Translating Research

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QUBIC The Australian Research Council Centre of Excellence in Quantum Biotechnology
Australian Government Australian Research Council
UTS University of Technology, Sydney
Flinders University
The University Of Queensland Australia
The University of Melbourne
UOW Australia

Bottom line up front



Research Translation is not commercialisation

Research Translation is research

Research Translation is fundamentally about people

What is Research Translation?



"The difference between **science** and **technology** is the ability to engineer your surroundings to your own ends, and not just explain them."



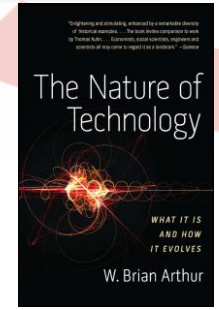
Dowling J.P. & Milburn G.J.,
"Quantum technology: the second quantum revolution", Phil. Trans. R. Soc. Lond. A (2003) 361, 1655–1674

Science discovers, investigates, understands, and describes phenomena.

Translation turns science into technologies

Technology is phenomena captured and harnessed for use.

Commercialisation is reducing to practice & combining technologies for economic or social benefit.



Adapted from: **W. Brian Arthur**, *"The Nature of Technology: What it is and How it Evolves", 2009* Penguin Books.

Why do research translation?





To create new technology and prepare for commercialisation

For 20 years I thought my job was, as a basic scientist, **publish papers and throw them over the wall** for someone else to apply.

I now realise that **there's no one on the other side of the wall**. Just a huge pile of papers that we've all thrown over.

- Prof. Duncan Watts

How is Research Translated?

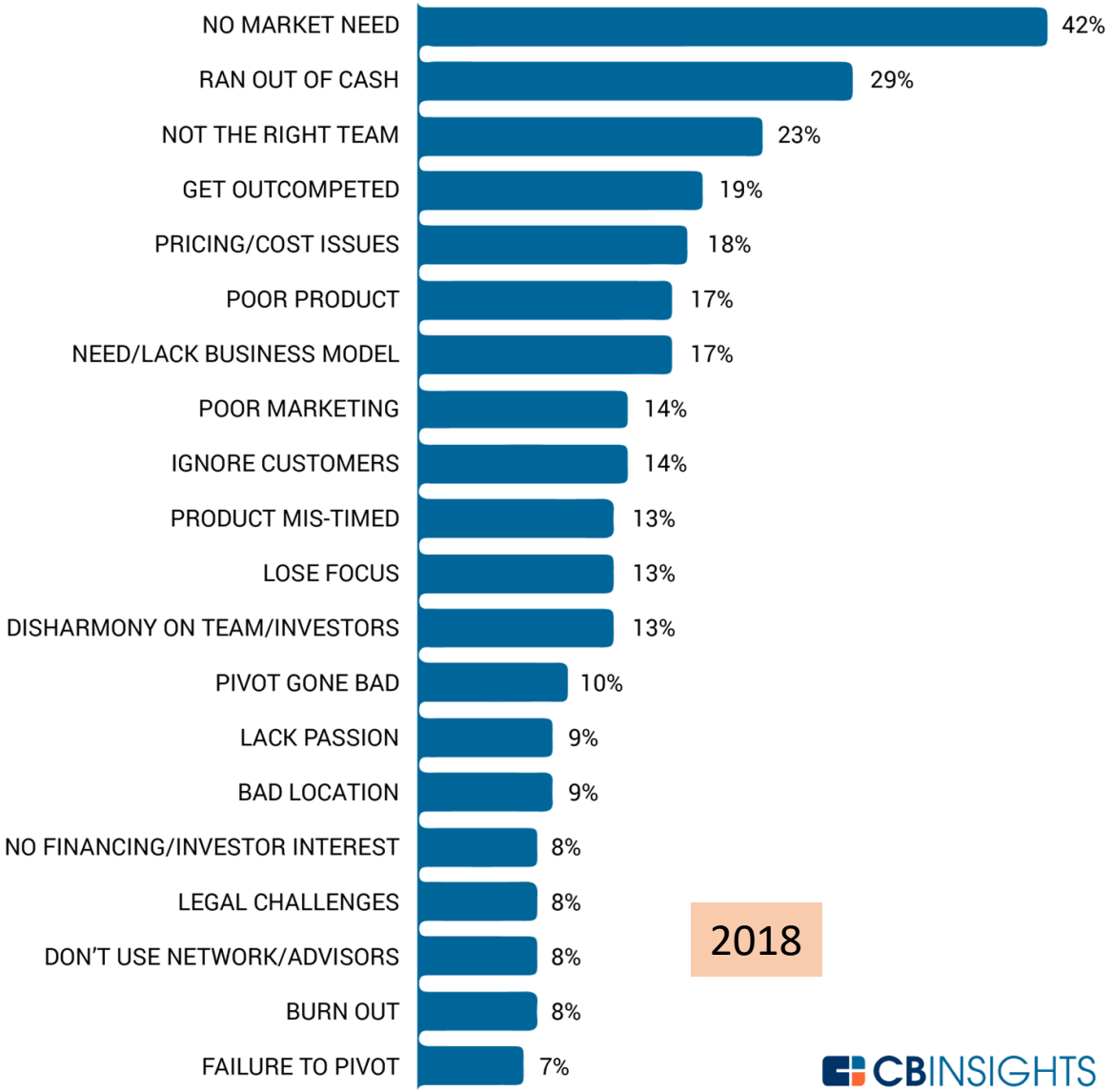


Hypothesis testing



THE TOP 20 REASONS STARTUPS FAIL

Based on an Analysis of 101 Startup Post-Mortems



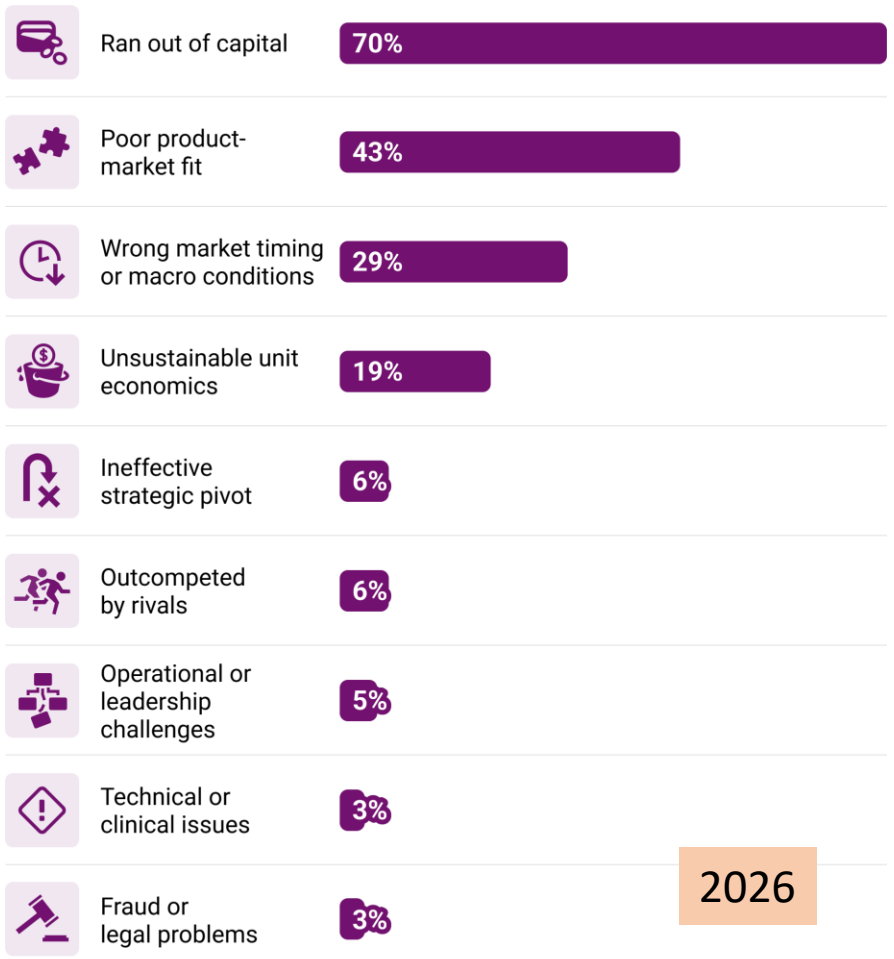
2018

CBINSIGHTS

Top 9 reasons for startup failure

CBINSIGHTS

Based on an analysis of 385 startup failures since 2023



2026

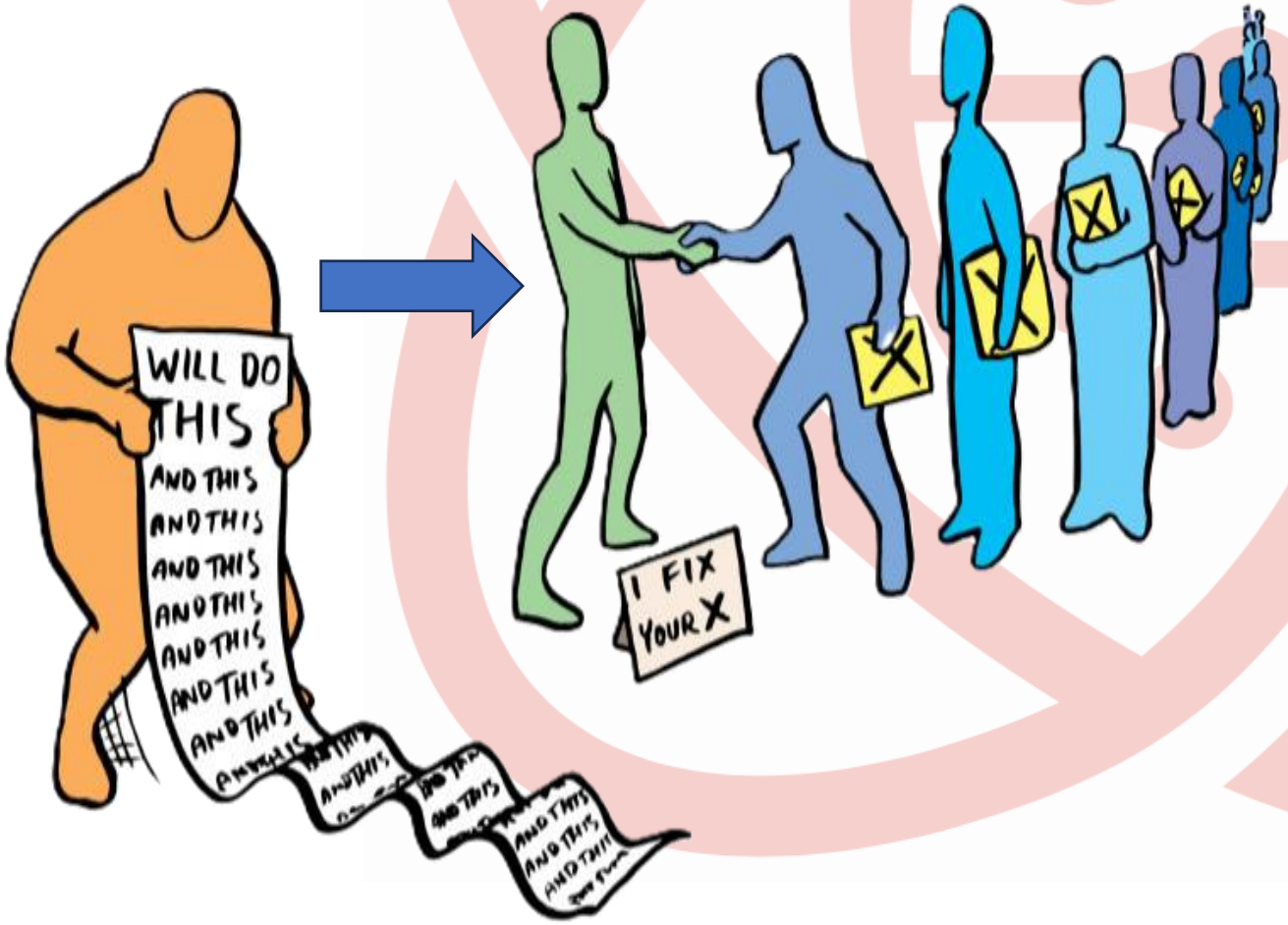
© 2026 CB Insights. Not mutually exclusive; one company can have multiple primary reasons for failure. Data as of 2/6/2026.

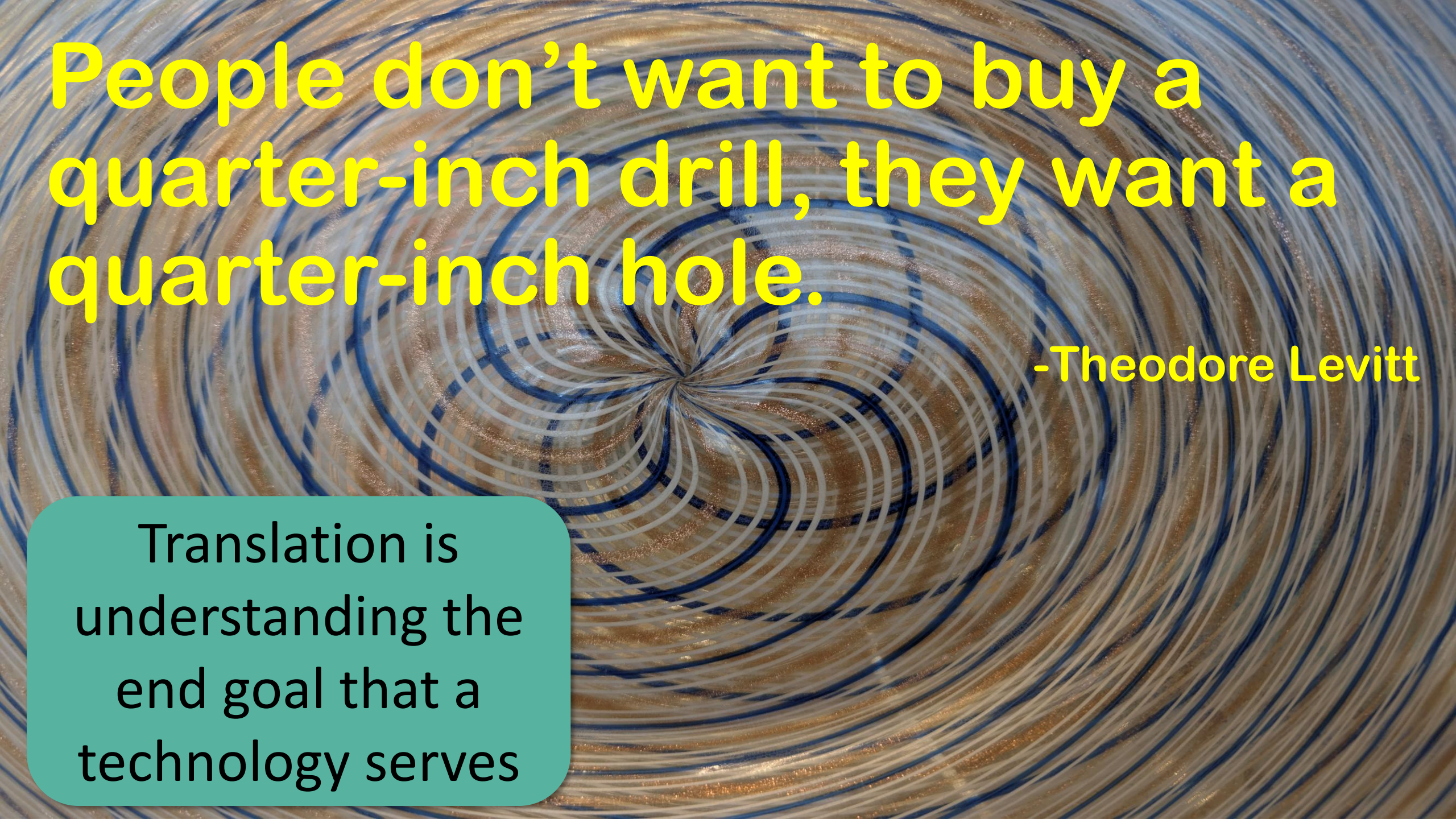
CBINSIGHTS

Market need is a main reason for failure → biggest risk to retire!

1) Is there an actual problem you are solving?
   i.e. What is the product?
2) Who cares about this problem?
   i.e. Is there demand?
3) Who will pay for or execute my solution?
   i.e. Who is the customer?

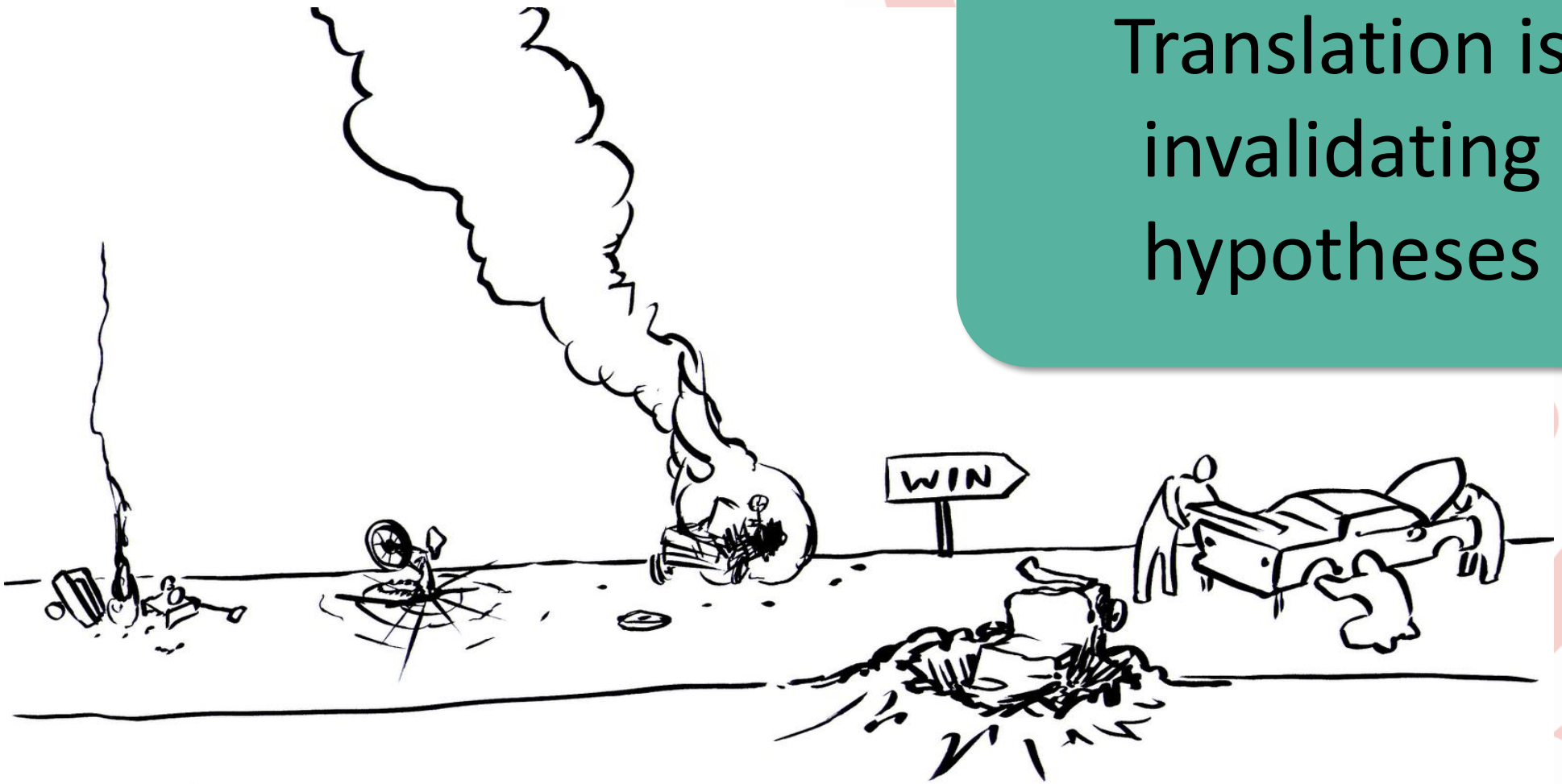
Translation is discovering and validating an application




People don’t want to buy a quarter-inch drill, they want a quarter-inch hole.
-Theodore Levitt
Translation is understanding the end goal that a technology serves

Expect failure





Translation is invalidating hypotheses

Successful translation is fail fast and learn

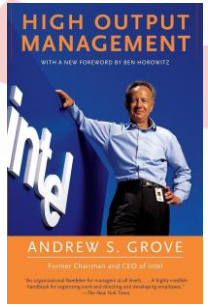


@FAKEGRIMLOCK

It’s all about the people



"When a person is not doing their job, there can only be two reasons for it. The person either **can't do it** or **won't do it;** they are either **not capable** or **not motivated.**"



Andrew S Grove
"High Output Management", 1983, Random House

"When a person is not doing ~~their job~~ *research translation* there can only be two reasons for it. The person either can't do it or won't do it; they are either not capable or not motivated."

Willing



Able



Notes for Translational Research Programs



People are necessary

- Execution is everything.
- People must be willing and able.

Failure is success

- Fail fast and learn from it.
- Treat the program as a portfolio.

Be always ready

- You cannot mandate an invention or discovery.
- Minimise avoidable barriers to participation.

Controversial opinions



Work with the willing & make them able!

Willing participants are rare – nurture them.

Provide equal opportunity to participate then double down on those that take the offer.

It’s not a competition – assess on the merits of each project.

Systematising Serendipity

