



A G S O L

Innovative Thinking

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Chief Technology Officer



1 billion people have no access to electricity

Most are smallholder farmers and depend on agriculture for their livelihood

AGSOL MICROMILL

THE SMARTEST & MOST EFFICIENT SMALL MILL IN THE WORLD

- ✓ Powered by solar, grid, rechargeable batteries or e-bike
- ✓ Incredibly easy to operate
- ✓ Cheaper than diesel or AC equivalent mills
- ✓ 2.5x more efficient than other electric mills
- ✓ 800W BLDC motor & no in-rush



SEE THE MICROMILL IN ACTION [HERE](#)

MicroMill's Competitive Advantage



Diesel Mill	Agsol MicroMill
High operating cost (40% of revenue)	No operating cost
High maintenance requirements	No maintenance (other than the milling chamber)
High technical expertise required	No technical expertise required
Physically challenging, "Only men can run it"	User friendly, gender neutral
Taints the flour with diesel smell	No noticeable pollutant
Prone to molding	Easy to clean
Faster milling speed (120+ kg/h)	Slower milling speed (60 kg/h)
Long wait times (due to high operating cost)	Short wait times (due to milling speed)
Profit: \$2.6/100 kg milled	Profit: \$4.4/100 kg milled
Subject to oil price fluctuations	Virtually free to run
High carbon footprint (2 tonnes/year)	Carbon neutral

“Creativity is just connecting things.

When you ask creative people how they did something, they feel a little guilty because they didn't really do it, they just saw something. It seemed obvious to them after a while.”

Steve Jobs

Engineering First
Principles

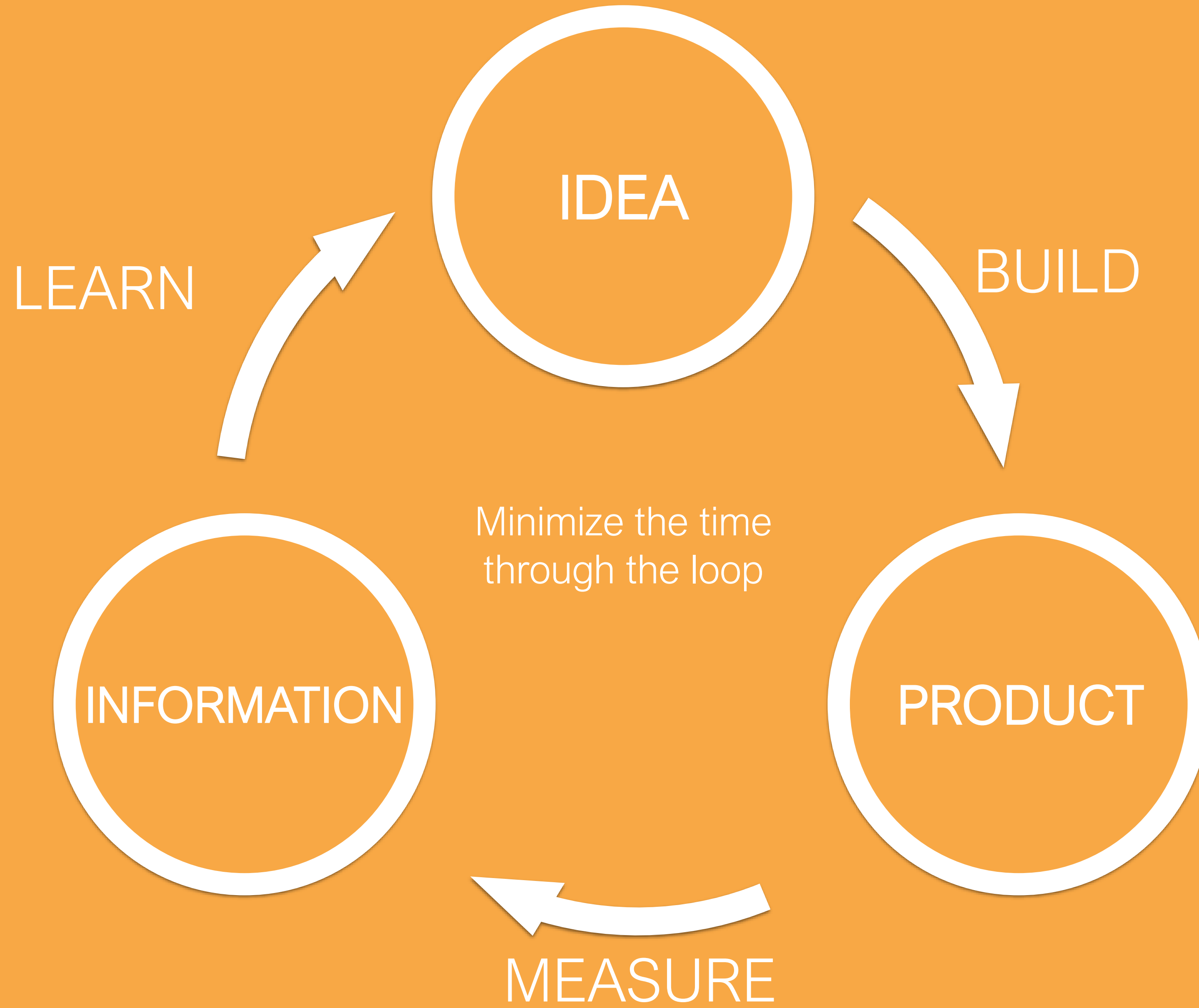
- Do not reason by analogy
- Challenge assumptions
- Know physical limitations

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Know your
customer!

- Go out and talk to your customers!
Impossible to innovate in a vacuum
- First assumptions are always wrong
- Listen to them, but don't always do what they tell you

LEAN DESIGN METHODOLOGY



Specification creation
in a vacuum

- Mill during the day
- Run it 8h a day

Proof of
concept
test



"The bearings can't take high-speed direct drive milling!"



"We need an affordable machine!"

"Cannot use li-ion batteries, they are too expensive!"

July 2019

"We know what the customer wants"



Demoed a
prototype



Tested first
prototype

Deployed
10 MVP's



Talking to customers

- Disregarded culture - on demand milling
- Low utilization



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Back to the drawing table





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We're open to internships!

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