Connect
Health
Tech

Connect: Health Tech #jointhedots

Creating a University Enterprise Zone for Cambridge across the life and physical sciences

This report was funded by Research England.

UNIVERSITY OF CAMBRIDGE

UKRI Research England

Index

3 Foreword

4 Overview

5 Key recommendations and ambition

6 About this report

7 Background & context

8 Focus areas

9 Building interdisciplinary bridges

10 Roadmap development

11 What challenges do we need to address?

13 Top 5 challenges

14 How can we solve the challenges?

16 Top 5 solutions

17 Putting solutions into practice

18 What are the benefits?

19 Key enablers

22 Looking ahead

23 Roadmap for the future

24 Acknowledgements

Foreword

Andy Neely

Cambridge has a deep and rich history of discovery and collaboration. Currently, the Cambridge cluster is home to a vibrant life science community, including a number of world-leading science and technology companies, over 630 life science companies and £18bn total turnover from knowledge intensive firms.

The University of Cambridge plays a significant role in the cluster by providing academically rigorous ideas, innovation, talent and skills. We also provide a supportive and dynamic ecosystem which enables natural collaboration between strong academic research and the key translational capabilities that are largely found in industry. Our success in the life and physical sciences relies on a combination of factors and careful nurturing of the right conditions to stimulate curiosity, conversation and collaboration that lead to the lightbulb moments which change the world.

Professor Andy Neely

Pro-Vice-Chancellor for Enterprise and Business Relations at the University of Cambridge

Historically, Cambridge has demonstrated its ability to embrace change and adapt accordingly, seeing obstacles as opportunities. Our question is how can we learn from our Cambridge phenomenon roots and continue to maintain our position as a global leader in health tech into the next generation with the new challenges we currently face?

By developing Connect: Health Tech, a Cambridge University Enterprise Zone (UEZ), we have taken the time to analyse, reflect and capitalise on our current ecosystem to provide a realistic but ambitious roadmap for the University to support the future growth of the cluster.

Many of the challenges identified during this analysis are cultural, demonstrating the importance of creating the right environment for ideas, start-ups, innovation and co-creation to thrive. The analysis also reinforces how investment in sustaining the culture of an ecosystem is equally important as investment in buildings, physical space, transport and infrastructure. With the right stakeholders sharing their knowledge, ideas and expertise, the willingness to invest (time and money) and the common altruistic goal of creating wealth for the region through collaboration and partnerships, we will continue to evolve and innovate. This will enable us to accelerate the design, development and testing of the diagnostics, devices and therapies of the future. The benefits of this are wide-ranging, from building capabilities and skills to providing scalable solutions for digital collaboration, and will support the growth of health tech in the cluster. This report sets out the ambitious steps needed to build strong foundations for the next 20 years.

Overview

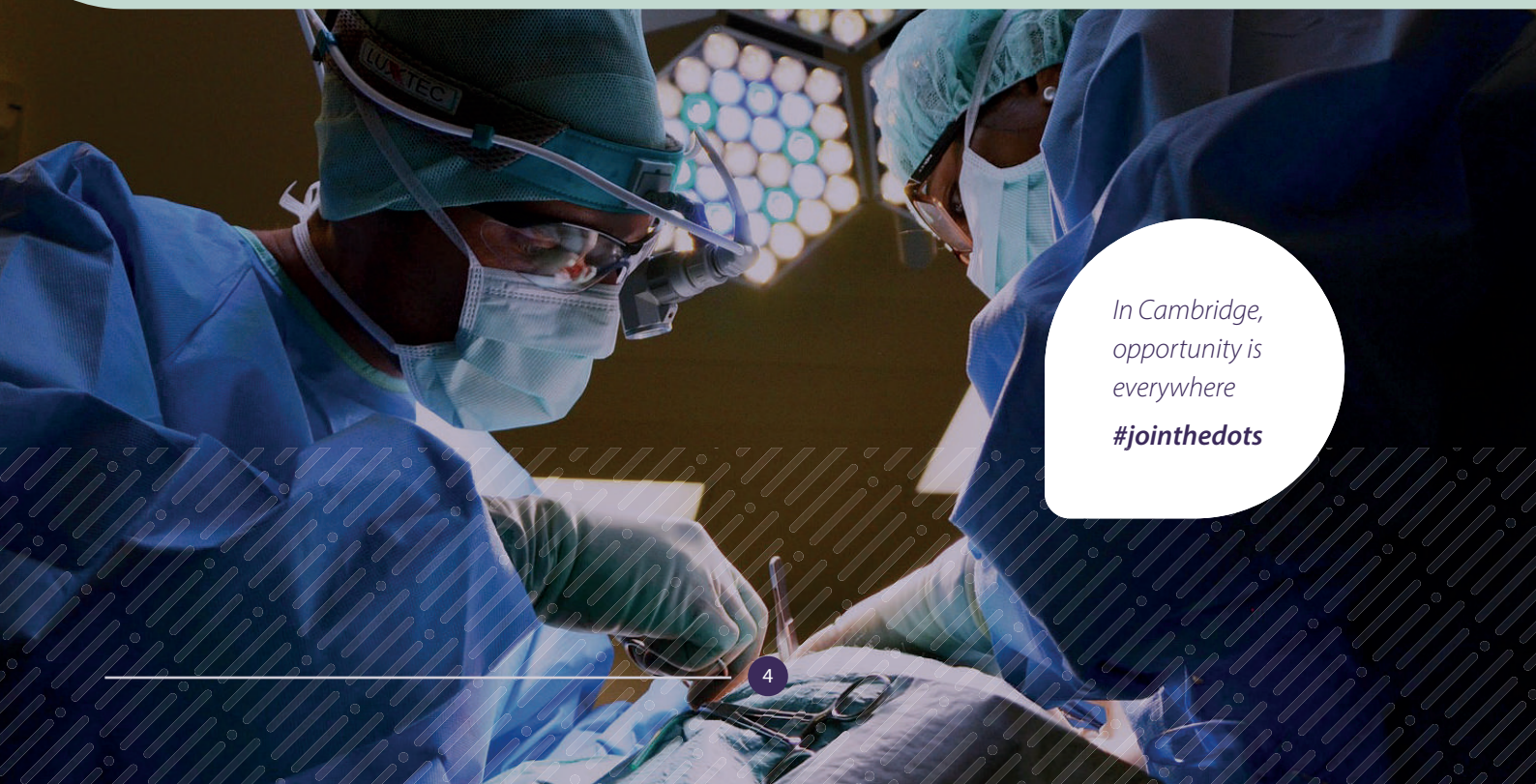
The Cambridge cluster is a supportive and dynamic ecosystem where scientists, businesses, clinicians and entrepreneurs converge to co-create the transformative therapies of the future.

In recent years, Cambridge has seen significant economic and population growth*. The challenge ahead is how to future-proof further growth, uphold our contribution to the UK economy and remain a global leader in life science research, commercialisation and innovation.

Turning the ideas at the interface between medicine and technology into reality for the benefit of society will need unprecedented levels of collaboration across disciplines and sectors. To support the University's ambition to meet this challenge, Connect: Health Tech, a Cambridge University Enterprise Zone , was initiated as a pilot project in 2020 to build interdisciplinary bridges between the life and physical sciences and industry, for the benefit of patients.

This report presents a summary of the challenges we are currently facing and potential solutions, many of which are transferable to other life and physical science hubs. Our aim is to bring value to patients, industry, academia, the NHS, entrepreneurs, start-ups, SMEs and the wider region with implementation of the recommendations in this report. The recommendations are scalable geographically (e.g. across the Oxford – Cambridge Arc and the UK) and across other sectors and research areas (e.g. decarbonisation, sustainability).

* Cambridgeshire and Peterborough Local Industrial Strategy



In Cambridge, opportunity is everywhere

#jointhedots

Key recommendations and ambition

A consultation process with key stakeholders from across the University and wider community resulted in the development of recommendations and a roadmap which defines an over-arching strategic plan to deliver and grow **Connect: Health Tech.**

- **Create and foster connectivity** across Cambridge giving all organisations in the cluster access to a wider network of expertise and funding opportunities in health tech;
- **Develop and nurture meaningful partnerships** which spark collaboration at the interface between medicine and technology, enabling innovation and future growth;
- **Put new ways of working into practice** to lower the barriers to engagement across Cambridge and, more broadly, improve navigation, fast-track introductions, increase academic/business interaction and efficient transition from idea to impact;
- **Leverage new partnerships and funding** to generate a pipeline of interdisciplinary projects for new and existing shared facilities and incubation space across Cambridge;
- **Work with incubators, accelerators and businesses** to to catalyse the design, development and testing of data-driven diagnostics and therapies;
- **Invest in and resource the culture of the cluster** in parallel to the planned investment in buildings, physical space, transport and infrastructure.

These recommendations align with recent research into the important elements that contribute to strong entrepreneurial ecosystems (such as Stam *et al* 2019*).

* Entrepreneurial ecosystem elements, Erik Stam and Andrew van de Ven 2019

Our ambition for Connect: Health Tech is to deliver:

- A thriving online business and enterprise community that connects our stakeholders: academic institutions, start-ups, entrepreneurs, science parks, the NHS, member organisations and local government.
- A digital platform fully populated by a community engaged in commercialisation of interdisciplinary ventures, contributing expertise in business development, R&D strategy, industry engagement, start-up acceleration and incubation, fundraising, business scale-up, operations and healthcare translation.
- Seamless and intuitive navigation for stakeholders, increased efficiency in identifying and being introduced to partners leading to deep, productive connections that deliver therapies at the interface between medicine and technology.
- A steady stream of projects which are fast-tracked by accelerators, incubators and other funding mechanisms, measured by a significant rise in funding and investment. A rich pipeline of start-ups and SMEs generated and supported to grow in therapeutics, med tech and digital health.
- Access to Cambridge as a test-bed for novel models of innovation through expansion of the ecosystem and engagement of expertise from further afield.
- A scalable model that can be implemented across the Cambridgeshire and Peterborough region, the Oxford-Cambridge Arc and the UK.
- A transferable model that can be applied in other sectors and research areas (e.g. decarbonisation, sustainability).

Creating the conditions for future growth

1. Growing communities & networks
Creation of a thriving online business and enterprise community with easier navigation.

2. Building partnerships & common goals
Productive connections that deliver therapies at the interface between medicine and technology.

3. Attracting investment
Map and sign-post to relevent funding opportunities for collaborative projects.

4. Mentoring & supporting projects
Steady stream of projects and start-ups fast-tracked by appropriate connections, funding & support.

5. Impact
Significant rise in interdisciplinary research funding and projects initiated.

Cambridge used as a test-bed for novel models of innovation

About this report

The Cambridge cluster is home to a vibrant life science community and the University plays a significant role in providing academically rigorous ideas, innovation, talent and skills to the cluster. In order to deliver the transformative therapies of the future, the life science sector is dependent on the effective inter-connection of physics, technology, engineering, biology and medicine.

The Cambridge UEZ, Connect: Health Tech, was set up to build an interdisciplinary bridge between two hubs of world-leading research in Cambridge. The science and technology hub anchored at the Maxwell Centre in the west and the biomedical hub anchored at the Milner Therapeutics Institute in the south. The bridge will bring together and integrate a community to identify shared research goals, equip scientists with a common language and embed new ways of working which would enable scientists to apply their research in diverse settings.

Creating Connect: Health Tech has provided us with the opportunity to consider future growth of the cluster in the life sciences. It has enabled us to work with the Cambridge community to identify and articulate current challenges and create a roadmap to shape the future, so that interdisciplinary academic research is amplified and translated into commercial and clinical success. The aim is to deliver a supportive and dynamic ecosystem which accelerates the design, development and testing of diagnostics and therapies, and aligns with the needs of the community.

This report, including our roadmap, was developed through a consultation process with key stakeholders from across the University and wider community and defines an over-arching strategic plan to deliver Connect: Health Tech. We discuss some of the challenges and solutions that may be unique to Cambridge and also those with broader application to other life and physical science hubs. The report focuses a lens on one of the most historically interesting clusters in the world.

Background & context

3rd most successful University innovation ecosystem in the world

630+ **Life sciences companies**

>800 **Over 800 high-tech manufacturing companies**

£18bn total turnover from knowledge intensive firms

Employing over 69,000 high skilled people

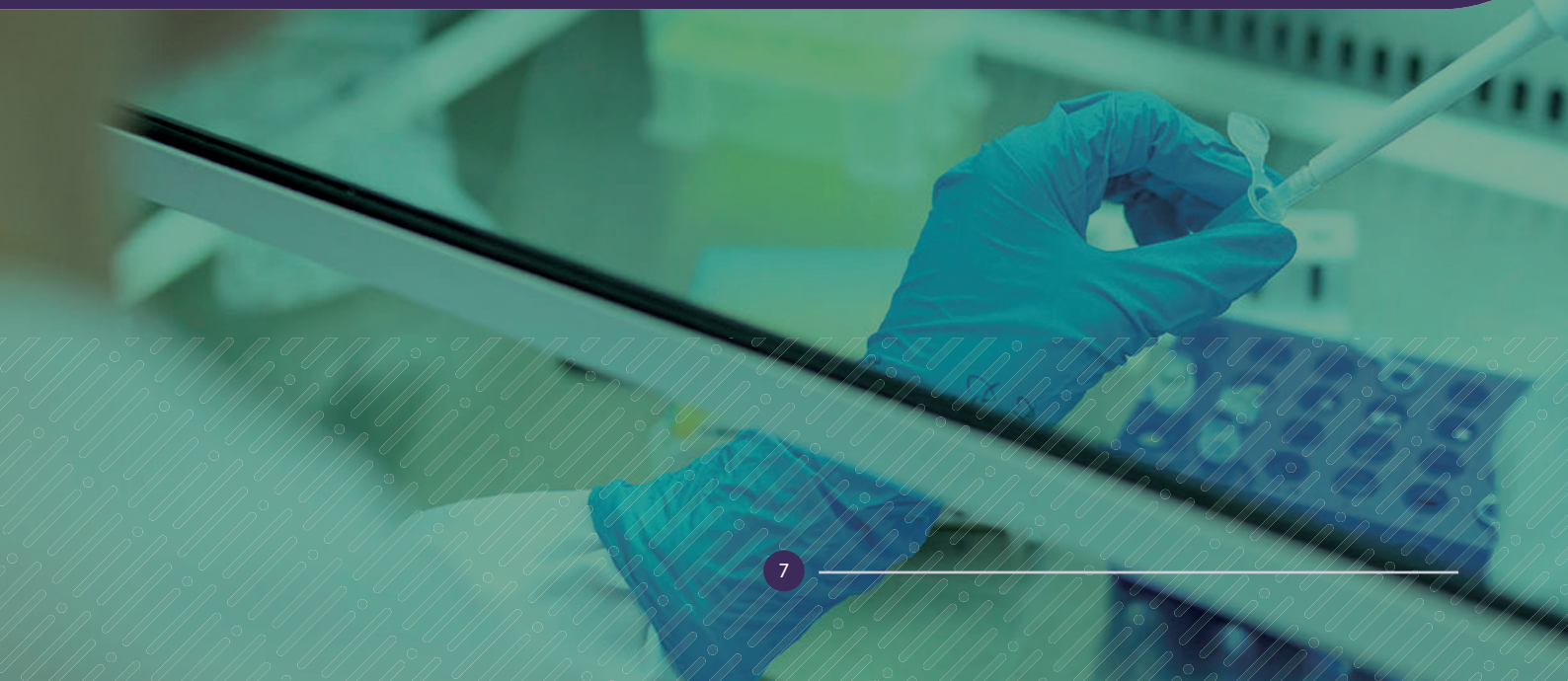
Future proofing growth

The **Cambridge cluster is fuelled by excellent research across all disciplines**, active knowledge-exchange, entrepreneurship, acceleration and incubation, and has created the most early-stage businesses in the UK.

The potential of the Cambridge cluster to contribute at scale to the UK economy is demonstrated by recent success stories, for example, the acquisition of Onethera by Astellas for $85m, and the partnership of Microbiotica with Roche Genentech valued at $534m in 2018. Through the University's commitment to fostering strategic partnerships with business, more global companies are establishing research hubs and embedded labs in Cambridge, including Rolls Royce, Dyson, Microsoft, Apple, AstraZeneca, GlaxoSmithKline, Aviva and Google. With a core strength of attracting progressive companies and world-leading talent, the University aims to provide the ecosystem with a world-class, well connected research and development environment that benefits Cambridge, the region and the UK – now and in the years to come.

The challenge ahead is **how to future-proof growth of the cluster**, maintain Cambridge and the UK's leadership in innovation, amid increased international sector competition, and avoid potential stagnation due to the multiple threats identified in the recently published 'Cambridgeshire and Peterborough Independent Economic Review (CPIER)'.*

Connect: Health Tech was specifically set up to test models of incubation and interdisciplinary interaction related to real-world challenges in the life sciences and to contribute to sustainable growth of the cluster.



Transforming medicine

Unlocking the power of today's technological advances, such as big data, quantum computing, artificial intelligence, med tech, digital health, bioelectronics, gene and stem cell therapy, requires the convergence of multiple disciplines and sectors to **co-create the transformative therapies of the future**. The task ahead is to pioneer and embed new ways of working which bring together physics, technology, engineering, biology and medicine, and equip scientists with a common language, entrepreneurial mindset and shared research goals to apply their research in diverse settings. This is particularly relevant in fast growing areas such as therapeutics, digital health, diagnostics and med tech.

Currently, cutting edge research is too far from real life market need and research strengths in different disciplines are often disconnected. There is an opportunity to boost connections across regions, institutions and disciplines, to meet the research and innovation need. Innovative models of research-exchange have been proven locally to work but they are not routinely applied across the ecosystem.

Cambridge, with its rich interdisciplinary environment, is an ideal test-bed for novel models of innovation in the life sciences.

*www.cpier.org.uk

Focus areas

The scale-up of a digital business and enterprise community in med tech, therapeutics and digital health requires co-stimulation of intellectual and commercial curiosity to mobilise the research base. Therefore, the focus of **Connect: Health Tech UEZ** is to:

Build an efficient navigation system and digital platform for the cluster which gives access and supports stakeholders in finding the right part of the ecosystem for their interests and needs.

Establish physical drop-in/hang out spaces across campuses which are open to all and used by leading figures to enhance the sense of community across disciplines.

Provide a gateway to a collated and bespoke programme of physical and digital networking events that cross disciplines and sectors and stimulates the identification of common goals.

Map, sign-post and increase access to training, resources and collaboration tools which equip the community with the skills necessary for effective collaboration and entrepreneurship.

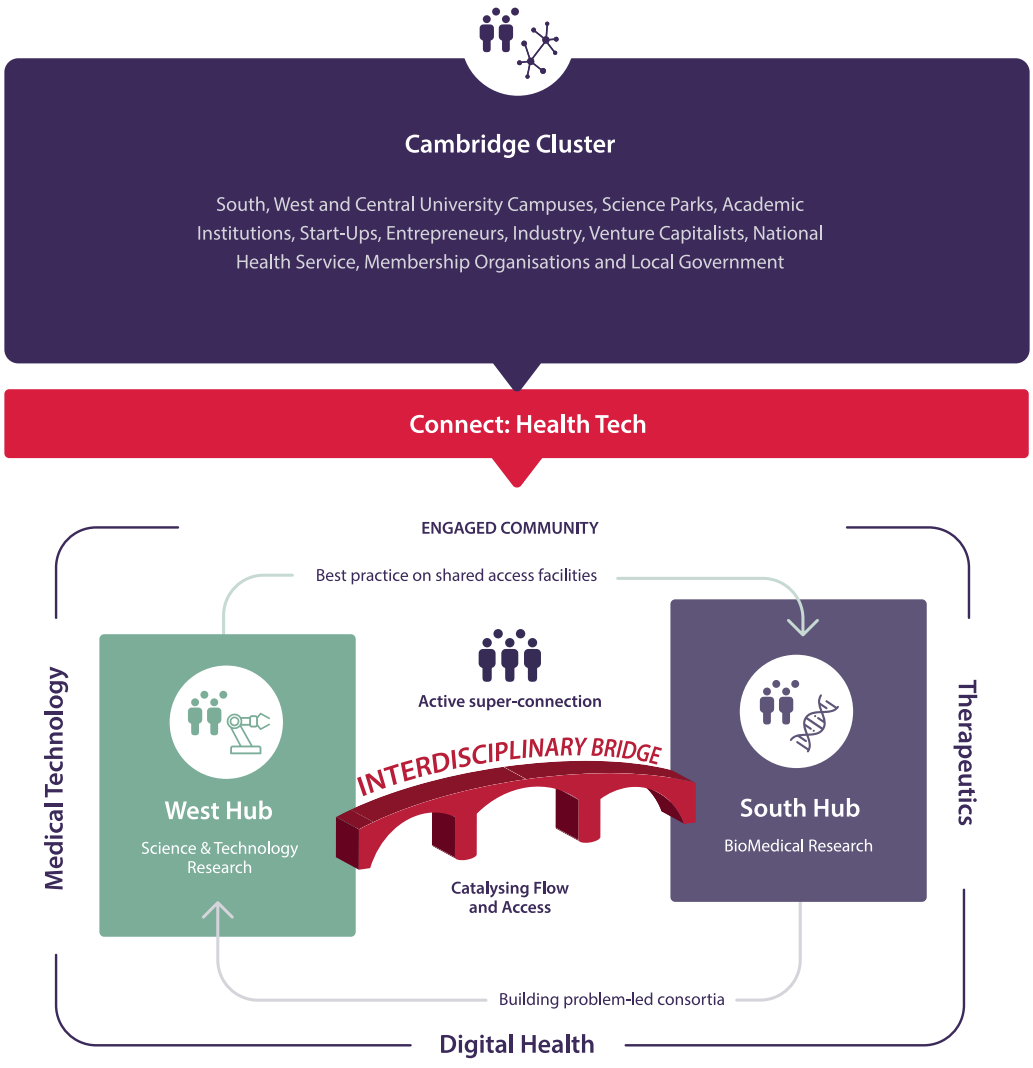
Develop real-life showcases of successful academic-business collaborations and enterprise success stories.

Building interdisciplinary bridges

By capitalising on Cambridge's rich history of scientific discovery and collaboration, **Connect: Health Tech** was set up to build and operate a highly effective bridge between two University of Cambridge research hubs with different disciplines, West (Science and Technology) and South (Biomedical).

The bridge will bring together and integrate a community of stakeholders from across the University, research institutes, the NHS, industry, investors, local government, and beyond with the aim of mobilising the collective knowledge capital to address societal and economic-led challenges.

Vision for Connect: Health Tech University Enterprise Zone Project



*This diagram outlines how **Connect: Health Tech** aims to create positive interventions around the health tech axis. Unlocking the potential of the cluster in identified areas, stimulating a world-class ecosystem that connects research and development for greater outcomes that benefit society.*

Through **Connect: Health Tech**, a number of positive interventions have been developed and tested to increase connections that deliver impact at the interface between physics, technology, engineering, biology and medicine. Such as:

Strengthening two core research incubation hubs in Cambridge

Strengthening two core research incubation hubs in Cambridge, encompassing the disciplines of biomedical sciences, healthcare and therapeutics with physical sciences, manufacturing, technology and engineering. Each hub provides access to purpose-built, state of the art laboratory spaces to attract a diverse range of tenants, from researchers, to start-ups and accelerators;

Testing and integrating interdisciplinary models of incubation

Testing and integrating interdisciplinary models of incubation across the University's West and South Campuses, to support the strategic aim of creating transformative healthcare technologies and therapies in the future. Harnessing and providing access to space which fosters interdisciplinary and cross-sector working practices. Catalyse academic/industry project ideas and research exchange around industry-led challenges;

Transforming Connect: Health Tech from a physical University Enterprise Zone

Transforming **Connect: Health Tech** from a physical University enterprise zone to a digital one through an online interdisciplinary community;

Pioneering and operationalising new ways of working across sectors

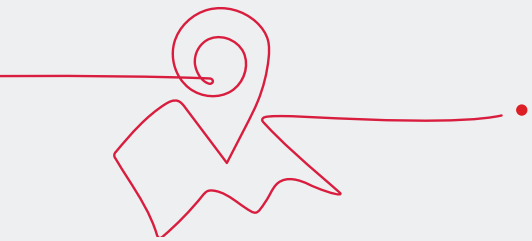
Transforming **Connect: Health Tech** from a physical University enterprise zone to a digital one through an online interdisciplinary community;

Providing increased access

Providing increased access to knowledge sharing and best practice, existing and newly funded facilities, events and networking.

Roadmap development

To ensure a comprehensive and objective process, the University commissioned the Institute of Manufacturing Education and Consultancy Services Limited (IfM ECS) to deliver a series of road-mapping workshops using the S-Plan framework, developed by the IfM over a period of several years.



The framework has been configured to help universities and research organisations align their research activities with industry needs, supporting decision-making and action.

Key stakeholders from across the University and wider community were asked to identify and examine the biggest challenges for the future of the Cambridge cluster in health tech and uncover the key factors necessary for increased and sustainable interdisciplinary bridges between physically unconnected hubs.

Three workshops were held as outlined below:

Workshop 1

Landscape – Share perspectives and ideas

- To review pre-submitted content from participants on **challenges, solutions and enablers**
- To identify and fill in any gaps

Workshop 2

Identification of challenges and selection of solutions for detailed exploration

- To identify the most important challenges
- To prioritise and select solutions for a detailed exploration
- To set up the working groups that will be exploring each solution in the third session

Workshop 3

Explore selected solutions

- To explore selected solutions for **Connect: Health Tech**
- To scope each priority solution
- To map the enablers and required resources

What challenges do we need to address?

The **Connect: Heath Tech** Advisory Group comprises stakeholders who represent a diverse range of groups from across the Cambridge cluster, including big pharmaceutical companies, start-ups, research institutions, investors, the NHS, incubators and networking organisations.

Staying connected as we grow

#jointhedots

Harnessing the combined knowledge of the Advisory Group, we examined some of the past and present challenges faced by the Cambridge cluster to feed into the development of the roadmap for the future.

The challenges fall into five broad categories:

Cultural

One of the largest challenges currently facing the cluster is finding the most effective model for the ecosystem to **stay connected as we grow**. Cambridge is more porous than many academic cities due to the collegiate system of the University, the co-location of many businesses and the small size and nature of the city. However, as the cluster grows, more could be done to connect the vast number of networks across the city and to continue to break down silos and enhance collaboration between University Departments and disciplines. This is particularly important between the life and physical sciences in Cambridge, due to geographical distances between hubs and differences in resources.

Financial

For the University to effectively support the cluster's world-leading position in enterprise, an environment of well-funded, world class science is essential. The funding environment is currently more demanding than ever and the challenge will be to identify new and diverse funding streams and create new opportunities to maintain the cluster and the UK's position in the life sciences. In the past, Cambridge has been accustomed to a prosperous environment with funding available for exceptional ideas if you know the right person/investor/angel. With growth of the cluster and a changing global environment we need to prepare and diversify our funding streams to access long-term, sustainable funding. The challenge is to identify early, prioritise and determine the key areas for significant investment in the long term so that they can be articulated and communicated clearly to potential investment partners.

Physical

Breaking down the barriers between the life and physical sciences is an ongoing challenge for many clusters and institutions. Cambridge has some fantastic examples of success in this area (e.g. the Cambridge Centre for Physics of Medicine, Cambridge Centre for Artificial Intelligence in Medicine and the Cambridge Centre for Physical Biology) and the challenge is to identify and cultivate the conditions for more such examples to develop and thrive. There is an awareness that bespoke, 'fit-for-purpose' physical space which fulfils the equipment and experimental needs of both disciplines is needed. It will be a priority to create this space alongside the cultural changes to fuel interdisciplinary innovation.

Geographical

Historically, one unique advantage that Cambridge has thrived on is its small city scene. The scientific community meets socially and professionally and generally lives and works in relatively close proximity. Relationships are strong and built on communication, commitment and trust, rather than feeling transactional. This is more common within the life sciences campuses (e.g. Cambridge Biomedical Campus, Downing site) and physical science campuses (West Cambridge) and a challenge for the future of the cluster is how to foster these relationships between sites. As the cluster expands geographically to the various diverse and busy science parks and becomes more embedded in the wider region (East Anglia, Peterborough) the challenge is how to evolve the 'Cambridge is a village' character, while welcoming new connections and relationships. One critical question to solve will be how can we build strong and successful relationships nationally and internationally that are not dependent on being in Cambridge?

Talent

Cambridge has built a reputation as 'the place to go' for the life sciences, it is known for its 'can do' attitude, its energy, its vision, its vast pool of entrepreneurs and mentors who 'pay it back' to support the next generation of start-ups and businesses. There is no shortage of talent and ideas. However, as the cluster grows and becomes more inclusive, physically and digitally, nationally and internationally, it has become more challenging to support the talent base to find the right people or organisations within the ecosystem to collaborate with or to gain mentorship from. There is an opportunity to make matchmaking more efficient.

Top 5 challenges

The challenges identified in the workshops were prioritised and combined where there was strategic alignment. Those with the most votes were taken forward for more detailed analysis, to find solutions and develop the roadmap.

1
CHALLENGE

Communication and navigation

Given the vast number of networks, how can we create an **easy and clear navigation system** to understand what is going in Cambridge for both internal and external stakeholders? How do we use our networks to communicate between stakeholders (academics, businesses and entrepreneurs) to **enrich interdisciplinary research and innovation?**

CULTURAL

2
CHALLENGE

Connection and access

How do we move towards a more proactive and purposeful approach to **developing connections** across the Cambridge ecosystem without compromising the benefits of organic growth? How do we **increase access** to the Cambridge environment for non-Cambridge based organisations? How can we develop physical and digital platforms to **enhance connectivity** between individuals which are reflective of the world-class quality of our knowledge?

CULTURAL

3
CHALLENGE

Breaking down boundaries

Divisions and silos may exist between different academic Departments and Schools, particularly life sciences and physical sciences, due to physical distances and differences in resources. Additionally, there can be boundaries between sectors, for example academia and industry, due to different incentives, drivers and resources. How do we create a **community of opportunity** and trust, identify commonalities and engage members to **go beyond** their current boundaries?

CULTURAL PHYSICAL GEOGRAPHICAL

4
CHALLENGE

Collaboration

Individual organisations (e.g. Institutions, colleges, start-ups, venture capitalists, angels, seed funds) are very active in their field. How do we capitalise on opportunities to be **more collaborative**? How do we **create the right conditions** for collaboration over competition where appropriate? How do we provide the right training and support for collaborations to succeed? How do we recognise and incentivise the spirit of the team and **share success** with everyone who contributed?

CULTURAL GEOGRAPHICAL

5
CHALLENGE

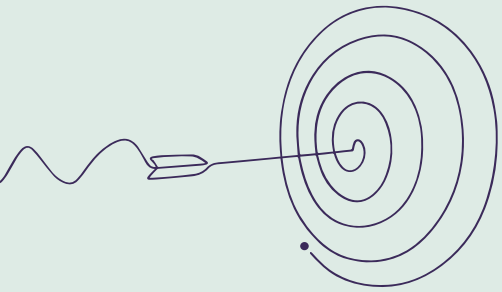
Mentorship

How do we **meet demand** as the cluster grows so that all entrepreneurs get mentorship and support (not just 'who you know'?) How do we **expand mentorship** for quick-to-market solutions in life sciences (typical assumption is that sales are 5–10 years away)? How do we **boost support** for operational aspects for start-ups (focus is on technical development and funding)?

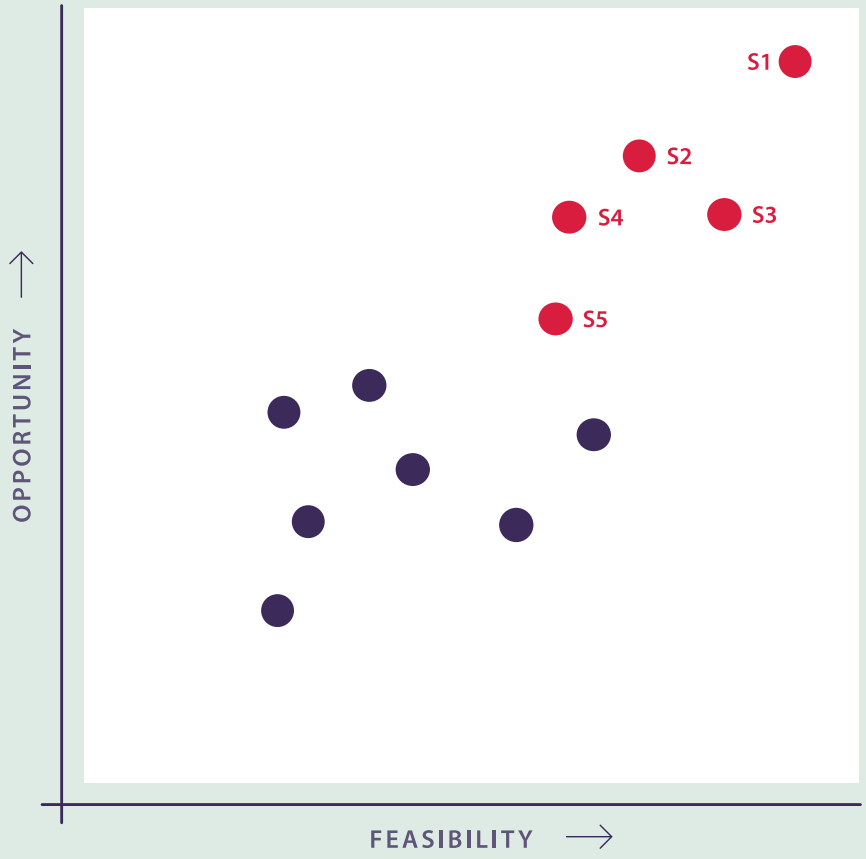
CULTURAL

How can we solve the challenges?

A wide range of solutions have been identified for **Connect: Health Tech** using opportunity and feasibility criteria.



By considering overlaps and synergies, the solutions were narrowed down to a defined and agreed list of five top solutions to implement for the future. The diagram below highlights the top five solutions developed by workshop participants, and how they ranked in order of high feasibility and high opportunity. The development of Connect: Health Tech and this report coincided with the Covid-19 pandemic and the solutions below, particularly the digital platform and navigation system, will be incorporated into post-pandemic recovery planning at the University.



Solutions with the highest opportunity and feasibility

S1 Develop an efficient navigation system and digital platform for the cluster which gives support and access to stakeholders to find the right person or parts of the ecosystem to meet their interests and needs.

S2 Engage the community with networking and virtual events that cross disciplines and identify common goals. Looking outwards to engage with similar communities outside of the cluster. Foster a digital culture of serendipity - purposeful and deliberate design to facilitate chance interactions and matchmaking between the right people. Focus on events that will engage interdisciplinary participation.

S3 Create showcases and case studies which demonstrate impact highlighting themes and strengths of Cambridge. Real-life examples of academic-business collaboration and enterprise success stories actively used to stimulate more examples.

S4 Build a drop-in/hang-out space that is open to all and used by leading figures to create a sense of community. Identify all existing opportunities and make them more accessible to everyone.

S5 Provide training, resources and collaboration tools to equip the community with the skills necessary for effective collaboration. Create a bigger network of market-oriented mentors and "buddy schemes" to support growth. Train new mentors and adopt a purposeful approach to fostering and managing mentors and their training.

Access to the multidisciplinary scientific community

#jointhedots

Opportunity - the magnitude of the opportunity plausibly available to the organisation e.g.:

- identifiable benefit to multiple stakeholders (internal and external)
- reduces or removes barriers or streamlines processes to achieve the aims of **Connect: Health Tech**
- provides the opportunity to develop strong partnerships

Feasibility - how well prepared the organisation is to grasp the opportunity e.g.:

- ability to sustain competitive position (e.g. IP rights, brand strength)
- availability of resources to implement the solution
- additional value of **Connect: Health Tech** in delivery of the solution

Top 5 solutions

The challenges identified in the workshops were prioritised and combined where there was strategic alignment. Those with the most votes were taken forward for more detailed analysis, to find solutions and develop the roadmap.

1
SOLUTION

Develop an efficient navigation system and digital platform

Develop an efficient navigation system and digital platform for the cluster which gives support and access to stakeholders to find the right person or parts of the ecosystem to meet their interests and needs (e.g. know-how, expertise, mentorship, equipment, funding or physical space). Focus on a digital approach that does not rely on geographical location.

CULTURAL

2
SOLUTION

Engage the community with networking and virtual events

Engage the community with networking and virtual events that cross disciplines and identify common goals. Looking outwards to engage with similar communities outside of the cluster. Foster a digital culture of serendipity - purposeful and deliberate design to facilitate chance interactions and matchmaking between the right people. Focus on events that will engage interdisciplinary participation.

GEOGRAPHICAL

3
SOLUTION

Create showcases and case studies which demonstrate impact

Create showcases and case studies which demonstrate impact highlighting themes and strengths of Cambridge. Real-life examples of academic-business collaboration and enterprise success stories actively used to stimulate more examples.

CULTURAL

4
SOLUTION

Build a drop-in/hang-out space that is open to all

Build a drop-in/hang-out space that is open to all and used by leading figures to create a sense of community. Identify all existing opportunities and make them more accessible to everyone.

PHYSICAL

5
SOLUTION

Provide training, resources and collaboration tools

Provide training, resources and collaboration tools to equip the community with the skills necessary for effective collaboration. Create a bigger network of market-oriented mentors and "buddy schemes" to support growth. Train new mentors and adopt a purposeful approach to fostering and managing mentors and their training.

TALENT

Putting the solutions into practice

Supporting economic recovery through the **Connect: Health Tech University Enterprise Zone**.

The mission of the University of Cambridge is to contribute to society through the pursuit of education, learning and research at the highest international levels of excellence. For us, this means cultivating and delivering excellent research, world-leading innovation and training of the next generation of highly skilled researchers and entrepreneurs, thereby underpinning the UK's economic growth and competitiveness. The Covid-19 crisis has demonstrated the importance of having a prepared and well-resourced research community closely connected with businesses and local and central Government that is able to respond rapidly during crises.

The solutions and recommendations from Connect: Health Tech will support the region's economic recovery post-pandemic and bring cutting-edge research, businesses and innovators together to be better prepared and connected for the future. Connect: Health Tech will also increase access to the Cambridge ecosystem extending reach and helping to level up growth and investment across the East of England and the Oxford-Cambridge Arc. To put these solutions into practice we need:

- Long-term support and investment to establish a thriving online business and enterprise community which will provide greater access and easier navigation for all stakeholders, to cutting-edge research and ideas within Cambridge encouraging further inward investment.
- Continued focus and investment to maintain a steady stream of inter-disciplinary projects which can be fast-tracked by accelerators, incubators and other funding mechanisms leading to a rich pipeline of start-ups and SMEs in therapeutics, medtech and digital health.
- Continued and increased support to build and strengthen capabilities and skills in entrepreneurship, mentorship, commercialisation, research operations and management, collaboration and partnerships, including sign-posting and increasing access to existing entrepreneurship activities.

In Cambridge, opportunity is everywhere

#jointhedots

The benefits

The table below demonstrates a wide range of benefits to the Cambridge research ecosystem from the development of the identified solutions.

Effective digital platform with in-built navigational functionality and up-to-date repository of information will make the knowledge of the University and the wealth of collaborators and connectors from across the **Cambridge cluster accessible 24/7.**

Increased efficiency in identifying collaborative partners in different sectors or research disciplines. Easier navigation and flow of projects and ideas. An abundant selection of high quality research projects and people benefiting from shared facilities, capital and infrastructure.

Strengthened interaction of physicists, material scientists, chemists, engineers, biotechnologists, biologists and clinicians across academia and industry leading to **increased interdisciplinary research** funding and projects initiated in health tech.

Increased **diversity of participation** in the business and enterprise community (e.g. non-traditional working styles remove barriers to participation such as those who are carers or who have difficulties travelling).

Harness the power of the community in one place. Increased access to people, space, expertise and knowledge.

Increase in networking and virtual events that **stimulate inter-disciplinary collaboration** towards global and real-world challenges will support the University's mission to create a better world and contribute to society.

Capabilities and skills built in entrepreneurship, mentorship, commercialisation, research operations and management, collaboration and partnership. Common language established across disciplines and sectors.

Expansion of the ecosystem geographically to engage expertise from further afield. **Scalable solutions** to include other Universities and clusters nationally and internationally. Functionality of solutions developed in collaboration with users and partners to ensure end-user benefit and use.

Increased **inward investment**. Rich pipeline of start-ups and SMEs generated and supported to grow in health tech. Significant rise in interdisciplinary research projects funded and commercialised.

Increase in companies **scaling-up across the region** and **increased flow** of companies out to key strategic areas of economic growth in the region and the UK. Significant **return on investment** through bolstering the world-leading position of the cluster in health tech.

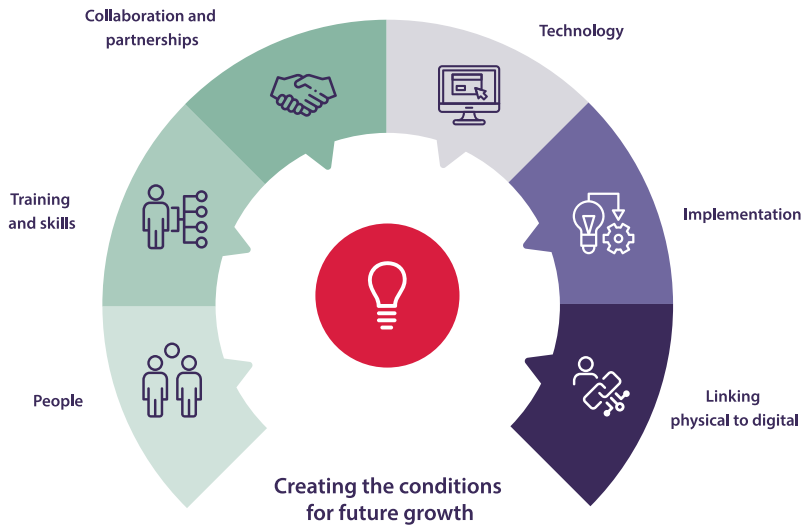
Large group of beneficiaries from industry, academia and the wider cluster including the NHS, entrepreneurs, start-ups and SMEs. Beneficiaries from innovation and increased inward investment include local and central government, councils, angel investors, venture capitalists and funders.

Digital elements creating **lower transaction** costs associated with forming the connections – less time and difficulty associated with finding the right connections. Proposed hybrid model (digital and human) adds **value and longevity.**

Key enablers

Supporting economic recovery through the University Enterprise Zone.

Key Enablers



People

- **Super-connectors** with a deep and up-to-date understanding of individuals and organisations
- **Mentors** - large and diverse pool
- **Experts in tech transfer and IP** to advise and support commercialisation
- **Business leaders** able to articulate the challenges in a common language

Training and skills

- **Map, sign-post** and **increase access** to existing entrepreneurship activities
- **Mentors** - next generation, what makes a good mentor?
- **Regular facilitated training** in capacity-building, commercialisation, research operations and management skills
- Establish and use **common language** interpretable across sectors and disciplines

Collaboration and partnerships

- Engage, leverage and collaborate across **existing networks** to amplify individual networks in the cluster
- Engage with similar communities more broadly **throughout the UK and globally** to increase reach
- Create a 'network of networks' so all stakeholders are connected across the Cambridge cluster and beyond

Technology

- Match-making capability, added value over other platforms (e.g. LinkedIn), ability to run events, as automated as possible (e.g. algorithms to support match-making), easy cross-posting, novel incentives

Implementation

- Tailored to **align with community needs**, intuitive user interface, start with minimum viable product combined with a systematic approach to enable **future scalability**
- **Unify efforts** on the platform by identifying a common problem

Linking physical to digital

- **Shared physical areas** for drop-in spaces
- Create a **stimulating digital environment** for interdisciplinary collaboration
- **Harness the power** of multiple people in one place
- Use digital technology to **reduce the transaction costs**
- Collate programme of events a**ll in one place**
- Provide **clear sign-posting** to relevant funding opportunities

The right people

- Human facilitators from across the cluster including: Super-Connectors, Knowledge Transfer Facilitators and existing Knowledge Exchange Networks with an external focus and deep and up-to-date understanding of organisational capabilities from inside and outside of the University.
- A talented and diverse pool of mentors with relevant experience and 'pay it back' mentality.
- Experts in University technology transfer to advise and support commercialisation. Contracts, finance and IP expertise. Project and facilitation management to enable collaborations to succeed.
- Business leaders and industry representatives who are able to articulate the challenges in common language, interpretable across sectors and disciplines.
- Community of entrepreneurs and researchers at all levels, from PhD students to key opinion leaders from academia, industry, start-ups and small and medium enterprises.
- Top-level academics and business champions, as well as early movers in the health tech space with good case studies to lead by example.
- Diversity across research areas including economics, business and manufacturing in addition to life and physical sciences.

Training and skills

- Support for the next generation of mentors and entrepreneurs who have recently been in the same position as the new start-ups. What makes a good mentor?
- Map, sign-post and increase access to, and awareness of, existing entrepreneurship activities including (but not limited to) those delivered by the organisations and programmes in Box 1 (organisations and programmes).
- Regular facilitated training of stakeholders, including those from the research community, in capacity-building and commercialisation. Areas of training include (but are not limited to) those in Box 2 (areas of training).
- Research operations and management skills. Establishing frameworks, project delivery strategies, contract negotiation, developing realistic milestones for projects and collaborations.
- Build capabilities and skills in recognising the right opportunities, identifying common goals and vision, developing an entrepreneurial mindset.
- Establish and use a common language interpretable across sectors and disciplines.

Box 1 - Organisations and programmes

- **Accelerate@Babraham**
- **Cambridge Academy of Therapeutic Sciences**
- **Cambridge Enterprise**
- **Cambridge Network**
- **Cambridge Postdoc Academy**
- **Cambridge University Technology and Enterprise Club (CUTEC)**
- **CamNTF**
- **Entrepreneurial Postdocs of Cambridge**
- **Innovation Forum**
- **Institute for Manufacturing (e.g. i-Teams, Technology Enterprise Group)**
- **Judge Business School (e.g. Entrepreneurship Centre, Ignite, Enterprise Tuesdays, Strategic Business Growth Programme)**
- **Maxwell Centre (Impulse)**
- **Milner Therapeutics Institute**
- **Office for Translational Research**
- **One Nucleus (Virtual Innovation Centre)**
- **Start Codon**
- **The Bradfield Centre**

Box 2 - Areas of training

- **Creating impact from research**
- **Defining the clinical need**
- **Developing a business plan**
- **Health economics**
- **How to collaborate effectively with industry/academia**
- **How to set up clinical trials**
- **How to write translational grants**
- **Medical device regulations**
- **Safety and toxicology**
- **The drug discovery pathway**
- **Understanding the market**
- **Women in translation**

Collaboration and partnerships

- Engage, leverage and collaborate across existing networks to amplify individual voices (Box 3 - existing networks).
- Engage with similar communities more broadly throughout the UK and globally to increase reach.

Box 3 - Existing networks

In the Cambridge Cluster:

- **Cambridge Network**
- **Cambridge Wireless**
- **CamNTF**
- **Eastern Academic Health Science Network**
- **ideaSpace**
- **One Nucleus**
- **Strategic Research Initiatives**

Technology and implementation

- Necessary requirements for the platform are listed in Box 4 (requirements).
- Start with the minimum viable product combined with a systematic approach to structuring a digital platform to enable future scalability (across the region, UK and internationally).
- Identify a common problem faced by all (e.g. economic recovery, improving healthspan) to unify efforts on the platform.
- Understand community needs and find additional ways to encourage cross-fertilisation across Cambridge and the broader ecosystem.

Box 4 - Requirements

- **Ability to run events**
- **Added value over other platforms (e.g. LinkedIn)**
- **As automated as possible (e.g. algorithms to support matchmaking)**
- **Easy cross-posting and ability to upload content to other systems**
- **Intuitive user interface**
- **Matchmaking capability**
- **On-boarding and novel incentives to use the platform – prizes, likes, 'pay it back'**
- **Self-sustaining content**
- **Tailored to align with community needs**

Linking physical to digital through virtual networking and events

- Increase access and maximise use of shared physical spaces across campuses to create drop-in spaces across disciplines that are available to all. Use existing locations/facilities as much as possible.
- Provide incentives for leading figures to use drop-in spaces to create a sense of community.
- Enable leading influencers and Super Connectors to move between physical spaces in combination with online presence in digital spaces.
- Create a stimulating digital environment to facilitate and foster interdisciplinary collaboration. An informal environment that recreates the feeling of bumping into someone in the same physical space.
- Harness the power of multiple people super connecting and matchmaking in one place (remove the bottlenecks).
- Ensure effective matchmaking at online digital events in addition to physical networking events to increase the amount of deeper, more productive connections.
- Use digital technology to reduce the transaction costs associated with finding the right connections – either reduction of the time needed and/or removing difficulty in finding the right connections.
- Collate programme of events all in one place with ability to set up a bespoke calendar.
- Deliver scoping exercise to understand current networking events landscape and identify key gaps.
- Provide clear sign-posting to relevant funding opportunities for collaborative or entrepreneurial activities when a connection has been established.

Looking ahead

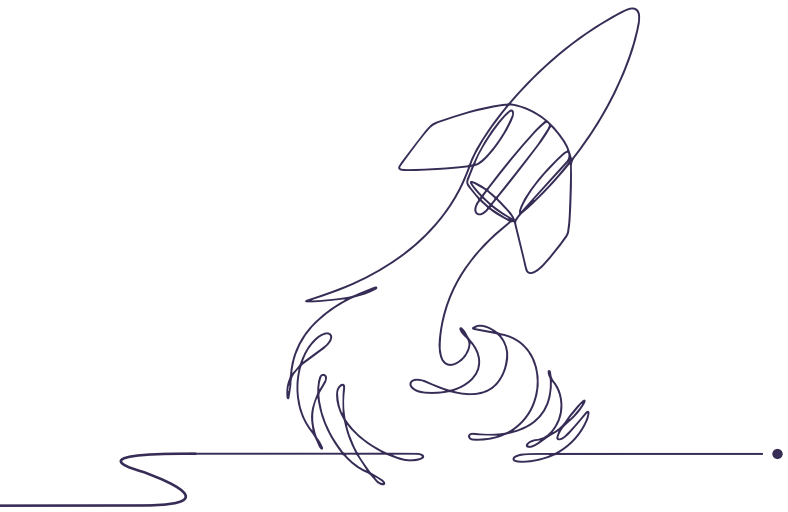
We have prioritised our next steps through the consultation and roadmapping process and identified the major deliverables to achieve our ambition for **Connect: Health Tech**.

Transition from physical to digital knowledge exchange

#jointhedots

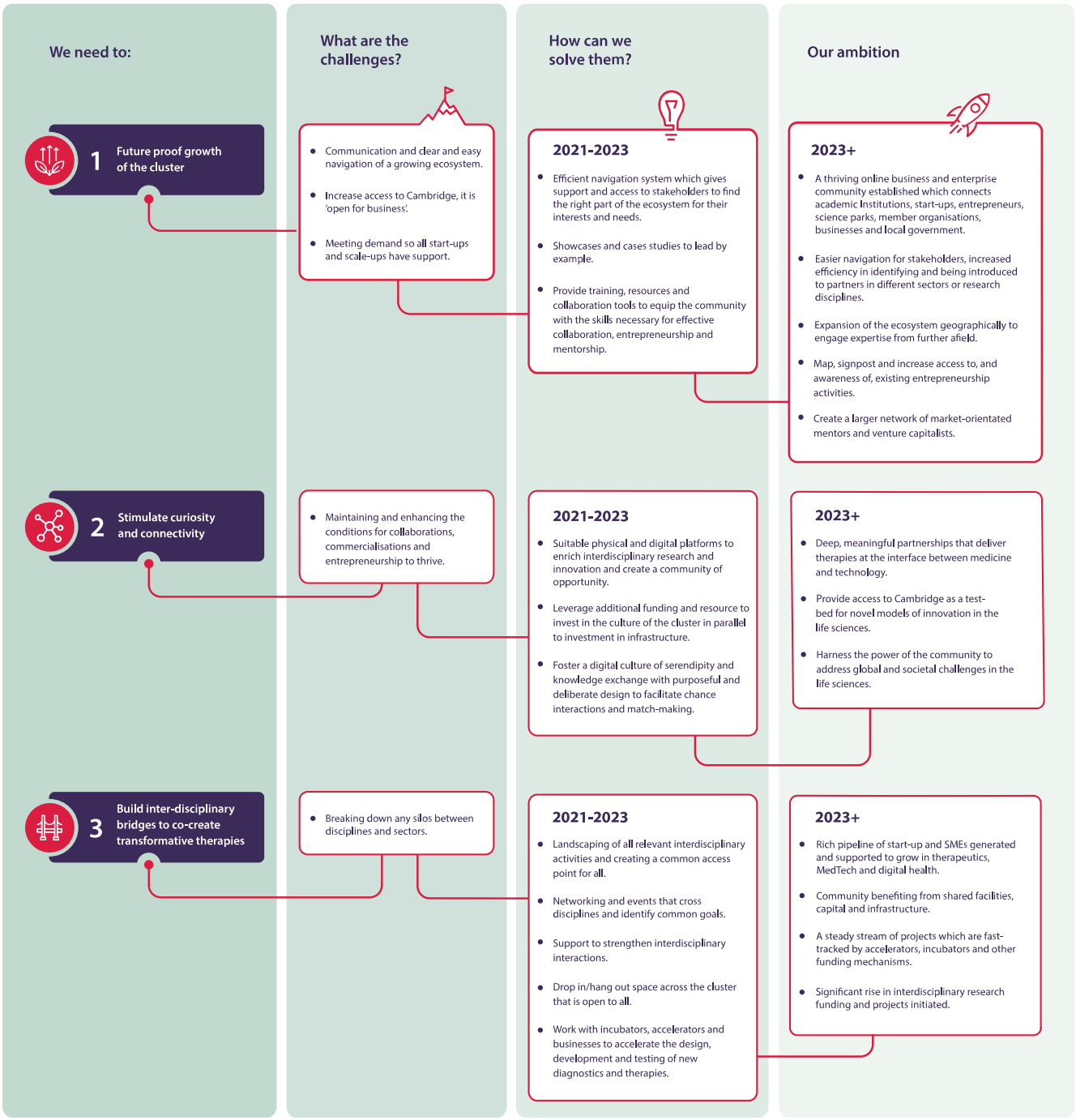
By 2023 we will:

1. Deliver a state-of-the-art digital platform that focuses on ease of use and intuitive design to boost community interactions and include functionality to live stream events, make introductions, enhance navigation, host expert groups in specific areas, exchange knowledge, run funding competitions and access shared project management space.
2. Transition from physical to digital knowledge exchange. This requires innovative human facilitation behind the scenes to join the dots, recognise synergies and stimulate connections.
3. Activate 'Super-Connectors', individuals with unprecedented access to the multi-disciplinary scientific and business community.
4. Scale-up the digital research, business and enterprise community by co-stimulation of intellectual and commercial curiosity to mobilise the research base.
5. Map and effectively utilise a co-ordinated support structure to take forward and convert connections into profitable projects which accelerate the design, development and testing of data driven diagnostics and therapies. This support structure includes technology transfer, business schools, research operations, incubators, accelerators, shared facilities and mentorship programmes, and will ensure that the pipeline of projects spearheaded have access to the knowledge and support they need to progress.



Roadmap for the future

A roadmap for the future



Acknowledgements

The authors of this report, kindly acknowledge the contributions of individuals from the following organisations in the development of the **Connect: Health Tech University Enterprise Zone**.

Organisations

Association of British Health Tech Industries

Association of British Pharmaceutical Industry

AstraZeneca

Babraham Institute

Babraham Research Campus

Bradfield Centre

Cambridge &

Cambridge Academy of Therapeutic Sciences

Cambridge Enterprise

Cambridge Innovation Capital

Cambridge Network

Cambridge University Health Partners

Cambridgeshire & Peterborough Combined Authority

Cartezia

Cytiva

Eastern Academic Health Sciences Network

GlaxoSmithKline

ideaSpace

Judge Business School

Maxwell Centre

Milner Therapeutics Institute

Office for Translational Research

One Nucleus

Postdoc Academy

Start Codon

Contact us

To discuss any aspect of this report, please contact Paula Rogers-Brown or Dr Kathryn Chapman at healthtech@admin.cam.ac.uk

University of Cambridge

The Old Schools
Trinity Lane
Cambridge
CB2 1TN
United Kingdom

July 2021

Connect
Health
Tech