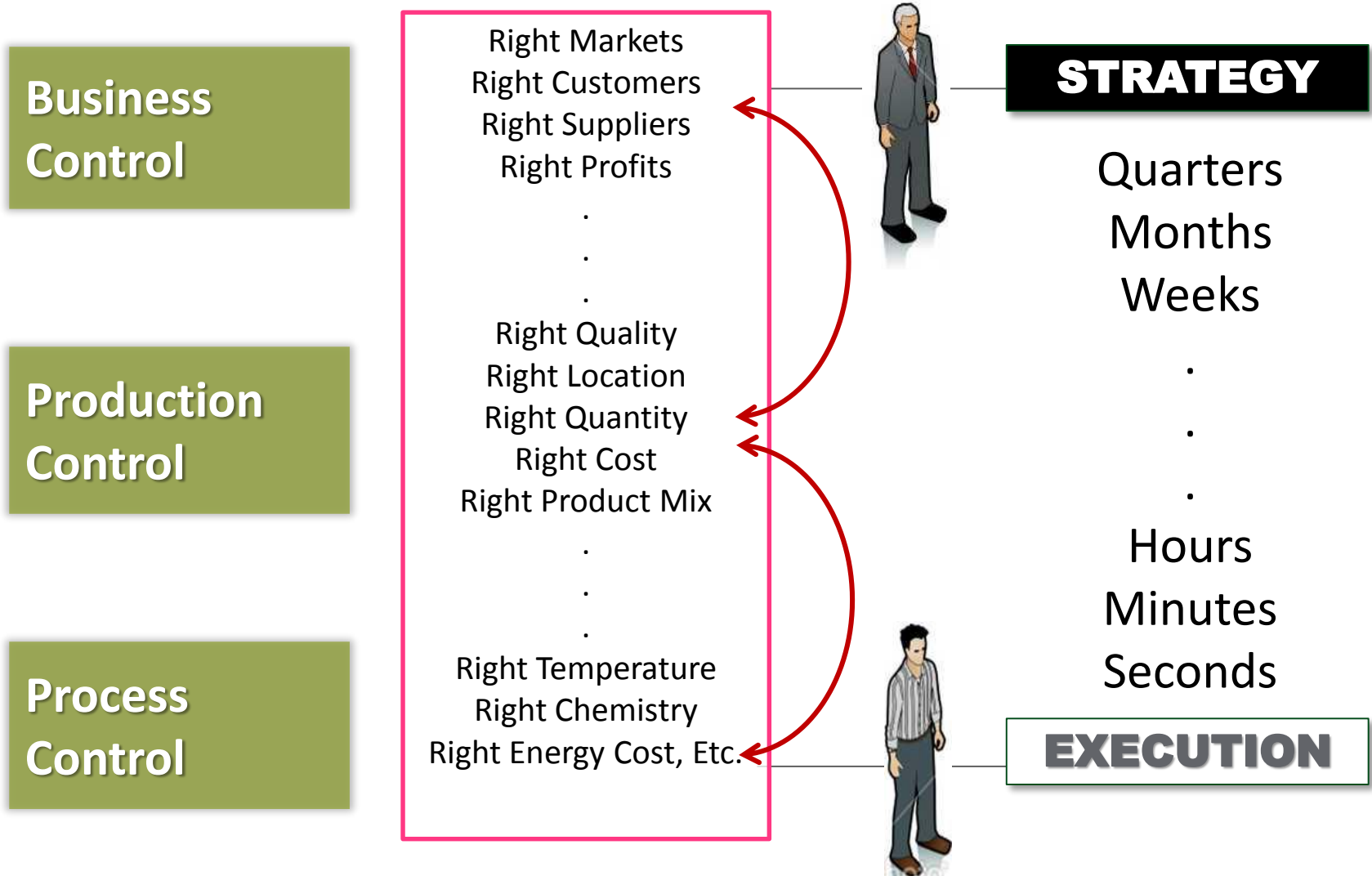
Role and Value of People

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Executive Concerns

- Experience drain – Graying of workforce
- Difficult to attract/retain high performing staff
- Engaging the employees in the business
- Helping employees understand their value
- Attracting new employees

Real-time is the final frontier



Why Empowerment – a time problem!

1990

Profit
Quality
Asset

Environmental

Safety

Efficiency

Management
(Transactional)



Control
(Real Time)

2015

Profit
Asset
Quality
Environmental
Safety
Efficiency

When You Can Control – Do
When You Cannot Control - Manage

Decision Rights – who makes the call?

“Give me the information, and I’ll tell you what to do.”



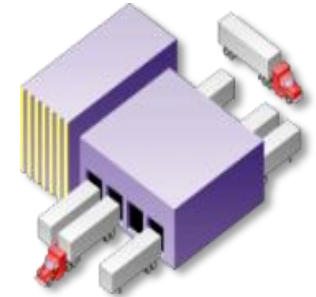
C- Level

VP



Director

Manager



Supervisor

Front-line Worker



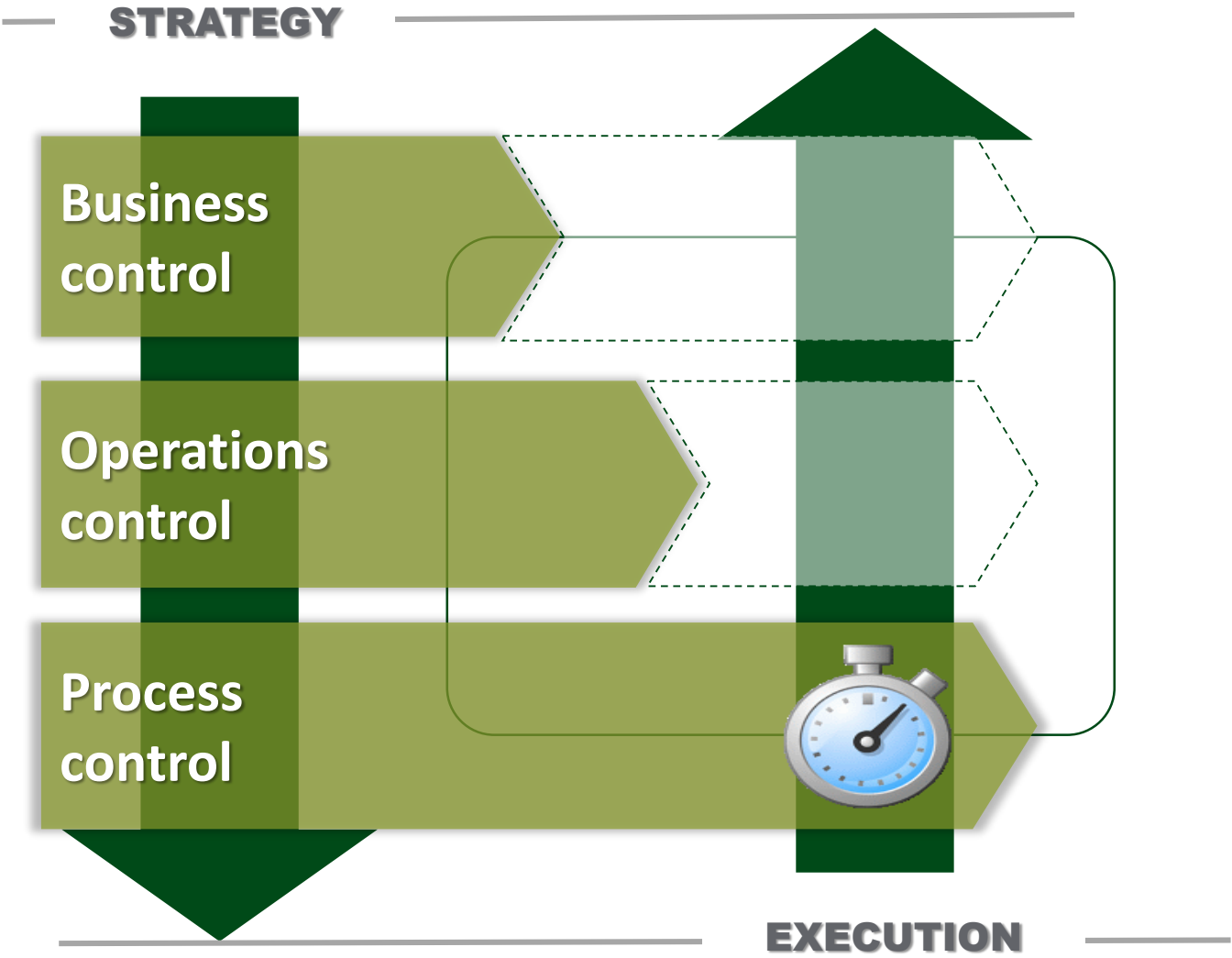
Time

Decisions

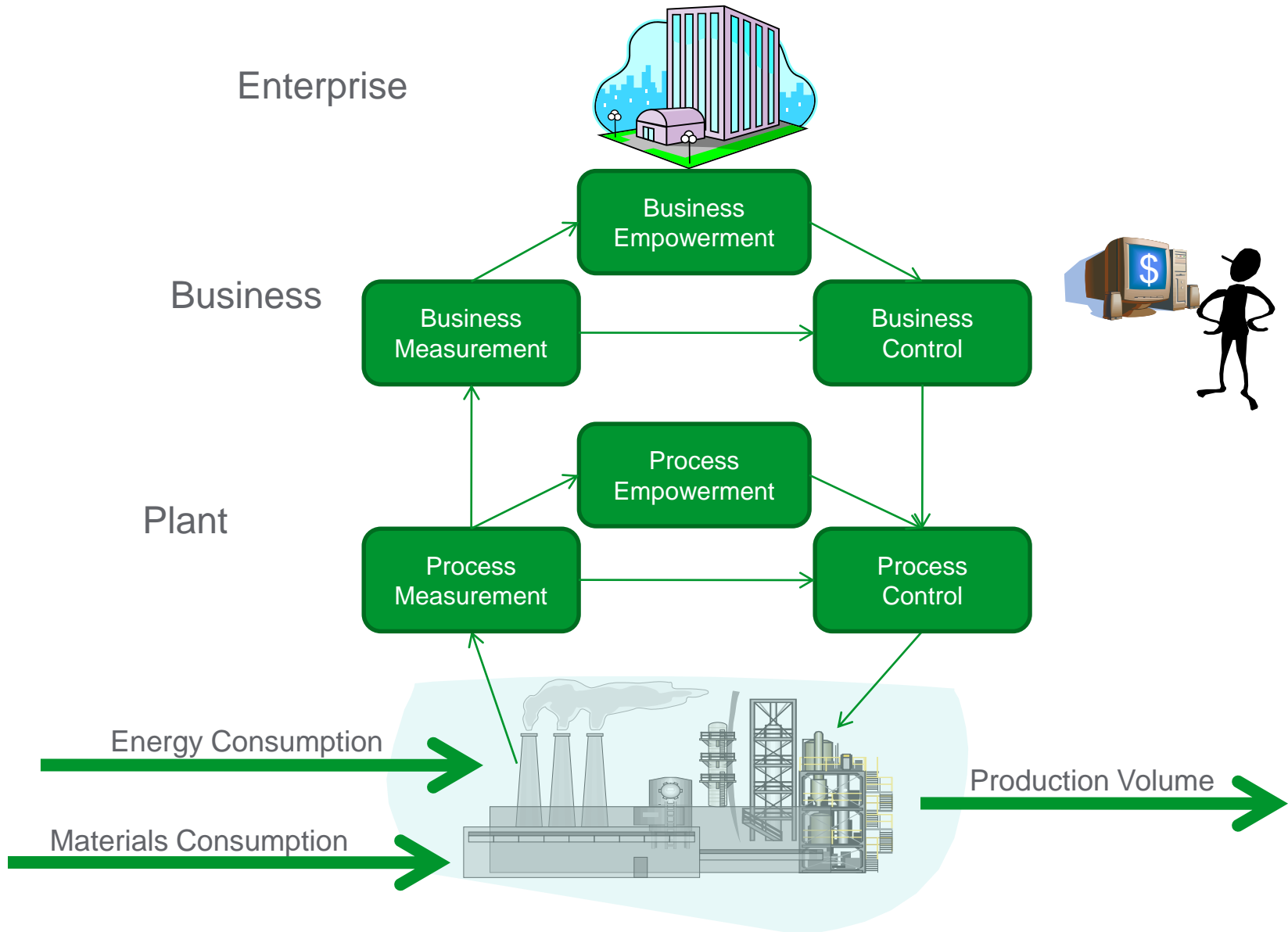
**“I can create more value...
-- if you empower me.”**



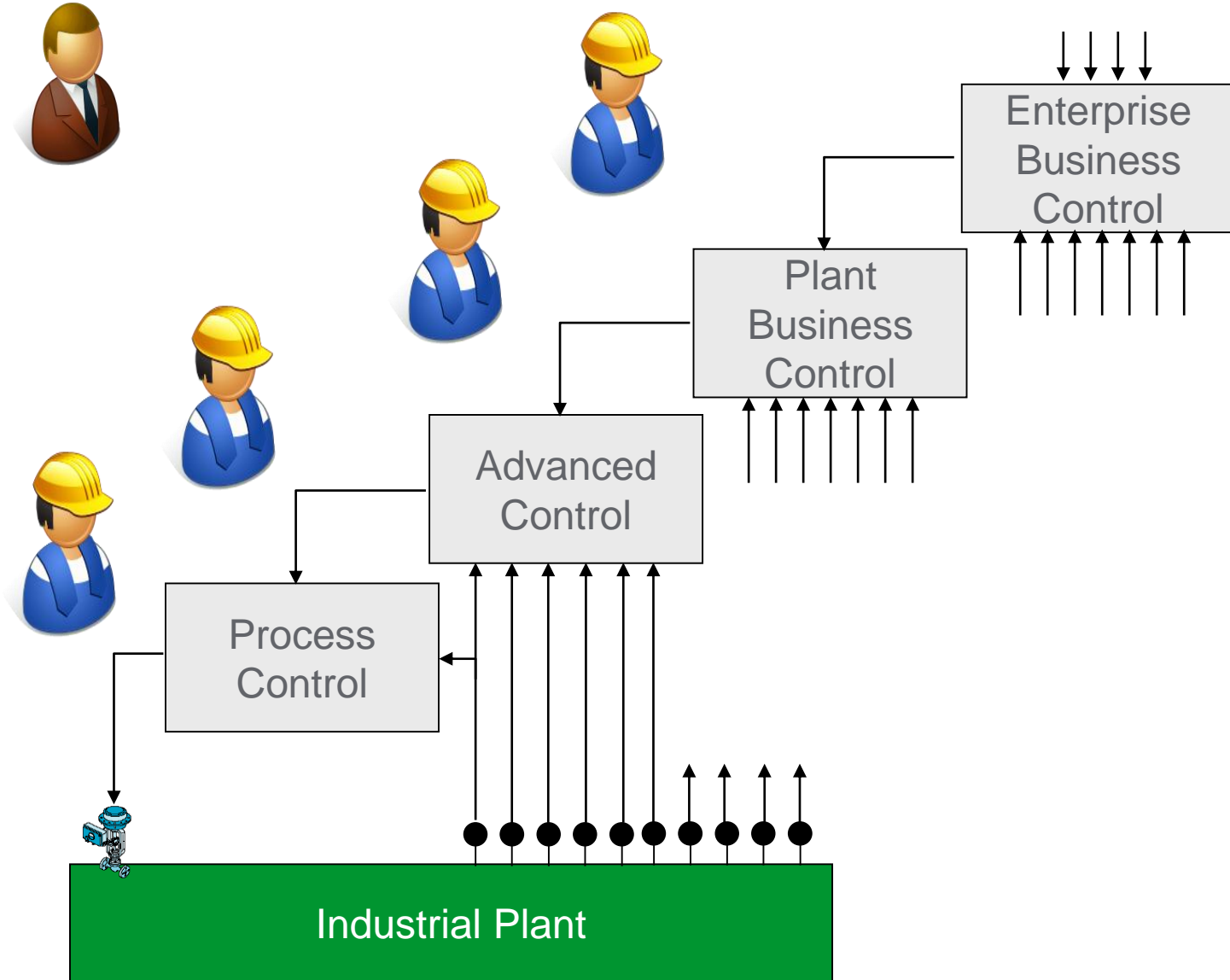
Enterprise Control principles



Optimizing Profitability and Efficiency



Cascade of Operational Performance “Loops”



“Workplace Departures”

- Retirements increasing as Baby Boomer retire
 - 10,000 per day for next 20 years
 - 400,000 years of experience being lost per day
 - Huge amount of experience leaving workforce
 - Hiring was suppressed through the last 15 years
 - Lack experienced workers to fill the gap



Characteristics of Millennials

- Meaningful careers
- Tech-Savvy
- Multitasking
- Connected
- Collaborative – part of team
- Training – want to know job
- Instant gratification/recognition
- Career advancement



Millennia's have the characteristics for success!

Millennial's are ideal- Instant gratification/rewards



Measuring the real value of every person in the operation

Millennial's are ideal – Team-based, collaborative,



Millennials are ideal – Tech-savvy, multitasking, training



Millennials are ideal – Tech-savvy, collaborative, connected, multitasking



Not Your Father's Automation Industry!

Millennials Want a Career with Meaning

- ❖ Help solve **world energy**
- ❖ Help provide **clean water**
- ❖ Help solve **world hunger**
- ❖ Help clean and sustain the **environment**
- ❖ Help meet **chemical & mineral** needs
- ❖ Help provide **material goods**

It would be difficult to find a career with greater impact

Industrial Automation: let's make a great future

Millennials are Ideal!

Because of what has already been done!

The Exact Right Generation

At Exactly the Right Time

Isn't it time WE solved world hunger!

Thank You

