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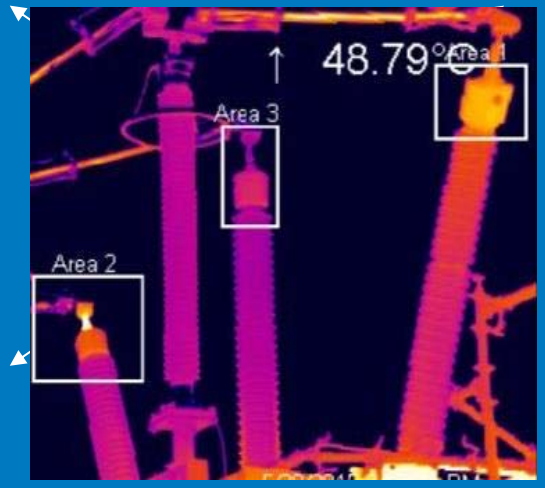
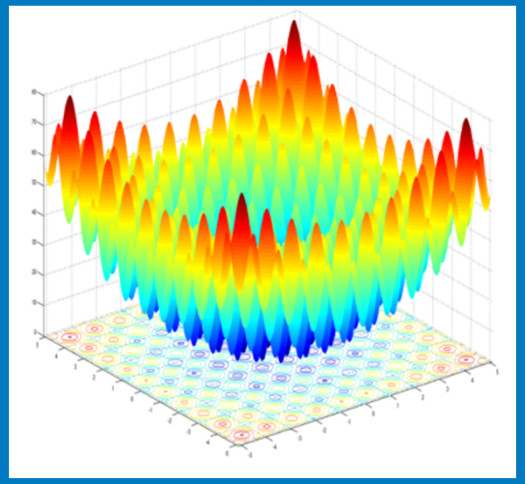
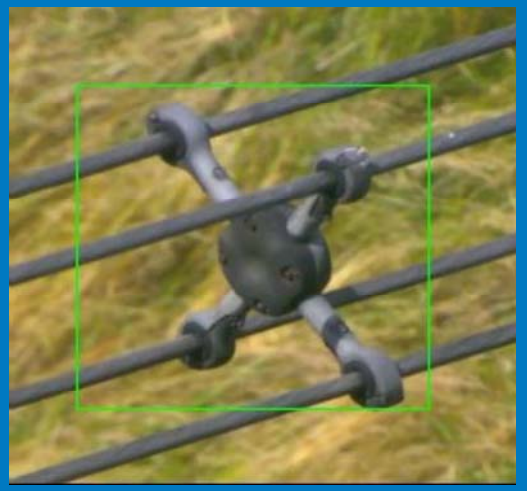
Big Data, Big Decisions: Realising Value from Big Data in Asset Management







Sam Young
Analytics Development Leader
National Grid (Electricity Transmission Owner)

Data is like electricity…

In Q2’17 the UK generated 80.7 TWh of electricity

Electricity is only valuable if it is actually used to do work

Data is only valuable if it actually changes a decision

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What decision am I trying to change with this data?

The more valuable the decision, the more valuable the data

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A. Reducing time spent looking at video footage by automatically detecting components: ~£20k p.a.

B. Reducing the amount we spend on asset replacement by 1%: >£10M p.a.

Saving SMEs time can be interesting and useful but it won't change the world

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What decision am I trying to change with this data?

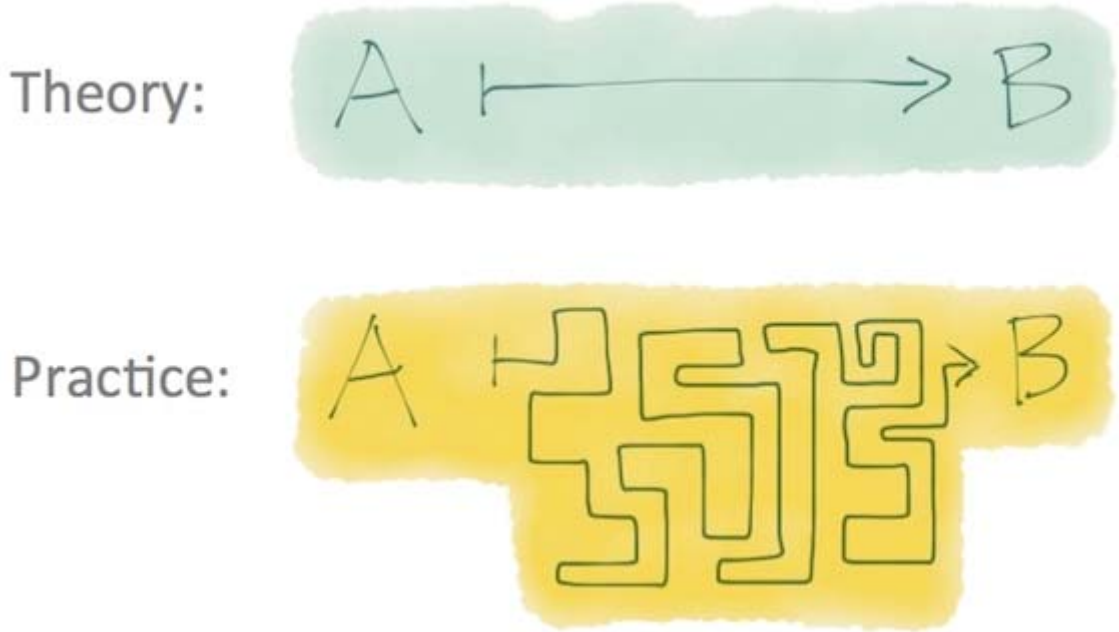
What is the value of changing that decision?

Big decisions in Asset Management

- What assets should be purchased?
- When should assets be maintained?
- When should assets be replaced?
- When can an asset be pushed harder?

What is the profit optimal purchase, usage, maintenance and replacement strategy?

A sad reality



Collecting and analysing the data is usually not enough to change the decision

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What decision am I trying to change with this data?

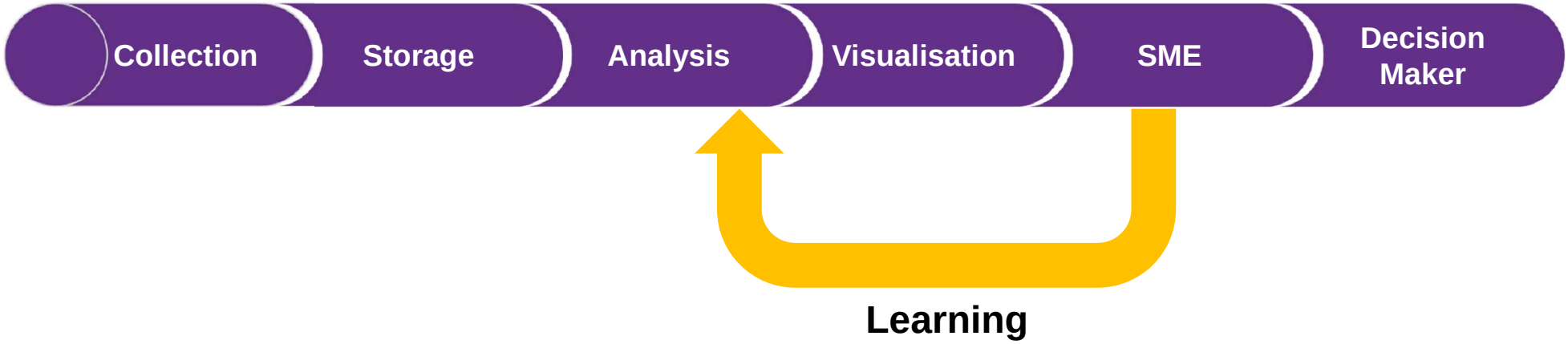
What is the value of changing that decision?

How can I ensure the decision really changes?

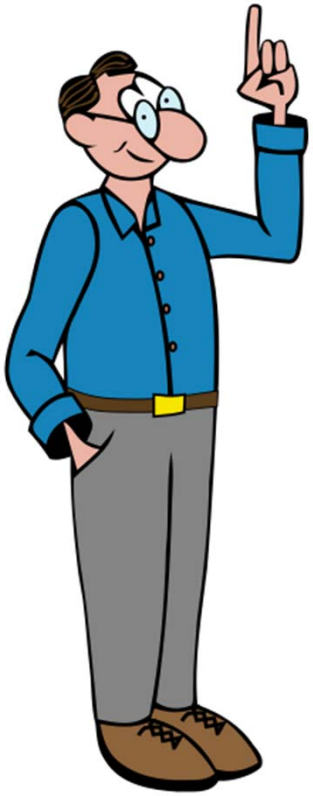
Ensure the pipe goes to the right place

Does the output make it to the real Decision Maker?

Fix the bottlenecks



Fix the bottlenecks



People learning

Machine learning

Connect multiple models that can inform decisions

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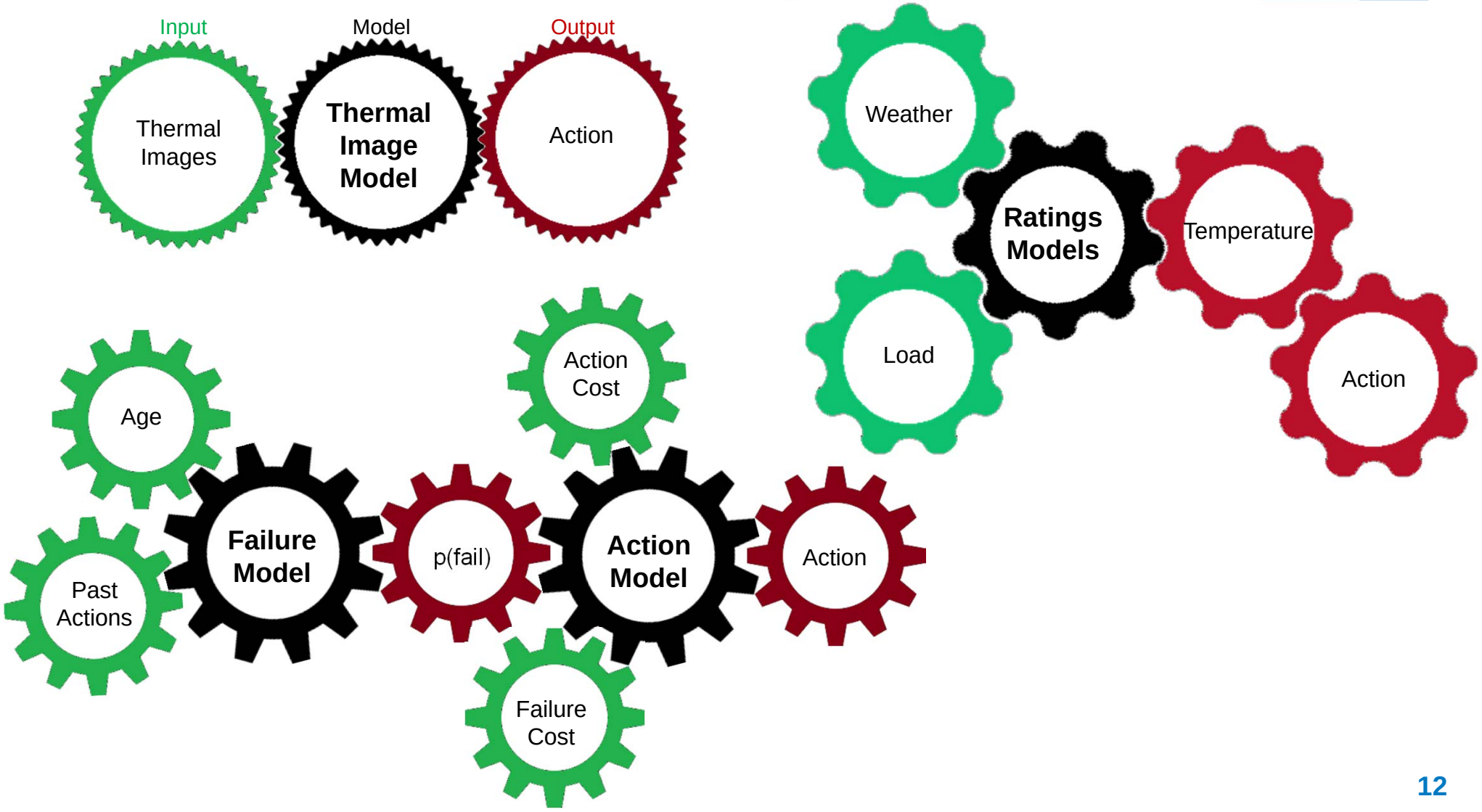

Connect multiple models that can inform decisions

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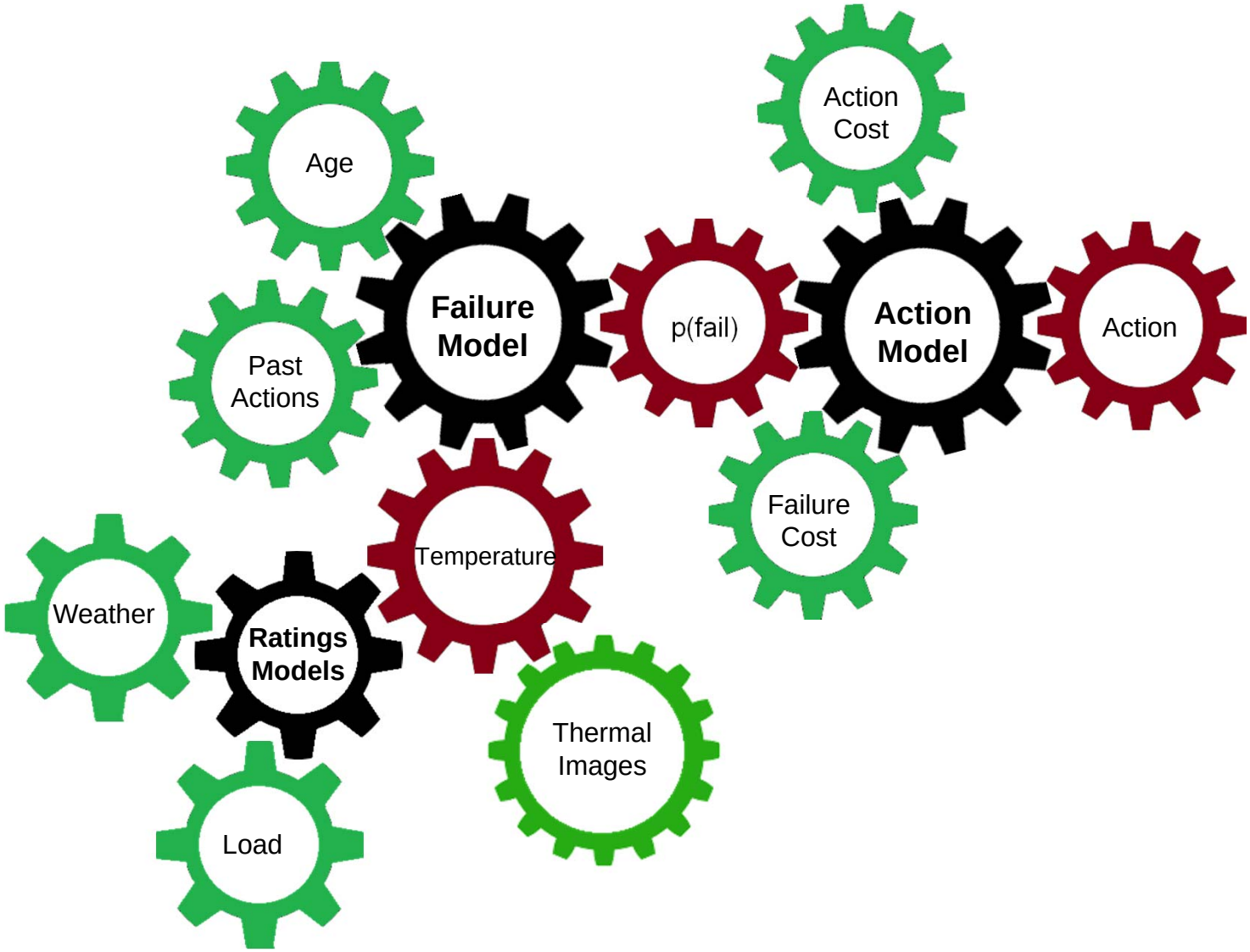

Teach people to like the taste

One quarter of boreholes drilled by NGOs in South Sudan between 2006-2012 were not in use by 2014

“It broke and we didn’t know how to fix it”

“It tastes strange”

Conclusion

- Focus on big decisions, not small ones
- Use machines to learn, not just apply existing knowledge
- Design models for connectivity, not isolation
- Solve the problem of cultural change, don’t ignore it