

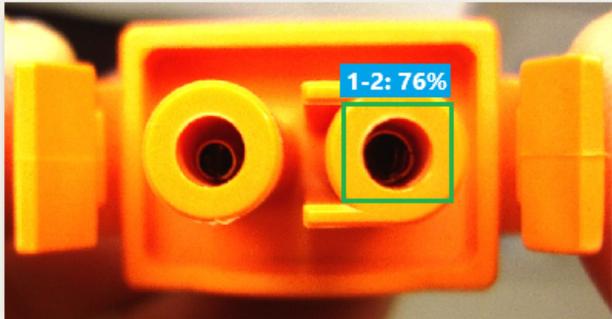
Building Devices Together

DefectAI

AI-Powered Defect Management for Smarter Manufacturing

Defect and Risk Management

Defect Type: Socket enlarged



From the image, I can list my risk analysis as:

1. Failure mode: socket enlarged
2. Hazard: electrical disconnection
3. Hazardous situation: non-contact between connector and mating connector
4. Failure cause: quality inspector uses hard point test lead probe into socket of connector to perform continuity re-inspection. This created an enlargement of the connector socket.
5. Disposition: scrap

based on above risk assessment, I can list potential risk measures and actions as:

1. all hard point standard test lead probes removed from the line.
2. update work instruction to detail not to use hard point test leads but mating connector only.
3. all stores of finished goods using same connector type shall be reviewed
4. recall goods using same connector.

Companies: Global Risk Data Inc (GRD)

Risk driven Quality Consulting Company LLC (RdQCC)

Founder: Jerry (JinXing) Xiao

May 10th, 2025

Problem Statement

- **High Volume Product Recalls and impacted Units in USA (2023)**

for consumer products, 322 recall events, impacting approximately 135.2 million units; for medical devices, 975 recall events, affecting 283,44 million units (*source: PR Newswire*).

- **Serious Product-related Incidents in USA (2023)**

approximately 12.7 million individuals were treated in emergency departments for injuries and over 700 deaths due to consumer product incidents (*Source: Stein Whatley*).

The FDA receives over two million reports annually of suspected device-associated deaths, injuries, and malfunctions. From July 1 to September 30, 2023, FDA received over 7,000 reports related to Philips ventilators including 111 patient deaths. (*Source: Fierce Biotech*).

- **High Product Inspection Costs and Investment**

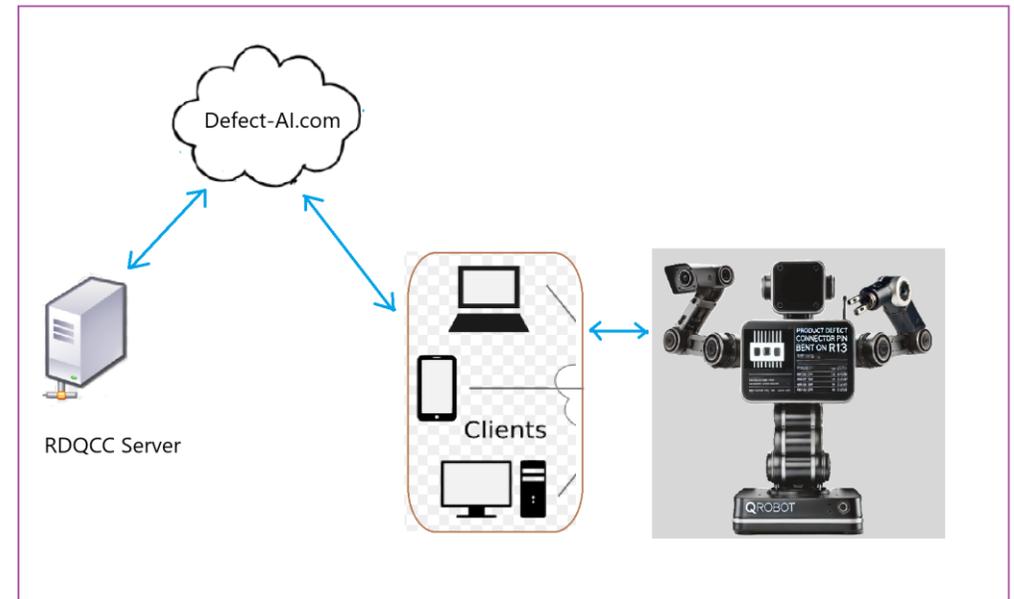
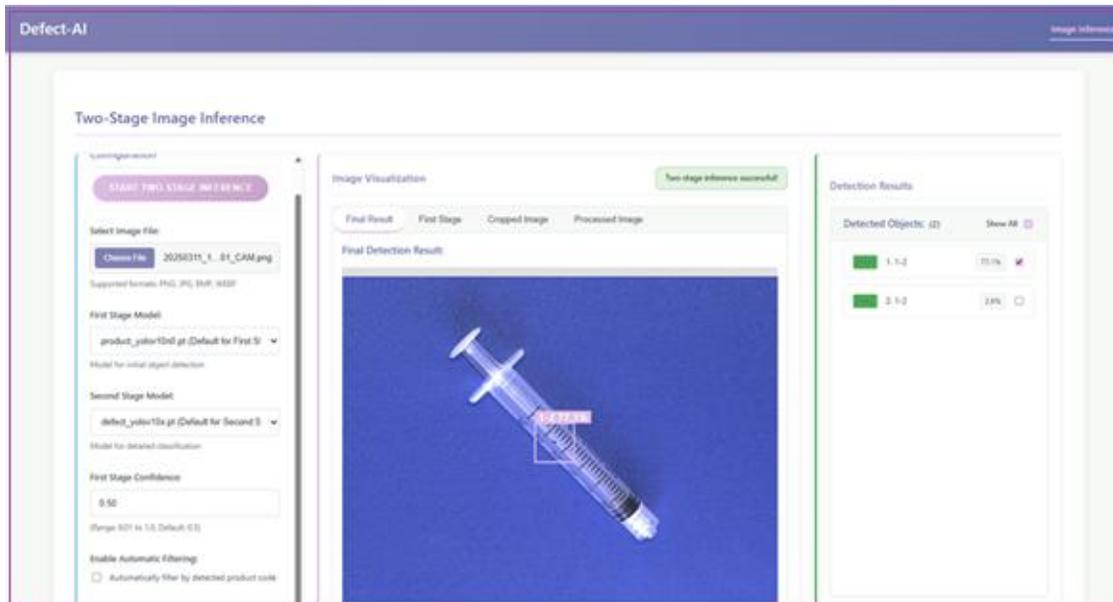
The cost of quality consists of prevention, appraisal, and failure costs, accounts for up to 25% of sales for some firms and can reach 40% to 50% in certain cases.

Most automated inspection systems using measurement approach are limited to isolated checkpoints, unable to identify defects out of these checkpoints such as during material transmission, rework, reinspection, or refurbishment. A mid-level system typically ranges from \$50,000 to \$150,000. Those systems are limited to a few checkpoints and are often unaffordable for small manufacturing companies or those with low-volume production needs.

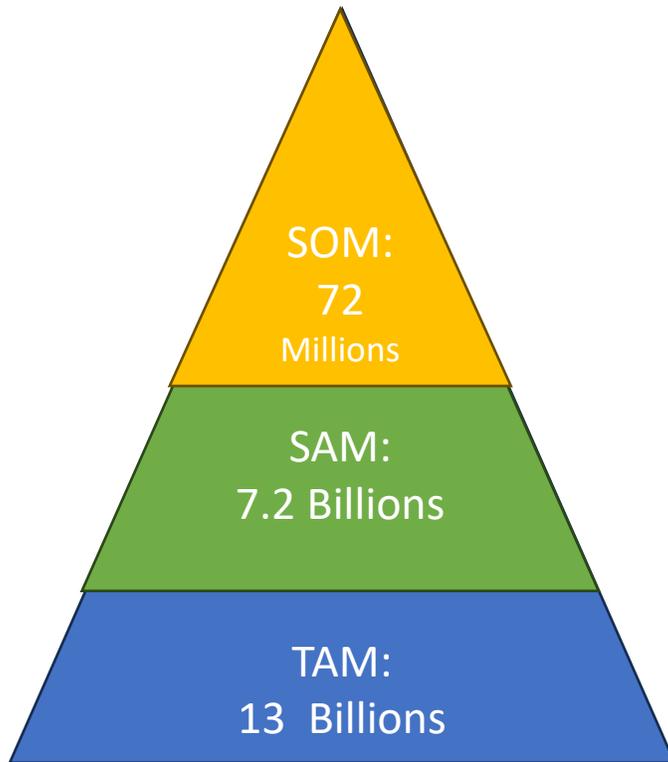
Our Solution: DefectAI

DefectAI, AI-powered defect management, is trained on a proprietary image-text dataset and fine-tuned with a powerful bimodal LLM.

- Web-based access (Left): Users can upload product images to the website and instantly access DefectAI's comprehensive capabilities—including defect detection, marking, root cause analysis, risk assessment, disposition, reporting.
- Robotic Integration (Right): Robots that capture and transmit product images enable DefectAI to instantly identify defects and initiate automated removal of defective parts directly from the production line.



Market Opportunity



- **Market Size**

The U.S. has over 600,000 manufacturing facilities across various sectors, including machinery (19,873), automotive (300), food processing (27,000), chemicals (3,430), electronics and semiconductors (2,031), medical devices (7,900), pharmaceutical and biotech (5,200), renewable energy and clean technology, etc.

Manufacturers represent direct users of the DefectAI system, with a global count exceed 1,100,000 facilities.

- **Growth Trends**

- The automated optical inspection system is projected to growth at a CAGR of 20.8% from 2021 to 2026 (*marketsandmarkets*)
- The global robotics market is growing at compound annual growth rate (CAGR) of 12.17% (*Mordor Intelligence*)
- In the industry 4.0 age, automating anomaly detection takes the guesswork out of condition monitoring.

DefectAI: Next-Generation Quality Control Solution

- **Product Overview**

The DefectAI is designed to automate quality control in manufacturing, minimizing costs and maximizing efficiency. By integrating within collaborative robot, it identifies defects across production lines while providing real-time risk analysis and actionable insights.

- **Technology and Innovation**

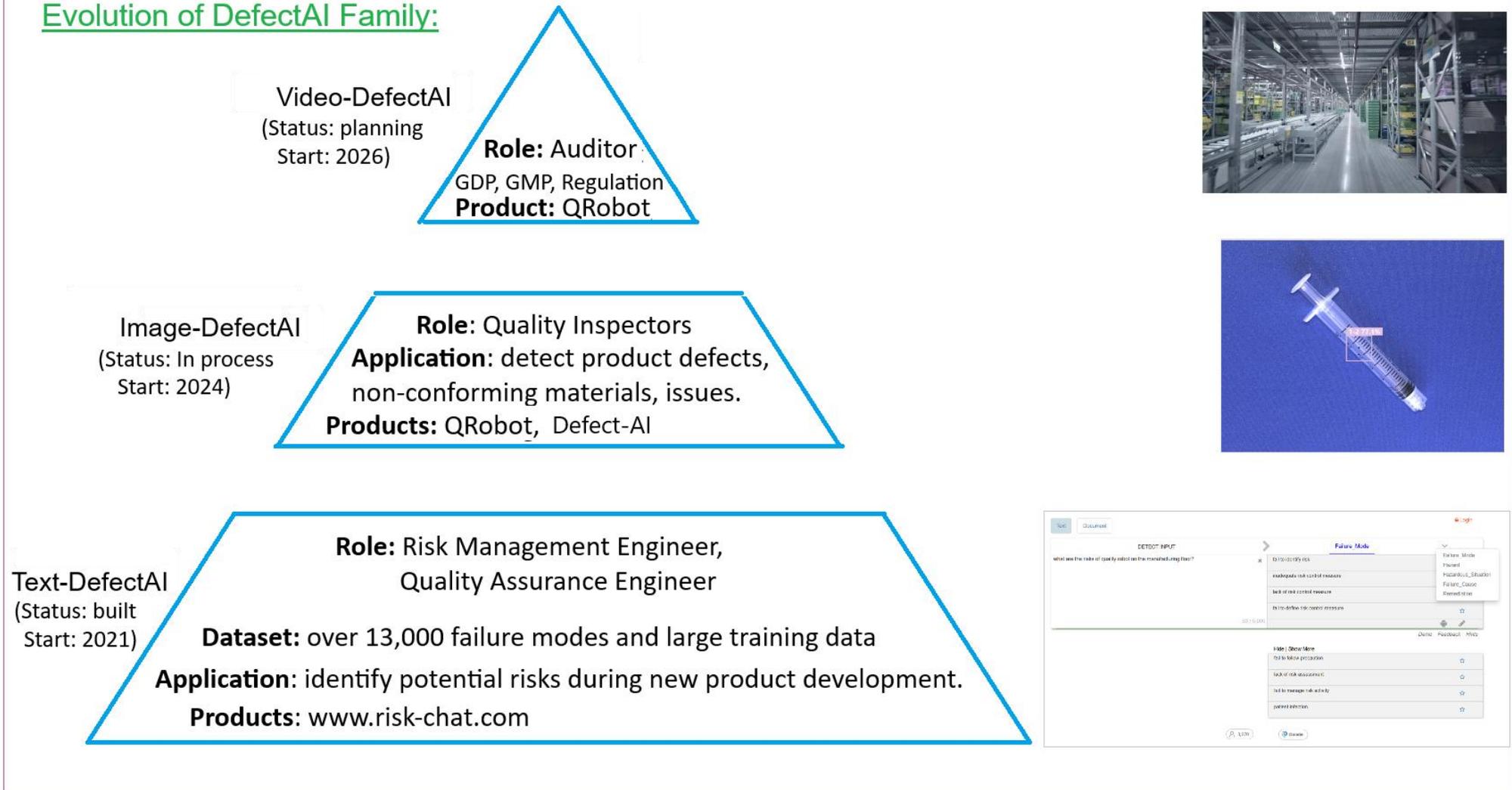
- **Proprietary AI Models:** Our AI models are trained on proprietary datasets, enabling DefectAI to recognize product defects with exceptional accuracy and conduct detailed risk analysis to support decision-making.
- **Integrated with Robot:** Equipped with state-of-the-art cameras, motion planning systems, and wireless communication technology, QRobot adapts seamlessly to both high-volume and small-batch production environments.
- **Transform quality inspection to next generation:** seamlessly transform quality control from isolated checkpoints to full production line solution, leveraging the full potential of industry 4.0.

- **Competitive advantage**

Unlike traditional automated inspection systems, DefectAI offers a flexible subscription model, drastically lowering the cost of entry. Additionally, its “one QRobot for all” enables to detect a wide range of non-conforming issues across manufacturing floors than competitors on specific defects.

DefectAI Core: from Text to Image to Video

Evolution of DefectAI Family:



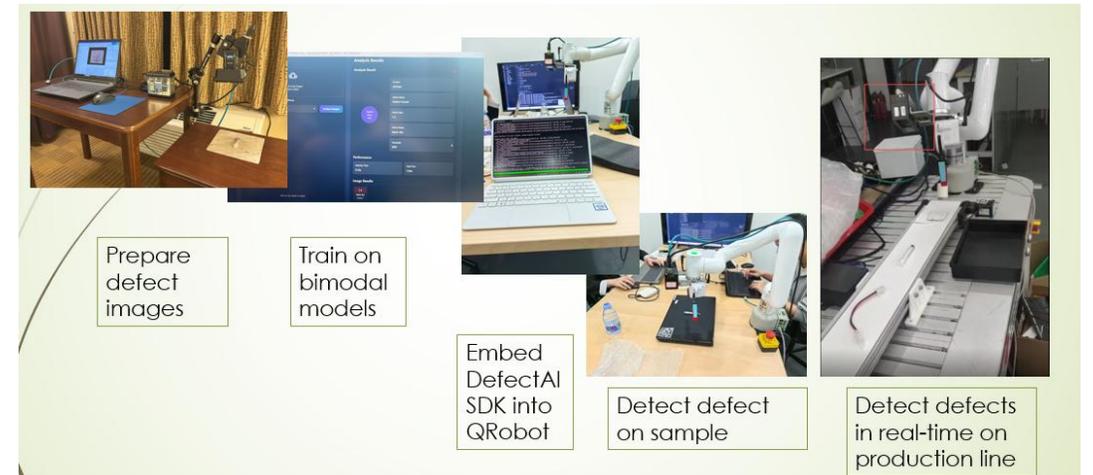
DefectAI Traction

- Key Milestones:

- Since 2021, our proprietary AI text models have achieved global user adoption (www.risk-chat.com).
- In 2024, we launched the Defect Image Lab to continuously produce high-quality defect images with captioned risk analysis.
- In January 2025, we introduced www.defect-AI.com, offering web-based defect management services to the registered users.
- By April 2025, our DefectAI was successfully integrated with partner robots, enabling real-time defect detection and automated removal of defective parts on production line.

- Partnerships & Collaborations

Established a partnership with Concordia University (ranking second in Canada for AI-related publications) through the NSERC (Natural Sciences and Engineering Research Council of Canada) grant program.



Business Model

- **Revenue Model:**

DefectAI operates on a Subscription-as-a-Service model, offering recurring revenue through tiered subscription model.

- **Pricing Structure:**

DefectAI offers a monthly subscription fee of \$100 per user, significantly reducing upfront costs compared to conventional automated inspection systems priced at \$100,000.

- **Key Customers:**

Any manufacturers seek cost-effective quality control solutions.

- **Distribution Channels:**

Direct partnerships with manufacturers and collaborations with academic institutions like ASQ (America society for quality), NAM (National Association of Manufacturers), etc.

- **Scalability:**

DefectAI supports both web-based access and integration with robotic systems, enabling convenient and cost-effective deployment and upgrades.

Competitive Analysis

Criteria	DefectAI	Traditional Automated Inspection Systems	Market LLMs (e.g., ChatGPT, Claude)
Cost	\$100/month subscription (\$0.06/hour) - Low cost.	\$100,000 upfront investment – High cost	\$0.06 per 1,000 tokens (\$0.03/image) - Medium cost
Adaptability	Broad adaptability to various defect types across manufacturing floors.	Only adaptable to predefined defects that appear with the sensor coverage area.	Not adaptable to user-specific products since the trained models are designed for general use.
Reliability and Accuracy	Deliver consistent and precision defect detection across manufacturing floors	High detection accuracy on limited products on production lines	Low detection accuracy and inability to mark defect zones
Scalability Deployment	Full compatible with smartphones, tablets, and laptops. Easily scalable through routine upgrades at minimal cost.	Requires significant reinvestment on hardware	Difficult to scale due to costly upgrades
Ease of Use	Defects are clearly marked and thoroughly analyzed	Requires technical expertise	Inability to mark defect zones makes defect identification challenging.

Summary: DefectAI provides a cost-effective, scalable, and highly accurate solution compared to traditional automated inspection systems and market LLMs. Powered by AI models trained on proprietary image-text datasets and comprehensive product risk analysis, DefectAI is easily integrated into robots capable of detecting defects across the manufacturing floor.

Go-To-Market Strategy

- **Customer Acquisition Channels:**

Digital marketing campaigns through linkedin and Google Ads targeting production managers and quality supervisors. Attendance at industry conferences like Automate, ASQ, and IMTs to demonstrate QRobot's capabilities.

- **Value Proposition Messaging:**

Revolutionize quality inspection with DefectAI: an affordable, scalable, and accurate solution, integrating with robotic technologies.

- **Distribution Strategy:**

DefectAI services are sold directly to end-users, ensuring comprehensive customer support and reliable ongoing maintenance.

- **Metrics for Success:**

Achieve 10 pilot group customers by the end of 2025, and begin integration with leading robotic platforms, including humanoid robots, in early 2026.

Team

- **Leadership Team:**

- **Jerry Xiao**, CEO: with over 20 years of consulting experience, Jerry has investigated more than 200,000 product failure issues and conducted detailed risk analysis across over 100 product categories including FDA approved robotic surgery systems and AI-powered medical devices.
- **Shahar Tsadeek**, Chief Data Scientist (CDS): Spearheaded the company's machine learning, data modeling, App development over the past five years.
- **Zhuo Qiu**, Computer Vision Scientist: responsible for imaging deep learning, developing multimodal AI models, optimizing model performance, and deploying models on application. Hold Bachelor's Degree from McGill University in computer engineering.

- **Diverse Expertise:**

Combined experiences in AI, Big Data, Imaging Process, Risk Management, and Quality Control.

- **Advisory Board:**

- **Bijan Elahi**: Award-winning author on medical device risk management and a renowned professor. He is the founder of international conferences on medical device safety risk management.
- **Robert de Monts**: An experienced professional in startup development, fundraising, operations, and market strategy. He held roles such as CEO, COO, executive advisor, VP in various domains. Holds a Master of Science from MIT and serves as a reviewer for the *MIT Review*.

Financial Projections



• Revenue Growth:

- Initial investment phase in 2015 to support R&D and pilot deployment.
- Rapid scale-up in 2026 with 3,000 subscriptions sold, generate \$1M in revenue.
- Strong growth trajectory reaching \$50M revenue by 2029 with 51,000 subscriptions sold.

• Profitability Milestones:

- Achieving profitability in 2027 with \$9M in net positive cash flow.
- Profit margin expands from -595% in 2026 to over 78% in 2029.

• Unit Economics:

- Revenue per user subscription: \$1.2k/year

Investment Opportunity

- **Capital Request:**

Seeking **\$10M** in Seed Funding to finalize DefectAI, get early customers, and build core team.

- **Pre-money valuation:**

\$50M, with equity offer of 16.6% for this round of funding.

- **Use of Funds:**

- 65% to build and support a team of approximately 40 professionals.
- 17% for infrastructure investments, including machine learning platforms, data centers, and defect image center.
- 13% for collecting defect samples and developing a comprehensive multimodal defect dataset.

- **Investment Rationale:**

DefectAI is positioned in a fast-growing AI machine vision inspection market with a scalable subscription model. With proven team expertise, strong industry recognition, and proprietary AI models, we are poised for rapid market adoption and growth.

- **Expected ROI:**

Targeted 4x return on investment within 4 years based on profitability by 2029

Thank you – Partner with Us to Transform Quality Inspection



- Revolutionizing AI-powered defect management to align with the robotics era.
- A clear roadmap for DefectAI – from text to image to video – aimed at transforming the field of quality engineering.
- Addressing a \$13B+ TAM with a scalable subscription model.
- Contact Information:

Jerry Xiao, CEO & founder

Email: jxiao@rdpdm.com | Phone: +1 (515) 657-2476

Website: www.rdqcc.com www.global-riskdata.com

Let's shape the future of quality control together. Schedule a follow-up meeting to discuss investment opportunities.