

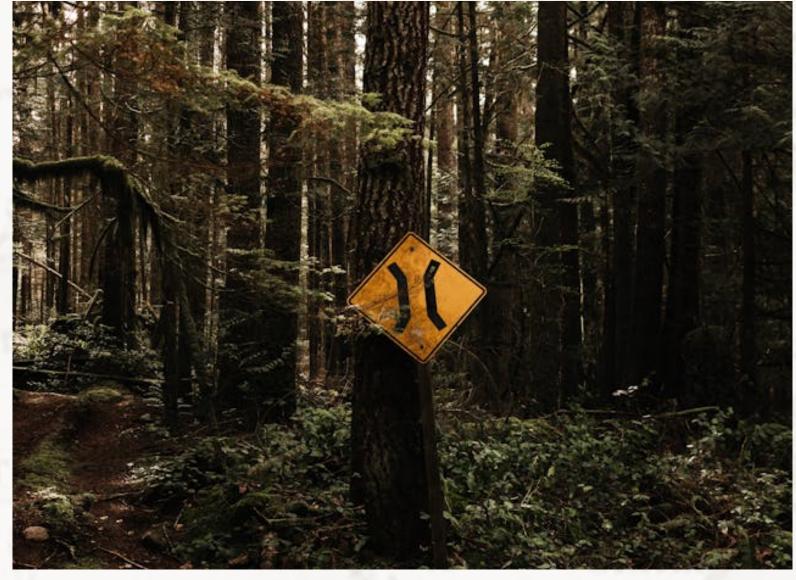






# What do we lose testing faster?







### ALTs take time The Problem

Not always, of course

Yet, sometimes, the plan may take months and months to execute.

There are limits on acceleration

There are limits on sample size



### Key Decisions The Problem

Some key decisions include answering the following question:

How long will it last?

ALT is one approach to create the information to inform the decision.



#### Tradeoffs

#### The Problem

Partial or incomplete ALTs provide partial or inaccurate information.

Alternative methods may not provide good enough information or might not be trusted



### What can/should

### we do instead?

### Poor Alternatives







### Higher Acceleration

Poor Alternatives

Crank up the heat and hope for the best

Yes the ALT goes faster, yet is it still providing useful results?



### Use Vendor Claims

#### Poor Alternatives

This might be a good alternative,

yet, in my experience, it should be used with care and caution.

If vendor claims were good enough, we'd rarely run ALT.



#### Parts Count Prediction

Poor Alternatives

Just don't do it – looking up failure rates in a table and adding them provides little more than a random number.

The trouble is some believe the result is accurate.



### What makes ALT

### valuable?

#### Better Alternatives







### Physics of Failure

#### Better Alternatives

With a good model of the specific failure mechanism, there is little reasons to run ALT.

Literature

Prior work

Deep understanding of the failure mechanisms



### Field Data

#### Better Alternatives

It might be crude, yet good enough.

Best if you have sufficient root causes analysis of most field failures

Ok, if the new design is largely based on a previous design

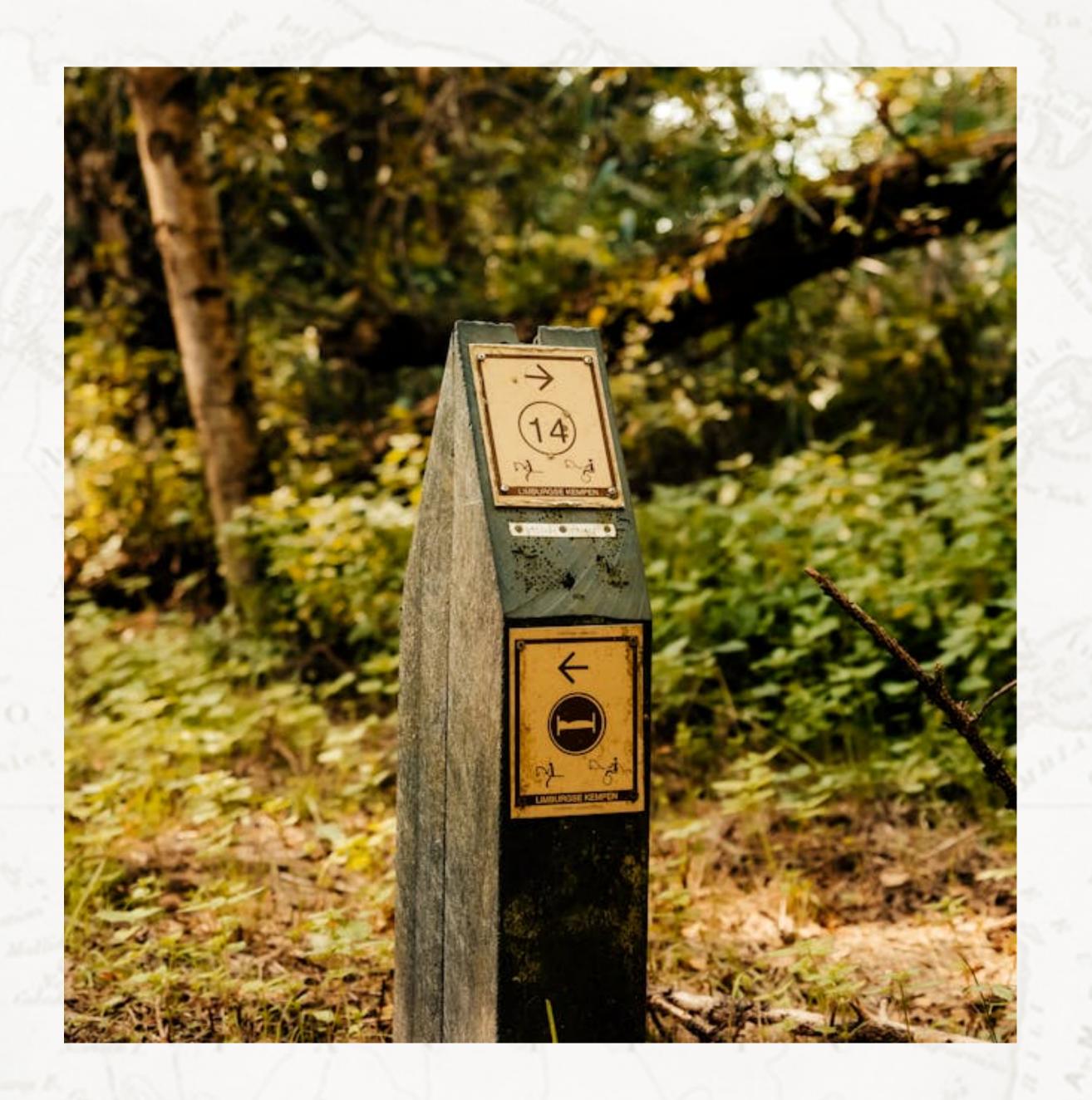


### Specific Causes

#### Better Alternatives

Instead of testing an entire product, focus on specific failure causes/mechanisms

Use system model to aggregate reliability data – at the failure mechanism level – use ALT to fill in the gaps.



### Will this work

## in your organization?

## Additional Comments and Questions

### Thanks

see more at AccendoReliability.com