



Becky Warnes Consultancy

DIGITAL HEALTH

June 2023





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ABOUT ME



Becky Warnes

Independent Business Consultant





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AUDIENCE POLL



NHS PRIORITIES



LONG TERM PLAN

- Digital, personal health records
- Cyber security
- RPA and Integration
- Maternity records - red book still not digitised!



TRANSFORMATION STRATEGY

- Digitise services
- Connect them to support integration
- Enable service transformation



RECOVERY SUPPORT PROGRAMME

- Non-invasive technology
- New care pathways (including VW)
- £10.5m + £18m for covid response



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NHS IMMEDIATE FOCUS



ELECTRONIC HEALTH RECORDS

- Electronic Patient Record
- Shared Care Records
- Patient Held Record
- £2 billion



VIRTUAL WARDS

- Tech Enabled Care
- Hospital @ Home
- £450 million



FEDERATED DATA PLATFORM

- Single point of access
- Population health management
- £480 million



NHS CURRENT STATE



Integrating Primary Care

- Streamlining access to care & advice
- Providing more proactive, personalised care
- Helping people stay well for longer

NHS CURRENT STATE

- No thoughts given to PHM
- Massive variation within each ICS
- Trusts and PC focused on specific pathways
- Patients not involved in Digital Transformation or Project Life Cycle
- Growing discontent amongst the public and HCPs with the Government
- Incumbent suppliers dictating digital roadmaps



WHAT DOES THIS MEAN FOR THE INDUSTRY?



DIGITAL TRANSFORMATION

System understaffed
and under pressure



UNDERSTANDING

We need to understand
these pressures and
demonstrate agility



AWARENESS

Imperative to know what is
happening in an already
fragile health system



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ANY QUESTIONS?



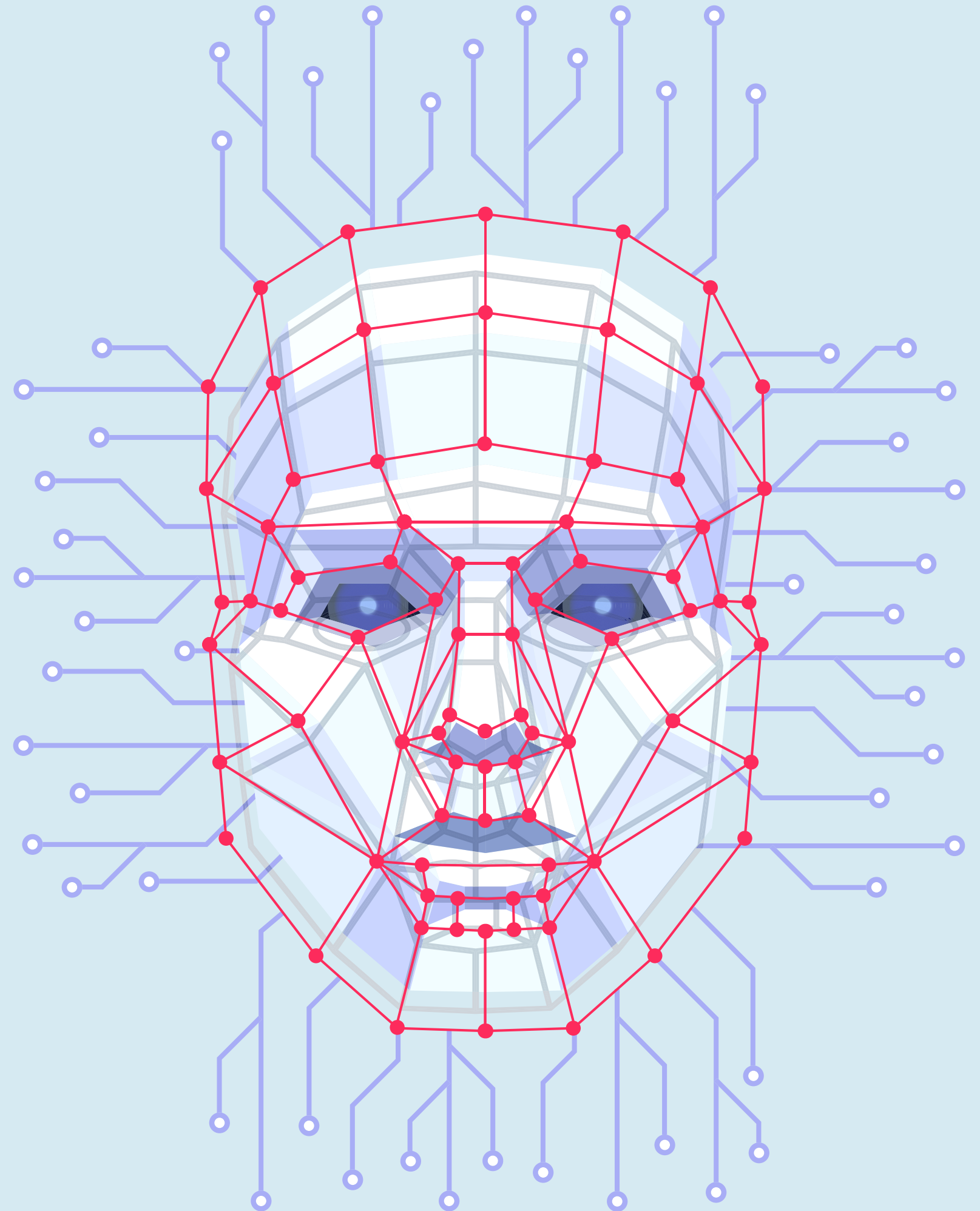
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DIGITAL TECHNOLOGIES



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ARTIFICIAL INTELLIGENCE & ROBOTIC PROCESS AUTOMATION





WHAT IS AI & RPA?



ARTIFICIAL INTELLIGENCE (AI)

The simulation of human intelligence processes by computer systems, or “machines.”

Uses unstructured inputs and creates its own logic



ROBOTIC PROCESS AUTOMATION (RPA)

The use of software “robots” (i.e., specialised computer programs) to standardise and automate repeatable business processes.

Uses structured inputs and logics



THE BENEFITS



- **Accuracy:** minimize human error and the costs associated with it
- **Compliance:** create audit trails and follow regulatory rules precisely
- **Speed:** complete tasks 4-5 times faster, improving efficiency
- **Cost:** anticipated cost saving of between 5 – 10% (AI)
- **Reliability:** work round-the-clock, no lunch breaks or shift handovers required, minimising
- **Improved Employee Productivity:** free up employees from repetitive or non-productive tasks.



THE BARRIERS

- Trust
- Cost
- Historical biased data sets
- Limited creativity – can lack humanity
- Ethics & Morality can be hard to incorporate
- AI has been proven to hallucinate and make assumptions





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DIGITAL THERAPEUTICS

WHAT ARE DIGITAL THERAPEUTICS?

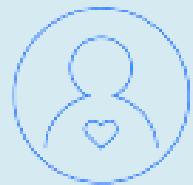
- Evidence-based behavioural treatments delivered online can increase the accessibility and effectiveness of healthcare
- Helps patients treat, prevent, or manage a disease that have a proven clinical benefit
- Digital Therapeutics (DTx) can support patients in self-managing symptoms





THE BENEFITS

What main benefits will be realized by digital therapies?



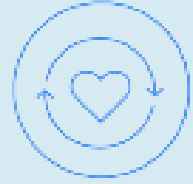
63%

Individualized therapy



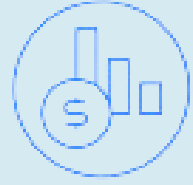
61%

Greater patient engagement



56%

Improved outcomes



43%

Reduced cost of care



30%

New medical insights



26%

Better reach of care

- Allow patients to have some control and take accountability for the management of their health
- Personalised treatment plans
- Many digital therapies are relatively inexpensive



THE BARRIERS



70%

% HCPs that voted barrier > 4
Lack of awareness



67%

Patient ability to engage with technology



53%

Tech challenges at provider end



47%

DTx is not comparable to traditional treatment

(0-7 scale)



40%

Generates additional HCP workload



27%

Lack of funding



13%

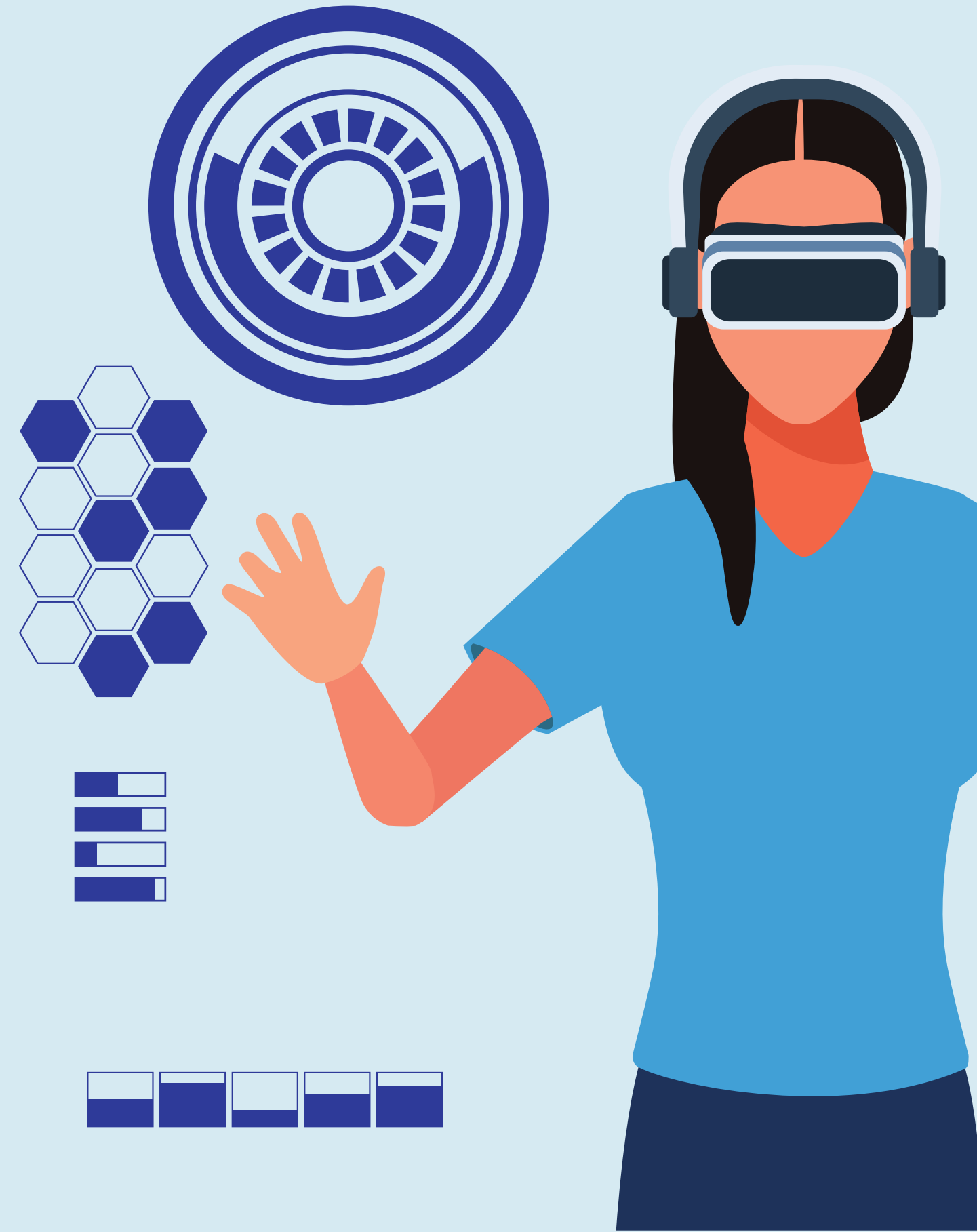
Increases patient burden

- The main barrier is a lack of knowledge of the DTx itself.
- Scepticism is high at this early stage of the adoption of digital health.



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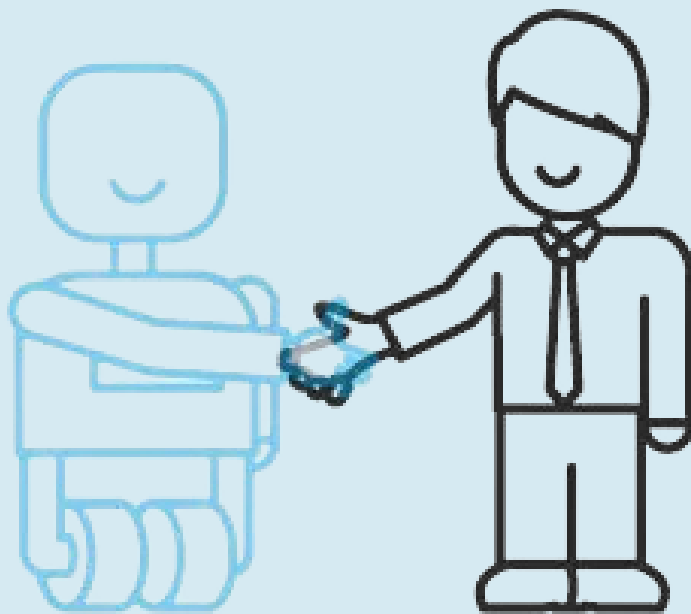
VIRTUAL REALITY AUGMENTED REALITY & MIXED REALITY





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WHAT IS THE DIFFERENCE BETWEEN THEM?



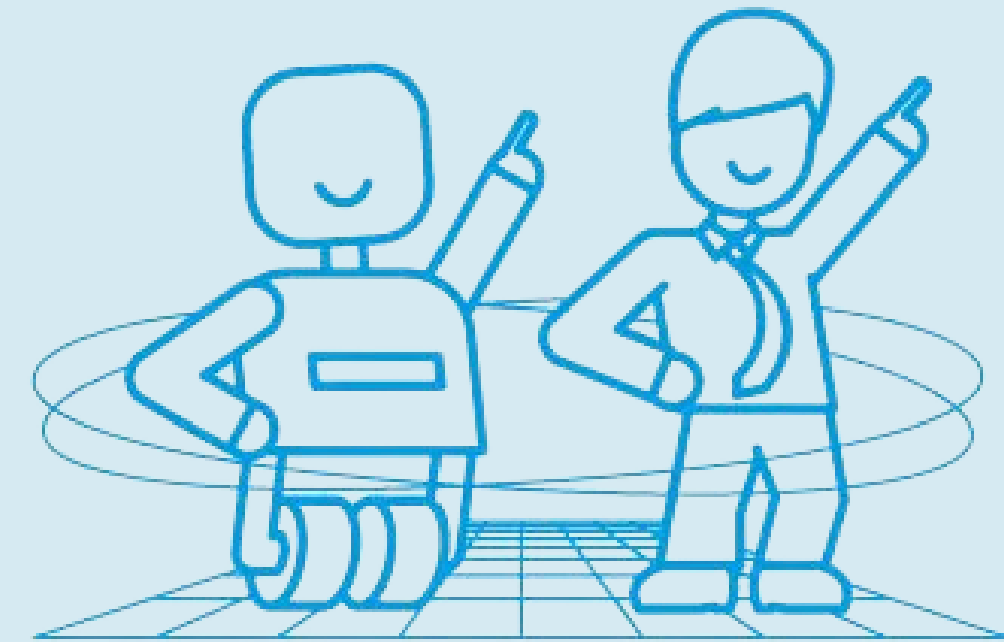
Augmented Reality (AR)

a view of the physical world with an **overlay** of **digital** elements



Mixed Reality (MR)

a view of the physical world with an overlay of **digital** elements where physical and digital elements can **interact**



Virtual Reality (VR)

a **fully-immersive digital** environment



THE BENEFITS



- The immersive learning that can be made possible
- Higher engagement and information retention rates
- Relatively low cost once initial outlay is covered



THE BARRIERS

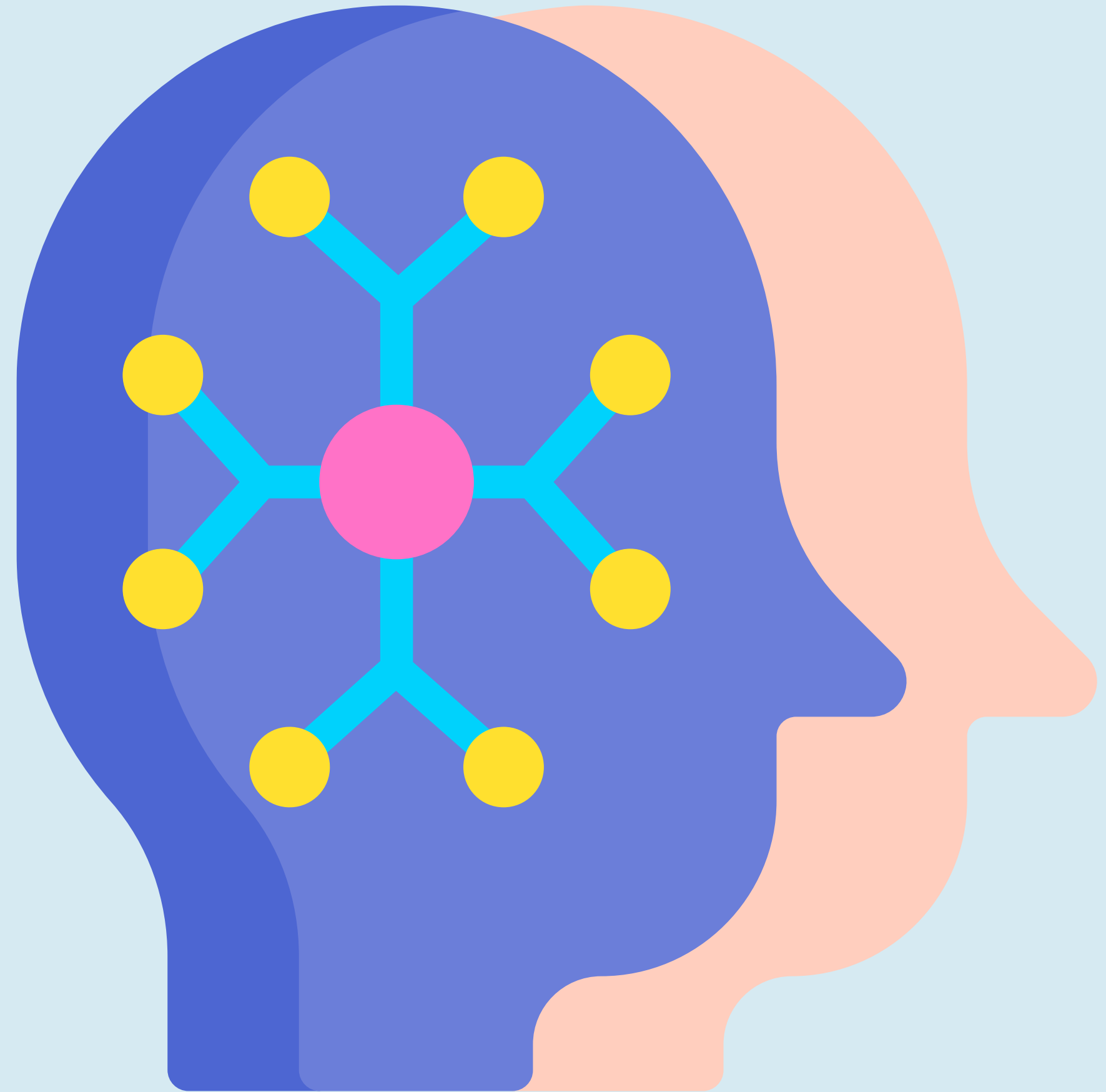


- Reputation for being a fad or focused on gamification
- Lack of skilled staff within NHS or private healthcare settings
- Lack of research into the long-term impact on sensory and neurophysiological changes
- Can be expensive



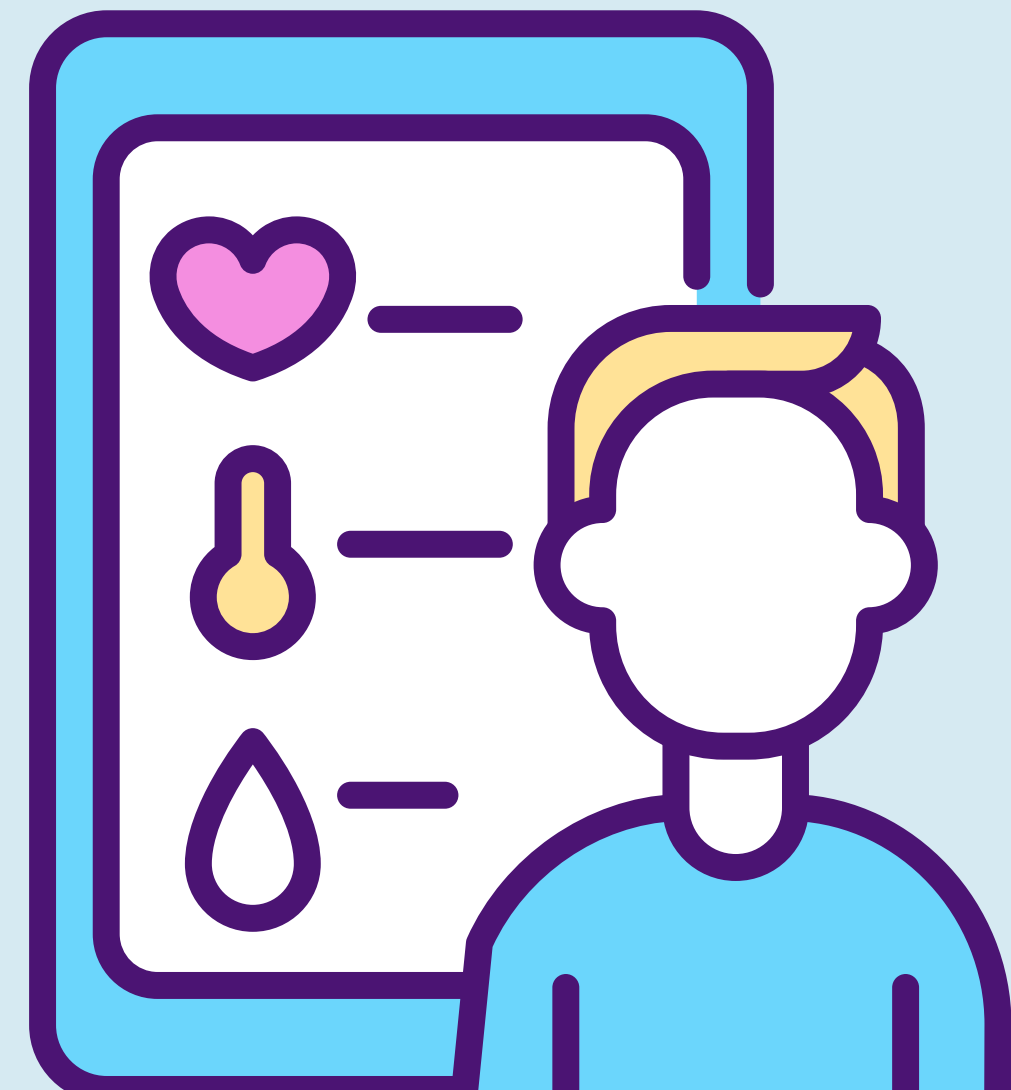
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DIGITAL TWINNS



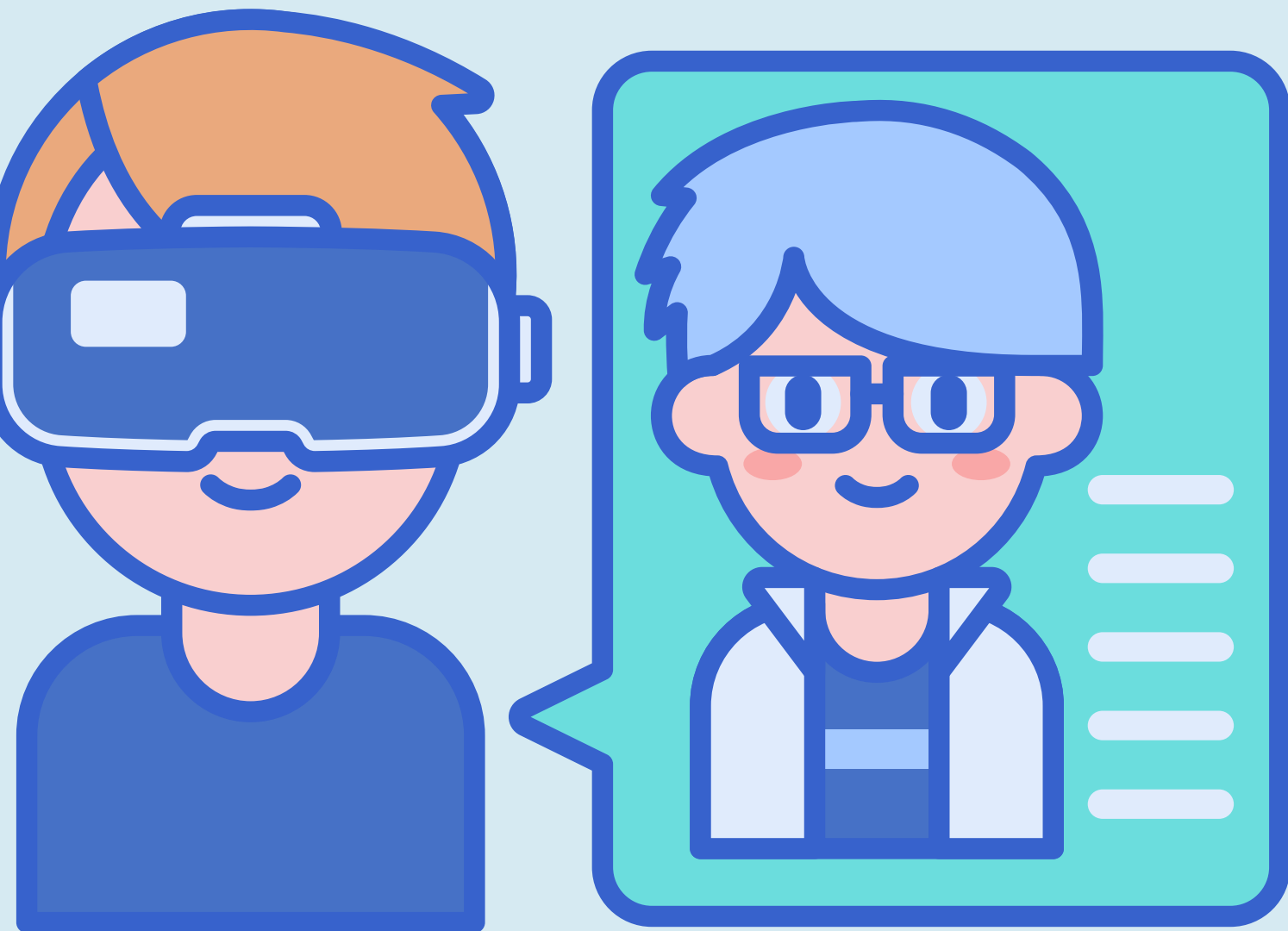
WHAT IS A DIGITAL TWIN?

- A digital representation of a physical object, process, service or environment that behaves and looks like its counterpart in the real world.
- A computer program that uses real-world data to create simulations that can predict how an artefact or process will perform.
- They have become a staple in modern engineering to drive innovation and improve performance.





THE BENEFITS

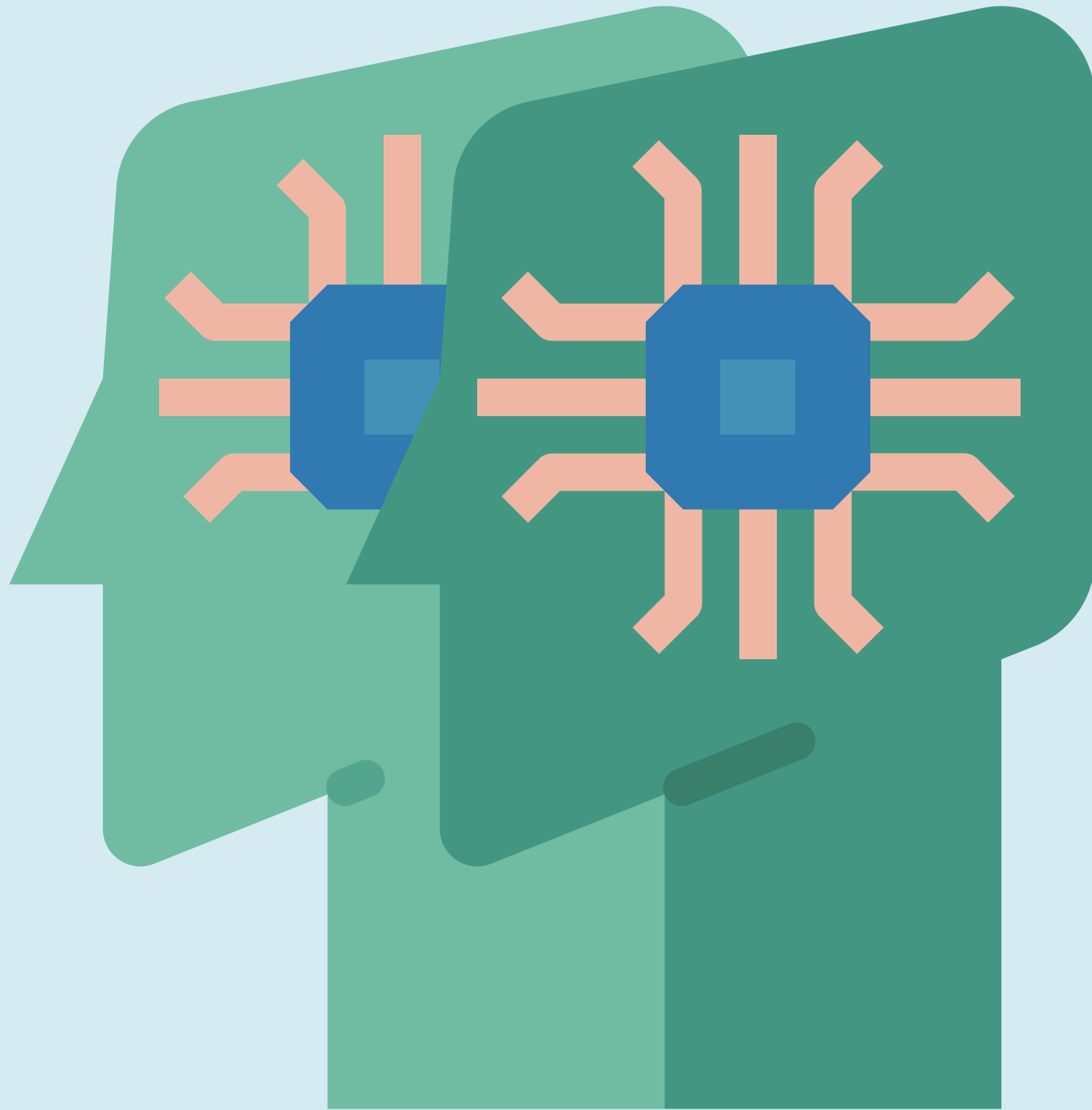


- Reduced time to market
- Improved product quality
- HCPs can predict the outcome of an intervention before prescribing it
- Informs and drives safety and sustainability efforts
- Drives operational efficiency



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THE BARRIERS



- An organization needs a fully integrated software environment.
- It is difficult to maintain a digital asset.
- Can provide cyber criminals with a new way to access and exploit sensitive information.



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ACCESS & OPPORTUNITIES



ACCESS & OPPORTUNITIES



AGEING POPULATION

- Increased from 6.1 million to 8.1 million in the last 10 years
- Five times more GP appointments than young people
- Today one-in-six of the population is aged 65 and over, and by 2050 it will be one-in-four.



STAFF SHORTAGES

- The total number of NHS vacancies in September 2022 was 133,446, a vacancy rate of 9.7%.
- Whereas in 2021 the number of vacancies was 103,809 and the vacancy rate 7.9%.



BUDGET RESTRAINTS

- The government has reduced the NHS revenue budget for 2022-23 by £330m.
- This is after the Treasury refused to fund the Department of Health and Social Care for additional ongoing covid costs



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**THANK YOU FOR
LISTENING!**