

# World's First AI Powered UVC Disinfection Robot

The Apex Of  
Disinfection  
Industry Is Here



**SPOTLESS**  
THE AI COMPANY



# Our vision

To harness the power of cutting-edge AI and on-device machine learning to develop a path breaking UVC disinfection robot.

To empower industries with intelligent robotics, shaping a future where machines master complex tasks, seamlessly and sustainably.

# Our mission

# The Problem

## HAI - Healthcare associated Infections



 HAI took a death toll of nearly **90,000 patients**

 Another **2,000,000** were affected severely

 USA - CDC's estimated cost of preventing **HAI losses** ranged from **\$ 28 B- \$ 45 B**

 UK - NHS stated cleaning services cost as **£1.1 B a 5.0% increase** since 2019 - 2020

## Time taken for disinfection



 **10-30 mins** Average time required to be left between applying the disinfectant and cleaning them out

 **20-35 mins** Average **turnaround time** for domestic flights is somewhere between **20-35 mins**, which is nowhere near to doing a complete disinfection

 **1-2 hrs** time taken for deep clean an isolation room after an infectious patient vacates

## Industrial Clean Rooms



 **ISO class clean air environments are Standard**

requirements for NASA, military, Bio, Pharma industries

 **Clean air environments** need to be **chemically inert** but **manual disinfection hampers it**

## Human Exposure to Disinfection



 Manual disinfection **causes occupational asthma and other respiratory illnesses** that pose a severe risk to human life

 Disinfection through **traditional methods is hazardous to human life and causes harm to the environment**

# Competition

## Competitor Robots

focus on macro level disinfection

\$125,000 USD per equipment Ex-factory, Manual movement and supervision

No Global R-a-a-S model

Manual to semi autonomous.

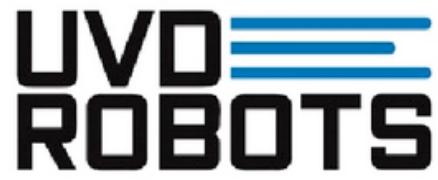


**Treats shadow & hotspots**

**60% Low price**

**R-a-a-s Business model as core offering**

**Fully Autonomous & AI powered**



# The Limitations on Existing Solutions



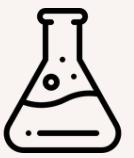
Chemical disinfection



Stationary UVC disinfection



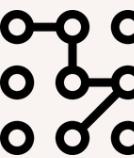
Autonomous UVC disinfection



Chemical disinfection affects the environment and its sustainability



Toxicity poses a threat to all living beings



Lack of visual perception due to technology limitations



Poor Disinfection due to fixed lamps, since only some regions are disinfected.



High Energy Consumption defeats the purpose of cost cutting



Too much manual labour is required



Manual Labour is Time Consuming and variable



Inability to identify microbe hotspots effectively

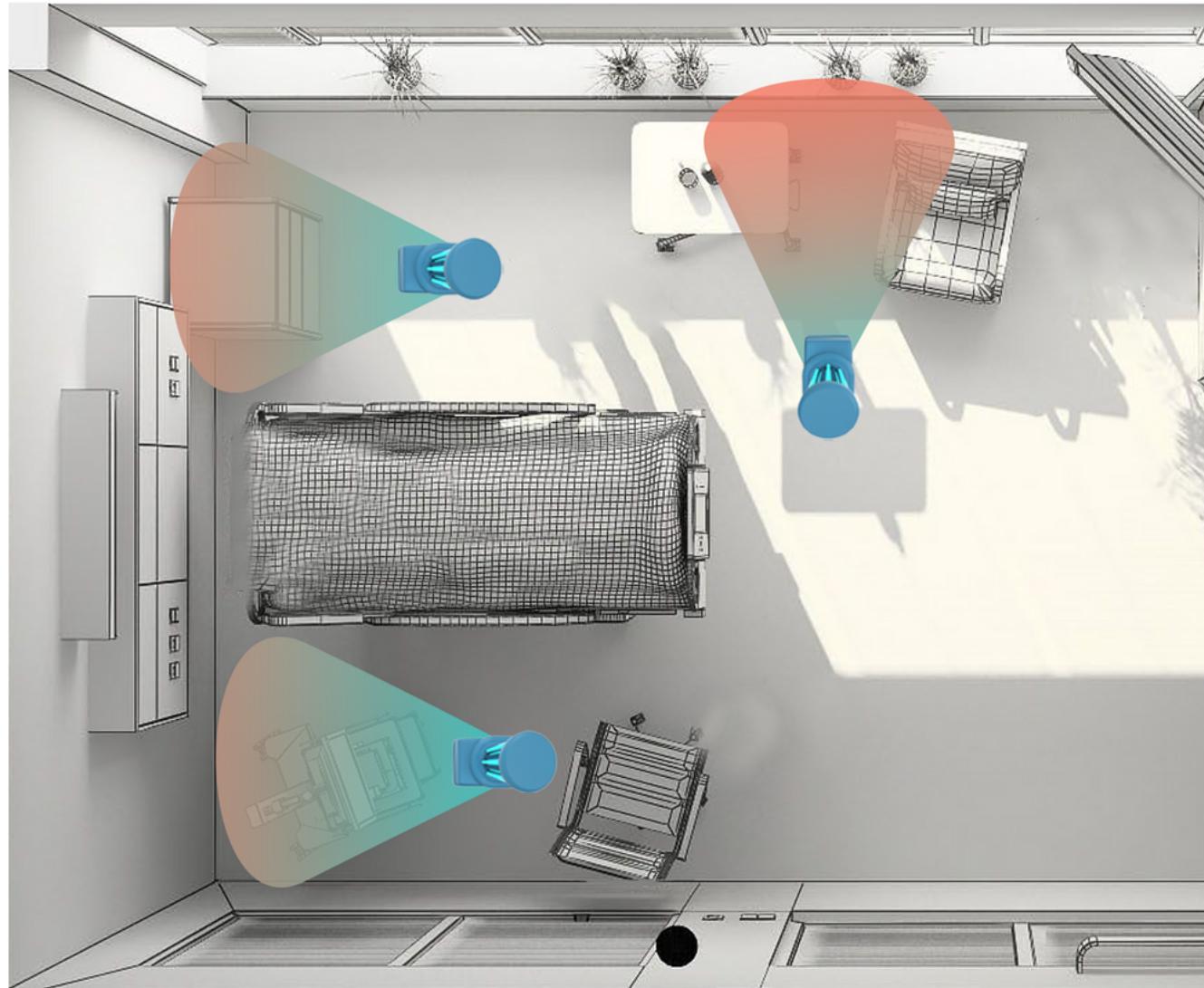


High Adoption Costs (£50k-£150k for single robot)



bacteria builds antibiotic resistance with regard to triclosan used in disinfectants

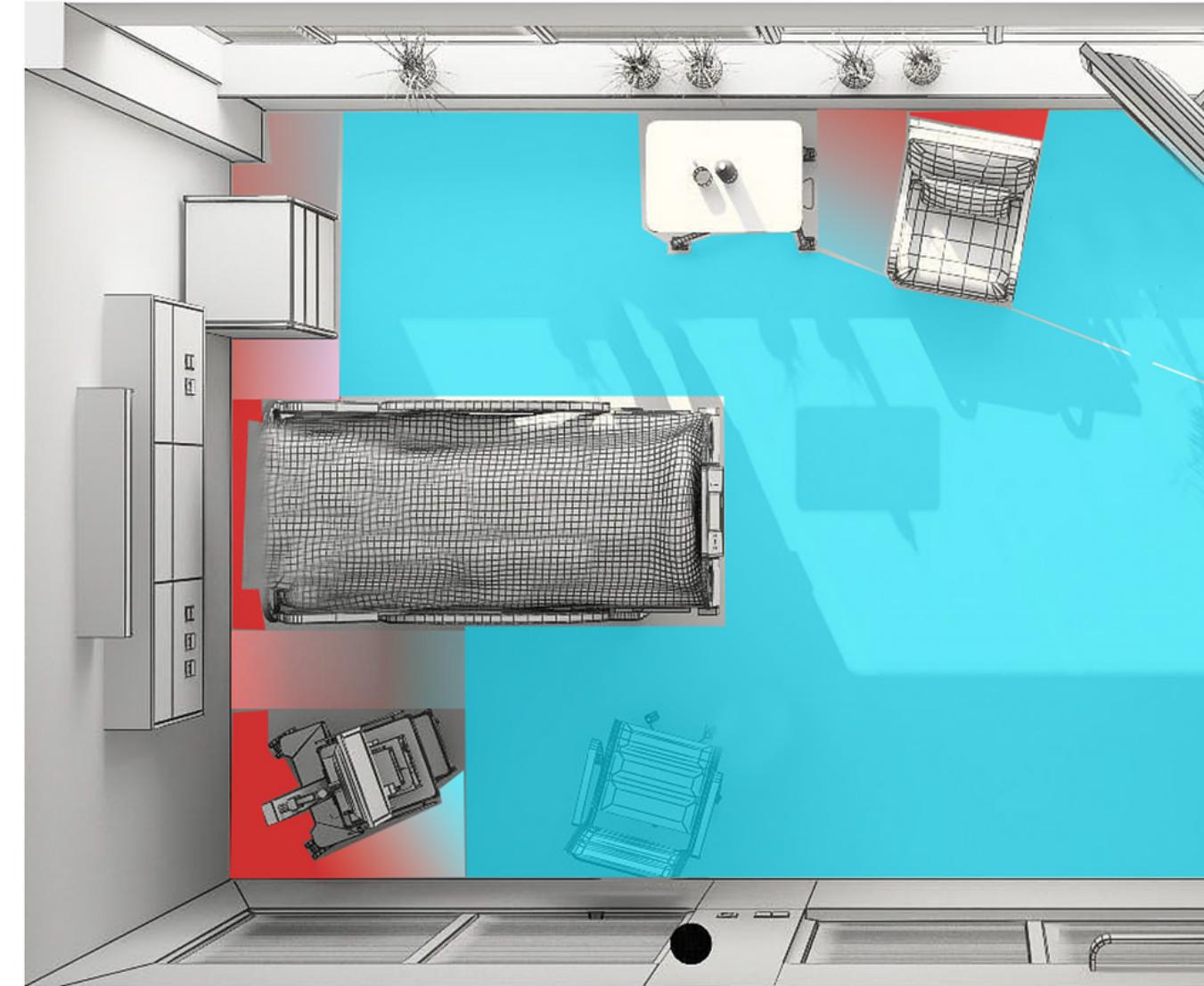
# The Limitations on Existing Solutions



40cms - 40secs

400cms - 40mins

**Time taken to disinfect increases exponentially as the distance between the light source and the surface increases. Doesn't have the intelligence to know what to disinfect and how long to disinfect based on the distance it is from the robot.**



Accessible Area

Unreachable or Narrow Spaces

**Can disinfect only places where light hits. Needs additional human augmentation for disinfecting high touch surfaces separately**

# Introducing Fully Autonomous Non-Chemical Disinfection SpotBot that has



UVC

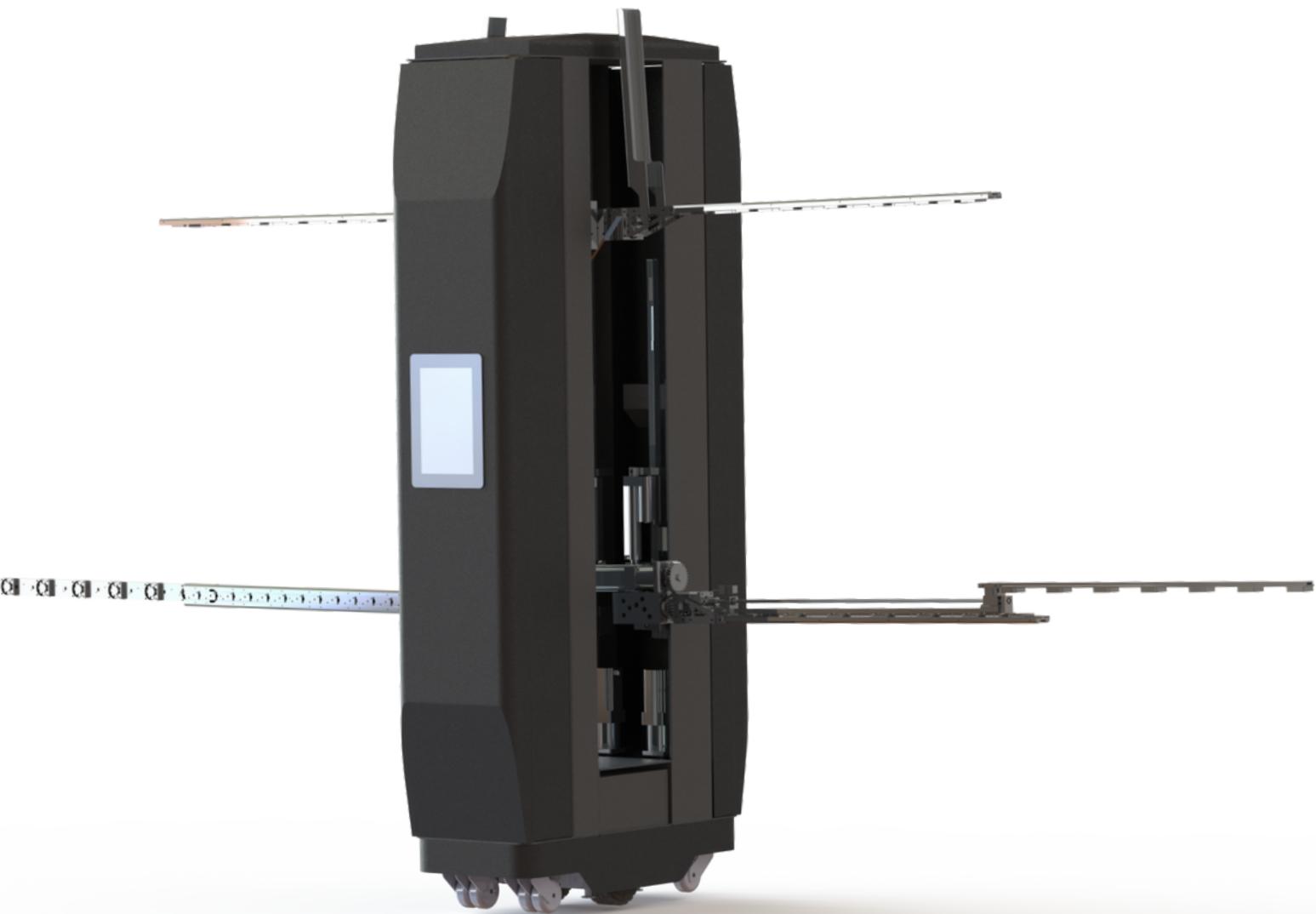
AI Powered

Edge Computing

5G enabled

It will converge to a point to no-human augmentation at record time.

## Spotbot

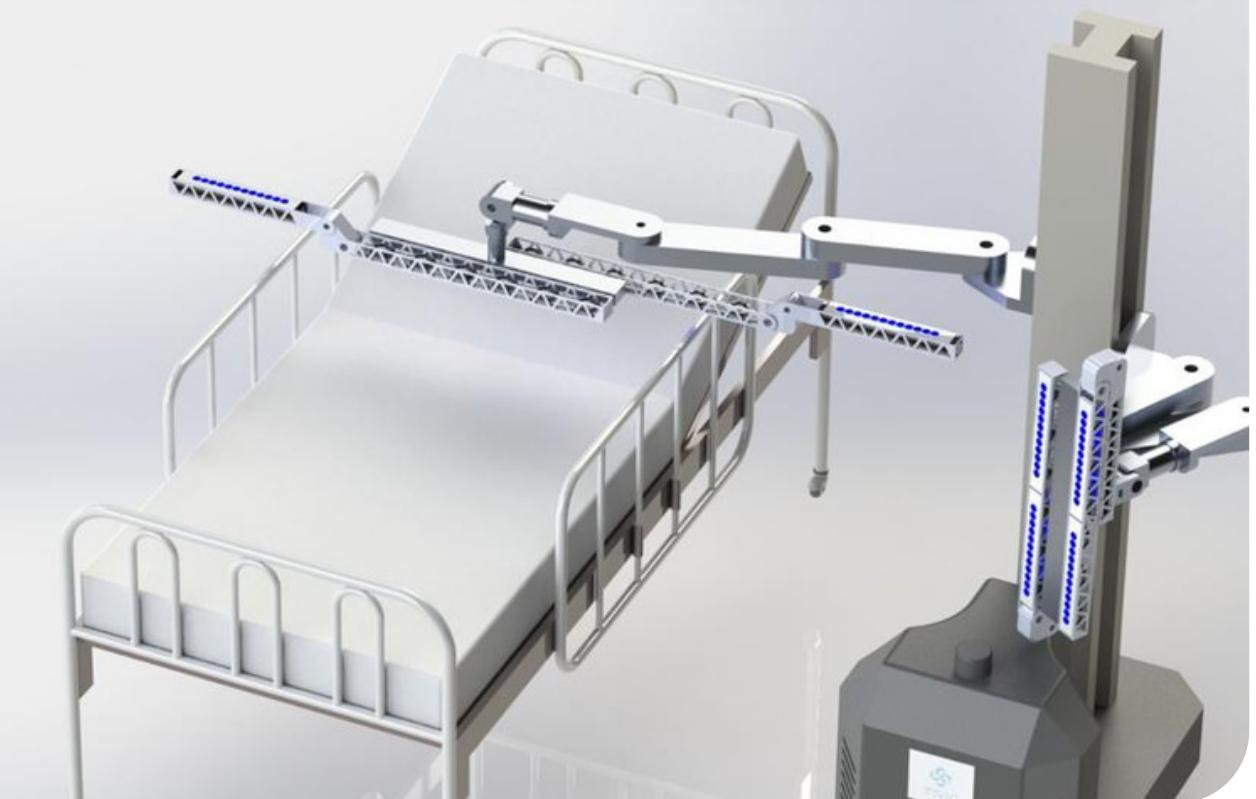


# Our Robots



Tier 1 Robot  
(Developed Prototype.  
Trials and validations  
underway)

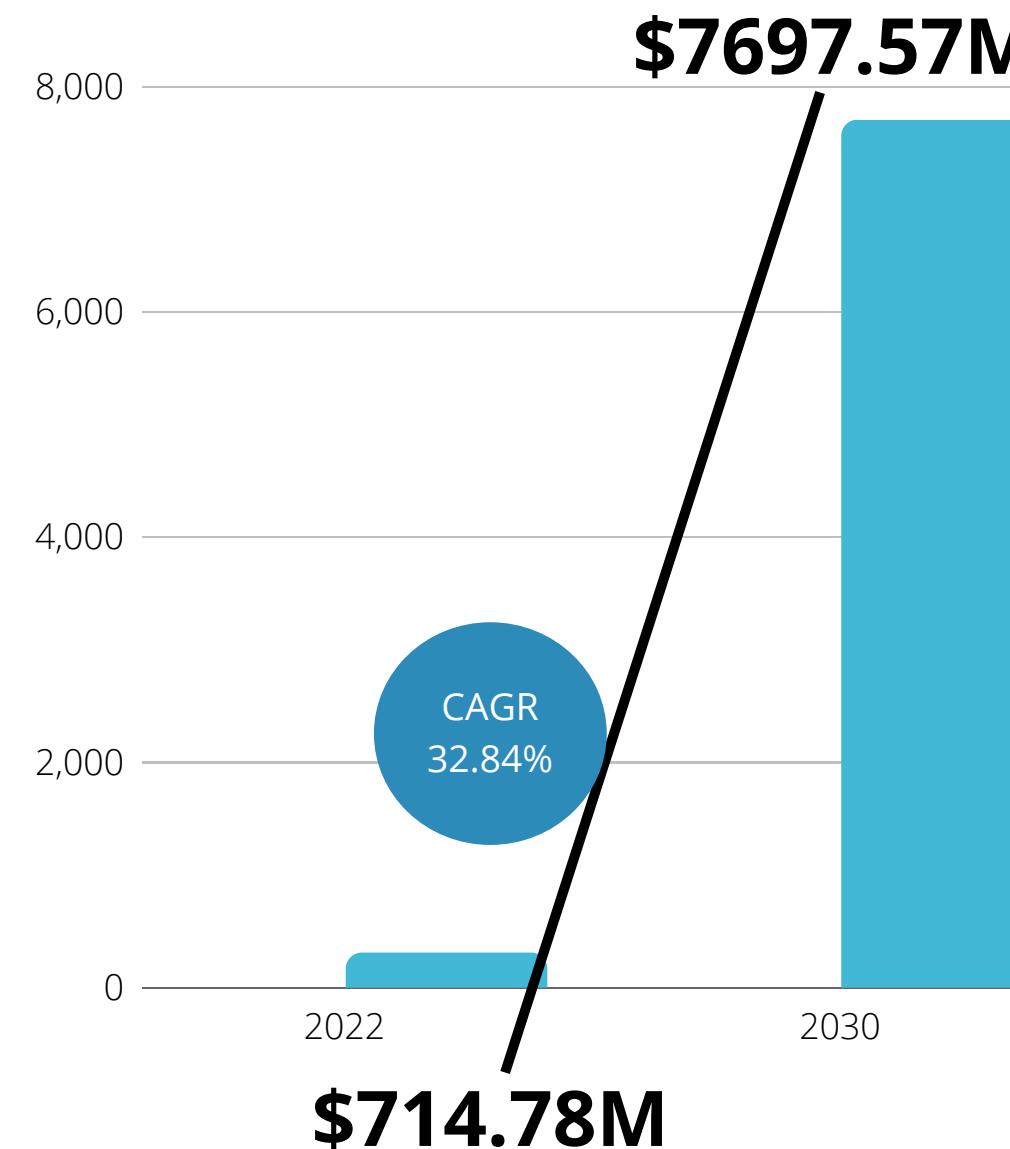
Tier 2 Robot (Design complete)



# Market Potential for UVC Robots

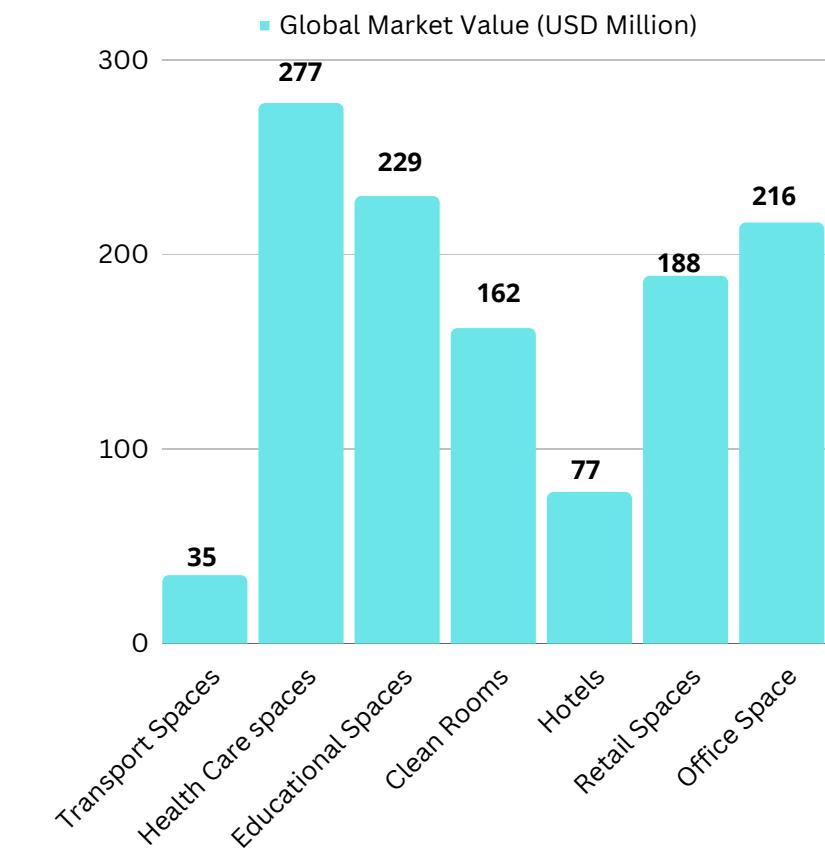


## Global UVC Robot Market (\$mn)



**Source:**

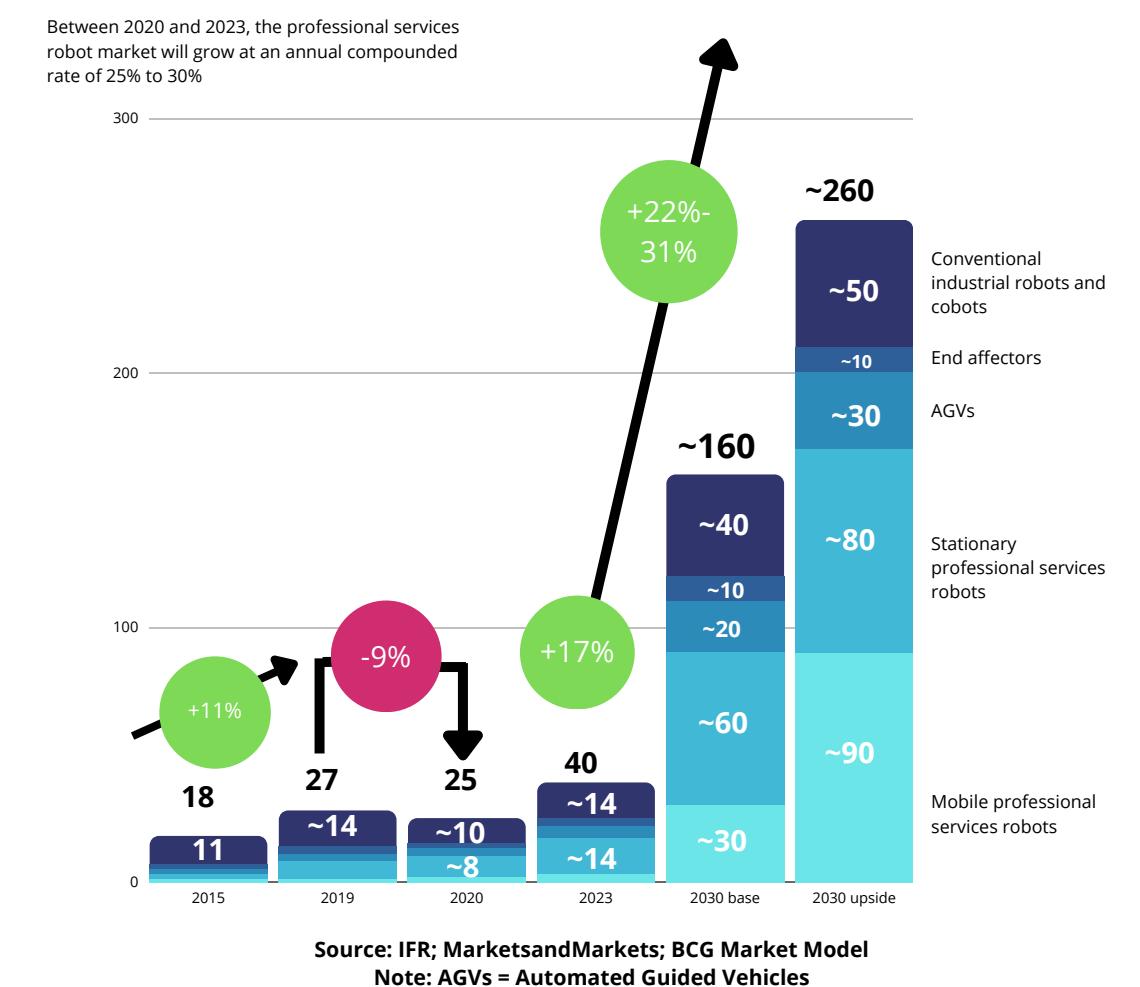
<https://www.verifiedmarketresearch.com>



**Source:**

<https://www.marketsandmarkets.com/>

## Global Robotics Market (\$bn)



# Market Trends

**+39%**

Building square  
footage by **2050**



**+37%**

New Professional service  
robots: **121,000** units

**+9%**

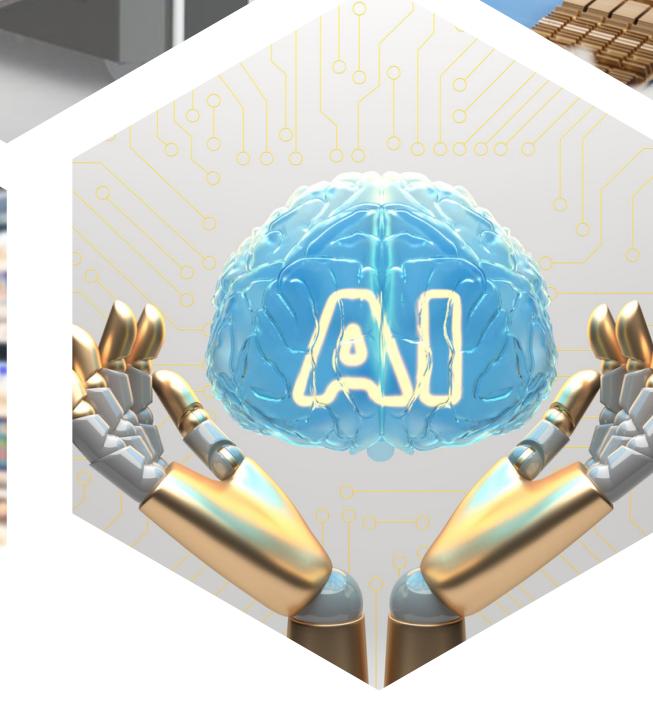
New Consumer service  
robots: **19 million** units

IFR  
**International Federation of  
Robotics**



**>30%**

CAGR for disinfection  
robot market  
predicted till 2030



**15Mn**

Healthcare workers missing  
worldwide by 2030 - **WHO**

**80%**

of service robot supplier are **small-  
medium sized enterprises** (SME  
with employees)

**1000**

service robot suppliers  
worldwide — **start-ups** have  
become mature

New business models have  
emerged: R-a-a-S

With technology and recent AI  
advances, existing use cases  
are shaped in exciting new  
ways

# Our Target Segments

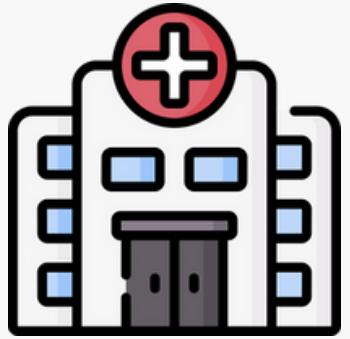


## Primary

### UK Market Prospects

### US Market prospects

### EU Market prospects



#### Hospitals and Care Homes

Hospitals - 1910  
Care Homes & Beds-  
17600 & 457,636



#### Commutation Facilities

Train Companies - 24  
Airports & FBO's - (40 & 15)  
Bus & Coach Operators - 4000 ( Year 2021)



#### Industrial Clean Rooms

Clean Rooms (UK) - 600

Hospitals - 6090  
Care Homes & Beds-  
65,600 & 1.7 million

Amtrak - 500 stations & 300 Daily trains  
Airports (Public & Private) - (5211 & 14850)  
Licensed buses - 939,200 ( Year 2021)

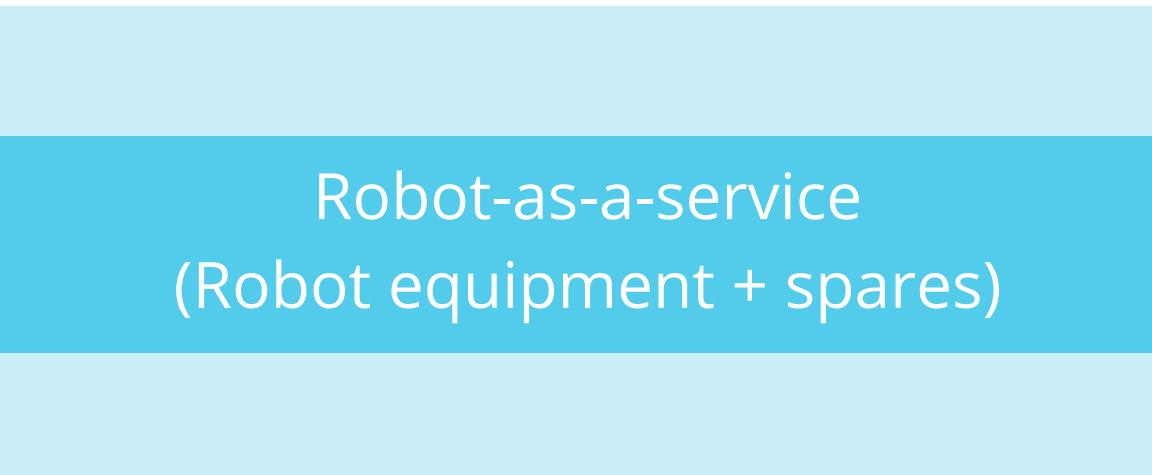
Cleanroom industry size  
~ 1 billion

Hospitals ~ 15,000  
Care Homes & Beds-  
48,500 & 3.4 million

Train stations ~36,000  
Major airports (400 )  
Registered buses - 882,000 ( Year 2021)

Cleanroom industry size  
~ 1.92 billion

**From the customer validation exercise, the company arrived at TWO models of Robot Service.**



**The company predicts about**

**60%**

of prospective customers will choose  
**R-a-a-S package that  
spreads the cost monthly**

**40%**

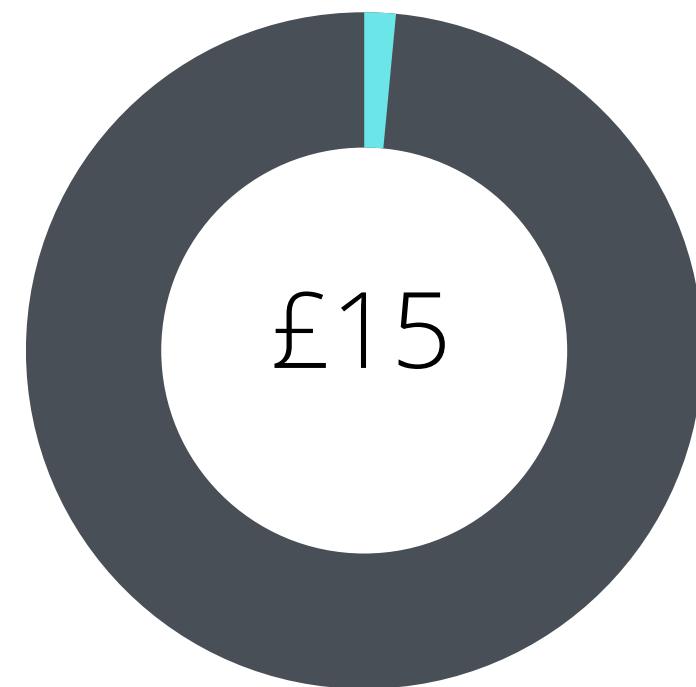
would choose  
**would choose the robot sale  
model after subscription (or  
as the first choice).**

## Cost Comparison

**Manual Disinfection**

vs

**UVC Robot**



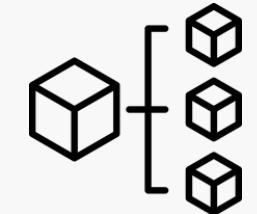
Attributes	Manual Chemical Disinfection	UVC Robot
Total Disinfection Time	25 Hours	2 Hours
Total Labour Time	25 Hours	1 Hour
Total Labour Costs	£ 250	£ 15

Cost comparison for disinfecting a hospital space of 1000 m<sup>2</sup> using our SpotBot UVC vs Manual Chemical Disinfection

## Traction Channels to be used



Direct Sales to the Customer



Partnerships with Resellers and Distributors



B2B Partnerships with other robotic startups



Online Marketplaces



Participation in trade shows & exhibitions



OEM Partnerships



Target Market



Spotless USP



Marketing Channels



Lead Acquisition



Sales & Service



Feedback & Improvements



## Intent Letters to Trial Robots (More than 50 entities)



Black Country  
Chamber of  
Commerce



## Chamber Of Commerce

## Professional Associations To Introduce Our Products

## Partnerships



SEOULVIOSYS

UV and LED partner



UNIVERSITY OF  
WOLVERHAMPTON



midlands aerospace alliance



WARWICK  
THE UNIVERSITY OF WARWICK

# Team



Kesava Jawaharlal  
CEO & AI Expert



Ramachandran Mariappan  
Business Strategy &  
Engineering Management



Rameshbabu Sethuraj  
Electrical and  
Electronics Expert



Sakthi Balan Venkatesan  
Manager Automation  
& Robotics

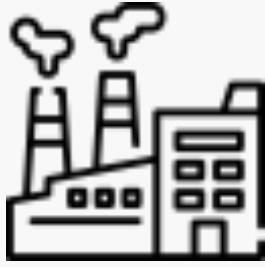
## Why Now?



# Benefits



Innovative and Sophisticated technology  
(Multiple patents applied)



Functional Prototype completed



Team of reliable industry experts



Cutting edge AI can be applied to different domains (Agriculture, Food processing, etc)



Spotless has the right value proposition



A portfolio of intelligent robots planned in the pipeline for various industries



SEIS Approved

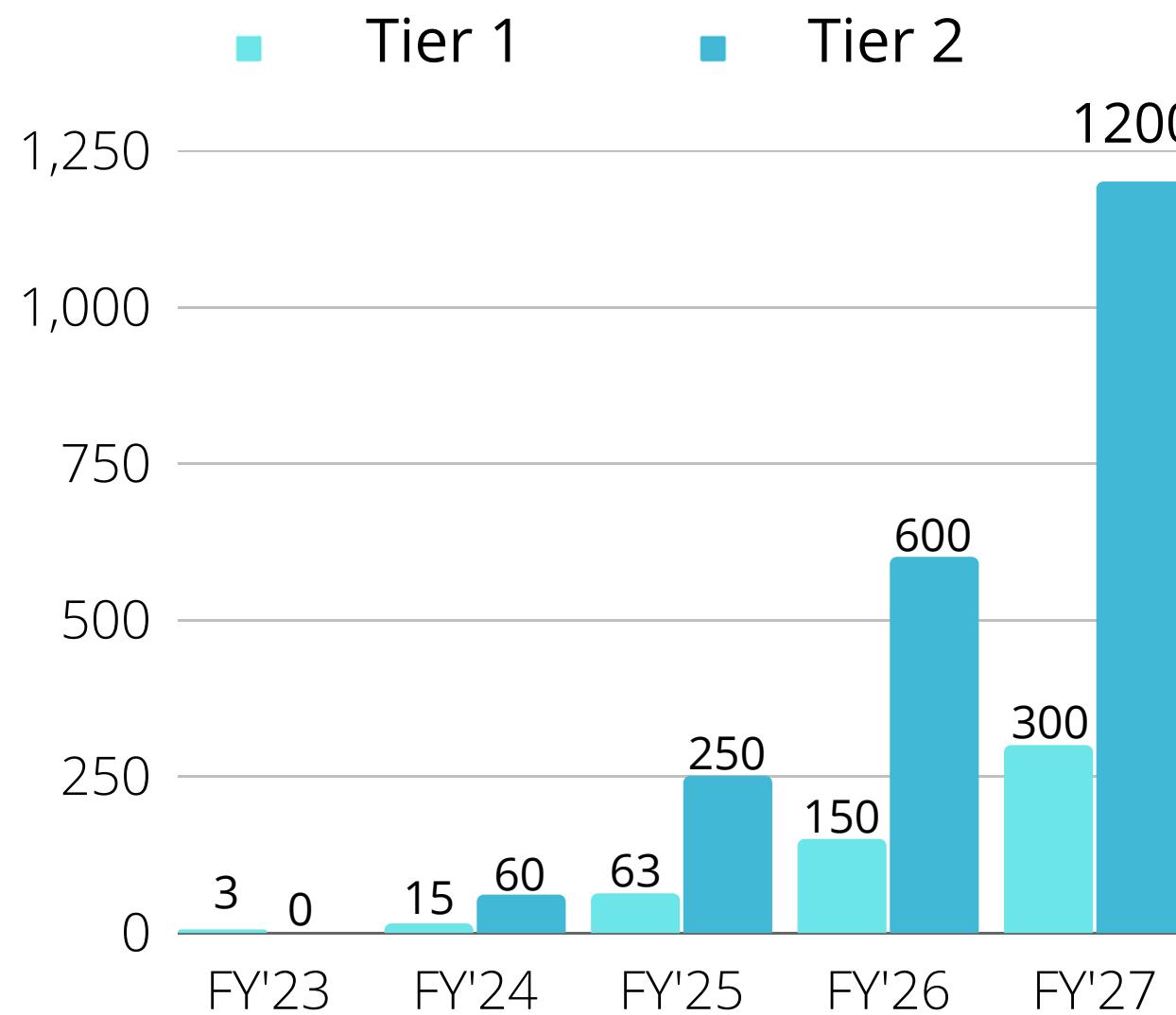


Applied for EIS

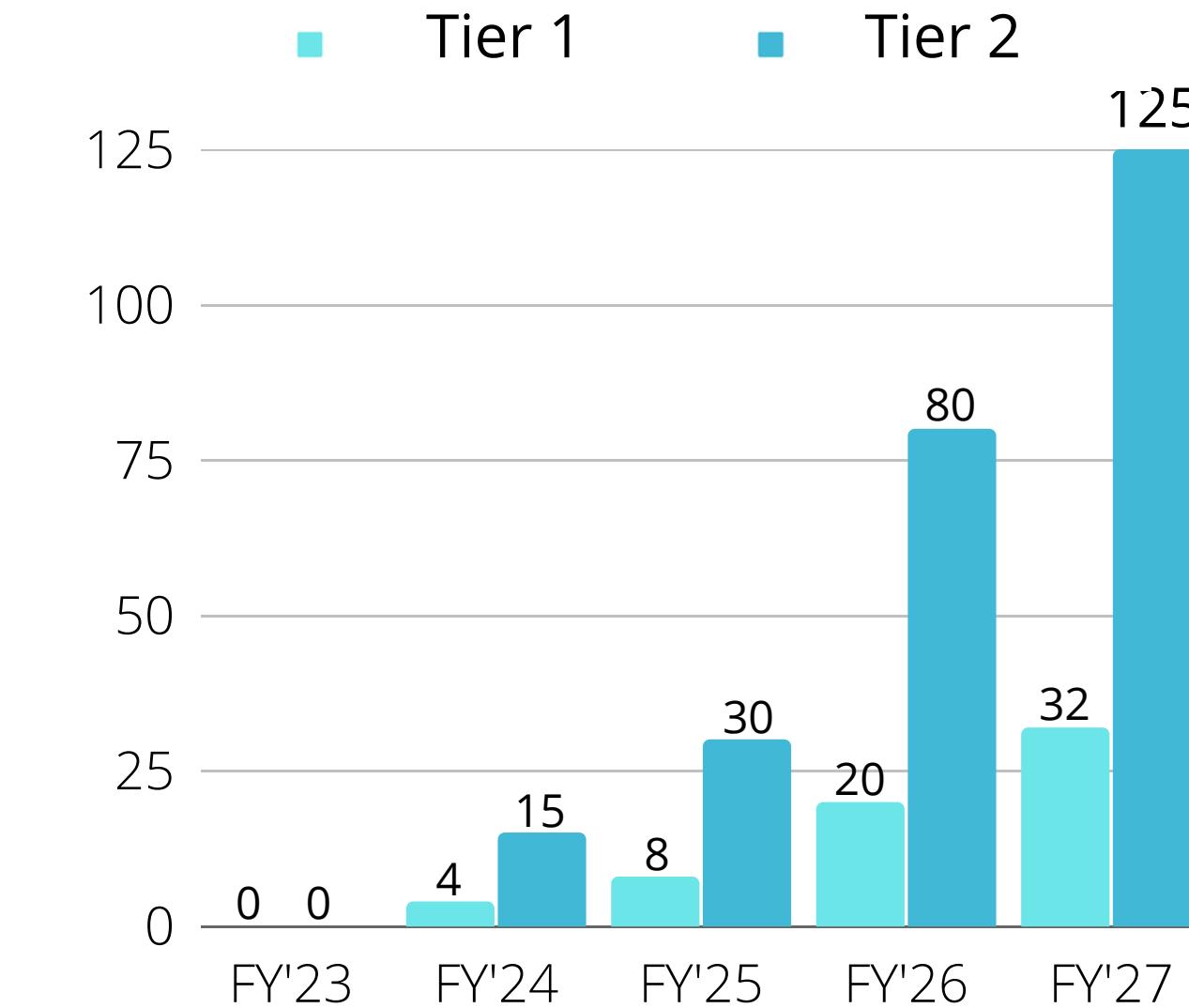
# Sales Projections



The company expects breakeven point during 3rd year and continue to grow upwards



**R-a-a-S Subscription**



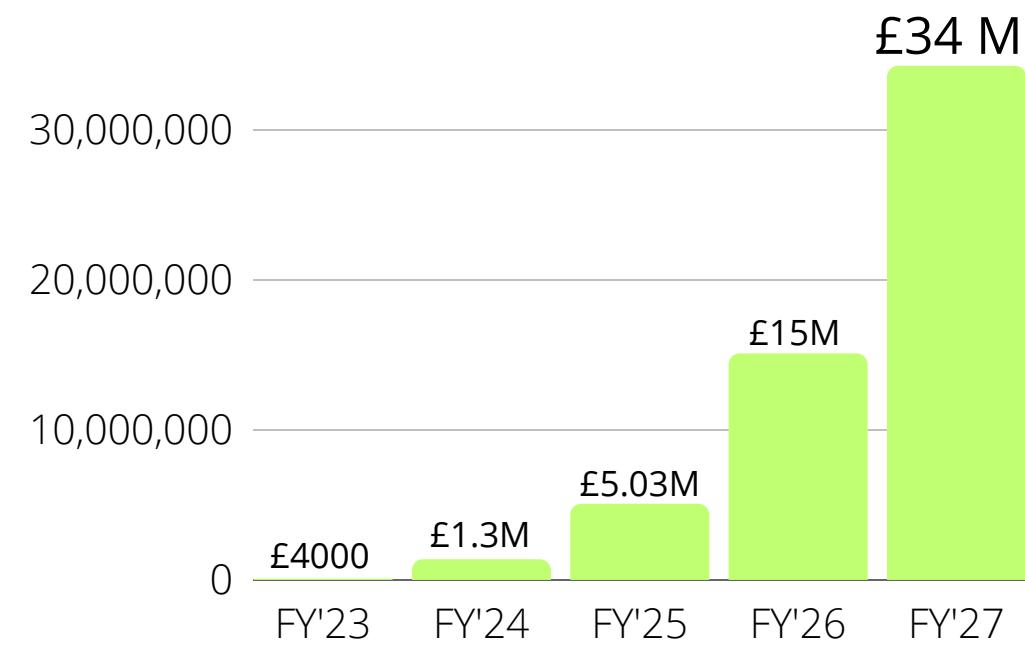
**Equipment Sales**

# Financial Projections



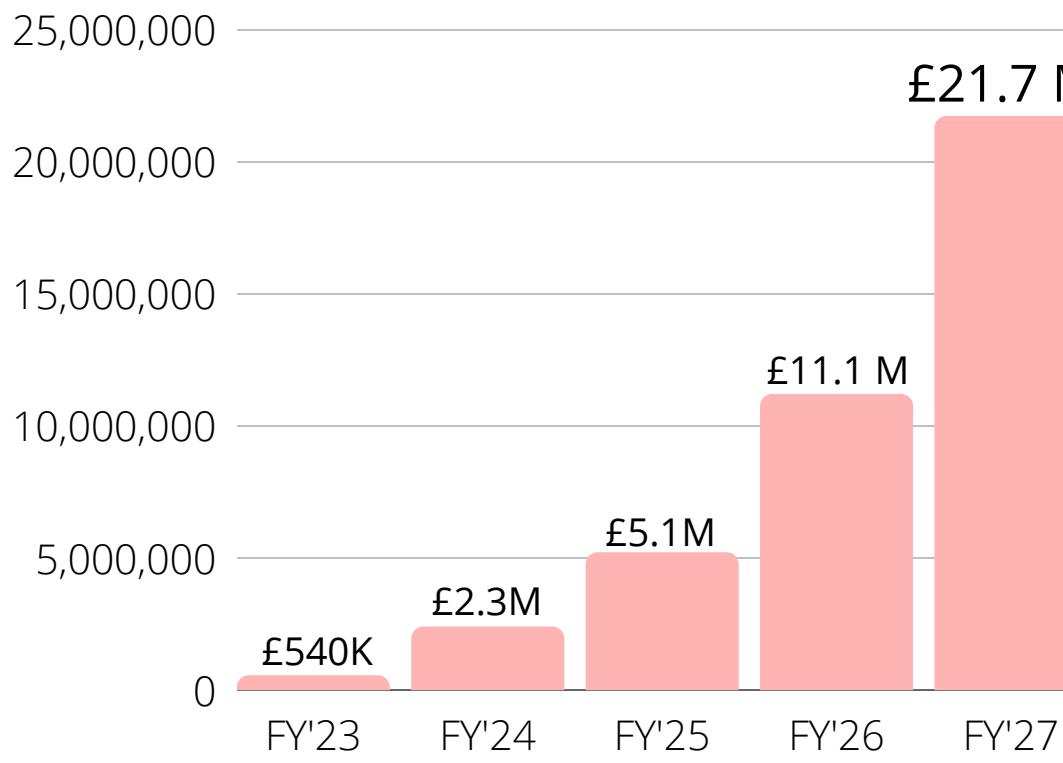
## Growth in 8 months:

\$0 → \$400k ARR



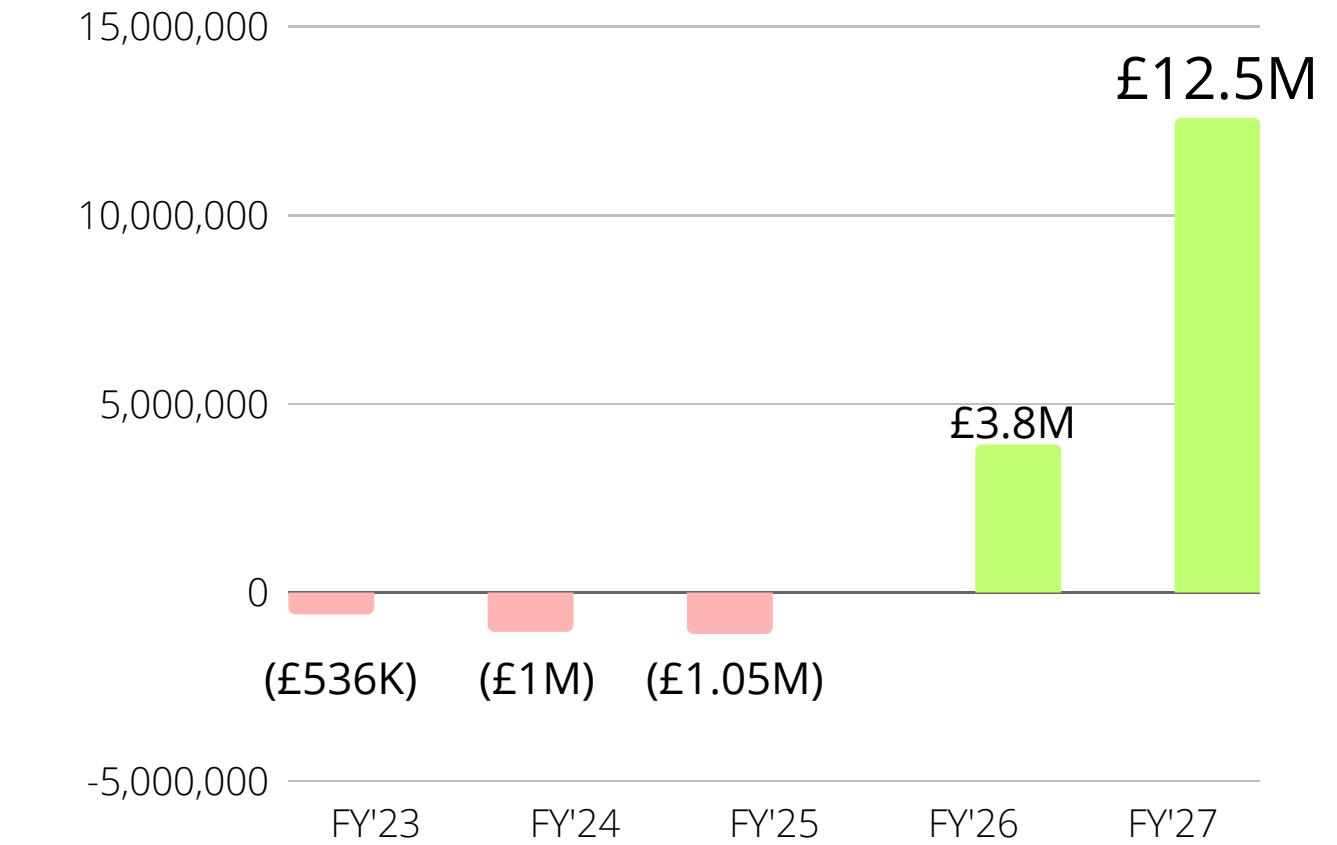
## Revenue

50% YoY Growth



## Expenses and Costs

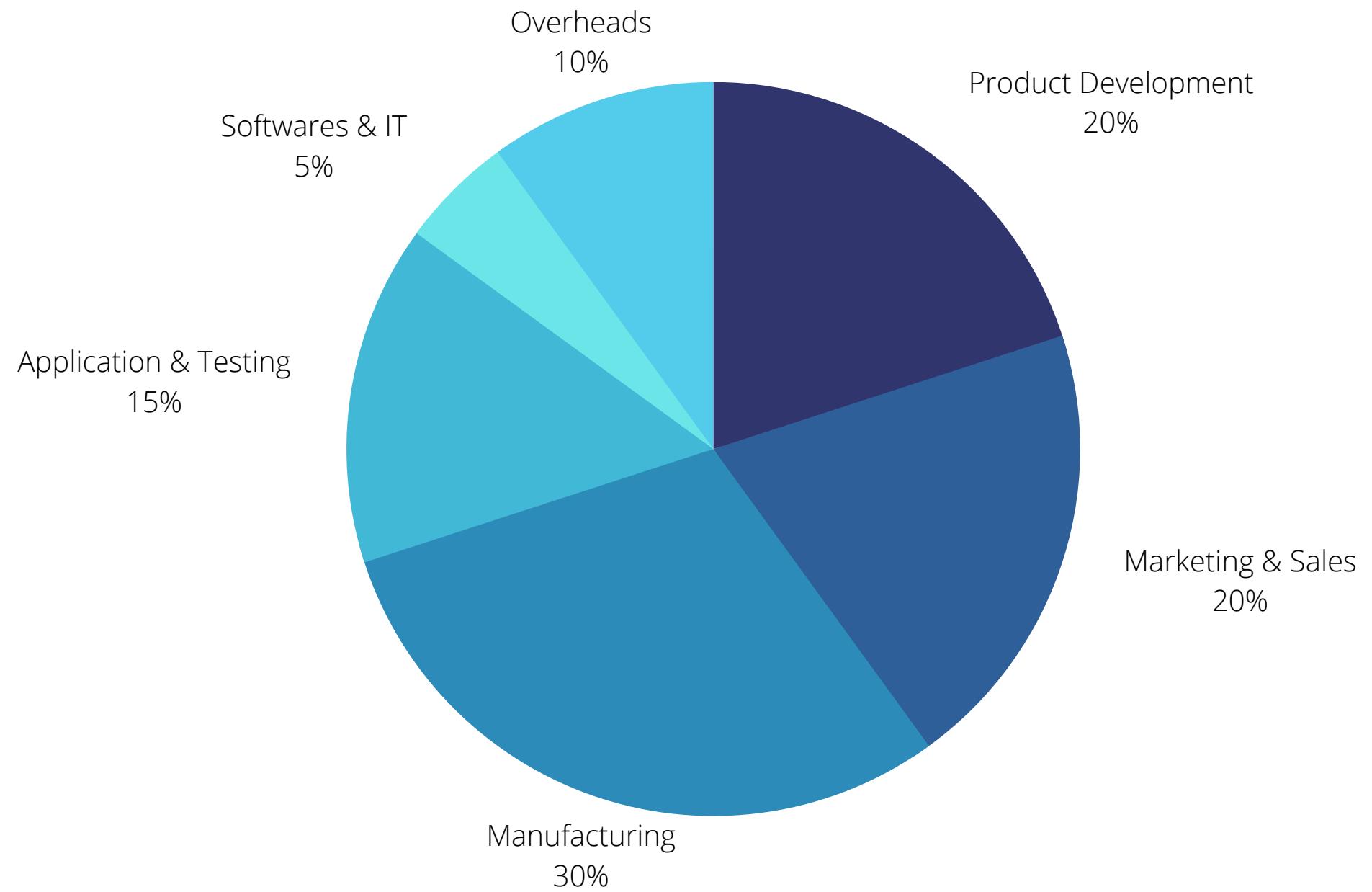
Gross costs & Expenses <= 50% Revenue



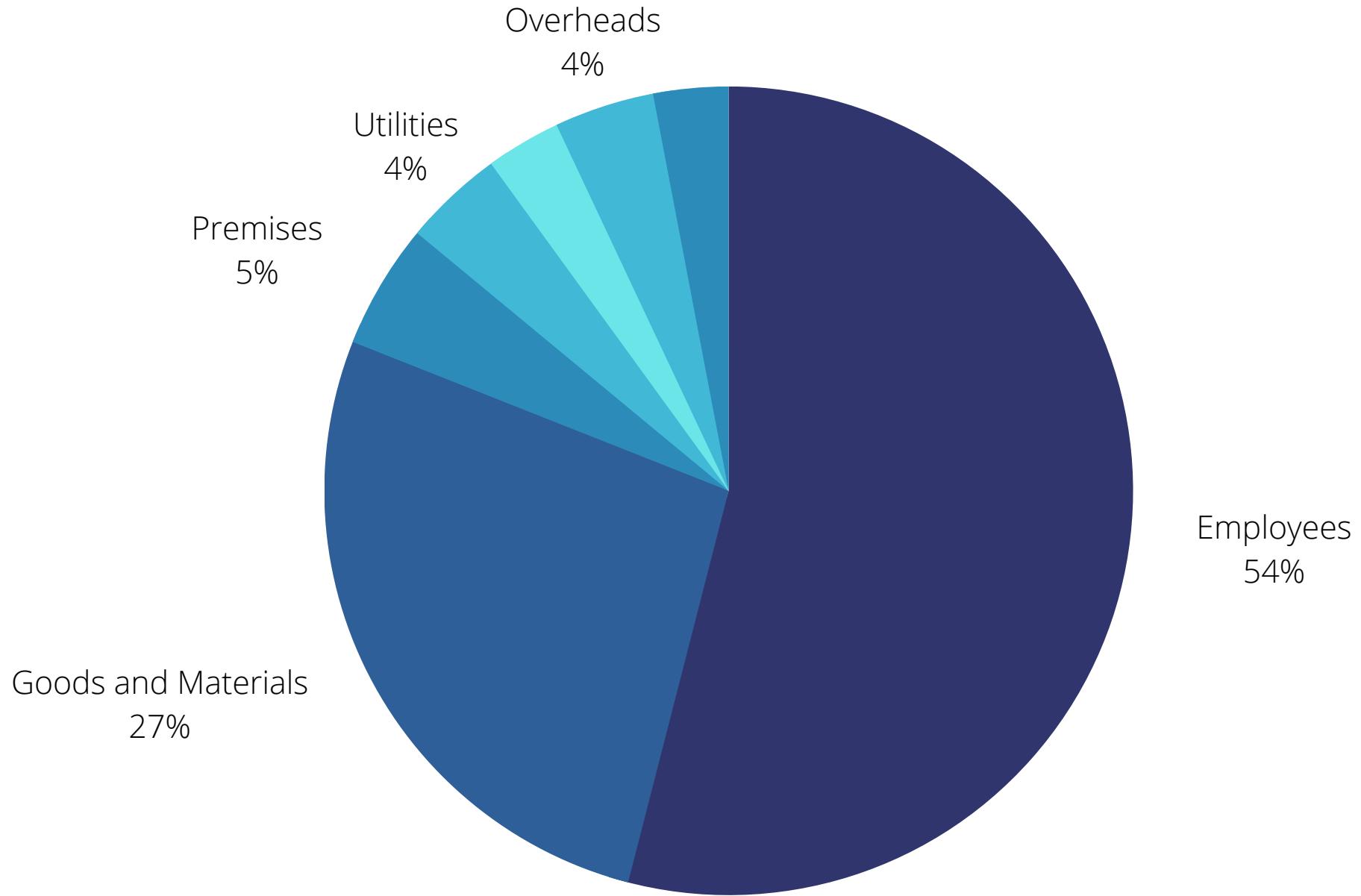
## Profit

The company expects breakeven point during 3rd year and continue to grow upwards

# Funding Needed : £1.5k

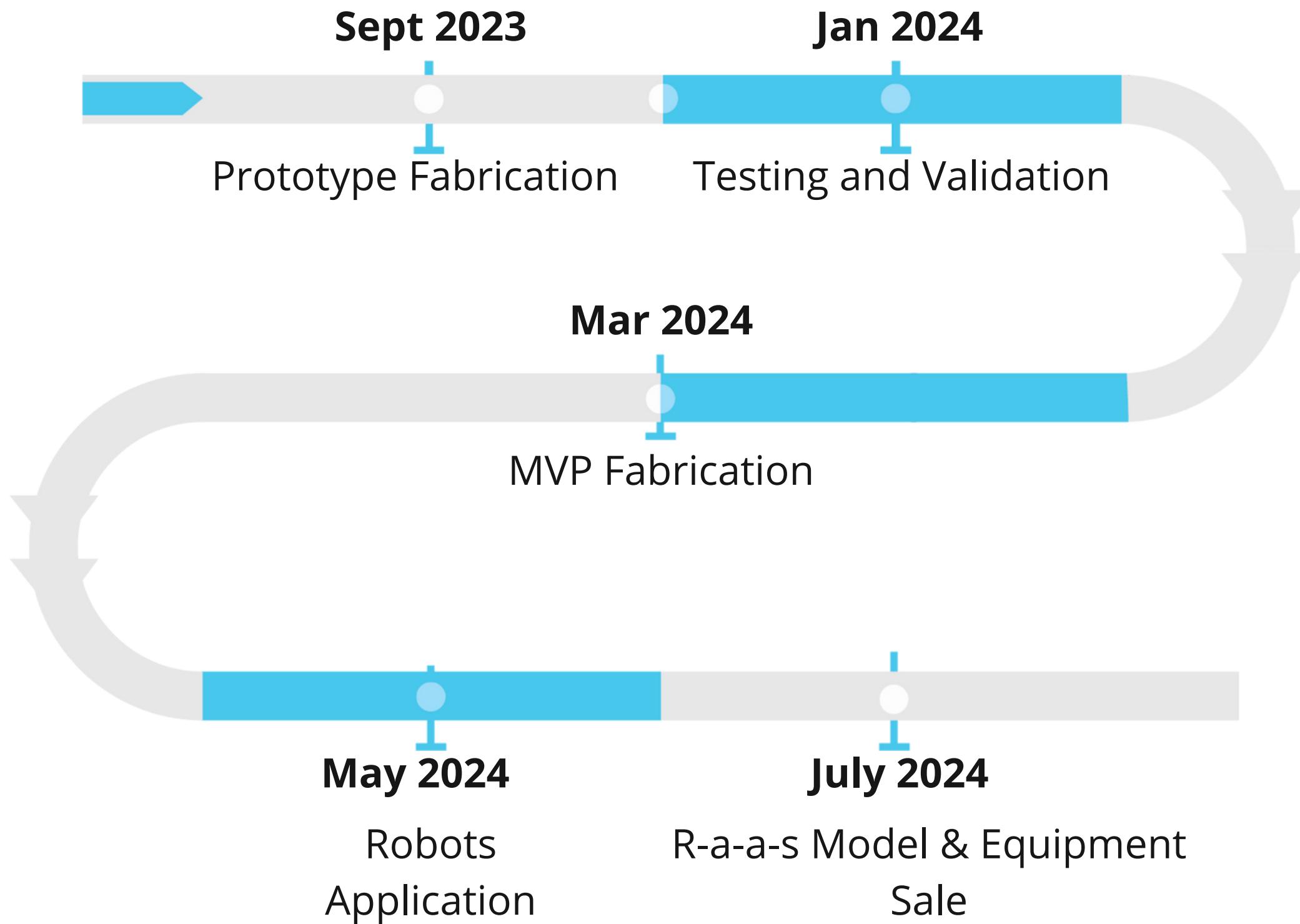


The initial capital will be used to develop the product and manufacture the first batch of MVP, Sales & Marketing, Test & trials, and IT infrastructure



The initial capital will be used to develop Robot Prototypes and batch of MVP, employees, buying accessories, UV-C lights, and premises

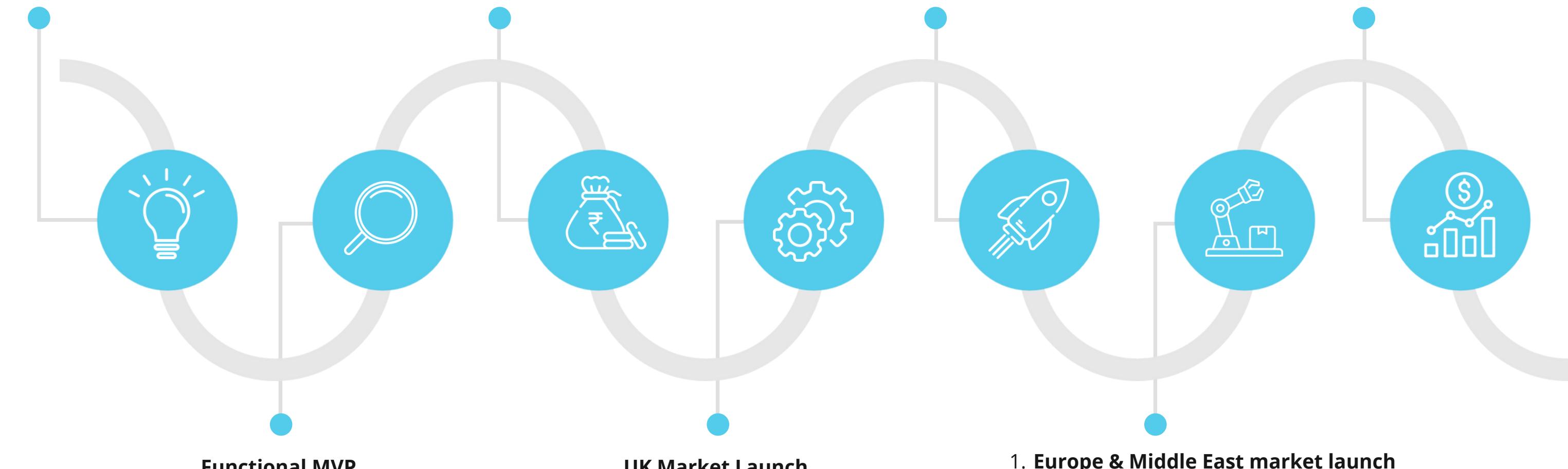
# Milestones



# Product Milestones and Funding Nature



- |   |   |  |   |
|---|---|--|---|
| <b>1. Base Fabrication</b><br><b>2. Arm Fabrication &amp; Integration</b><br><b>3. Testing and Validation</b> | <b>1. Initial demo &amp; Trial in selected premises</b><br><b>2. Design and preparation for first batch</b><br><b>3. R-a-a-s launch of MVP in the UK — 10 units</b><br><b>4. Version-2 ready with AI capabilities</b> | <b>1. Mass Production (300 units)</b><br><b>2. Version-3 ready With Advanced A1 capabilities</b> | <b>1. Version - 4 ready</b><br><b>2. No of units -1080</b><br><b>3. Breakeven</b> |
|---|---|--|---|



Prototype to MVP	MVP (Year 1)	Commercial Launch (Year 1-2)	Market Entry (Year 2-3)	Market Expansion (Year 3-5)	Market Growth (Year 4-6)
Equity Funding - 150k GBP	Equity Funding - 0.75M GBP	Equity Funding - 0.937M GBP	Equity Funding - 3.17M GBP	Equity Funding - 9.15M GBP	Equity Funding - 19.14M GBP



## Contact Us



+44 7765 221740

[info@spotless.ai](mailto:info@spotless.ai)

[www.spotless.ai](http://www.spotless.ai)

E-Innovation Centre, Telford innovation Campus, Priorslee,  
Telford, Shropshire, England, TF2 9FT