Dr Chris Yates

Director, Vision Ventures

Vision Ventures is a M&A advisory firm specializing in corporate transactions and strategic consultancy in the vision tech market.

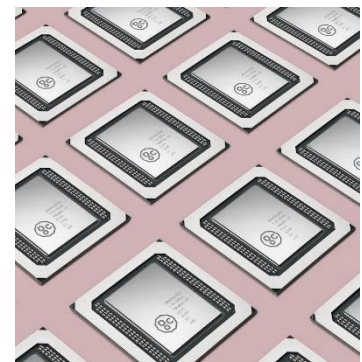TERADYNE   Atlas Copco   AMBIENTA   Rockwell Automation   ISRA VISION   ZEISS   COGNEX   tiama
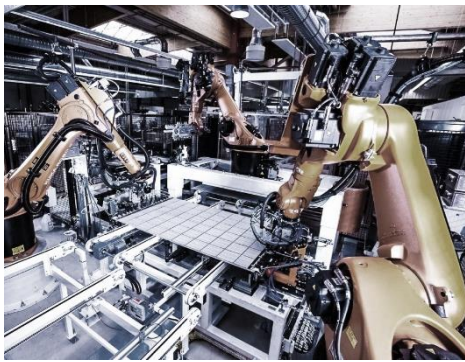
VISION VENTURES

AI has Become a Central Paradigm of Vision Tech

**DATA** — **MODEL** — **TRAIN** — **INFER**

# AI has Lowered the Barrier to Entry in Many Markets

AI deployments have been accelerated by easily available tool chains, processor platforms, data sets, networks, cloud compute

This has lowered the barrier for many startup companies to enter the market of vision tech

Example: Waste & Recycling Business

Images

AI

UX/UI

68%

TensorFlow   PyTorch   Keras   ONNX   TensorRT   OpenVINO
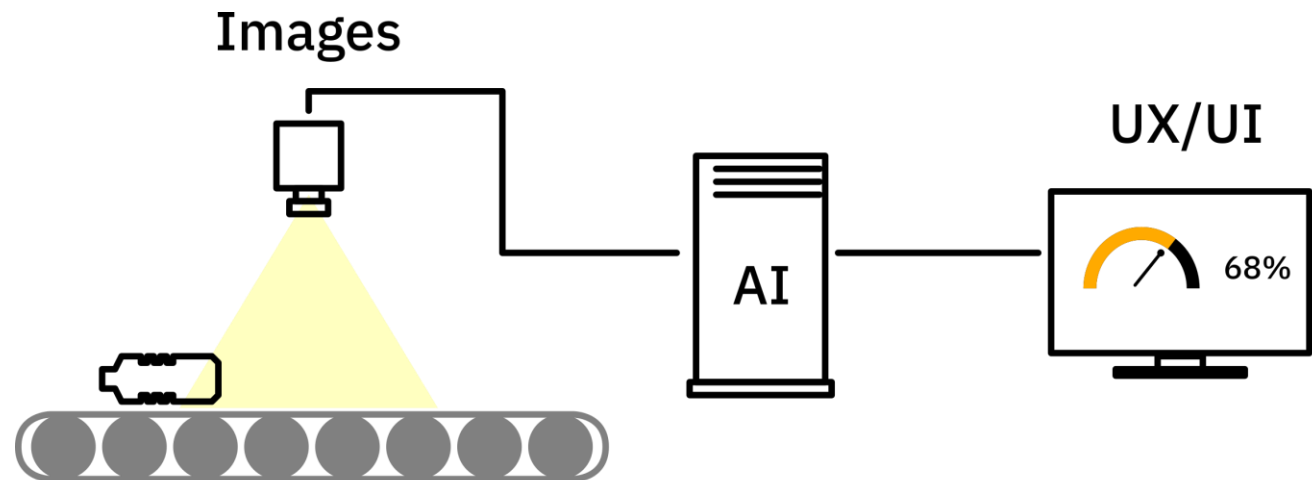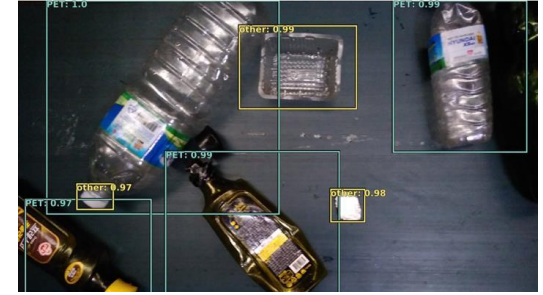
But how valuable is the AI component?

The cycle of innovation, investment, growth, acquisition is an important mechanism in a free market economy

A problem for investors and strategic acquirers can be to understand how to value the 'AI' component of a business

AI technology is rapidly developing and can be very complex to understand for non-experts; or appear all similar

'…leveraging a unique deep learning methodology…'

'…partnership with NVIDIA to assure using the best AI techniques…'

…AI-powered visual quality inspection goes beyond the capabilities of machine vision alone…

'…enhances the learning capabilities of optimization algorithms, particularly neural networks, trained according to stochastic gradient-descent rules…'

VISION VENTURES

Breaking down the AI Impact
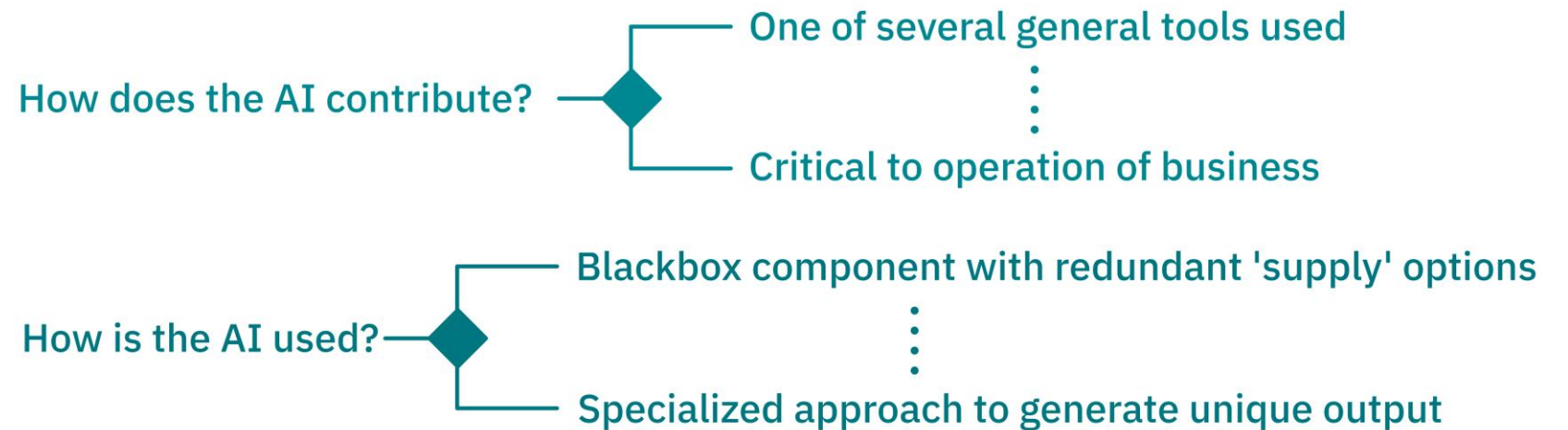
BUSINESS

How does the AI contribute? ◆

One of several general tools used

⋮

Critical to operation of business

BUSINESS

PRODUCT
SERVICE
SOLUTION

How does the AI contribute? — One of several general tools used ... Critical to operation of business

How is the AI used? — Blackbox component with redundant 'supply' options ... Specialized approach to generate unique output

Breaking down the AI Impact

BUSINESS

PRODUCT
SERVICE
SOLUTION

TECHNOLOGY

How does the AI contribute? ◆
- One of several general tools used
- Critical to operation of business

How is the AI used? ◆
- Blackbox component with redundant 'supply' options
- Specialized approach to generate unique output

How does the AI work? ◆
- Internal technical evaluation
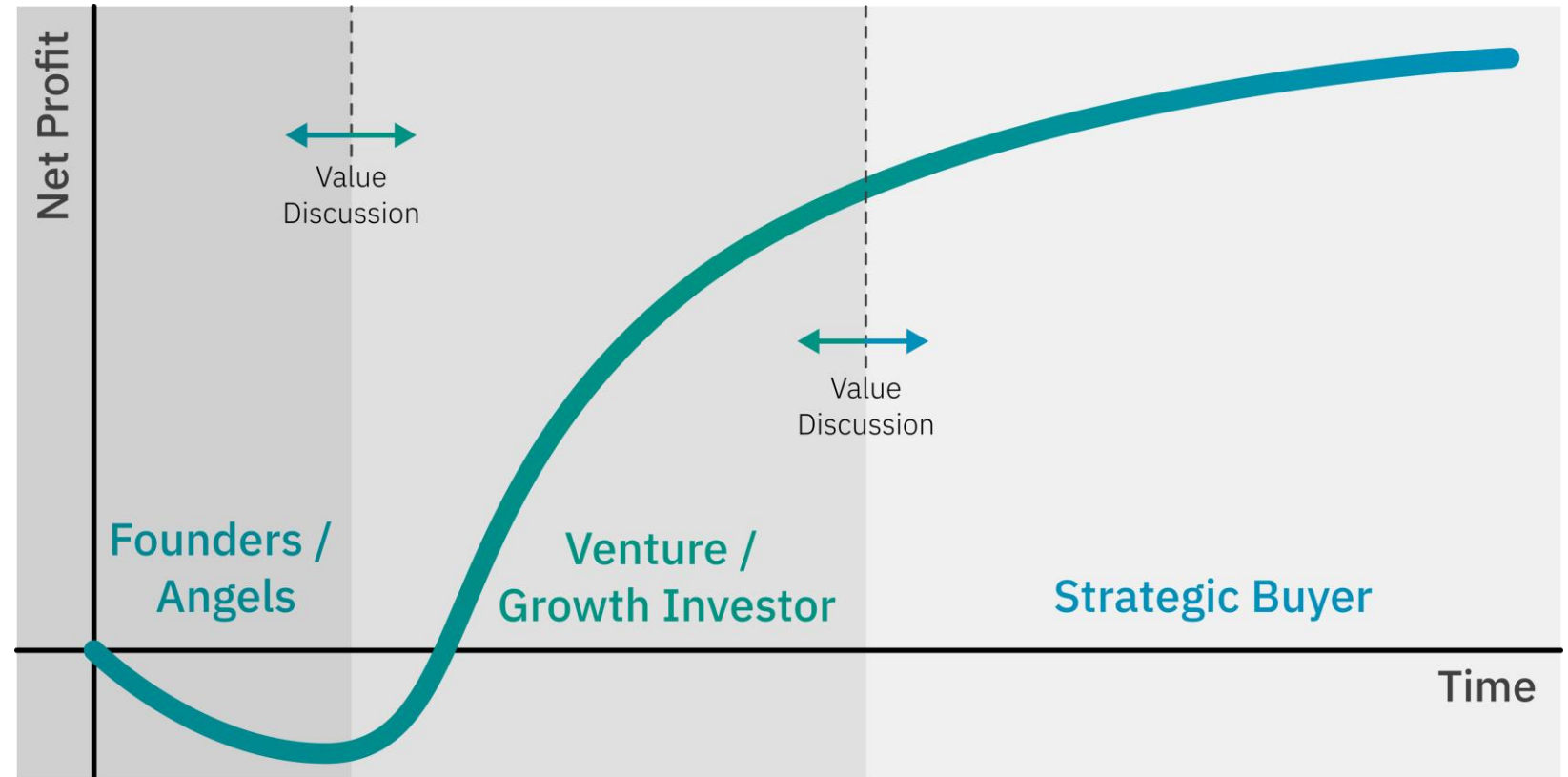- External expert advice

Discussions on Value are Important Throughout Growth

Three major stages in a company's growth create discussions on value

Each major group has different key concerns

Accurately assessing value at each stage requires understanding of different viewpoints

Three key ways for founders to promote the value of their AI solution:

Benchmarking

Meaningful benchmarking is valuable, e.g. direct tests of competitive solutions against the same problem

Performance metrics are best in context of customer KPIs – e.g. parcels per hour

Competitive details are often lacking in presentations

References

General expectation is that the technology works

Real-world deployment and maintenance 'stories' are a powerful approach to explaining the solution, even if only proof-of-concept

Communication

Explain relative importance of all components of AI to business model

Avoid a focus on just one aspect (e.g. inference)

Assessing Barriers to Scale
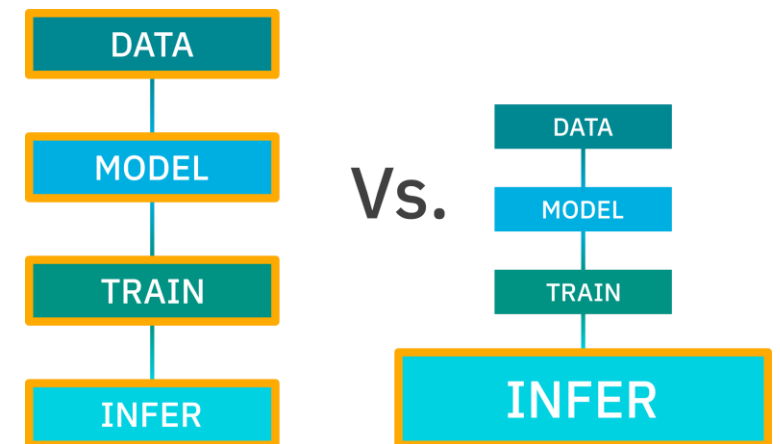
For investment diligence one of the most important aspects is the ability to scale – is this helped or hindered by the AI approach in the business model?

Data and training are often areas with most impact to scaling of business

DATA

MODEL

TRAIN

INFER
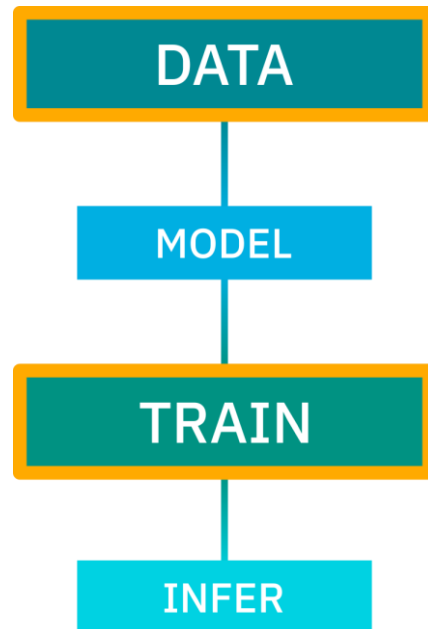
Data

Time/training to assemble required data

Annotation and metadata

Data security (e.g. do I need to be on-site?)

Training

How often is update required?

How to add additional parts/classes?

Size of model – training time/cost?

***Several companies are addressing these issues by enabling the customer to handle data and training through ease-of-use approaches**

VISION VENTURES

The Difference in Appetite for Risk

Founders, investors, and acquirers have different levels of tolerance to risk

Valuations are reduced by items which are perceived as risky

We often assign higher risk to things we do not understand or are unfamiliar with

Reducing the perception of risk benefits both sellers and buyers during the valuation process

VISION VENTURES

Risk Reduction by Acquirers
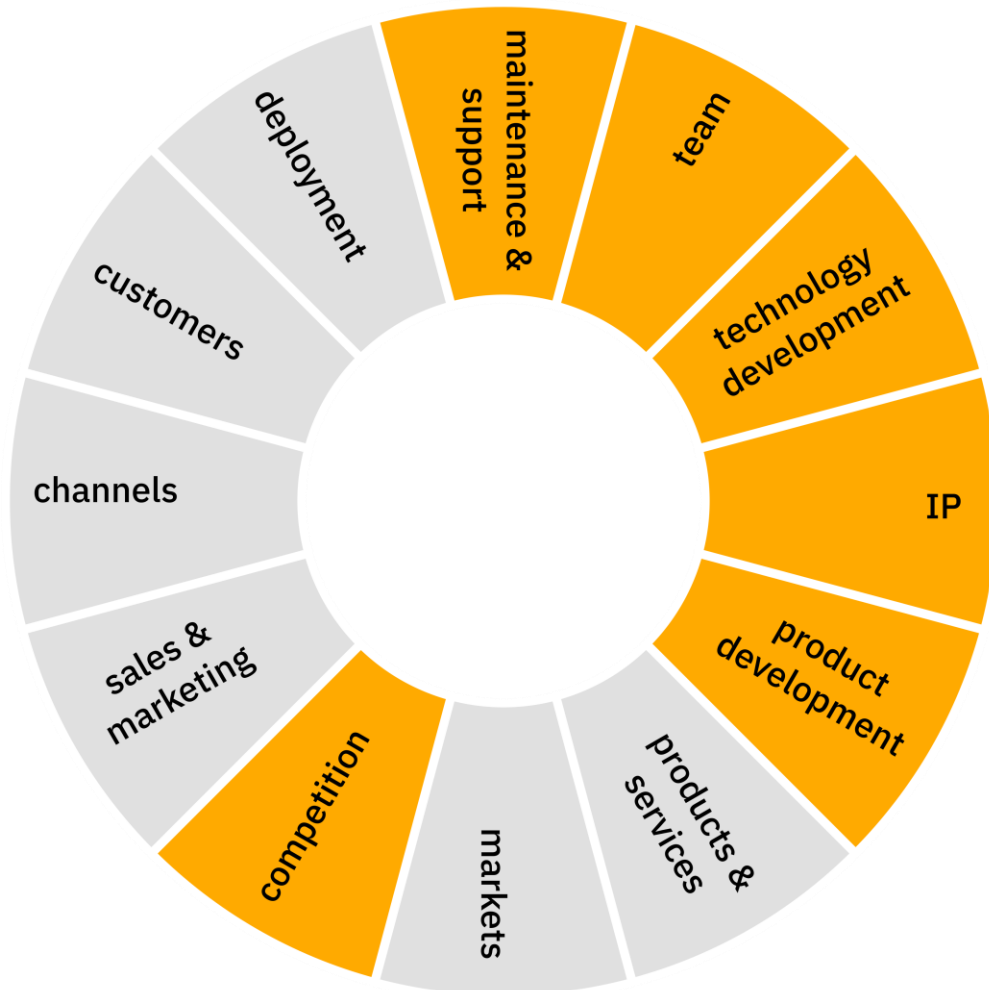
Formal due diligence process is the primary approach to risk reduction – areas for special focus if AI is new a new focus area

Quantify where critical IP is located within company - individuals, code, patents etc.

Understanding how the AI development will operate after integration with existing processes

Acquired team culture and expertise and ability to educate internally

Requirements on maintenance and support in the field

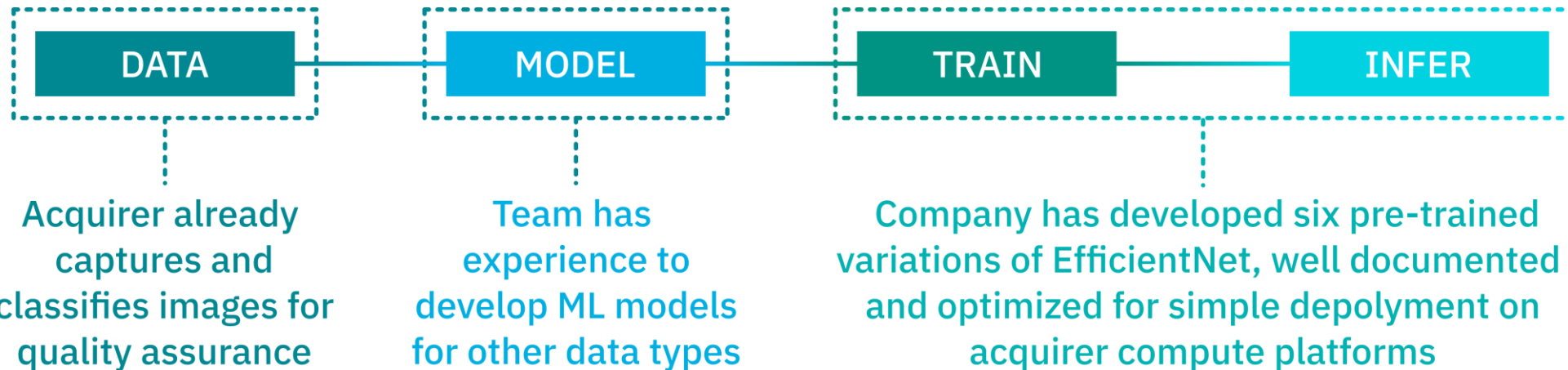# Company Led Risk Reduction Before and During Acquisition

Synergy

Forward synergies with the acquirer business spread the overall exposure to risk and so can increase value

'Packaged' AI

'Package & Present' AI components for simple integration – 'How would X easily fit into the acquirer business?'

Layered Information

Decision makers are unlikely to have time to understand all technical details – different detail levels can help structure discussions

Examples:

DATA ──── **MODEL** ──── **TRAIN** ──── **INFER**

Acquirer already captures and classifies images for quality assurance

Team has experience to develop ML models for other data types

Company has developed six pre-trained variations of EfficientNet, well documented and optimized for simple depolyment on acquirer compute platforms

VISION VENTURES

Understand each
Stakeholder View
motivation and concerns

Ensure clear
Communication
of AI in a business context

Perform expert
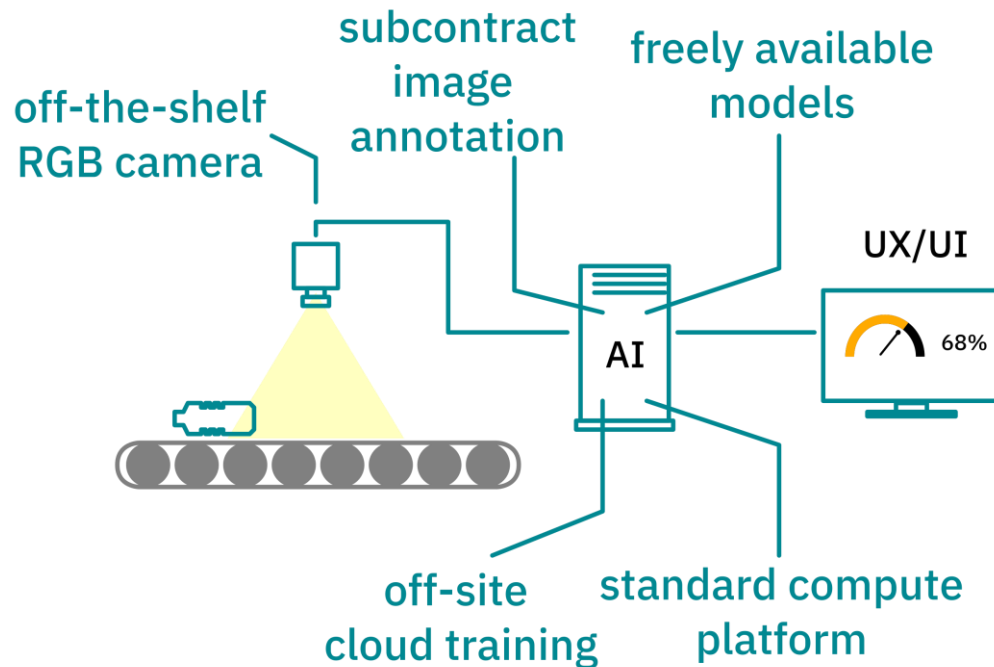**Structured Analysis**
to assess AI impact and risk

Thank You

Dr Chris Yates

yates@vision-ventures.eu

Company #1 Strategy: speed to market
and capturing market share

off-the-shelf
RGB camera

subcontract
image
annotation

freely available
models
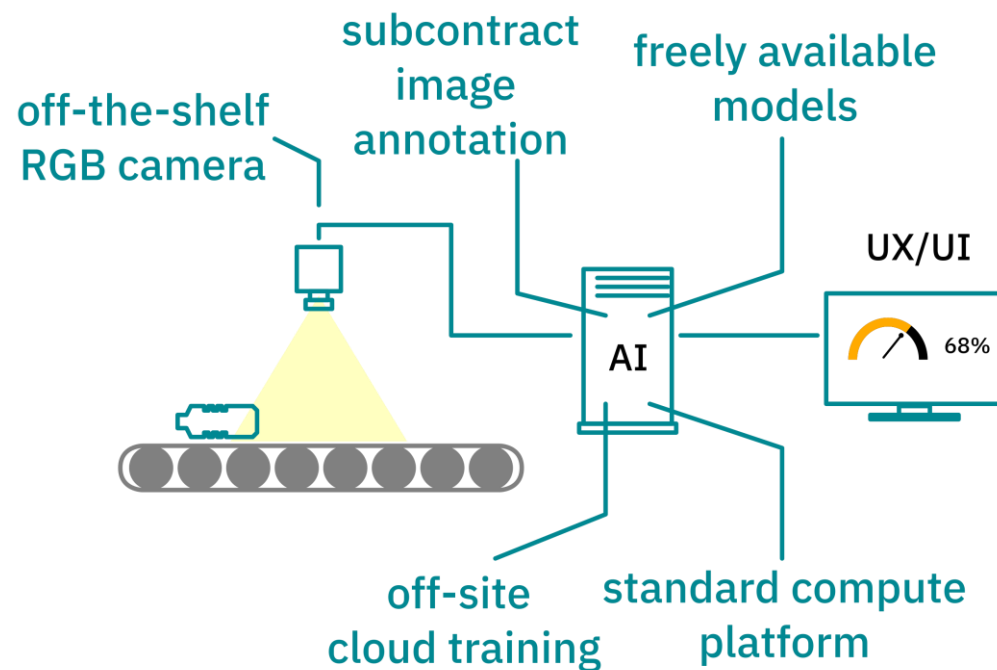
UX/UI

AI

68%

off-site
cloud training

standard compute
platform

Example: 'Leader in AI Vision for Waste Recycling'

Company #1 Strategy: speed to market and capturing market share

Company #2 Strategy: technology development to create dedicated sector expertise