



The research commercialisation office of the University of Oxford, previously called **Isis Innovation**, has been renamed **Oxford University Innovation**

All documents and other materials will be updated accordingly.
In the meantime the remaining content of this Isis Innovation document is still valid.

URLs beginning www.isis-innovation.com/... are automatically redirected to our new domain, www.innovation.ox.ac.uk/...

Phone numbers and email addresses for individual members of staff are unchanged

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Innovation in Oxfordshire, new partnerships, networks & opportunities

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Oxford Brookes University

**Isis innovation & Oxford AHSN Technology Showcase 2015
eHealth & Big Data
Tuesday 30th June 2015**

Status & credentials: what I'm not

Just to frame the discussion, let's get a few things clear: I am NOT

- A medical or hospital employee
- An e-health specialist
- An image analyst
- A big data guy (except for certain betting circumstances....)
- A statistics person (ditto)

(and I'm probably not a research active person now, but I was returned in the REF/RAE/RSE s of 1986, 1989, 1992, 1996, 2001, 2008, 2014.....)

Status & credentials: what I AM

However I *AM*

- A medical mathematics person
 - A VC now – but I was a PVC (R + KE)
 - On the Board of Directors of a medical spin-out (OET)
 - A Trustee of the Oxford Trust
 - A member of the OxLEP Board and the Venturefest Oxford Board
 - An ex member of the Members' Council, Southampton General Hospital
 - Contributor to Oxford AHSC, AHSN
- so maybe I am able to take a “view from outside”

What I'll talk about

OK, so there are my credentials:

There are lots of talks in this session from real experts in their field, and lots of really interesting specific applications, so in contrast I'll give you:

- A general overview and survey of where I think we are
- Some general thoughts on where we may be heading and what we should do
- A few provocations: please feel free to shoot me down – that'd be fun!
- A few dumb questions – and challenges

So what's this e-health thing then?

E-health and big data share a common problem: everybody has their own definition, but all the definitions are different

It's a huge area, and we have to think about what it means, and how the Oxford region might excel in this field

So what do *I* mean by e-health, how might our ecosystem here respond, and where should we be focussing our effort?

For me there are three “bits” of e-health :

E-Health 1:

- Patient record systems – data standards, units, conventions
- Patient information systems
- Data systems for GPs, nurses and hospitals etc.

Reflections:

- ☐ Lots of public money has been wasted trying to make this all work
- ☐ There have been many high-profile disasters
- ☐ The data and confidentiality issues have not really been sorted out
- ☐ It's really a national rather than a local or LEP thing

I'd pretty much leave this alone

E-Health 2:

- Communications between different health systems
- Communications between patients and hospitals
- Holistic patient care – different bits of care system communicating
- Interprofessional team working
- Things like Babylon – a sort of Uber for healthcare

Reflections:

- ☐ There's lots of public interest in this
- ☐ It's a rather diffuse area, and involves training and education as well
- ☐ Different parts of the sector seem to be in different places on this

I'm not sure where we are on all this – but not world leaders I surmise

E-Health 3:

- App development and personalized medicine
- Sensors/Telemedicine
- Devices and products, computer intelligence
- High-tech, sophisticated new machines, procedures and data sets
- Complicated data analysis, decision making tools, advanced informatics

Reflections:

- ☐ Biobank – Big Data Institute Churchill 2017 - Bioescalator
- ☐ Lionel: Institute of Biomedical Engineering, OBN,
- ☐ OSI: £300m spin-out fund, AHSC/AHSN wealth creation

THIS is what we are world-leading at

Key drivers:

- ❑ Aging population – lots of us are not dying fast enough!
- ❑ Growing population
- ❑ Pressure on NHS, cost efficiencies, fewer hospitals
- ❑ Greater expectations – better diagnosis and cure
- ❑ Availability of big data – app technology – “Amazon think”

How to run innovation in Oxford + shire

How can this all come together and make us established world leaders?
What are our mechanisms and natural advantages?

- The LEP and SEP – Oxon's plans are all innovation-based
- Training and education have roles (e.g. MSc Medical Genomics)
- OU Ehealth Lab is developing – Institute of Digital Health
- AHSN wealth creation – AHSC two major themes (Big data, E-Health)
- OU NHS Trust at the top of Electronic Health institute's maturity index
- OU Medicine generally world-leading
- World-class clinical trials facilities and expertise

Deja Vu

Of course, Oxford has done all this before.

It led the Biotech revolution 20-30 years ago – can we learn from that?

How did this happen?

- Oxford Trust pulled like-minded people together across the County
- Encouraged people to develop tools to help people with new Biotech ideas, leading to.....
 - Oxford Biotechnet (1996)
 - Biobusiness incubator, Littlemore
 - Training for investors and supporting consultants
 - Oxford Brookes Biotech degree
 - Eventually OBN – an Oxford Brookes spin out
 - Diagnox Cherwell, Oxford Science Park, Milton Park incubator etc. etc.....

and generally set up the required supportive networks and infrastructure

Pop-up strategy for E-Health global domination

- Create a focus
- Carry out an audit
- Create appropriate networks
- Promote the area and make sure that people know about it
- Embed suitable public engagement mechanisms
- Build supporting facilities that'll attract the right types of organisation to Oxon
- Support the research community
- Create all the required and appropriate types of training

..... I'm sure that you can all think of better ideas

What are the challenges?

Some key questions to answer include:

- How can we GET TO Oxford and GET AROUND in Oxford?
- How can anybody anywhere afford to live in Oxford?
- The green belt restricts what we can do – can we never build ANYTHING?
- Many very bright people come to Oxon – but how do we **retain** them?
- How does an SME successfully commercialise a great new medical device via the NHS? It seems impossible! Can we find a way of NOT having to go to Germany, Scandinavia or the USA?