



14th
**International Donor Registry Conference
& WMDA Meetings**
25 – 29 June, 2024 – Cape Town, South Africa
All patients & donors matter
www.capetownidrc.co.za



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Challenges in the Application of Artificial Intelligence & Machine Learning in Transplantation



> Introduction

> AI Opportunities

> AI Challenges

> Way forward

> **Introduction**

> AI Opportunities

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AI has the potential to transform how we work

**Providing automation and intelligence that frees up
colleague time to better help patients, faster**

Terminology

DATA | Foundation

DATA SCIENCE | Doing cool things with data

AI | Algorithms that recreate the way humans think

Machine Learning | Learning through iteration – with our help, or without

Gen AI | Generating content

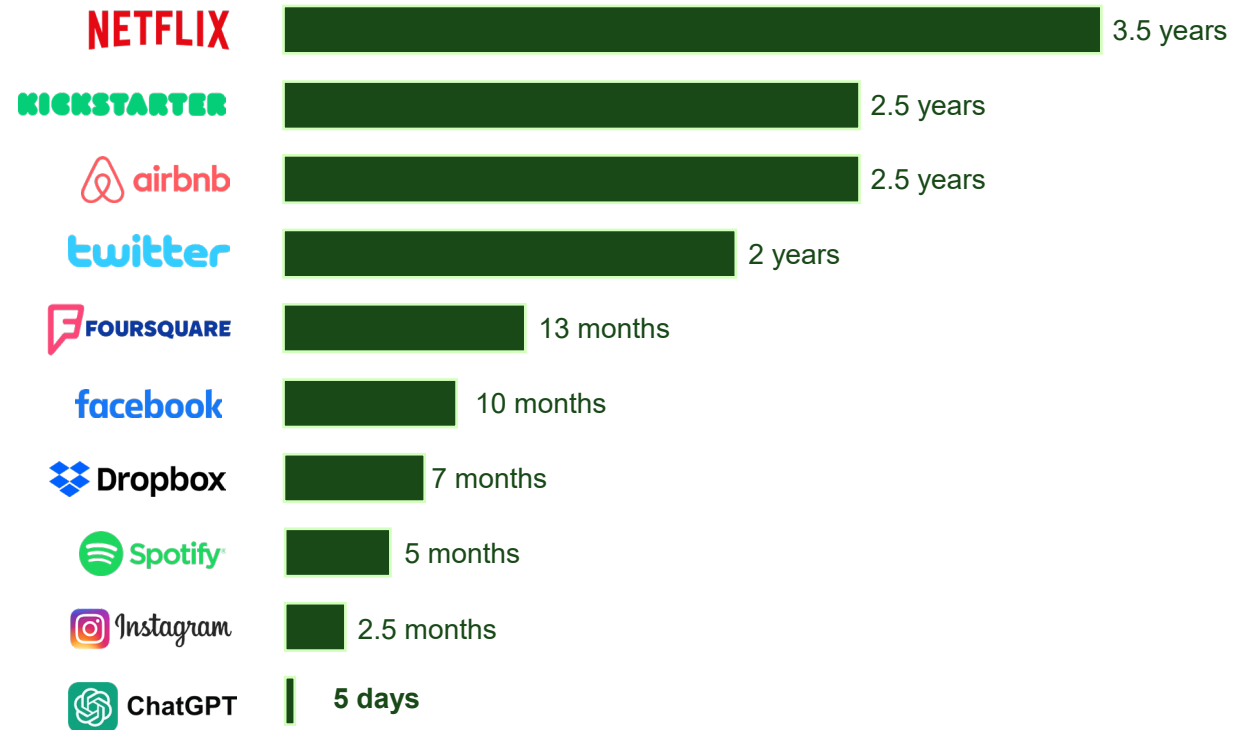


Size and Pace of GenAI

OpenAI's ChatGPT

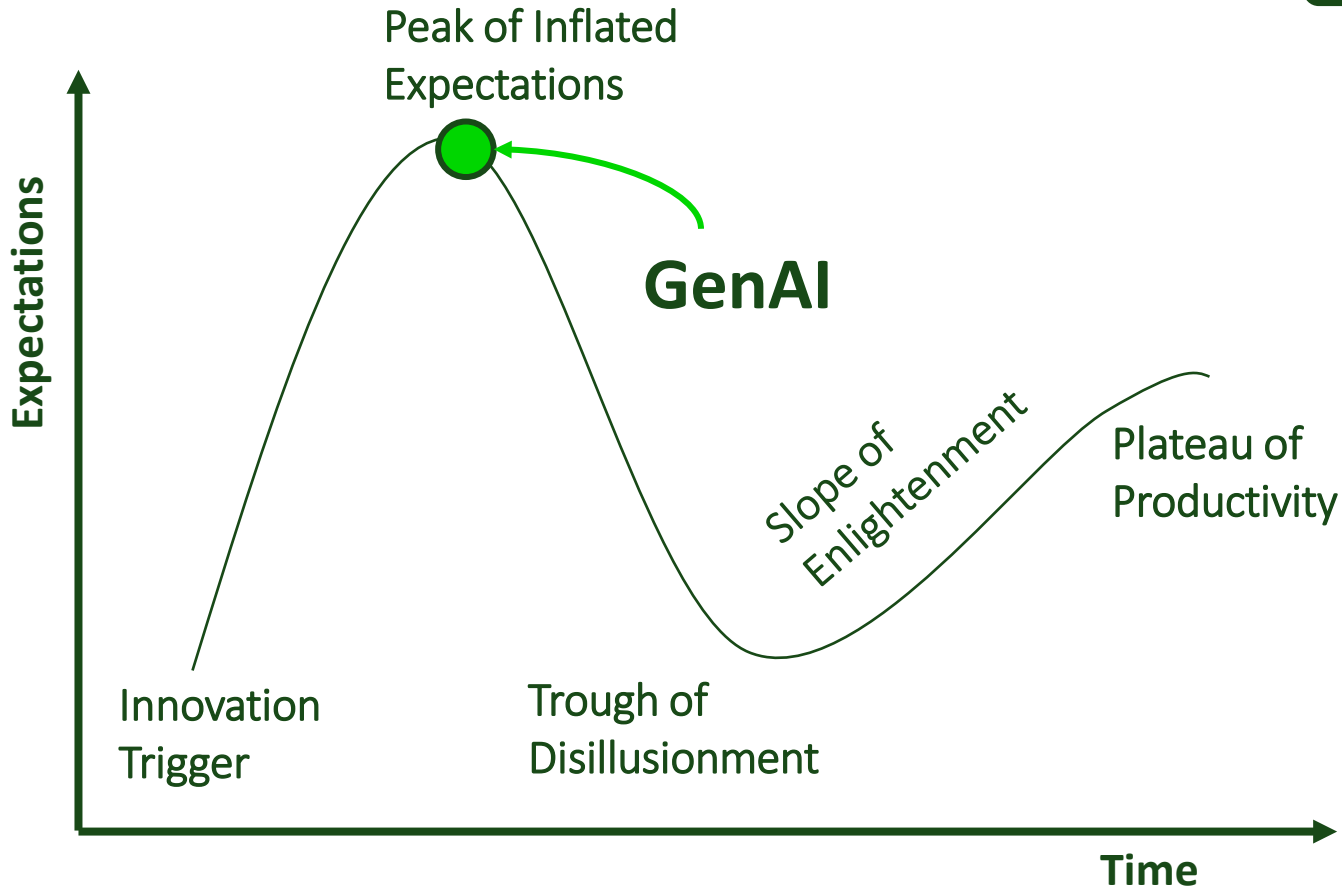
Microsoft have invested over \$13 billion since 2013 in OpenAI, now valued at \$80 billion.

Time to reach 1 million users



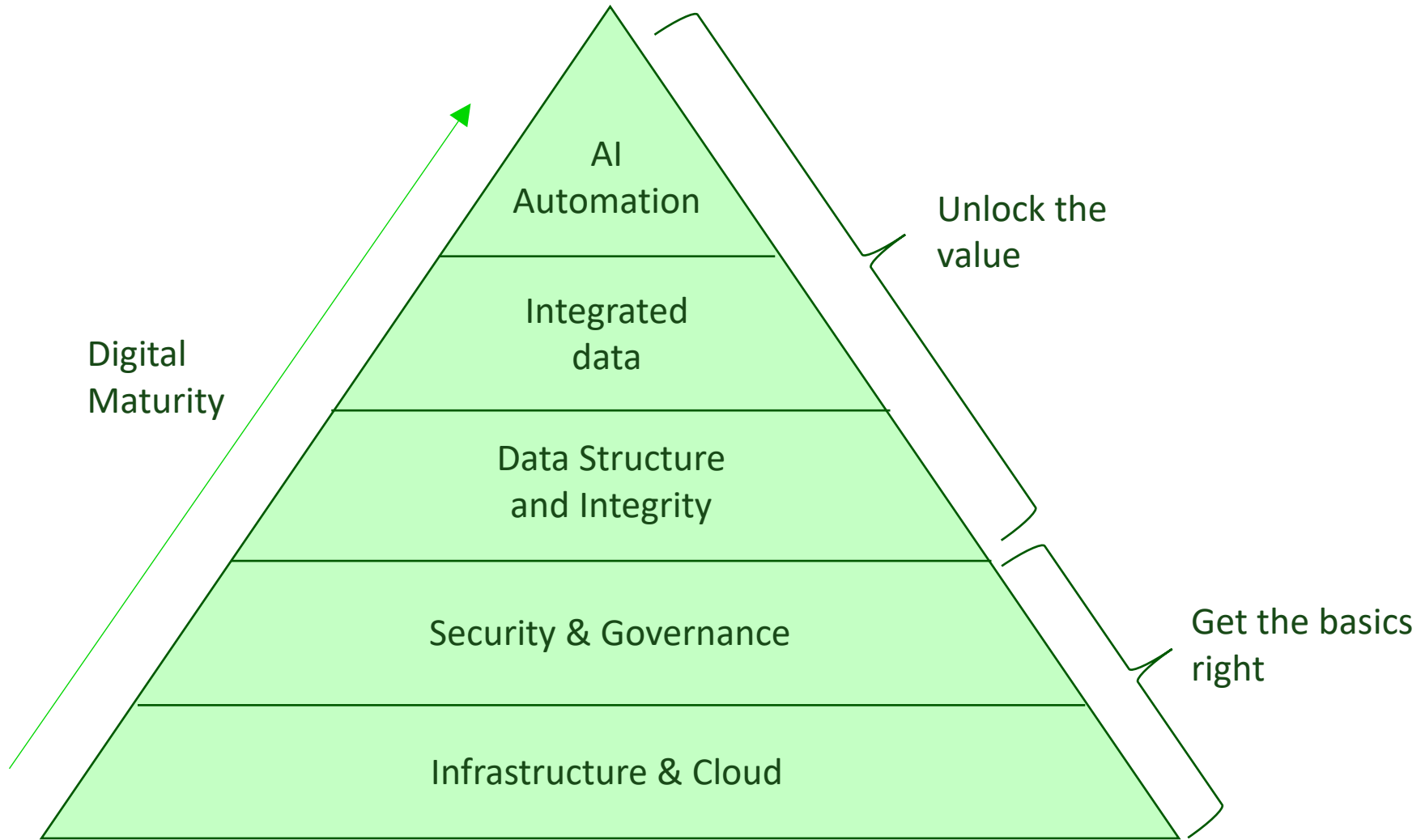
It's not all positive

GenAI: Hype or high potential?



PwC suggests **90%** of **Generative AI** projects fail

AI foundations



> Introduction

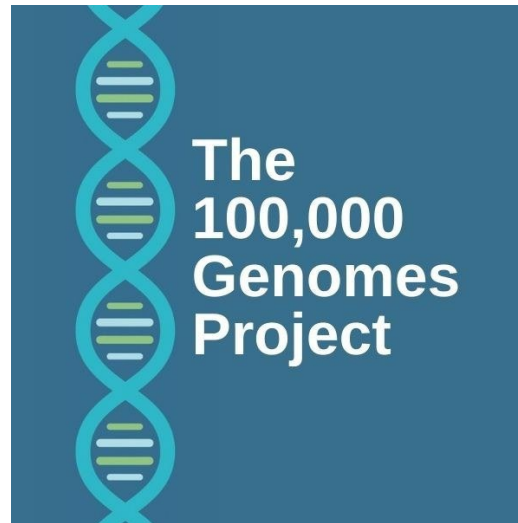
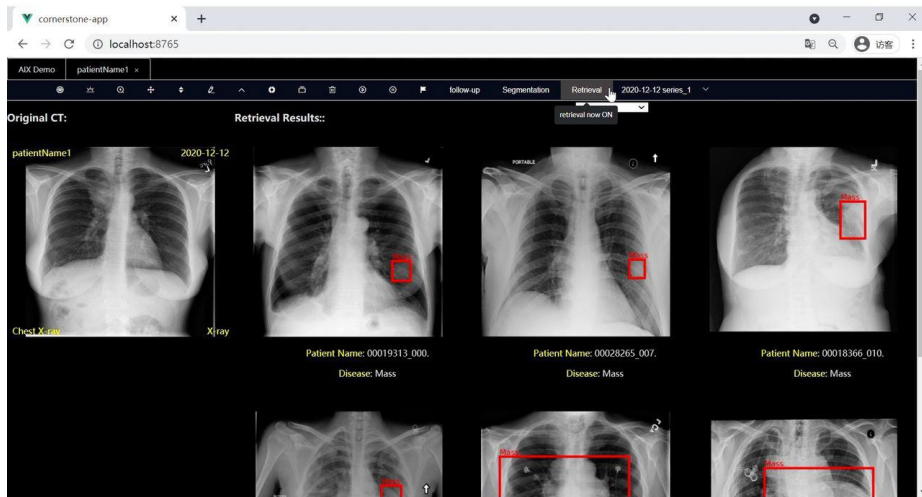
> **AI Opportunities**

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- **Healthcare**
- **Registry community**
- **Organisation**

AI in healthcare



AI in the registry community

- Donor readiness scoring
- Donor-patient matching / Search
- Survival outcomes
- Modelling unmet needs
- HLA sequencing
- Donor Engagement

AI across organisations

- Operational effectiveness & automation
- Fundraising & marketing
- Helpdesks – IT, HR, patient/donor support
- Software development using Microsoft GitHub CoPilot
- HR / Finance / Administration

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The right data

“Only 4% of data considered AI ready”

- Digital data (v paper)
- Quality, size and availability of data sets
- Data consistency (e.g. ethnicity)
- Privacy and cyber security

Ethics & Responsible AI

95% of leaders believe at least part of their business will be affected by the EU regulations on AI

- Ethics
- Bias
- Regulation
- IP ownership and legal accountability

The right interaction

7% of organisations using AI are hiring for roles in “prompt engineering”

- Asking the right questions
- Interpreting the response – human analysis/interpretation
- Hallucinations
- Human touch

Cultural Change

Only 17% of companies claim a digitally literate workforce

- Agility
- Experimentation and fear of failure
- Job security and evolution of skills mix needed in orgs
- Business continuity – over reliance

The Costs of AI

Data centre power use
will double 2022 ->
2026

- Financial cost
- Expert resource
- Time/resource for test & learn
- Environment & sustainability
 - Electricity
 - Natural resources

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AI at Anthony Nolan

- Data strategy in place – initially focussing on solid data foundations
- Continued focus on digitisation to enable future AI / automation opportunities
- Cross organisational AI working group
- Drop-in sessions in progress with org to build awareness and best practice
- AI Policy developed
- AI/ML used in AN Research, Atlas search and in PoC work around donor availability
- Collaborating with WMDA Pillar 1 on areas of AI opportunity
- Using Microsoft Github Copilot to support software development
- Setting up trial of Copilot for Microsoft Office365

Conclusion

- A big risk around AI is ignoring it
- Organisational culture, data and tech need to be ready to experiment with AI and implement successes when solutions ready
- Positions need to be taken on challenge areas including ethics, bias, training LLMs and sustainability
- A key will be finding the right tool for the right job and a critical part of this for end-to-end transplantation will be collaboration within the community
 - WMDA Bioinformatics & Innovation committee are investigating appropriate uses of AI in the transplantation space

Thank you.





Thank you!



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