




Industrial Strategy and R&D

The Foundation of Science and Technology

David Willetts

18th October 2017

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A crude history of Industrial Strategy

- Gentleman scientist – up to WWI
- Warfare State -1920-1970
- Disengagement from applied research : Rothschild bastardised. 1970-1990
- Reconstructing Industrial Strategy: on top of a prior implicit science strategy

Underlying Continuities in Research Strategy

RF

- To pursue research excellence across a wider range of disciplines than any other medium sized economy
- To reward research excellence even at the expense of other objectives
- To base this research in universities and thus protect the Humanities and weaken business links
- To operate a decentralised trust-based system with limited substantive strategies

Three doctrines shaping the British model

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- Dual funding: University v Research Council funding
- Rothschild: Science budget v departmental R&D
- Universities v public sector research establishments

Dual funding

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- Low trust transactional Research Council funding (£2.7b)
- High trust patient substitute for endowment from HEFCE (£1.6b)
- But a gap – no high trust funding outside universities.

Rothschild

RF

“ R&D with a practical application as its objective, must be done on a customer-contractor basis.....Basic, fundamental or pure research, called basic research in this report, has no analogous customer-contractor basis...”

Haldane Model: Science budget v Departmental R&D

After Rothschild

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- 25% cut from Research Councils for Departments
- What happens to the department as customer?
- Is the company the customer?

Universities v research institutes

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- Universities in the private sector
- Public sector research establishments:
- Conserving data – BGS
 - Measurement and standards – NPL
 - Doing Research - LMB

Problems sustaining PSREs

RF

- Public sector rules
- Departmental insouciance
- Privatisation
- Competitive bidding v core capacity
- The Manchester Guidelines

Industrial strategy: Horizontal v Vertical

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Picking winners?

Sectors

Places

Challenges

Technologies



RF

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DAVID WILLETTS



A UNIVERSITY
EDUCATION

Britain's universities are more important than ever and this is the first book in a generation to look at them so comprehensively

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A University Education

This is the authoritative, up to date account of how Britain's universities work and what the student gets. It blends history, economics, and David Willetts's own direct experience of policy making. It links the university to the rest of the education system and shows how the unusual structure of English higher education with competitive admissions influences the behaviour of schools. He argues that three years at university are at least as transformational as the child's first three years and makes the case for growth both in the number of students and universities.

- University funding is once again a hot topic and there is a clear account of how the system works and how it could be changed.
- Fresh evidence shows how an unusually high proportion of Britain's research happens in universities – with important implications for innovation and commercialization.
- The book shows how two powerful contemporary trends – globalization and digital technologies – will shape higher education.
- Willetts ends with a powerful and personal plea to universities to help tackle what he sees as the key weakness of English education – early specialization.

Throughout there are illuminating comparisons with universities in the US, Germany and elsewhere. The book is also unusual in drawing on insights from a range of campus novels.

Britain's universities are more important than ever and this is the first book in a generation to look at them so comprehensively.



DAVID WILLETTS is well placed to write the authoritative book on British universities. He has visited most of them. He is an honest friend with direct experience as Cabinet minister responsible for universities and science in the Coalition Cabinet. He remains closely involved as Visiting Professor King's College, London and as adviser to 2U the American ed tech company. He also participated in the scrutiny of the new legal framework for universities and research in the Lords. He is an Honorary Fellow of Nuffield College, Oxford. He is Executive Chair of the Resolution Foundation.

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