Karlsruher Institut für Technologie

How do I write a (successful) DFG proposal?

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Baseline

- Ph.D. thesis takes money (about 250 Teuro without overhead!)
- Funds of universities and institutes are more and more limited
- Funding by third party sponsors (DFG, AIF, BMBF, EU, State BW, industry), usually one application is not sufficient for a doctorate
- Third party funding would like to strengthen the competitiveness of Germany, e.g. DFG has about 3.3 billion Euro per year
- the money should not only produce very good science, but also a highly qualified new generation of researchers for industry and universities
- Doctoral thesis certainly makes good contributions to science or industrial application, but above all for a personal development
- Post-Doc: would like to gain further scientific qualifications, a habilitation or a professorship should be the intention! Third-party funds are absolutely necessary for the establishment of an own research group!

Proposal – in general

- Definition of a scientific question: where is the problem? Where is the gap? What is the vision? (also later always very important!)
- Develop a feeling for feasibility (even an Airbus A380 was originally created in the mind of an Airbus employee!)
- Selection of the external funding source (fundamental research: DFG, applications: AIF, innovative potential before commercialization: EU...)
- Study of literature gives a good overview with connections that are important for the project: in the end, the gap that needs to be filled has to be shown; it's amazing what has been done already!
- Preliminary work: very important to show that it works; you write completely different if you have done it yourself before!
- Formulate clear objectives! Usually 3-4 imaginable objectives that you want to achieve with the project are sufficient

Proposal – in general

- do not promise too much, it must be feasible for yourself or the Ph.D. student (but not too little either!)
- Formulate a work program, as precise as possible, so that it is clear what has to be done
- Reasonable time schedule
- Sensible cost plan: 1 Ph.D., necessary equipment and material resources (don't exaggerate; it's good that we are well supplied with personnel and equipment, but there is always something missing)
- Superior structure of the proposal:

  State of research: where is the gap?

  Preliminary work: why I am the best person to solve the problem! Show your experience and results of a feasibility study

  Objectives: what should to be reached? Where are the challenges? What are the open questions?

  Work program: how can the objectives be achieved?

Some recommendations

- A good introduction is important (generate the interest of a reviewer)
- On the first two pages the intention of the entire application must be clear
- Clear structure of the proposal must be visible (also each individual chapter)
- After complicated explanations, always give meaningful summaries in short paragraphs
- Not too many diagrams, but good ones! Also explain them and fill them with content! Design diagrams scientifically! Not too small (everything must be readable when printed out)! No ‘beautiful pictures’!
- The proposal must convince a reviewer who is deeply involved in the scientific problem but also someone who is aside!
- Put yourself in the role of the reviewer, not only consider your own point of view, play the role of ‘Advocatus diabolic’! Do not conceal anything!
- In the foreground is always good science!

Proposal - formal

- Paragraphs express individual thoughts (a thought does not consist of a sentence), good magazine articles serve as examples (‘Die Zeit', ‘Spiegel'... ‘Bild' is not so well suited for a proposal…)
- Excellent German/English: very well formulated sentences that build on each other and show the logical structure
- if possible, formulate active
- whoever has not thought about a good formulation, also did not take care of the topic!
- 'Writing is better thinking'
- Also in an industrial career applications are expected (research applications for the personnel, business plans with costs)
- Also important for the formulation of patents
- Money per page is very high (for 25 pages you receive in general around 250 TEuro!)

Personal Barriers

- Every beginning is hard!
- First proposal: preliminary work is not so important, but you need resources from your institute (for own position, facilities, equipment…)
- You have to learn how to deal with failure (we all have the same problem!)
- 'one out of ten' ideas is unfortunately the reality
- Good training for future employment: PhDs must be able to lead and motivate people! Must be able to draw the right conclusions and make decisions sometimes based on their instinct
- of course always with the background of a deeper understanding!
- When you have finished a proposal you should have the feeling that you have done everything and you cannot make it better!

The goal…it is more than worth to proceed!

The job prospects for PhDs have always been good!

There will be also many open positions in future for professors!