# From Academia to Industry

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# Being a physicist in industry

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**Should I stay in academia after my studies, PhD, Postdoc,… ?**

**What is different / the same in industry ?**

# Academia – stay or leave

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## Good or Bad? Positives and Negatives

Exciting ground-breaking experiments

Limited infrastructure support

Job security?

Directly influence direction of research

Continuous proposals

Independence

Only high impact papers

Internationality

Teaching

Teaching

# What's different in industry

| Academia | Industry |
| --- | --- |
| External funded projects | External & internal funded projects |
| Technical challenges | Technical challenges |
| Clever solutions | Efficiency & repeatability & optimisation |
| New ideas / theories | New markets and products |
| Publishing papers | Selling products |
| **Advancing the boundaries of science** | **Profit for shareholders** |

# Some thoughts from other people

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"What are the most rewarding aspects of your job?"

Finding a **cost-effective** solution for a complex problem

Challenging projects which require real scientific detective work to solve and bring about **real world products**.

Problem solving, **working with professionals from other disciplines** (chemistry, EE, ME, CS)

Drive equipment design for next generation **customer needs**

I get to work on my own projects with little or no supervision. I get to study new fields according to my own curiosity

Providing a **reliable and sophisticated** software product with a **long lifetime**

Achieving new **performance** levels with newly developed processes

Be able to design and implement my ideas **from scratch to completion** and **contribute significantly to the company's success**

Seeing **others use the results of my work**.

Level of **responsibility**, active participation equity participation.

Common Careers of Physicists in the Private Sector
AIP: Roman Czjuko and Garrett Anderson

# Why industry

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**One of many reasons**

**See a project through to a functioning product**

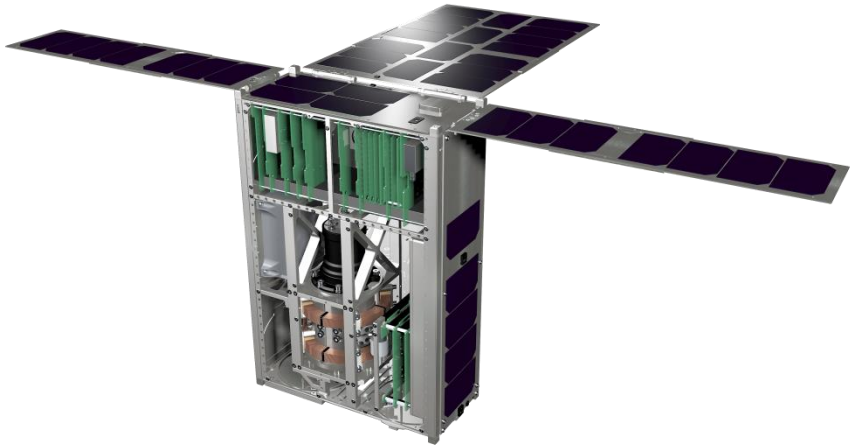
**In my case:**
**Building quantum sensors**

# Technologies developed at Te2v

UNIVERSITY OF BIRMINGHAM

## Gravity

Using gravity to detect objects beneath the ground for the construction sector and defence.



## Space

Gravity sensing  from space for future science missions.

Timing from space for navigation and synchronisation.


## Timing

Synchronisation of large networks in telecoms, navigation and synthetic aperture radar for defence.

# Markets & Applications

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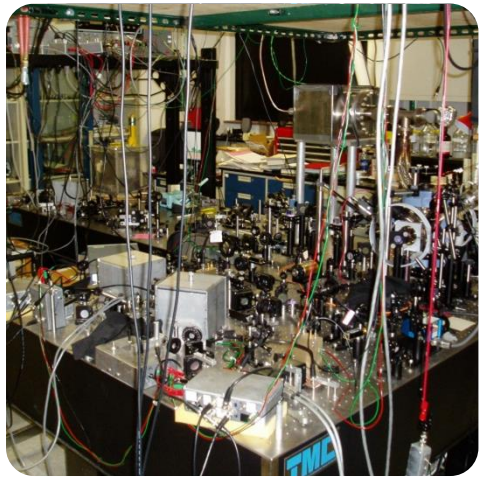
## Science

*Sale of components- e.g. vacuum*



## Space

*Space clocks and gravity sensors*

## Defence

*Clocks and gravity sensors*

## Maritime

*Navigation and clocks*

## Industrial (including agriculture)

*Industrial sensing / imaging*

## Construction

*Seeing beneath the ground*

## Oil and Gas

*Detection and monitoring of oil*

## Medical

*Magnetic brain scanning*

# Skills & Experience Gained as a Postdoc

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1. What is the pain of the customer?
2. Good enough!
3. For what use?

- Talent Pool
- Leading Academics
- Industry thinking
- Club captain
- …

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# Thank you