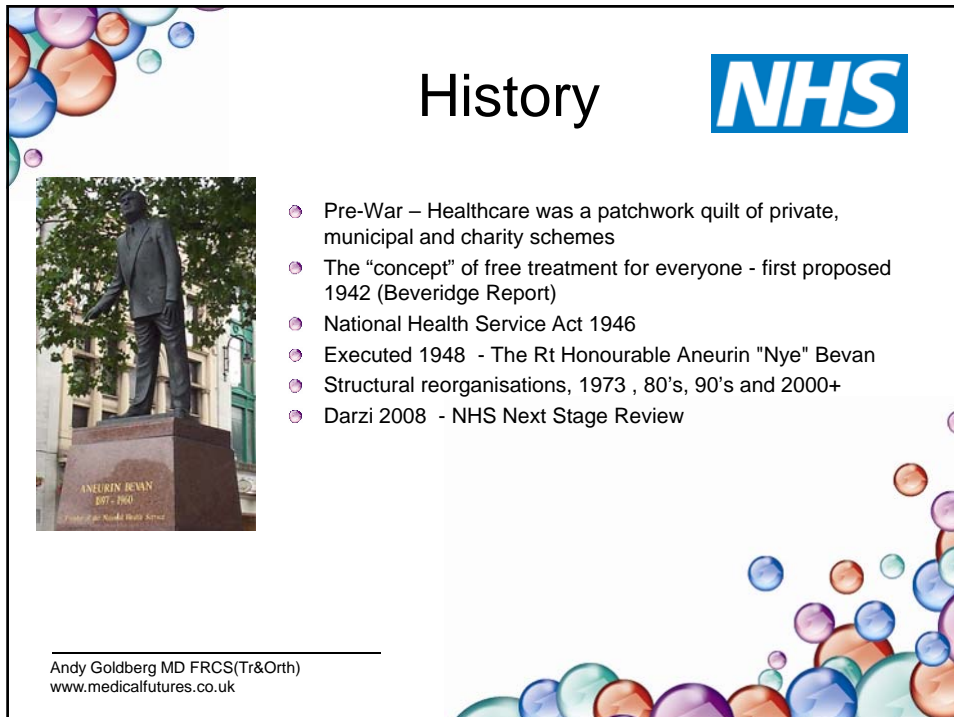




\$4Trillion

Medical Devices World Market: \$250 Bn

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History

ANEURIN BEVAN
1897 - 1960
1st President of the World Health Organisation

- Pre-War – Healthcare was a patchwork quilt of private, municipal and charity schemes
- The “concept” of free treatment for everyone - first proposed 1942 (Beveridge Report)
- National Health Service Act 1946
- Executed 1948 - The Rt Honourable Aneurin "Nye" Bevan
- Structural reorganisations, 1973 , 80's, 90's and 2000+
- Darzi 2008 - NHS Next Stage Review

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Health Innovation Council

The role of the HIC is:

- provide leadership and advocacy with key decision-makers in the NHS on the benefits to patients, the NHS and the country of adopting cost-effective new technologies and models of care
- lead on the development of recommendations on innovation adoption
- take an overview of work across the innovation pathway from discovery to adoption
- ensure that relevant levers are used with the NHS to ensure an increase in the uptake of innovative cost-effective products and procedures. Underpinned by world-class commissioning.
- overseeing the implementation of the above

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Scope




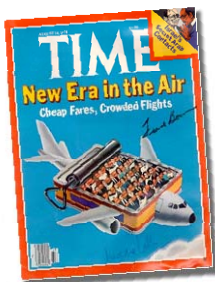

- £92Bn **Budget** 2007/8, with a further £14.5bn on adult social care
- 1.3m **Employees**
- 1m **Outpatient consultations** a week
- 17.3m **surgical procedures and interventions** a year
- £1.3Bn spent on **R&D**
- 2,500 **calls** to the DH media centre per week
- 92 **articles** written about health stories in the 10 major national newspapers each day.
- 14,893 written **PQs** were answered in 2005/6, more than twice as many as any other Department
- 275,000 **contacts** are made every year with MPs and members of the public.

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What is innovation?

- Implementing change
- Not necessarily about something new
- Not necessarily better

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Sir Freddy Laker and Stelios Haji-loannou were used to illustrate that the same concept could work & fail under different timings & different modes of execution. John Tyndall and Sir Alexander Flemings description of Penicillin equally illustrated how innovation in medicine was not necessarily about seeing something new.

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- The author then gave three detailed case studies of major healthcare innovations that have had a major impact on the way healthcare is delivered. He cited the story of the invention of the laryngeal mask, the vascular stent and the hip replacement.

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1970's	1980's	1990's
Argentina	Essex	USA
Kitchen	Bedroom	Shed
Industry- too risky	Industry- too risky	Industry- too risky
Restauranteur	Music Man	karen talmadge
cordis	Laryngeal Mask Company	Kyhpon

The common theme was that they had all taken between 10-15 years to go from head to paper, representing a lag that precedes the commercialisation lag that follows. All had been invented in rural centres, by lone individuals without support. All had approached industry and been rejected and all were catalysed to success through a chance meeting with a successful businessmen.

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Innovative People

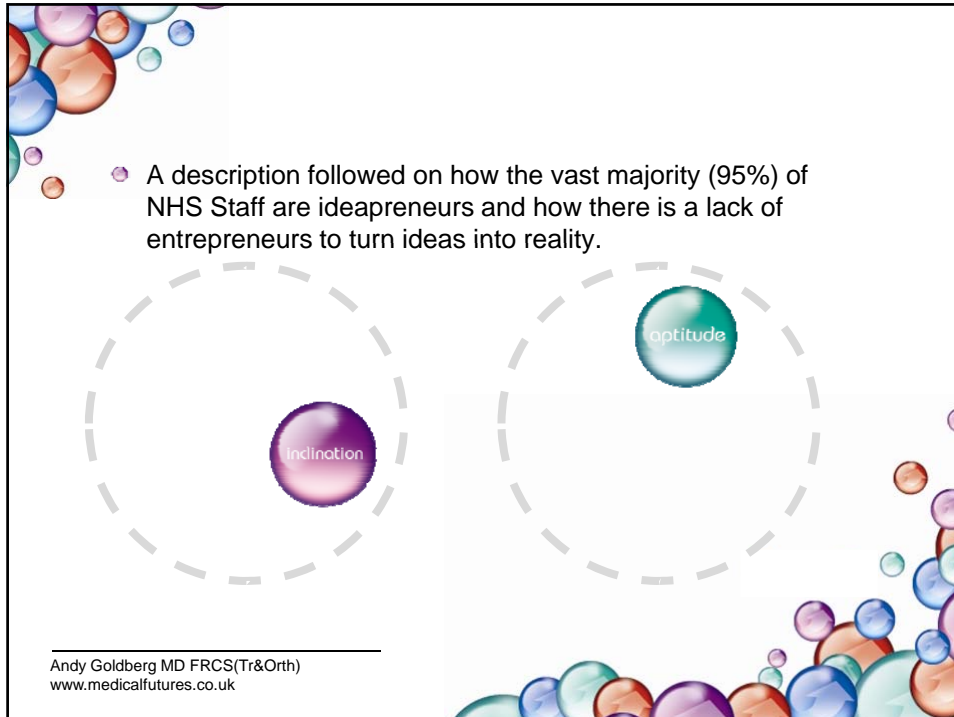
A description of character traits of innovators was discussed, with the author differentiating idea generators and entrepreneurs. Various illustrations were given to demonstrate how ideas people do not progress to the critical mass necessary to create value and how entrepreneurs are vital to create value.

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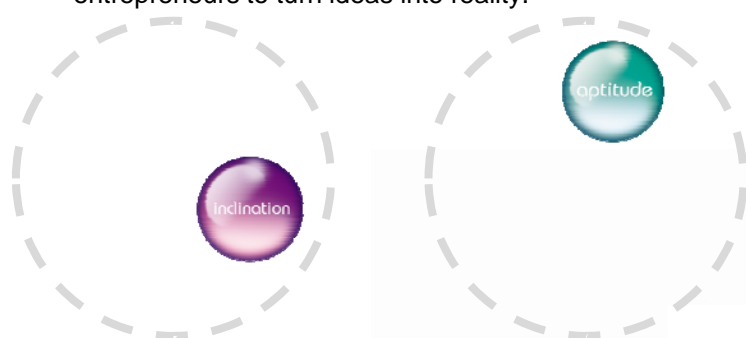
Ideapreneurs vs Entrepreneurs

Ideapreneurs	Entrepreneurs
Cerebral	Hands-on
Idea generators	Idea executors
Stay with an idea until the next one	Tenacious
Aspirational	Visionary
"Where's my Texan?"	"Out of my way, suckers"

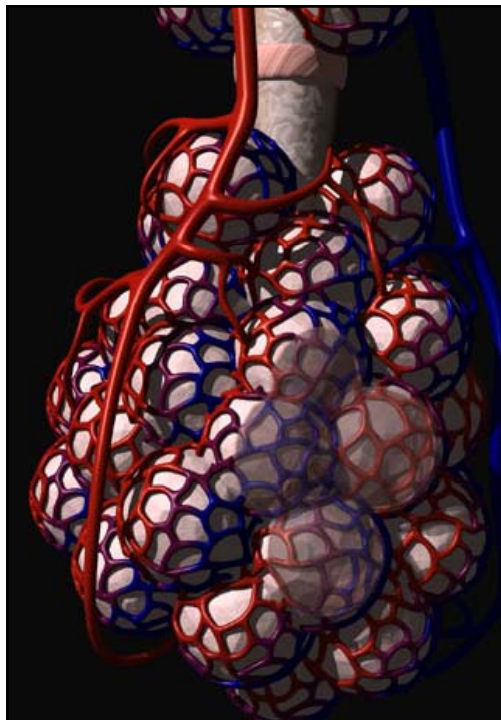
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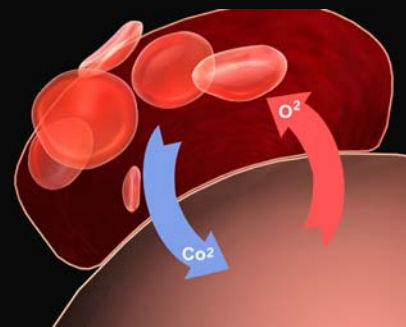
A description followed on how the vast majority (95%) of NHS Staff are ideapreneurs and how there is a lack of entrepreneurs to turn ideas into reality.

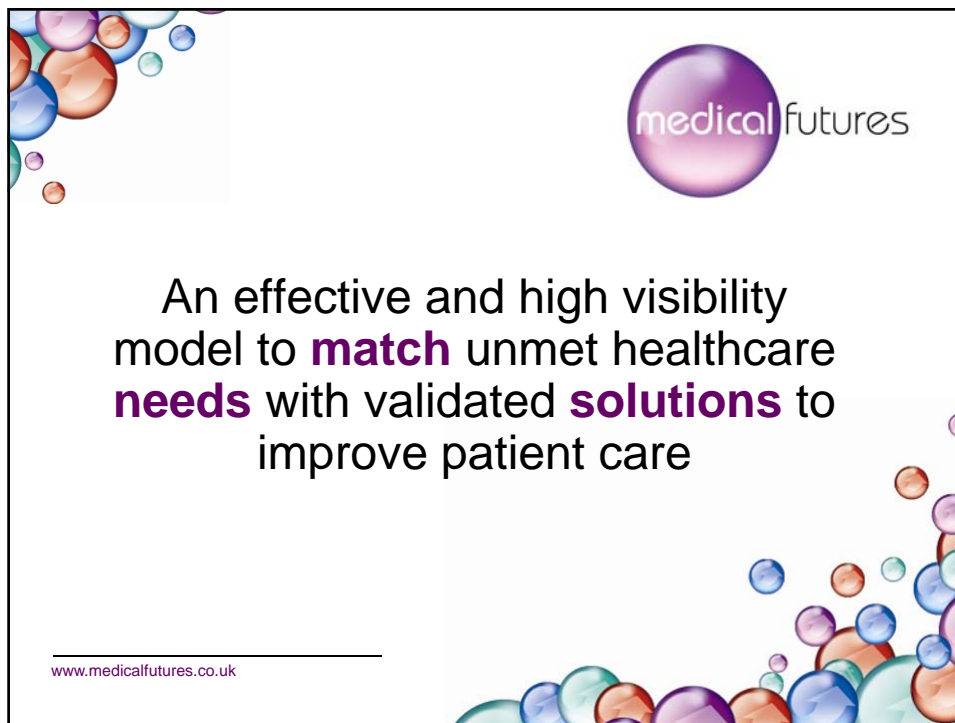
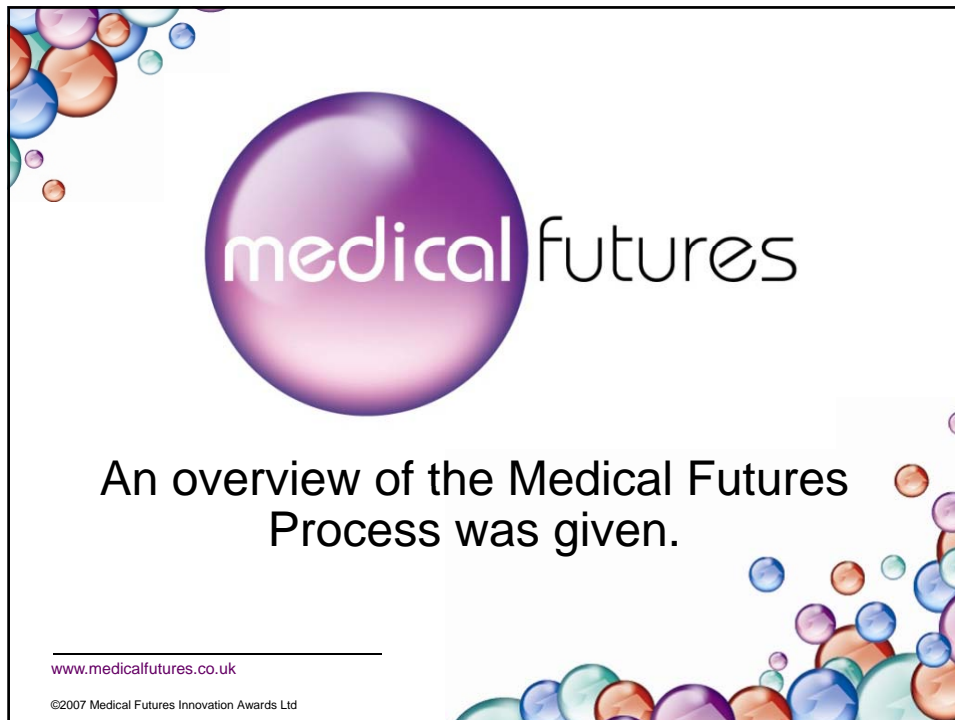


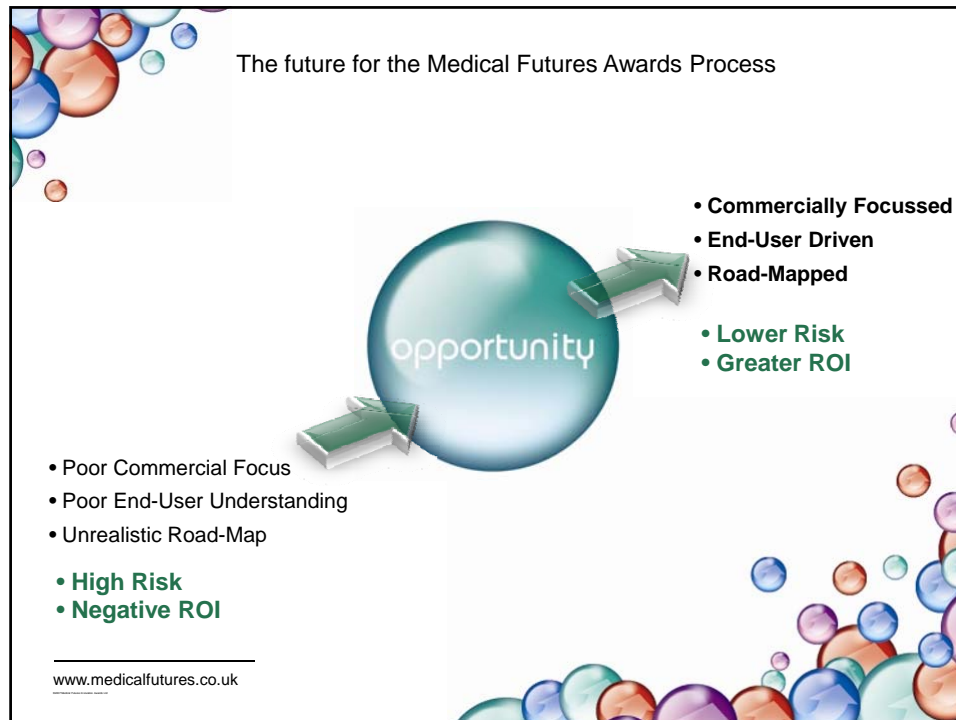
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The concept of a mismatch between the research & ideas base and the skills and money to translate them was introduced.









Case Studies were given

Case Study 1

MediRacer

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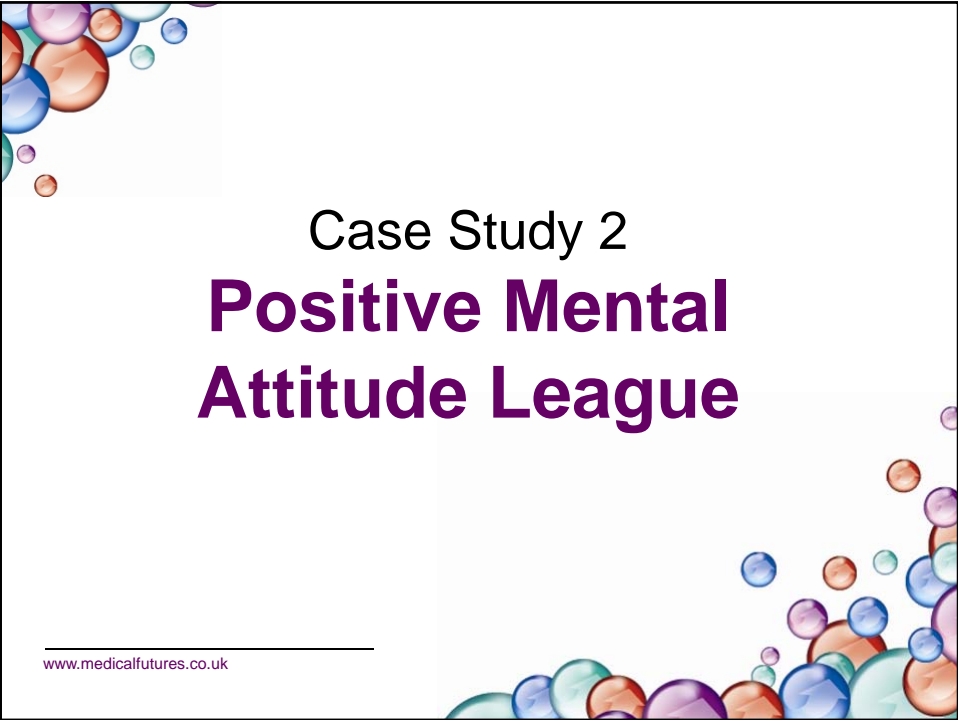



A Case study was given to demonstrate how innovative new technologies can be adopted in the NHS. The case study demonstrates how by re-engineering a service the technology could help bring about:

- 1) Improved quality care
- 2) Reduced waiting times
- 3) Cost Savings (>£70m per annum)
- 4) Improved Productivity

The take home message was that new technologies can only be introduced through linkage to efficiency gains.

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Case Study 2

Positive Mental Attitude League

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A second case study was used to illustrate how many of the thousands of pockets of excellent best practice in the NHS can be rapidly disseminated and promoted.

The Key lie in knowing how to package the product and market it

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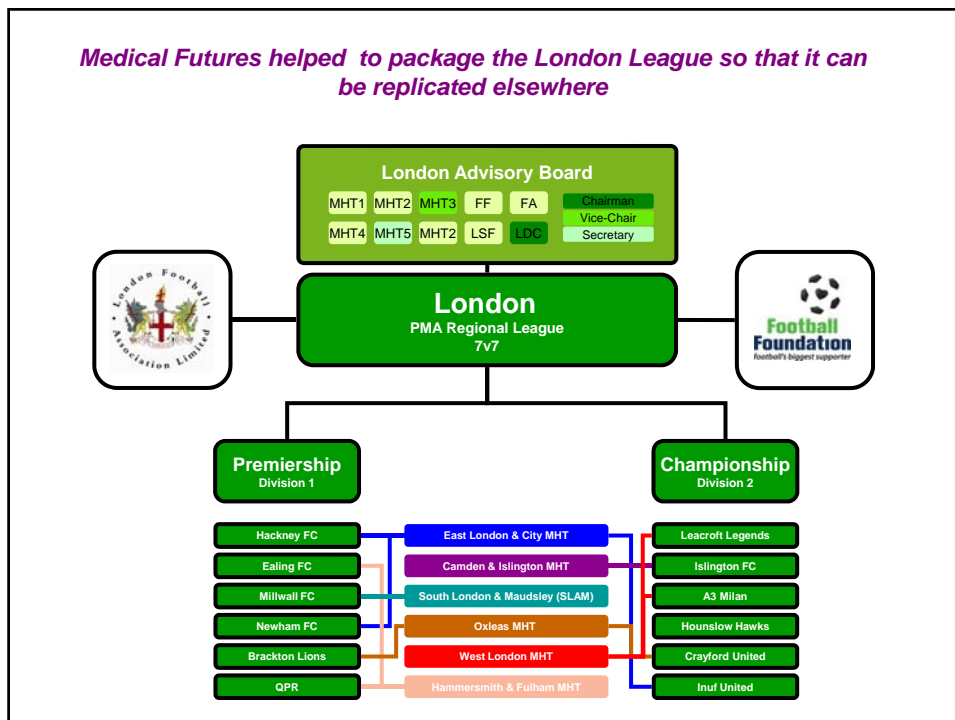


**The Positive Mental Attitude Football League,
was a London based initiative helping sufferers
of mental illness recover and reintegrate into
the community .**

*Despite it being paid for by the innovator and
run by the service users, it remained invisible to
many of the key stakeholders including NHS
management, commissioners and the public.*

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- The PMA Sports Charity is Created with new branding
- Links to the NHS Mental Health Trusts are formalised
- Relationships with The FA and Football Foundation are formalised
- An independent film producer creates a fly on the wall documentary
- Up to 72 teams are planned nationwide



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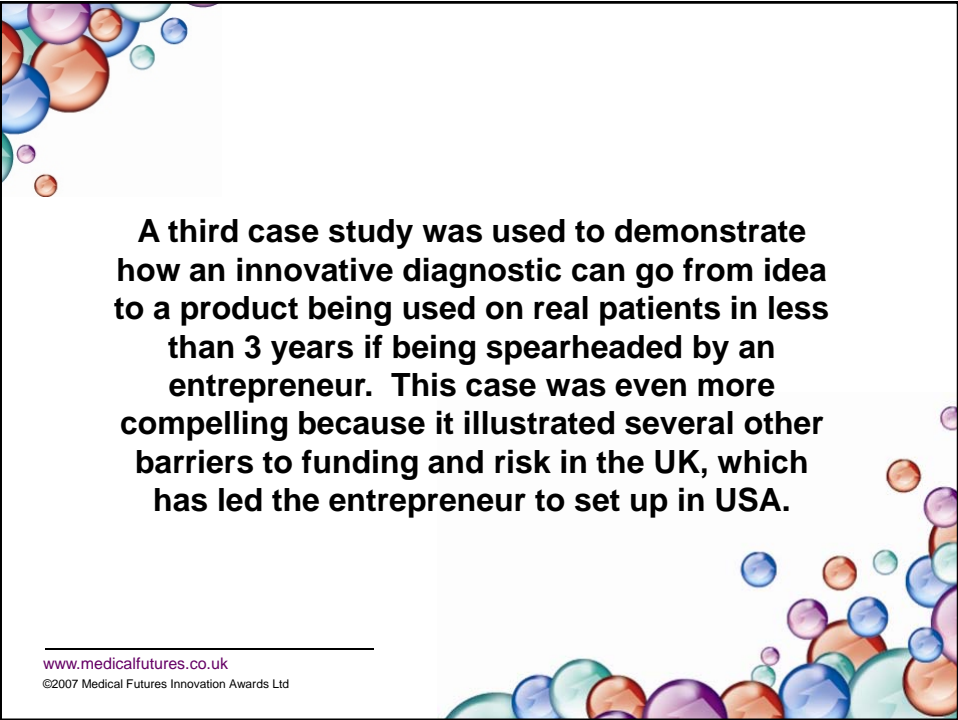



Case Study 3

Diagnostics for the Real World

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A third case study was used to demonstrate how an innovative diagnostic can go from idea to a product being used on real patients in less than 3 years if being spearheaded by an entrepreneur. This case was even more compelling because it illustrated several other barriers to funding and risk in the UK, which has led the entrepreneur to set up in USA.

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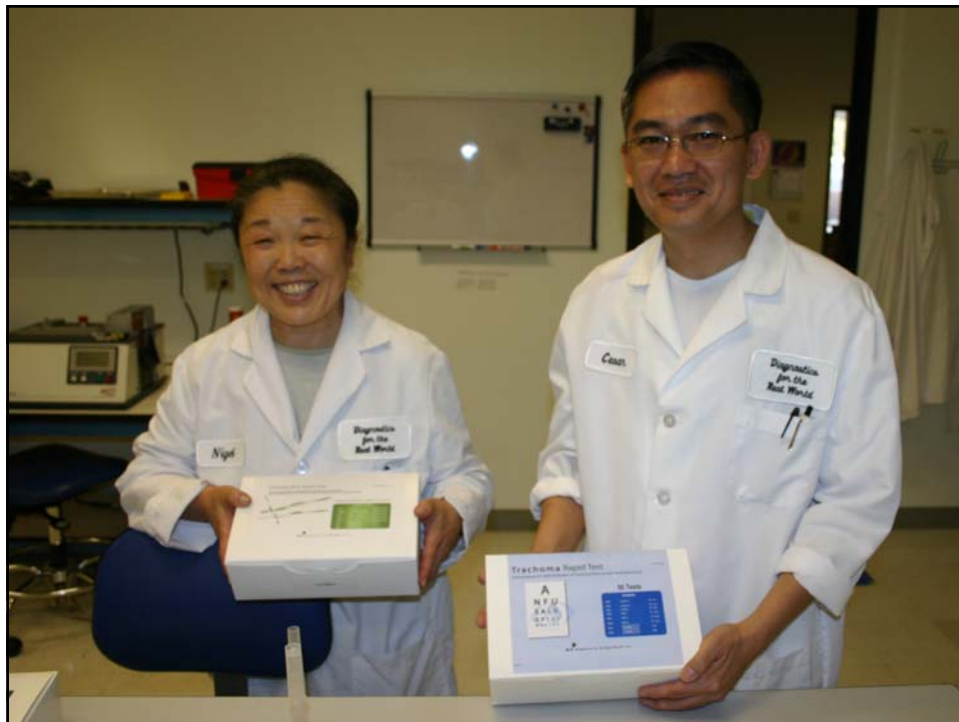


Dr Lee and colleagues at the 2003 Medical Futures Awards when her idea was a prototype



Dr Lee proudly shows off her new offices, in Sunnyvale, California





A discussion then took place on whether the UK is measuring the right outputs. The author presented an argument that we are measuring outputs that seem to have no impact on patient care

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Are we measuring the right outputs?

“UK spends more per capita on cancer research than any other country in Europe” Innovation Nation



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Are we measuring the right outputs?

“Our share of the top 1% of cited papers in peer-reviewed journals is second only to the US.”

90% of the largest medical technology companies are US based

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Are we measuring the right outputs?

	US ¹	UK ²
R&D Expenditure	\$45Bn	\$5.13Bn
Patent Applications	16,000	1,537
Spin-Outs	533	187
Licensing Income	\$1.78Bn	\$169.7m
IP Income as % R&D	4.0%	3.3%

2006 AUTM U.S. Licensing Activity Survey ¹
OSCHR & 2006 HEFCE BCI Survey ²

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Prof David Kelley

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i n v e n t
Bill Hewlett & David Packard

→

Apple
Wozniak and Jobs

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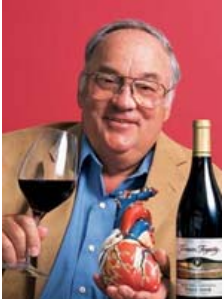



Jeff Bezos
Princeton




Mark Zuckerberg
Harvard



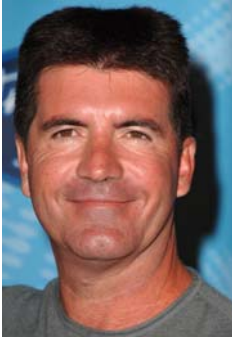







Professor Perkins
Collagen Corp
ReSound
Lazarscope
Novacept
\$3Bn

Professor Fogarty
Edwards Lifesciences
Three Arch Partners
\$5Bn

Dr Reiley
Kyphon Inc
Archus
INBONE
\$4Bn

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The UK's most well known and respected entrepreneurs have very little association with academia. The author hypothesized whether Universities in the UK are anti-entrepreneurial?

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Summary

- Public Sector Innovation
 - NHS has major challenge yet huge opportunity
 - Innovation must be linked to efficiency gains
 - Treat public and private innovation the same
- Innovative Places
 - WARNING - beware gaggles of ideapreneurs
 - beware focussing money where least needed and widening the innovation mismatch
 - do not set up centres of specialty expertise
 - focus on talent rather than IP
- Innovative People
 - talent is everywhere, nurture it
- Innovation Index – Make sure the right things are measured
- Government Role – Help create the environment and support the “risk gap”
- Execution, Execution, Execution

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Senior Scientists Pitching an idea to Improve Patient Care



Senior Consultant Surgeon Pitching his Ideas to cure the NHS



Lord Sir Ara Darzi, Health Minister, Department of Health & Colleagues as Judges



Sir Richard Sykes & Sir Victor Blank as Medical Futures' Judges





Rory Bremner, Comedian co-hosts the Medical Futures' Awards