



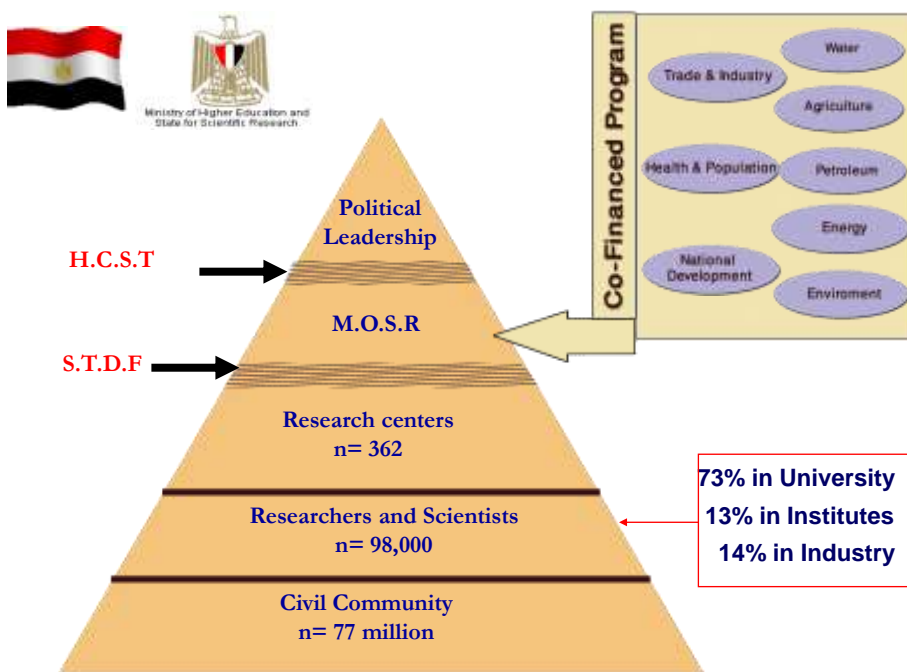
Sustainable Development Education, Research and Innovation

Vision for Knowledge Economy

Professor Maged Al-Sherbiny
Assistant Minister for Scientific Research

Towards Science, Technology and Innovation

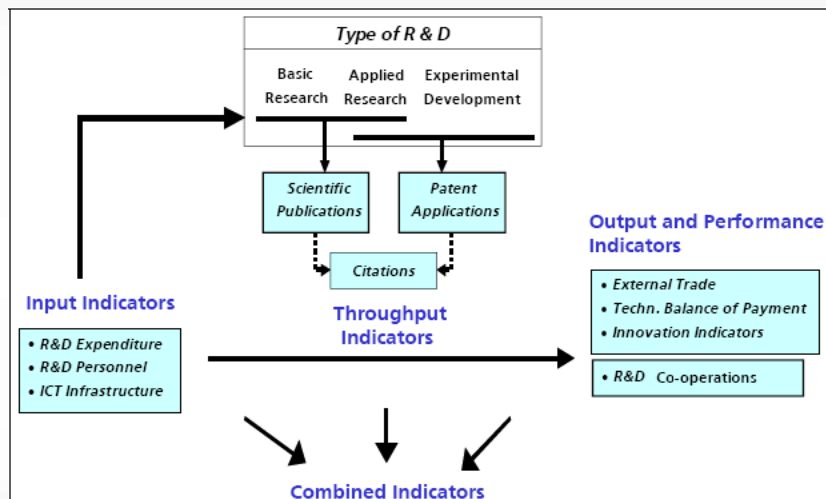
20/11/2009



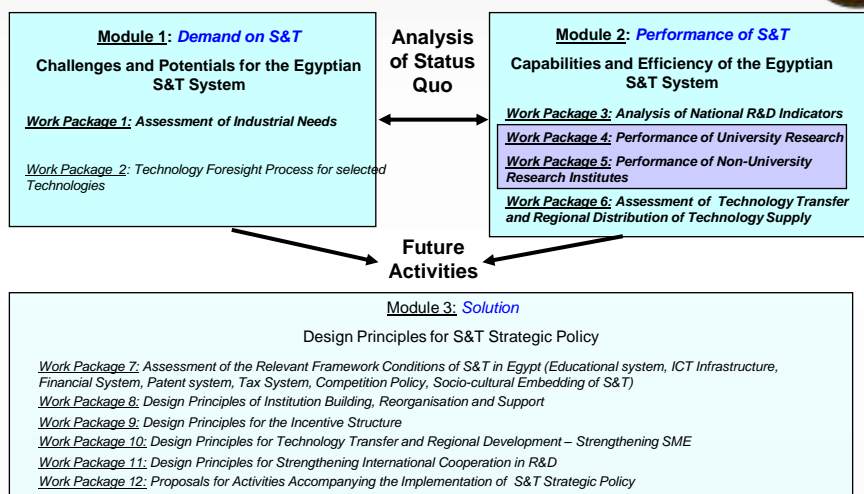
Towards Science, Technology and Innovation

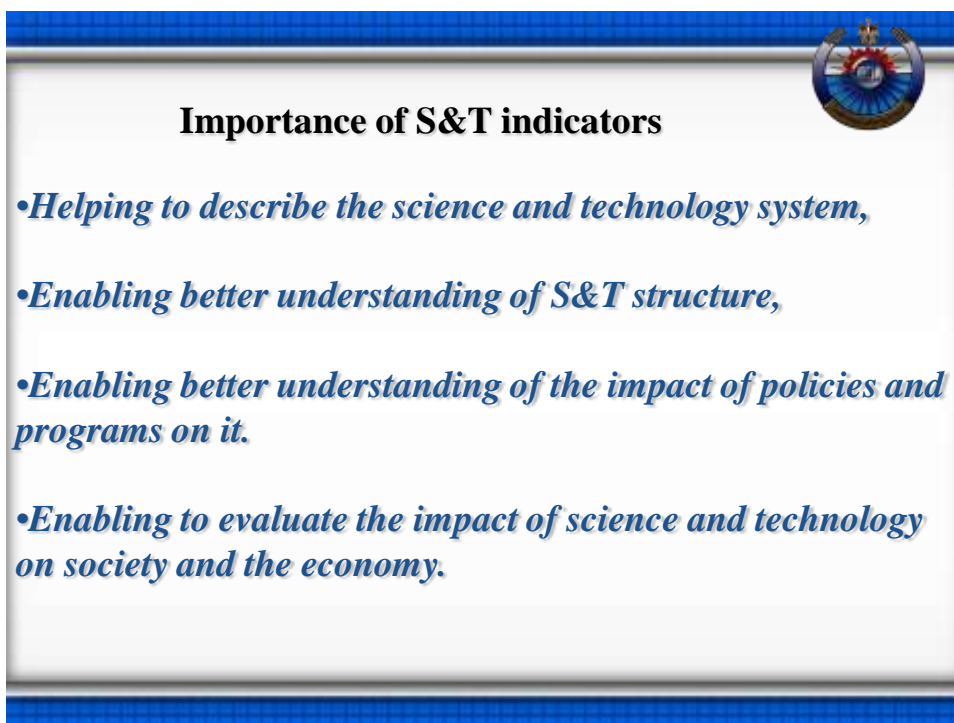
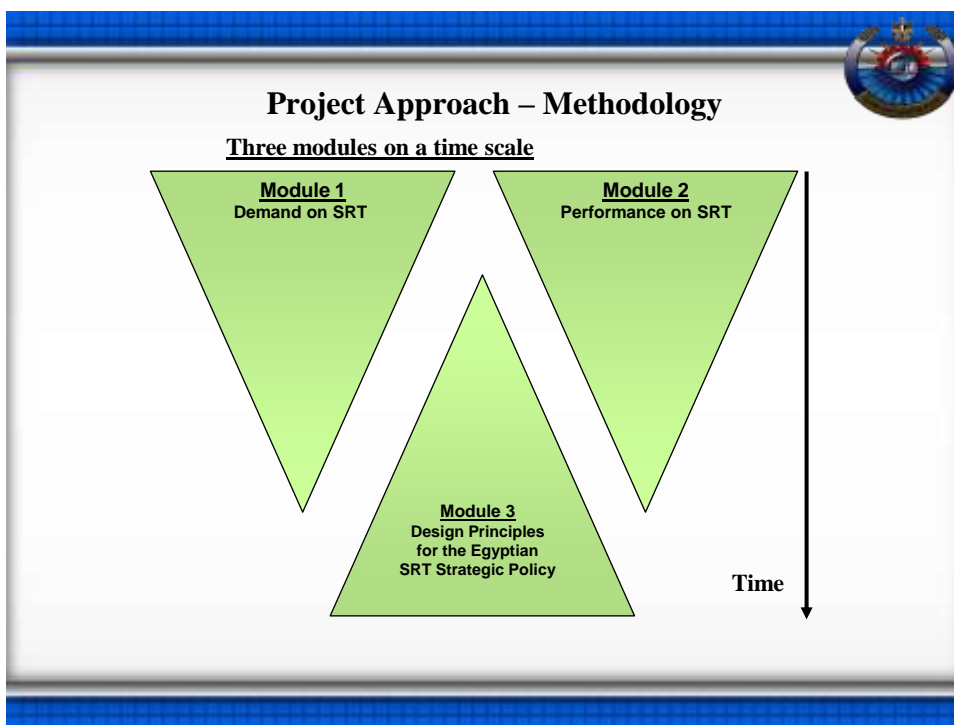
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Importance of S&T indicators



Methodology for the Evaluation of the Egyptian S&T Landscape







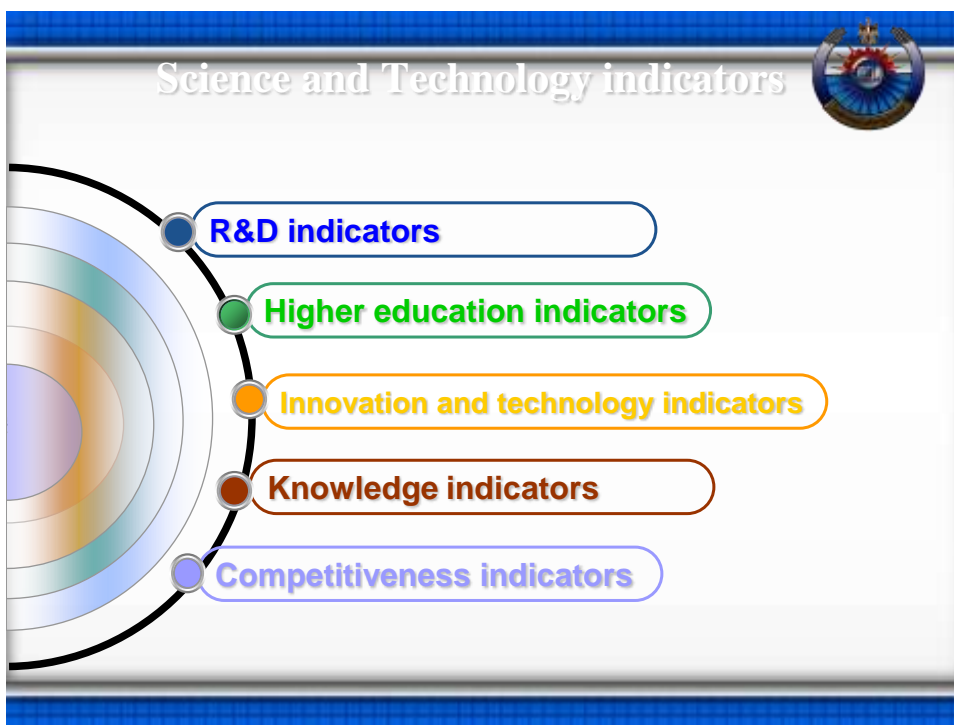
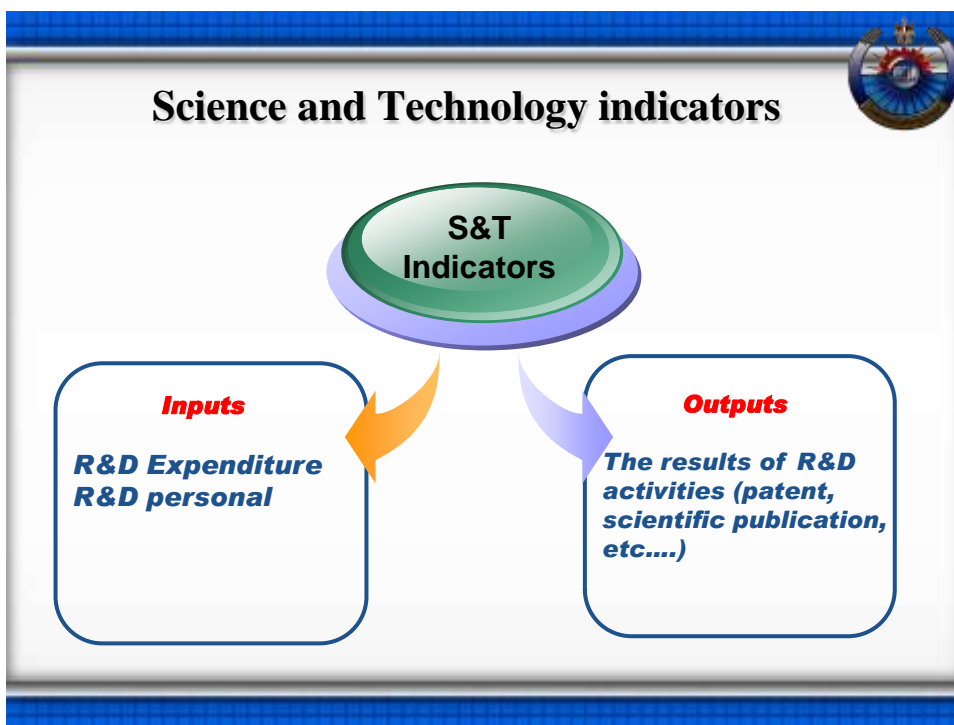
CHALLENGES

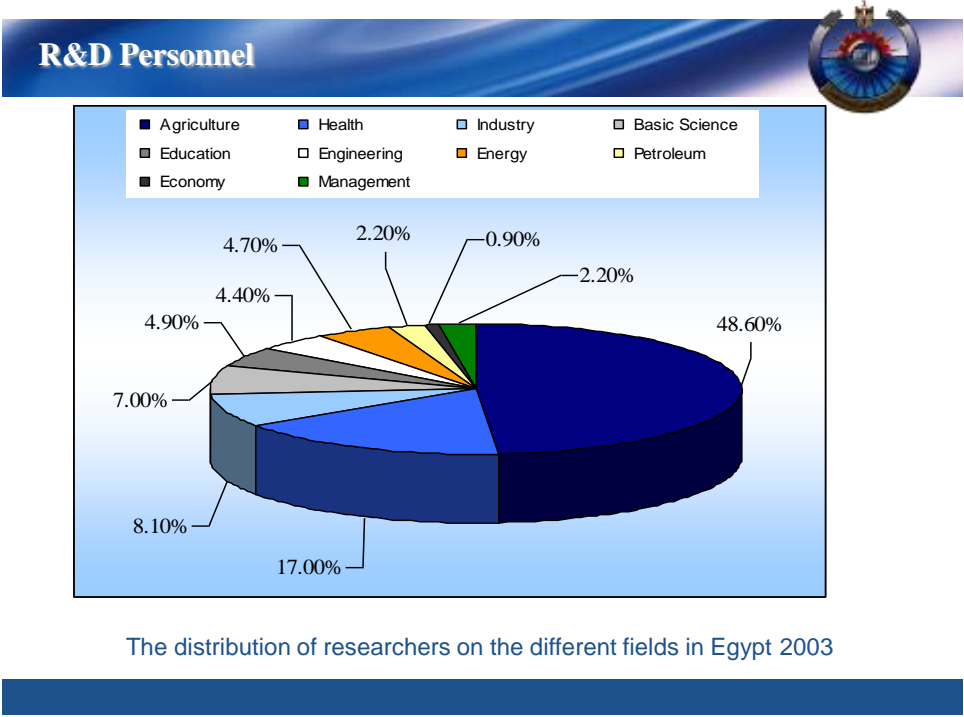
- S&T data are not readily available in Egypt except in government and higher education sectors
- If they were available, they are not in systematic manner or incomplete
- Data of (expenditures or R&D personnel) are difficult to obtain especially from private sectors.
- There is no standard method to collect data of S&T



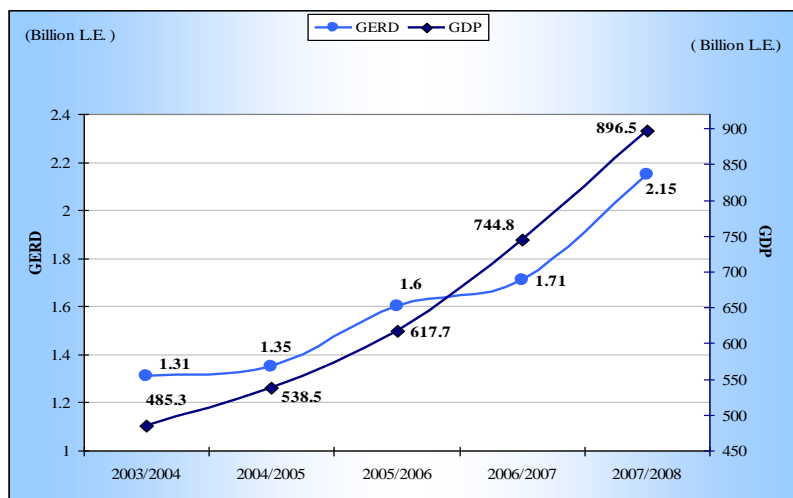
Efforts in S&T

- Egyptian government took several steps to collect data for science and technology indicators.
 - Building a capacity for S&T documentation in stakeholder institutions.
 - Planning to conduct surveys to collect science and technology data in Egypt.
- R&D Surveys
 - Innovation Survey
 - Performance Survey





R&D Expenditure



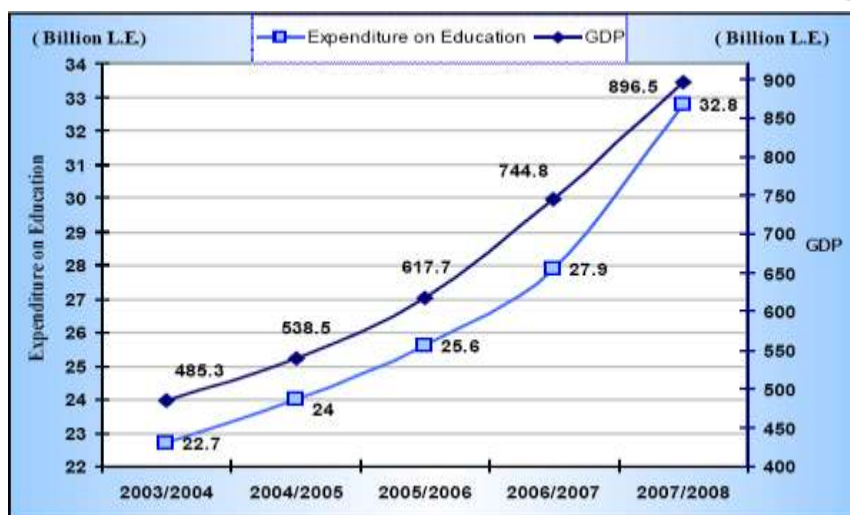
Gross Expenditure on Research and Development

Higher Education Indicators



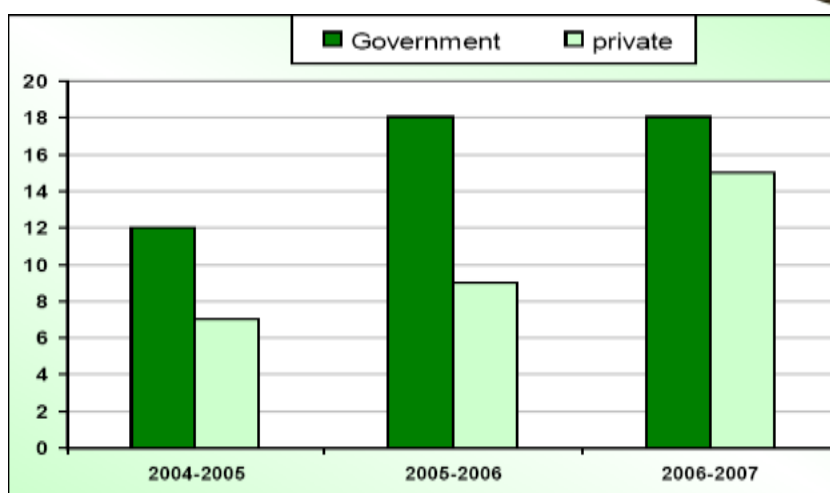
Includes numbers of Egyptian and non-Egyptian enrolled students and graduates in universities and government and private institutes.

R&D Expenditure



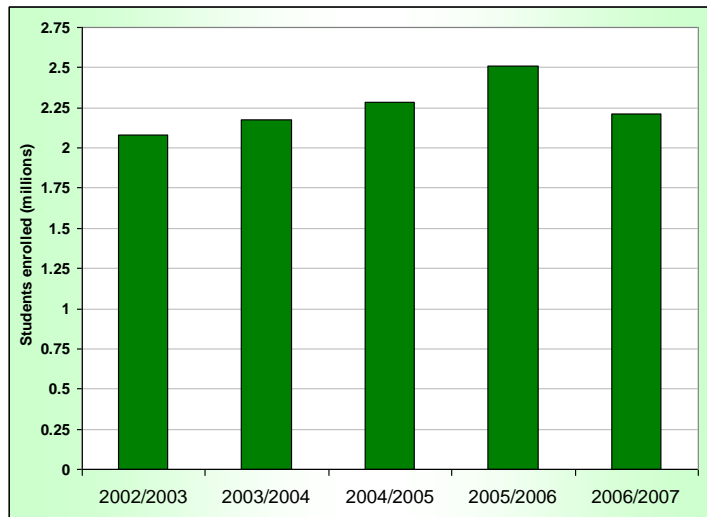
Expenditure on education

Higher Education Indicators



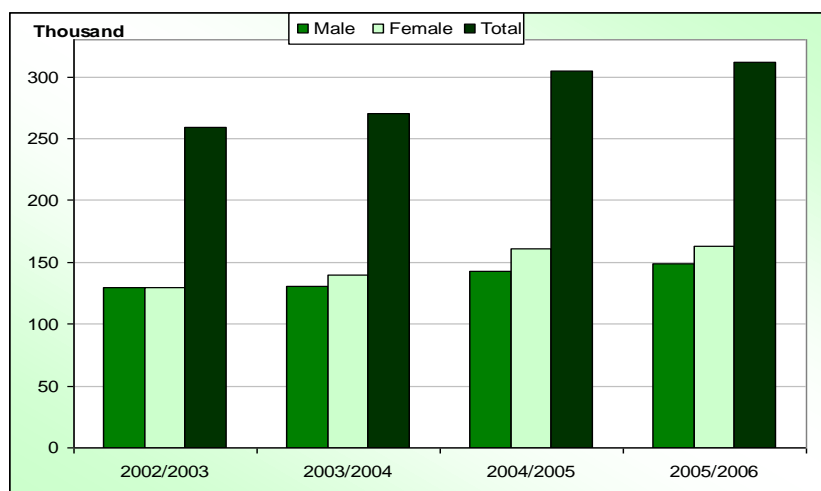
Number of universities

Higher Education Indicators



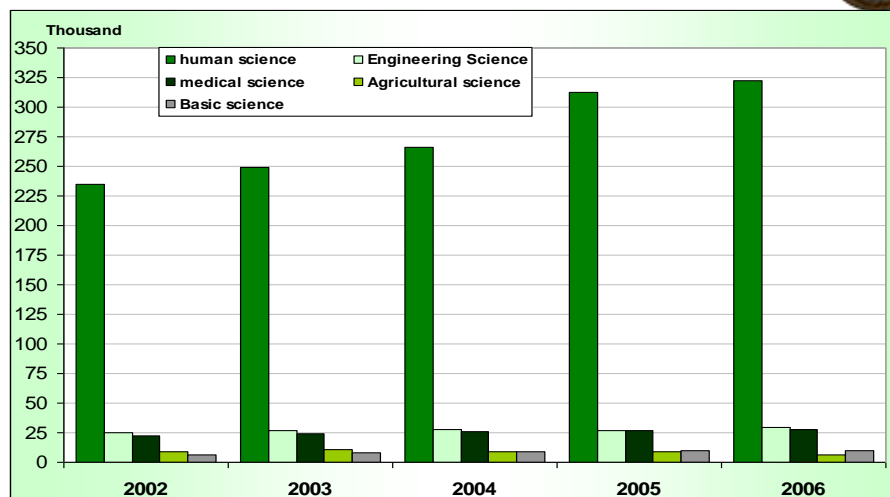
Students enrolled in higher education and university (including Azhar)

Higher Education Indicators



University graduates (governmental and private)

Higher Education Indicators



Relative distribution of graduates (governmental - private)
according to the specialization

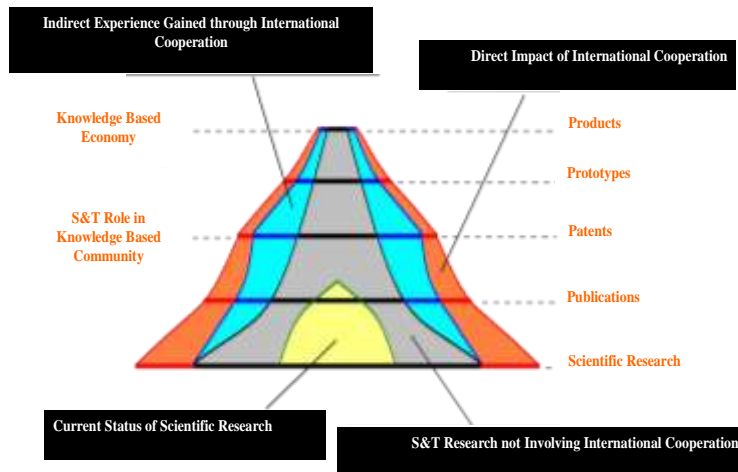
Innovation and Technology Indicators



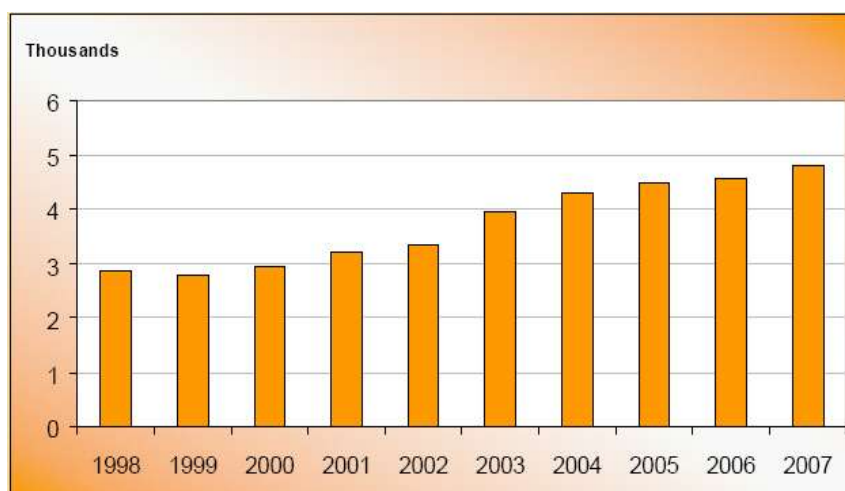
The indicators include 4P's : Publications ,
Patents, Prototypes and Product.

They are considered as outputs of science and
technology indicators

“4P’s” Concept



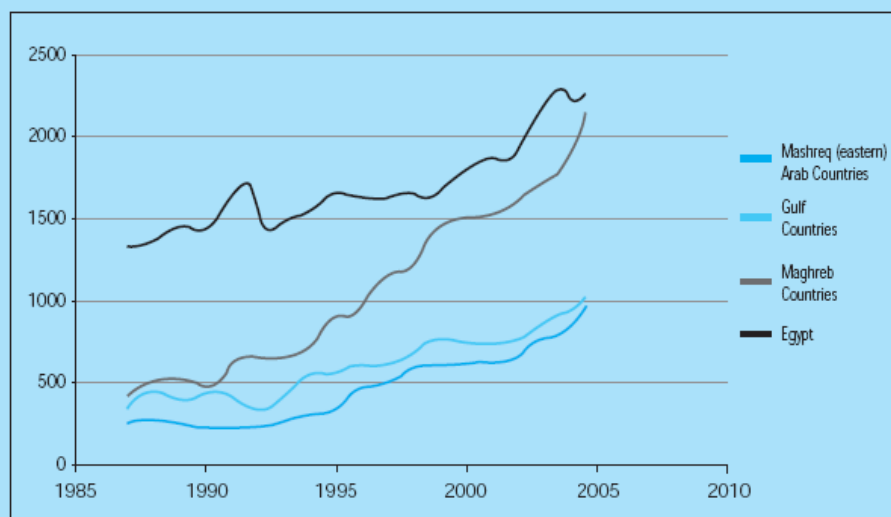
Innovation and Technology Indicators



Research published in International Journals

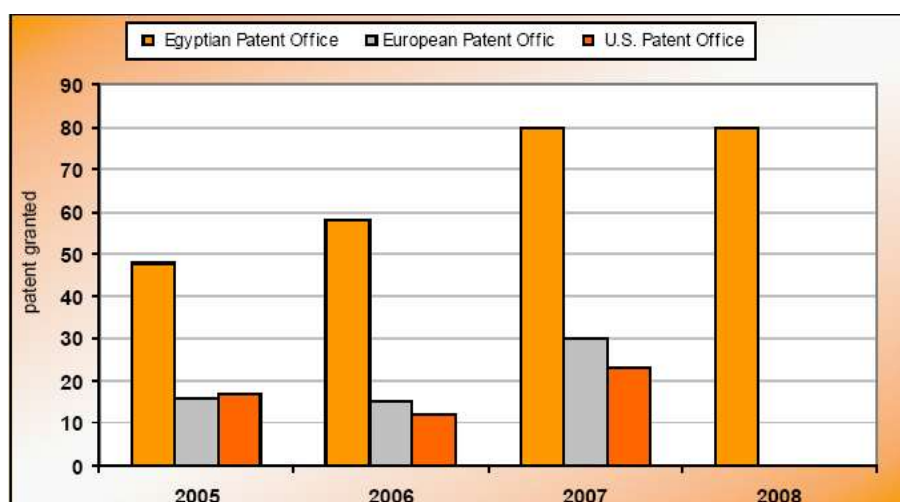
FIGURE 5-6

Number of scientific papers published in the Arab region



Source: UNESCO, 2008b

Innovation and Technology Indicators



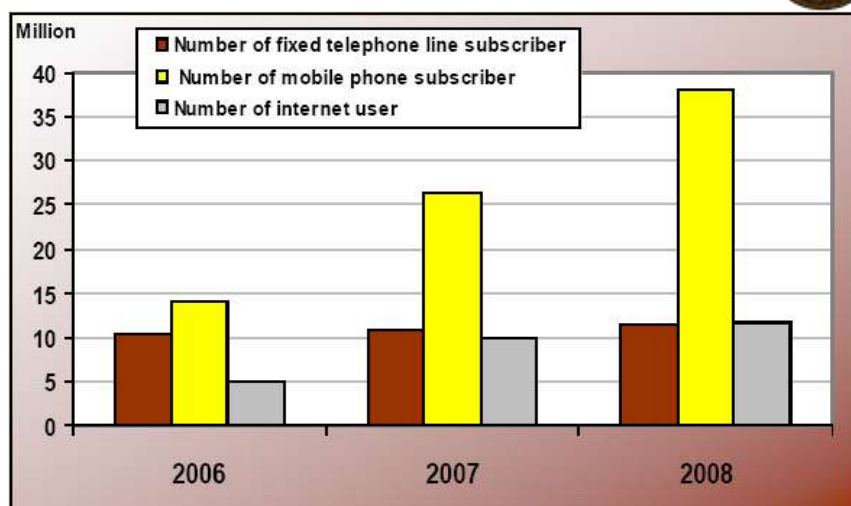
Number of patents granted by the Egyptians from different patent office

Knowledge indicators



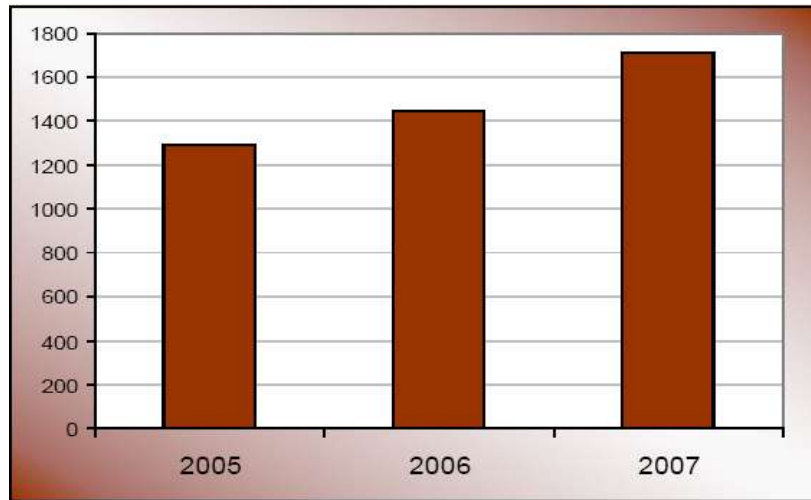
**Includes Fixed and Mobile Telephone ,
Number of Internet User and
National award**

Knowledge Indicators



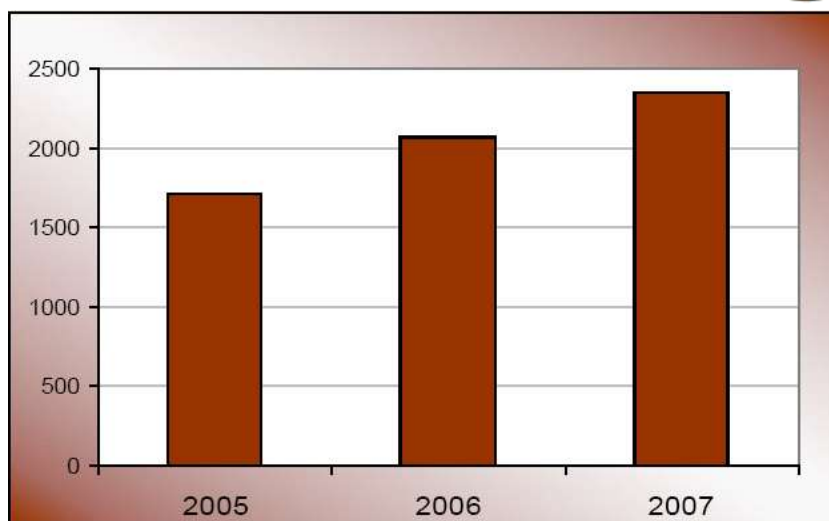
Fixed and mobile telephone and number of internet user

Knowledge Indicators



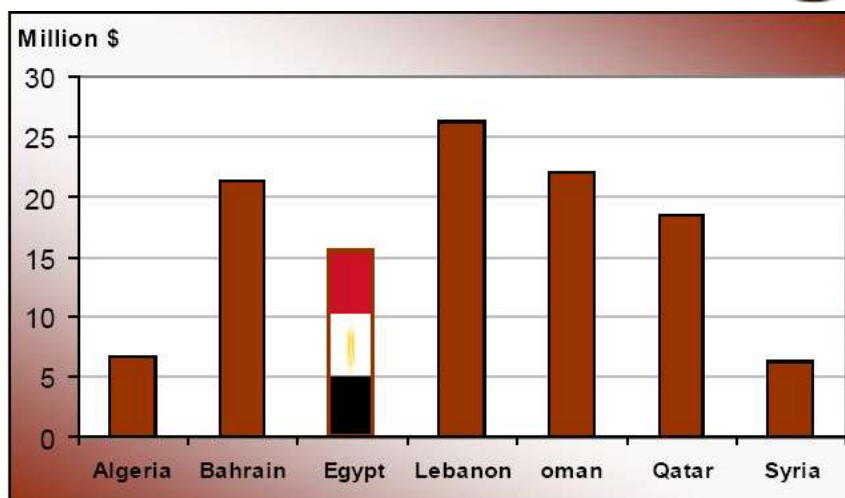
IT clubs in Egypt

Knowledge Indicators



IT companies in Egypt

Knowledge Indicators

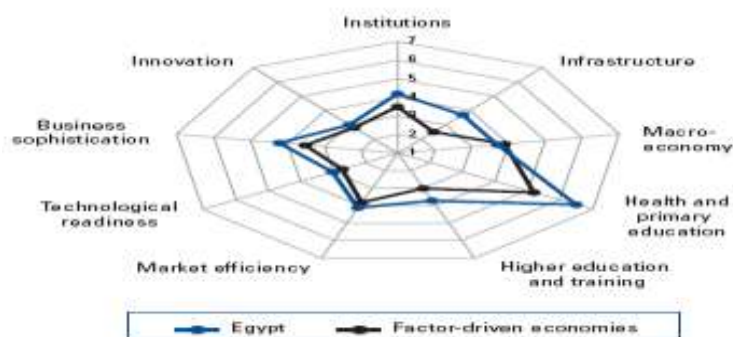


High-Technology Exports 2004

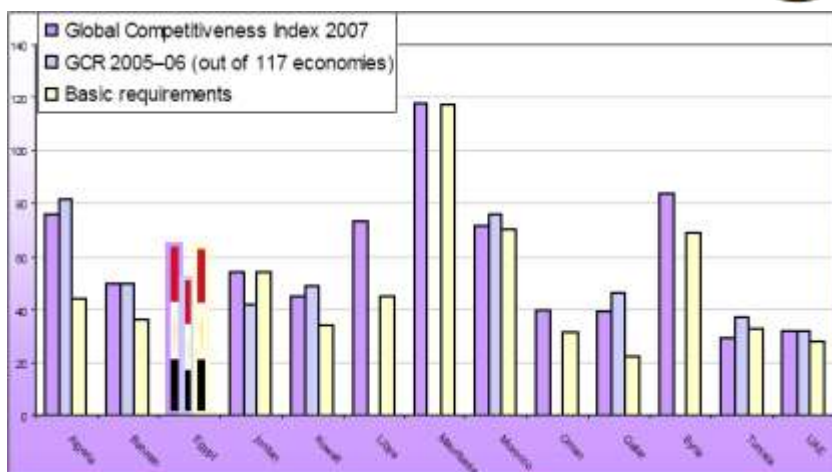
Global Competitiveness rankings



Stage of development

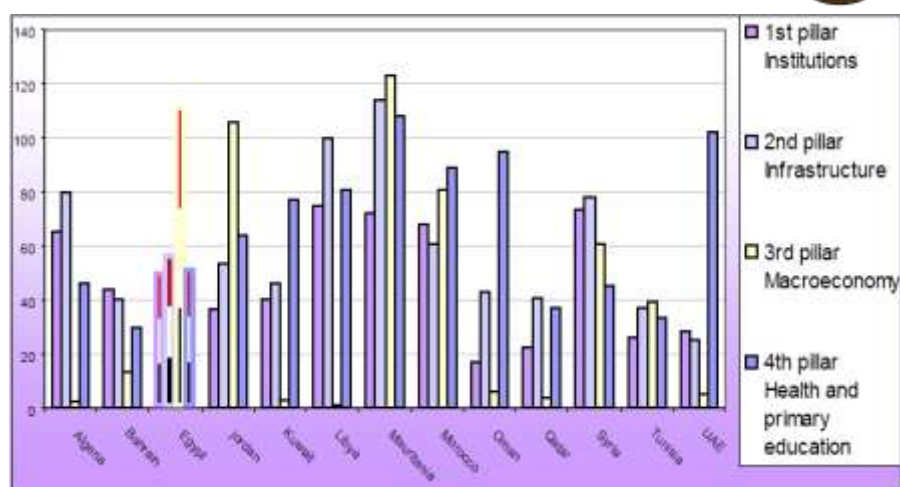


Global Competitiveness rankings



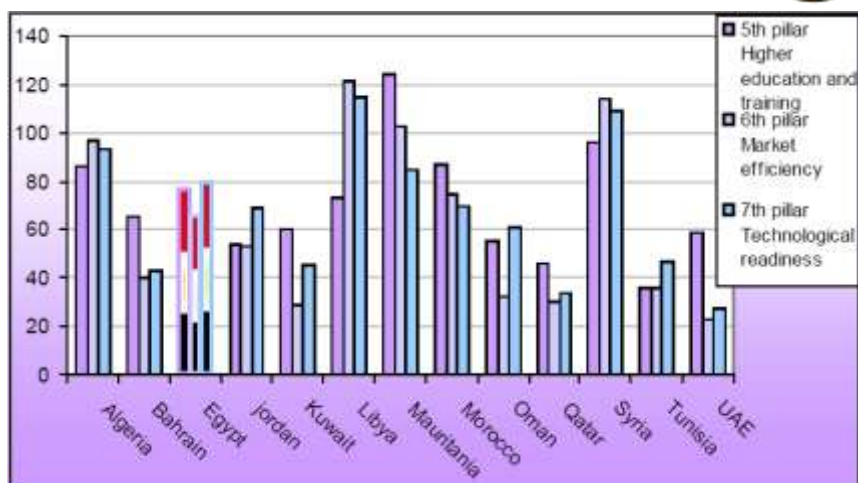
The Basic requirements, GCR 2005-06 (out of 117 economies), Global Competitiveness Index 2007 in Egypt and some Arab countries

Global Competitiveness rankings



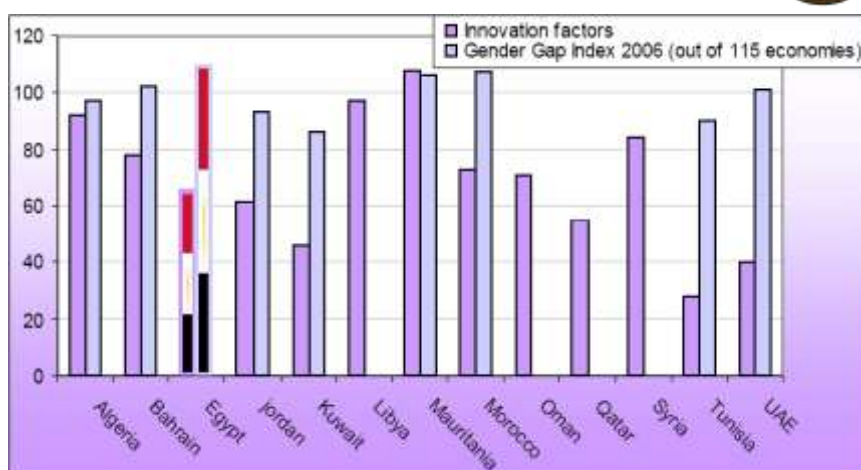
Institutions, Infrastructure, Macro economy, Health and primary education in Egypt and some Arab countries

Global Competitiveness rankings



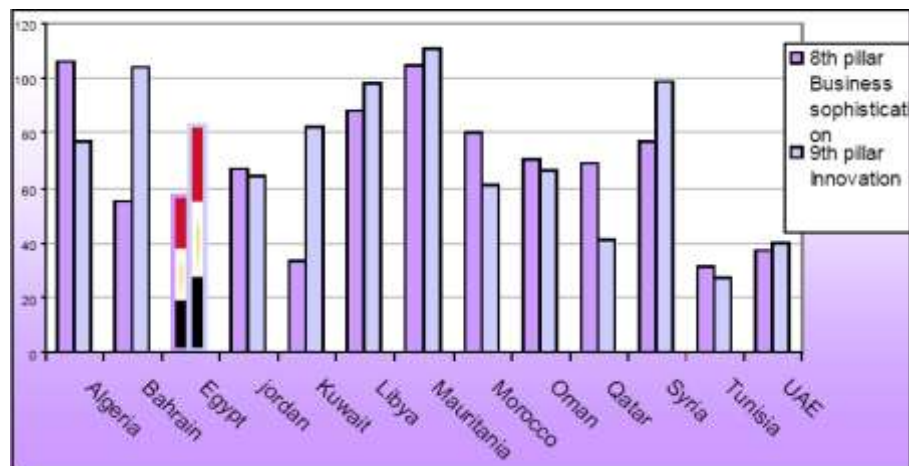
Higher education and training, Market efficiency, Technological readiness in Egypt and some Arab countries

Global Competitiveness rankings



Innovation factors, Gender Gap Index 2006 (out of 115 economies) in Egypt and some Arab countries

Global Competitiveness rankings

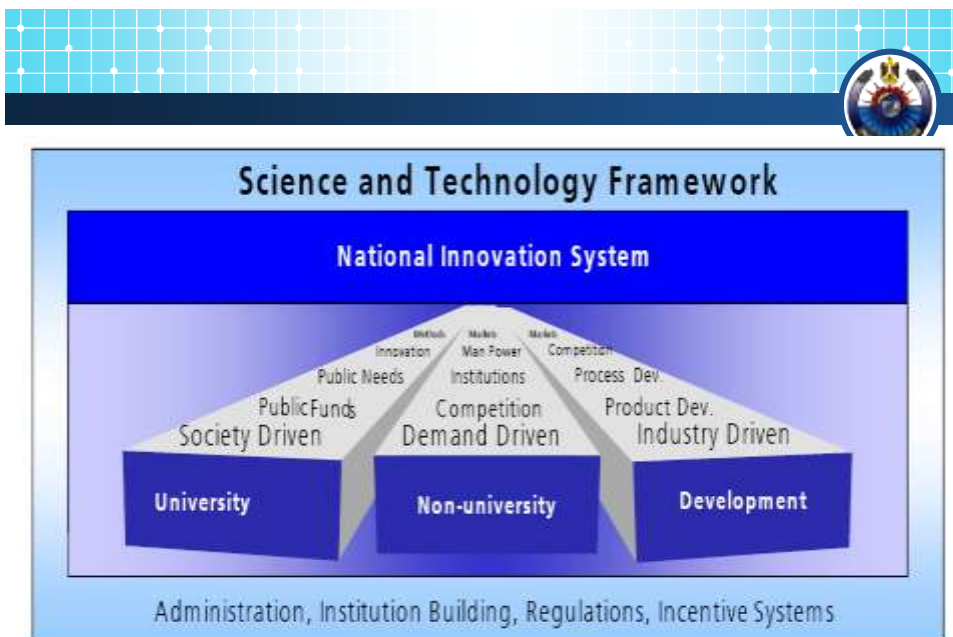


Innovation, Business sophistication in Egypt and some Arab countries



Innovation indicators

Egypt, 2009



Objective of innovation Survey

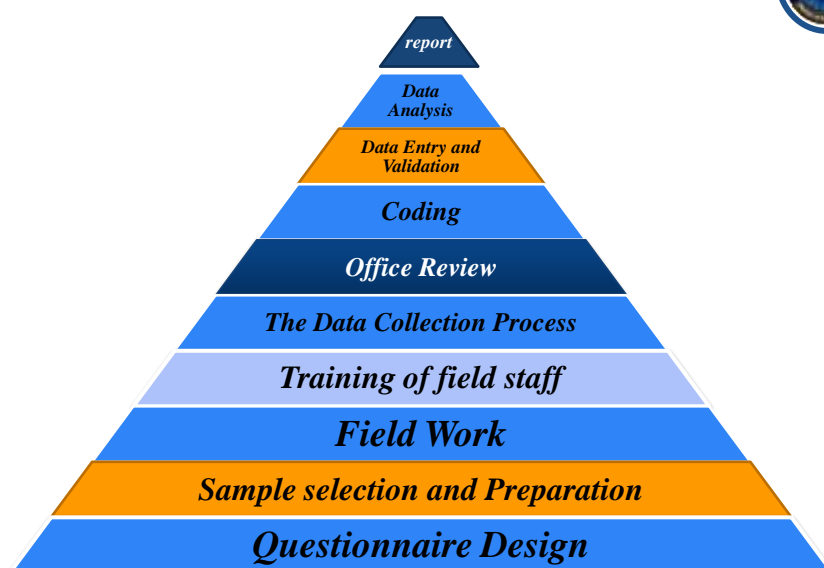
- To assess whether the enterprises working in different fields of economic activities (e.g. manufacturing and services), pay high attention to the notion of innovation and R&D or not.
- To assess innovation activities in management, production, and/ or the marketing processes from internal or external sources.

Methodology



In order to conduct this study a random sample of around **3000 enterprises** were interviewed, using a specially designed questionnaire form

Methodology





Ministry of Scientific Research

Egyptian National Innovation Survey 2008

Manufacturing, IT and Services

For the following questions, please select the most appropriate response from the following 5-point scale: 1 = Not at all, 2 = Somewhat, 3 = Moderate, 4 = Quite, 5 = Very much



Ministry of Economic Planning



Central Agency for Public Opinion Research



CEPRS



Ministry of Education



European Union

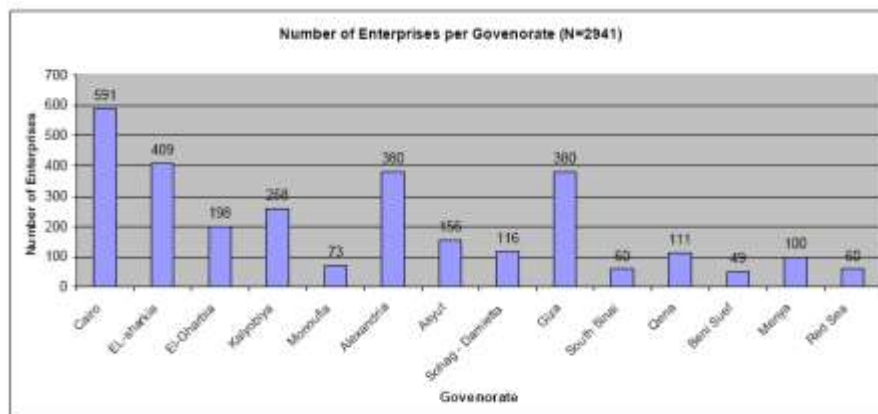
PLEASE NOTE:
In order to be able to compare enterprises with and without innovation activities, we request ALL enterprises to respond to ALL questions, unless otherwise instructed.

Please change address level if necessary

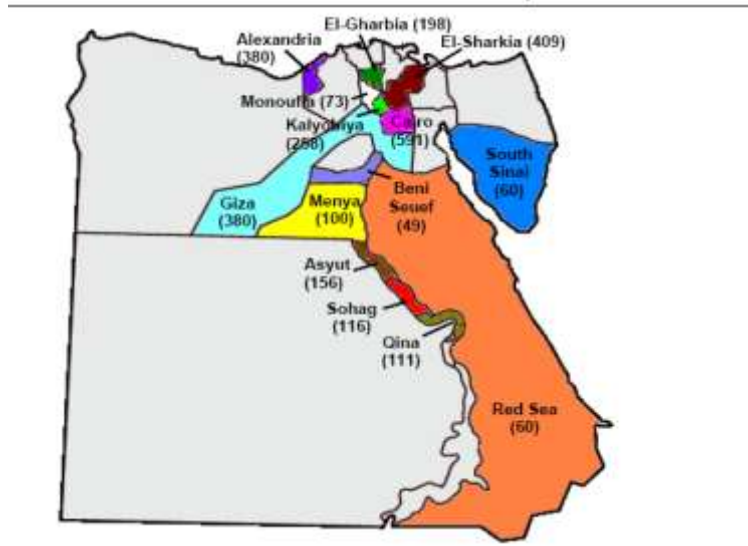


Results

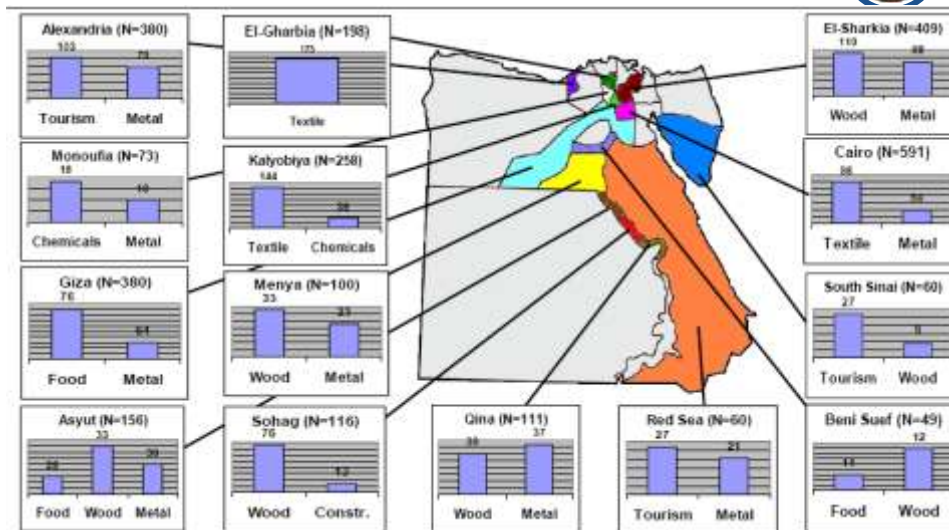
Enterprises By Governorates



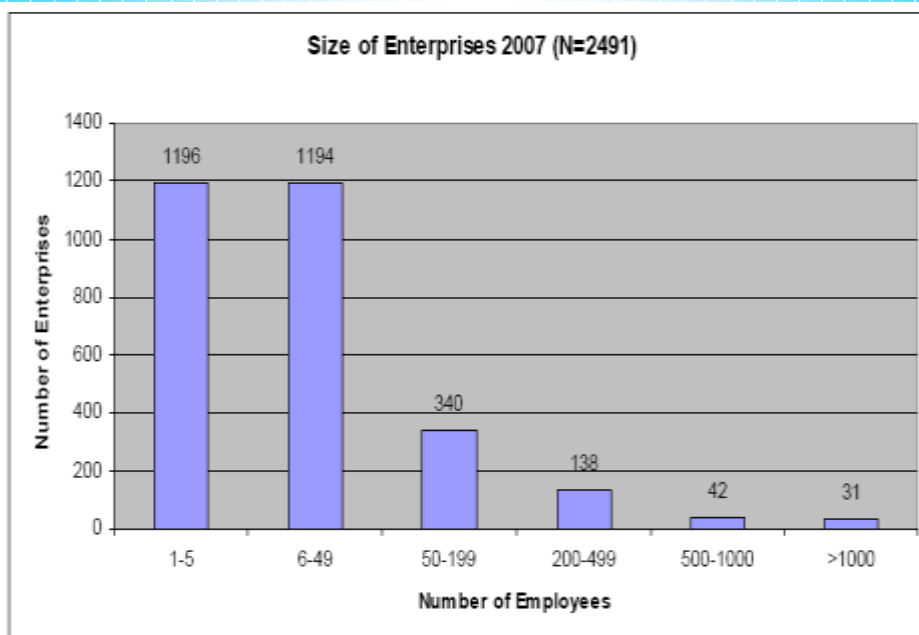
Local Distribution of Enterprises in Governorates

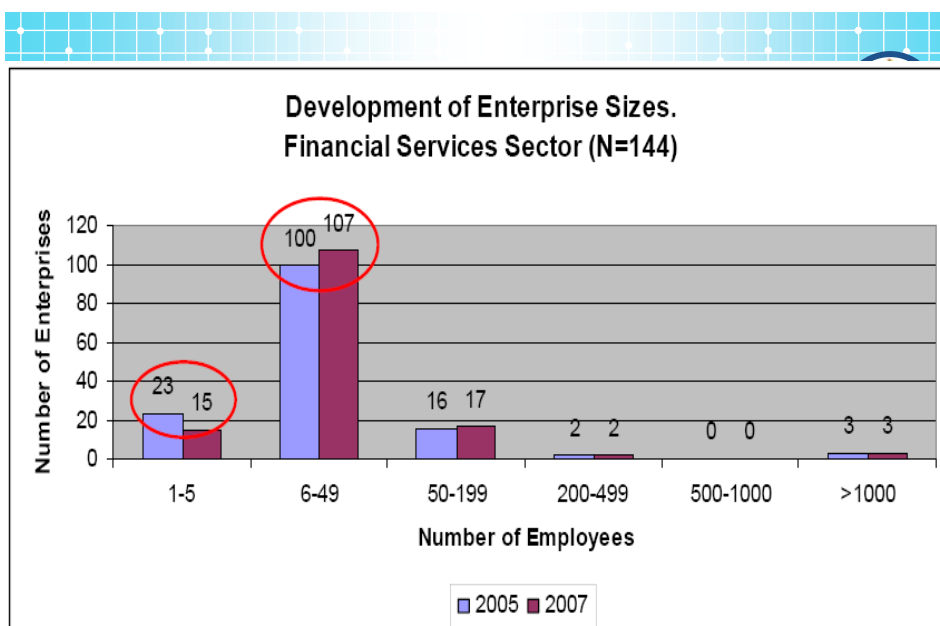
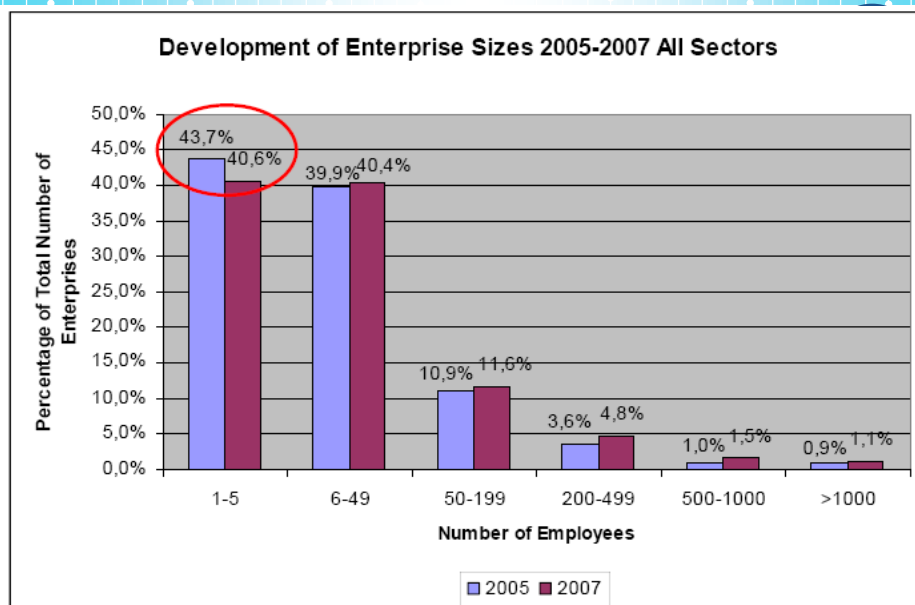


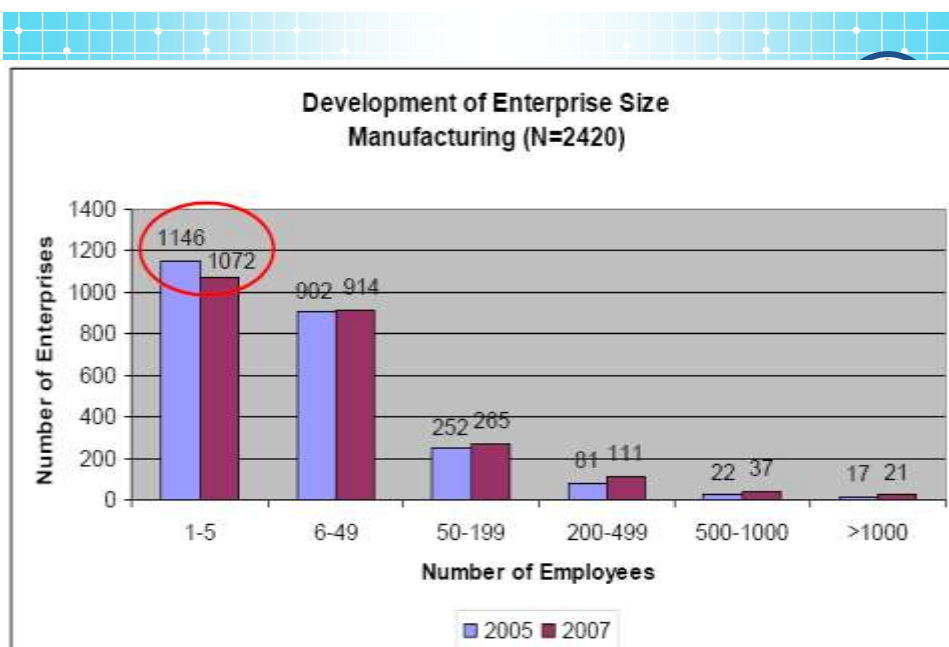
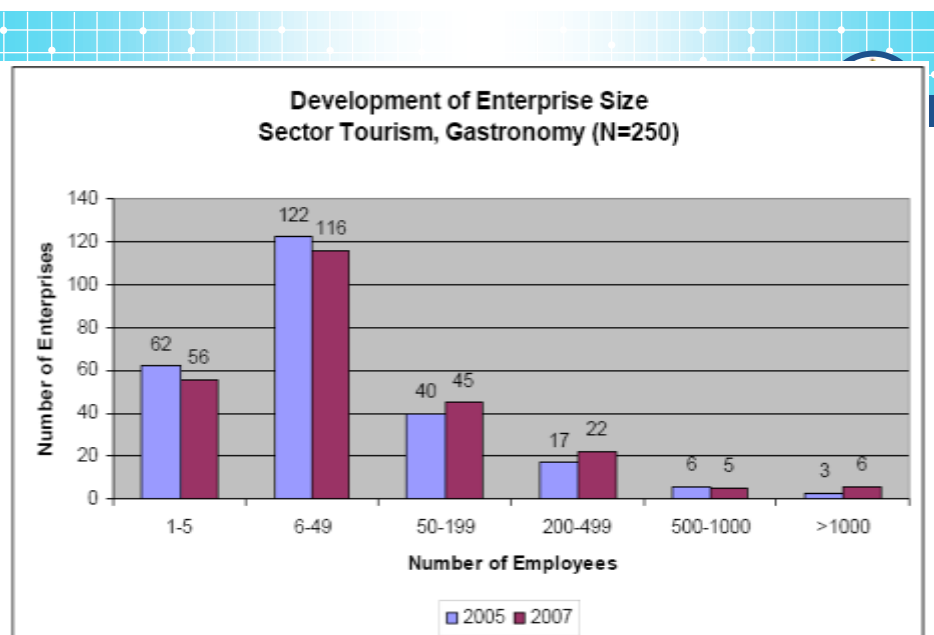
Most important Sectors per Governorate

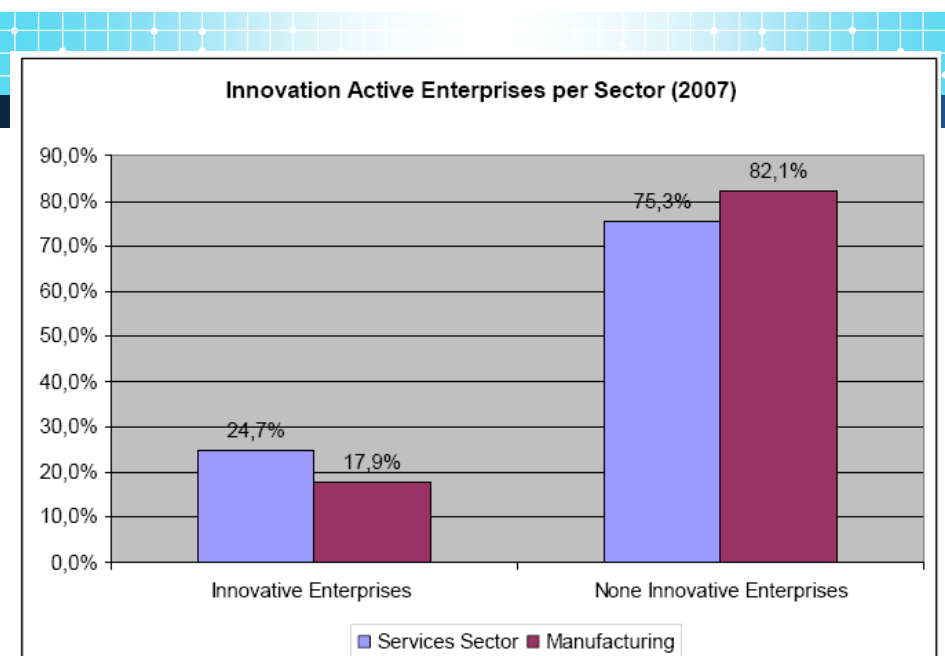
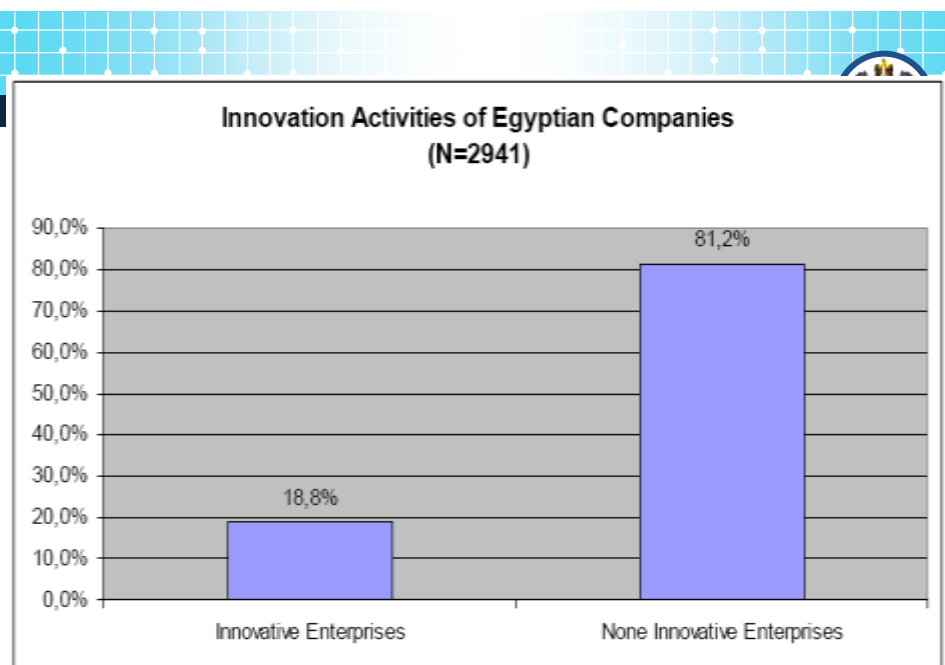


Size of Enterprises 2007 (N=2491)

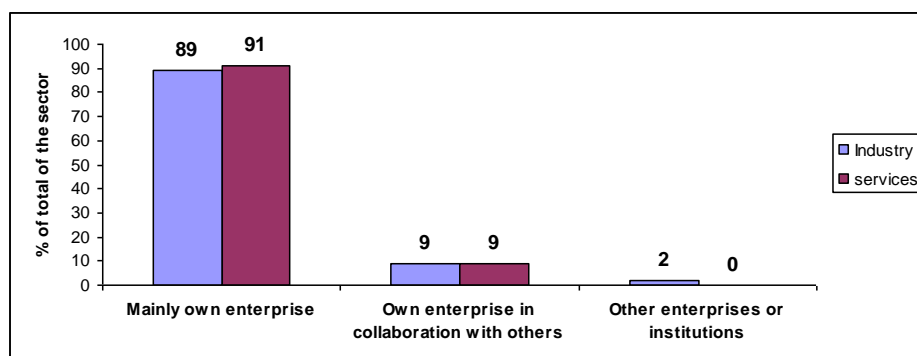




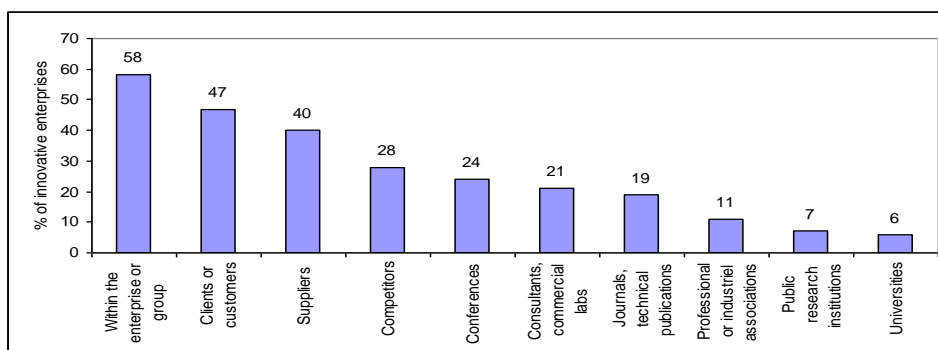




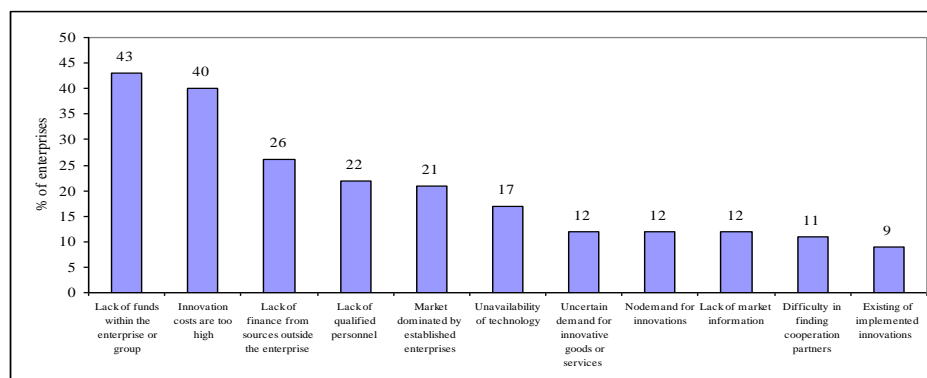
Innovative enterprises – responsibility for the development of innovations (2008)



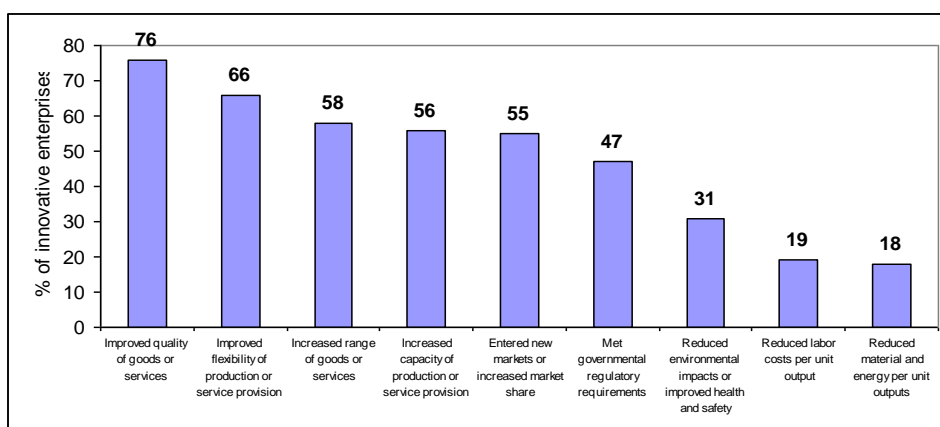
Sources of information for innovation rated as highly important by innovative enterprises (2008)



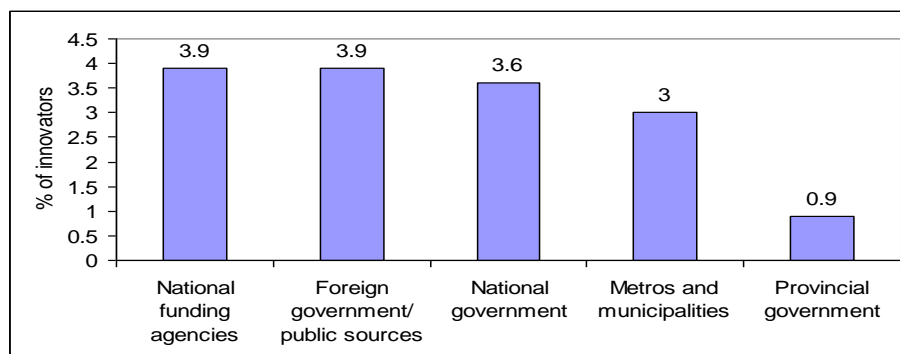
Factors Hampering Innovation Activities (2008)



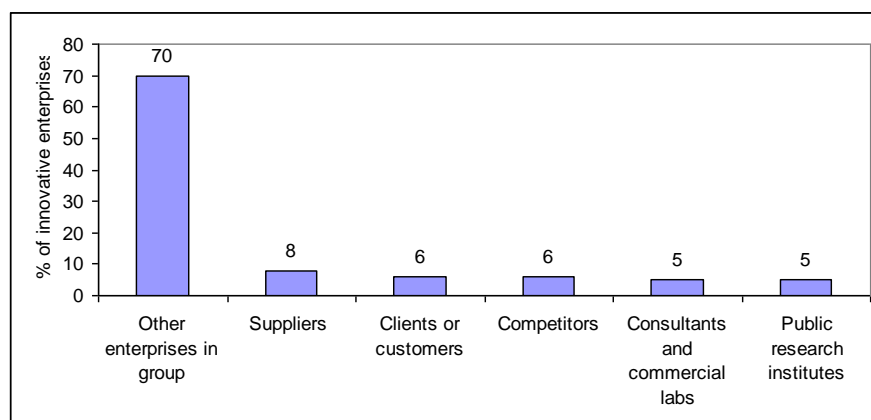
Highly important effects of innovation on outcomes for enterprises (2008)



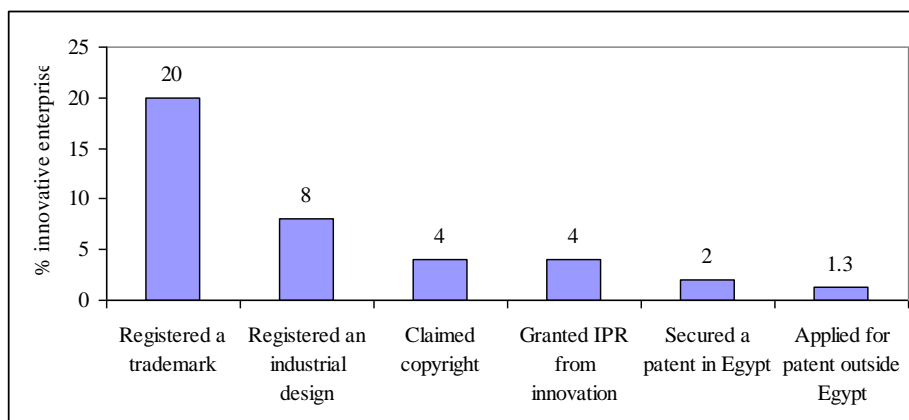
Innovative enterprises that received financial support for innovation activities from government sources (2008)



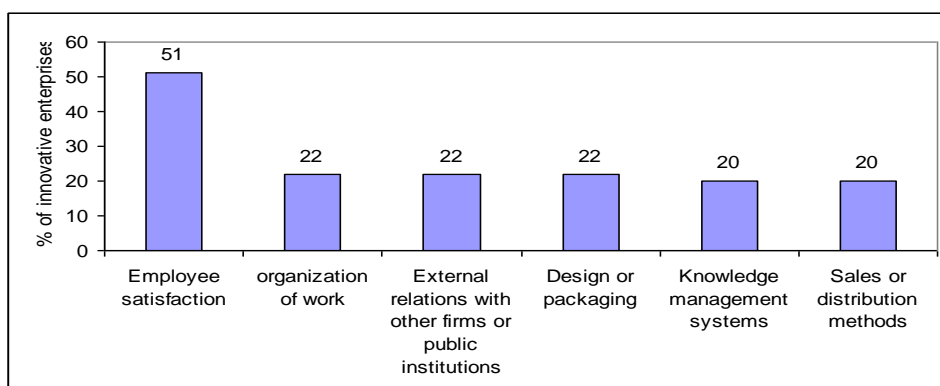
Collaborative partnerships for innovation activities by type of partner (2008)



Enterprises with innovation activities using intellectual property rights (2008)



Proportion of innovative enterprises using organizational or marketing innovations (2008)





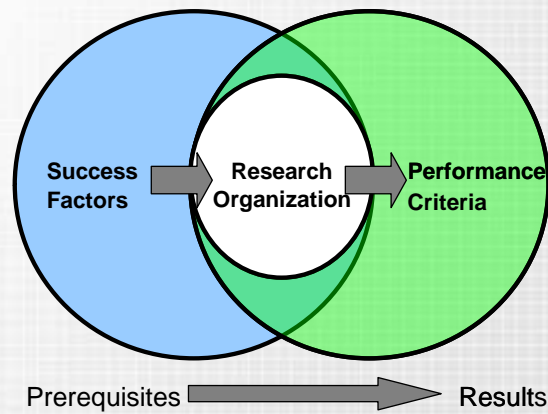
Introduction

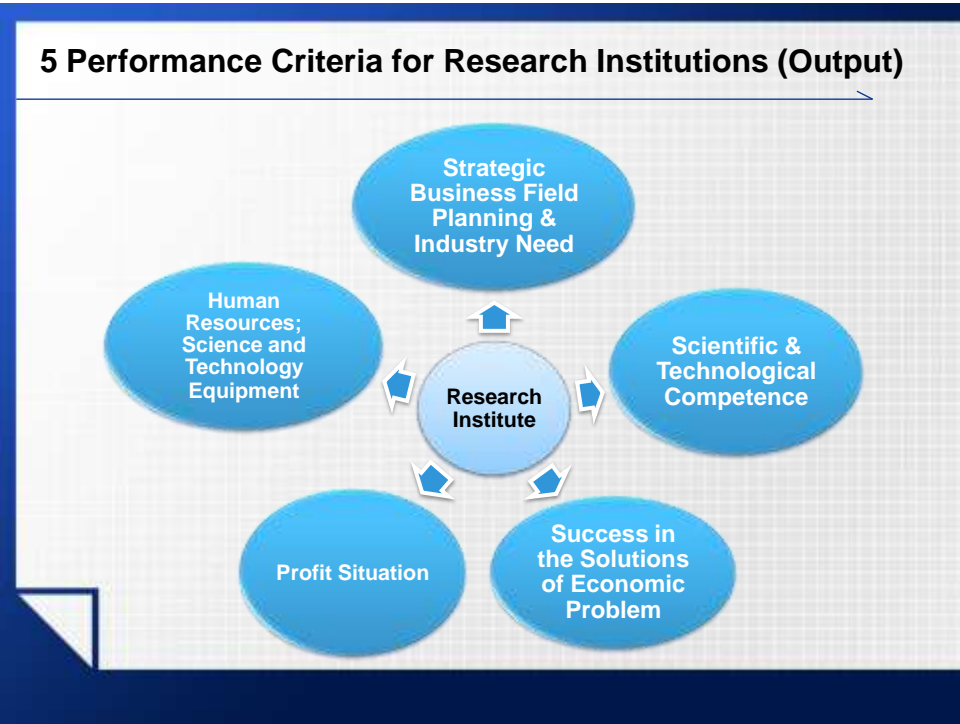
For the future of the national innovation system of Egypt it is vital, that both sides, industry and research institutions know about their strengths and weaknesses in terms of innovation in order to provide suitable measures and programs for the future development and enhancement of innovation capabilities of both sides

The evaluation takes place for the very first time, and universities and research centers are not well acquainted with the topic of innovation performance and the surrounding topics.

METHODOLOGY

9 Success Factors / 5 Performance Criteria

Source: Kuhlmann, Holland; Erfolgsfaktoren der wirtschaftsnahen Forschung, 1995**9 Success Factors for Research Institutions (Competence)**





Interview Questionnaire for the Evaluation of the Performance of Research Institutes

Evaluation of the Egyptian Science and Technology Landscape

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<center>

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<Organization>

<Street>

<City>

<Country>

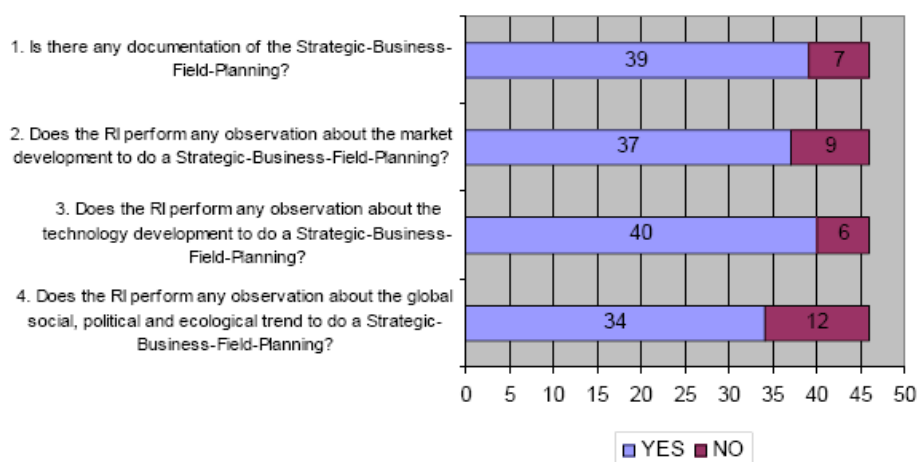
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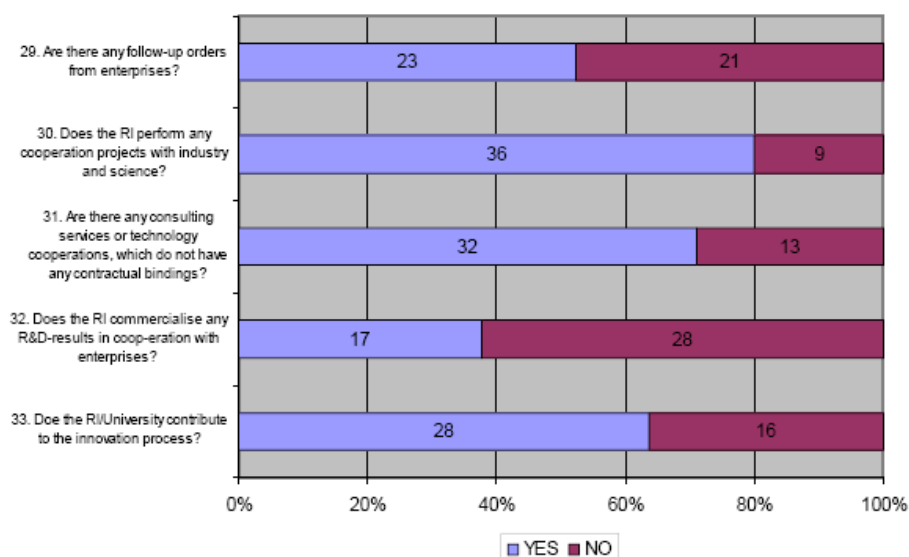
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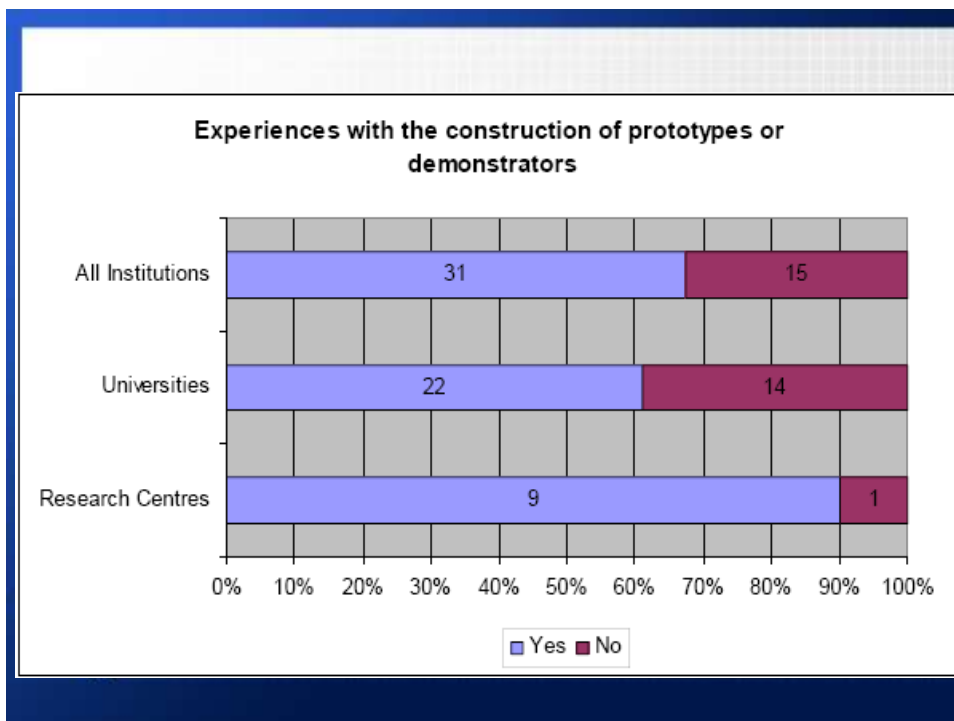
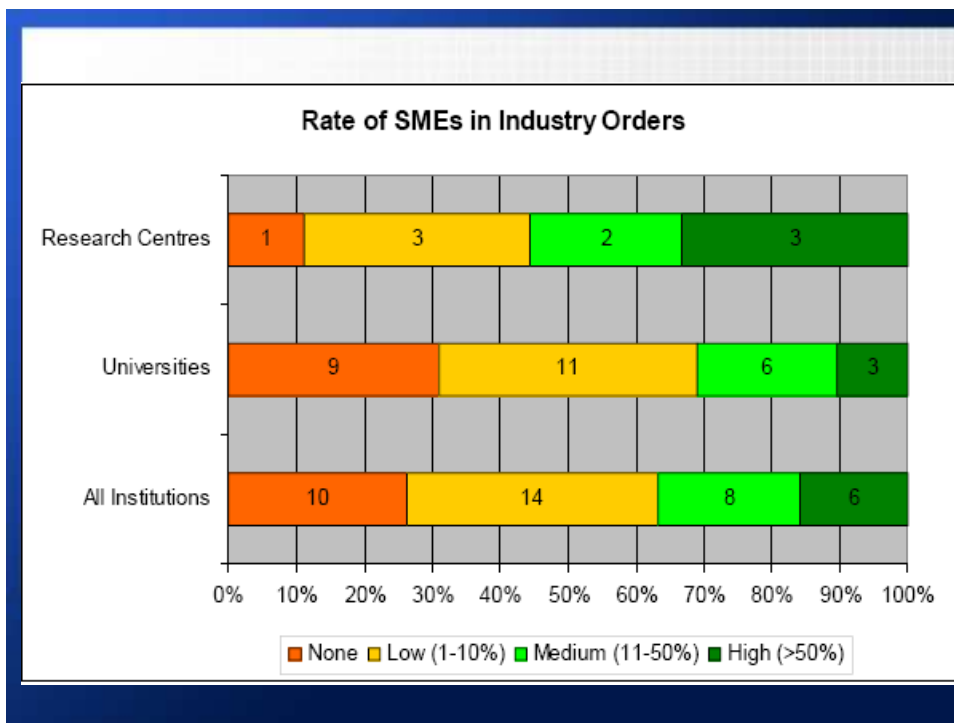
Success Factor "Strategic Orientation"

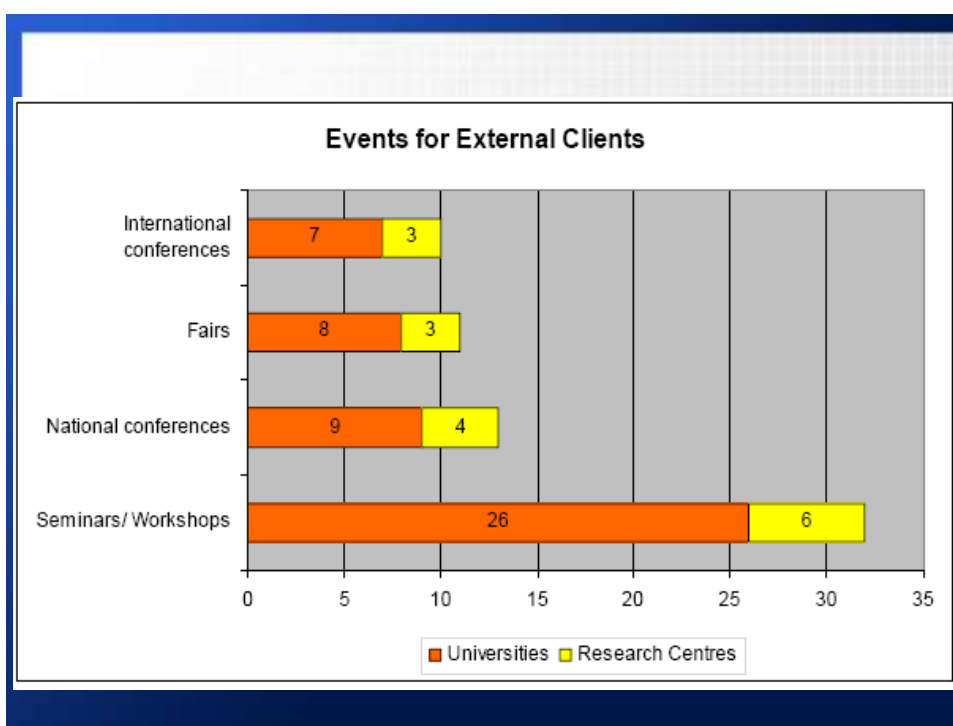
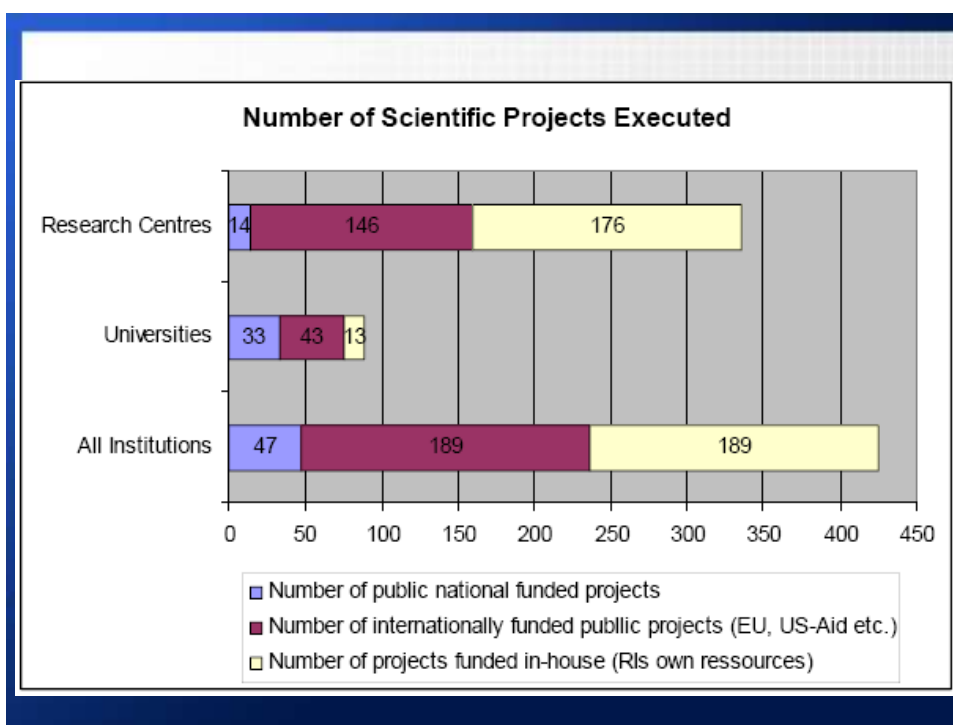
3.1 Strategic Business Field Planning

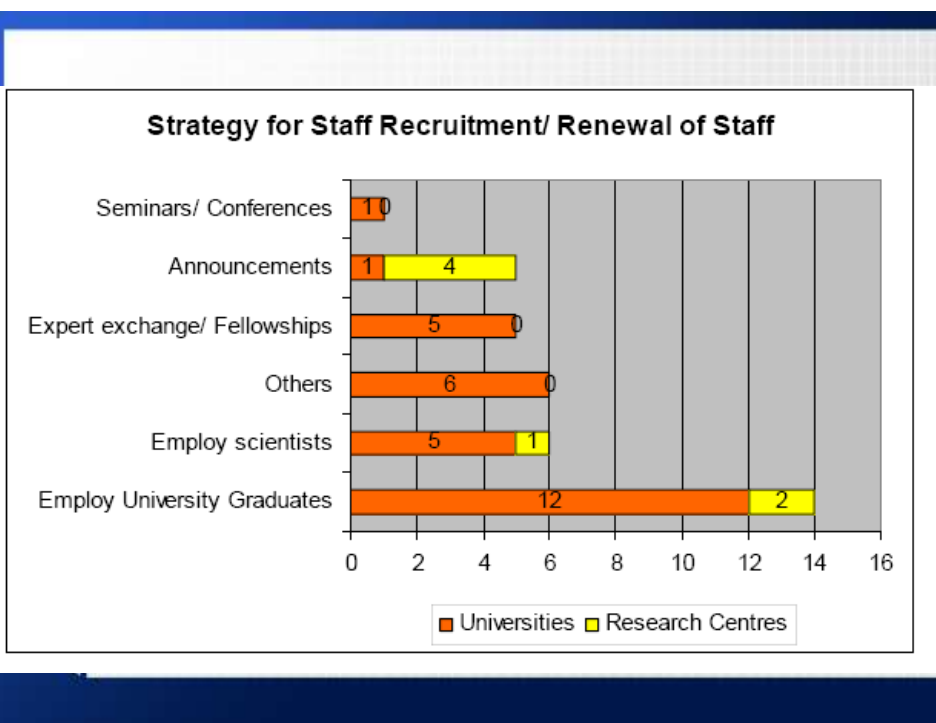
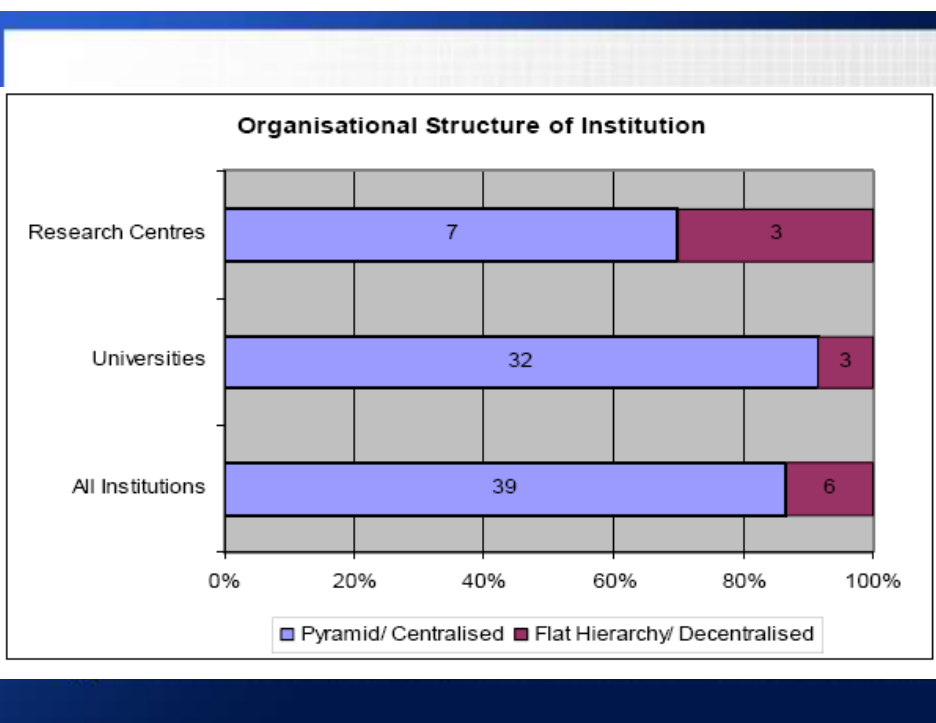


Relationship to Industry

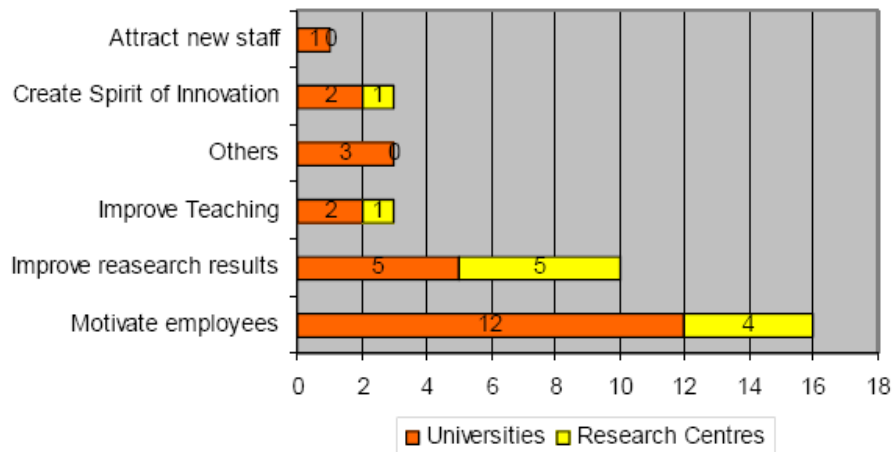




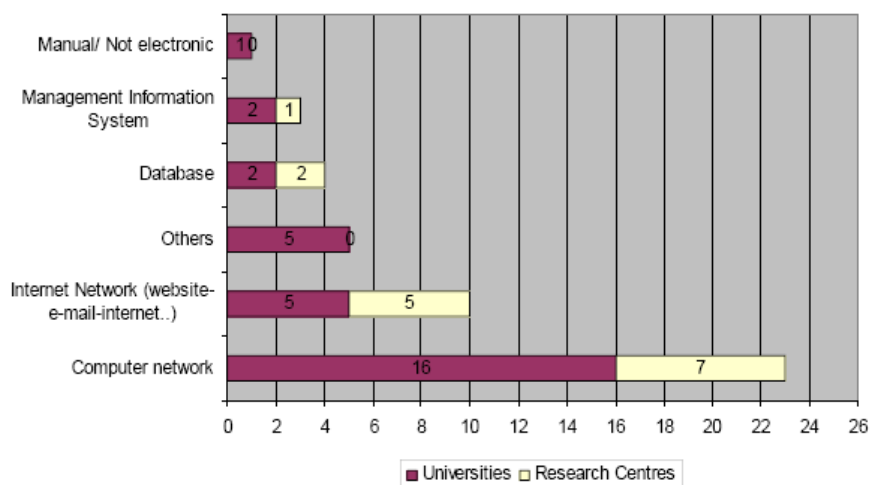




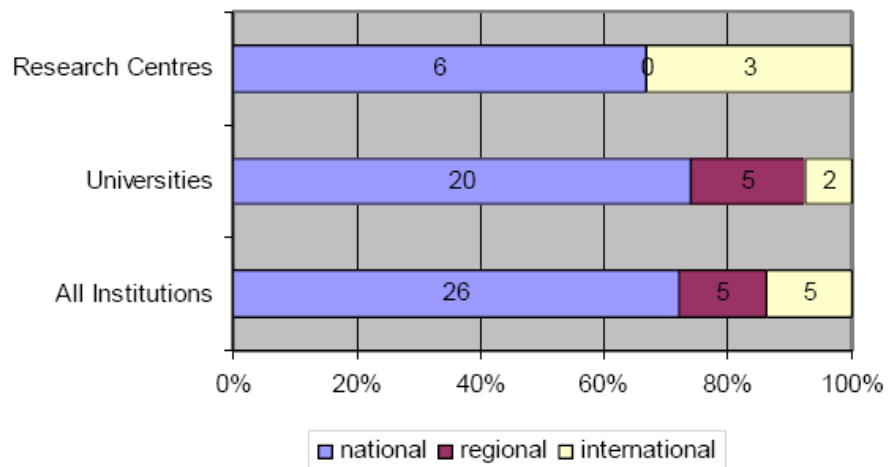
Reasons for Introduction of Incentive Systems



Data Processing Practices



National and International Funding



Performance of Researchers

