Research Project Proposal Writing

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2. Purpose of a Proposal
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1. Types of research and how it is funded

Fundamental or pure research: is about searching for knowledge without with no obligations on outcomes

Normally funded by governments

Applied Research, Development Projects and Practical Implementations are usually funded on a contract with delivery obligations eg a marketable product, software or technique that could be implemented for production

May be funded by government, private companies or individuals

Approximately 85% of funds are usually committed to applied research and 15% on theoretical research

1. Types of research and how it is funded

According to OECD, about 2/3 of R&D on scientific and technical fields is carried out by industries 20% and 10% respectively by universities and government

The research is an ongoing process of correcting and refining hypotheses, which should lead to the acceptance of certain scientific truths.

No scientific proof can be accepted as ultimate fact
Rigorous testing/observations enable presumptions to become accepted facts

Research enables gradual building of knowledge.

2. Purpose of a Proposal

The purpose of a proposal is to persuade the reader to sponsor a grant or to provide some funds.

A proposal is a written document to a sponsor

The sponsor may be public or private

Typical public sponsors are:

- **US National Science Foundation (NSF)**
- **EU Programs under FP7,**
- **National Research Councils in many countries (e.g. NRC Canada, DFG Germany, British Council, Australian Research Council etc.)**
- **Research Grants Council of Hong Kong**
- **Qatar National Research Fund**

1. Types of research

Private Sponsors are mainly Foundations:

- **In the US there are 43 000 Private Foundations, awarding 8B$ annually. These are established by about 1/3 of the 2.5M US Corporations.**

- **There is a US Federal Law, that 5% of the market value assets or interest income, whichever is higher must be turned over to non-profit organizations.**

- **The conditions for a grant are up to the sponsor under the legal constraints motivated by profit**
- **They are much less likely than governments to fund research projects solely for the sake of knowledge**

2. Types of Proposals:

The sponsor determines the purpose of funding

- **Fundamental research**
- **- returns expected in 25 years**
- **– outcome uncertain**
  – typically 10% of research funding
- **Applied research - returns expected in 15 years**
- **– outcome predictable**
- **Development - returns expected in 5 years**
  – outcome expected
- **Practical execution of a task**
- **-returns expected on project**
- **completion**

2. Types of Proposals:

The Internet contains many references to writing project proposals
Most are from the US – they even include details of fund raising and how to find a sponsor.

Of interest is a school library project in the US States, for which grant applications must be made by school districts,
Their success is based in the quality of the application:
(www.schoollibraryjournal.com)
New York obtained 1$ per student
California 37$ per student
Oklahoma 70$ per student
Alaska 132$ per student

3. Contents of a Proposal:

Internet references from the US are:

www.foundationcenter.org
www.mtsu.edu
http://research.microsoft.com
www.research.umich.edu
www.nsf.gov
www.tgci.com
www.wpi.edu
www.wpi.edu
www.mcf.org
www.cs.uiowa.edu
www.scn.org
http://grants.library.wisc.edu
www.professionalpractice.asme.org
www.gsa.gov/fdac/queryfdac.htm
www.jmu.edu

3. Contents of a Proposal:

Non-US Internet References:

http://scottish-enterprise.com
http://ec.europa.eu/research/fp6/index_en.cmf?p=0_doc
www.funding.aau.dk/eufund.htm
www.mdx.ac.uk
www.education.monash.au
www.biu.ac.il

3. Contents of a Proposal:

The web recommendations all have similar details for the preparations and the proposal contents:

Preparation:

Step 1: write for application forms and guidelines if not available on the Internet

Step 2: read the guidelines

Step 3: call a past grantee for advice

Step 4: call a past reviewer

Step 5: contact the program officer

3. Contents of a Proposal:

Proposal Writing:

3.1. Introduction
- who are you
- goals
- prove your credibility
- state the problem

3.2. Problem Statement and Need
- demonstrate your understanding
- focus on project
- relation to larger problems
- importance of project
- feasibility to solve the problem
- aim to be reached

3. Contents of a Proposal:

Proposal Writing:

3.3. Objectives - specify the end product (specific, measurable, practical, logical)

3.4. Methods - data collection, use

3.5. Evaluation - new knowledge in topic

3.6. Budget and justification

3.7. National benefit

3. Contents of a Proposal:

A letter proposal for a private sponsor may not need any forms. It should contain a similar (shorter outline):

Part 1 Summary	**- self identification**
	- uniqueness
	- sponsor expectations
	- budget
Part 2 Sponsor Appeal	**- why to approach this sponsor**
Part 3 Problem	
Part 4 Solution	
Part 5 Capabilities	**- demonstrate credibility**
Part 6 Budget and justification	
Part 7 Conclusion	

sign by “heavy weight person“ as leader

4. Evaluation Process:

As a rule all applications are reviewed by a group of experts.

Why are proposals rejected?

Problem Statement 58%	**- problem not important**
	- problem too complex
	- only of local significance
	- premature
Approach 75%	**- methods unsuited**
	- description too nebulous
	- not thought out
Investigator 55%	**- not sufficient experience**
	- unfamiliar with literature
	- poor publication record
Other 16%	**- resource assessment unrealistic**

4. Evaluation Process (cont):

- Often success rate is very low – 20-25%
- Evaluators read hundreds of applications that are not directly in theie fields of expertise
- Need to make the application clear otherwise the evaluator will not understand the project and will rate it poorly
- Need to be innovative in development of the project
- Publication record is very important

5. Do´s and Dont´s:

Do:

- add interesting technology components to proven ideas
- know how to fit into past and current projects
- involve a team
- proofread the submission thoroughly

Don´t

- say little is known or done
- think you know everything
- confuse objectives with actions
- define objectives you do not wish to achieve
- use abbreviations
- focus on the “cutting edge“
- request funding for basic operations