

The Pounded Yam Challenge

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The Year 2030



Why Practice Makes Perfect

- What has this Cargo Tricycle to do with year 2030?
- That gives exactly the number of years it took for another motorbike company to become a major global player in motor vehicle industry!
- 1971. I was writing my WAEC (today's equivalent of SSCE) The word Honda was synonymous with cheap motor bike.
- Even in the motor bike industry, the name was “Triumph”, not Honda!

The First Honda four-Wheeler

- 1963
- People did not only laugh at the motor car, they made fun of the motorcycle here because it was what poorer people could afford.
- Not as prestigious as the “Triumph” or the “Harley Davidsons”.



Heard of SiriStar Company?

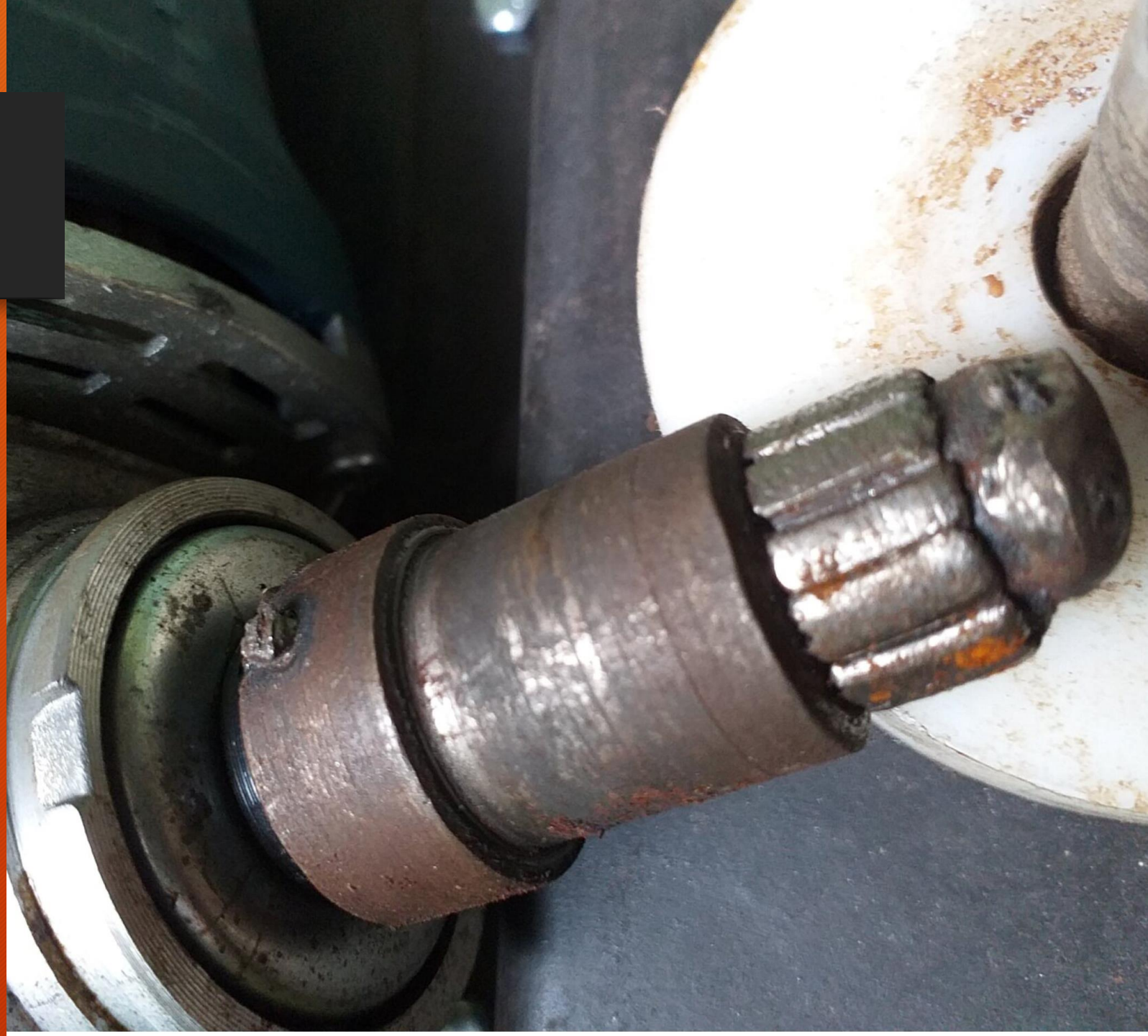
- They are already far ahead of where Honda was in 1963.
- Twill be no surprise if they become a global brand in 2030!

Back to pounded Yam.

- Imagine that you are looking for a Yam Pounder in the Nigerian Market.
- This one is “Proudly Nigerian” and it does the job. Only that is is heavy, expensive and exceedingly noisy.
- Worked, under light usage for about a year. After a fault, you got no service. No good address, no contact.

Desperation, Open it up!

- Simply put a grinding machine on a poorly made gear system.
- Rotates a vastly oversized rotor.
- Gear teeth wear was cause of the noise. The manufacturers only made the gear and the rotor.
- I present to you the rotor and the gear!



The Grinding Machine

Here is the grinder with the
transmission gear teeth.



Rotor is a Welder's Idea

- Take a good look at the rotor! Zero engineering, 100% welding! Vastly oversized. It grinds pounded yam to pulp in 30 seconds! Your neighbours will think you are drilling a borehole in your kitchen!
- Made of Stainless Steel. Do you have an idea of the cost of stainless steel compared to plastic?



Here is what they are selling at Ebute Ero as a Yam pounder

- Look at the box.
- Do you believe that AKAI made a Yam pounder? The name sounds Japanese!
- It is your brother that made a yam pounder! I put it to you that all he did was to print “YAM POUNDER” on a sticker and paste it over the original manufacturer’s label!
- They are selling it in the open market.

AKAI

YAM POUNDER

100W

HEAVY
DUTY MOTOR

STEPLESS
SPEED

TURBO
SWITCH

STAINLESS
STEEL BLADES

SAFETY
SWITCH

BL

Food Processor Rotor

Here is the food processor rotor

Made of plastic:

See the understanding from strength of materials that the highest stresses occur at the attachment to the body

Look at the cutting edge of the rotor.



Coupling Mechanism

- Here is the Akai “Yam Pounder” coupling
- Lightweight; mostly plastic
- Can be 3D printed!



Value Addition, Cost

- If the value addition of your industry is trivial, you are guaranteed to remain poor! The Akai food processor was “turned” to a Yam pounder by a “smart” guy” that purchased a lot of them, Got a colour laser printer, and printed labels on adhesive paper!
- The “Proudly Nigerian Manufacturer” went a bit further:
 - Removed the label on the grinder to hide its origin;
 - Made a gear connecting coupling
 - Made a stainless-steel rotor albeit grossely oversedigned and expensive
 - Prohibitively expensive machine.

Class Challenge

- Replicate the rotor and coupling. Find the basis for putting a static load on it to obtain an optimal shape that will beat the yam, or plantain or any other food you may need to pound.
- Optimize for the purpose of getting better results from pounding yam
- Top five attempts will be prototyped and tested in a demonstration.
- Specify the motor power needed to drive the system.
- You are on your way to making your own yam pounder and will not need to run away when buyers want service because you understand what you have made!