# Science Industry – Career Oportunities

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- Academia Vs Industry some comments -
- What is Science Industry?
- Personal experience



• Sorry, but I do not have a general answer



- Academia is complex, but as a concept, is quite similar worldwide (MANY SIMPLIFICATIONS)
  - Write proposals for funding
  - Make research (theoretical or applied) pencil/computers Vs experiments
  - Write proposals for funding
  - Teaching
  - Write proposals for funding
  - Mentoring young researchers
  - Write/correct proposals for funding

induciencia



#### THINGS YOU CAN DO IN ACADEMIA THAT WOULD GET YOU FIRED IN THE REAL WORLD:

WWW. PHDCOMICS. COM

• Many kind of companies (size, culture, economic model...)

- Start-ups
- SMEs
- Big companies
- International companies
- Productive
- Engineering
- Services
- ...
- In general:
  - more constrained than in academia
  - Shorter term
  - More "practical"
  - Pays better



- Some differences:
  - Flexibility
  - Paperwork (specially if you work in a public laboratory/university)
  - Objective:
    - Knowledge
    - Profit
  - Salary







### Science

Knowledge about the reality derived from observation, methodical experimentation.

The explanation of principles and causes and the formulation and verification of hypotheses





### Science works sometimes far from our regular natural perceptio



### Therefore you need special facilities



### **Science Industry**

Companies that design, manufacture and maintaing scienfic facilities, intruments or Systems





### Some Large Research Infrastructures under construction



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#### European Extremely Large Telescope E-ELT

Biggest optical telecope in the world. 40m Mirror

Construction Budget: 1.600 M €

Estimated start date:

Installation Country:

Chile

2021







### Some Large Research Infrastructures under construction



The Compact Linear Collider

| Possible sucesor of LHC   |             |
|---------------------------|-------------|
| Construction budget:      | > 10.000 M€ |
| Estimated start date:     | (?) 2025    |
| Installation Country: Sui | za, Japón.  |
|                           |             |
|                           |             |





### Some Large Research Infrastructures under construction

Facility for materials tensting for DEMO

Construction budget:

600 M€

Estimated start date:

2025

Instalation Country: Spain



IFMIF-DONES accelerator site. Granada



### Science Industry: Some Numbers

EUROPE......9.557 M €/year\*

GLOBAL......40.093 M €/year\*



# Just some examples





Spanish leader in welded structures

International leader in engineering and manufacturing of sistems for science





World reference in power supply and modulators for scientific Facilities



## Ineustar



Private non-profit Industry Association created by Spanish companies working in this sector

### **OBJECTIVES**

- Structure the sector.
- Increase economic returns and spreadthe knowledge on ScienceIndustry
- Support from the private sector Spanish applications for Large Infraestructures
- Promote a bigger Science development
- Defend the common interests of the Science Industry
- Disseminate, collectively, the nature and capabilities of the Science Industry
- Promote and propose unique programs, projects and technological developments
- Collaborate, and create synergies between industry and academia





### Spanish Industry works for most relevant internacional facilities





### Spanish Industry works for most relevant internacional facilities





# Why Scietifics work in this Industry?

- Facilities/Systems required for the experiments require cutting edge technologies: companies need new ideas and ways of thinking
- Systems are generally "one of a kind" and is very important understand the final objective.
- Relation customer-provider is very special andit is very important to talk "the same language"



My experience

- Telecommunication Engineer – University of Navarra



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# NOTHING IS FOREVER, EXCEPT CHANGE.

- BUDDHA