

# EDUCATIONAL TRAINING PROGRAM

## 1<sup>st</sup> day

2. “How to apply a quality management system in a University through MODIP and in a Career and Liaison Office (quality policy, quality management, quality manual, evaluation plan, etc)” moderated by Maria Kaltsogianni - Maria Sigala.

**“TRAINING OF CAREER, LIAISON, TECHNOLOGY TRANSFER &  
INNOVATION OFFICE STAFF”, 1-6/8/2019  
UNIVERSITY OF WEST ATTICA**



# QUALITY MANAGEMENT SYSTEM

The adoption of a quality management system should be an important strategic decision to an organization. The design and implementation of the quality management system of an organization is influenced by

- a) the business environment that the organization operates, the changes in this environment and the risks associated with that environment*
- b) the diverse needs*
- c) the specific goals*
- d) the products provides*
- e) the processes applied*
- f) the size and organizational structure*

# Historical Background

- ▶ "Economies of scale size could only be achieved through specialization of production»

*1776, Adam Smith The Wealth of Nations*

- ▶ In the early 20th century, systems were developed for the division of work into subsystems and individual components, in order to increase efficiency.
- ▶ The latest version of ISO 9001: 2008 based on «process-centric approach»!

## The Principles of Scientific Management 1911, Frederick W. Taylor

- ▶ a) Analysis of processes and converting them into groups of standardized and repetitive activities
- ▶ b) After the division of labor in a variety of activities, required a management system suitable for the control of work
- ▶ Taylor's system catalyzed the concept of art as art

# Production line FORD in 1909

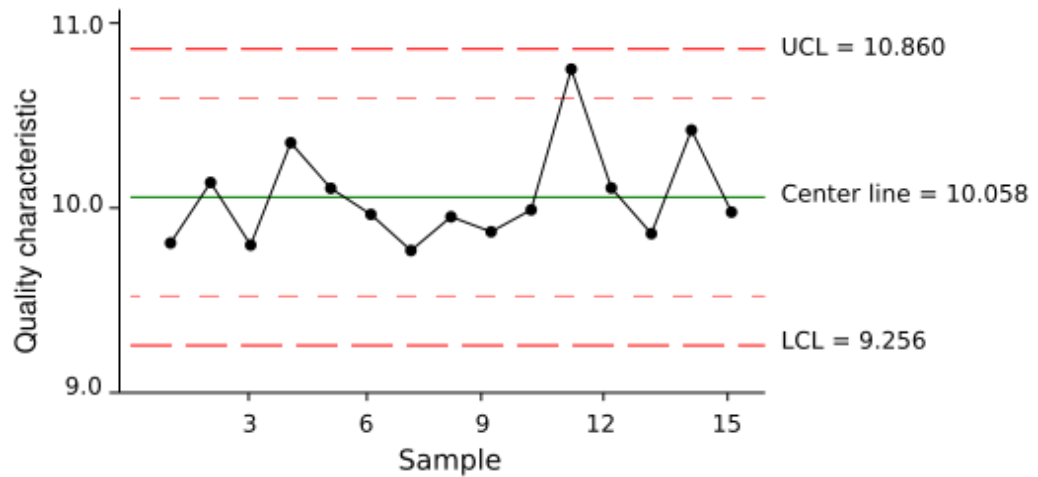
The concept of separating design from production has been the cornerstone of the system of Taylor.

Objective: Efficient production of a vehicle at a reasonable cost. The Henry Ford adopted four principles:

- ▶ Interchangeable parts,
- ▶ Continuous flow,
- ▶ Division of work and
- ▶ Reduction of losses.

## Walter A. Shewhart - Bell Telephone

1920 - Statistical  
Process Control, SPC  
1924 - Control  
Chart



**PLAN for changes to bring about improvement**

Customer/supplier mapping  
Flowcharting  
Pareto analysis  
Brainstorming  
Nominal group technique  
Solution/fault tree  
Evaluation matrix  
Cause & Effect diagrams

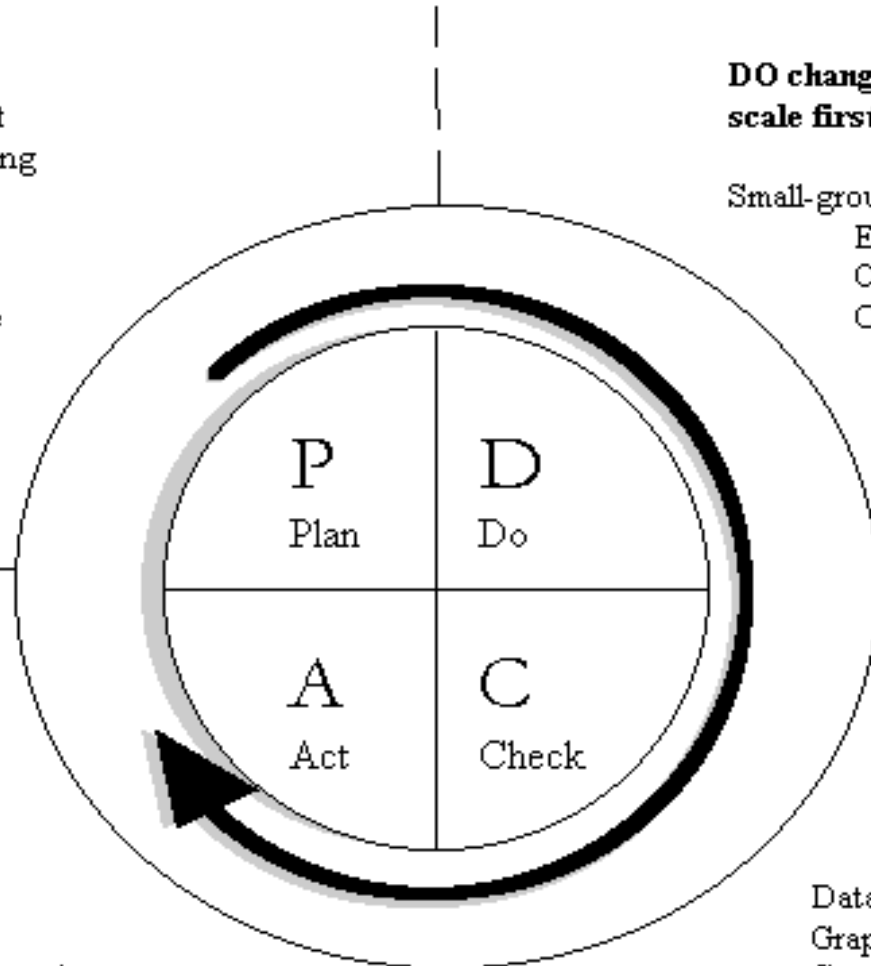
**DO changes on a small scale first to trial them**

Small-group leadership skills  
Experiment design  
Conflict resolution  
On-Job training

Dr. W. Edwards Deming

«The father of the third Wave of the Industrial Revolution»

PDCA



**ACT to get the greatest benefit from changes**

Process mapping  
Process standardisation  
Controlled reference information  
Formal training for standard processes

**CHECK to see if changes are working and to investigate selected processes**

Data checksheets  
Graphical analysis  
Control charts  
Key performance indicators

<http://www.sqaki.com/Deming/>

## The Fourteen Points of Deming (1-7)

- ▶ The constant pursuit of better products and services, with the ultimate aim of maintaining competitiveness, duration and provide new jobs.
- ▶ The adoption of the new philosophy. We are in a new economic era. Western governments must accept the challenge to become familiar with their new responsibilities and to oversee the changes.
- ▶ The dependence of the control to achieve quality. The need for screening should be eliminated from the start incorporating quality into the product itself.
- ▶ The abolition of the practice of establishing a business relationship with suppliers based on their values, for the benefit of the reduction in overall costs. Developing relationships with a single supplier for each material, based on trust and loyalty.
- ▶ The continuous improvement of the system of production and service, to improve quality and productivity and thus constantly decrease costs.
- ▶ The introduction of education at work.
- ▶ Establishing leadership. The aim of supervision should be to empower people and machines to improve their performance. Both the supervision of the administration and supervision of production workers should be inspected thoroughly.



## The Fourteen Points of Deming (8-14)

- ▶ The abolition of fear, to work effectively, all the employees of the organization
- ▶ The removal of barriers between departments. Those working in research, design, sales and production must work as a team to provide the errors during production and use of products / services.
- ▶ The removal slogans, prompts and targets for the workforce require the complete elimination of errors and achieve higher levels of productivity. Such exhortations only complicate relationships, as most causes of low quality and productivity inherent in the system itself and can not be controlled from the workforce.
- ▶ The elimination of labor standards (quotas) on the production line. Replace them with leadership.
- ▶ The elimination of management based objectives and eliminating administration on numbers and numerical goals. Replace them with the leadership.
- ▶ The removal of barriers that deny their hourly workers a sense of pride in their work. The responsibility of supervisors must be switched from numbers to quality. The removal of barriers that deny the administrators and employees to design a sense of pride in their work. Among other things, this involves removing the abolition of the annual assessment of their competencies and management based on objectives.
- ▶ The introduction of an intensive training program and personal improvement.

**Joseph Juran,**

“The father of the quality trilogy”:

- ▶ design,
- ▶ control and
- ▶ improve the quality
- *1937, portrayed the principle Pareto*
- *1941, Business Process Reengineering (BPR)*
- *1951, Print the first version, fundamental for the quality control work, Quality Control Handbook*

## Genichi Taguchi

- ▶ *1960-1980: Japanese Quality Revolution*
- ▶ *1950, was invited to contribute to the reconstruction of the damaged phone network in Japan*
- ▶ *developed its own comprehensive methodology for the implementation of planned experiments (DOE)*

## Shigeo Shingo

- ▶ 1960-1980: Japanese Quality Revolution
- ▶ 1960, poka-yoke System
- ▶ **inevitable error**
- ▶ **prevents**
- ▶ This system is based on the design process so as to preclude the possibility of error or at least to identify and correct any errors comfortably. The mechanisms of poka-yoke system fall into two categories:
  - ▶ **the prevention and**
  - ▶ **detection.**

## 1980-In progress: The American Movement Quality

- ▶ Add TQM (Total Quality Management, TQM)
- ▶ Timely and Lean Production (Just-In-Time and Lean Manufacturing)
- ▶ Business Process Reengineering (Business Process Reengineering, BPR)
- ▶ 6-Sigma (2nd generation)
- ▶ The Lean Production is a rebirth in the United States of the methods and concepts of Production System Toyota.
- ▶ Total Quality Management focuses largely on the results within the organization in general and not the business.
- ▶ The Motorola developed the first generation of 6-Sigma, based on Total Quality Management (80s) The second generation of 6-Sigma was developed in company AlliedSignal in 1994.
- ▶ The Business Process Reengineering is focused on improving the performance of processes.

High-quality career services centers benefit marketing students by providing a full range of career counseling and job placement information so that when they enter the workforce, they are prepared to make better job choice decisions leading to more satisfying and productive careers.

Marketing education is best viewed as a process that begins with student recruitment and ends with the placement of graduates into meaningful positions of responsibility (Kelley and Gaedeke 1990).

Students, parents, and legislatures increasingly are concerned about the institution's ability to assist students in becoming successful members of society.

Academic program outcomes can be measured via three strategies: (1) the value-added approach, (2) the career success approach, and (3) the impact approach (Jennings 1989). The value-added approach is based on the premise that educational programs are intended to change students along a multitude of dimensions with respect to knowledge, attitudes, and skills.

A second strategy is the career success approach, which determines how the educational degree affects the careers of recipients. Assessment tracks the quality of placements that graduates receive, their on-the-job performance ratings, career trajectories, earnings levels, and promotions earned. A third strategy, the impact approach, attempts to evaluate the program on the basis of the relative contribution of the program graduate to the organization's success.

Marketing faculty members have a valuable contribution to make in assuring the quality of career services provided to their students. Faculty members are participating on school and university committees charged with developing procedures that evaluate both curricular and extracurricular outcomes for students, with special emphasis on placement. Marketing-trained faculty members have expertise in gathering and evaluating information about attitudes, opinions, and behaviors, and training in organizational performance assessment, which often involves the validation and use of external performance metrics. Effective assessment of placement efforts requires the development, validation, and adaptation of performance metrics that tap student (and graduate) attitudes about quality, value, and satisfaction.

Evolving from a single-purpose administrative unit offering a narrow range of placement services, college placement offices have largely become comprehensive services centers providing a complex array of career-related services to multiple constituent groups. In an effort to reflect this transition toward a more comprehensive mission, many placement offices have changed their names to Career Development and Placement Services, Career Planning and Placement Services, or simply, Career Services. Correspondingly, the breadth of services offered by these centers has expanded from merely offering on-campus recruiting operations, to including career development and planning programs for freshmen and sophomores, as well as career assistance and involvement with alumni throughout their life (Barr and Upcraft 1993).



Unfortunately, in a survey, Workman, Engelland, and Singh (1997) found that little objective assessment of programs and procedures is actually being conducted. What gets measured “has more to do with gathering statistics that make the university look good rather than improving value for students” (p. 177). Critical weaknesses in the assessment programs at many schools exist because assessment is focused on graduates rather than on current student users, and students do notice this deficiency.

The literature suggests that a growing importance is placed on the measurement of service quality, and this importance is reflected in a significant stream of academic research devoted to this subject. Parasuraman, Zeithaml, and Berry (1994) have made a number of major contributions to this literature stream. In a theoretical foundation piece, Parasuraman, Zeithaml, and Berry (1985) demonstrated that the measurement of the service quality construct has been elusive and indistinct. Shedding some light on the measurement problem, they proposed a measurement approach (Parasuraman, Zeithaml, and Berry 1985) and subsequently proposed an instrument called SERVQUAL, reported in Parasuraman, Zeithaml, and Berry (1988) and further refined in Zeithaml, Parasuraman, and Berry (1990). While the researchers’ conceptualwork initially identified 10 dimensions, their analysis distilled these dimensions to 5, which they named *tangibles*, *reliability*, *responsiveness*, *assurance*, and *empathy*.

**APPENDIX TABLE A.1**  
**Original and Revised SERVQUAL Scale Items**  
**for Assessment of Career Services Centers**

<i>Original SERVQUAL Items</i>	<i>Revised Items</i>
<p><b>Tangibles</b>            Have up-to-date equipment            Have visually appealing physical facilities            Have well-dressed and neat-appearing employees            Have visually appealing physical facilities</p> <p><b>Reliability</b>            Promise to do something by a certain time, then do it            Show a sincere interest in solving your problems            Are dependable            Provide services at the time they promise to do so            Keep their records accurately.</p> <p><b>Responsiveness</b>            Tell students when they will be served            Serve students promptly            Always be eager to provide assistance            Never be too busy to respond to requests promptly</p> <p><b>Assurance</b>            Have employees who earn your trust            Help students feel safe in their transactions            Have polite employees            Will have the knowledge to answer your questions</p> <p><b>Empathy</b>            Have employees who give personal attention            Know the needs of their customers            Have the student's best interests at heart            Have operating hours convenient to all</p>	<p><b>Tangibles</b>            Have information readily available for job searches            Cover job opportunities in all geographical areas            Present a full range of career-planning resources            Have complete information on employers</p> <p><b>Reliability</b>            Promise to do something by a certain time, then do it            Show a sincere interest in solving your problems            Provide the right information the first time            Insist on error-free records</p> <p><b>Responsiveness</b>            Tell students when they will be served            Serve students promptly            Always be eager to provide assistance</p> <p><b>Assurance</b>            Be consistently courteous with students            Be friendly and courteous when I phone them            Show respect for students</p> <p><b>Empathy</b>            Have employees who give personal attention            Have the student's best interest at heart            Have operating hours convenient to all</p>

NOTE: SERVQUAL-style elicitation requires that the respondent answer the above indicators twice—first with respect to excellent career service centers (CSCs) to develop a service expectations score, and second, with respect to their campus CSC to develop a service performance score. Responses are recorded on a 7-point format, from 1 = *strongly disagree* to 7 = *strongly agree*.



# QUALITY

- ▶ “The trilogy of quality: plan, control, improve”
- ▶ “Quality does not necessarily “declares” the “best product/service” but the best product/service for the use & the cost we wish”
- ▶ “Our goal...is meeting your needs”
- ▶ “Dream, plan, achieve”



PLAN:  
**B**





- ✓ **Liaison Office of T.E.I. of Piraeus**  
**has established and applies a quality management system For Counselling and Advising Services to Educational, Employment and Practical Training Issues.**
- ✓ **Proof has been furnished that the requirements according to DIN EN ISO 9001:2008 are fulfilled.**

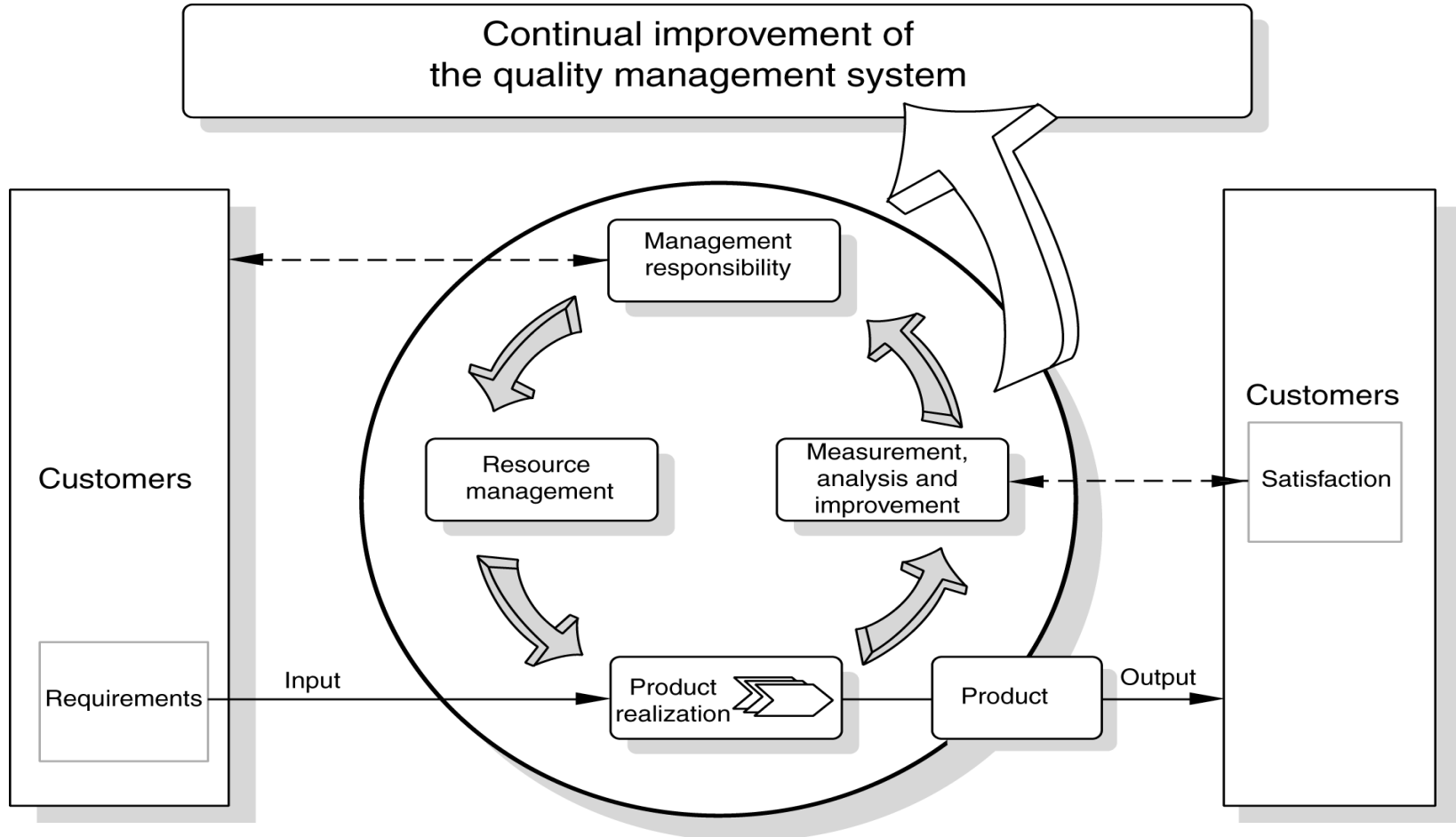




## ISO 9001:2008 CONTENT

- ▶ 1 Scope
- ▶ 1.1 General
- ▶ 1.2 Application
- ▶ 2 Normative references
- ▶ 3 Terms and definitions
- ▶ 4 Quality management system
- ▶ 4.1 General requirements
- ▶ 4.2 Documentation requirements
- ▶ 5 Management responsibility
- ▶ 5.1 Management commitment
- ▶ 5.2 Customer focus
- ▶ 5.3 Quality policy
- ▶ 5.4 Planning
- ▶ 5.5 Responsibility, authority and communication
- ▶ 5.6 Management review
- ▶ 6 Resource management
- ▶ 6.1 Provision of resources
- ▶ 6.2 Human resources
- ▶ 6.3 Infrastructure
- ▶ 6.4 Work environment

- ▶ 7 Product realization
- ▶ 7.1 Planning of product realization
- ▶ 7.2 Customer-related processes
- ▶ 7.3 Design and development
- ▶ 7.4 Purchasing
- ▶ 7.5 Production and service provision
- ▶ 7.6 Control of monitoring and measuring equipment
- ▶ 8 Measurement, analysis and improvement
- ▶ 8.1 General
- ▶ 8.2 Monitoring and measurement
- ▶ 8.3 Control of nonconforming product
- ▶ 8.4 Analysis of data
- ▶ 8.5 Improvement



**Key**

————▶ Value-adding activities

- - - -▶ Information flow

# Quality Policy

It is the job of the Liaison Office to provide top quality services, both to the educational community and to public and private sector companies, organizations, local authorities and collective bodies. By providing such services, the University aims to:

- ▶ Contribute to the training, specialization and professional placement of graduands and graduates of the Institute.
- ▶ Help businesses find the specialized staff they need.
- ▶ Keep the Institute informed of the needs and demands of production and to participate in activities related to the adaptation of Study Programmes.
- ▶ Co-operate with similar offices in A.E.Is and T.E.Is throughout Greece and abroad.
- ▶ A fundamental principle and commitment of the Liaison Office at the T.E.I. of Piraeus, and, indeed, the guiding philosophy of each member of its staff, is to provide all interested parties with services that meet their requirements fully, that comply with regulatory demands and that meet the quality standards that the Liaison Office insists on.

# Quality Policy

- ▶ To guarantee quality, the management of the Liaison Office
- ▶ Has introduced a quality assurance system which complies with ISO 9001:2008. This has been applied to all aspects of the Office's work and to all the activities it is involved in which affect the quality of service it offers and the assistance it provides to students and other interested parties.
- ▶ Continually reviews and improves its services wherever possible to maximize the effectiveness of its procedures and, by extension, of its Quality Assurance System as a whole.
- ▶ Has established measurable objective targets for quality in the Office, Departments, procedures and services. Efforts to achieve these targets are regularly appraised by the Senior Management of the Liaison Office as part of the Quality Assurance review process.
- ▶ Strives to ensure the necessary resources are available to enable each section of the Office to operate freely, effectively and efficiently.
- ▶ Invests in ongoing training and education to keep its staff abreast of contemporary developments and to promote the concept of Quality throughout all the office's activities.
- ▶ Monitors, measures and appraises all the vital parameters and procedures to ensure it achieves its targets.
- ▶ By adopting the principle of ongoing improvement, the Liaison Office
- ▶ Recognizes and rewards team work and individual effort, makes an investment in people and
- ▶ shows its respect for students and other interested parties.





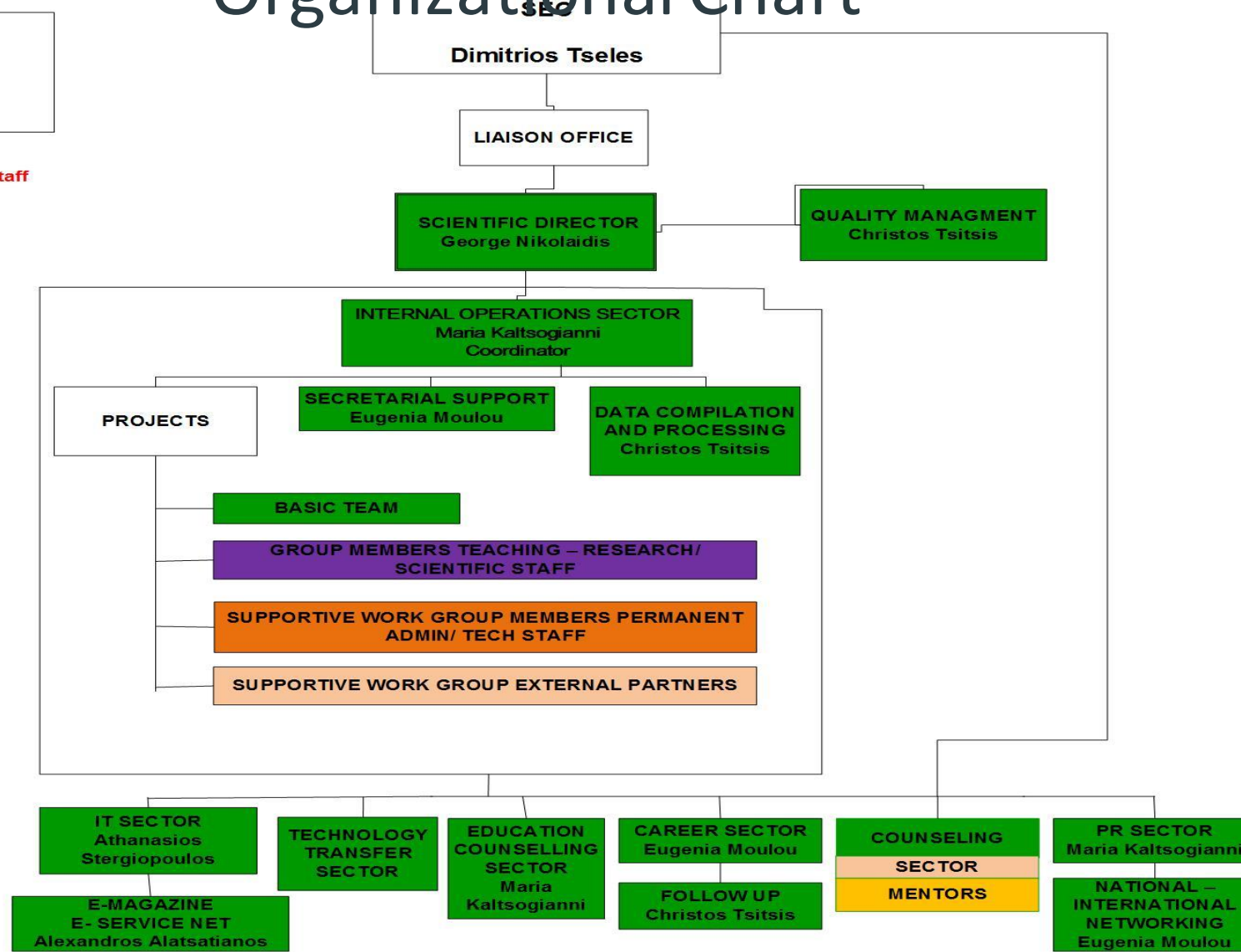
## Quality Manual

Has full description of all the standardized processes and procedures that are used by the liaison office for all the services provided.

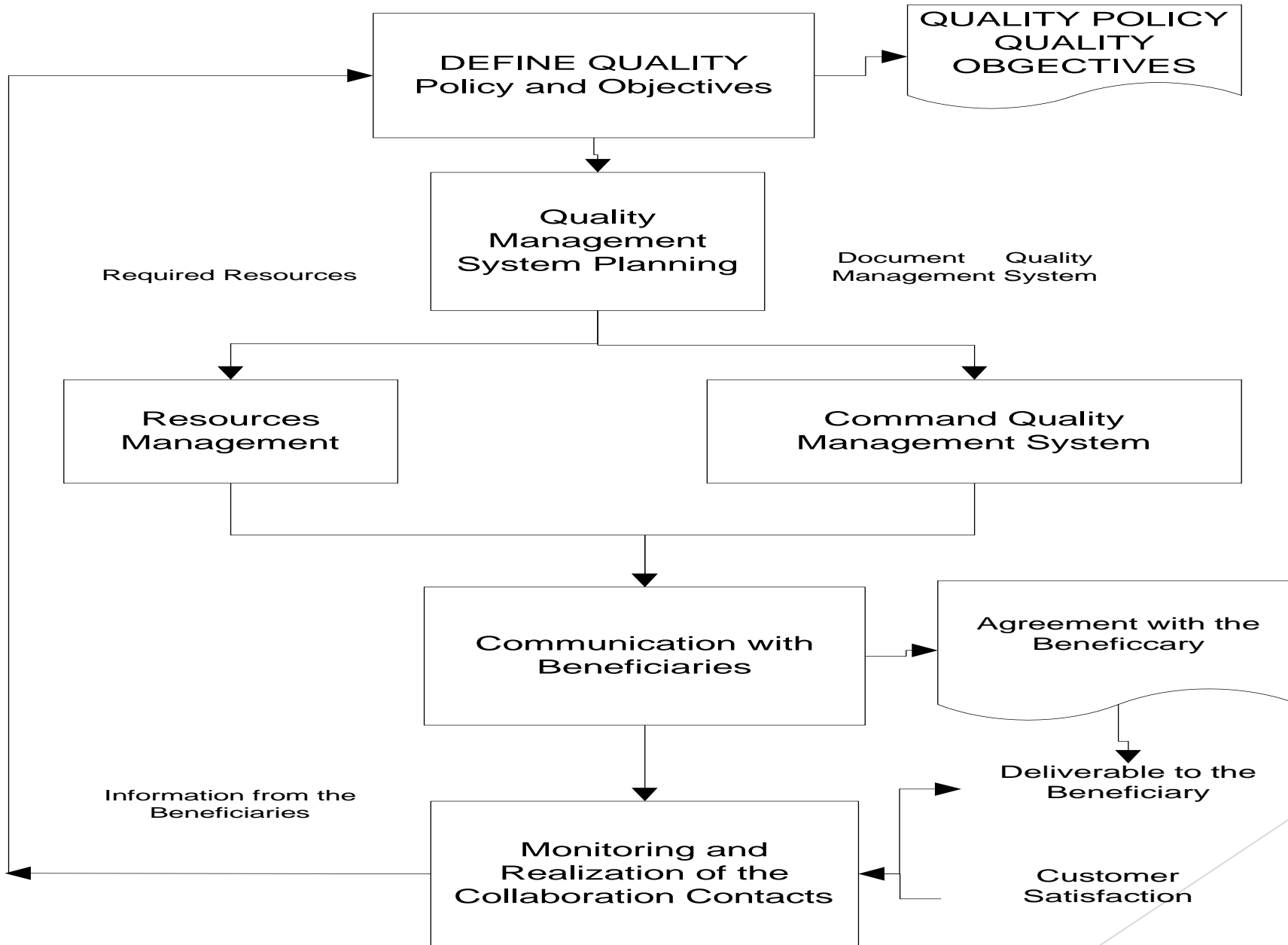
# Organizational Chart

\*Job Profiles Research Team

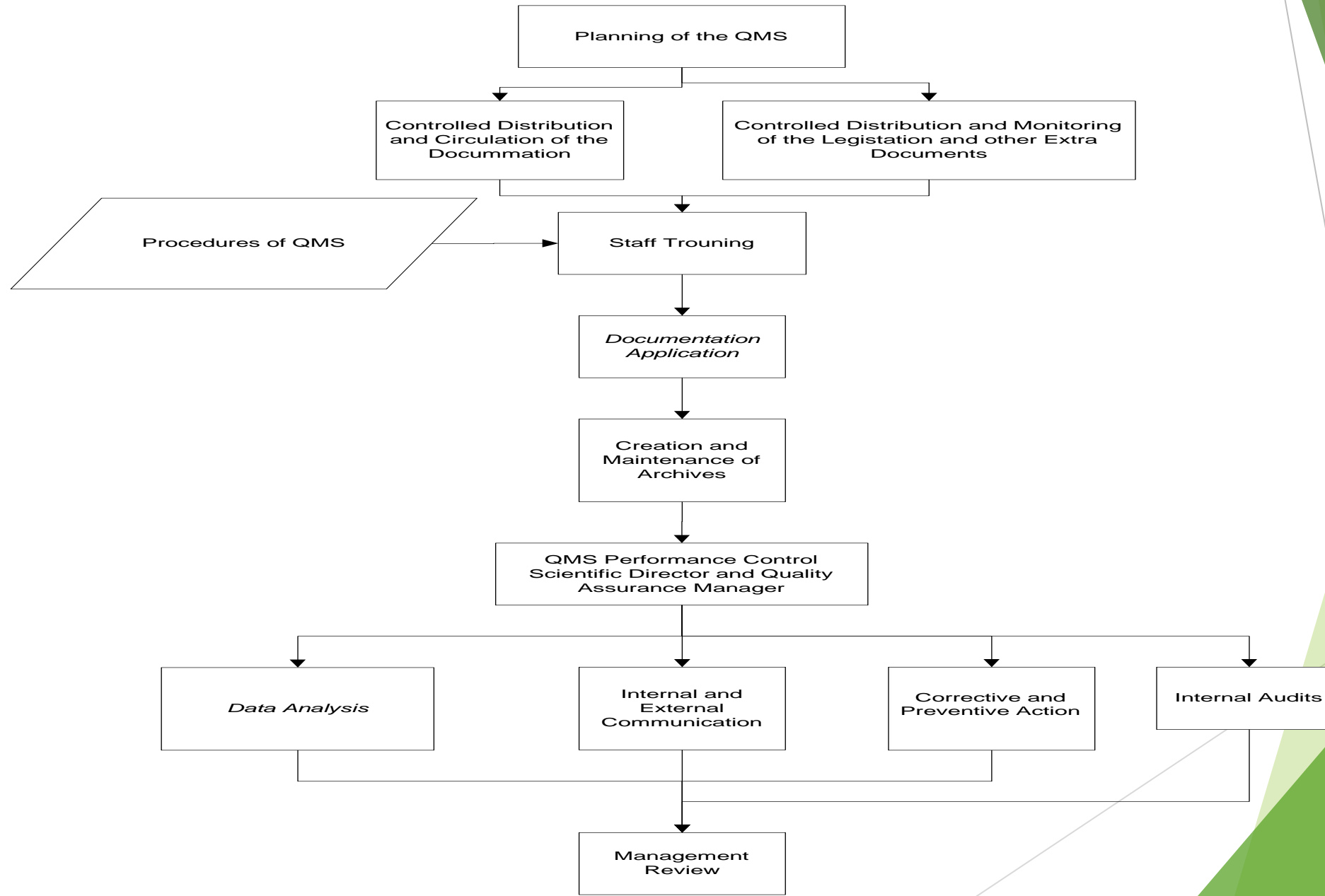
- Graduate Survey Team
- Job Market Research Team
- Mentors Team
- Professors
- Permanent Administrative Staff
- Fixed Term Staff
- Exterior Colaborators



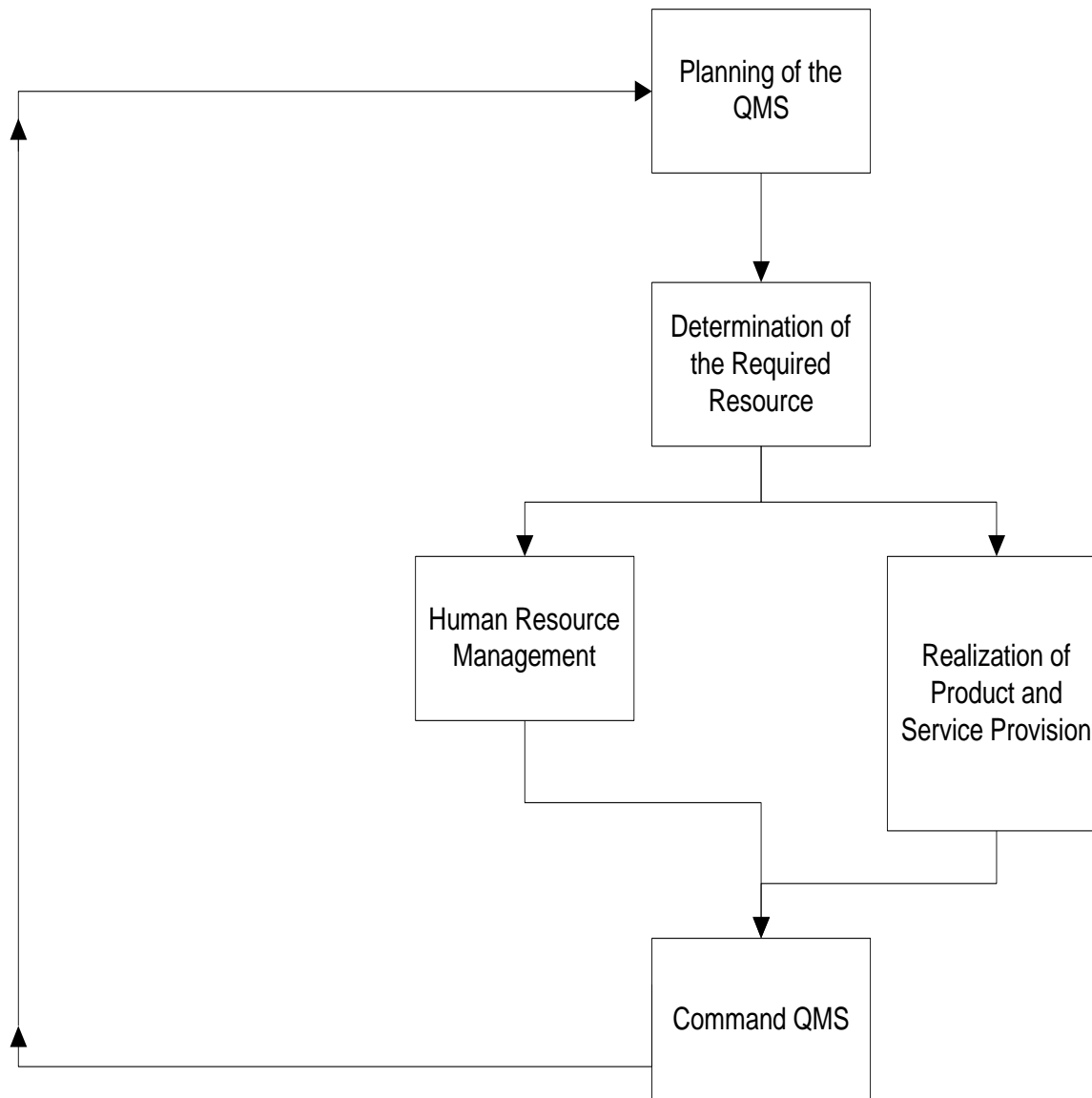
# Basic Processes



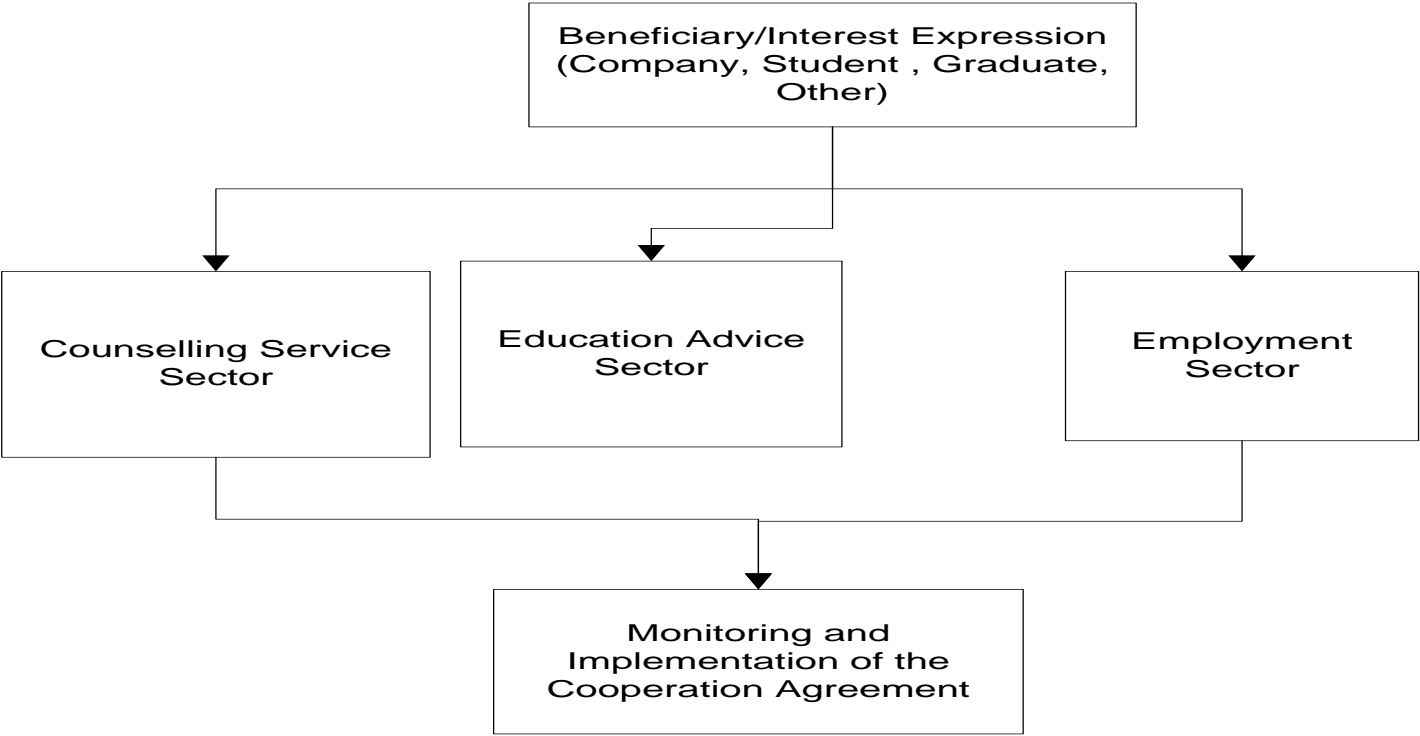
## Command of the Quality Management System



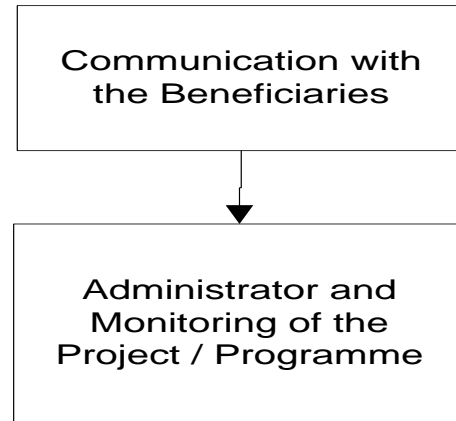
## Resource Management



# Communication with Beneficiaries



## Monitoring and Implementation of the (realization) project / programme



# TECNOLOGY TRANSFER SECTOR

PROVIDING SPECIALIZED SERVICES TO TECHNOLOGY TRANSFER WORKSHOPS & SUPPORT COOPERATION CONTRACTS

LEGAL SUPPORT & INFORMATION ON INTELLECTUAL PROPERTY

PERSONALIZED INFORMATION & COUNSELING FOR NATION & COMMUNITY PROGRAMS ON RESEARCH & TECHNOLOGICAL DEVELOPMENT(RTD) IN INNOVATION & ENTREPRENEUSHIP

RECORDING & MONITORING OF BASIC & APPLIED RESEARCH CONDUCTED

SEMINARS ON ENTREPRENEUSHIP

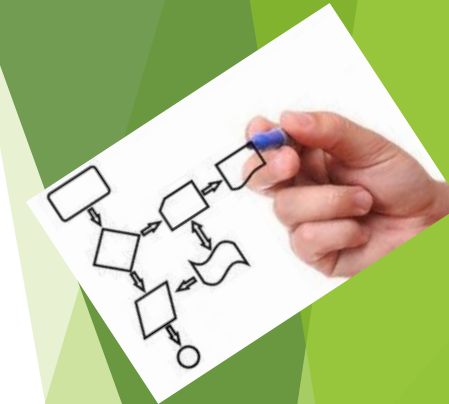
METHODICAL & ONGOING INFORMATION & SUPPORT OF SCIENTIFIC & TECHNICAL PERSONEL FOR POSSIBLE COLLABORATIONS

MAPPING OF CURRENT MARKET DEMAND FOR PRODUCTS & SERVICES OF GENERAL & SPECIALIZED SERVICES



# Quality Management System Procedures Catalog

Serial Number A/A	Procedure Code	Procedures of the QMS
1.	P 1	Development and Improvement
2.	P 2.1	Control of Documents and Records
3.	P 2.2	Corrective and Preventive Action
4.	P 2.3	Internal Audits
5.	P 3.1	Human Resource Management
6.	P 3.2	Products and Services Provision Process
7.	P 4.1	Counseling Service Sector
8.	P 4.2	Education Advice Sector
9.	P 4.3.1	Employment Sector (Companies)
10.	P 4.3.2	Employment Sector (Students , Graduates)
11.	P 4.4	Integrated Information System
12.	P 5.1	Technology Transfer Sector



# List of Documented Records Required



Serial Number A/A	Record Code	QMS Records/Documents
1.	D 2.1.1	QMS Documents Catalog
2.	D 2.2.1	Problems and Complaints
3.	D 2.3.1	Audit Program
4.	D 2.3.2	Audit Report
5.	D 3.1.1	Personnel's Education
6.	D 3.1.2	Individual Evaluation Form
7.	D 3.1.3	Staff Evaluation Catalog
8.	D 3.1.4	Staff State Check in – Check out
9.	D 3.2.1	Suppliers Evaluation Catalog
10.	D 4.3.1	Notification Form of Available Job or Practical Training Offers
11.	D 4.3.2	Inventory Card/Census Form
12.	D 4.3.3	Companies Service Evaluation Questionnaire
13.	D 4.3.4	Students /Graduates Service Evaluation Questionnaire
14.	D 4.3.5	Loyalty card – Complaint

<b>Serial Number A/A</b>	<b>Record Code</b>	<b>QMS Records/Documents</b>
15.	D 5.1.1	Assignment of patent rights (Inventor-University)
16.	D 5.1.2	Confidential disclosure agreement (disclosure information) (University-Company)
17.	D 5.1.3	Confidential disclosure agreement (patent information) (University-Company)
18.	D 5.1.4	General Procedure for Disclosing an Invention (University – Inventor)
19.	D 5.1.5	Invention Disclose Form (University – Inventor)
20.	D 5.1.6	Agreement As to Invention Rights (University Research Foundation- Inventor)
21.	D 5.1.7	License agreement (University-Company)
22.	D 5.1.8	Material Transfer Agreement (nonbiological materials template) (University-Company)
23.	D 5.1.9	Material Transfer Agreement (outside materials- receive) (University-Company)

## List of Documented Records Required

<b>Serial Number A/A</b>	<b>Record Code</b>	<b>QMS Records/Documents</b>
24.	D 5.1.10	<b>Information Needed By PUAS- Sponsored Research for Requests for Materials</b> (University – Inventor)
25.	D 5.1.11	<b>Option Agreement</b> (University-Company)
26.	D 5.1.12	<b>Software License</b> (University-Company)
27.	D 5.1.13	<b>Software Transfer Agreement</b> (University-Company)
28.	D 5.1.14	<b>Terms and Conditions for Patent License</b> (University-Company)
29.	D 5.1.15	<b>Visiting Scientist Agreement</b> (University – Inventor)
30.	D 5.1.16	<b>PUAS-IRB Principal Investigator’s Manual (IRB= Institutional Review Board)</b> (University – Inventor)
31.	D 5.1.17	<b>Types of Projects: Does my Project Require IRB Review?</b> (Environment-Investigator Control)
32.	D 5.1.18	<b>Report of Potential Conflict of Interest , Outside Activity/Employment</b> (Inside Investigator Group)
33.	D 5.1.19	<b>Permission to use University Personnel, Equipment, Facilities, Students or Service Forms</b> (University – Inventor)
34.	D 5.1.20	<b>Do I Need to be Concerned About Export Controls?</b> (University – Inventor)
35.	D 5.1.21	<b>Request for Service Fee in Lieu of Facilities and Administrative Cost Rate Form</b> (University – Inventor)
36.	D 5.1.22	<b>Faculty Funding Search Request</b> (University – Inventor)

# EMPLOYMENT SECTOR (example)

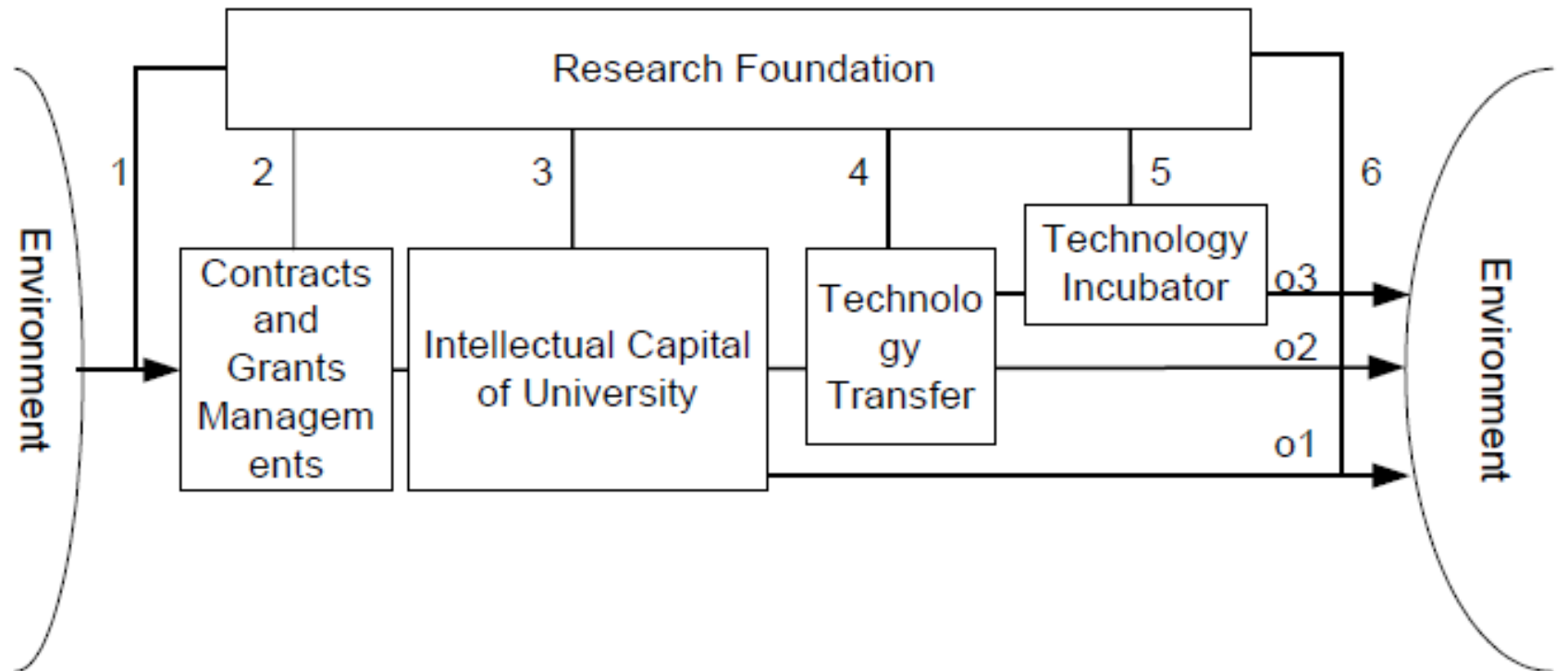
- ▶ **The Office is here to offer** a link between the Institute's Students and companies in the Public and Private Sector, Organisations, Local Authority Services and Collective Bodies such as Business Chambers, Co-operatives, etc., by helping to:
- ▶ Fill job vacancies with graduates from the various departments and to supply graduands for companies offering Work Placement.
- ▶ The services provided by the Department can be used by:
- ▶ Students / graduates who are seeking practical training / job opportunities or who need information about opportunities-prospects to continue their studies
- ▶ Companies-Organisations which are looking for specialised staff to fill job vacancies and seeking to develop co-operation with the Institute.

- ▶ Procedure-Documents
- ▶ Code of ethics
- ▶ Applications (paperbased, webbased, etc)
- ▶ Database with job vacancies and students or graduates searching
- ▶ Anouncements, job alerts
- ▶ Events (career days, job fairs, workshops, etc)
- ▶ Career Guides, Job Profiles, Career Path Monitoring Research, Market Research
- ▶ Services (web, emails, phonecalls, face to face, visits, psychometric tools, workshops etc)
- ▶ Follow up
- ▶ Evaluation
- ▶ Improvement

## Other records kept

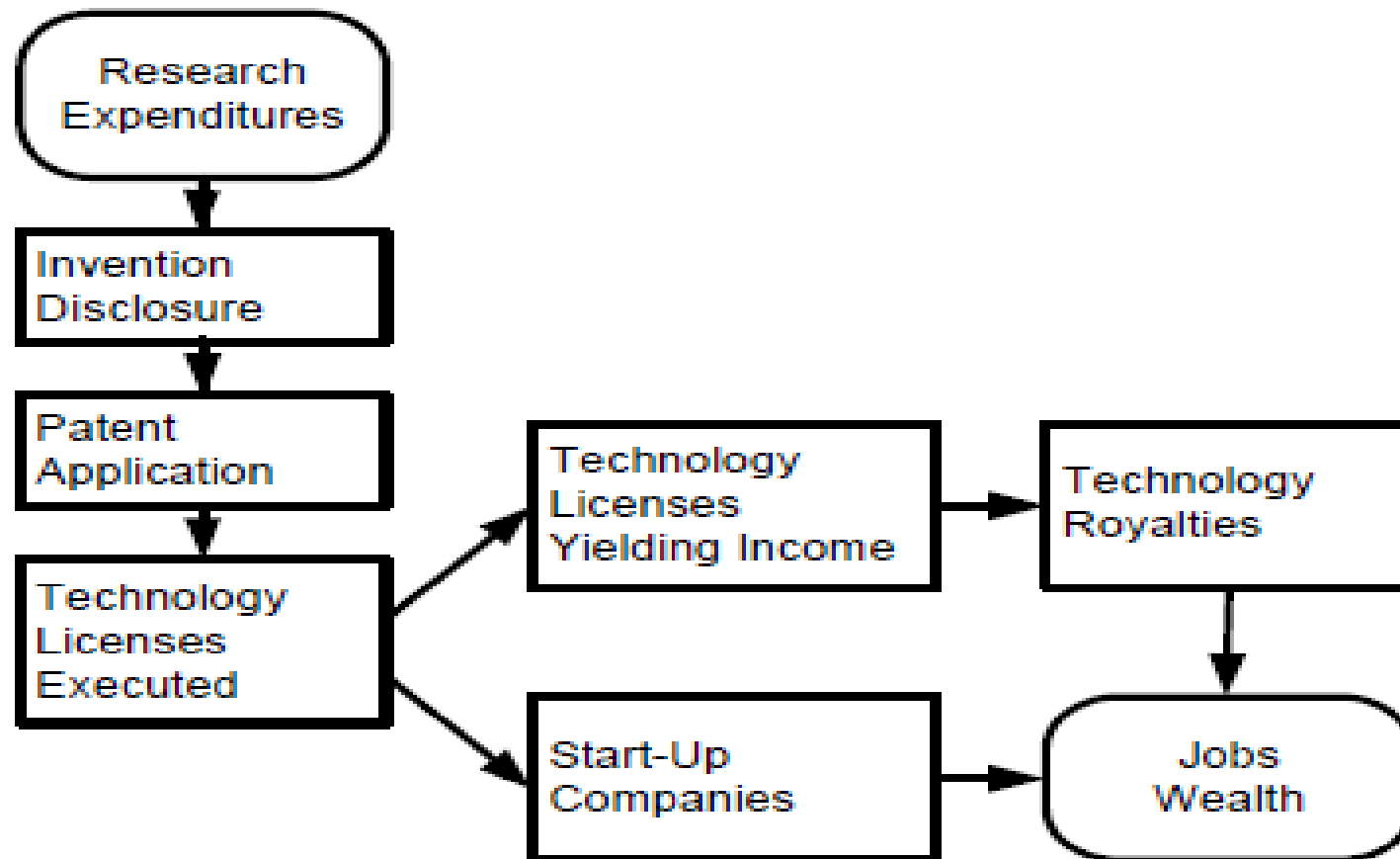
- 1. Interim Evaluation Annual Report**
- 2. Annual action plan**
- 3. Technical Project Bulletin**
- 4. Monthly expenditure monitoring reports**
- 5. Operation Progress Monitoring Sheet**
- 6. Financial Forms**
- 7. Administrative Forms**
- 8. Application Forms**
- 9. Sworn Statements**
- 10. Project Plan**
- 11. Personnel's Duties Catalog**
- 12. Job Descriptions**
- 13. Plenary session proceedings**
- 14. Code of ethics**

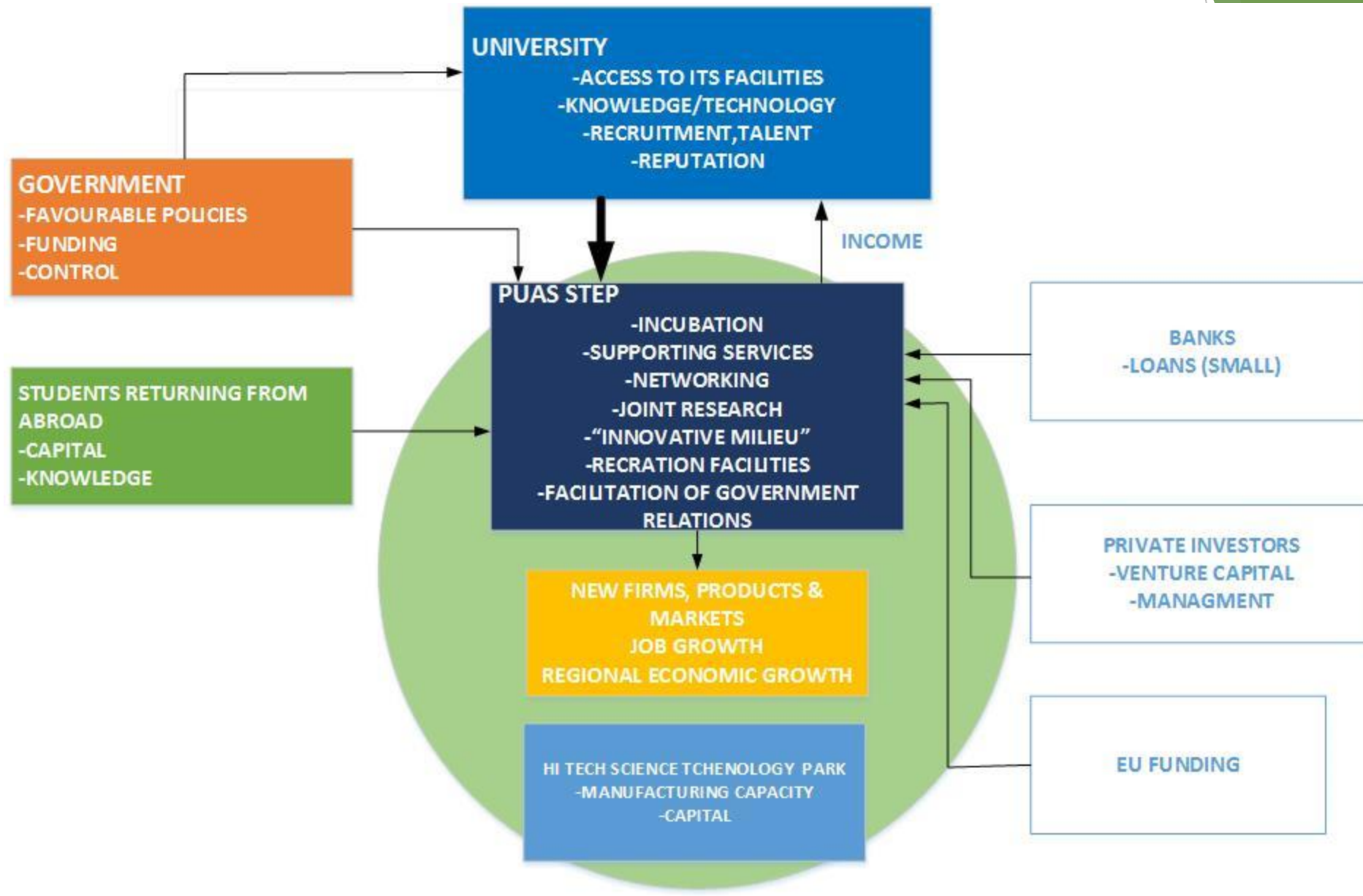
## *Potential Model of the Technology Transfer System in UNIWA*

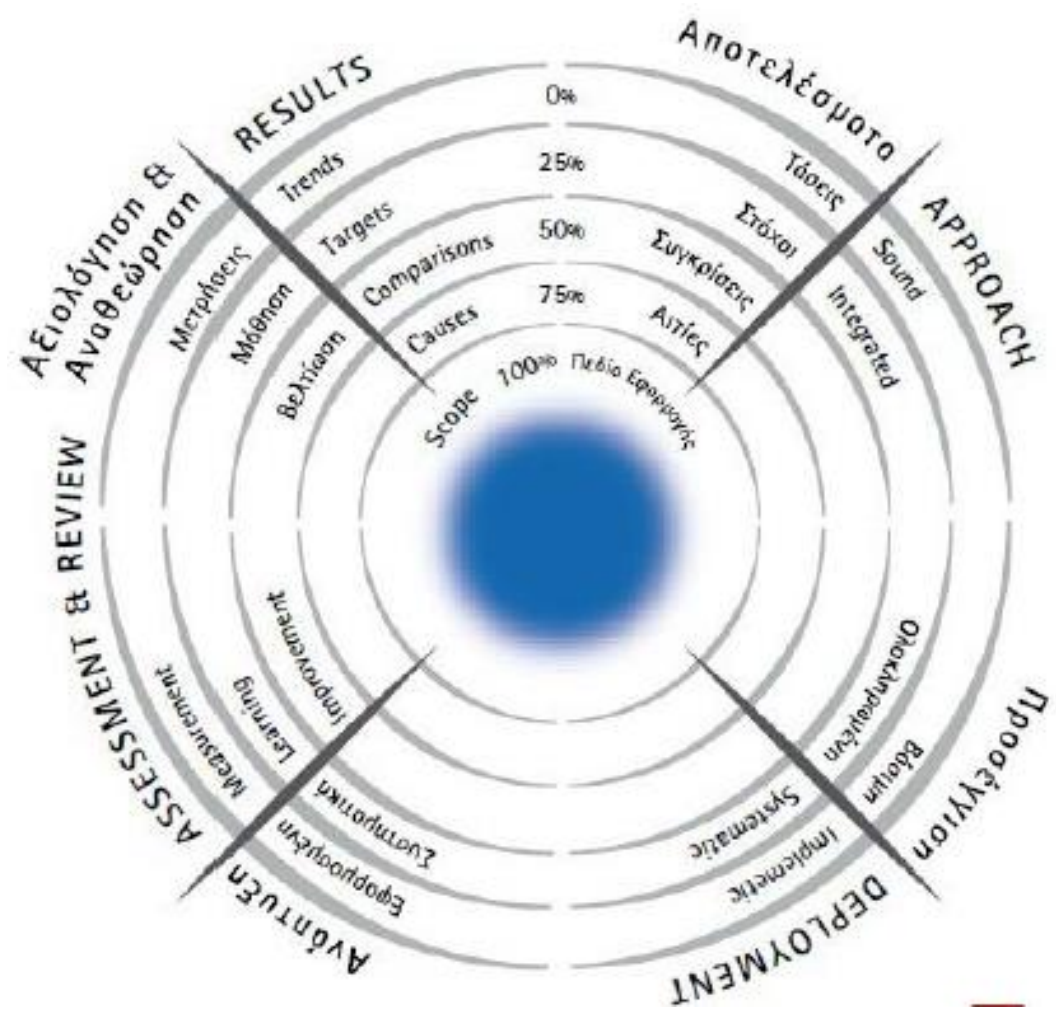




## *Technology transfer process from investment to jobs*







*Plan-Do-Check-Act (PDCA)*



# BENCHMARKING

- ▶ Systemic approach for the improvement of the services, where good practices are to be explored and applied so as to improve a procedure besides that of Competitive performance
- ▶ Closing the gap
- ▶ Competitive benchmarking
- ▶ Process benchmarking
- ▶ Examine the hard:quantitative (finance & management) and the soft (culture & ethics)

▶ Questionnaires



▶ Validation



▶ Data Entry



▶ Reports

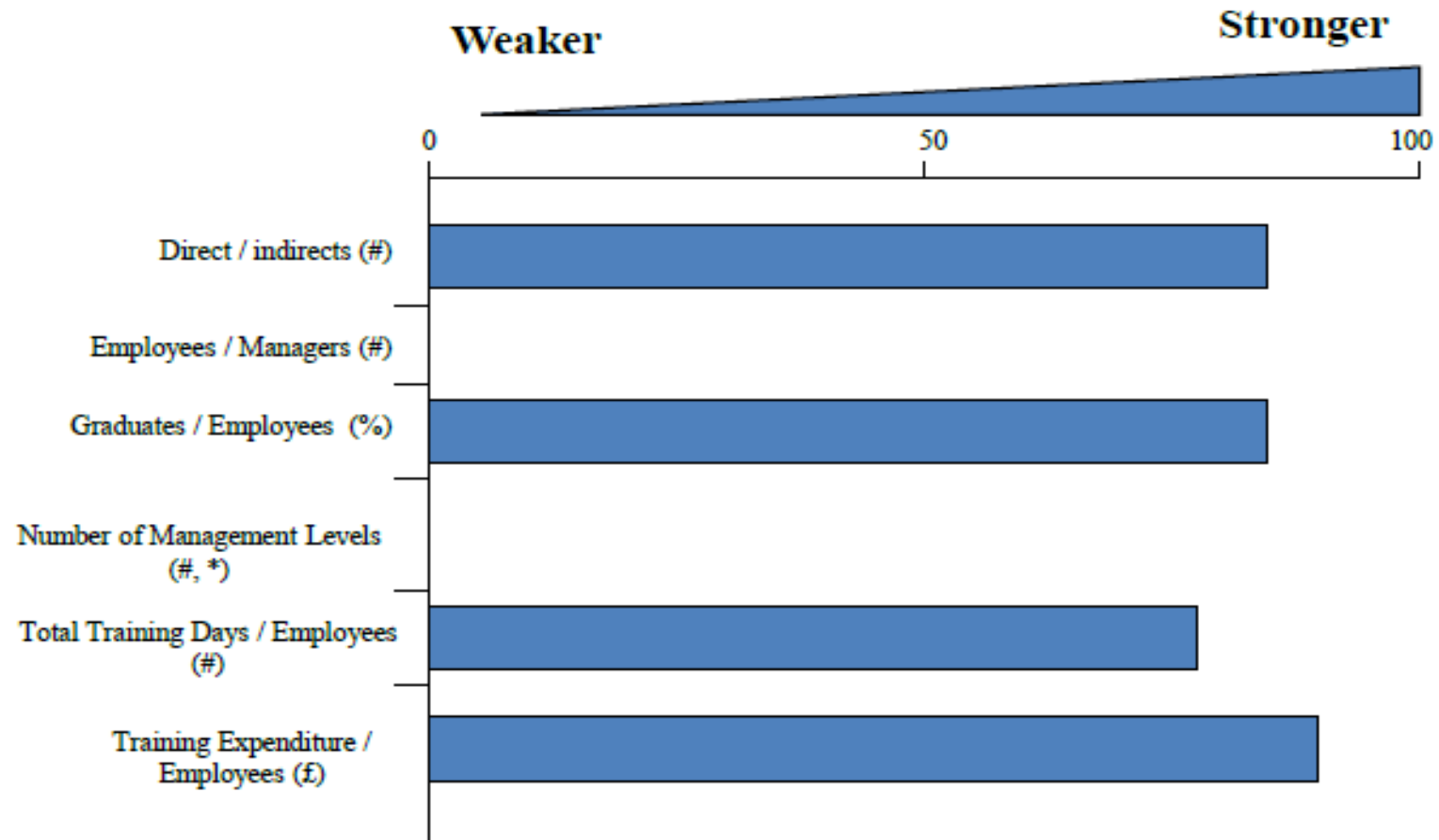


▶ Action programme



# The procedure

# People Management



### Social Responsibility results:

- ▶ Perception external measurements (references, articles, open meetings etc)
- ▶ Performance indicators

### Basic performance results:

- ▶ All the results that prove the successful strategy development. Measurements & targets are set up by the senior management.
- ▶ Basic indicators

6-Sigma: methodology  
for deduction of  
failures based on  
process improvement

- ▶ DMAIC=DEFINE, MEASURE, ANALYZE, IMPROVE & CONTROL
- ▶ DMADV=DEFINE, MEASURE, ANALYZE, DESIGN & VERIFY
- ▶ DFSS=DESIGN FOR 6-SIGMA



## STAGES OF 6-SIGMA

- ✓ IDENTIFY the need
- ✓ DECIDE the realization
- ✓ ORGANIZE the financial targets, the timetable, the training
- ✓ INITIAL IMPLEMENTATION
- ✓ DEVELOPMENT (black belt training for the senior management)
- ✓ MAINTAINING (green belt training for the personnel)
- ✓ SENIOR MANAGEMENT COMMITMENT
- ✓ SELECTION & TRAINING OF THE “RIGHT” PEOPLE
- ✓ SELECTION OF 6-SIGMA PROJECTS

# CRITICAL SUCCESS FACTORS



6-SIGMA SUBPROJECTS MANAGEMENT



INVOLVEMENT OF THE FINANCIAL  
DEPARTMENT



6-SIGMA SUBPROJECTS EXPENDITURE

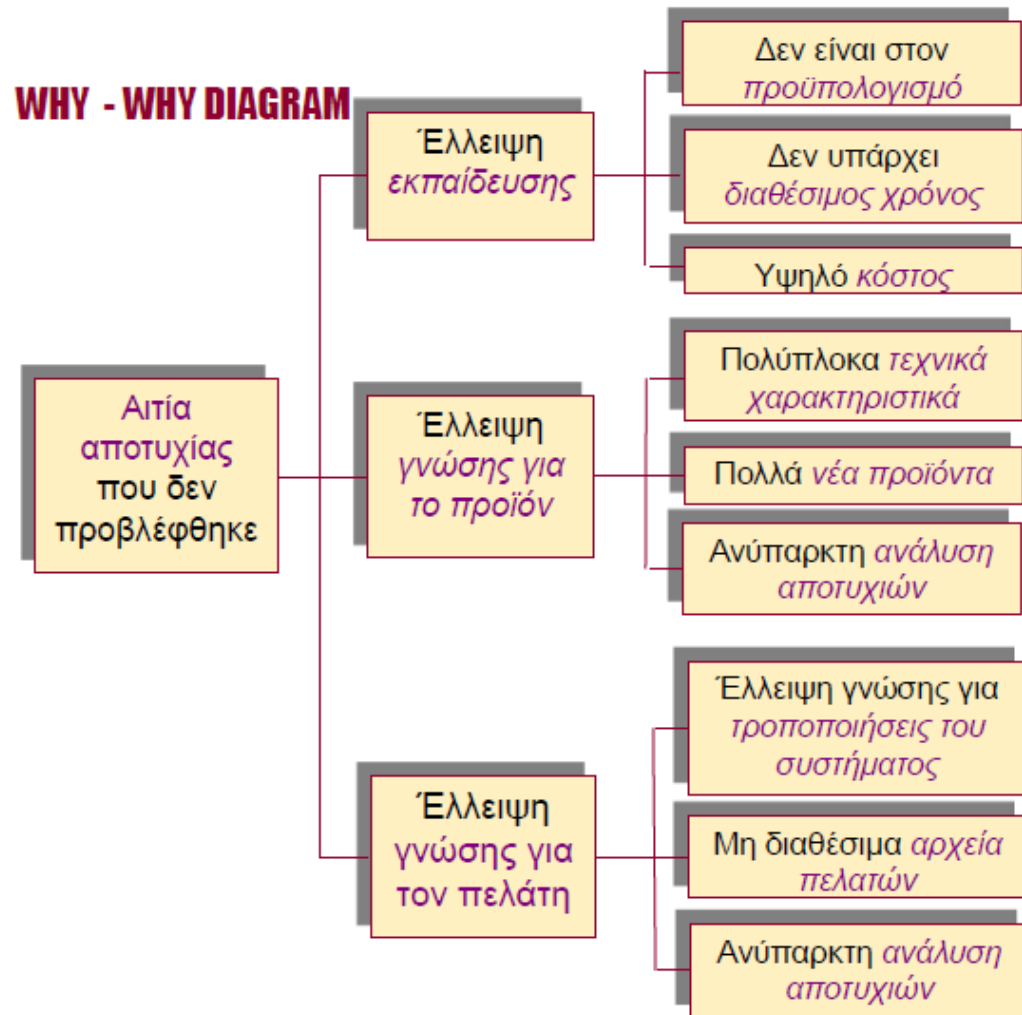


NOT A STATISTIC MODEL BUT A PROGRAM OF  
LEADERSHIP & CHANGING THE “BEHAVIOUR”

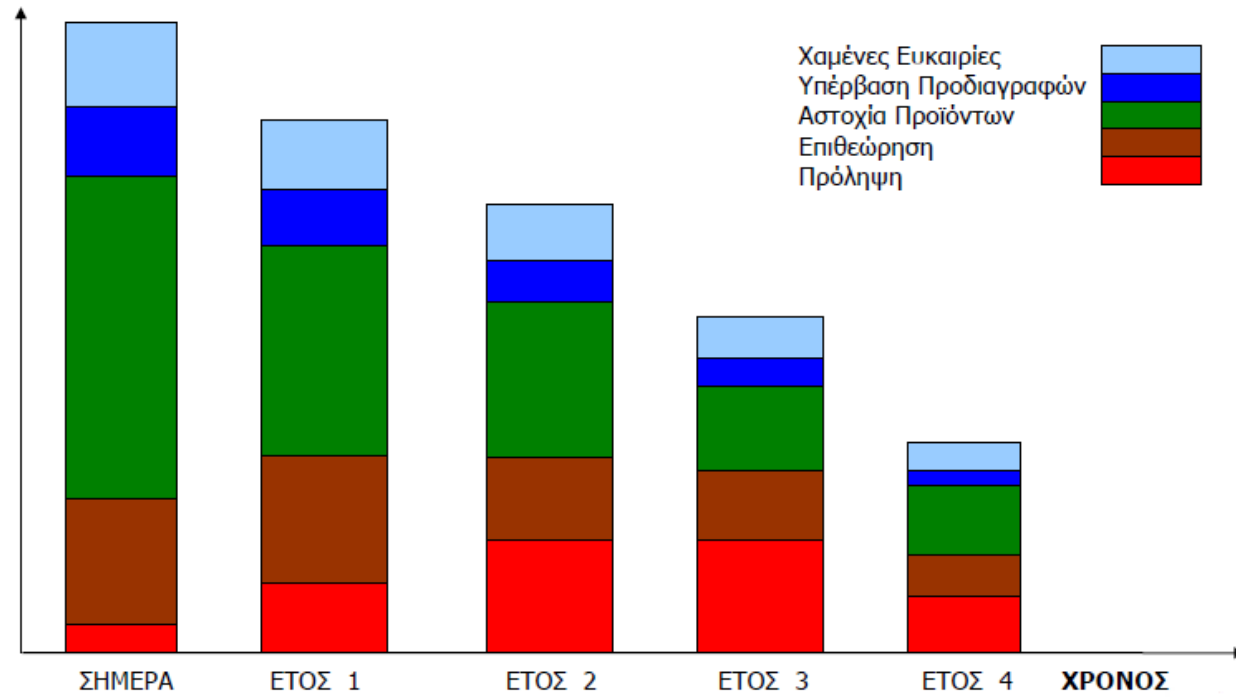
# 6-SIGMA QUALITY TOOLS

- ▶ PDCA Cycle (PLAN, DESIGN, CONTROL, ACT)
- ▶ WHY-WHY DIAGRAM (IDENTIFY, EXPLAIN & ANALYZE OF THE PROBLEM CAUSES)

## WHY - WHY DIAGRAM



## ΚΟΣΤΟΣ



# QUALITY COST PER YEAR

**ΚΟΣΤΟΣ ΠΟΙΟΤΗΤΑΣ  
(παγόβουνο)**



**QUALITY  
COST  
(ICEBERG)**

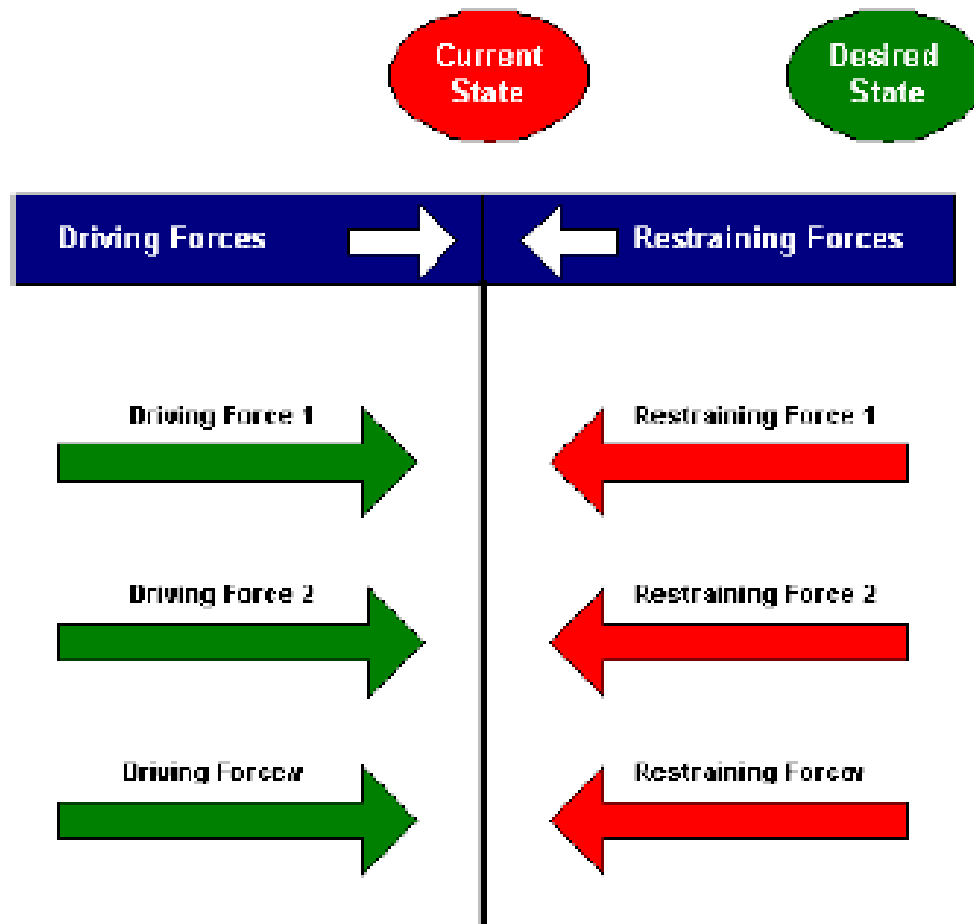
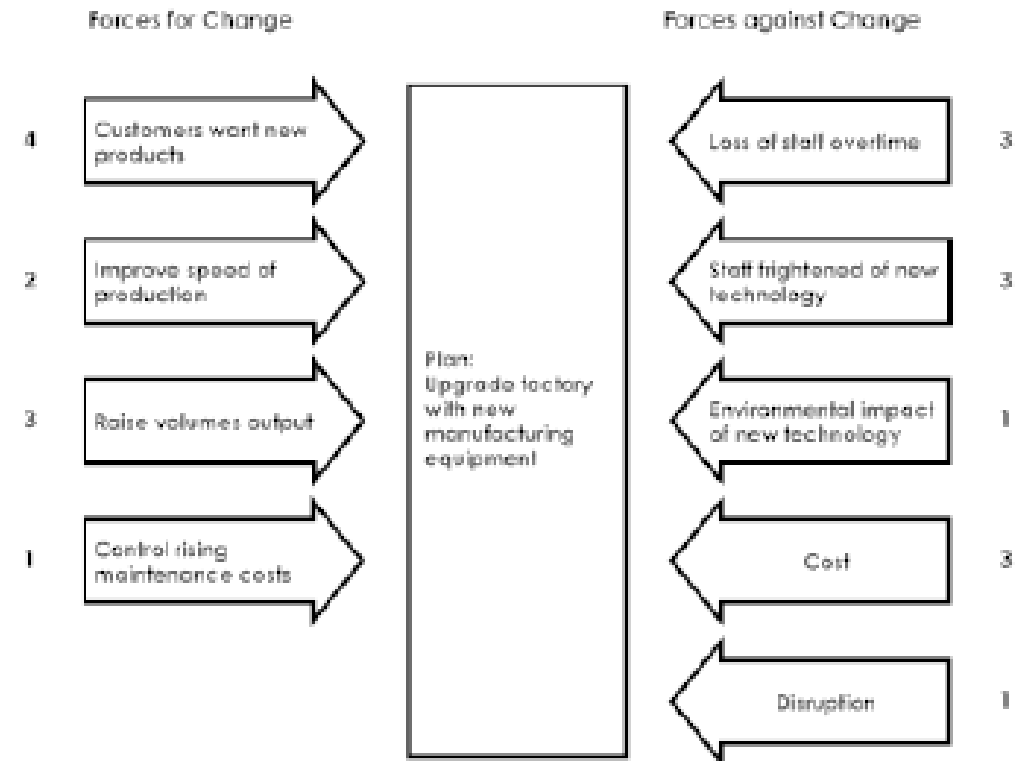
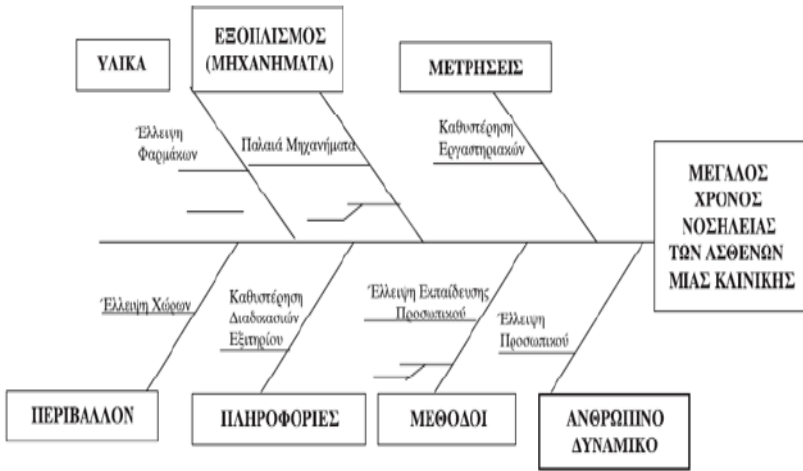


Figure 1:  
Force Field Analysis

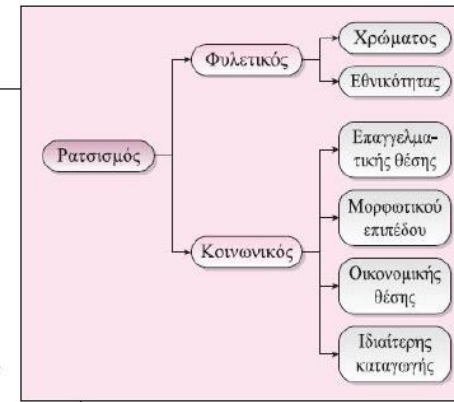
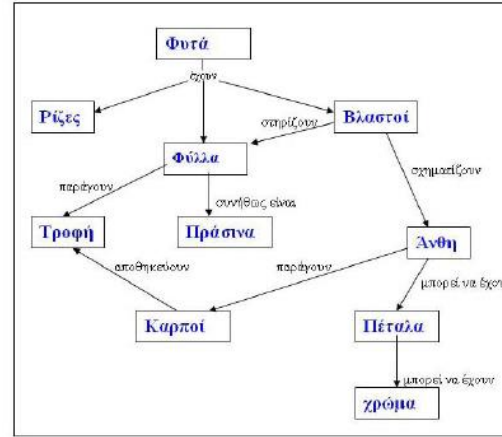
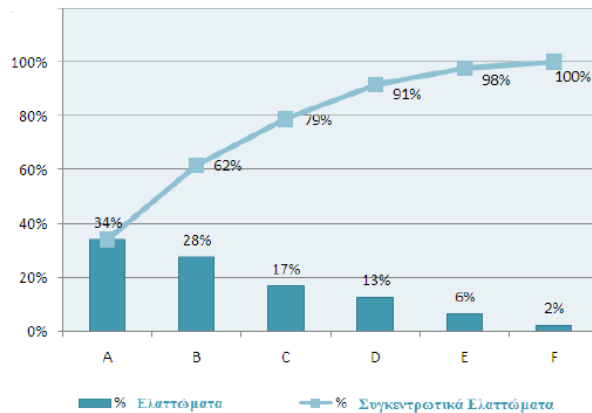


# FORCED FIELD ANALYSIS



Σχήμα 2. Παράδειγμα διαγράμματος αιτίων - αποτελέσματος

### Γραφική απεικόνιση



## ΚΑΤΑΙΓΙΣΜΟΣ ΙΔΕΩΝ (Brainstorming)

### Μέθοδος για την γέννηση ιδεών

Επιτρέπει την αναγνώριση όσο περισσότερων ιδεών σε ομαδικό επίπεδο

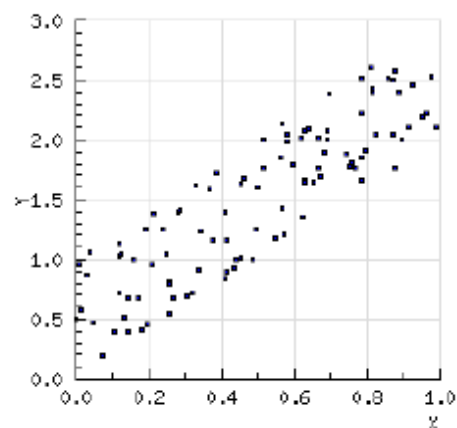
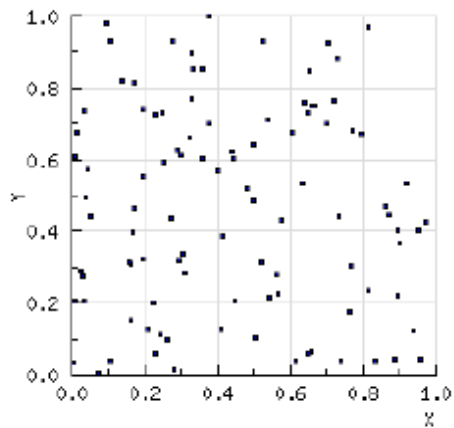


1. καθορίστε τον υπεύθυνο της ομάδας
2. ορίστε το σκοπό του brainstorming
3. κάθε μέλος, με τη σειρά, αναγνώρισε μια ιδέα
4. προσθέστε νέες ιδέες στις ήδη υπάρχουσες
5. μη συζητάτε και μη κρίνετε τις ιδέες
6. καταγράψτε τις ιδέες
7. συνεχίστε μέχρι να στερέψουν οι ιδέες
8. συζητήστε τις ιδέες με σκοπό την κατανόησή τους

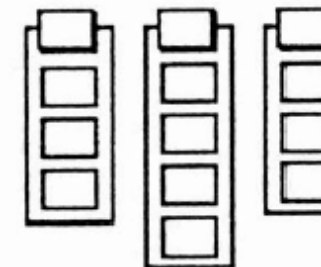
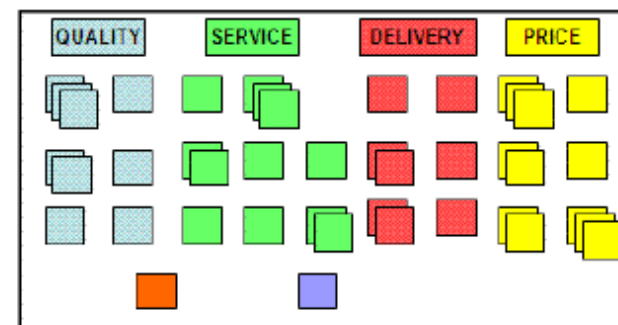
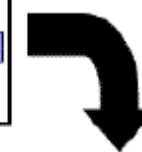
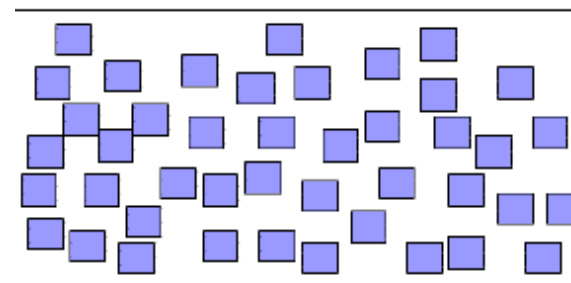


## Μέθοδος για τη συσχέτιση (ομαδοποίηση) ιδεών

πιτρέπει την ομαδοποίηση ενός μεγάλου αριθμού ιδεών για ένα θέμα



Τα διαγράμματα αυτά είναι ιδιαίτερα χρήσιμα στην απεικόνιση ανεξαρτησίας ή συσχέτισης ανάμεσα σε δύο μεγέθη



SCATTER DIAGRAM-FLOW CHART-AFFINITY DIAGRAM-HISTOGRAM-DATA COLLECTION FORMS



THANK

YOU!