

Commercialisation of your idea or prototype

Tharsus is a designer and manufacturer of Advances Machines & Robots (AMR's).

We help businesses create strategic AMR's that generate new revenue streams.

Our unique operating model makes Tharsus highly distinctive. It is a genuinely unique combination of processes, toolkit, methodology and behaviour. It is our fundamental innovation that sets us apart. It drives everything we do.

Partnership lies at the heart of how we work. We navigate our customers from the idea for their new AMR, through commercial clarity, technology strategy, development, and delivery of world class value added manufacturing.

Profile

- 300+ colleagues
- 50 year heritage
- 3 development and manufacturing sites totalling 170,000 sqft
- Developing Strategic Machines for global brands
- Business outcomes for our customers in excess of £2bn
- £60m+ revenue

Accreditations

The Chamber Business Awards

Winner 2020
Employer of the year

Sunday Times Hiscox Tech Track

Listed #74
Fastest Growing Private Tech
Companies

The Manufacturer: MX Awards

Winner 2019
Young Manufacturer

The Journal Top 200

Listed #135
Top North East Companies

North East Business awards

Winner 2019
Company of the year

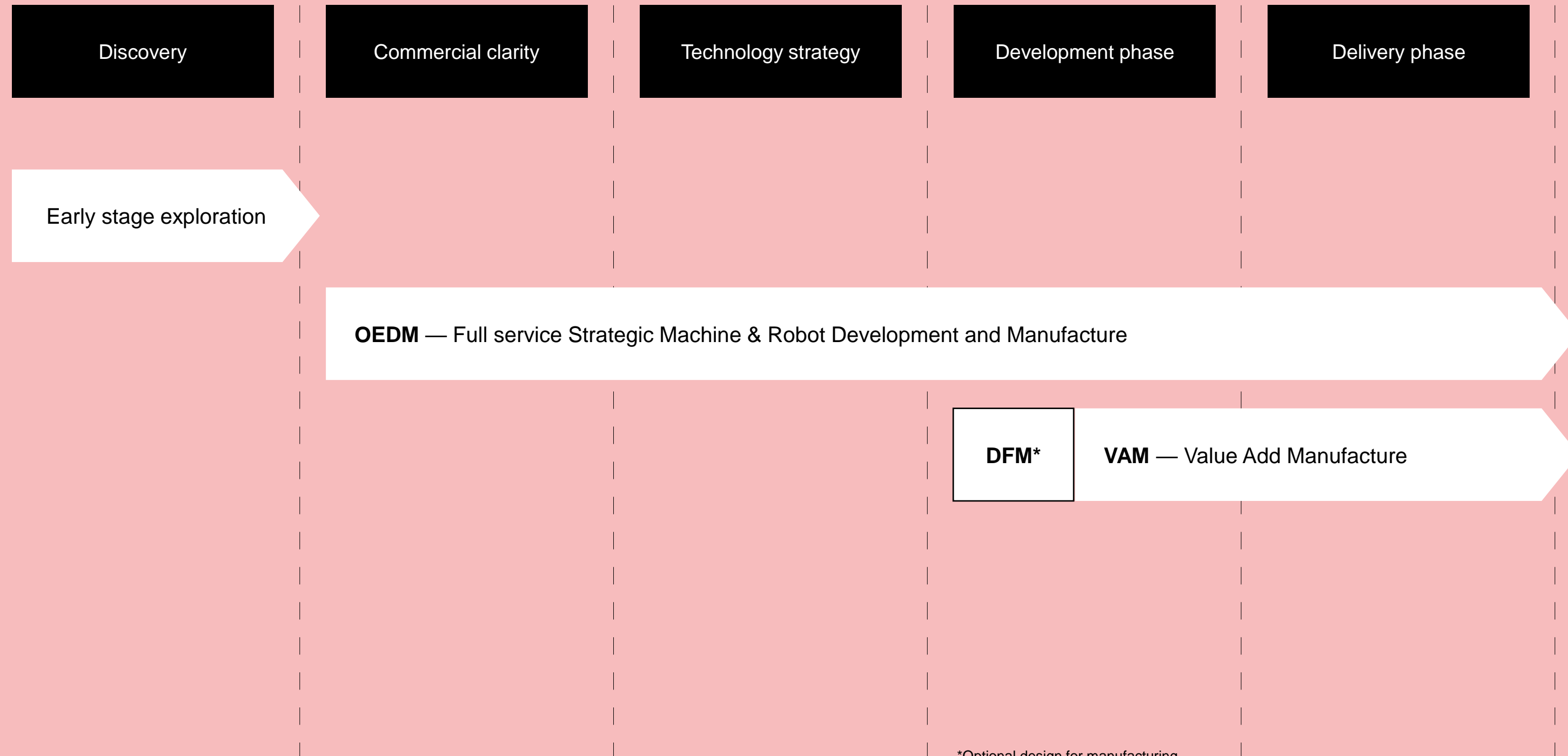


Our customers



Tharsus engagement routes

Tharsus has three distinct yet complimentary service offers.



*Optional design for manufacturing

Tesla

1bn.

Cars in the world

iPhone

7bn.

People on the planet

Automata

2m.

Industrial robots

Apple picking robot

- Labour efficiency

- An experienced picker **12** apples per minute, **5,000** per day, earns **£150** a day.
- **10 Week** season **£7,500** wages cost
- APR **4** apples per minute but can work **20** hours a day, **4,800** per day. Running costs per day are minimal.
- Machine lasts **3** years, need to design a machine for **£20,000 or less**.
- Fund installation team, maintenance team and a spares organisation probably in remote locations.

BOARD — Organisational context, business strategy, leadership, management of business risks and opportunities, strategic KPI's

Business excellence — Customer focus, compliance, support on business process development, documents and records control, system audits and improvements

Company and company requirements → Marketing → Business Development → Solutions Architecture →

Project/programme management — Manage customers, relationships, projects and gross margin

Operational Quality and CI

Design

Supply Chain Management

Strategic Planning & Material Flow

Pilot Manufacture

Batch/Volume Manufacturing

Project Management

Operations → Outputs: Products and services.
(Company and customer satisfaction)

Design

Strategic Supply

Plan

Material flow

Introduce

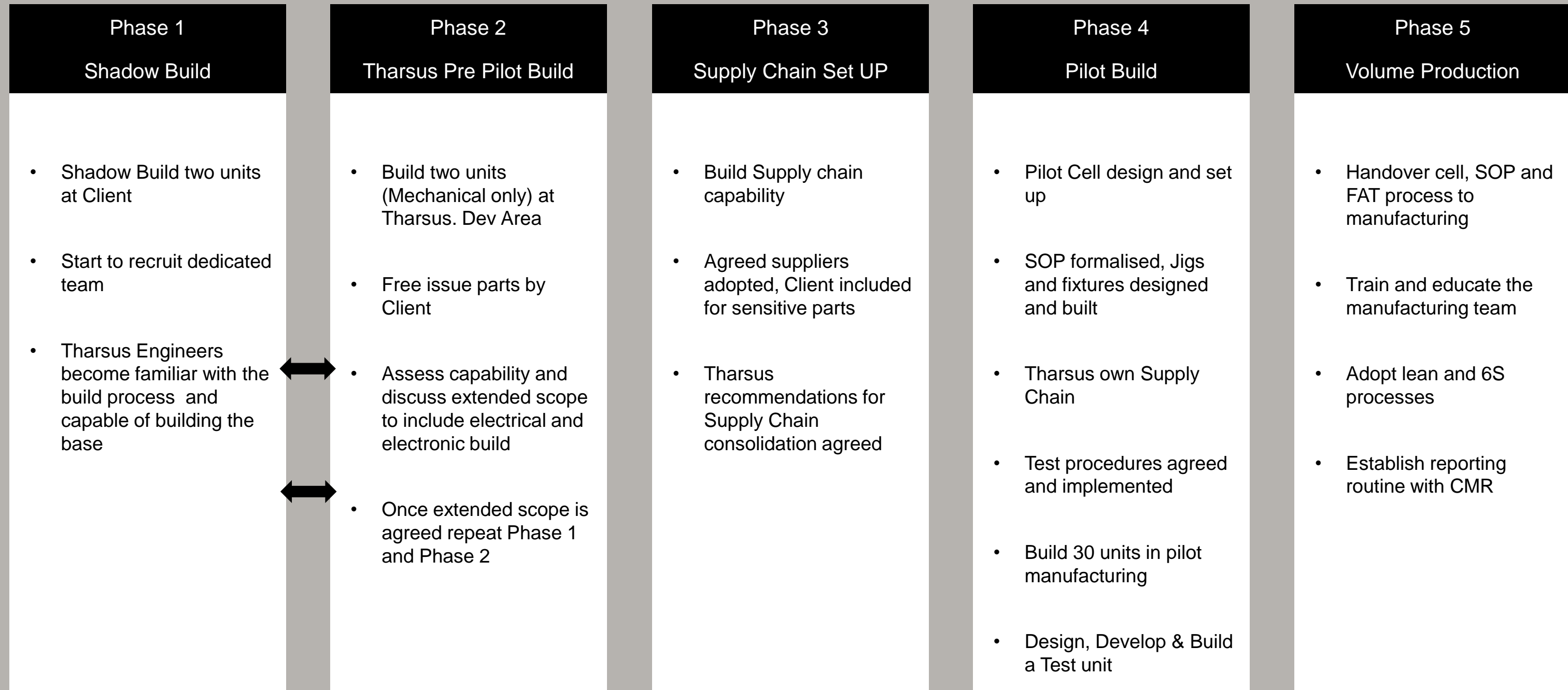
Produce

Support

Group support processes — Finance, information systems, human resources, health and safety and maintenance

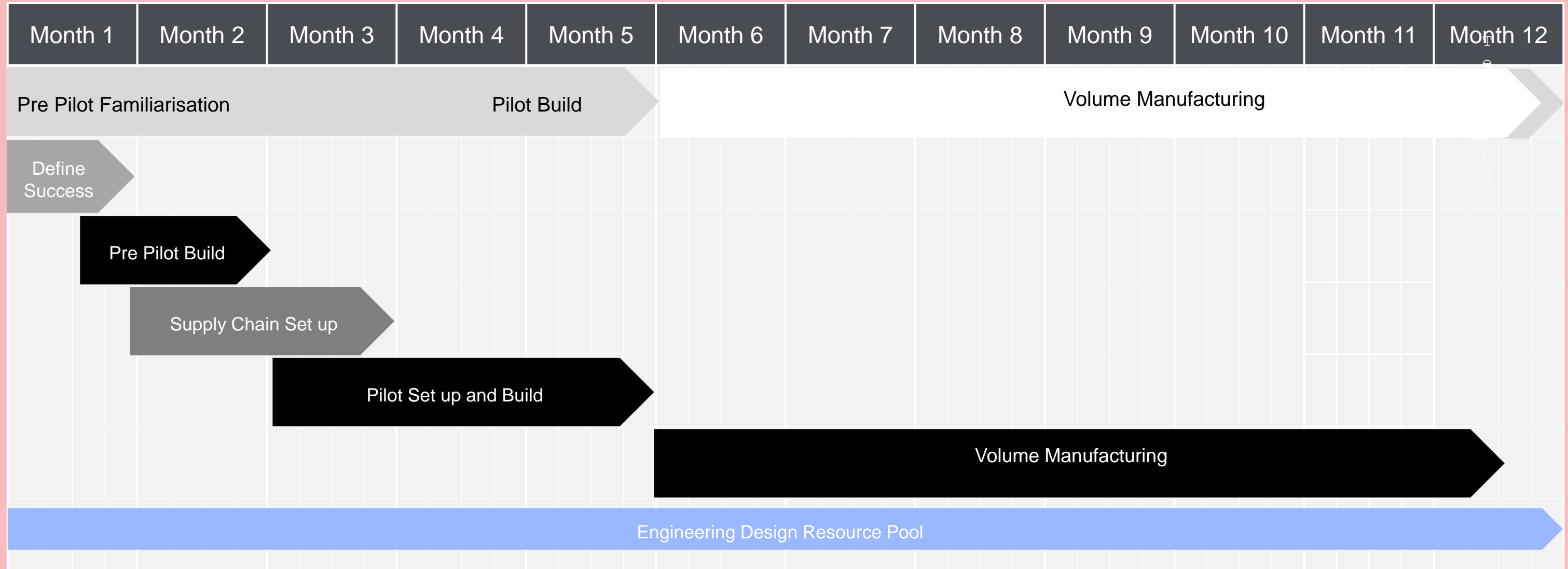
Project Outline – Example

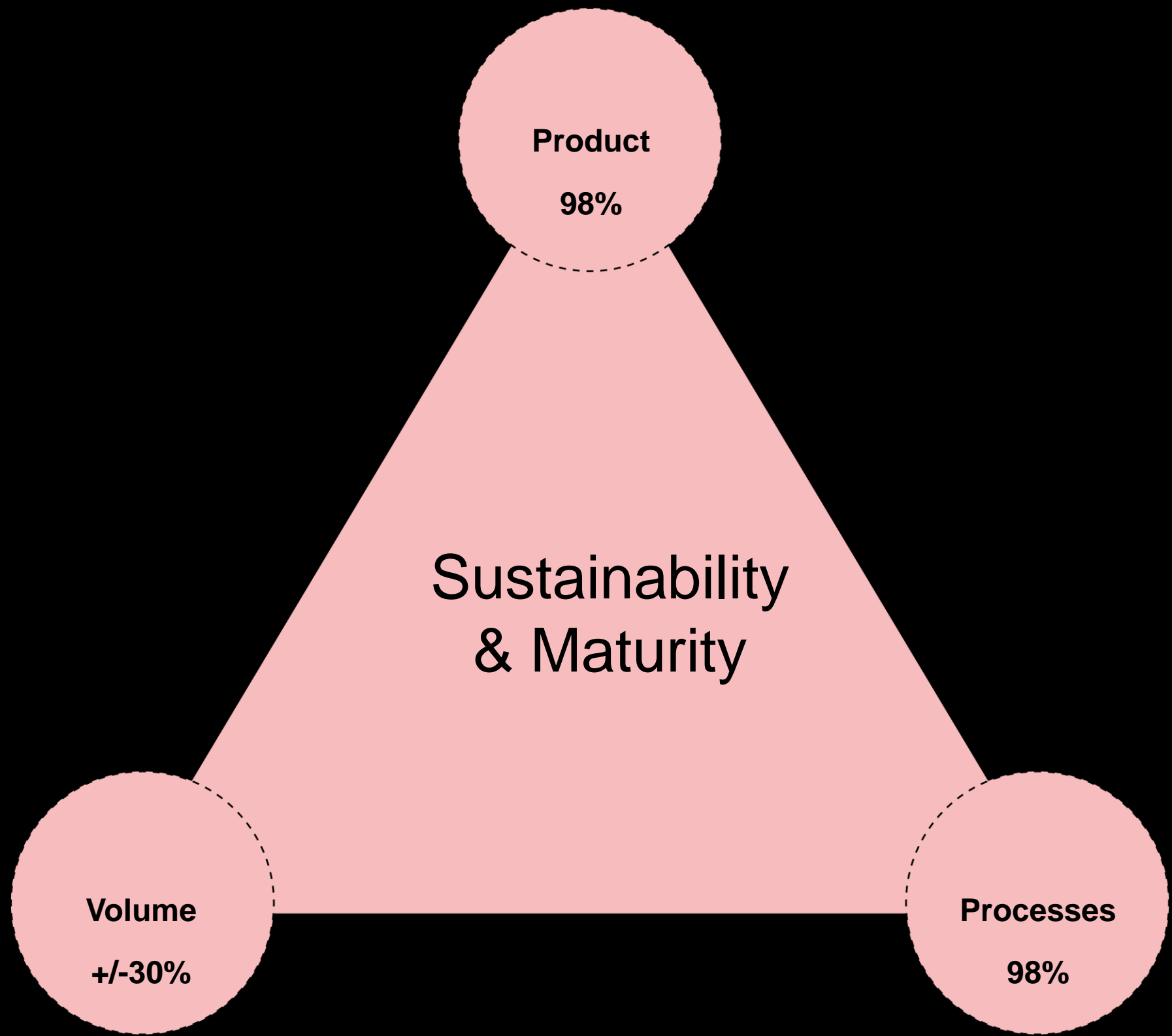
Overview of anticipated phases – journey from current status to steady-state manufacturing



GANTT Chart Overview – Example

What will my journey to productisation look like?
How long will it take?





Product

98%

**Sustainability
& Maturity**

Volume

+/-30%

Processes

98%

During the NPI Process

- Engineering day rates

NPI Model

- Cell set up
- Supply chain set up
- SOP creation and documentation
- Test process set up and documentation
- Jigs, fixtures and tooling

Volume production model:

- Warehouse and manufacturing cell space
- BOM incurred – supply chain, inspection, obsolescence, packaging
- Hourly rate for manufacturing
- A small margin!

The Automata journey

The Automata Journey
A design led machine invented in
Shoreditch

- Two young design engineers needed a low cost robot to help build their architectural designs
- They couldn't find a machine so decided to invent their own
- 4 years later Eva was born
- A £8000, easy to use Cobot
- Eva is now used in many applications previously not economically viable for robots

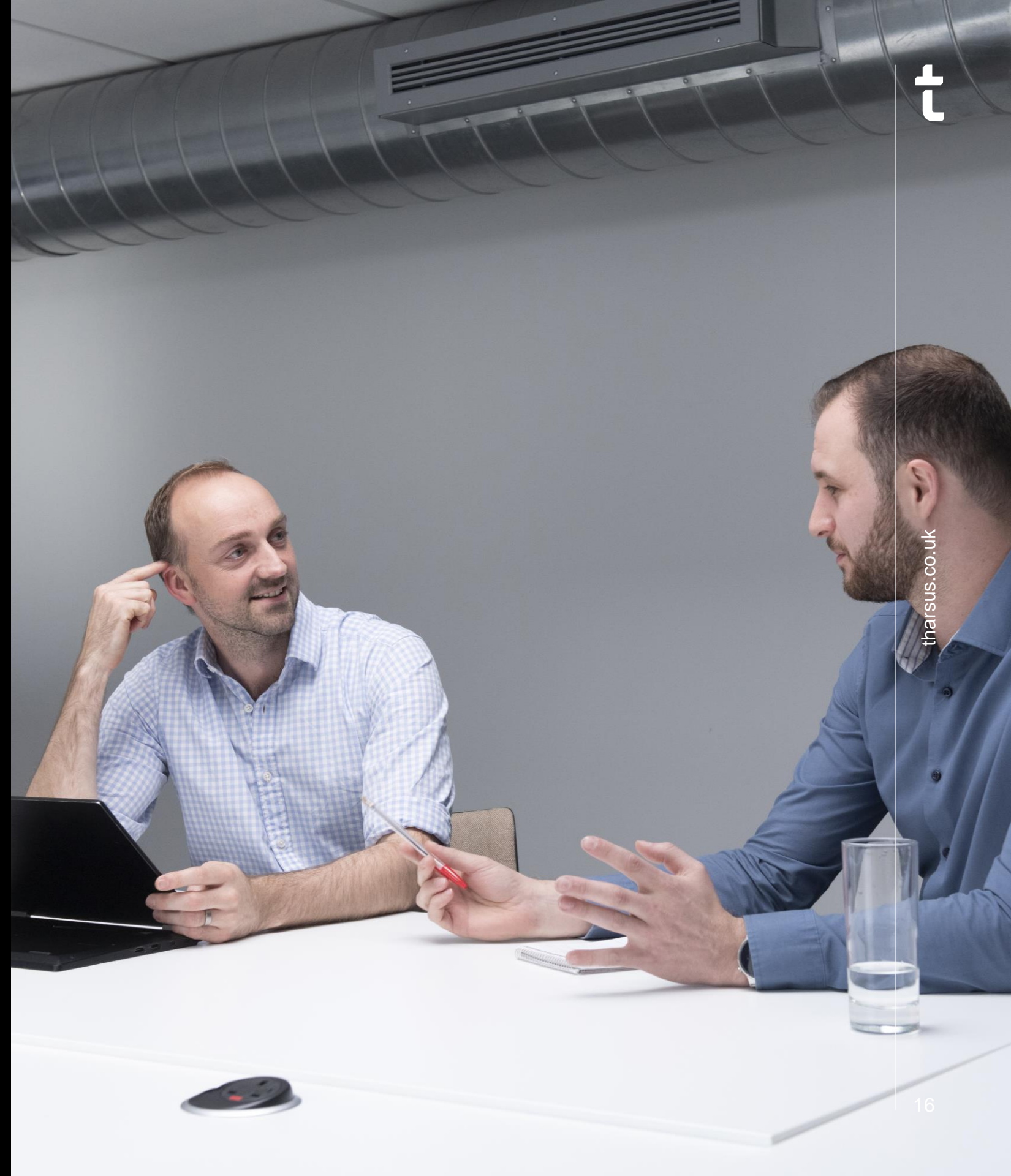
The Automata journey
2018 EVA is introduced to Tharsus

- Once they had a successful prototype the team approached Tharsus to start to build Eva in volume
- The machine was being built by skilled engineers in the lab
- The requirement to manufacture 1000's per annum



The Automata journey
Partnership from prototype to
production

- Full design review of Eva identifying potential manufacturing problems, a data led approach
- Set up Pilot manufacturing cell
- Agree test process - sub-assemblies to FAT
- Share data in the cloud
- Work on problems collaboratively to optimise production
- Tharsus Design own work packs for specific electrical and mechanical challenges



Consider the flexibility of supply chain to adapt to rapid and high volume change in design at the development phase.

Where possible avoid creating new technology for technology sake, where something already exists. Lower risk to integrate already established technology than creating your own hardware subassemblies. e.g. using off the shelf motors, sensor systems etc

Although a product may work in a controlled workshop environment, consider its use in the field and all the scenarios it could face (reliability and service life).

It's a data-driven journey.....but getting the right level/granularity is important

The Automata journey
Today

- 100's Eva robots being used in multiple applications
- Very strong customer demand
- Nearing the end of Pilot manufacturing
- Looking forward to volume production

