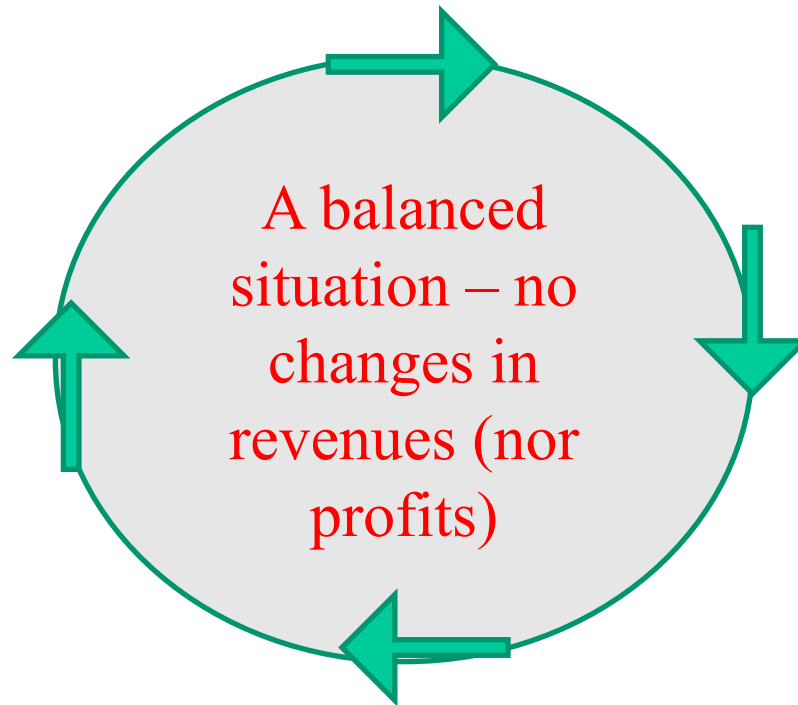# 3.1 Total Productivity Management (TPM), TQM, and Hoshin Kanri

- THREE TYPES OF PROBLEMS
- TOTAL PRODUCTIVITY MANAGEMENT, TPM (Sumanth, David, J. 1998. CRC Press LLC. 373 p.)
- HOSHIN KANRI
- HOSHIN PLANNING
- ITIL
- Case Honeywell

What does business growth require?

A balanced situation – no changes in revenues (nor profits)
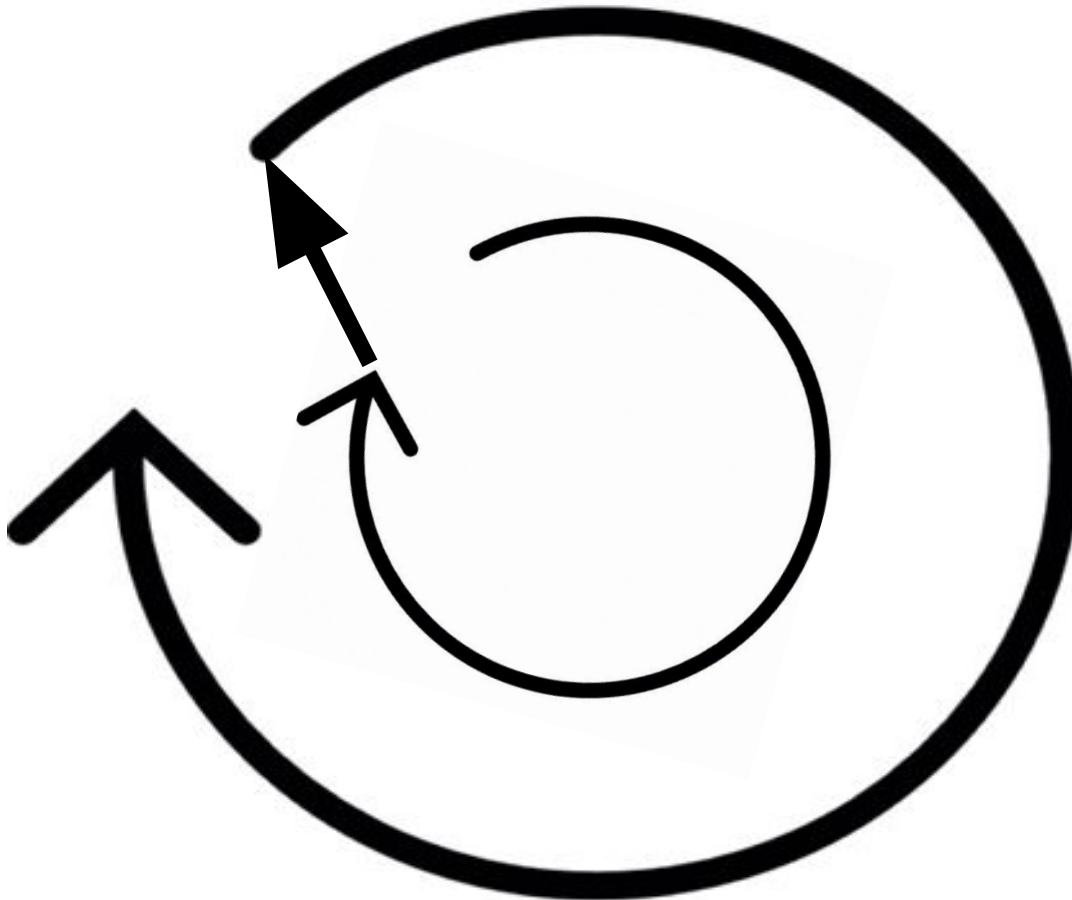
What does business growth require?

A steady yearly growth by small steps improvement and investments based on yearly profits
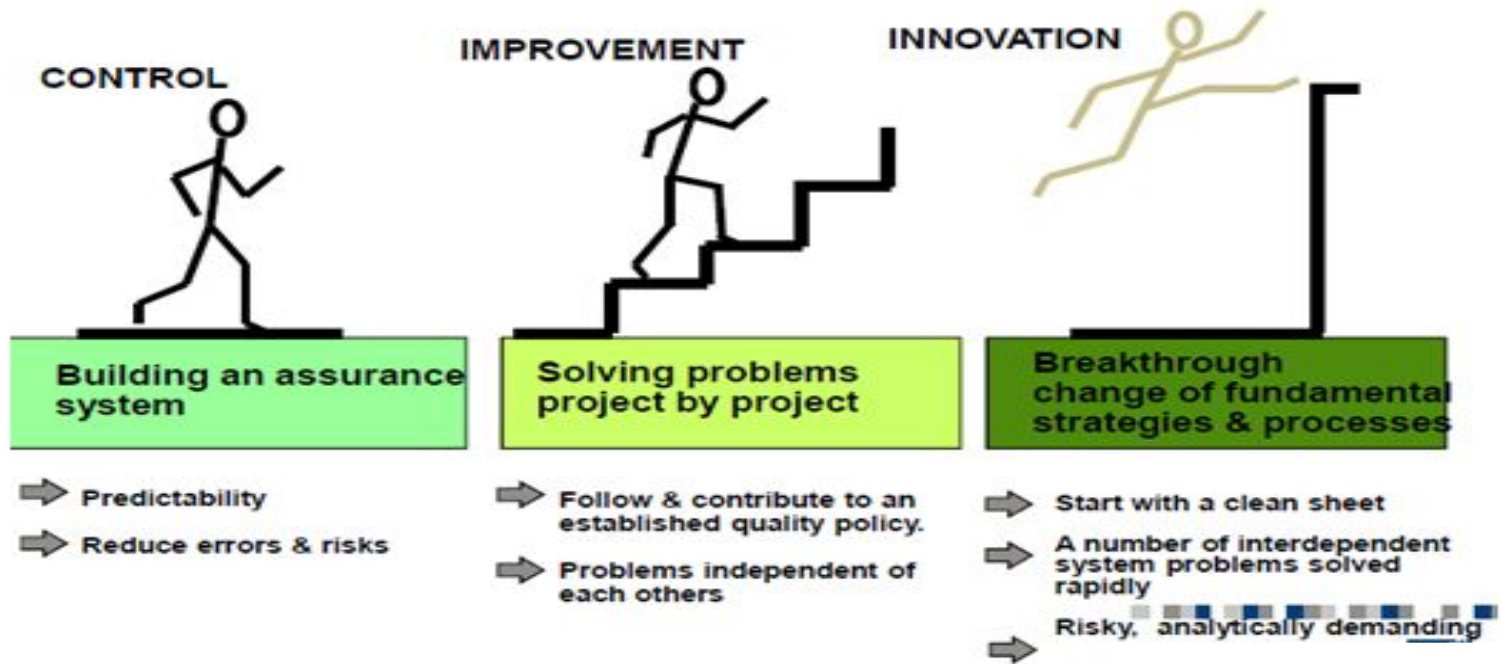
What does business growth require?

Or giant tiger leap by investment – by new own capital or loaned capital

=> High risks and opportunities

THREE TYPES OF PROBLEMS

CONTROL

IMPROVEMENT

INNOVATION

Building an assurance system

Solving problems project by project

Breakthrough change of fundamental strategies & processes

- Predictability
- Reduce errors & risks

- Follow & contribute to an established quality policy.
- Problems independent of each others

- Start with a clean sheet
- A number of interdependent system problems solved rapidly
- Risky, analytically demanding

Define processes and create metrics Stabilize	Analyze and improve processes and performance continuously	Strategy planning RISK management

JAP

Where do you normally find the biggest quality problem?

How does TQM solve the business problems?

Describe the framework of TQM!

TQM

competitiveness

Customer satisfaction external and internal

Profitability and continuity

Continuous improvement of processes

Society and environment

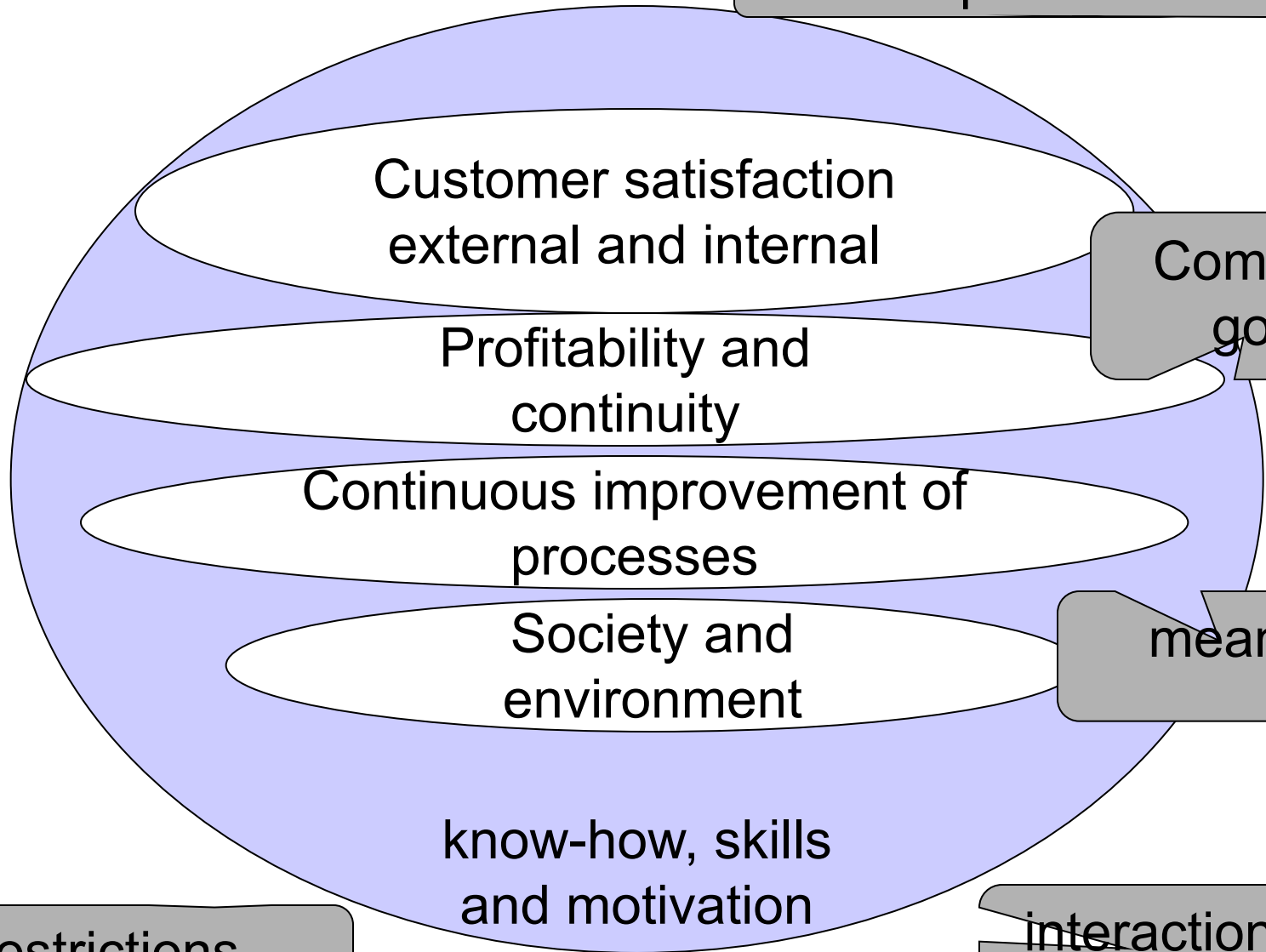know-how, skills and motivation

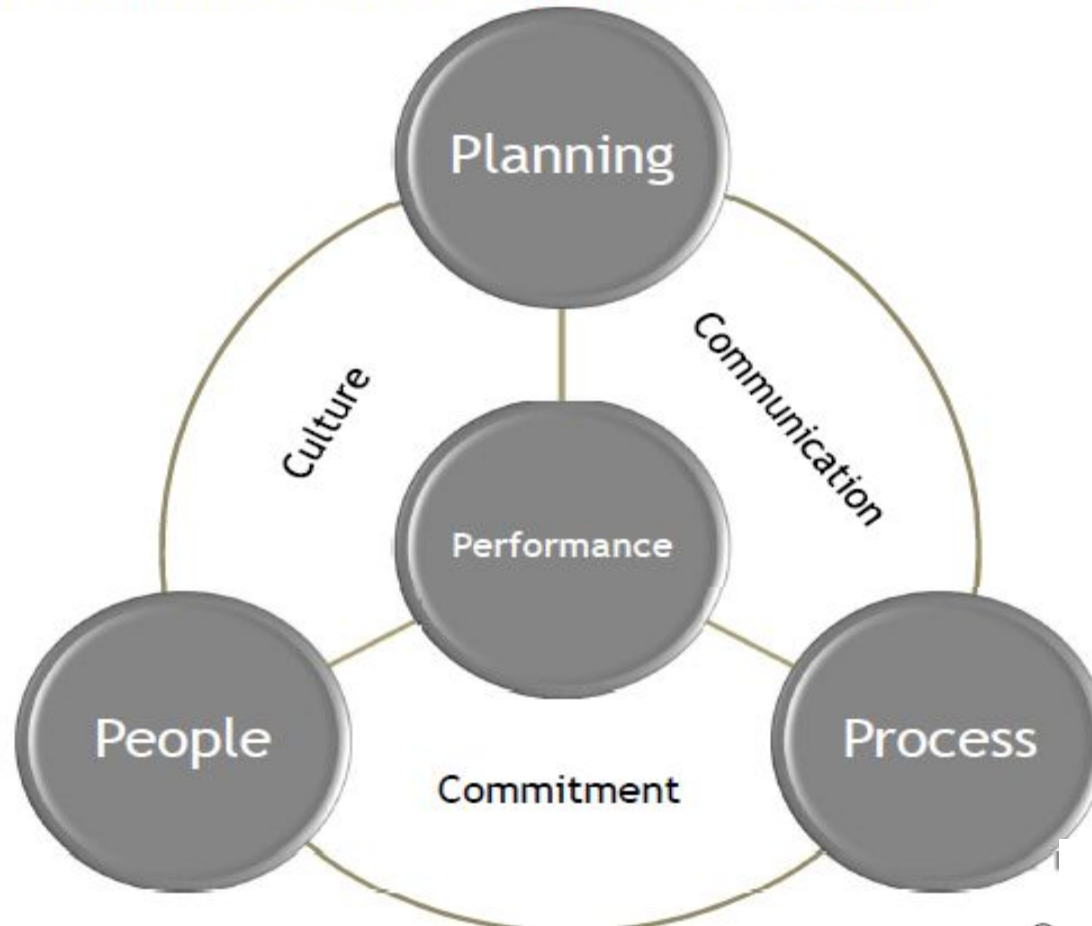Common goal

means

restrictions

interaction

JAP

OAKLANDIN 's TQM / OPERATIONAL EXCELLENCE· MODEL

OAKLANDIN 4P/3C -MALLI
MODEL

- *Planning*, *people* and *processes* are the keys to delivering quality products and services to customers and generally improving overall *performance*.
- These four Ps form a structure of 'hard management necessities' for a simple TQM and Operational Excellence (OpEx) model
- The three Cs of *culture*, *communication*, and *commitment* provide the glue or 'soft outcomes' of the model which will take organizations successfully into the twenty-first century.

THE TOTAL QUALITY MANAGEMENT APPROACH (OAKLAND 2014)

- TQM is a comprehensive approach to improving competitiveness, effectiveness and flexibility through planning, organizing and understanding each activity, and involving each individual at each level; it is useful in all types of organization.
- TQM ensures that management adopts a strategic overview of quality and focuses on prevention, not detection, of problems.
- TQM often requires a mindset change to break down existing barriers.
- Managements that doubt the applicability of TQM should ask questions about the operation's costs, errors, wastes, standards, systems, training and job instructions

Unique Features of TOTAL PRODUCTIVITY MANAGEMENT, TPM, Employee Creativity

PROMOTION 3,0%

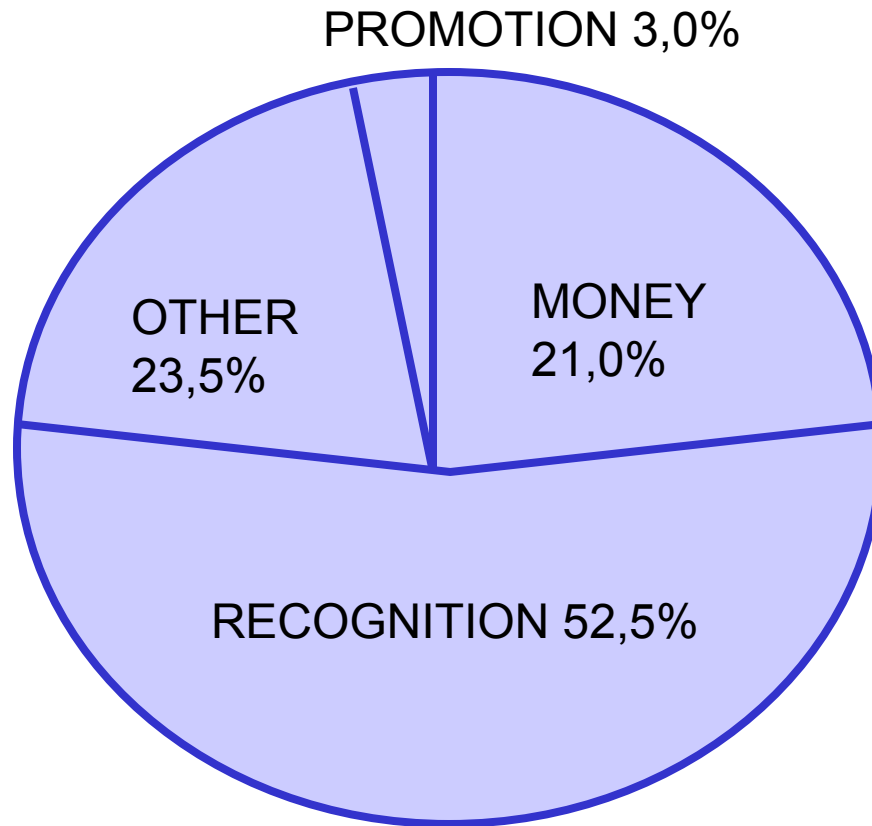OTHER 23,5%

MONEY 21,0%

RECOGNITION 52,5%

FIGURE 1. Importance of recognition and money in fostering creativity. (Source: "Productivity and Quality: IIE Evaluates Improvement by Productivity Engineers," Industrial Engineering, p. 57, May 1989)

This is merely one example of what has been proven by many behavioural scientists - that a recognized and motivated group of individuals provide a positive performance environment for themselves and for the enterprise for which they work. A special report published by the Institute of Industrial Engineers showed that recognition and money accounted for 73.5% of the responses offering ideas to improve performance (Figure 1).

Matsushita, generally considered the largest consumer electronics company in the world, knows the importance of people. "Matsushita's Seven Objectives" (Figure 2), as the company calls them, all revolve around people. No wonder it has been such a successful company.

"MATSUSHITA'S SEVEN OBJECTIVES"

1. NATIONAL SERVICE THROUGH INDUSTRY

Our purpose shall be not solely to gain wealth nor display industrial strength, but to contribute to the progress and welfare of the community and nation.

2. FAIRNESS

We shall be fair and just in all our business and individual dealings. Without this spirit no man can win respect nor can he respect himself no matter how wise or capable he may be.

FIGURE 2. People at the centre of attention in Matsushita. (Courtesy of Matsushita Corporation.)

3. HARMONY AND COOPERATION

Alone we are weak, together we are strong. We shall work together as a family in mutual trust and responsibility. An association of talented men is but an unruly mob unless each member is imbued with this spirit.

4. STRUGGLE FOR BETTERMENT

It shall be our policy to encourage trust and self-reliance that each may gain self-respect through his own endeavour and to struggle hard for betterment. Without this spirit, true peace and progress cannot be achieved.

FIGURE 2. People at the centre of attention in Matsushita. (Courtesy of Matsushita Corporation.)

5. COURTESIES AND HUMILITY

We shall respect the rights of others. We shall be cordial and modest. We shall praise and encourage freely. Without this spirit there is no social order.

6. ADJUSTMENTS AND ASSIMILATION

Progress cannot be achieved unless we adjust to the ever-changing conditions around us. As the world moves forward, we must keep in step.

FIGURE 2. People at the centre of attention in Matsushita. (Courtesy of Matsushita Corporation.)

7. GRATITUDE

We shall repay the kindness of our associates, our community, our nation and our foreign friends with gratitude. This spirit of gratitude will give us peace, joy and unlimited strength to overcome all difficulties.

FIGURE 2. People at the centre of attention in Matsushita. (Courtesy of Matsushita Corporation.)

In summary, managers who design their companies around the "people building" theme will be more successful than those who design with any other central focus, such as profits or technology.

The TPM philosophy creates and sustains the people-building emphasis; therefore, the power of technologies designed by such people is long lasting and totally productive. The people building thinking in TPM ensures an enthusiastic work ethic, job security, organizational stability, and employee stability.

Instituting innovations and creating technological or structural changes in such an environment are easier because of the "organizational resilience" for adaptability and accommodation.

Quality at Nokia Networks What does quality mean at Nokia Networks - See more at: http://networks.nokia.com/about-us/company/quality# sthash.Kdtt5arZ.dpuf

http://networks.nokia.com/about -us/company/quality

Quality at Nokia Networks

What does quality mean at Nokia Networks?

For us, quality is simply about putting the customer at the centre of everything we do, not only in technology and services, but also in our behaviours.

We are putting quality into practice every day through three quality principles that sum up the Nokia Networks way: **Customer First**, **Execution Excellence** and **I Own Quality**.

These principles, along with the aspiration of our talented people to be the best-in-class, are forming the unique foundation of Nokia Networks' quality DNA.

Nokia Networks is built on solid quality principles

Customer First encourages employees to adopt 'outside in' thinking and to focus on the needs of the customer, rather than looking inwards at ourselves. It implies carrying the voice of the customer inside the organization to collaborate across functions. Ensuring that the impact on the customer is understood fully and that we are delivering high quality products, services and solutions to maximize the investments customers are making with us.

Execution Excellence is about doing it right the first time. With this we mean proactive quality through early detection and containment.

I Own Quality means that every Nokia Networks employee takes personal responsibility on a daily basis for their actions and decision making to achieve high quality for our customers.

Join the Nokia Networks quality journey

An important part of the Nokia Networks quality journey is developing a partnering relationship with our customers, jointly working with them to achieve and exceed their expectations – to delight them.

Nokia Networks is determined to achieve the goal of delighting our customers and making quality a key differentiator in the marketplace.

Hoshin means objectives or directions   (
a course, a policy, a plan, an aim)

Kanri means control or management
(administration, management, control, charge
of, care for)

⇒ **Hoshin Kanri** means policy management or
management of objectives (Policy Deployment)

Nichijo means daily.

⇒ **Nichojo Kanri** means daily management

Hoshin Kanri was developed in Japan 1960 at Bridgestone Tire Company. the philosophy originates with ancient military traditions and efficiency.

The purpose of Hoshin Kanri is to make it possible to get away from the status quo and make a major performance improvement by analyzing current problems and deploying strategies that respond to environmental conditions.

There are two levels:

- The Strategic Planning Strategies — Business Simulations
- The Daily Management Strategies — Business Operations

Hoshin planning process - flowchart

Company vision	Long range plan	Customer inputs	Competitive Situation	Previous year's plans

Review these fundamental viewpoints of strategic planning

Company President's Plan	Division Manager's Plan	Next level Manager's Plan	Department Manager's Plan

Annual plans

Daily Management plans

Planning phase

Do

Check

Act
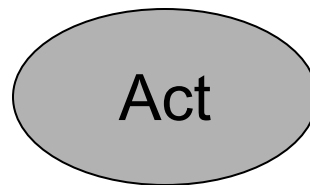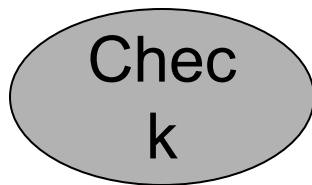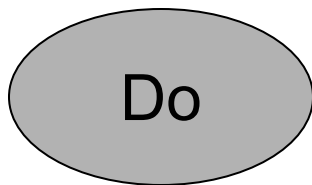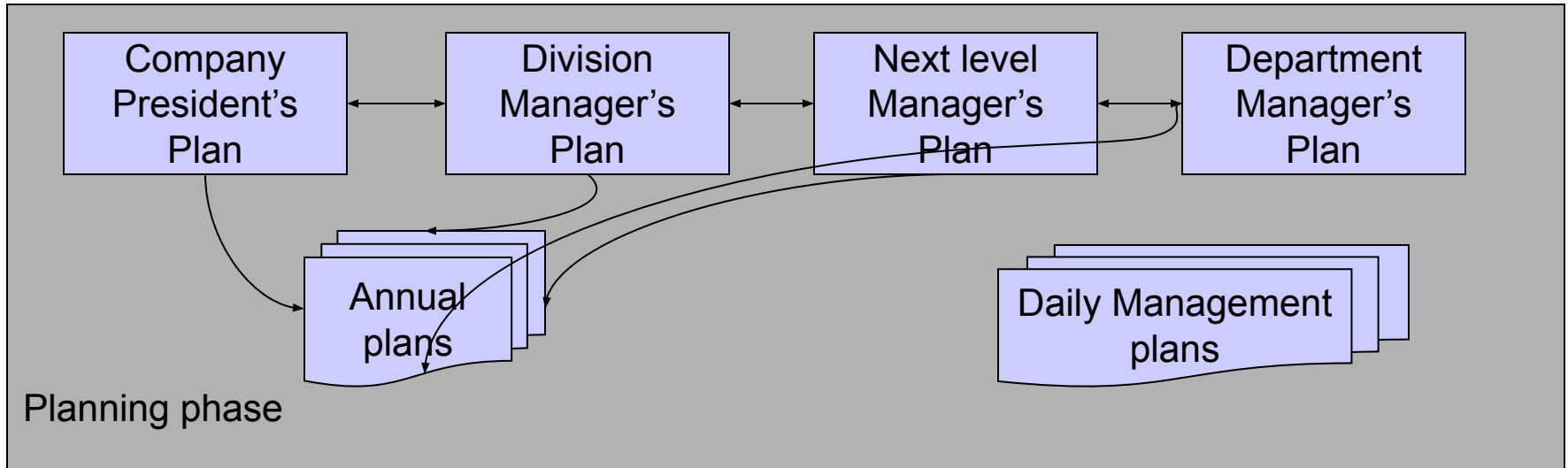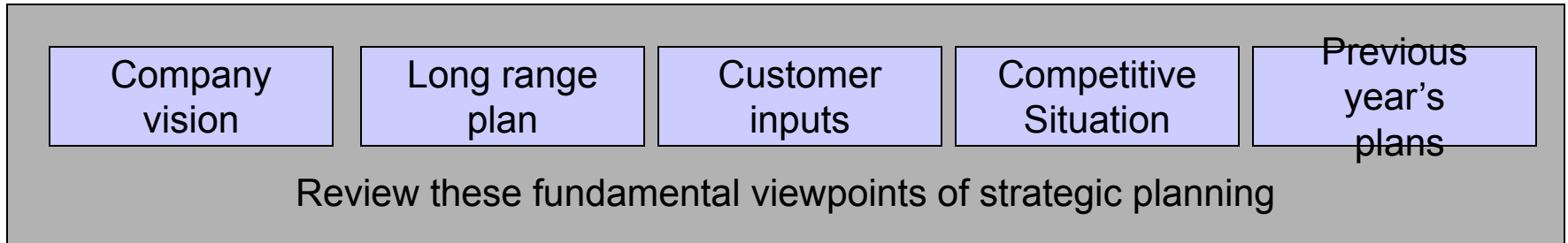
TOP-DOWN vs. BOTTOM – UP vs. HOSHIN KANRI PLANNING

Top management's financial goals

Middle management's operative plan and to achieve financial goals

TOP–DOWN – where is the commitment – fear?

Employees' operative goals

BOTTOM – UP PLANNING

BOTTOM UP – does it make sense – laissez faire?

Top management's financial goals

Middle management's operative plan and goals

Employees' operative goals and plan

Very high commitment – inevitable in creative and scientific jobs!

COOPERATIVE PLANNING

JOHTO- Manage-m ent

KESKI-JO HTO Middle manage-m ent

TYÖN-TE KIJÄT

MIKÄ ON MAHDOLLISTA – ja mitä se vaatii panostuksia -> TAVOITTEIDEN UUDELLEENARVIOINTI

Realistinen tavoite ja parempi mieli ☺

TALOUDELLISET TAVOITTEET

Toiminnalliset mahdollisuudet

Yhtyeen-sovi ttaminen

TOP DOWN –BOTTOM UP JOHTAMINEN

MIKÄ ON VÄLTTÄMÄTÖNTÄ Menestymiselle/ olemassaololle

Sitoutuminen tavoitteisiin ja keinoihin

Tavoitteista ja keinoista yhteisesti sopimista   JAP

27

Balanced Scorecard , BSC – a Strategic Performance Measurement Framework (Kaplan & Norton 1996)

http://www.youtube.com/watch?v=_A02vKgE4NQ

Financial Perspective
Goal - Measure

Customer Perspective
Goal - Measure

Vision and Strategy

Process Perspective
Goal - Measure

Learning and Growth Perspective
Goal - Measure
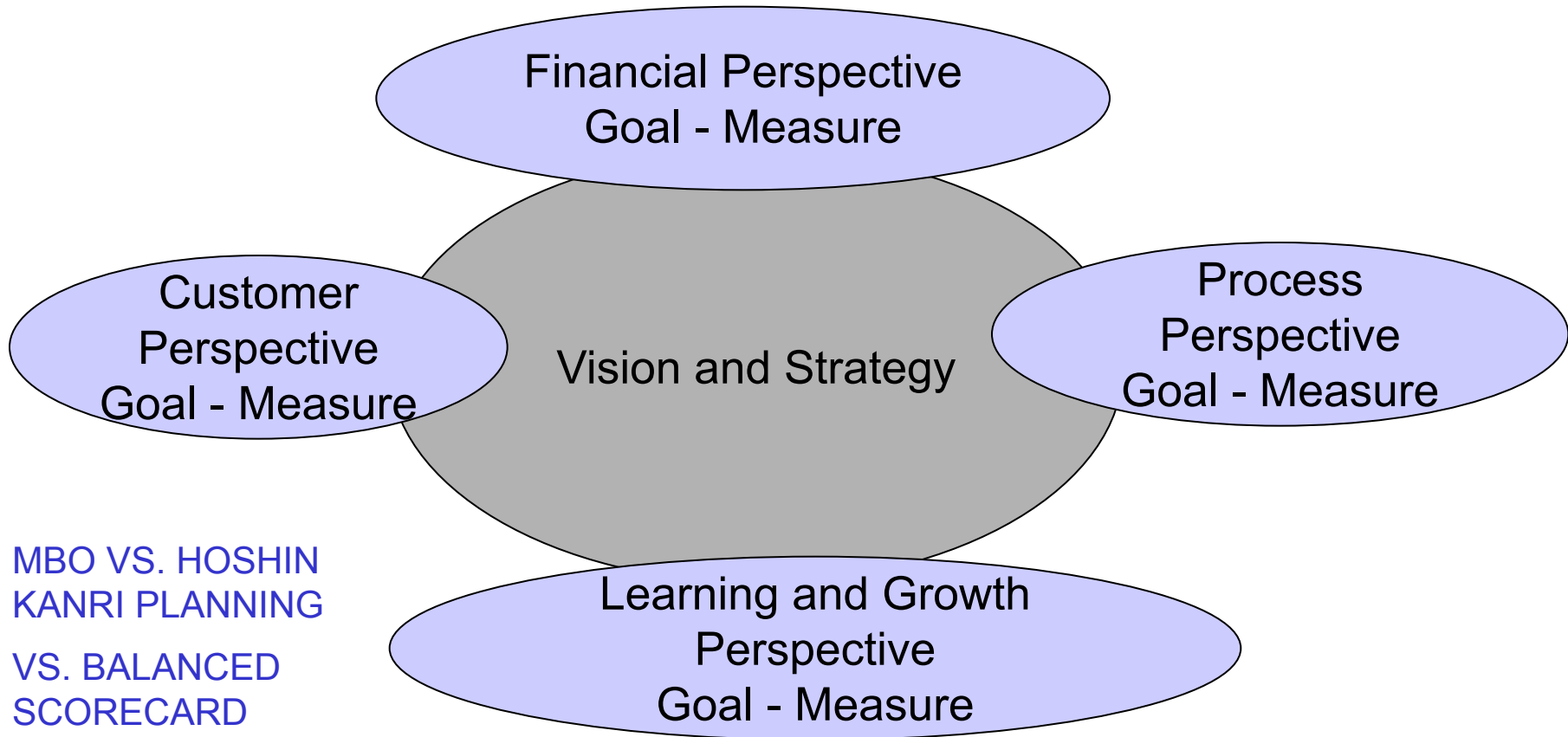
MBO VS. HOSHIN KANRI PLANNING

VS. BALANCED SCORECARD

ITIL, formerly known as the Information Technology Infrastructure Library, is a set of practices for IT service management (ITSM) that focuses on aligning IT services with the needs of business. In its current form (known as ITIL 2011 edition), ITIL is published as a series of five core volumes, each of which covers a different ITSM lifecycle stage. Although ITIL underpins ISO/IEC 20000 (previously BS15000), the International Service Management Standard for IT service management, the two frameworks do have some differences

ITIL describes processes, procedures, tasks, and checklists which are not organization-specific, but can be applied by an organization for establishing integration with the organization's strategy, delivering value, and maintaining a minimum level of competency. It allows the organization to establish a baseline from which it can plan, implement, and measure. It is used to demonstrate compliance and to measure improvement
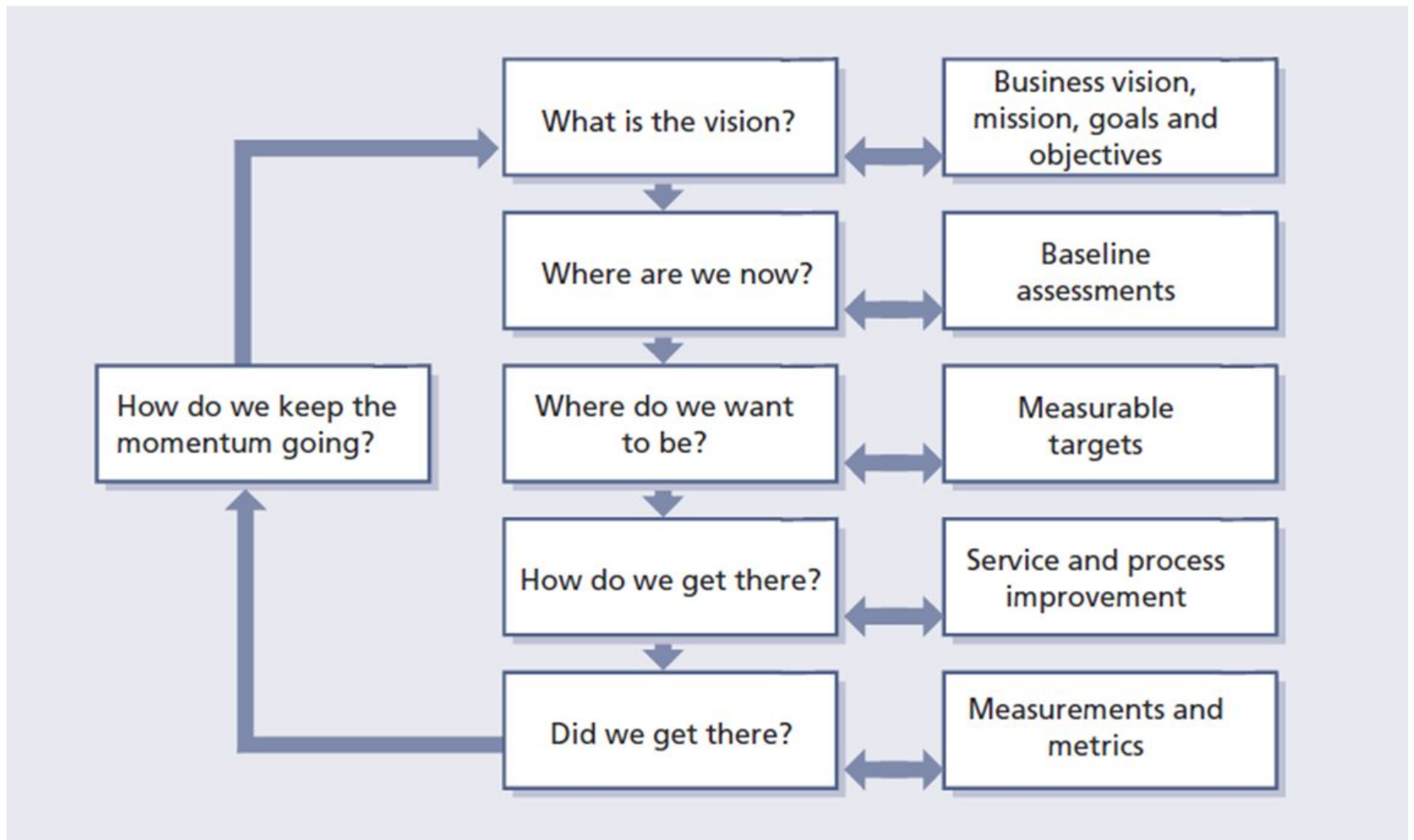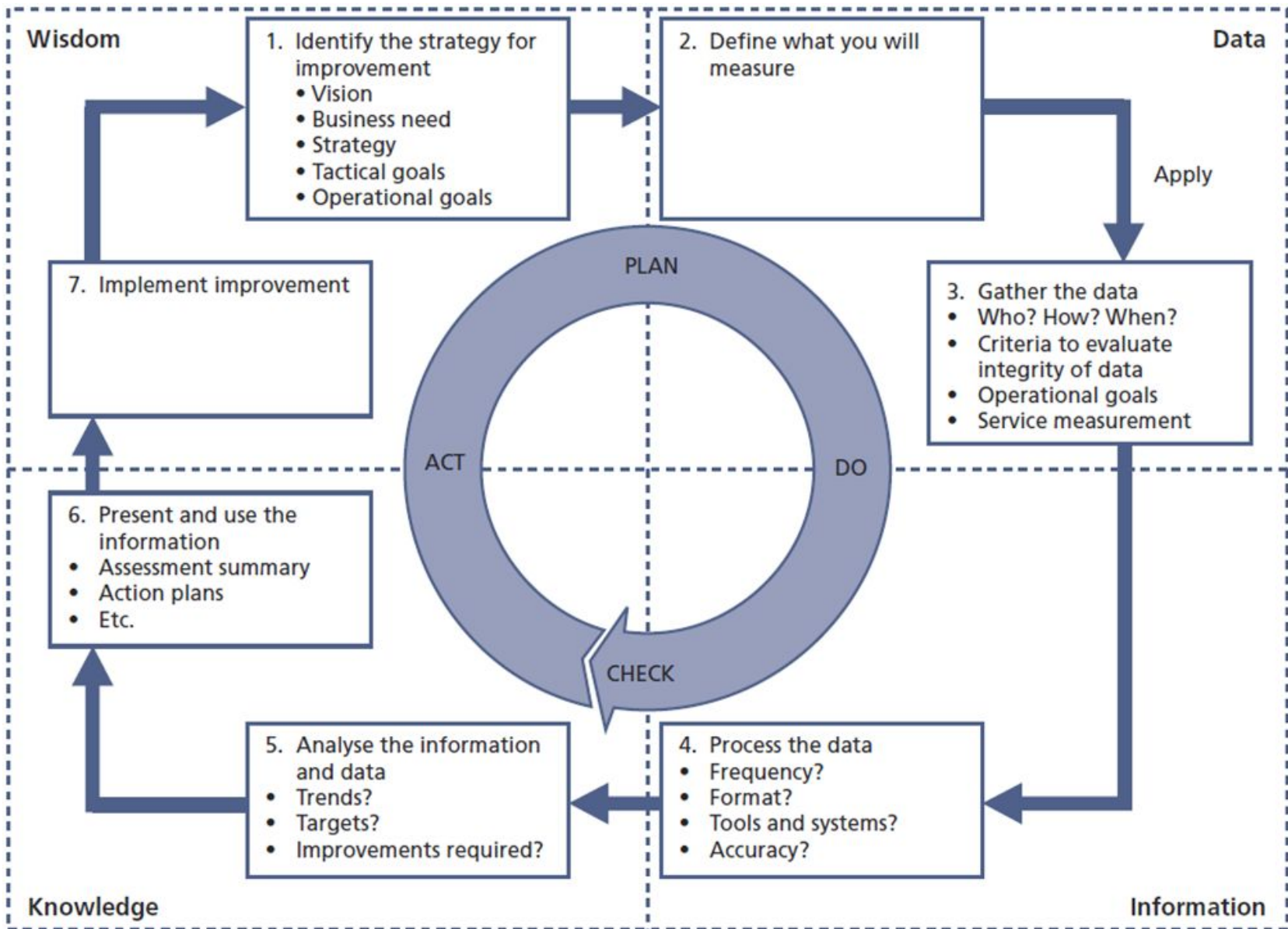
THE PDCA CYCLE

THE PDCA CYCLE

CONCLUSION   ACTION | PLAN   HYPOTHESIS

8. Decision, standardization

7. Confirm results

1. Define the problem

2. Understand causes

3. Priority order

4. Hypotheses for solutions

CHECK | DO

Yes   No

5. Implement solutions
- pilot project
- simulation

ANALYSIS

6. Check results
- does the solution work as planned ?

EXPERIMENT
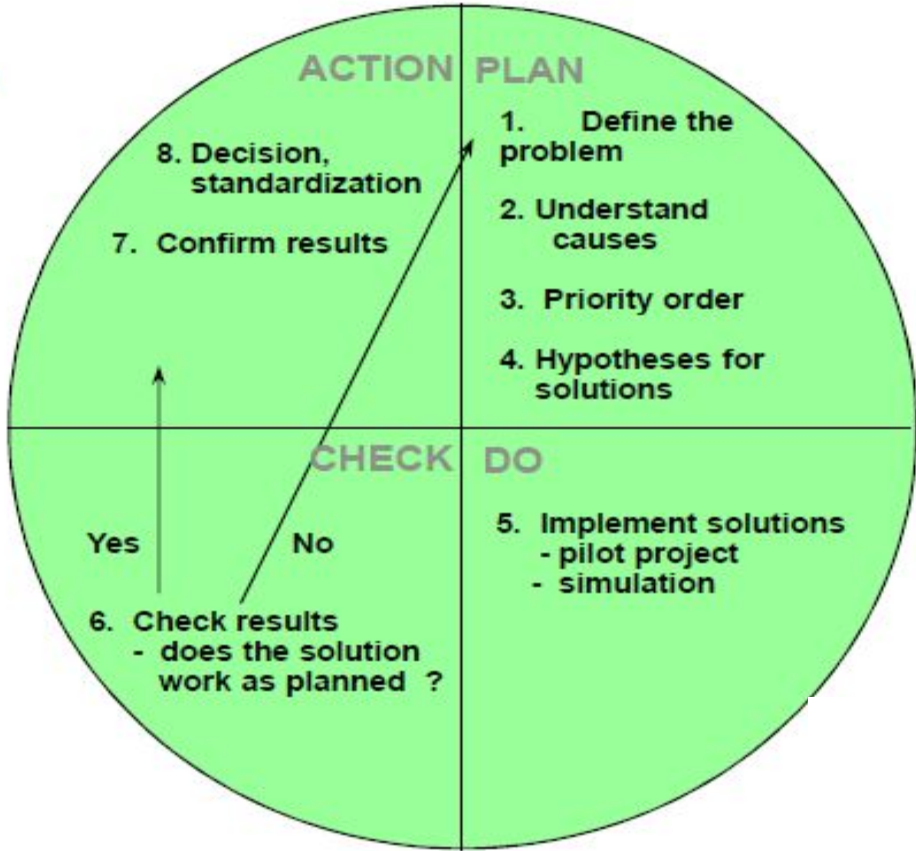
Summary of TQM – Total Quality Management

Comparison with Balanced Score Gard - BSC

Financial perspective Profitability and continuity

Customers Product and service quality

VISION and Strategy

Processes Robust and productive

Quality management of People Competent and motivated –

ADD
Social responsibility
and Sustainable development

ADD
Continuous improvement -
Struggle for betterment

Quality Management at Honeywell Oy

Mission, Vision and Values

HONEYWELL OY

- Honeywell Measurex Sales Office
  - Sales and services for IAC systems
- Honeywell Measurex Factories
  - Industrial automation system development and design, product mgnt, deliveries
- Sensing & Control
  - Importer of electrotechnical and electronics components
- H&B Products & Systems
  - Building automation and control systems
- H&B Services
  - Building services, maintenance and added value service

* 530 employees in total
* Sales 420 MFIM apprx.

OUR PURPOSE IS TO GREATE VALUE FOR SHAREHOLDERS

Our Vision

Is to delight our customer by helping to fulfill global needs for energy efficiency, a cleaner environment, greater productivity, increased safety, enhanced comfort and peace. This will enable Honeywell to achieve undisputed global leadership in control and to grow profitably, reaching our full potential for our customers, employees, investors and communities.
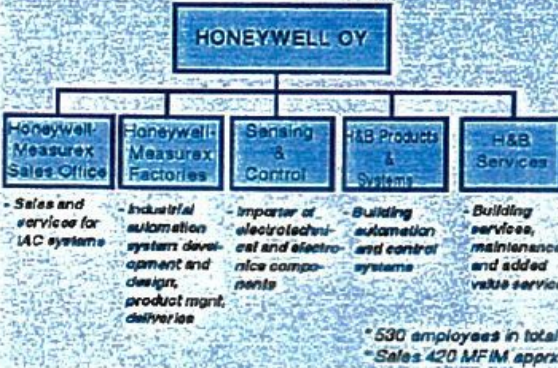
How We Will Reach Our Vision
- People
- Commitment to total Quality
- Technology
- Global Presence
- Ethics and Corporate Citizenship

Our Strategies for Growth
- To increase Honeywell's business with current customers
- To build on our strength in systems integration
- To pursue vertical markets with growth opportunities
- To expand our global presence
- To expand through worldwide channels and complementary acquisitions

What We Value
- Integrity and the highest ethical standards
- Communication that is open, consistent and honest
- Continuous improvement, development and learning in all we do
- Performance with recognition for results
- Mutual Respect and trust in our working relationships
- Diversity of people, cultures and ideas
- Innovation and encouragement to challenge the status quo
- Teamwork and meeting our commitments to one another

Environment, Health and Safety Policy (EH&S Policy)

ENVIRONMENT, HEALTH AND SAFETY POLICY : EUROPE, AFRICA AND MIDDLE EAST REGION

It is Company policy to:

- provide a safe and healthy work environment and to manage all aspects of company business in ways that minimize impact on the environment, conserve natural resources and protect human health and ensure safety

- comply with all applicable environmental, health and safety laws and regulations and establish and comply with company standard practices where laws or regulations are not adequately protective or do not exist and such practices are necessary to preserve human health or the environment

- provide training to enable employees to work safely and ensure that all employees are aware of potential hazards and hazardous materials in the workplace

- actively minimize the risk of environmental contamination

- strive for continuous, measured improvement in environmental, health and safety performance

- assign responsibility and accountability for environment, health and safety activities

Implementation of this policy through managed programs and systems is a management responsibility and every Honeywell employee will actively participate in its execution.

Each unit shall issue such policies and practices as necessary to implement the requirements of this policy.

Quality Statement

Honeywell Europe is committed to become a total quality company with employees at all levels responding to the needs of our customers, striving to bring quality to every aspect of their work and helping others do the same while achieving superior financial results

---

Honeywell Code of Ethics & Business Conduct

The Role of HQV:
- A value creating management system
- A way to integrate valid management practices
- A comprehensive way to communicate
- A realistic self-assessment tool
- A mechanism to continued improvement
- A framework for ongoing learning
- A vehicle for recognition

HQV = Honeywell Quality Value

- Leadership — 100 points
- People Management — 90 points
- Policy & Strategy — 80 points
- Resources — 90 points
- Processes — 140 points
- People Satisfaction — 90 points
- Customer Satisfaction — 200 points
- Impact on Society — 60 points
- Business Results — 150 points

HQV is based on European Quality Award criteria and implementation started in 1994

= Covered by ISO 9000

EH&S Management system at Honeywell Oy is based on SFS-EN 14001 standard

EH&S Balance

Paper consuming	5.4 Million A4-sheets
Electricity consuming	2264 MWh
Waste hazardous / landfill	-/ 460 m3
Sewage discharging	3470 m3
Transport fuel consuming	4000 l
Recycling	70 tons

Environment risk: 3*10E-6

HQV Self-assessment

ENABLERS

Following nine criteria must be evaluated annually

1. Leadership
How the executive team and all other managers inspire, drive and reflect Total Quality as the organisation's fundamental processes for continuous improvement.

2. Policy & Strategy
How the organisation's policy and strategy reflect the concept of Total Quality and how the principles of TQ are used in formulation, deployment, review and improvement of P & S

3. People Management
How the organisation releases the full potential of its people to improve its business continuously

4. Resources
How the organisation's resources are effectively deployed in support of P & S. (Financial, Information, Suppliers, Materials, Applications)

5. Processes
How processes are identified, reviewed and, if necessary, revised to ensure continuous improvement of the organisation's activities

RESULTS

6. Customer Satisfaction
What the organisation is achieving in relation to the satisfaction of its external customers

7. People Satisfaction
What the organisation is achieving to the satisfaction of its people

8. Impact on Society
What the organisation is achieving in satisfying the needs and the expectations of the community (Quality of life, the environment)

9. Business Results
What the organisation is achieving in relation to its planned business objectives and in satisfying the needs and expectations of everyone with a financial interest or stake

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Daily practices are described in unit's HQV Submission

= 500 Points

Our Points = ___
Our Goal 98= ___

Best in Class = 800

= 500 Points
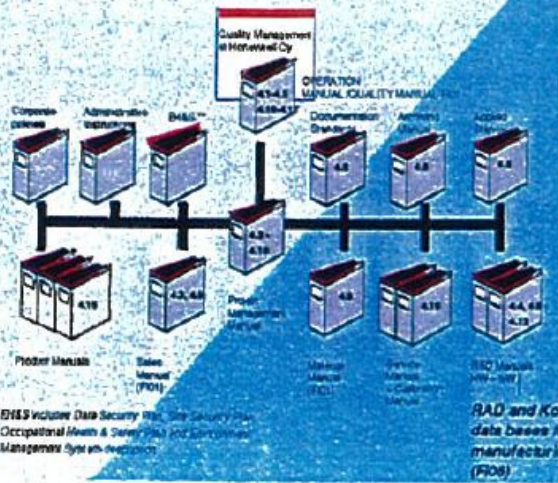
TOTAL = 1000 Points

ISO 9001 certificate gives 120-200 points

ISO 9001: Model for quality assurance in design, development, production, installation and servicing
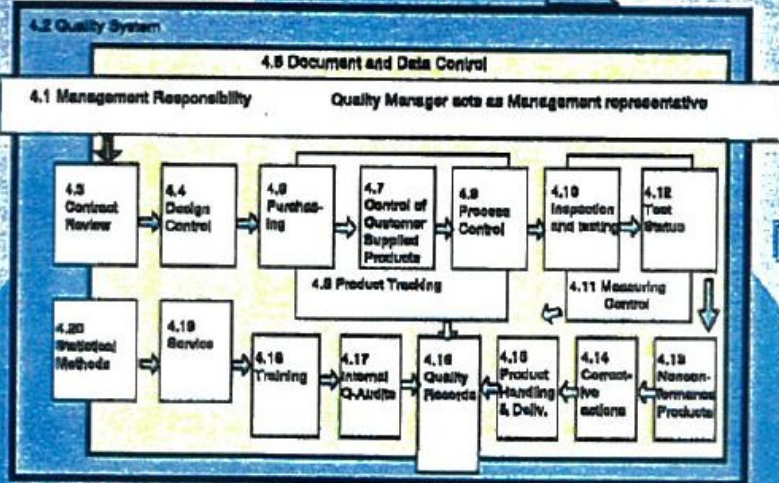
ISO 9001

Scope
Standard specifies quality system requirements for use where a supplier's capability to design and supply conforming product needs to be demonstrated.

The requirements specified are aimed primarily at achieving customer satisfaction by preventing non-conformity at all stages from design through to servicing.

Quality Documentation

** EHES includes Data Security Plan, Site Security Plan and Occupational Health & Safety Plan and Environment Management System description

4.2 Quality System

- 4.5 Document and Data Control
- 4.1 Management Responsibility — Quality Manager acts as Management representative
- 4.3 Contract Review
- 4.4 Design Control
- 4.6 Purchasing
- 4.7 Control of Customer Supplied Products
- 4.9 Process Control
- 4.10 Inspection and testing
- 4.12 Test Status
- 4.8 Product Tracking
- 4.11 Measuring Control
- 4.20 Statistical Methods
- 4.19 Service
- 4.18 Training
- 4.17 Internal Q-Audits
- 4.16 Quality Records
- 4.15 Product Handling & Deliv.
- 4.14 Corrective actions
- 4.13 Nonconformance Products

ISO 9001 Certificates
- Various R06 — 24.5.1994
- Measurex Oy — 13.12.1994
- Affiliate Finland — 26.8.1994

RAD and Kompo data bases for manufacturing (R06)

The main items by which we can evidence our ISO 9001 compliance
- All tenders, contract or orders shall be reviewed => record of reviews shall be maintained
- The effective handling of customer complaints
- The supplier shall define and document how the requirements for quality will be met
- Design reviews shall be documented
- Documents and data shall be reviewed and approved for adequacy by authorised personnel prior to issue. Note coding of documents !
- The supplier shall evaluate and select subcontractors on the basis of their ability to meet requirements
- Product identification and traceability
- Measuring and test equipment shall be calibrated
- Nonconformance products shall be identified
- Design verification and validation

Quality in Delivery Projects

Personal Quality
- Set your personal quality goals
- Control your quality level continuously
- Treat your associates in the same way as the external customers
- Keep your working environment clean and tidy
- Avoid mistakes - anticipate risks
- Do your tasks better - document the results understandably
- Use your resources sensibly
- Be committed - give and receive feedback
- Require quality also from the others

Customer does not pay for
- unnecessary work
- mistakes
- waste of time
- bureaucracy

but is ready to pay for
- high quality
- high processed products & services
- long term cooperation

Continuous Improvement
- Everything can be done better
- We are all involved in the development process
- Any problem can be solved to be a strength
- It is most important to inform of the problems and bring out any suggestions
- Write down your finding, otherwise you'll forget it
- Problems can be solved, creativity needs maturing time
- Take advantage of others' expertise and experience
- Progress gives savings and improves operation
- Carry out improvement actions quickly