PROCESS IMPROVEMENT
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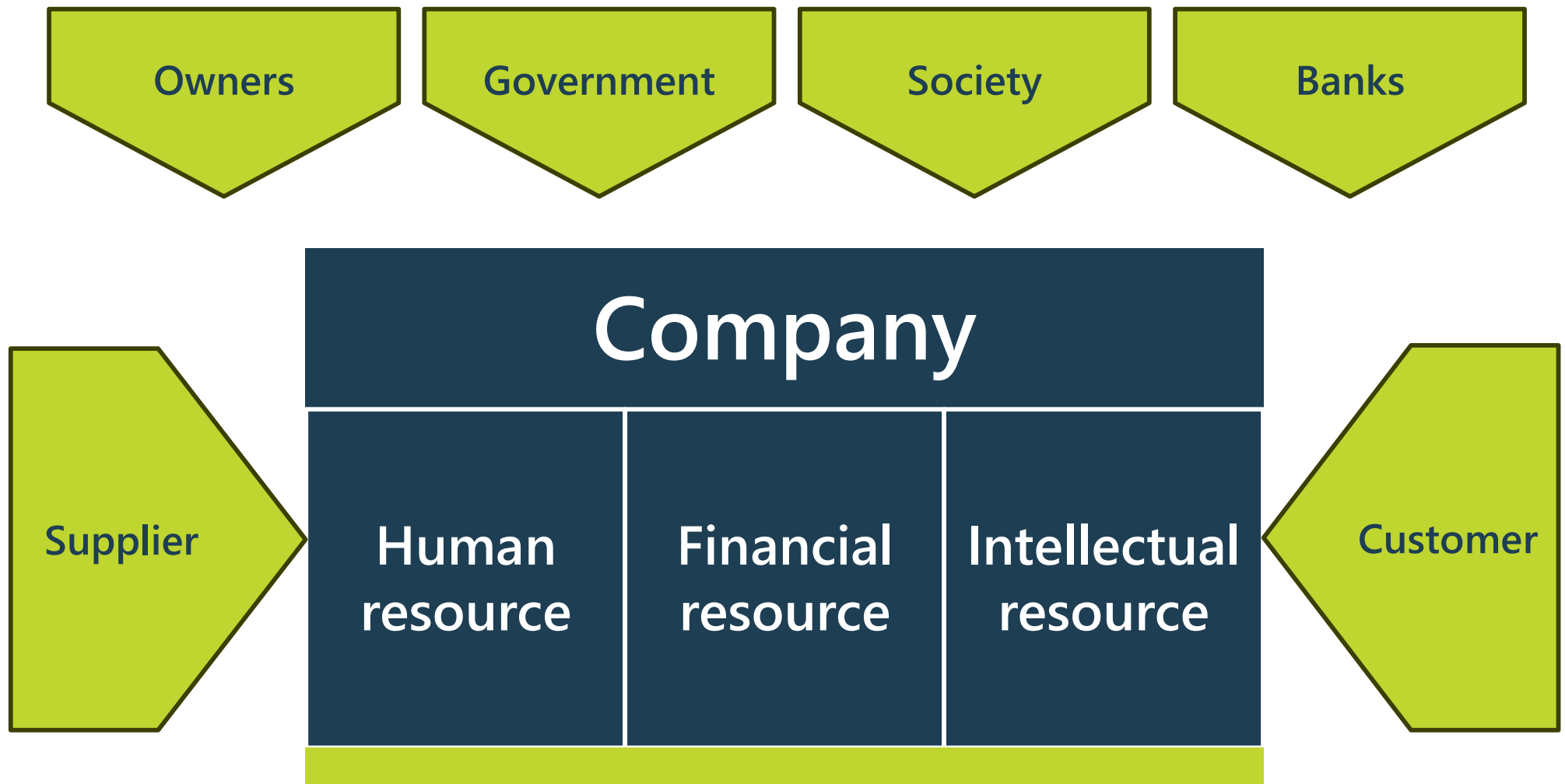
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Requirements

- **Midterm test (25 points)**
  - 16.05.2024 (from 8:15)

- **Retakes:**
  - 1st midterm test: 21.05.2023
  - 2nd midterm test: 23.05.2023

- **Moodle:**
  - Presentations

Basics of the companies working

Owners Government Society Banks

Supplier

Company

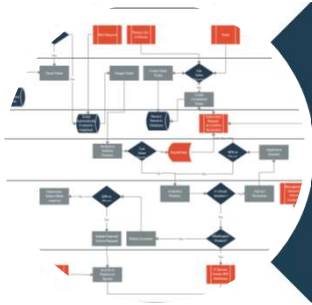| Human resource | Financial resource | Intellectual resource |

Customer

MŰEGYETEM 1782

Starting points
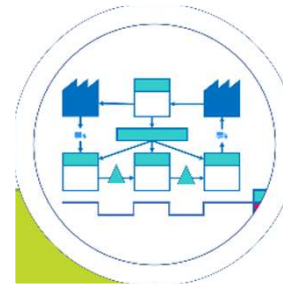

Value

Streaming

Process

The approach of value

Strategically approach

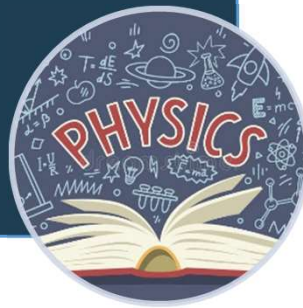- Customer focus
- Usage
- Evaluate usage operations

Operative approach

- Customer focus
- Production
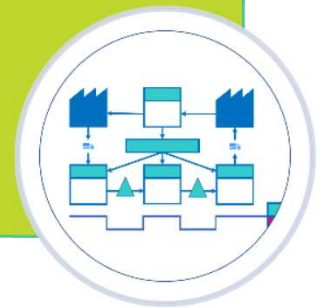- Evaluate manufacturing operations

Streaming approach

- Continuous movement between 2 points.

Physics

- Moving of information and material in the business life

Business

Process approach

- **Human focus**
- **Responsibility**
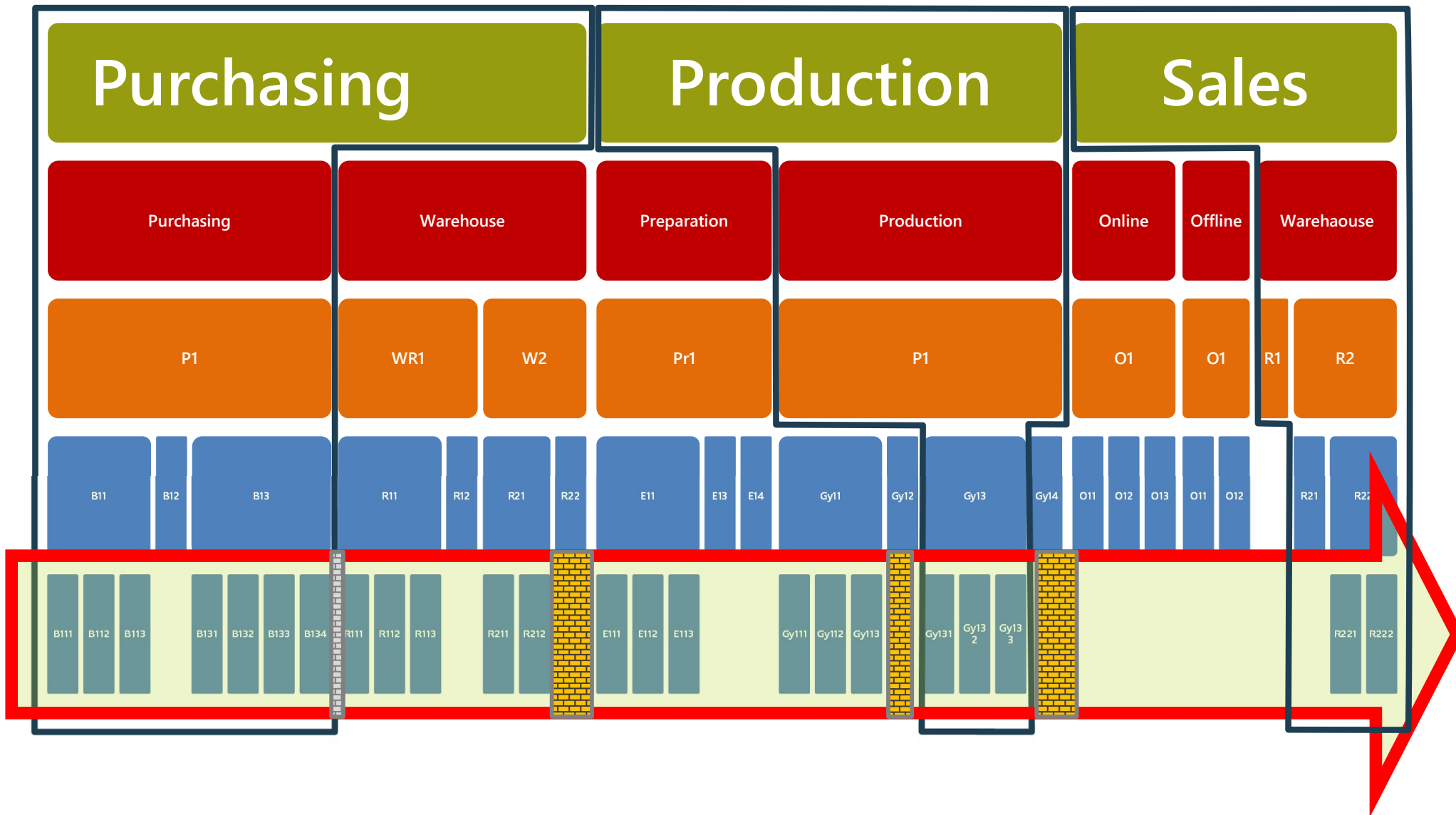- **Task**

Organization

- **Customer focus**
- **Operation**
- **Process**

Value streaming
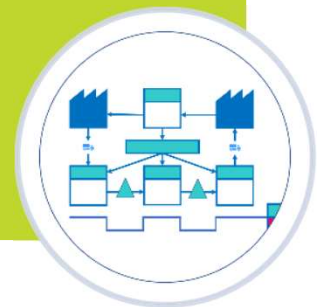
Organization vs. value streaming

Definition of process approach
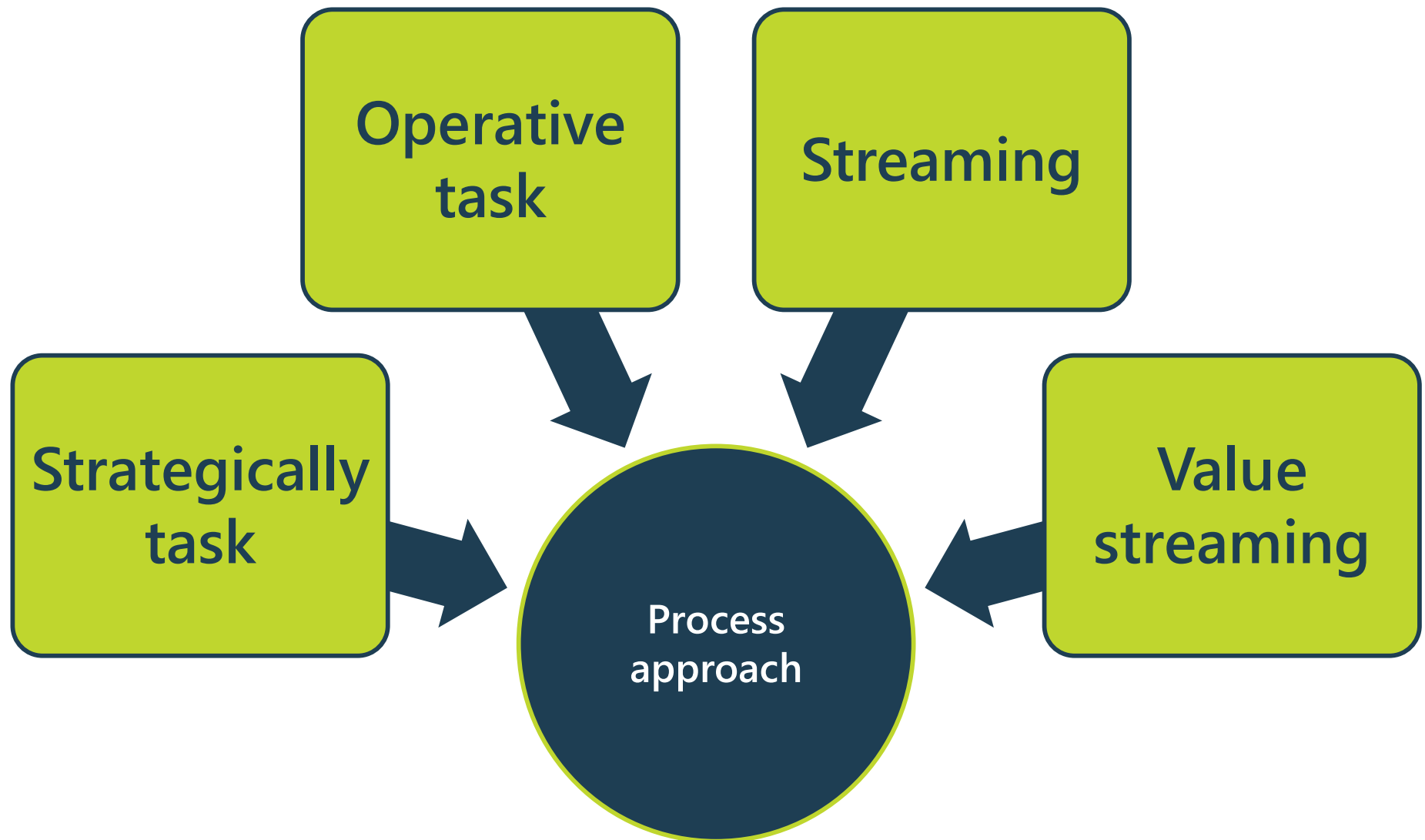
Methods and topics

Production processes

Quality management

Lean management

Cost management

Process control

Inventory management

Aims and objectives

- Getting students acquainted with the basics of quality management and forming their attitude towards (quality) management topics

- Main topics:
  - Defining quality
  - The evolution of quality management
  - Principles of Total Quality Management
  - Quality Management Systems
  - Process improvement tools and methods
  - Basics of Statistical Quality Control

What does it mean, quality?

Quality management

- A set of coordinated activities to direct and control an organization in order to continually meet customers' requirements, improve the effectiveness and efficiency of its performance.

- NOT ONLY some feature of a product/service

The development of the interpretation of quality
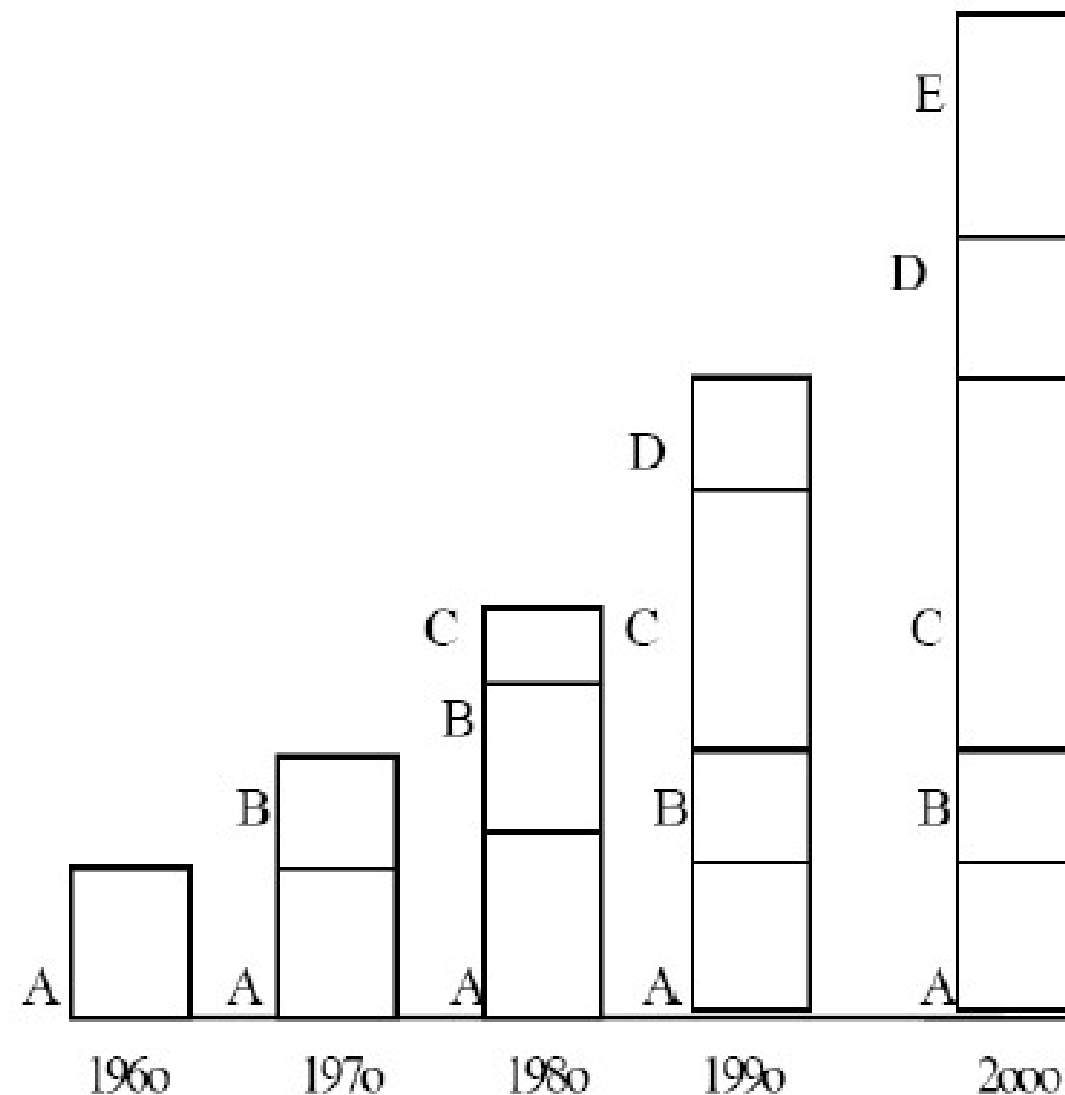
E= compliance with corporate culture, environmental and social expectations

D= compliance with the customer's hidden expectations

C= compliance with the customer's needs

B= compliance with practical needs

A= compliance with the standard

QM activities

- Analyzing customers' needs
- Designing to meet them
- Clear instructions
- Ensuring punctual delivery
- Defect-free production
- Effective support services (internal & external)
- Feedback of customer satisfaction
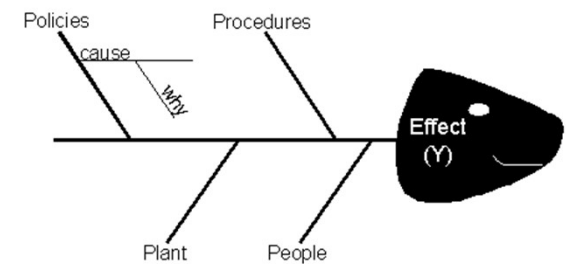
Q

- **Quality=meeting the customers' requirements every time**
- **Quality management = actions taken to offer quality**

Why is it important to pay attention to quality?

Determinants of market competition – value for customers:

- **price** – cheaper
- **time** – faster
- **quantity** – more
- **quality** – better

We offer three kinds of service:
GOOD - CHEAP - FAST
You can pick any two

GOOD service CHEAP won't be FAST
GOOD service FAST won't be CHEAP
FAST service CHEAP won't be GOOD

Schools of Quality

- **Cultural, economic and political circumstances influencing the evolution of Quality Management**
- **Different groups, the spread of philosophy, features and key elements**

European School of Quality

- **Strongly formalized**
  - Documentation, monitoring
  - Execution of pre-stated duties
  - Standardized systems with independent third-party certification

- **Importance of middle management**
  - Production and technology management approach
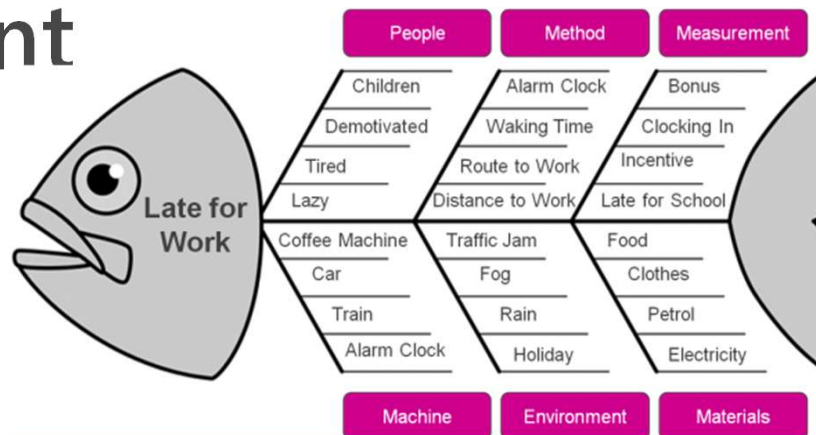
American School of Quality

- After the appearance of competitors from the far east
- Strong top management
- Top-down strategy
- Developing responsibilities down the hierarchy

The Japanese Way

- Bottom-up approach
- Strong cultural influence
- Quality circles
- Widespread application of simple, graphical methods for process improvement

Features of different schools of quality

Features	Japanese	American	European
Spread	Multitudinous, bottom-up	Top-down, snowball principle	Production and technology management
Group	Quality circles	Top management	Middle management
Specialities	Totality, basic, simple tools and techniques	Management environment, different focus	Standardization, regulation
Key elements	Quality circles	Management climate	Documented monitoring, shadowing

THE EVOLUTION OF

QUALITY MANAGEMENT SYSTEMS

Evolution of QM systems

- **Total Quality Management (TQM)**

- **Quality assurance and quality management systems**

- **(Statistical) quality control**

- **Quality inspection**

1. Quality inspection

- **Beginning of XIX. Century**
  - Taylor: Scientific management
- **Dedicated staff to judge every product (100% inspection)**
- **Improving quality by stricter inspection**
- **Disadvantages**
  - End-of-the event
    - Without feedback
    - Extra costs, time-consuming
  - Disagreement between workers and inspectors
  - Lack of management attention

Input → BLACK BOX → Output

INSPECTION
☑ PASSED
☐ FAIL

Quality Inspection

Feature	Quality inspection
Primary concern	Detection of defects
View of quality	A problem to be solved
Emphasis	Product uniformity
Methods	Gauging and measurement
Role of quality professionals	Inspection, sorting, counting, grading
Responsible for quality	Inspection department
Philosophy	Good quality can be inspected into the product

2. (Statistical) Quality Control

- 1924 Walter A. Shewhart
- Measures through the manufacturing process
  - Random sample instead of controlling every product
  - Preventing the nonconformities
- Controlling and regulating the processes
- Production and engineering departments are responsible for the quality

Quality control

Feature	Statistical quality control
Primary concern	Control
View of quality	A problem to be solved
Emphasis	Product uniformity with reduced inspection
Methods	Statistical tools and techniques
Role of quality professionals	Troubleshooting, application of statistical methods
Responsible for quality	Manufacturing and engineering departments

3. Quality assurance and quality assurance systems

- Broader scope
  - Co-operation between several departments
- Managing the whole QMS and reaching an operational optimum
- Co-working with other organizations
- **The emphasis is on the design and manufacturing**
- Preventive actions
- ISO 9001
- Third-party certification

ISO

ISO 9001:2015

QA & QAS

Feature	Quality assurance systems
Primary concern	Coordination
View of quality	A problem to be solved with proactivity
Emphasis	The entire production chain, from design to market, and the contribution of all functional groups, especially designers, to prevent quality failures
Methods	Programs and systems
Role of quality professionals	Planning, program designing
Responsible for quality	All departments, top management is only peripherally involved in designing, planning and executing quality policies

4. Total Quality Management

- **Quality as a business strategy**
  - – Meeting customers' always-changing needs
- **Continuous improvement with the active participation of all employees**
- **QM principles and tools used everywhere in the organization**

Goal

TQM

Principles

| Customer focus | Process improvement | Total involvement |

Supporting elements

| Leadership | Supportive structure | Communication |
| Education and training | Reward and recognitions | Measurement |

TQM

Feature	Total Quality Management
Primary concern	Strategic impact
View of quality	A competitive opportunity
Emphasis	Market and consumer needs
Methods	Strategic planning, goal setting, mobilizing the organization
Role of quality professionals	Education and training, goal setting, consultative work with other departments, program design
Responsible for quality	Everyone in the organization with top management exercising strong leadership

Supporting elements 1.

- **Leadership:** role of senior managers as advocates, teachers, and leaders

- **Education and training:** quality is based on the skills of every employee and his or her understanding of what is required

- **Supportive structure:** senior managers may require support to bring about the change necessary to implement a quality strategy
  - Consultants, small support staff

Supporting elements 2.

- **Communication:** communicate to all employees a sincere commitment to change, a way to overcome resistance to change
  - Bottom-up flow of information
- **Reward and recognition:** teams and individuals who successfully apply the quality process must be recognized and possibly rewarded
  - Examples and role models for others
- **Measurement:** the use of data becomes topmost in installing a quality management process

1. Customer Focus

Organizations depend on their customers and therefore should understand current and future customer needs, meet customer requirements, and strive to exceed customer expectations

It requires more money to attract a new customer than it requires to keep the actual customers

KEEP the present customer HAPPY ☺

- The identification of customer needs and expectations require systematic thorough and continuous COMMUNICATION

- The most critical aspect of this process is to LISTEN to the customer

- Once customer needs are identified, these needs must be MONITORED continuously to ensure that the product or service still satisfies them

Aim:
continuously meet customer expectations and provide value

Key questions

- Who is our customer exactly?
- What customers expect from the organization? What do they want?
- What level of performance is needed to meet their expectations?
- What is the relative importance of the different characteristics?
- How well do organizations provide the services customers have requested?
- How satisfied are the customers with the current level of performance?

Internal and external customer

- Output: The specific products or services that we produce as part of our work process, and that we pass to others, who use them in their work process.

- Internal customer: uses our output as an input in her/his work process

- External customer: final user

Total Quality Management

1. Customer focus

Understanding the customers' requirements

3rd level
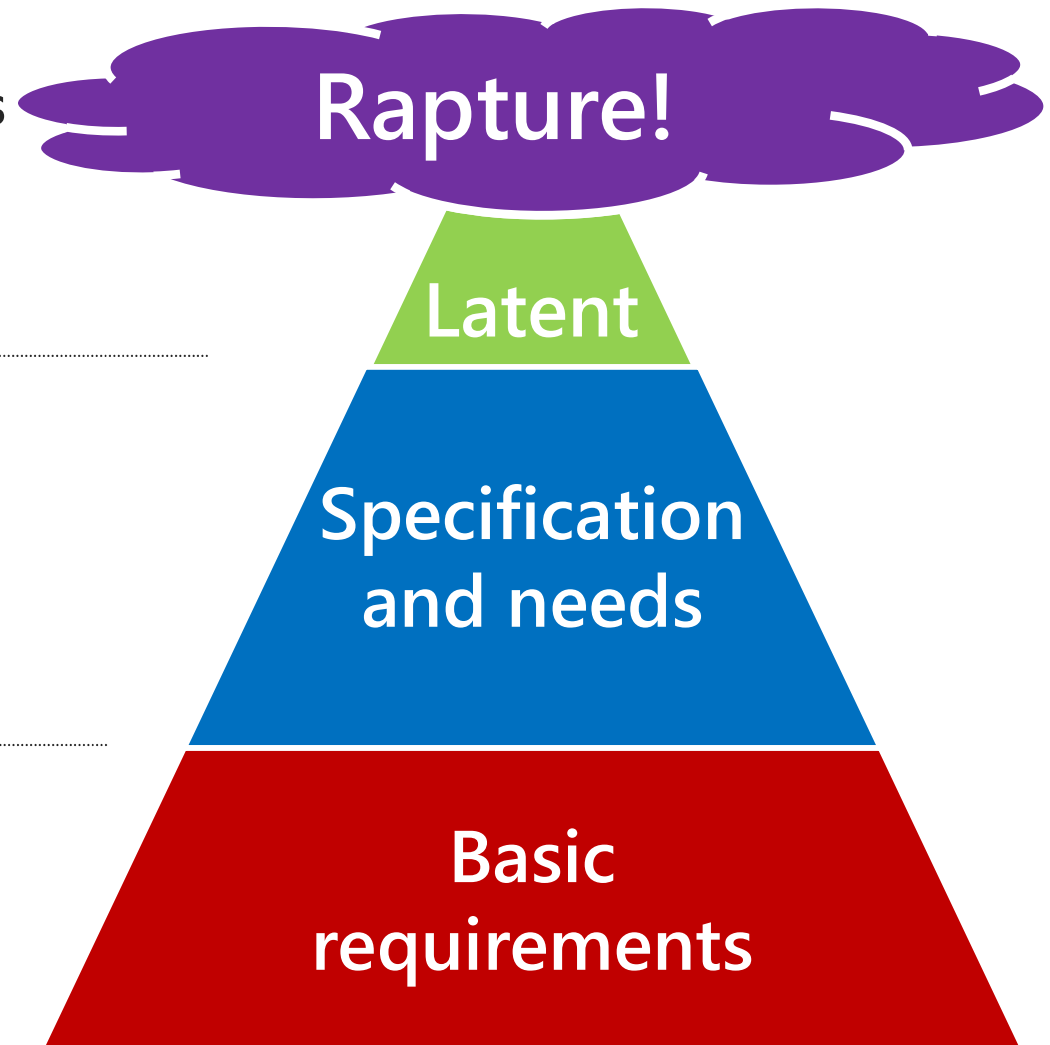Characteristics and properties that bring added value; the customer does not expect them *(LATENT)*

2nd level
Options and compromises; the customer can choose from them
(EXPRESSED)

1st level
Minimum performance level; which's presence is always assumed *(UNSPOKEN)*

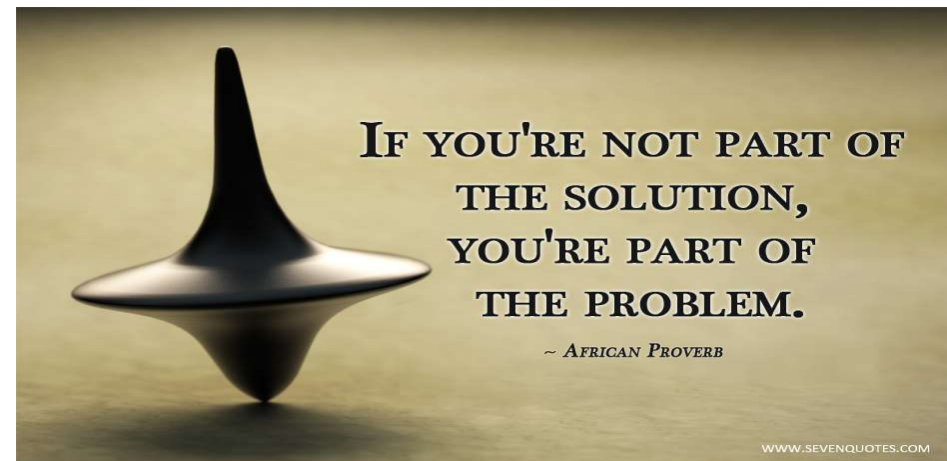Rapture!

Latent

Specification and needs

Basic requirements

2. Total Commitment, Empowerment

Leaders establish unity of purpose, direction, and the internal environment of the organization; they fully involve people in achieving the organization's objectives

The difference between an average and an outstanding company is the LEADERSHIP they have

IF YOU'RE NOT PART OF THE SOLUTION, YOU'RE PART OF THE PROBLEM.

~ AFRICAN PROVERB

WWW.SEVENQUOTES.COM
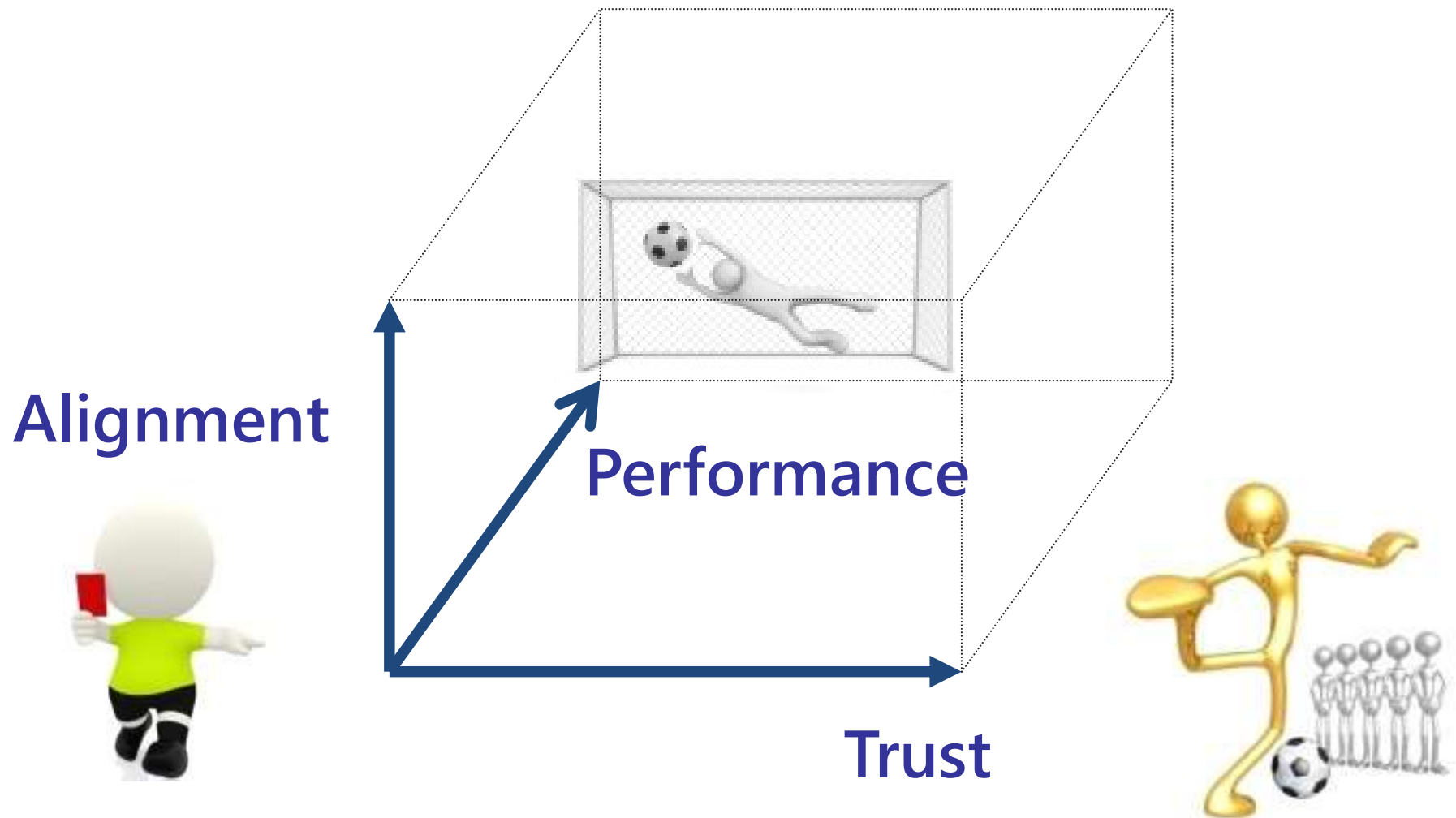
Employee Involvement

People are the **essence** of an organization and their full involvement enables their knowledge and experiences to be used for the organization's benefit

Employees are a company's greatest asset

Quality comes from within; it comes from the hearts and the minds of the people
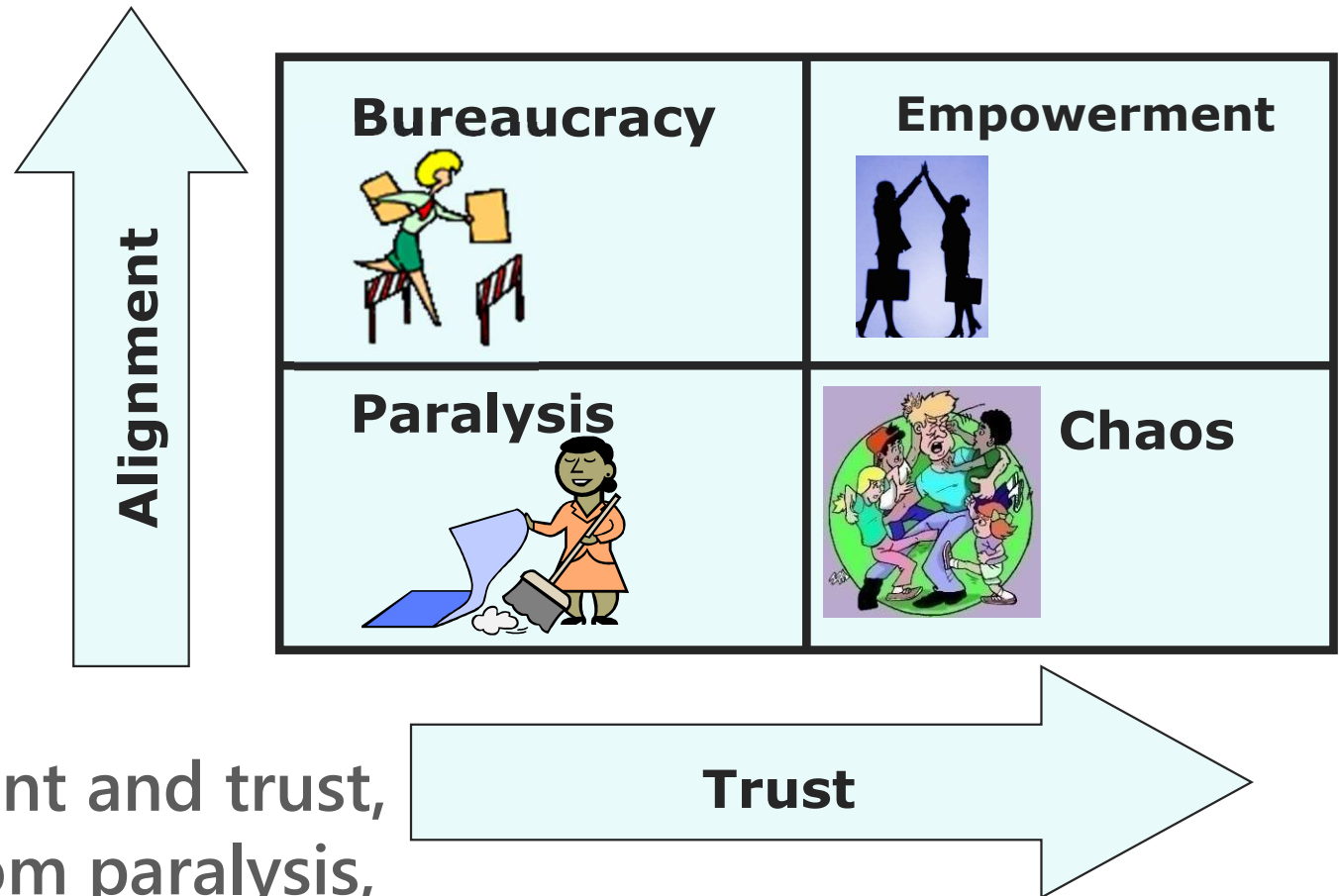
Creating autonomy

Alignment

Performance

Trust

Performance: Providing materials, methods, machines and the right ability, skills, knowledge.

Empowerment dimensions

- ## Alignment
  - Knowledge and support of the vision, the values, goals and objectives
  - Build up motivation

- ## Mutual trust
  - Employees need to **trust** management and feel that management trusts them

Empowerment matrix

Without alignment and trust, we will suffer from paralysis, bureaucracy or chaos