

WORLD COMPETITIVENESS-TODAY'S CHALLENGE FOR POLISH RESEARCH INSTITUTES

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Abstract

New areas of activities of Polish Research Institutes, competitiveness, measures of successes of Research Institutes, model of Research Institute, way to international cooperation are presented in the paper. At present Polish industry looking for well educated graduates, therefore Polish universities are flourishing.

Foreign owners and clients became sources of new technologies. It is easy to justify choice of these solutions. International cooperation gives opportunity for achievement global R&D competition. It also gives opportunity for young well educated graduates to work in Poland. Successes of Research Institute demand double measures. It means necessity to measure two success elements: economy success and professional success. Modern research institute can be compared to professional sport club. Such sport club members, there are people hungry for knowledge and job successes, ready for heavy work, greedy for fame. This similarity creates new innovative management conception of Research Institutes in Poland. The paper presents in particulate Institute of Aeronautics, Some data concerning the Institute of Aeronautics illustrate its possibilities scientific-research, the possibility of working out novel of products and the international cooperation within the framework of bilateral agreements and European Programs.

Keywords: *research and development research institute, international cooperation, competitiveness,*

1. Introduction

Some years ago, Polish economy reoriented itself on the capitalistic way.

Polish Industry changed owners and clients and now works as global concerns partner.

At present, Polish Industry looking for well educated graduates, therefore Polish Universities are flourishing.

Foreign owners and clients became sources of new technologies.

National R&D market shrank, therefore Polish Research Institutes had to look for new perspectives.

2. New areas of activities of Polish Research Institutes

Transformation of Polish economy and new expectation from research and development units determined new areas for Research Institutes activity. They are:

- International cooperation including international programs participation and R&D services for global concerns,
- Technology transfer and support for domestic SMEs.

It is easy to justify choice of these solutions. International cooperation gives opportunity for achievement global R&D competition. It also gives opportunity for young well educated graduates to work in Poland.

Research Institute's works can be used for domestic SMEs on the global market.

3. Competitiveness

International cooperation of Polish Research Institutes requires acceptance of market laws. Fundamental market law it is competitiveness. Global competition it is fundamental challenge for Polish Research Institutes.

4. Measures of successes of Research Institutes

Successes of Research Institute demand double measures. It means necessity to measure two success elements;

- economy success,
- professional success.

Economic measure it is profit.

Professional measures there are monographs, conferences, patents, rewards, science and job titles.

5. Model of Research Institute

We talk about modern Research Institute which competes on the global R&D market and which transfers technology for domestic industry including SMEs.

Research's Institute features are:

- Position and prestige of Institute's brand,
- Fame of leaders and managers' skills,
- Specialization compliance with clients expectation,
- Staff skills, knowledge, experience, management, potential,
- Quality standards,
- Laboratory equipment,
- Client's references.

Balanced development of Research Institute demands three financial sources which are:

- Orders and programs from foreign clients,
- Orders from domestic industry and money from technology transfer for domestic SMEs,
- Government programs and government sponsorship of laboratory equipment and infrastructure modernization.

6. Way to international cooperation

Slogan "international cooperation" means:

- Participation in foreign science conferences,
- Mutual visits of experts and managers,
- Participation in European Union Frame Programs,
- Participation in joint international programs,
- Offset participation.

7. Conclusion

Research Institute can be compared to professional sport club. Such sport club members, there are people hungry for knowledge and job successes, ready for heavy work, greedy for fame.

Research Institute therefore is similar to professional sport club operating:

- Search for young talents,
- Experts transfer among: Research Institute, universities, economy and industry,
- Rotation of employees who are not able to achieve future successes but their professional experience can be used in other businesses,
- Permanent competition,
- Team work,
- Job training.

This similarity creates new innovative management conception of Research Institutes in Poland.

8. Appendix

Some data concerning the Institute aeronautics illustrate potencies of the Institute, the possibility of working out novel research products and the international cooperation within the framework of bilateral agreements and European Programs.

Institute of Aeronautics - research possibilities

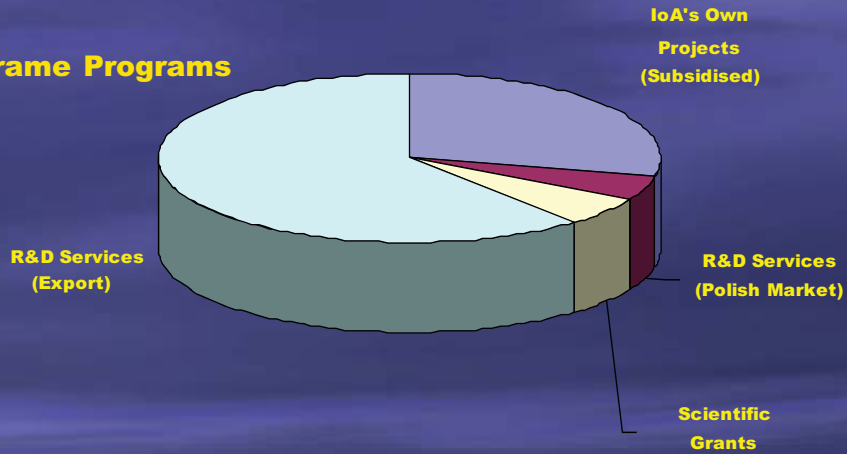


Institute's potencial

SALES STRUCTURE (2005)

Clients:

**General Electric
Pratt&Whitney
EADS CASA
Airbus
European Frame Programs**

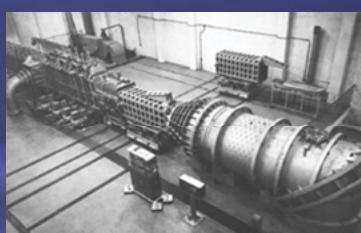


EMPLOYMENT 500

Materials and Structures Research Center with more than 60 laboratory stands



New Technologies Center



HIRETT
High Reynolds Number Tools
and Techniques for Civil
Transport Aircraft Design

Mission and Strategy

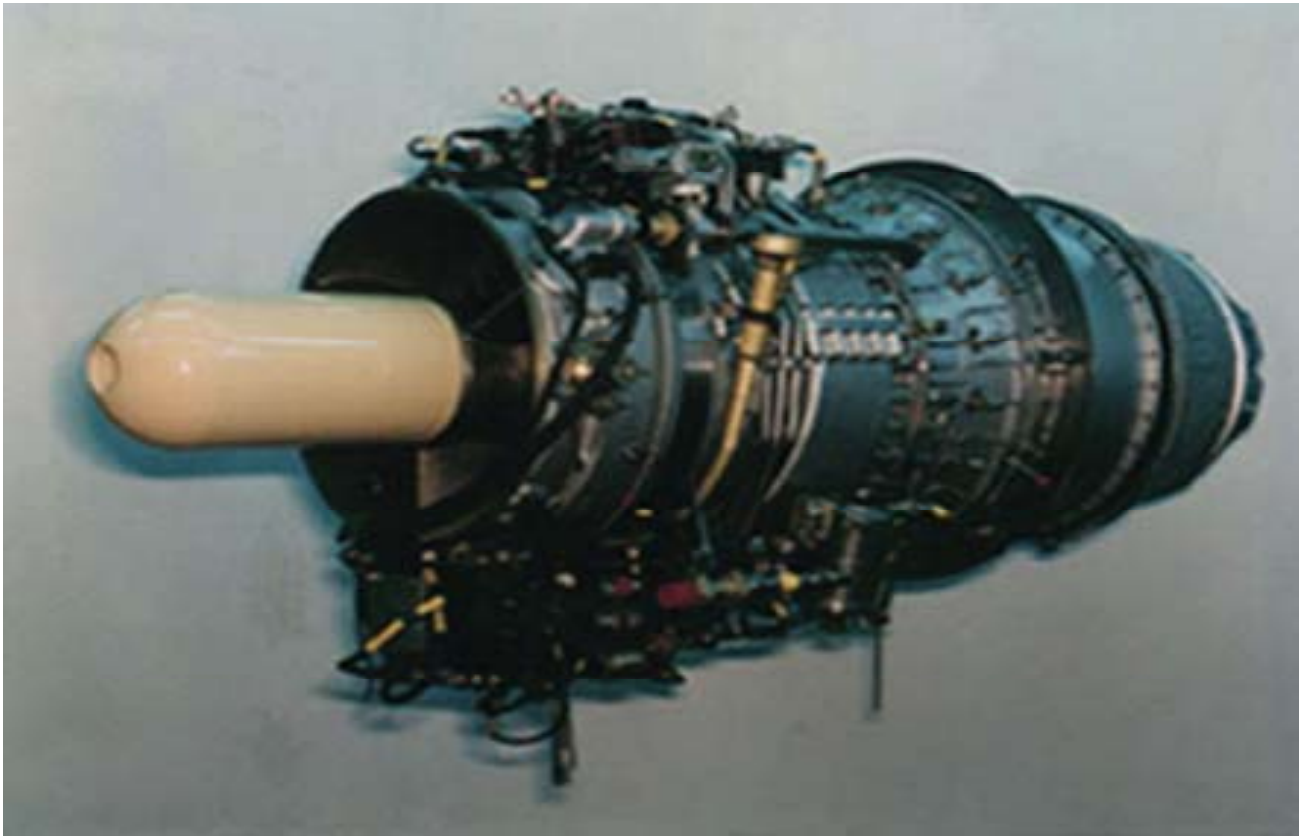
Mission and Strategy

Mission – creation of new technologies

Strategy – services on the worldwide R&D market

Range of Activity







International science research and development cooperation

Cost-Effective Small Aircraft

INTEGRATED PROJECT Proposal No. 030888

Duration: 36 months (2006 - 2008)

COORDINATOR : VZLU

40 Partners:

e.g.

VZLU, CENAERO, CIRA, DLR, EADS, Eurocopter, IFA, Liebherr, NLR, ONERA, PIAGGIO AERO, TURBOMECA, UoM, Ulg

IoA participation - Contractor

AERODYNAMIC, AIRCRAFT DEPARTMENTS and , CMST

IoA :

- New airfoils with and without high lift system
- New propeller
- Analysis of loads
- Flutter
- Composite structures
- Registrar of fatigue loads



NEW TECHNOLOGIES CENTER

NEXT PROJECTS

THE 7 FP - THE SEVENTH FRAMEWORK PROGRAMME
for research and technological development
will run from 2007 to 2013
7 FP with budget 50.5 Billion Euro

4 MAIN BLOCKS OF ACTIVITY FORMING 4 SPECIFIC PROGRAMMS:
1. COOPERATION
2. IDEAS
3. PEOPLE
4. CAPACITIES

IN „COOPERATION” IS TRANSPORT (INCLUDING AERONAUTICS)
with budget 4.1 billion Euro (Transport)
and 157 million Euro for Aeronautics for 2007

5 CALLS
IN 2007, 2008, 2010, 2011 AND 2012
with budget distribution of about
200 MILLION EURO PER CALL



NEW TECHNOLOGIES CENTER

NEXT PROJECTS

THE 7 FP (FIRST CALL)

7 FP

1. SOFTLAND
2. ESTE
3. CSA BIOFUEL CITIES
4. MARISPA
5. HYSTRUCK
6. SAM
7. NETWORK OF EXCELLENCE P/T "Airport impact monitoring"
8. OCN - TURBOPROP
9. ROTOR-TIP-JET
10. CRYOTHEP
11. EMORPH
12. AEROFAST

HELIX – Innovative Aerodynamic High Lift Concepts



Develop and explore innovative high lift concepts
21 innovative concepts proposed

HELIX has rigorously assessed these concepts using multi disciplinary design tools

Trade tools (TADPOLE – Airbus UK, FET - IAI)

The only one concept has been down selected to experimental validation in a large scale wind tunnel test.