$193 BILLION REASONS TO RING CAMBRIDGE

“Buns” Talk to the I.f.M., 6 June 2025

By Stephen Allott
Chairman, Tarigo™ Product Management Training
Hon. Member, University of Cambridge, Department of Computer Science and Technology
Founder, Funder and Designer of the Cambridge Computer Lab Ring

$193 BILLION IS IMPORTANT TO THESE 7 DISTINCT STAKEHOLDER GROUPS

Ring Hall of Fame Founders

Ring Hall of Fame companies

Companies employing technical graduates especially PhDs

Cambridge University

- CU senior management e.g. Pro-Vice Chancellors and Heads of Schools
- Department heads e.g. of the Computer Lab or Engineering
- Institute for Manufacturing ("IfM") faculty and students

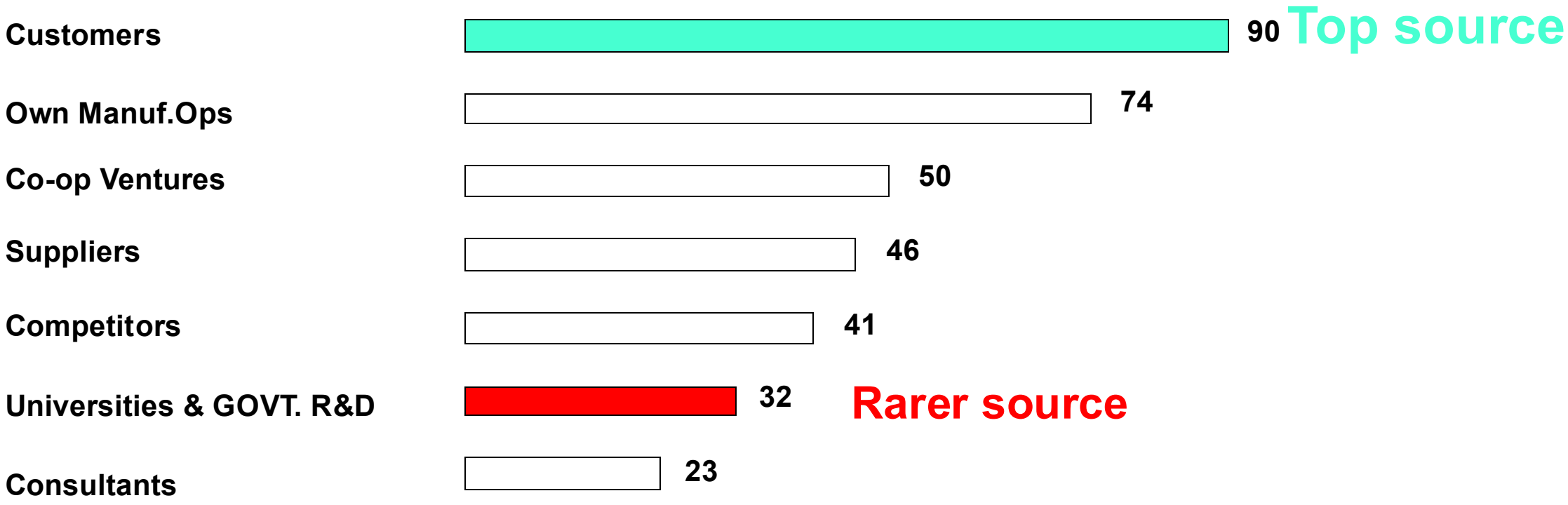
Observers, commentators and journalists in Innovation

Government Depts (Business, Education, Treasury),

The **UK General Population**

INFORMATION SOURCES SUGGESTING NEW R&D PROJECTS

% R&D managers in industry indicating source



Source : Cohen, Nelson & Walsh published in 2002 from 1994 survey

TREASURY SCIENCE AND INNOVATION REPORT
July 2004

> "Studies show that R & D delivers benefits by allowing an economy to do two things:
>
> - understand and appreciate the value of others' findings and results;
>
> - and make new discoveries."

Source: http://www.hm-treasury.gov.uk./spending_review/spend_sr04/associated_documents/spending_sr04_science.cfm at p.150

The first means looking things up. The second means inventing things.

TREASURY SCIENCE AND INNOVATION REPORT
July 2004

"Studies show that R & D delivers benefits by allowing an economy to do two things:

1. Start with a valuable customer problem

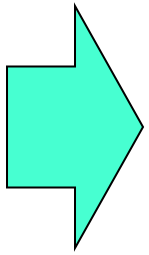
- understand and appreciate the value of others' findings and results; →
- and make new discoveries."

2. Using the findings of others, a Computer Lab PhD graduate can create a product

Source: http://www.hm-treasury.gov.uk./spending_review/spend_sr04/associated_documents/spending_sr04_science.cfm at p.150

The first means looking things up. The second means inventing things.

TOPICS



What has the Ring done?

What this means for the stakeholders

What has to change as a result

The Ring

CAMBRIDGE COMPUTER LAB “THE RING”

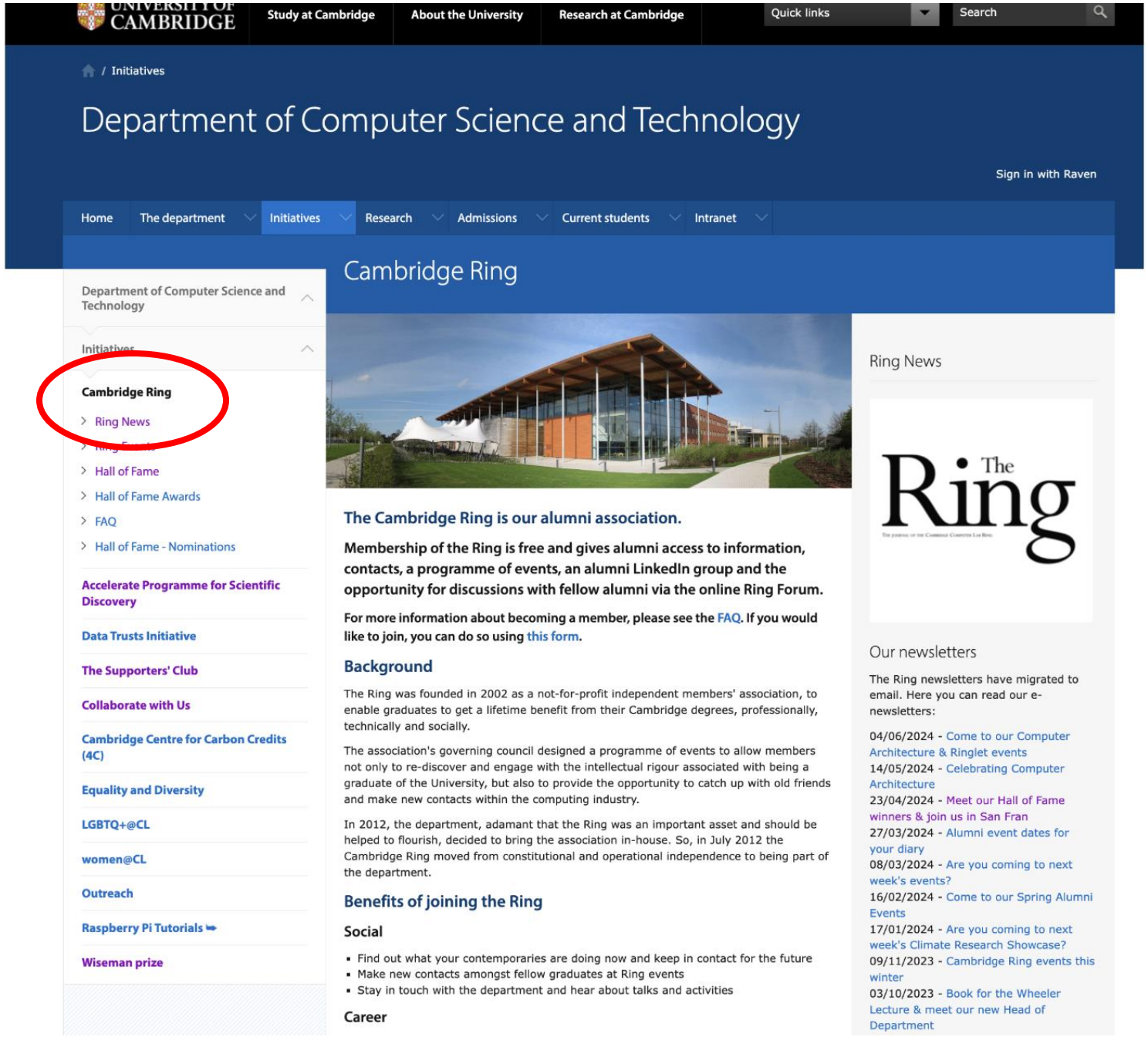
… provides graduates with a lifetime benefit from their Cambridge degree helping them and the companies they found (the “Ring Hall of Fame”) to be more successful

CAMBRIDGE COMPUTER LAB “THE SUPPORTERS CLUB”

…enables graduates to find their first job and strengthens the business / university interface.

CAMBRIDGE COMPUTER LAB “THE LAB”

… refers to the University of Cambridge Department of Computer Science & Technology does both teaching and research for undergraduates, Masters and PhDs.



The Ring

"Lifetime benefit from your Cambridge Degree"

The Ring was founded in 2002 Maurice Wilkes suggested the name.

Maurice Wilkes designed the famous Cambridge Ring network in 1975

81 SUPPORTERS CLUB COMPANIES* ENABLE GRADUATES TO FIND THEIR FIRST JOB

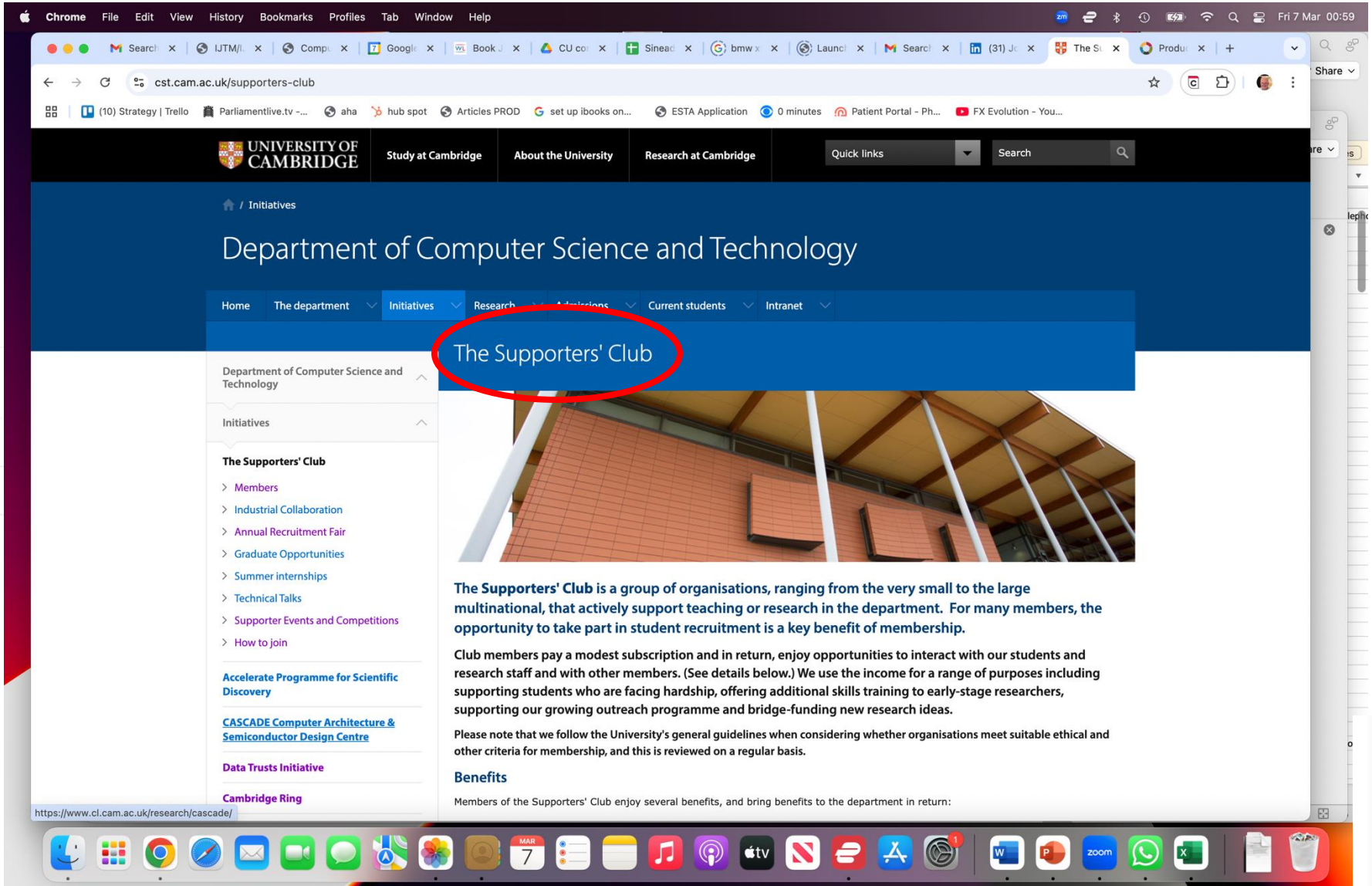
Cambridge Ring

- Ring News
- Ring Events
- Hall of Fame
- Hall of Fame Awards
- FAQ
- Hall of Fame - Nominations

Accelerate Programme for Scientific Discovery

Data Trusts Initiative

The Supporters' Club



* 24 May 2025

SINCE 2002 WE HAVE COLLECTED THE LIST OF COMPANIES FOUNDED BY OUR GRADUATES

Cambridge Ring

- Ring News
- Ring Events
- Hall of Fame
- Hall of Fame Awards
- FAQ
- Hall of Fame - Nominations

Accelerate Programme for Scientific Discovery

Data Trusts Initiative

The Supporters' Club

Companies started by Computer Science and Technology graduates and staff

If you would like to add a company to the list, please fill in this form. Please send any corrections to this list to ring-organiser@cst.cam.ac.uk.

Current number of companies: 341

- **Acorn Computer** Co-founder: **Andy Hopper**

  Founded in 1979, Acorn produced a number of computers including the BBC Micro.

- **Active Media Solutions** Founders: **John Bates and Giles Nelson**
  Founded in 1995, Active Media Solutions was one of the first companies to deploy complex database-driven websites in which information can be easily classified and searched rather than statically encoded as HTML.

- **Actuarial Solutions Ltd** Founder **Martin Barringer**

  Founded in 1999, Actuarial Solutions Limited is a specialist provider of software tools and consultancy for actuarial applications.

The Hall of Fame is listed on the department web site. These wooden honour boards are located in the "Street" (the building entrance lobby) and are proudly pointed out to all visitors. Ingeniously mounted on wheels, they can be wheeled into lectue halls and meeting rooms if needed.

“RING TOP ONE HUNDRED” HALL OF FAME COMPANIES BY LTM REVENUE

£ m, last 12 months revenue

THE TOP 100: number 1 – number 10

ARM	**2,554**
Micro Focus	**1,646**
DeepMind	**1,527**
Sophos	**820**
Raspberry Pi	**209**
Jagex	**137**
Evi	**126**
Go Mobile	**118**
Improbable.io	**66**
NextBase Ltd	**49**

THE TOP 100: number 11 – number 35

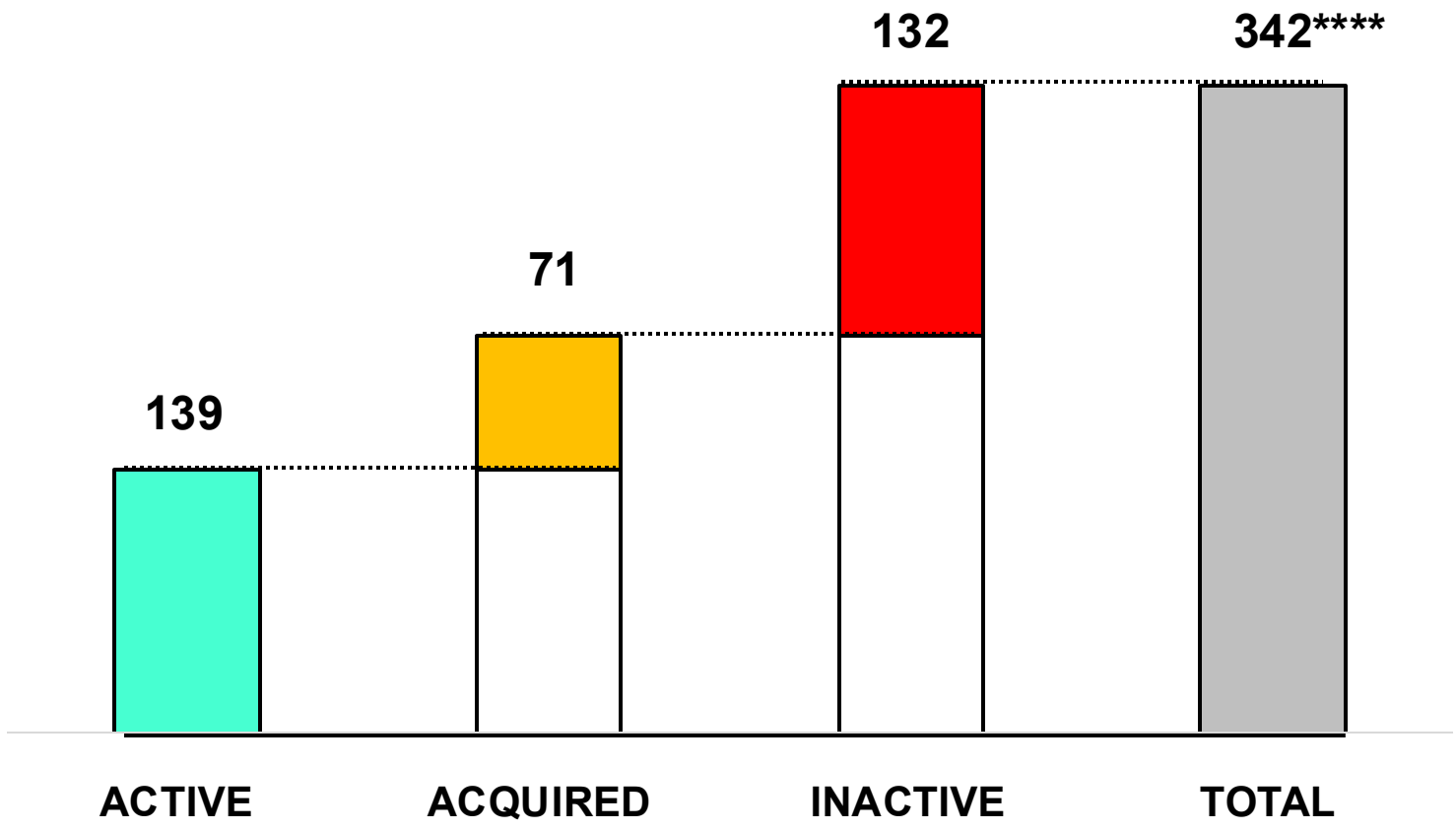
Grapeshot	39
Perfect Image	31
Superhuman	30
Masabi	29
Bango	25
Spektrix	18
Tractable	16
Amino Comms	16
CodeThink	16
Collabora	15
Ubisense	14
Speechmatics	12

Global Inkjet	11
Beauhurst	9
Questionmark	8
Element	8
blinkx	8
PolyAI	7
Operis Plc	7
Jobstream Group	2
FusePump	2
English Language	2
Eluceda	1
Applied Generics	1
Moon Express	1

Source: Beauhurst analysis

355* RING HALL OF FAME** COMPANIES AS OF 6 Jun 2025

Number of companies on the Ring Hall of Fame web page



* Companies listed on the Cambridge Computer Ring Hall of Fame web page as of 6 Jun 2025
** A company founded by a Ring Member (= Cambridge University Computer Lab graduate or member of staff)
*** Source: Beauhurst analysis as of 15 May 2025
**** total of 342 to be updated by the further 12 companies found.

*COMPUTER LAB+CLUB+RING => HUGE ECONOMIC IMPACT****

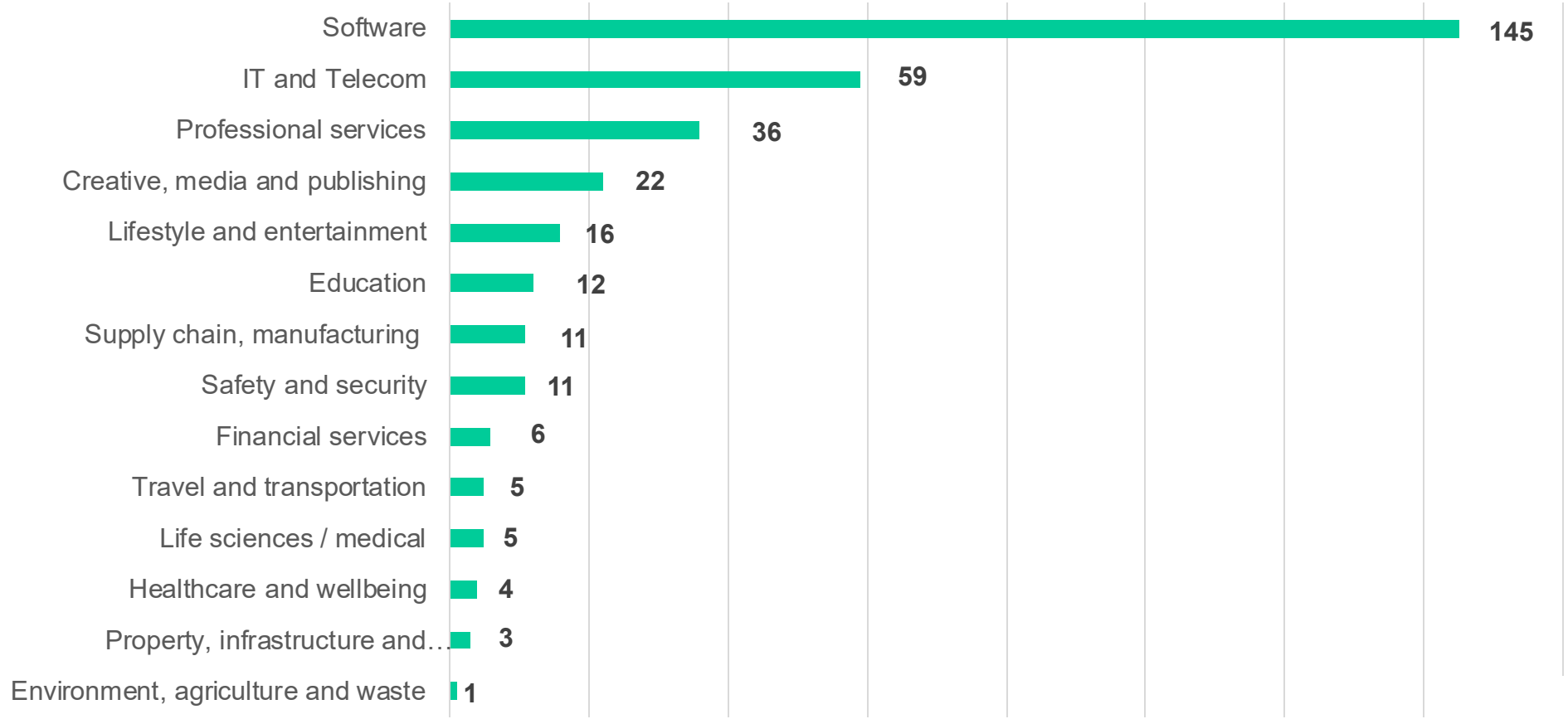
Revenue p.a.	*$ 10.1 billion (£7.6 billion)*
Valuation	*$ 193 billion (£145 billion)*
Staff	*28,000*
Equity raised	*$ 2.3 billion (£1.7 billion)*

55 separate acquirors with only 4 repeats:

MSFT	4 acquisitions
Citrix	3 acquisitions
Oracle	2 acquisitions
Google	2 acquisitions

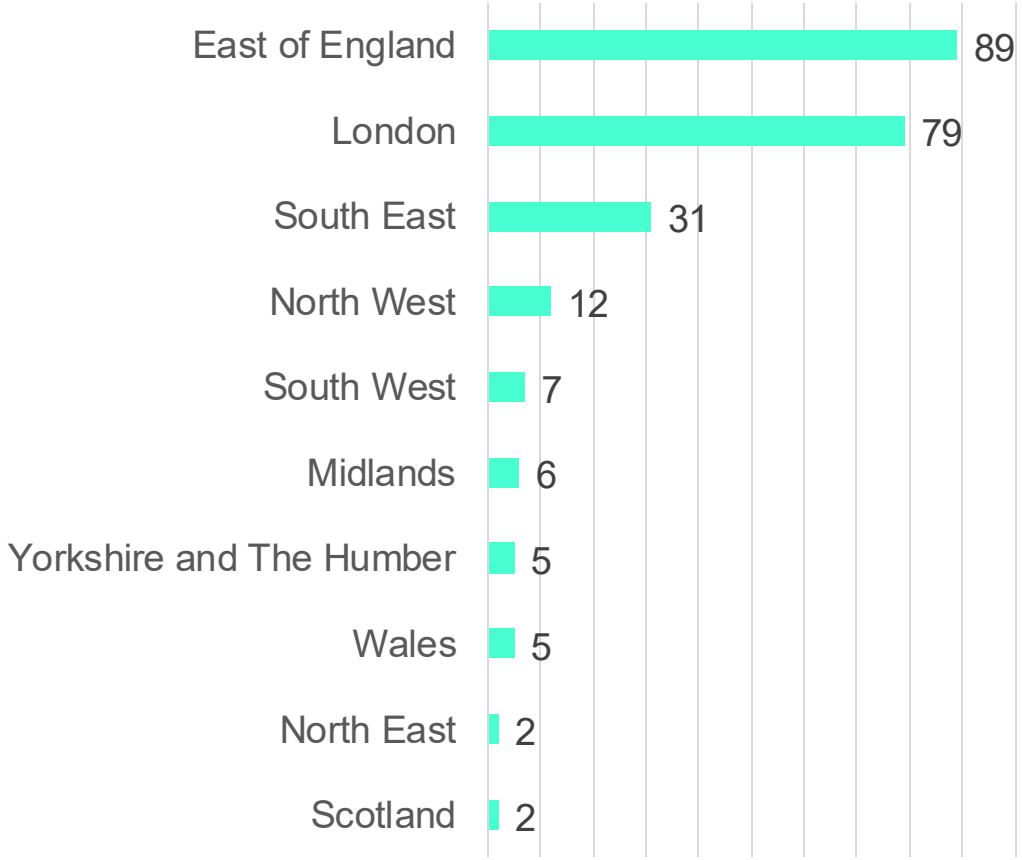
INDUSTRY FOCUS IS ON SOFTWARE, IT AND TELECOMS

Number of companies



Source: Beauhurst analysis

THE COMPANIES ARE CLUSTERED AROUND CAMBRIDGE



Cambridge clustered

in

Software, tech and telecoms

Ring Hall of Fame companies are major contributors to the

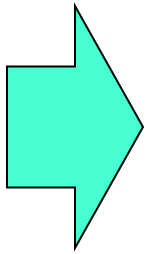
Cambridge technology industry cluster

Source: Beauhurst analysis

Key feature of the Ring organisation design
Ring
Ring
Ring
Ring

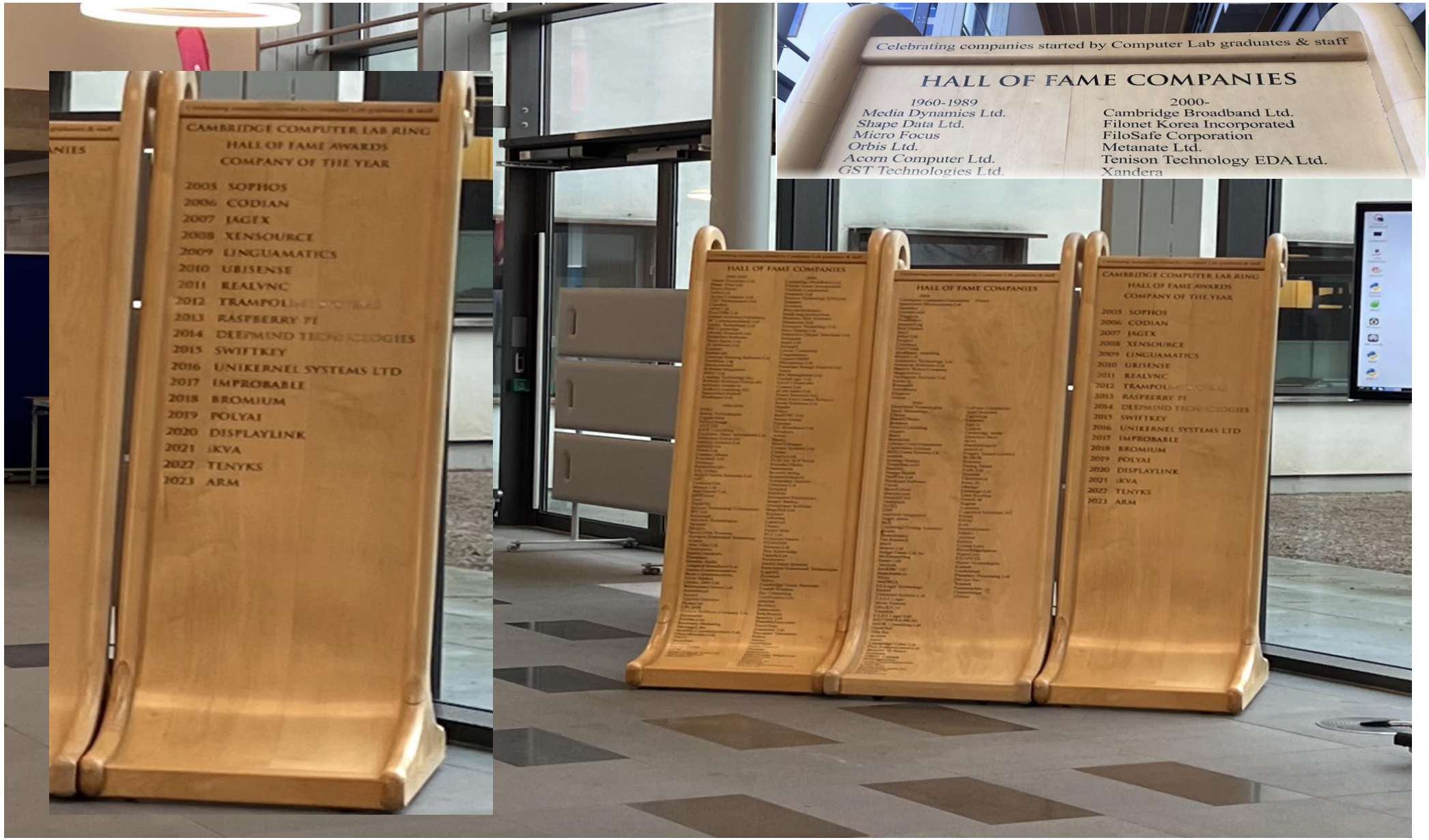
TOPICS

What has the Ring done?



What this means for the stakeholders

What has to change as a result



Key feature of the Ring org. design

GROWTH LEVERS FOR RING START-UPS

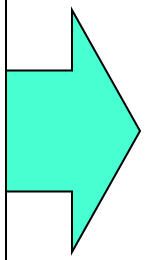
THE UNDER EXPLOITED ECONOMIC IMPACT OF RING START-UPS

More start-ups

1. Grow Computer Lab size
2. Increase % of entrepreneurial Lab students
3. Invest in inspiration

Address richer customer problems

Radically upgrade management skills



UPSIDE POTENTIAL ECONOMIC IMPACT OF RING START-UPS

8x more start-ups could happen if:

1. Double the Computer Lab size
2. Double % of entrepreneurial students in the Lab
3. Double the level of inspiration

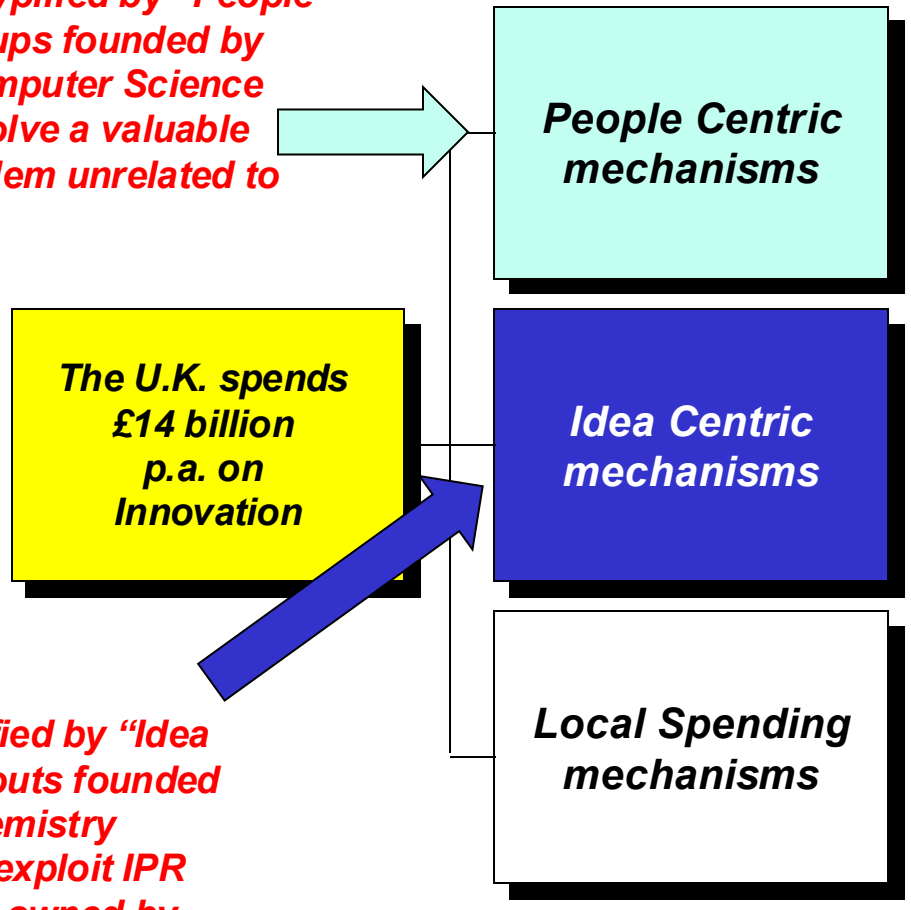
e.g. Double value of customer problems

10 x management skill: hire & train better

Upside could be:
2 x
2 x
2 x
2 x
10 x

THERE ARE A WIDE RANGE OF MECHANISMS THAT TURN SCIENCE INTO GROWTH

Cambridge is typified by "People Centric" Start-ups founded by Cambridge Computer Science graduates to solve a valuable customer problem unrelated to their research



- Education of graduates taking jobs in industry
- "B-rainfall" of future Hausers, Brins and Musks
- B-rainfallers may found Start-ups e.g. the 351 Cambridge Computer Lab Ring Hall of Fame companies aggregate market cap of £150 billion (est.)

Works well in SOFTWARE

- Technology Transfer and Licensing / University Spinouts
- Diffusion by publication, conferences and contacts
- Textbooks and examinations board revenues

Works well in DRUGS

- University staff spending in the local region
- University student spending in the local region
- Tourist spending

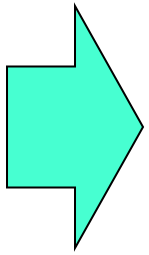
Oxford is typified by "Idea Centric" Spinouts founded by Oxford Chemistry academics to exploit IPR from research owned by Oxford University

"Don't treat software like a drug" per Stephen Allott

TOPICS

What has the Ring done?

What this means for the stakeholders

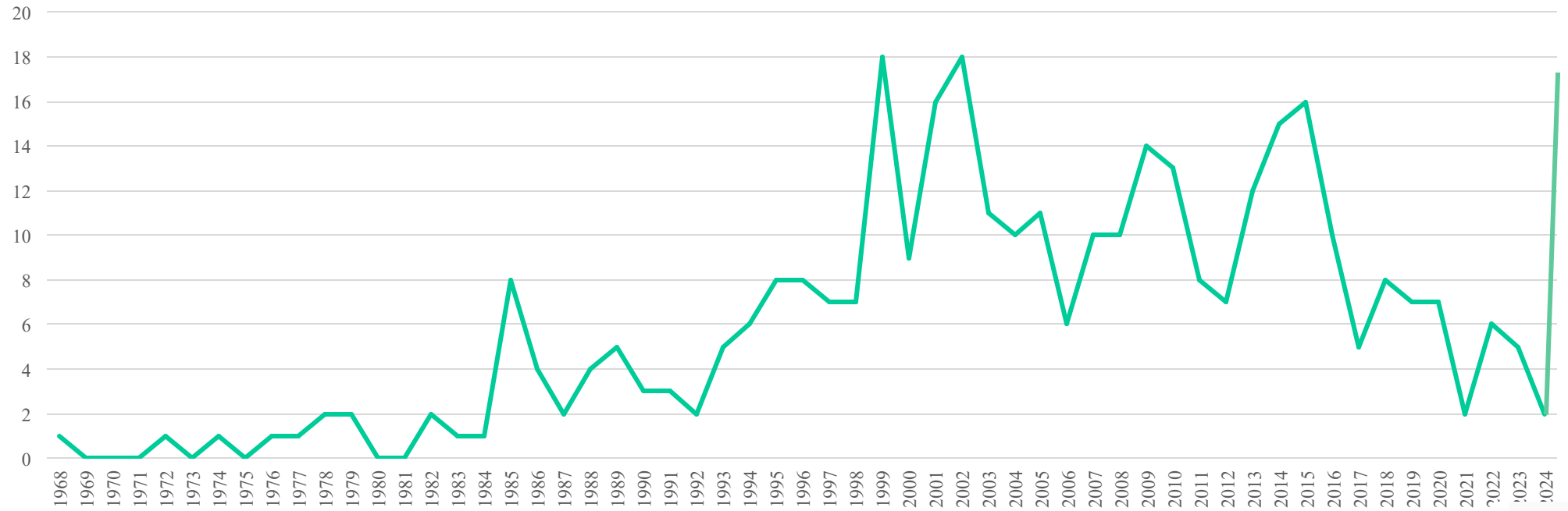


What has to change as a result

TRACK DOWN 100% OF THE HALL OF FAME AND INSPIRE MORE

RING HALL OF FAME COMPANY FORMATIONS BY YEAR

number per year



2025 so far is +15

Analysis shows that the Hall of Fame is more like 400 + companies

Cause of this decline in formations is not yet known. Hypothesis that the cause is lack of systematic discovery and inclusion in the Ring Hall of Fame list

Source: Beauhurst analysis

MAKE NEWS - THE “RING AWARDS” WERE LAUNCHED IN 2005

example of recent notice

23 April: Cambridge Ring Dinner

A reminder that the next Cambridge Ring Dinner is on Wednesday 23 April 2025.

Taking place at Queens' College, the event starts at 16:30 with short research talks and the Hall of Fame Awards ceremony. These will be followed by a drinks reception and dinner

THE RING AWARDS

Conceived, created and judged by Stephen Allott since 2005 with the purposes of:

- **Attracting top talent**
- **Celebrating the successes of Ring members**
- **Creating news “out of thin air”**

THE DREAMS OF RAHUL VOHRA INSPIRED BY THE HONOUR BOARDS: INSPIRE MORE

RAHUL VOHRA

• Cambridge Computer Lab Comp Sci	2002 - 2005
• Cambridge Computer Lab PhD	2006 – 2007
• CUE President	2006 - 2007
• CUE Chairman	2007 – 2008
• Rapportive Founded	2010
• Superhuman Founded	2014
• Superhuman Ring Product of the Year	2023

"I became aware of the Lab Ring as a graduate student,"

" It is amazing to see Superhuman on this list. I remember dreaming about building something meaningful everyday as a student."

"I have fond memories of the awards ceremony being over dinner. It's something that's very uniquely Cambridge and hopefully can continue happening!"

"I met some great people through it, like Eben Upton (Founder of Raspberry Pi)"

HIGH PRESTIGE WINNERS OF THE RING COMPANY OF THE YEAR AWARDS

2005	Sophos
2006	Codian
2007	Jagex
2008	Xensource
2009	Linguamatics
2010	Ubisense
2011	Real VNC
2012	Trampoline
2013	Raspberry Pi
2014	Deepmind
2015	Swiftkey
2016	Unikernel
2017	Improbable
2018	Bromium
2019	PolyAI
2020	Displaylink
2021	iKVA
2022	Tenyks
2023	A.R.M.
2024	Tractable

UNIVERSITY OF CAMBRIDGE
Department of Computer Science and Technology

Alastair Beresford
Professor of Computer Security
Head of Department

13 January 2025

Mr Stephen Allott
70 Eccleston Square Mews
London
SW1V 1QN

Dear Stephen,

I am delighted to confirm your appointment for three years as Chair of The Ring Hall of Fame Awards Panel with effect from 01 January 2025.

I would also like to reaffirm your status as an Honorary Member of the Department in recognition of your invaluable contribution to the department.

I very much look forward to our continued collaboration.

Yours sincerely,

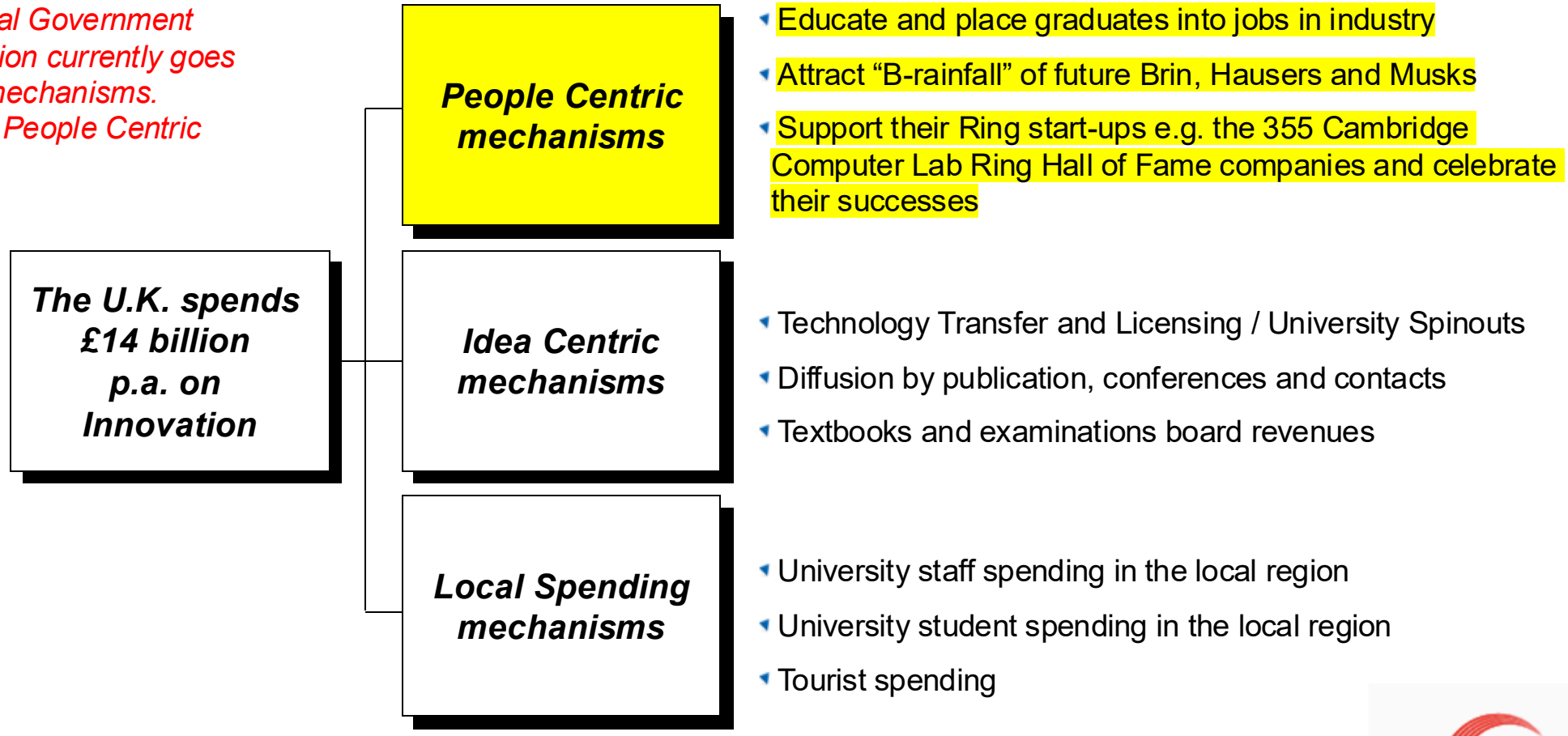
Alastair Beresford.

Alastair Beresford
HEAD OF DEPARTMENT

Thanks so much for taking this on — I'm looking forward to working with you over the

THE "CAMBRIDGE RING" WILL RECEIVE ROI ALLOCATED INNOVATION SPENDING

The £14 bn annual Government spend on innovation currently goes on Idea Centric mechanisms. None is spent on People Centric mechanisms



Note on Business Cases

How does one do a business case for a policy intervention given the twin problems of projecting future cashflows and there is no counter factual?

This is in my view a conventional Treasury social value assessment combined with a NPV model approach.

Current policies should be subject to the discipline of a business case. These should be zero based with no grandfathering of current policies and practices.

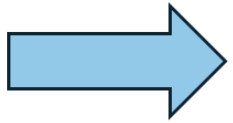
The Tripos exam question will be:

1. List comprehensively all the mechanisms which lead from science to growth
2. Describe how each mechanism operates
3. Describe the levers which can boost each mechanism i.e. how each might be catalysed with money
4. Scope the return function of each boosting lever
5. Explain how the return might vary with the circumstances of any particular case
6. Estimate the potential returns on interventions for a set of Cambridge start-ups (e.g. for the Cambridge Ring) where a start-up includes a graduate founded company located anywhere or located in the UK or in a CB post code
7. Estimate the sum of Idea Centric interventions outside Pharma that have been made in Cambridge University
8. Estimate the Social Value / NPV of those interventions in fact
9. Estimate the Social Value / NPV had those interventions gone to start-ups
10 Compute the difference (the public value foregone)

Value $100's billions

WE SAY "BOTH ROUTES CAN BE GOOD" LET THE ROI DECIDE

UNIVERSITY OF CAMBRIDGE

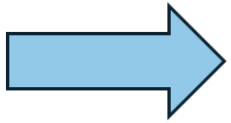


brilliant *leaders*

ARM

Brilliant researchers .....

UNIVERSITY OF CAMBRIDGE



brilliant *research*

Mono-clonal Anti-bodies

Value $ billions

SHIFTING TO THE LAB / CLUB / RING

MERELY A SMALL FRACTION OF THE

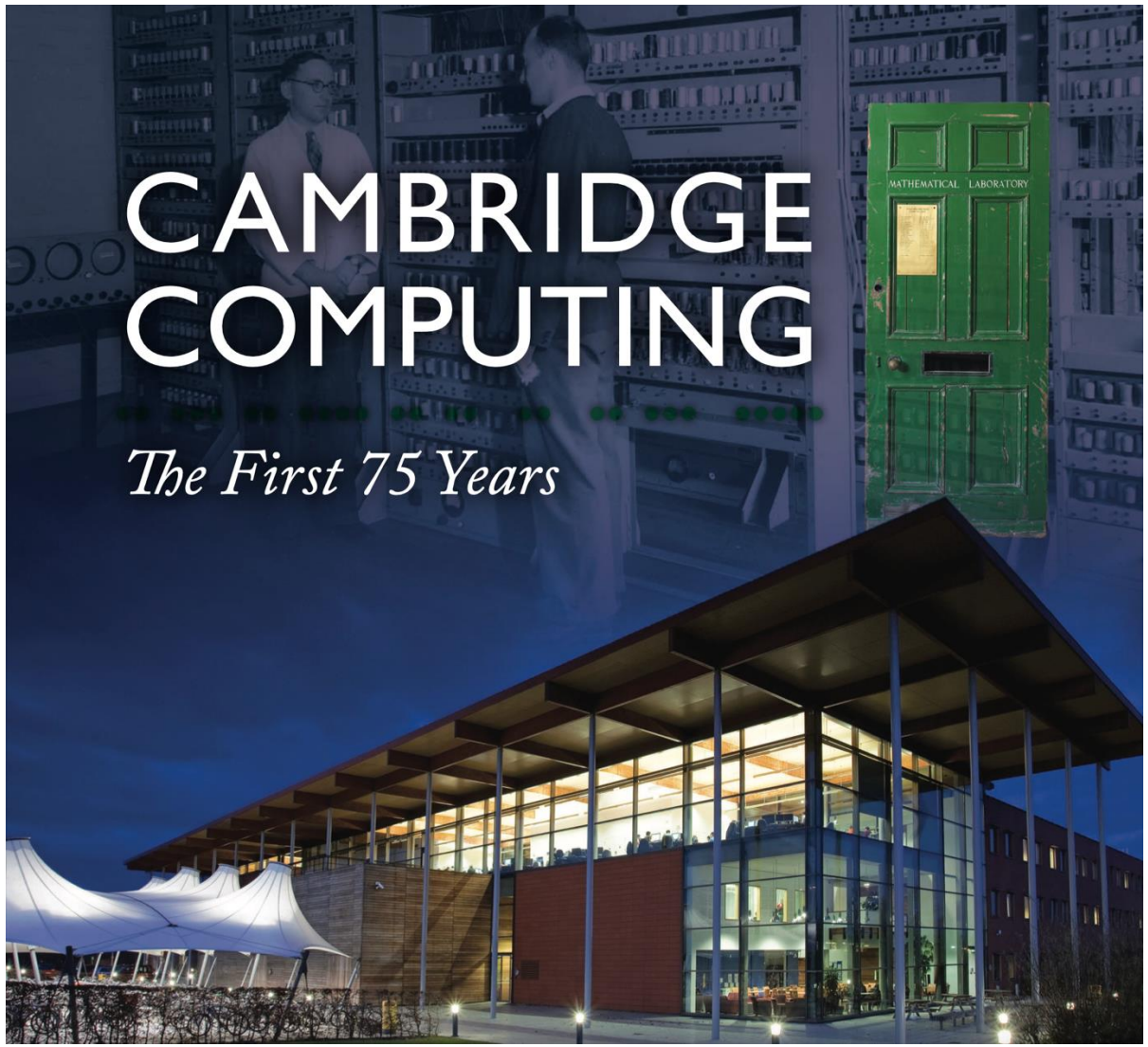
BILLIONS CURRENTLY BEING SPENT

ON INNOVATION WOULD CREATE A

HUGE UPSIDE

TAKE - AWAYS

The Ring is the THING.	**“WOW”**
Big changes.	**“NOW”**
Move the money.	**“OW”**



HALL OF FAME COMPANIES

1960-1989

Media Dynamics Ltd.
Shape Data Ltd.
Micro Focus
Orbis Ltd.
Acorn Computer Ltd.
GST Technologies Ltd.
Camdata
APM Ltd.
First DBS Ltd.
Global Software Publishing
PC Communications Ltd.
Qudos Technology Ltd.
SRI Cambridge
Olivetti Research Ltd.
Perihelion Software
Three-Space Ltd.
Xi Software Ltd.
Equisys
Sophos plc
Cunning Running Software Ltd.
NextBase Ltd.
Questionmark
Software Integrators
JMEC Ltd.
Leading Technology Inc.
Rubicon Software Group plc.
Software Solutions
Consulting AG

2000-

Cambridge Broadband Ltd.
Filonet Korea Incorporated
FiloSafe Corporation
Metanate Ltd.
Tenison Technology EDA Ltd.
Xandera
Zoonami
Blue technologies
break-step productions
Business Web Software
Datanomic Ltd.
Governor Technology Ltd.
Grex Games Ltd.
Interactive Digital Television Ltd.
Ionsquare
Jagex Ltd.
Jawasoft
Lemur Consulting
Linguamatics
Linguit GmbH
Micropraxis Ltd.
Paradigm Design Systems Ltd.
Azuro
Bid Management Ltd.
CacheLogic Ltd.
Level 5 Networks
Cotares Ltd.
eCosCentric Ltd.
Fraser Research Inc.
Great East London So
Solutions Ltd

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