TRANSFORMATIVE PERSONAL HEALTH TECHNOLOGIES IN 2040

STEEP Forces, Technologies and Insights

STEEP FORCES

Social

- Ageing
- Non-communicable diseases
- Mental health
- Lifestyles
- Deepening disparities
- Demographic changes
- Beyond gender
- Migrations
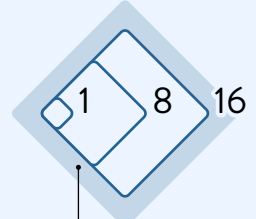- Work from everywhere
- Do it yourself

Technological

- Med(AI)cine
- Autonomous systems
- Hyper-connected
- Human enhancement
- Extended reality
- Robotics
- Digital twin
- Cryonics
- Genetic control
- Avatars

HOW TO READ IT

Technologies

Size
Amount of votes

1   8   16

Highlight
Most relevant technologies emerged from the participants' survey results
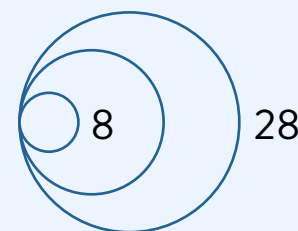
Colour
Category
- Digital
- Wearable & Sensors
- Data, XR & AI
- Others
- Devices
- Imaging
- Genetics
- Nano

Insights
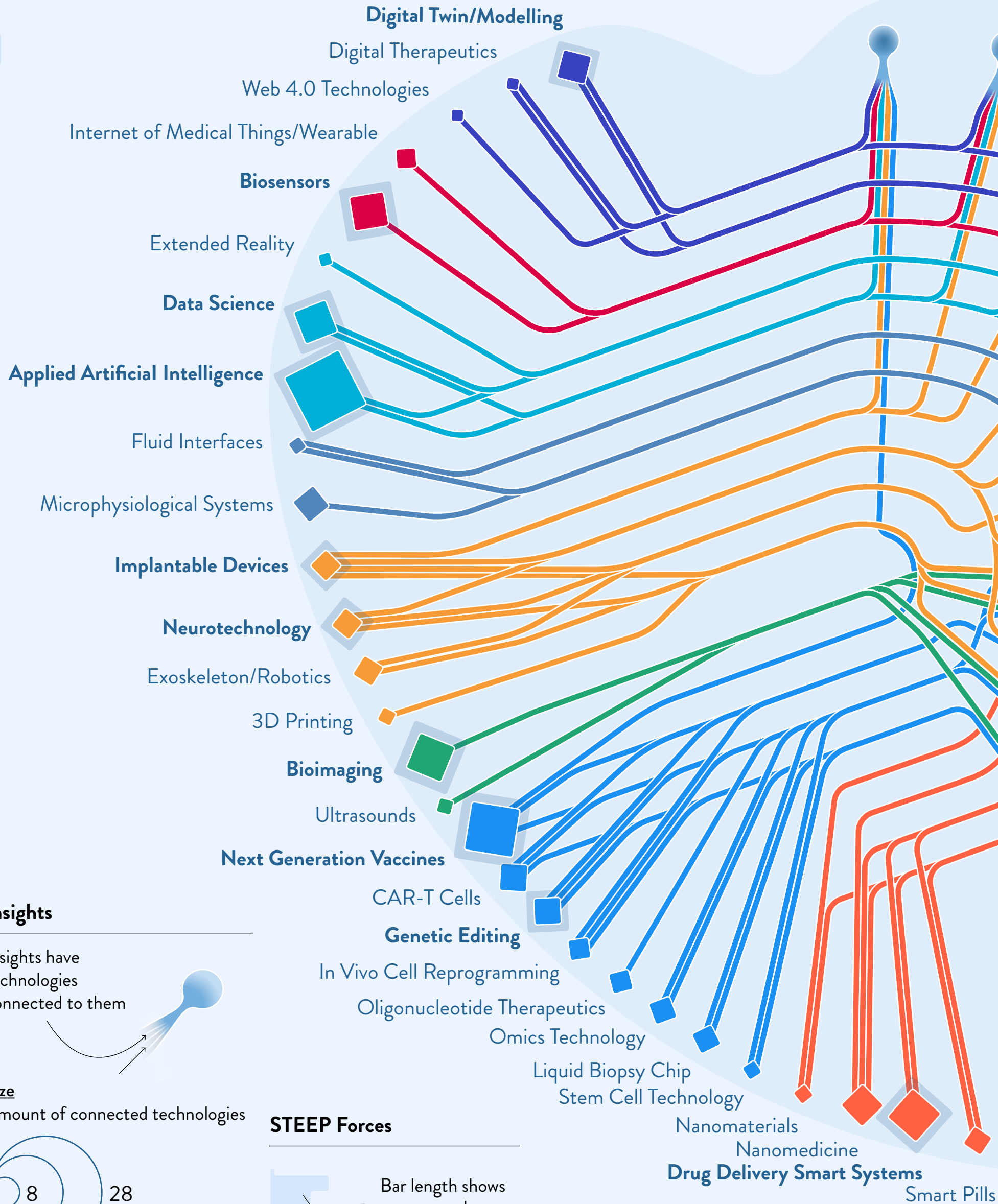
Insights have technologies connected to them

Size
Amount of connected technologies

8   28

STEEP Forces

Bar length shows survey results.

TECHNOLOGIES

Digital Twin/Modelling
Digital Therapeutics
Web 4.0 Technologies
Internet of Medical Things/Wearable

Biosensors

Extended Reality

Data Science

Applied Artificial Intelligence

Fluid Interfaces

Microphysiological Systems

Implantable Devices

Neurotechnology
Exoskeleton/Robotics
3D Printing

Bioimaging
Ultrasounds

Next Generation Vaccines
CAR-T Cells

Genetic Editing
In Vivo Cell Reprogramming
Oligonucleotide Therapeutics
Omics Technology
Liquid Biopsy Chip
Stem Cell Technology
Nanomaterials
Nanomedicine

Drug Delivery Smart Systems
Smart Pills

INSIGHTS

Auto-monitoring and self-tracking for an active population engagement

Modelling and data

More prevention, less cure

Widespread education: health professionals' education and healthcare networks

A remote online life

(Re)new(ed) relationships: caregivers, family, and new collaborative communities

Mental health and well-being

Healthcare sustainability

Empathy and the narrative dimension of the patient

Ethics, privacy, and security

New diseases and new forms of discrimination

Personalised medicine

Environmental

- Pandemics
- Antimicrobial resistance
- Global climate changes
- Extreme events
- Environmental degradation
- Permafrost melting
- Pollution
- Food waste
- Circular economy
- Biodiversity loss

Economic

- Privatisation
- E-commerce
- Cost of living increase
- More prevention, less cure
- Insurance market players
- (Un)predictable instability
- New spaces, new relations
- Tech giants' pervasiveness
- Data exploitation
- Lack of skilled workers

Political

- Security
- Collapse of democracy
- Welfare
- (Trans)national identities
- Information and connection
- Geopolitical competition
- Nuclear paths
- Global commons
- The rise of ethical questions
- States like silos

POLITECNICO
MILANO 1863

TECHNOLOGY FORESIGHT