

# Developing Workplace Critical Thinking (DWC)

BMSK5001

Week 4

# Aim session

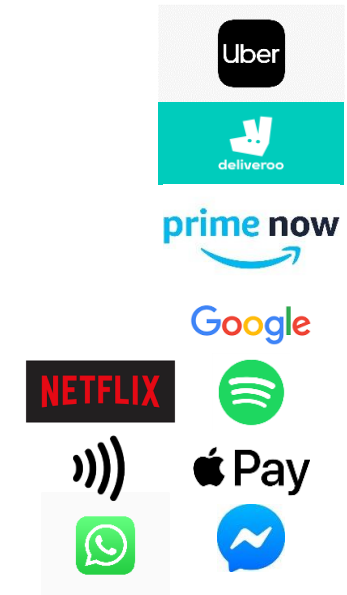
To discuss :

- Skills people can develop to better prepare themselves for problem solving and decision making in the rapidly changing business environment?
- How people can learn to think creatively and critically?
- How creative and critical thinking can help people make better business decisions?
- What are the logical stages of problem solving and decision making?
- The Scientific Management Theory

| <b>Variables</b>                                    | <b>Agricultural<br/>Era</b> | <b>Industrial<br/>Era</b>                                                 | <b>Post-Industrial<br/>Era</b>                                 | <b>Knowledge<br/>Era</b>                                                   |
|-----------------------------------------------------|-----------------------------|---------------------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------------------|
| <b>Strategic Factors<br/>of Economic<br/>Growth</b> | Land                        | Capacity of<br>Industrial<br>Production                                   | Information                                                    | Knowledge                                                                  |
| <b>Organisational<br/>Factors</b>                   | Hierarchy (Land<br>Owner)   | Blue Collar<br>Bureaucracy<br>(Factory Owner,<br>Trade Union<br>Leaders ) | White Collar<br>Bureaucracy<br>(Administrators, IT<br>Managers | Collaboration<br>(Communities)                                             |
| <b>Predominant<br/>Consumer Goods</b>               | Food                        | Agricultural Goods,<br>House & Clothing                                   | Information &<br>Communications<br>Services &<br>Products      | Intellectual<br>Products &<br>Services                                     |
| <b>Technology</b>                                   | Agricultural                | Manufacturing &<br>Engineering                                            | Information &<br>Communications                                | Technology for<br>Learning,<br>Innovating,<br>Consulting,<br>Collaborating |
| <b>Predominant<br/>Resource</b>                     | Workforce                   | Physical Sources of<br>Energy                                             | Information                                                    | Ideas                                                                      |

# Today's consumers are demanding more than ever...

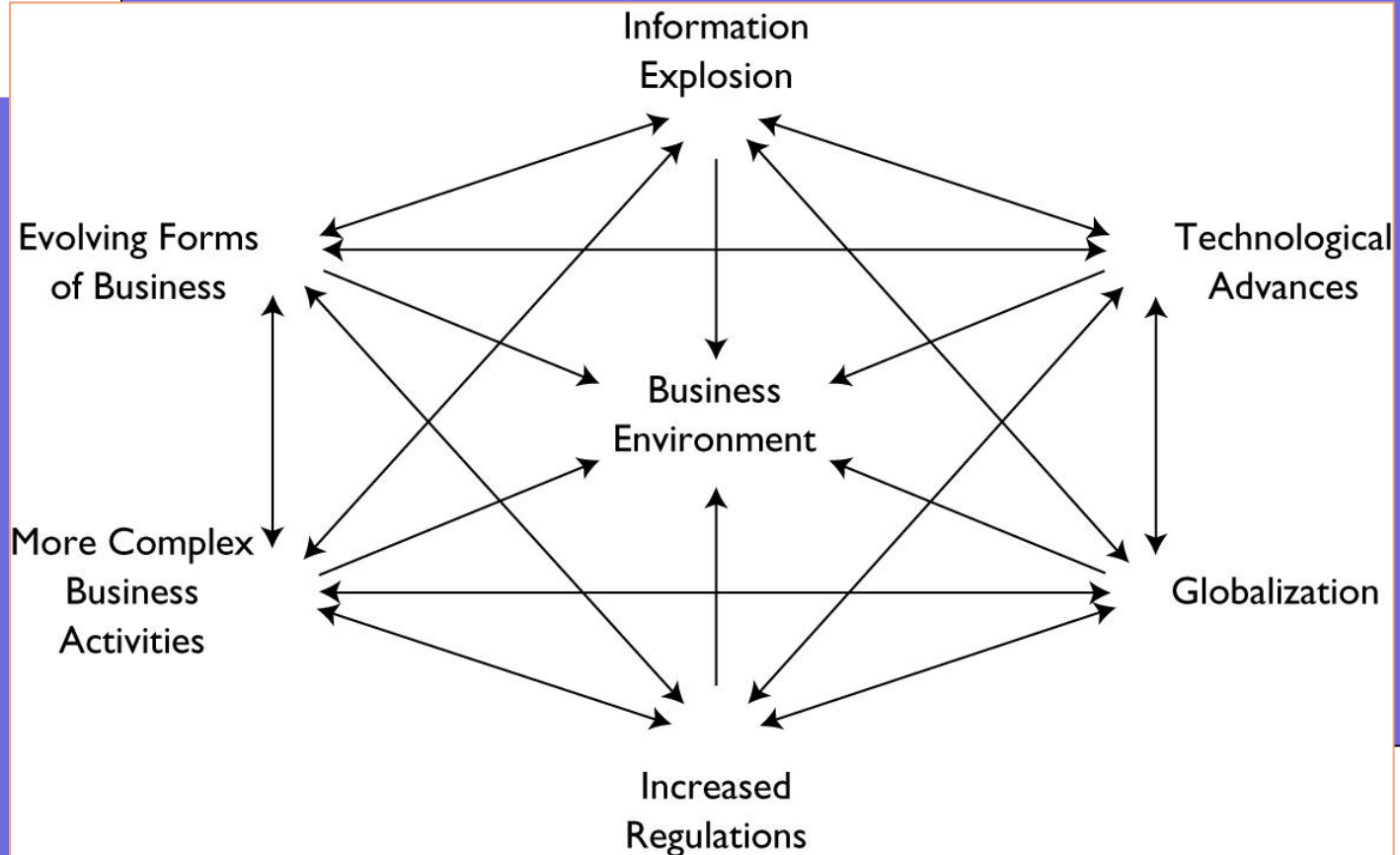
- a taxi in 5 minutes
- a pizza in 20 minutes
- groceries in 60 minutes
- search results in 0.3 seconds
- content on demand
- not to stand in line at a supermarket
- not to pay cash
- immediate answer to questions



Source: Dr. Tu Lam Pham

- YouTube: E-Commerce Trends 2018 – Amazon, Artificial Reality and Augmented Reality  
<https://youtu.be/Kxr0npIIcHE>

# The Changing Business Environment



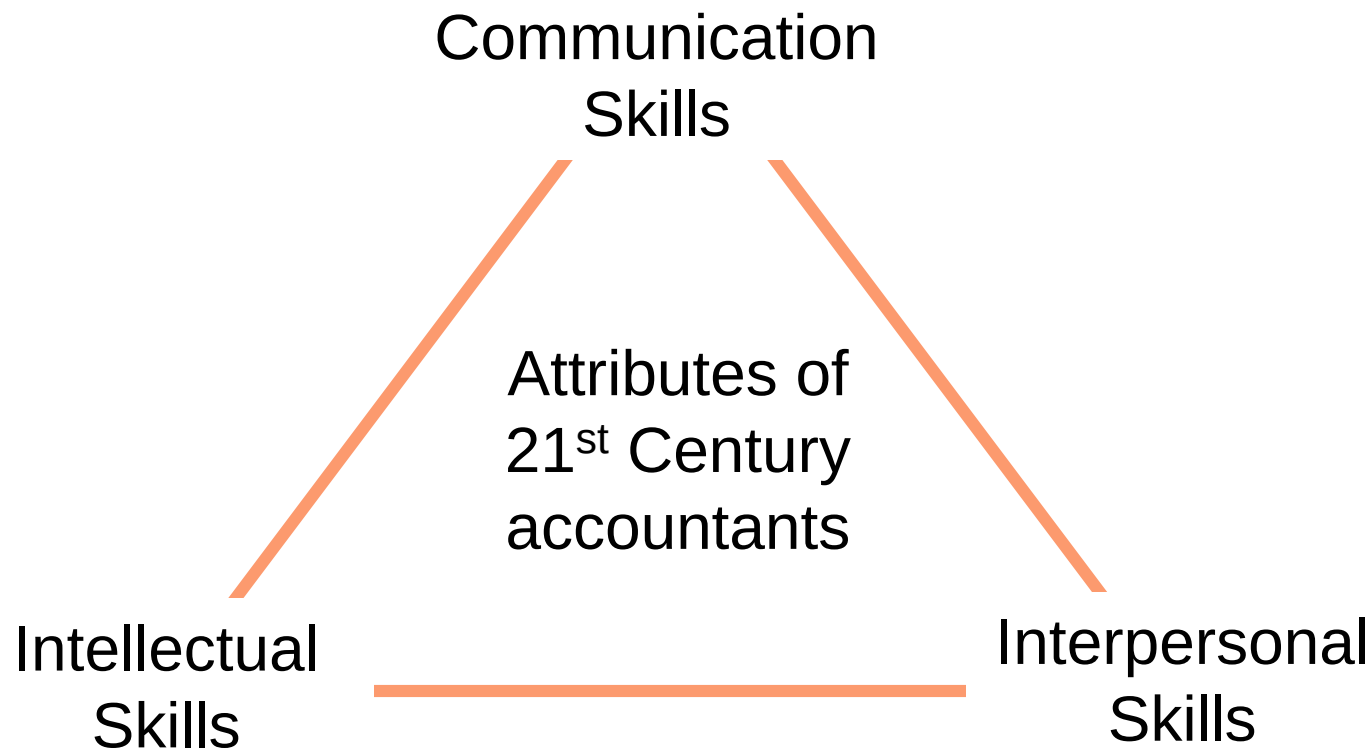
# Characteristics business environment

- Change and innovation
- Understand and respond to ever increasing customer demands
- Develop agile supply chains and to mitigate risk
- Leverage new technologies
- Launch new products and services
  - Decision making is often equally fast-paced, with little time to gather evidence and to consult with colleagues.
  - The desire to reach consensus in the shortest possible time → affect time for deliberation and consensus.
  - Challenge existing business practices

# The “Successful” Business Person...

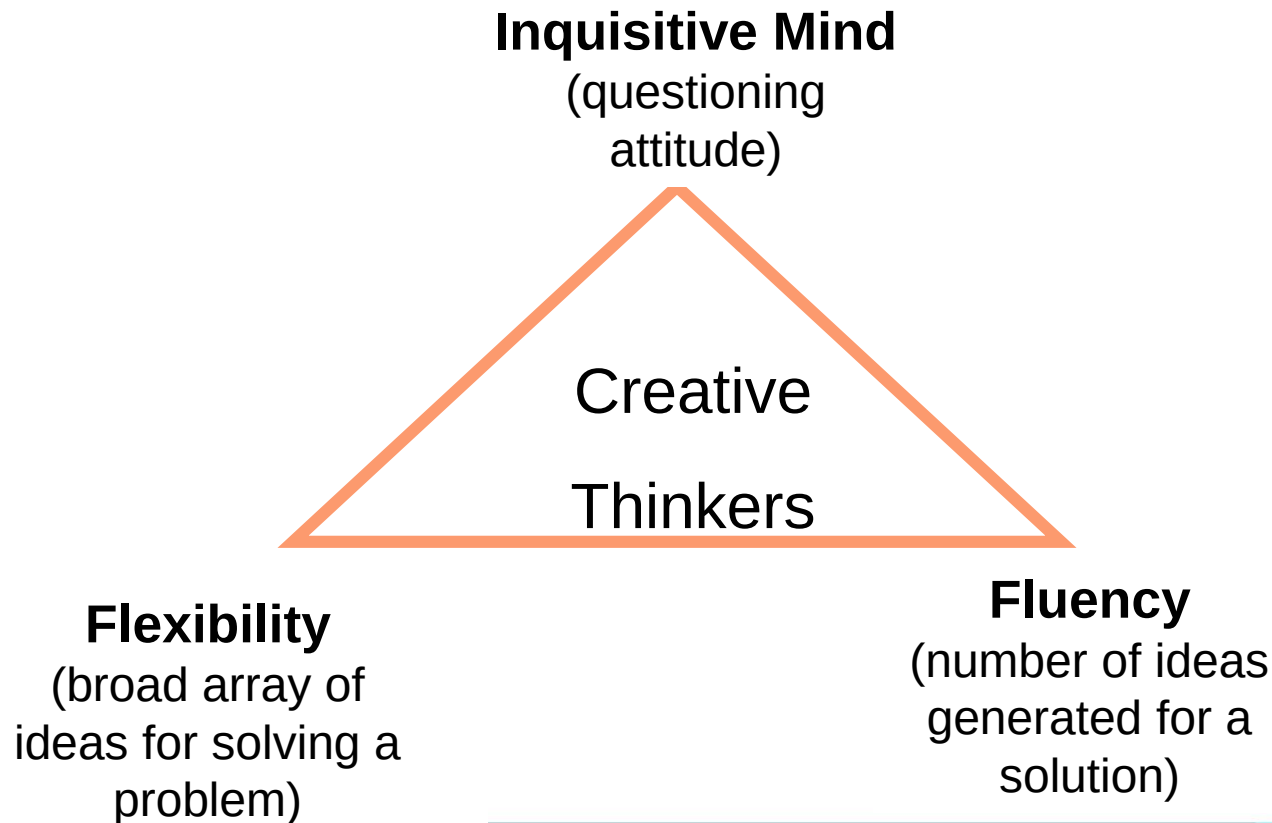
- Thrives on changes, seeing change as an opportunity rather than an obstacle.
- Is prepared for the opportunity to change.
- Is both willing and able to change.
- Is devoted to lifelong learning, realizing that continuous learning is the only way to keep up with and be prepared for change.

# 21<sup>st</sup> Century business



# Creative Thinking

- Creative thinking is the process of actively generating new ideas to discover solutions to a problem.



# Creative Thinking **Strategies**



## Brainstorming..

*generating plenty of  
“harebrained” as well as  
reasonably possible  
ideas*

## Piggybacking

*... generating  
new ideas  
from other ideas*

## Drawing analogies...

*connecting facts, ideas,  
or experiences that are  
normally considered  
separate*

# Questions for Creative Thinkers to Ask

- What is it about this idea that stimulates my curiosity?
- Can I come up with more ideas?
- Can I come up with a great variety of ideas?
- Do I develop ideas independently and not eliminate them because of social influences?
- Do I consider several alternatives before acting?

# Critical Thinking

Critical thinking is the process that evaluates the ideas generated by creative thinking

**Independent**  
(in process of  
evaluating ideas)

*Critical  
Thinkers  
Have Grit!*

**Tolerate  
Ambiguity/Willingly  
Defer  
Judgment**  
(to collect  
information and  
evaluate solutions)

**Objectivity**  
(being unbiased in the  
evaluation process;  
valuing truth)

# Questions for Critical Thinkers to Ask

- If an issue is controversial, do I accept my first reaction or do I debate the issue in my head first?
- Do I tend to reject new evidence that contradicts my current opinion on the subject, or do I evaluate the new evidence and then decide whether to accept it or reject it?

# Questions for Critical Thinkers to Ask

- When I am trying to solve a problem, do I usually accept the first solution that “works” or do I generate multiple solutions and then choose the best one?
- When others disagree with me, do I usually listen to them with an open mind and critically evaluate their ideas, or do I try or defend my own ideas?

# CRITICAL THINKING SKILLS OF WILDEBEEST

<https://www.youtube.com/watch?v=JMjXvsCLu6s>

# CRITICAL THINKING SKILLS OF WILDEBEEST

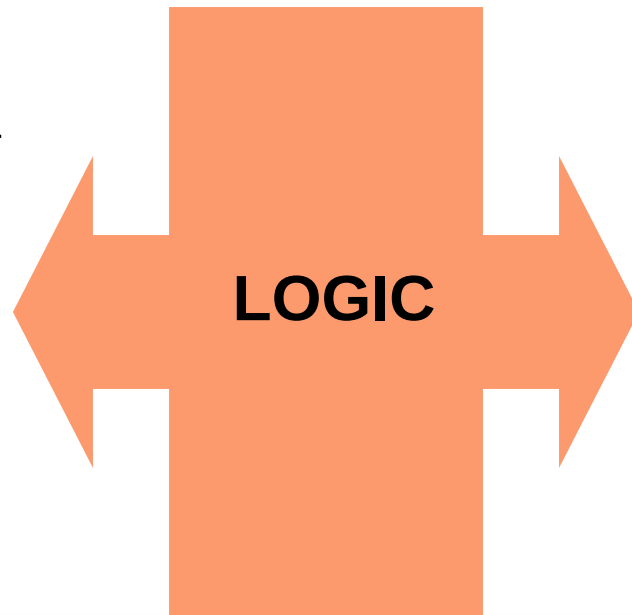
- Jot down thoughts about the wildebeest's critical thinking skills.
- Utilize your own critical thinking skills to jot down ideas about possible better outcomes for this dilemma.

# Critical Thinking and Logic

- Critical thinkers use a variety of skills in the problem-solving process. Among these skills is the ability to use logic.

## Inductive logic

Reasoning that moves from a specific conclusion to a general statement.



Reasoning that moves from a general statement to a specific conclusion.

## Deductive logic

# Red Model of Critical Thinking

Recognize  
assumptions

Evaluate  
arguments

Draw conclusions

# Stages in Problem Solving and Decision Making

Creative Thinking

Recognize  
Problem



Identify  
Alternatives



Evaluate  
Alternatives



Make  
Decision

Critical Thinking

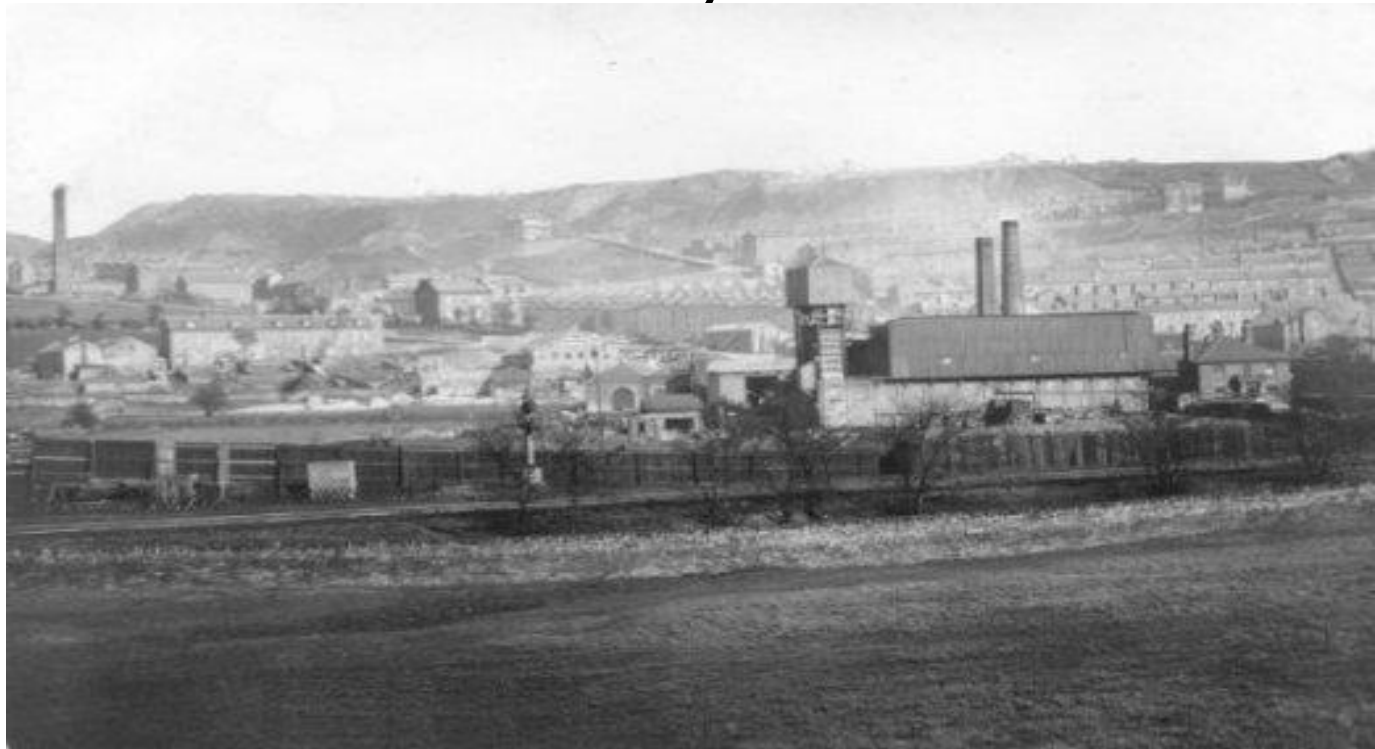
# Problem solving

- Is an information-based search activity and the search is for information.
- The information necessary to solve a business problem is typically scattered about the organization.
- Solving a business problem, we must stay continuously focused on the information we need, the information we have, and any differences between the two.

# Scientific Management (1910-1935)

# Craftsman → Company Man

## Beginning of 19th to Middle of the 20th Century

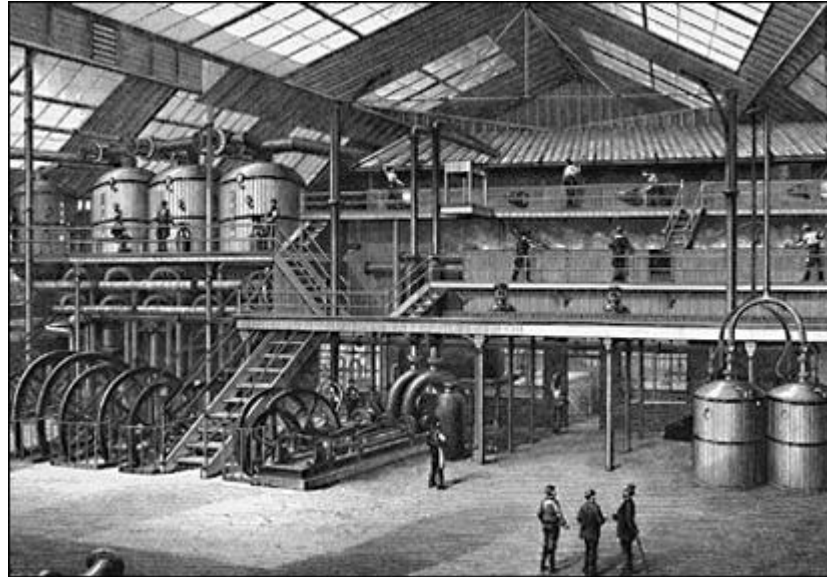


# 1880's The Golden Age



Decentralized decision making

# 1880's The Golden Age



Foreman acted as Internal Contractor

# 1880's The Golden Age



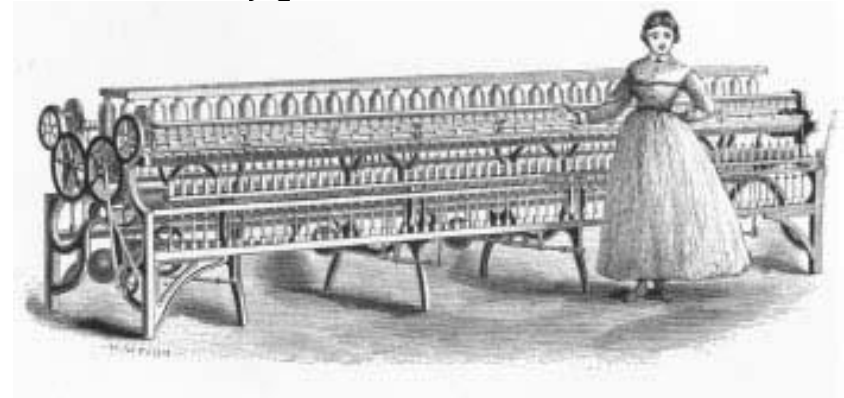
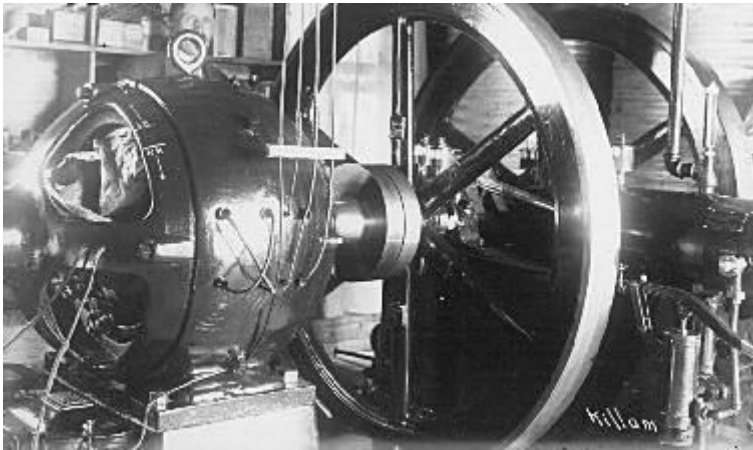
**Management** determined what was produced  
**Foreman** supervised/structured production process  
**Craft workers** chose motions and tools to complete project

# 1880's The Golden Age

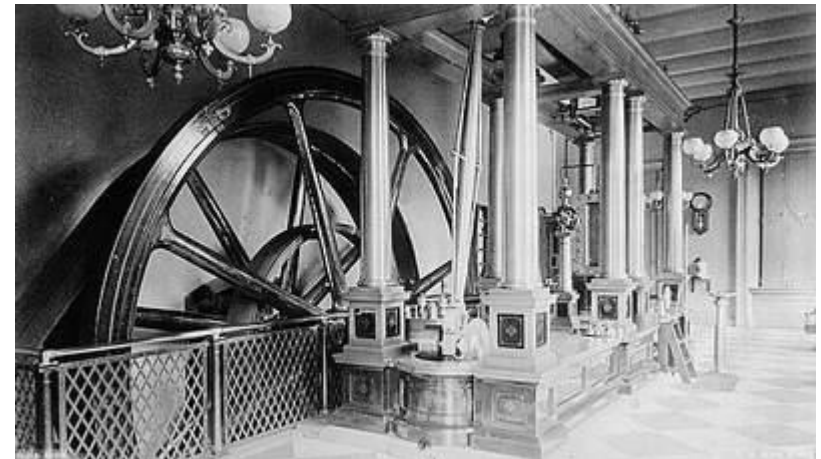


Birth of Trade Unions  
Employer retained absolute authority

# 1880's The Golden Age



Increased mechanism → dramatic  
increases in productivity  
Efficiency and speed of machines  
Improved  
Gains not matched by workers



# Frederick Winslow Taylor



# Frederick Taylor

- Efficiency Expert in U.S. Steel Industry
- Invented New Tool Designs and Handling Methods
- Designed Stop-Watch Task Timing
- Created Piece-Rate Payment Scheme
- Developed Industrial Departments



# Scientific Management 1910-1935

- The process of approaching various aspects of organizations in a scientific manner using scientific tools such as research, management, and analysis.

# Organizational aspects examples

- -Size of the Organization ( Large, Medium or Small)
- -No of Employees
- -Nature of the Organization ( Service or Product)
- -Resources of the Organization
- -Trade (Import or Export, Local international)
- -Mode of Entry ( import export, FDI, Joint venture, Franchising or partnership etc...)
- -Technology
- -Innovations
- -Management policies

# Scientific Management

- Time motion studies
- Job analysis
- Written prescribed tasks and methods
- Individualization of work
- Motivation through “high wages”
- Management as science
- “The one best way” by analysis

# Results

- Startling achievements in production and reduced costs
- Scientific Management swept through US and Europe
- Taylor greeted with strikes and worker revolts
- Workers: "We want our heads left on us!"

# Criticisms

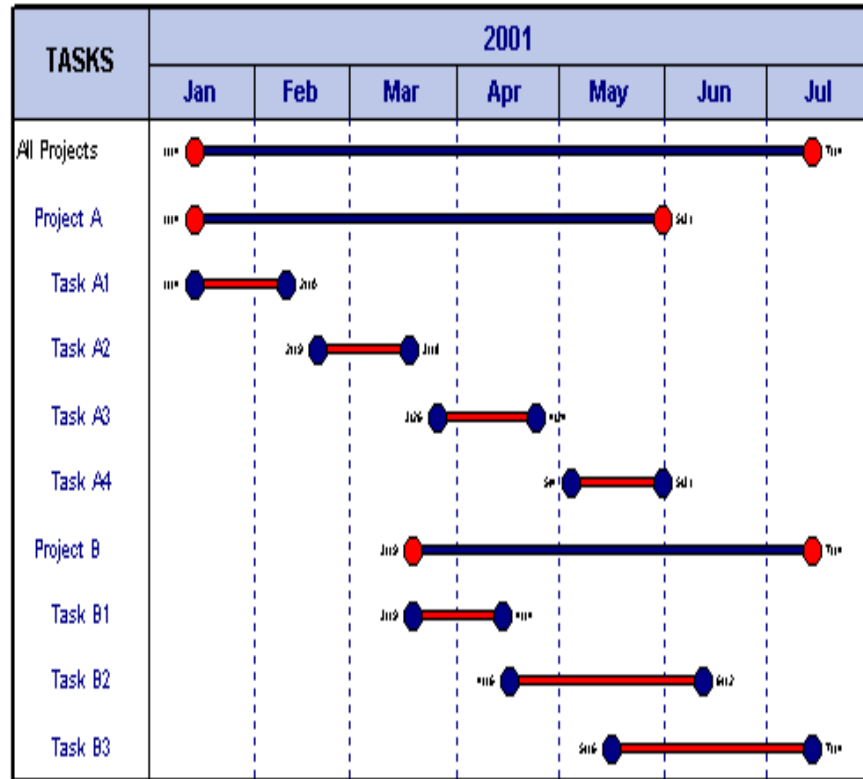
- Employer centered
- Loss of meaning for work
- Alienation of workers to society
- Reduced opportunity
- Denied "human community" in workplace
- Neglected the environment (a closed system view)

# Henry Gantt

- Worked with Taylor at Midvale Steel Company
- Specialized in incentive wage plans
- Introduced a differential piece rate system – Task work with a bonus
- Permitted workers to improve the production system
- Introduced a bonus for foremen based on the number of their workers who earned bonus

# Gantt Chart Information

## Basic Gantt Chart



- Developed to help industrial age managers plan for mass production
- Utilized to coordinate WWI shipbuilding
- Visual display used to schedule based on time

# Frank and Lillian Gilbreth



- believed in regulation and consistency in the workplace
- Rather than encouraging a company of many working parts, they valued efficiency above all else.
- believed that there is one best way to get any job done, and the specific process should, when identified, be replicated through the manufacturing process, eliminating individual steps and producing the most efficient results
- Increase efficiency to increase profit and worker satisfaction

# Frank and Lillian Gilbreth

- Pioneers in the field of motion studies and provided the foundation for job simplification, meaningful work, and incentive wage plans.
- Analyzed each motion of work for wasted efforts in an attempt to reduce each task to the smallest amount of expended time and energy.
- Professed: effective training, effective work methods, improved work environment, positive psychological perspective.
- Made the connection between standardization and efficiency
- Believed that time could not be separated from motion; the two were intertwined.

# Frank and Lillian Gilbreth

- Systematically examined how repetitive tasks were performed
- These repetitive tasks were broken down into Therbligs, which are systems for analyzing the motions involved in performing a task. This consisted of identification of individual motions, as well as moments of delay in the process, designed to find unnecessary or inefficient motions and to utilize or eliminate even split seconds of wasted time.
- Invented and refined Therbligs roughly between 1908 and 1924. Each Therblig had a mnemonic symbol and standard color for charting

# Scientific Management's Impact on Organizations

- Defined Administrative Roles
- Supervision of work rather than people
- Work specializations
- Span of control
- Cost accounting
- Homogeneity of Positions
- Engineering for Efficiency
- Assembly Line Production
- Emphasis on Quality Control

# Scientific Method of Management Contrasted

## Scientific Management

- The most efficient manner to perform a task is determined and everyone does it that way
- Task Analysis
- Personnel Selection and Training
- Bureaucratic Organization Structure
- Span of Control and Top Down Management

## Humanistic Approach

- Concern for people not the task
- Participatory decision-making
- Emphasis on Individual Contributions and Personal Awareness
- Flexibility

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## Social Systems Approach

- Focused on the interaction of the organization and its larger environment
- Leaders are high-task oriented (work structure) and high-relationships oriented (concern for others)
- Organizations are a set of interrelated elements functioning as a whole

# Exercise 1

- 6 students will take up the role of managers
  - The Scientific Management theory will be leading in making a decision on a specific case in the workplace
  - Have a critical thinking approach
- 6 students in the role of advising managers will be consulted during the board meeting

# Sources

- Becker, J., (2015) Nursing summit
- University of Vermont, Scientific Management at Work (2018).
- Chandigarh University, E-library, Scientific Management, University Library (2018).