(Unit –IV) Topic 1

Innovation: Need & Importance

Principles of innovations

Topic & CO Mapping

Topic	CO	Level
Innovation: Need & Importance, Principles of innovations	CO 4	2

Topic Objectives And Outcomes

Topic Objectives:

- To Understand the need and importance of innovation.
- To Understand and learn principles of innovation

Topic Outcomes:

- Ability to develop innovation acumen
- Application of innovation principles in developing products

Recap

- Storytelling
- Testing
- Assessment

Innovation

- Practical implementation of ideas that result in the introduction of new goods or services or improvement in offering goods or services.

- Turning a new concept into commercial success or widespread use

Innovation


EXPENSES
TAX
PROFIT
INCOME
RESEARCH
LEADERSHIP
TEAMWORK
COMMUNICATION
x
y
PROGRESS
INNOVATION
GOAL
IMPROVEMENT
DEVELOPMENT
SOLUTION
MANAGEMENT
ORGANIZATION

Need of Innovation

- Grow in Leaps and Bounds
- Stand Out from Competitors
- Meet Customer Needs
- Attract the Best Talent

Importance of Innovation

- Creative Development
  - You can achieve growth by learning how to be creative.
- Continuous Improvement
  - Innovation gives organizational sustainability when you are making continual improvements and repackaging and re-branding.
- Responding to Competition and Trends
  - Innovation can help you to see what exists now in opportunities or which ones will likely pop up in the near future.
- Having a Unique Selling Point
  - consumers will see innovation as something which adds value to products or a company

Eight Essentials of Innovation

- **Aspire**
- President John F. Kennedy's bold aspiration, in 1962, to "go to the moon in this decade" motivated a nation to unprecedented levels of innovation. A far-reaching vision can be a compelling catalyst, provided it's realistic enough to stimulate action today.
- Lantmännen, a big Nordic agricultural cooperative (4+2% to 14% growth)
- **Choose**
- Fresh, creative insights are invaluable, but in our experience many companies run into difficulty less from a scarcity of new ideas than from the struggle to determine which ideas to support and scale.
- RELX Group: preliminary budget of around $200,000 to run new experiment in customer segment each year

Eight Essentials of Innovation

- **Discover**
- Innovation also requires actionable and differentiated insights—the kind that excite customers and bring new categories and markets into being
- 3 areas: a valuable problem to solve, a technology that enables a solution, and a business model that generates money from it.
- **Evolve**
- As smartphones and mobile apps threaten to upend oldline industries, business-model innovation, established companies must reinvent their businesses before technology-driven upstarts do
- Amazon does a particularly strong job extending itself into new business models by addressing the emerging needs of its customers and suppliers.

Eight Essentials of Innovation

- **Accelerate**
- A surprising number of impressive innovations from companies were actually the fruit of their mavericks (single person decision making process), who succeeded in bypassing by their early-approval processes
- At many companies, marketing's role is to champion the interests of end users to help development teams evolve products.
- **Scale**
- Considering the appropriate magnitude and reach of a given idea is important to ensuring that the right resources and risks are involved in pursuing it
- TomTom launched its first touch-screen navigational device 5-12 million

Eight Essentials of Innovation

- **Extend**
- Smart collaboration with external partners, though, goes beyond merely sourcing new ideas and insights; it can involve sharing costs and finding faster routes to market.
- the components of Apple's first iPod were developed almost entirely outside the company
- **Mobilize (to organize people or things to do something)**
- Find ways to embed innovation into the fibers of their culture, from the core to the periphery.
- Discovery Group, for example, is upending the medical and life-insurance industries

Types of Innovation

1. Product Innovation

This focuses on creating a new product, service, or product feature.

Examples the pivoting head of Gillette razor blades.

(Shirts Making use of phase-change materials (PCMs), which takes heat away from you when you're feeling warm, and gives it back to you when you're feeling cold.)

2. Process innovation

This refers to changes made to make a process more efficient. For example, assembly lines were a breakthrough in manufacturing.

(drone for delivery of goods, driver less cars)

3. Business Model innovation

This is when you transform business operations.

Ride-sharing platforms, such as Uber, are an example of this. They took the taxi and car service companies' business model and altered it to a peer-to-peer, digitized model.

(selling books by weight)

Levels of Innovation

1. Incremental innovation (Mobile Phone)

Small changes that increase the efficiency of your current business model.

2. Expansive innovation (Work from home culture)

Change that results from exploring new ideas. Its purpose is to sustain and grow the company in the long term.

3. Disruptive innovation (Reliance Jio)

Creates a completely new business model, offering a novel value proposition.

Principles of Innovation

- Analyze the sources of innovation for opportunities
- Determine customer needs, wants and expectations
- Innovation should be simple and focused
- Innovation should start small
- Innovation should aim at leadership

Peter F Druker

Innovation and Entrepreneurship: Practice and Principles.

Harper & Row, Publishers, Inc. 1985.

Summary

- Innovation
- Types of innovation
- Need of innovation
- Importance of innovation
- Principles of innovation

Daily Quiz

Q1. Describe the innovation.

Q2. Discuss the need of innovation.

Q3. Enumerate the importance of innovation in business.

Q4. Discuss the principles of innovation.

Q5. Describe the types innovation.

(Unit –IV) Topic 2

Quality: Principles & Philosophies

Topic & CO Mapping

Topic	CO	Level
Quality: Principles & Philosophies	CO 4	2

Topic Objectives And Outcomes

Topic Objectives:

- To understand the concept of quality
- To understand the principles & philosophies of quality.

Topic Outcomes:

- Ability to apply quality concepts in creating products

Recap

- Innovation
- Types of innovation
- Need of innovation
- Importance of innovation
- Principles of innovation

Quality

The philosophy of quality has traditionally focused upon the development and implementation of a corporate wide culture that emphasizes a customer focus, continuous improvement, employee empowerment, and data-driven decision making.

Quality: Philosophies

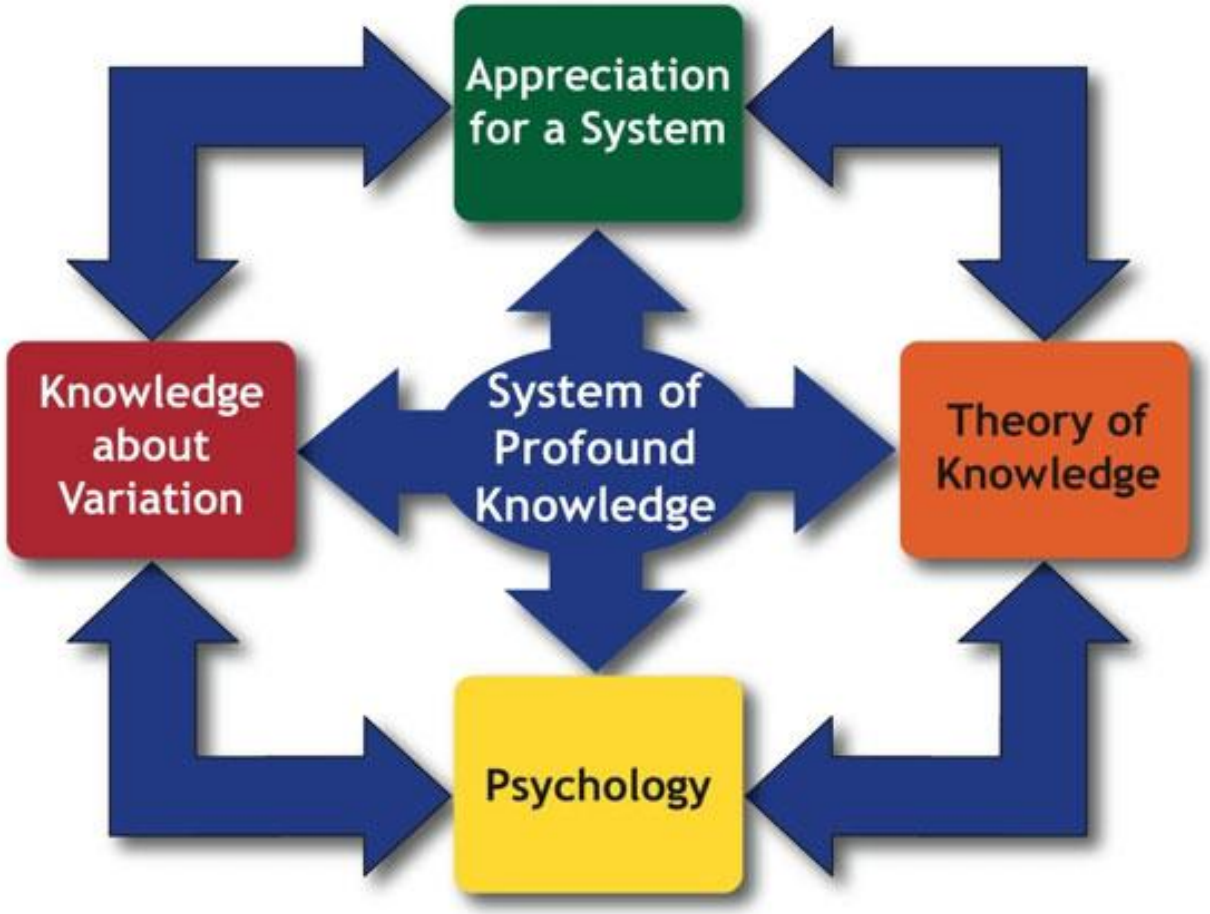
- **Deming**

  William Edwards Deming is recognized as the leading management thinker in the field of quality. His philosophy adopts cooperation, and continual improvement for both individuals and organizations.

He is known for his 14 points for Deming Chain Reaction and theory of Profound Knowledge

Quality: Philosophies

- Theory of Profound Knowledge
- **The System of Profound Knowledge provides a foundation for continual improvement.**



Quality: Philosophies

- Theory of Profound Knowledge
- **The System of Profound Knowledge provides a foundation for continual improvement.**

I. Appreciation for a system: system optimization need coordination and cooperation so Understanding becomes crucial

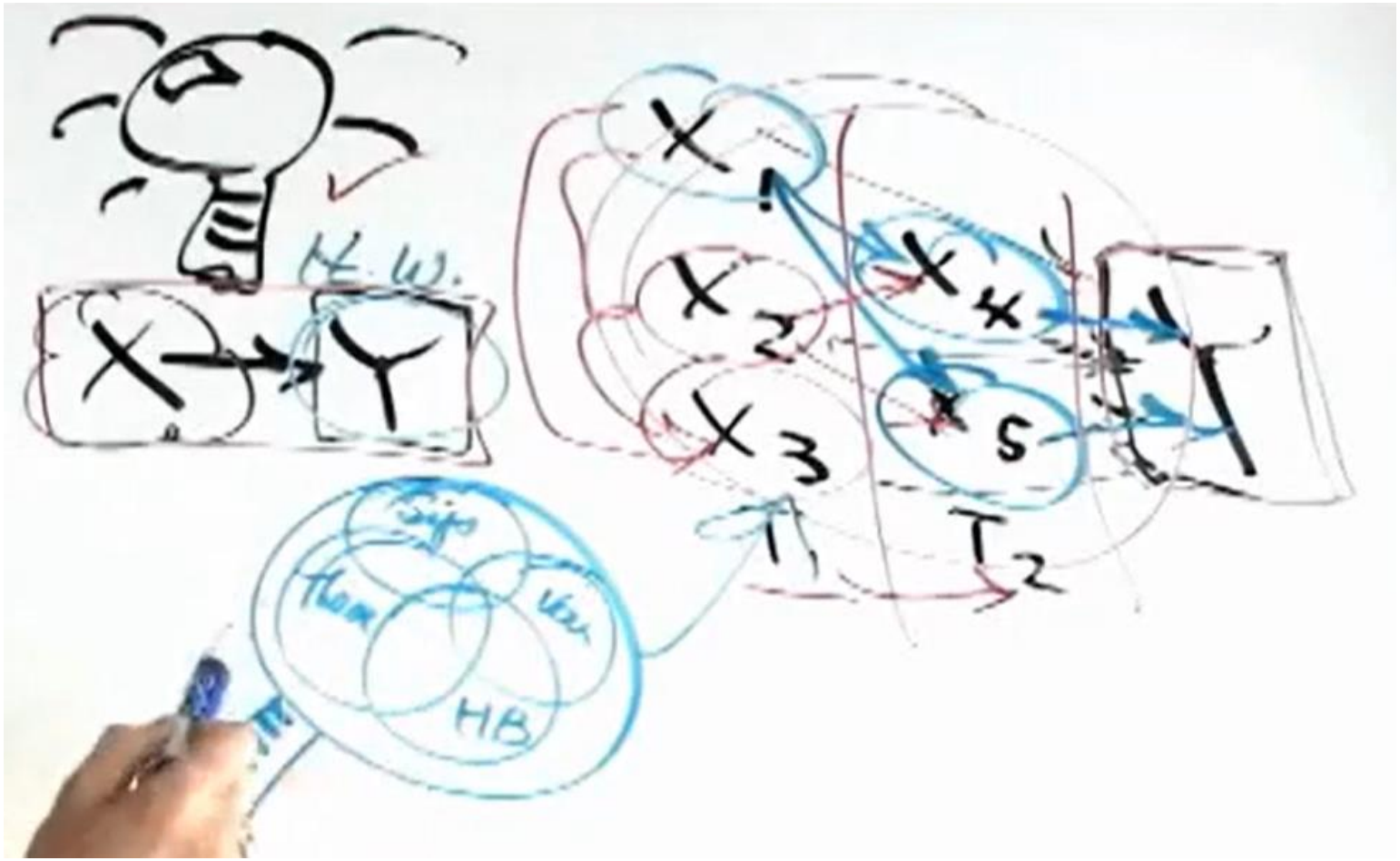
II. Knowledge about Variation: certain aspects of variation we want to make in our products

III. Theory of Knowledge: Knowledge depends on theory. Information is not knowledge. Practice makes permanent, not perfect. Copying examples does not lead to knowledge.

IV. Knowledge of Psychology: Leaders must understand human behavior to motivate, coordinate and manage people to optimize the system.

Quality: Philosophies

- Theory of Profound Knowledge
- **Example: Want to change process of handwashing**



Principles of Quality: Dr. W. Edwards Deming

1. Create a Constant Purpose Toward Improvement
2. Adopt the New Philosophy
3. Stop Depending on Inspections
4. Use a Single Supplier for Any One Item
5. Improve Constantly and Forever
6. Use Training on the Job
7. Implement Leadership
8. Eliminate Fear
9. Break Down Barriers Between Departments
10. Get Rid of Unclear Slogans
11. Eliminate Management by Objectives
12. Remove Barriers to Pride of Workmanship
13. Implement Education and Self-Improvement
14. Make "Transformation" Everyone's Job

Principles of Quality: Dr. W. Edwards Deming

1. Create a Constant Purpose Toward Improvement: long term vision for making products for long durability
2. Adopt the New Philosophy: mobile phone competitors
3. Stop Depending on Inspections: inspect whole manufacturing process rather product
4. Use a Single Supplier for Any One Item: Quality relies on consistency – the less variation you have in the input, the less variation you'll have in the output
5. Improve Constantly and Forever: improve product quality
6. Use Training on the Job: train your employees to stay in competition
7. Implement Leadership: supervisor should be good enough to lead

Principles of Quality: Dr. W. Edwards Deming

8. Eliminate Fear: ensuring that they're not afraid to express ideas, don’t blame anyone
9. Break Down Barriers Between Departments: Build a shared vision.
10. Minimize the total cost: of product from raw material to operational cost
11. Get Rid of Unclear Slogans: don’t give target to employee, employee focus on number not quality
12. Remove Barriers to Pride of Workmanship: one group get prize others get depression
13. Implement Education and Self-Improvement: Improve the current skills of workers.
14. Make "Transformation" Everyone's Job: execute the plan

Quality: Philosophies

- **Juran**

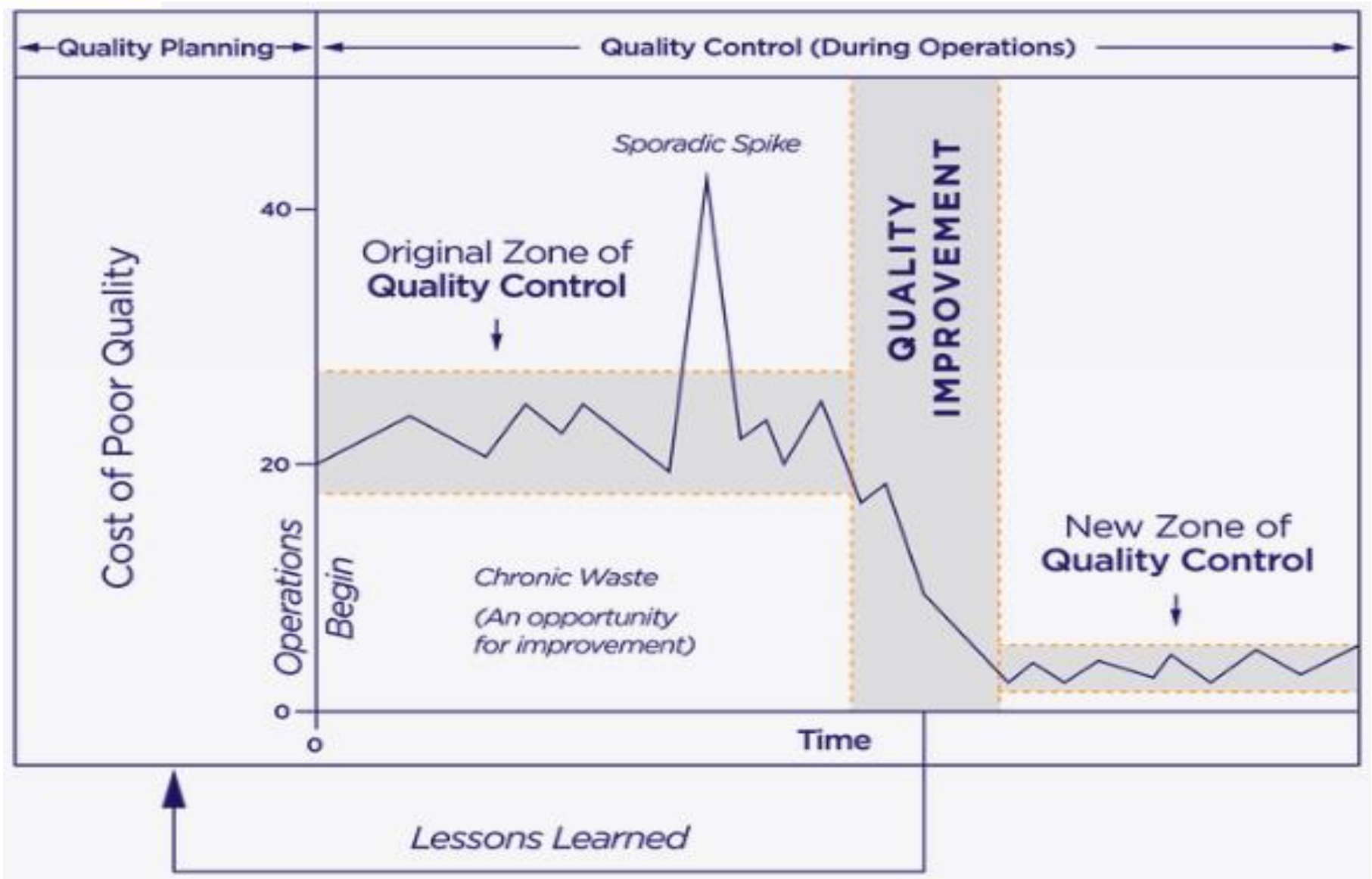
  His quality management approach is based on three key principles: the Pareto principle; quality management principles; and the Juran Trilogy – quality planning, quality control, and quality improvement.

  The Juran Trilogy is an improvement cycle that is meant to reduce the cost of poor quality by planning quality into the product / process.

Juran's Triology

- Quality Planning (Quality by Design)
- Quality Control (Process Control & Regulatory)
- Quality Improvement (Lean Six Sigma)

Juran's Triology



https://www.juran.com/blog/the-juran-trilogy-quality-planning/

Juran's 10 step process

- Build awareness : of need and opportunity for improvement.
- Set goals for improvement.
- Organize to reach the goals.
- Provide training.
- Carry out projects to solve problems.
- Report progress.
- Give recognition.
- Communicate results.
- Keep score
- Maintain momentum by making annual improvement part of the regular processes

https://www.nvtquality.com/white-papers/jurans-steps-for-quality-improvement/

Quality: Philosophies

- **Feigenbaum**

  Armand V. Feigenbaum is known for his work on total quality control, and quality costs. He is the originator of the concept of the "hidden plant," the assertion that a proportion of the capacity of every factory is wasted due to not getting **things right first time.**

- **Shewhart**

  Walter A Shewhart honed his skills while working at Bell Telephone, where his work focused on reducing variation in a manufacturing process. He was recognized as the originator of statistical quality control (SQC) and also created the "Shewhart cycle", or "Plan-Do-Check-Act" (PDCA).

Quality: Philosophies

- **Shingo**

  Shigeo Shingo was a frontrunner in continuous process improvement and operational excellence. He developed the concept of the **Single-Minute Exchange of Die (SMED)**, aimed at cutting waste in manufacturing processes.

- **Crosby**

  Philip Crosby found fame on publication of his book Quality is Free, in 1979. In addition to that, he is known for the principle of "**doing it right the first time**" (DIRFT) and the Four Absolutes of Quality.

Quality: Philosophies

- **Taguchi**

  Genichi Taguchi's methodology pushes the concepts of quality and reliability back to the design stage. It constitutes an efficient technique for designing product tests prior to the commencement of manufacturing, so ensuring quality, not defect, is designed in.

- **Ishikawa**

  Kaoru Ishikawa introduced the concept of quality circles and was a fervent believer in the need for quality to be company-wide. He is arguably best-known for the Ishikawa Diagram – also known as the fishbone or **cause and effect diagram** – used to identify the **root cause** of an event and commonly employed in quality defect prevention initiatives.

Summary

- Quality: Philosophies
- Juran’s Triology
- Principles of Quality (Deming)

Daily Quiz

Q1. Describe the Juran's triology.

Q2. Elaborate of the philosophies of quality and it's advent in business.

Q3. Describe 14 principles of quality propounded by Deming.

Q4. Opine yourself on quality in product development and process.

Q5. Define the quality.

(Unit –IV) Topic 3

Customer perception on quality

Kaizen & 6 Sigma

Topic & CO Mapping

Topic	CO	Level
Customer perception on quality, Kaizen, 6 Sigma	CO 4	2

Topic Objectives And Outcomes

Topic Objectives:

- To understand the concept of quality from customer's perspective
- To learn about quality management tools

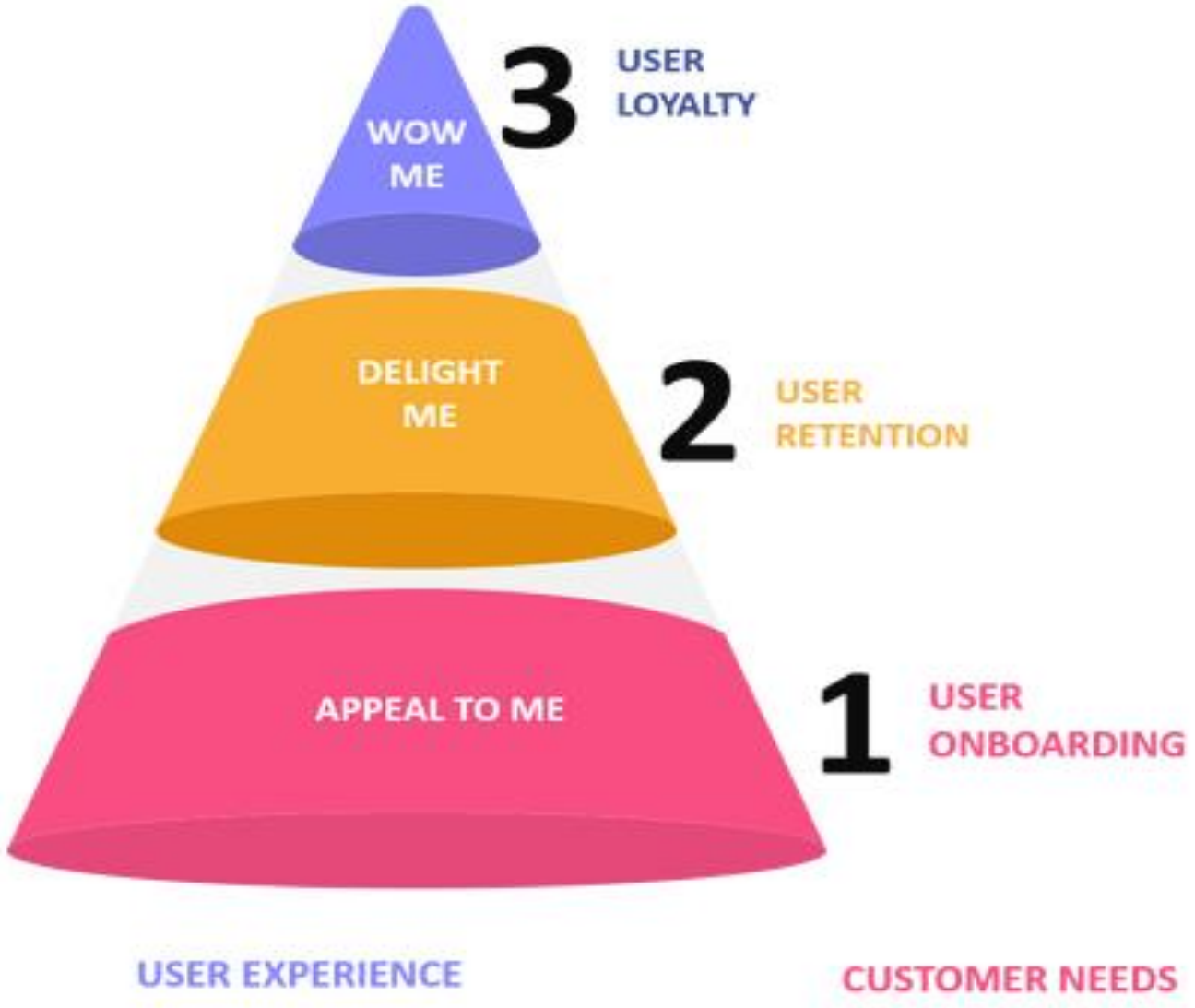
Topic Outcomes:

- Ability to deliver quality in offerings
- Ability to apply quality management tools.

Recap

- Quality: Philosophies
- Juran’s Triology
- Principles of Quality (Deming)

Quality: Customer Perspective



Quality: Customer Perspective

- **Performance** - operating characteristics (speed, comfort, ease of use, and so on); for multiple performance features, the relative importance of each
- **Features** - extras, add-ons, or gimmicks that enable a customer to somewhat customize a product
- **Reliability** - the likelihood that the product will perform as expected and not malfunction within a given time period
- **Conformance** - the degree to which the product satisfies or conforms to pre-established standards

Quality: Customer Perspective

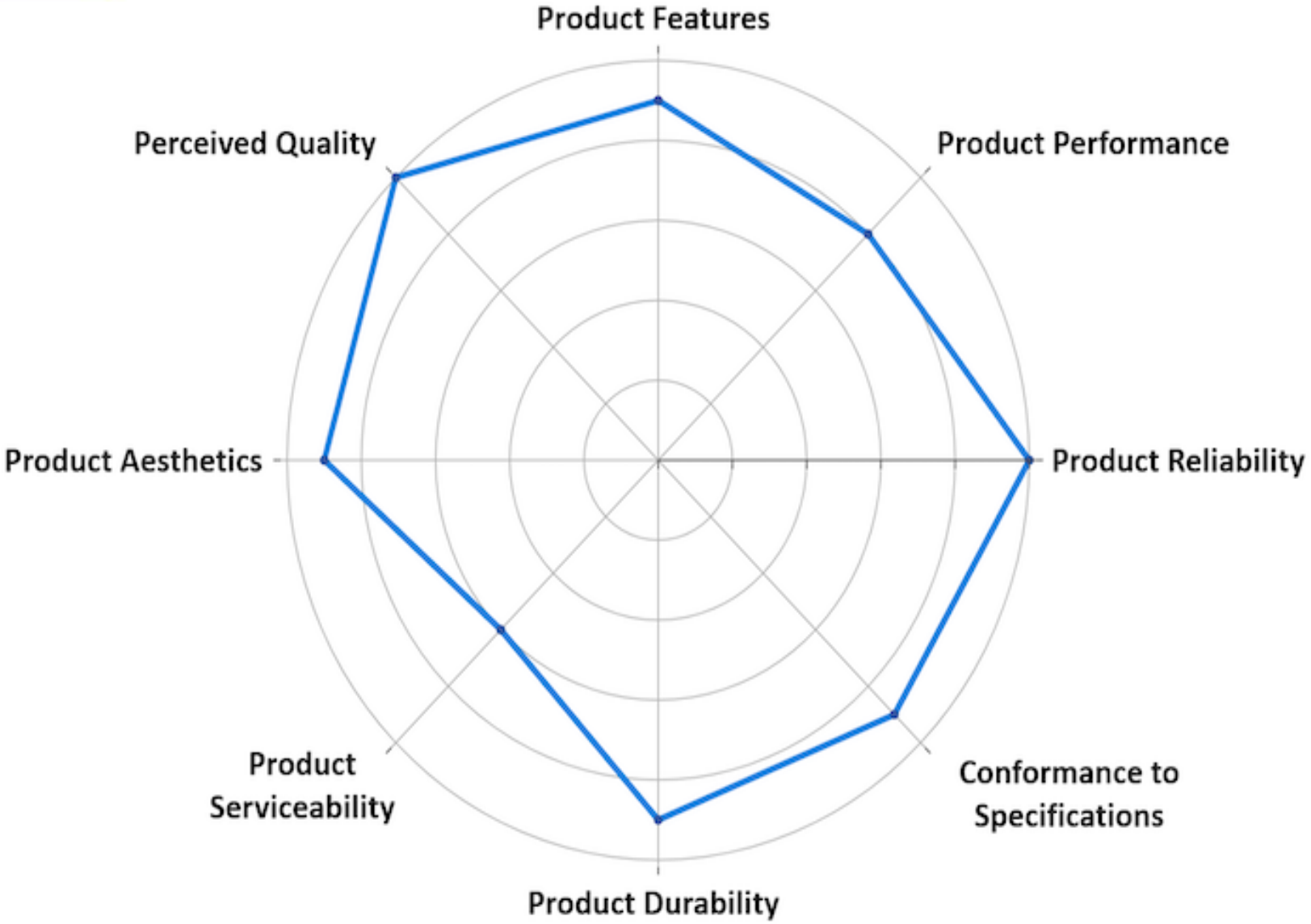
- **Durability -** the length of time, or extent of use, before the product deteriorates and must be replaced; durability is a function of the product's operating environment and reliability

- **Serviceability -** the speed, ease, and convenience of getting or making maintenance work or repairs and the courtesy and competency of service people

- **Aesthetic -** the look, sound, smell, feel, or taste of the product based on personal taste; though subjective, some aesthetic judgments tend to be common

- **Perceived Value -** subjective opinions about the product based on images or attitudes formed by advertising and/or the reputation of the producer

Eight Dimensions of Quality



KAIZEN

Masaaki Imai sat down to pen the groundbreaking book

‘Kaizen: The Key to Japan’s Competitive Success’

Through this book, the term KAIZEN™ was introduced in the western world.

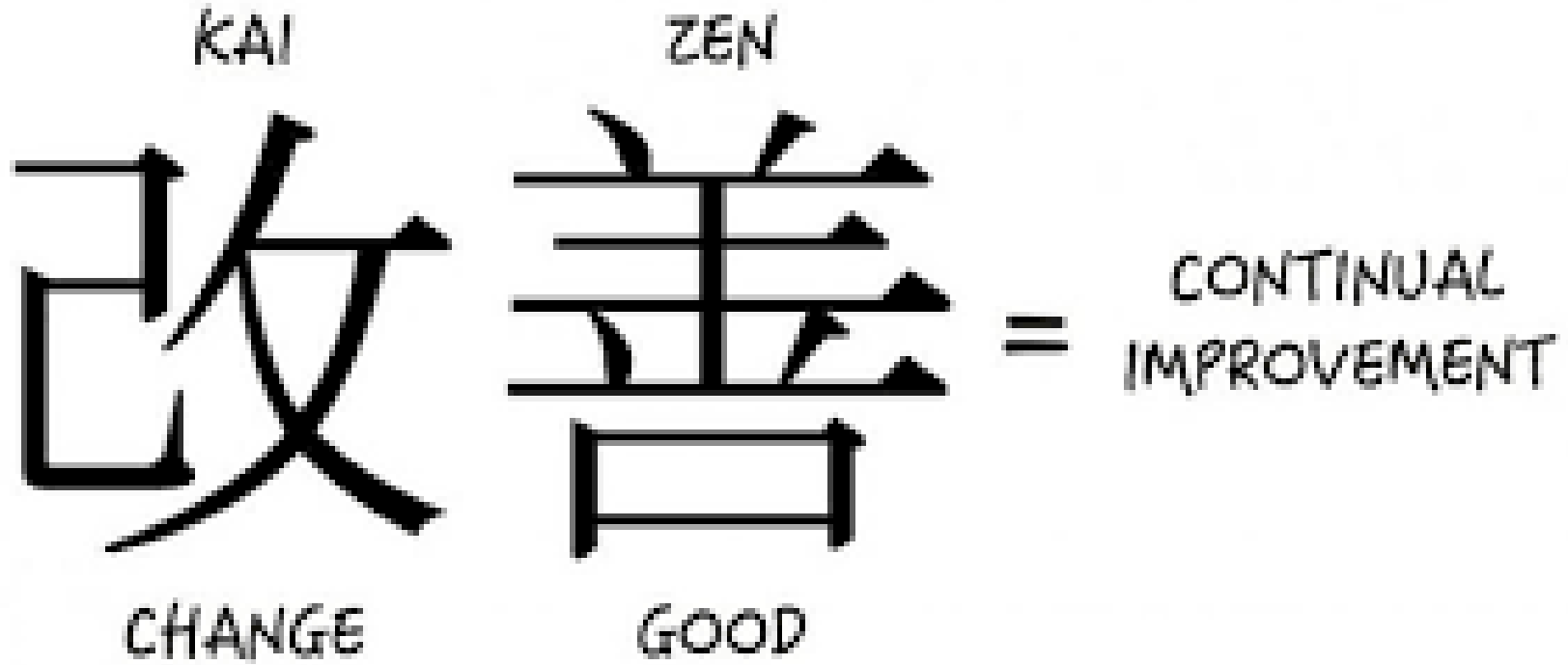
Today KAIZEN™ is recognized worldwide as an important pillar of an organization’s long-term competitive strategy. Since introducing this term as a systematic approach for business improvement, companies that implement KAIZEN™ have continually yielded superior results.

KAIZEN: Definition

"KAIZEN™ means improvement. Moreover, it means continuing improvement in personal life, home life, social life, and working life. When applied to the workplace KAIZEN™ means continuing improvement involving everyone – managers and workers alike."

Masaaki Imai, Founder of Kaizen Institute

KAIZEN



Kaizen: 5 Principles

- Know your Customer
- Let it Flow
- Go to Gemba
- Empower People
- Be Transparent.

https://www.founderjar.com/kaizen/


kaizen.com
KAIZEN™ INSTITUTE
Know your Customer
Creating customer value
Identify their interests so you can enhance their experience.
Let it Flow
Targeting zero waste
MU DA
Everyone in your organization should aim to create value and eliminate waste.
The Core of KAIZEN™
改善
Pure Improvement
Everyone, Everywhere, Every Day
Go to Gemba
Following the action
Value is created where things actually happen – go there!
Be Transparent
Speaking with real data
Performance and improvements should be tangible and visible.
Empower People
Organizing your teams
Set the same goals for your teams, and provide a system and tools to reach them.
Practice, Learn and Improve
Be Determined

Six Sigma: Introduction

- Six Sigma is a methodology used to improve business processes by utilizing statistical analysis rather than guesswork.

- Processes are improved by controlling variation and understanding the intricacies within them.

Six Sigma: Introduction

- **Six Sigma** (**6σ**) is a set of techniques and tools for process improvement. It was introduced by American engineer **Bill Smith** while working at **Motorola in 1986**.

- Six Sigma strategies seek to improve manufacturing quality by identifying and removing the causes of defects and minimizing variability in manufacturing and business processes.

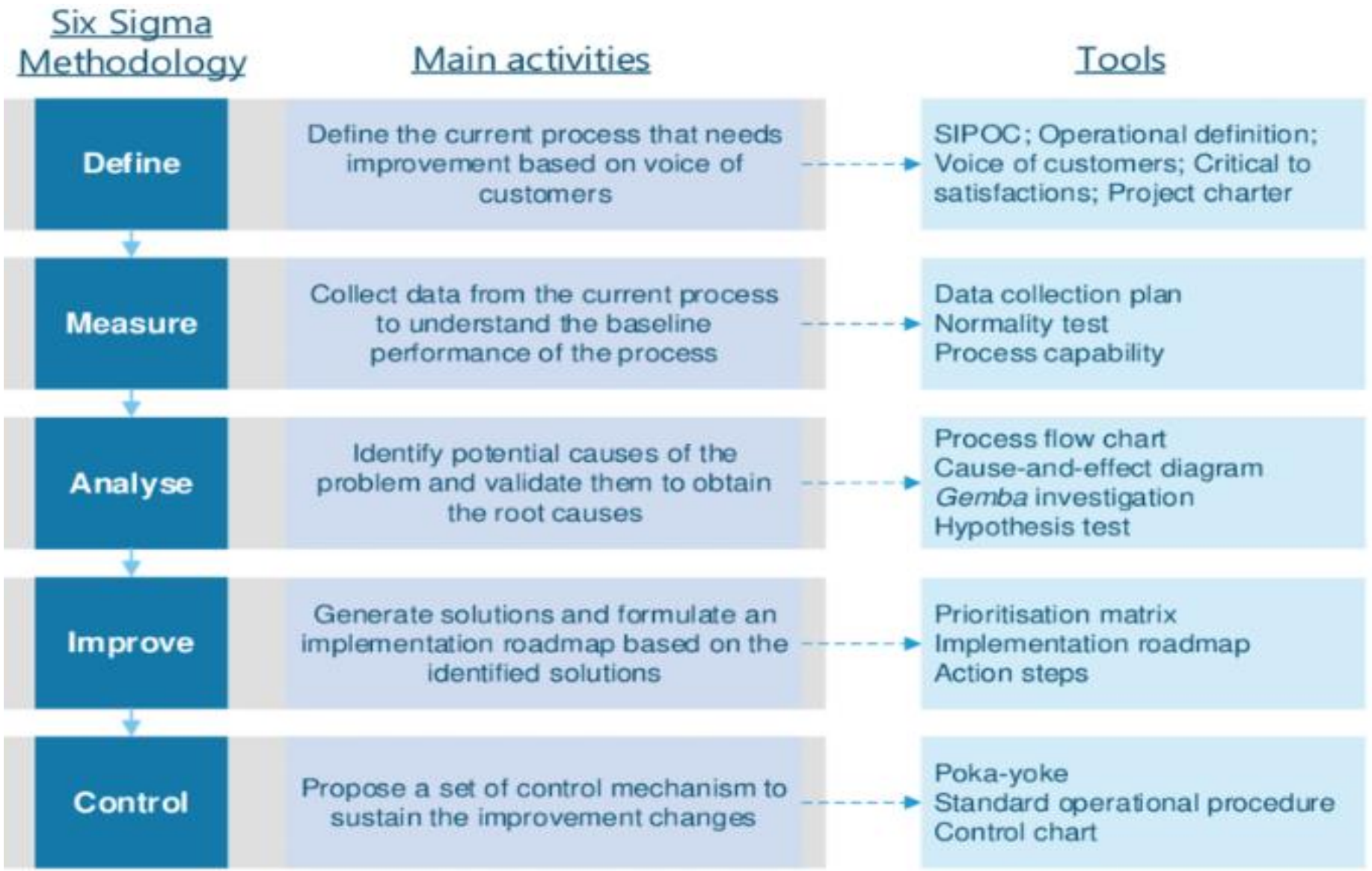
Six Sigma Philosophy

The Six Sigma methodology is defined by five DMAIC steps and a preceding “step zero” known as Six Sigma Leadership.

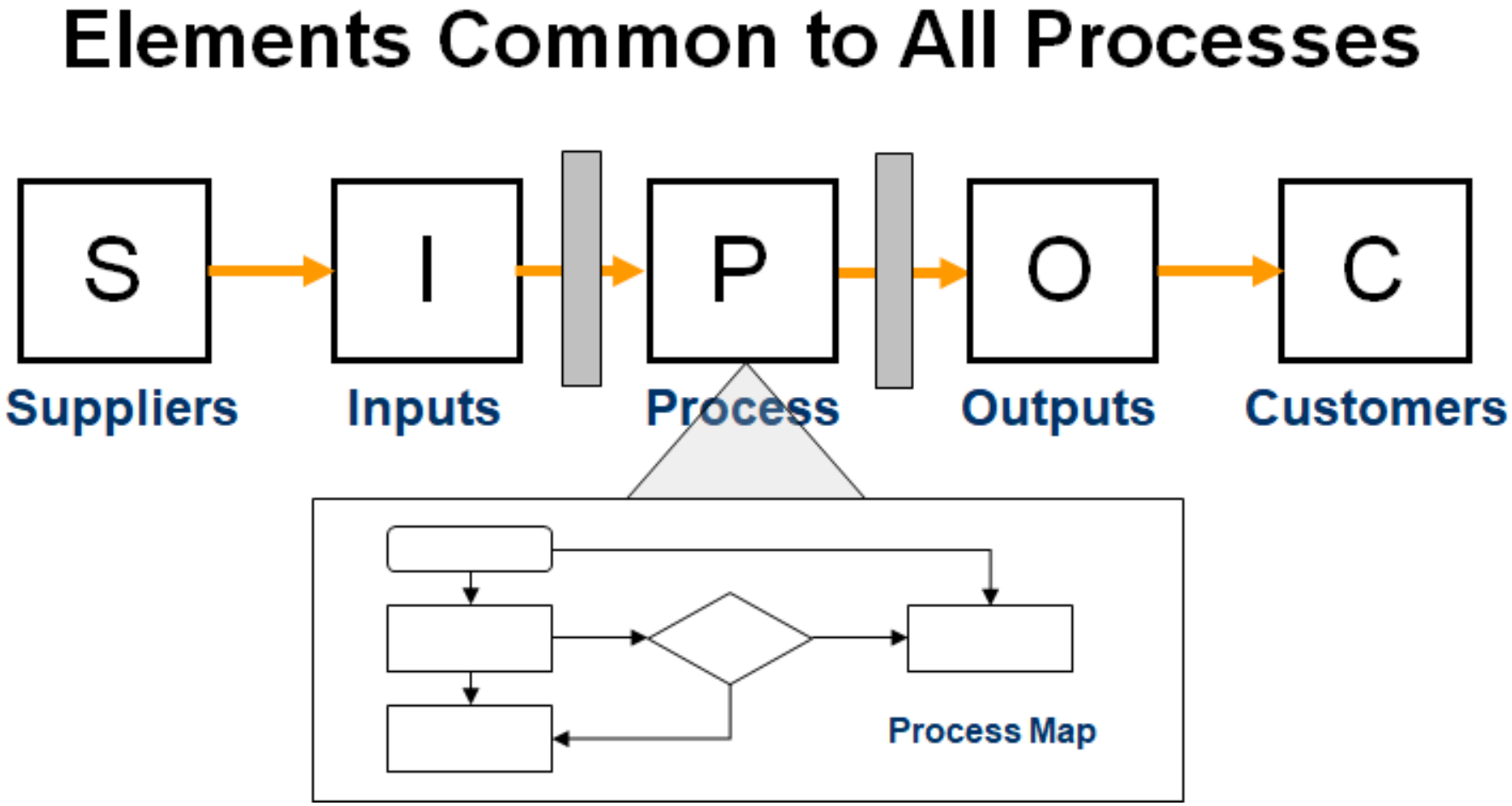
DMAIC is the acronym for:

- Define – What is important?
- Measure – How are we doing?
- Analyze – What is wrong?
- Improve – What needs to be done?
- Control – How do we guarantee performance?

DMAIC framework and Six-Sigma tools



SIPOC


Elements Common to All Processes
S
I
P
O
C
Suppliers
Inputs
Process
Outputs
Customers
Process Map

SIPOC

- Suppliers – Suppliers supply the inputs for the process.
- Inputs – Materials, equipment, information, forms, staff, etc.
- Process – The steps of the process your team is improving, from the initial step to the final step/delivery of the product or service.
- Outputs – The product or service that is delivered to the internal or external customers as an output of the process, i.e. reports, products, services, etc.
- Customers – Anyone who receives the outputs.

Defects Per Million Opportunities (DPMO)

- This represents a ratio of the number of defects in one million opportunities. In other words, how many times did you have a flaw or mistake (defect) for every opportunity there was to have a flaw or mistake.

- The formula for calculating DPMO is as follows.

$$DPMO = \left(\frac{\text{total number of defects found in a sample}}{\text{total number of defect opportunities in the sample}}\right) \times 1{,}000{,}000$$

$$= \left(\frac{\text{total number of defects found in a sample}}{\text{Sample size x number of defect opportunities per unit in the sample}}\right) \times 1{,}000{,}000$$

Defects Per Million Opportunities (DPMO)

- **Three Sigma quality** – This level of performance produces a defect-free product 93.32% of the time.
- **Four Sigma quality** – This level of performance yields a defect-free product 99.349% of the time.
- **Five Sigma quality** – Five Sigma performance produces defect-free products and services 99.977% of the time.
- **Six Sigma quality** – Six Sigma performance produces a defect-free product **99.99966%** of the time; allowing only 3.4 errors per one million opportunities.

Summary

- Customer’s perspective of Quality
- KAIZEN
- Six Sigma

Daily Quiz

Q1. Describe the concept of Six sigma

Q2. Discuss the concept of DPMO.

Q3. Describe the DMAIC process.

Q4. Explain the concept of SIPOC.

(Unit –IV) Topic 4

Leadership, types, qualities and traits of leaders and leadership styles, Leaders vs Manager

Topic & CO Mapping

Topic	CO	Level
Leadership, qualities and traits of leaders and leadership styles, Leaders vs Manager	CO 4	3

Topic Objectives And Outcomes

Topic Objectives:

- To understand the leadership theories and styles.
- To learn the working aspects of leader and manager.

Topic Outcomes:

- Ability to effectively lead people and teams leadership in organization

Recap

- Customer’s perspective of Quality
- KAIZEN
- Six Sigma

Leadership

Leadership is the ability of an individual or a group of individuals to influence and guide followers or other members of an organization.

"Leadership is the art of getting someone else to do something you want done because he wants to do it.“

Former U.S. President Dwight D. Eisenhower

Traits & Qualities of Leaders

1. Vision
2. Inspiration
3. Strategic & Critical Thinking
4. Interpersonal Communication
5. Authenticity & Self-Awareness
6. Open-Mindedness & Creativity
7. Flexibility
8. Responsibility & Dependability
9. Patience & Tenacity
10. Continuous Improvement
11. Fostering Creativity And Innovation

Leadership: Styles

Autocratic, Authoritarian, Coercive, or Commanding:

- Autocratic leaders make decisions without seeking input from anyone who reports to them, or anyone at all, usually. Team members are not consulted prior to direction and are expected to fall in line with the leader's expectations.

- Rarely effective and can lead to low job satisfaction and poor morale.
- However, autocratic leadership can be effective in crisis situations when quick decisions need to be made.

Leadership: Styles

Bureaucratic:

- Bureaucratic leaders tend to follow a textbook template as to how a leader should act, and are generally risk averse.
- Typically found in large, established organizations or highly regulated environments where adherence to strict rules is important.
- This leadership style stifles innovation among employees and struggles to respond effectively to change.

Leadership: Styles

Affiliative:

- Affiliative leaders strive to create emotional bonds with their team members and direct reports.
- This style is focused on building trust within the team and fostering a sense of belonging to the organization.
- Particularly effective during times of heightened stress
- Constant praise and nurturing can cause performance issues to be overlooked and unaddressed.

Leadership: Styles

Democratic, Facilitative, or Participative:

- Places a high value on the knowledge, skills, and diversity of their team.
- They are consensus-builders and are constantly asking for input from their direct reports and peers.
- Democratic leaders are excellent listeners, and they develop confidence in their leadership by utilizing the collective wisdom their team has to offer.

Leadership: Styles

Laissez-Faire or Delegative

- The French term "laissez faire" translated to English is "let them do." In other words, a laissez-faire leader trusts their employees to do what they're supposed to do and offers minimal interference – and direction.

- The laissez-faire leader is most commonly found in entrepreneurial start-ups, where the founder puts full trust in their team so they may focus on executing the company's overall strategy.

Leadership: Styles

Transactional:

- Transactional leaders are only concerned with the work their employees do.

- Common among sales teams, a transactional leader will often set a sales target and reward the individuals who reach it with a bonus.

Leadership: Styles

Transformational:

- Focused on continuous improvement.
- Constantly push their team outside of their comfort zone and implement stretch goals.

- This style is often associated with charismatic leadership, a leadership style rooted in the charm and persuasiveness of the leader.

Leaders vs Managers

- Leaders create a vision, managers create goals.
- Leaders are change agents, managers maintain the status quo.
- Leaders are unique, managers copy.
- Leaders take risks, managers control risk
- Leaders are in it for the long haul, managers think short-term.
- Leaders grow personally, managers rely on existing, proven skills.
- Leaders build relationships, managers build systems and processes.
- Leaders coach, managers direct.
- Leaders create fans, managers have employees.

Leaders vs Managers

MANAGERS	LEADERS
▪ Concerned with the *present*	▪ Look to the *future*
▪ Make sure *details* are taken care of	▪ Set broad purposes and *directions*
▪ Exercise *control* to make sure that things work well	▪ Create *commitment* that things may work better
▪ Solve *today's* problems by addressing difficulties caused by changing events	▪ Create a *better future* by seizing opportunities stimulated by changing events
▪ Focus on the *process*	▪ Focus on the *product*
▪ Focus on *problem* behavior and try to improve it through counseling, coaching, and nurturing	▪ Focus on what is *right* and praise it
▪ Make sure people put in an honest day's work for their pay	▪ Inspire people to do their best
▪ *Organize and plan* to meet this year's objectives	▪ *Create a vision* of the years down the road
▪ Create efficient policies and standard operating procedures	▪ Go beyond the need for standard procedures and create a more efficient system
▪ Focus on *efficiency*	▪ Focus on *effectiveness*