

Universities and Knowledge Transmission, Transfer and Exchange: The Bletchley Park Model

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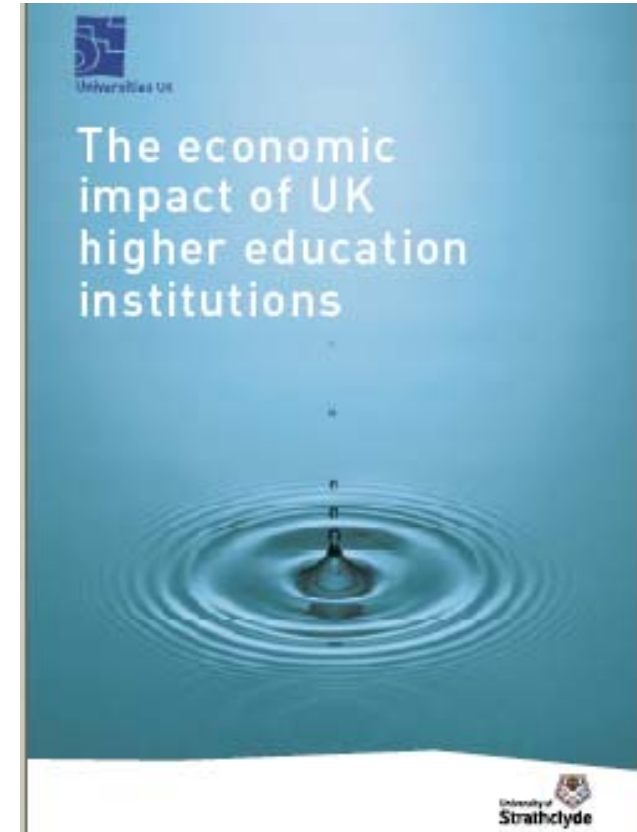


Universities and Knowledge Transmission, Transfer and Exchange

- Increased drive to measure the 'economic impact' of Knowledge Transfer from Universities
- Beyond Bugs and Drugs
- Definitions and Language
- The Bletchley Park Model
- Developing 'metrics' to estimate the value of knowledge transfer from HEIs : key issues
- Outputs and Outcomes

Impact of Higher Education Institutions on *Regional Economies* A Joint Research Initiative

- Increased drive to measure the 'economic impact' of Universities and knowledge transfer
- Government seeking metrics for knowledge transfer
 - to assist in resource allocation
 - to show evidence of return on investment
 - to enable general evaluation of efficiency and effectiveness
 - to give some indication of the economic and social impact of HE



Beyond Bugs and Drugs

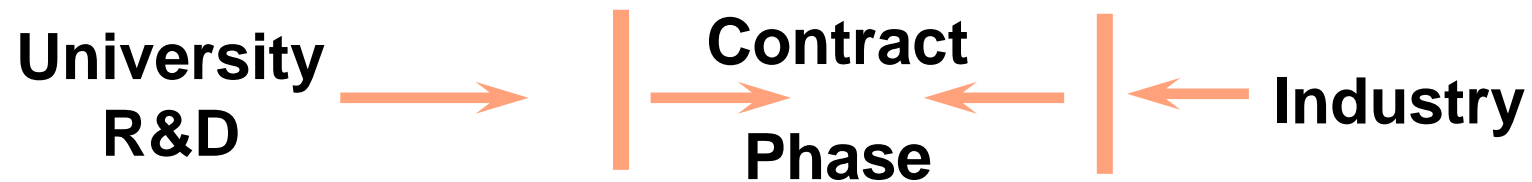
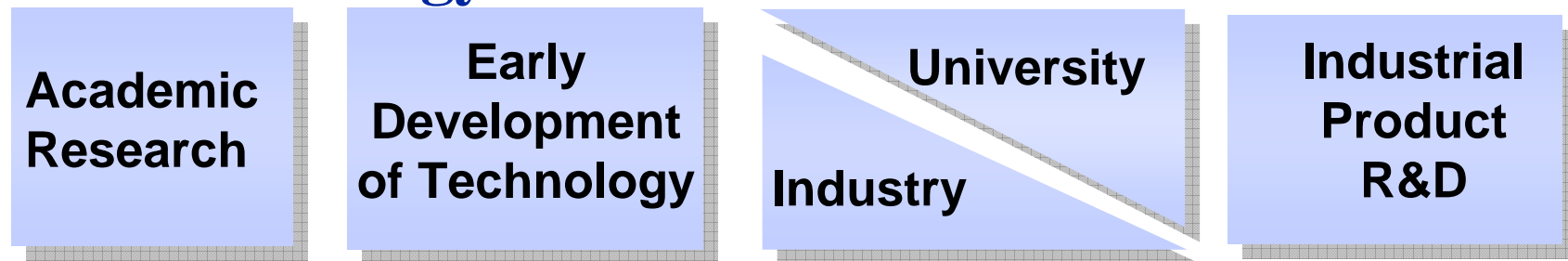
- Limitations of current KT/KE focus: the readily available data encourages a focus on narrow aspects of HEI activity - e.g. patents and licensing, no. of 'spin-off companies' created
- – leading to an over emphasis on commercial interactions or tangible products/inventions from Science & Engineering (the *Bugs and Drugs* agenda)
- Much wider impact of Universities (social, cultural, environmental) but Non-commercial work of universities (eg public policy advice, community engagement) is overlooked (Does under-priced mean undervalued?)

Definitions and Language: Knowledge Transfer, Knowledge Exchange or Knowledge Transmission?

- No common understanding of terms
- Originally called 'Technology Transfer'
- Based on concept of a linear process of a 'development continuum'
- Knowledge Transfer or Knowledge Exchange?
- Universities create knowledge... but much (most?) is not creation of new knowledge but interpretation, decodifying and repackaging of pre-existing knowledge
- Also Universities in business of *transmitting* knowledge – not automatically transferred or exchanged

1998 – a linear concept of ‘technology transfer’

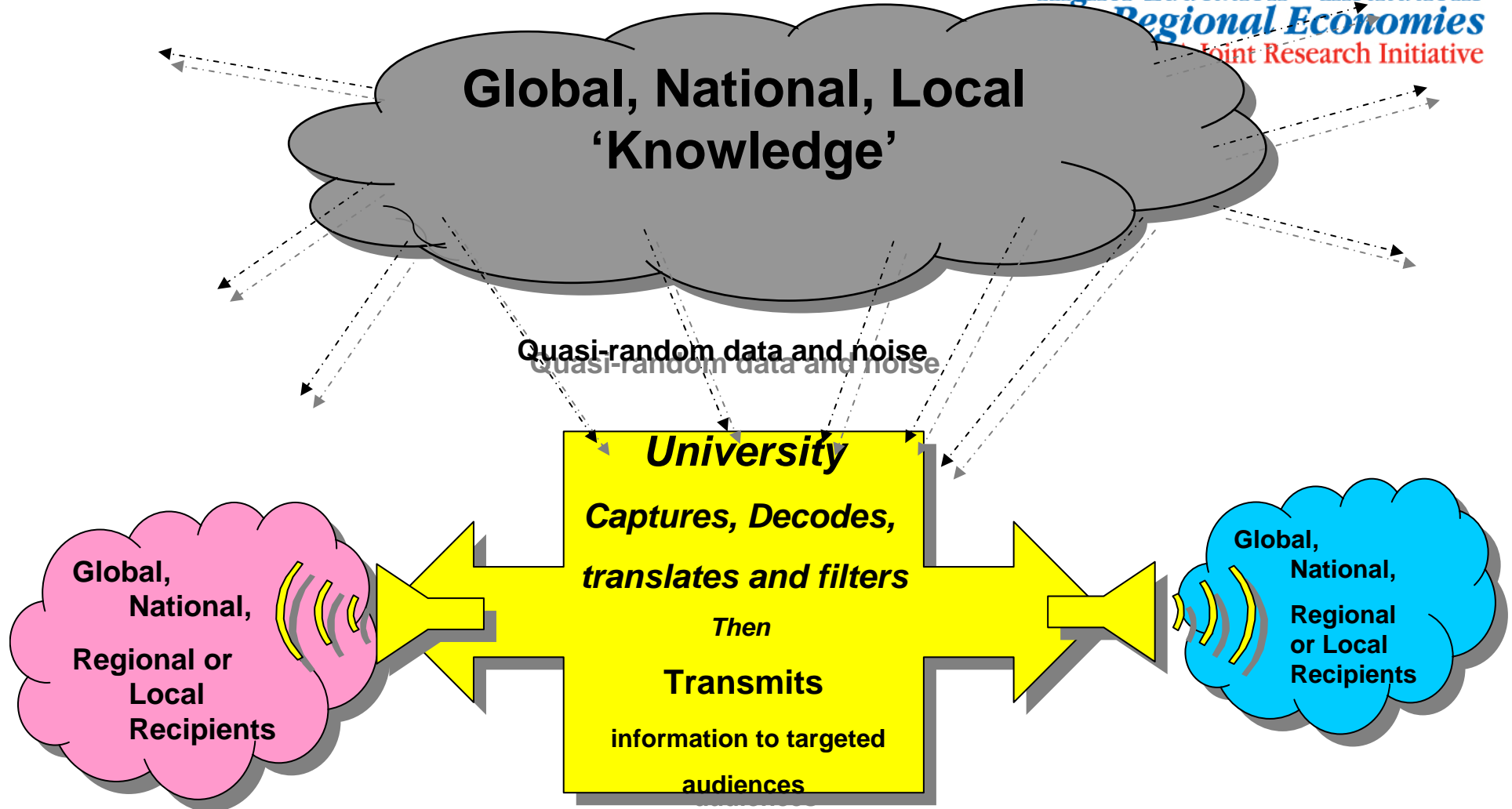
The Technology Continuum



Source: UK for JP Arbutnott presentation to ACU 1998 on the role of universities in economic growth

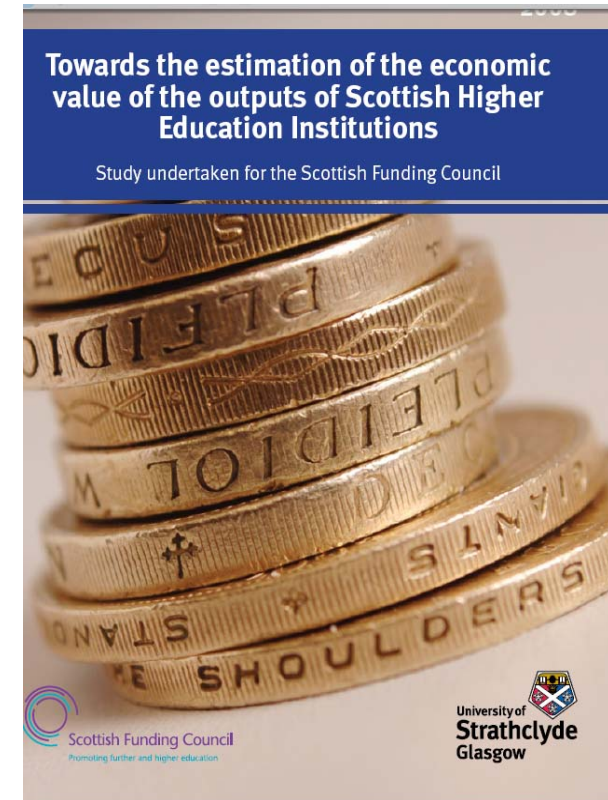
The Bletchley Park Model

Impact of
Higher Education Institutions
Regional Economies
Joint Research Initiative



*Towards the estimation of the economic value
of the outputs of Scottish higher education institutions*

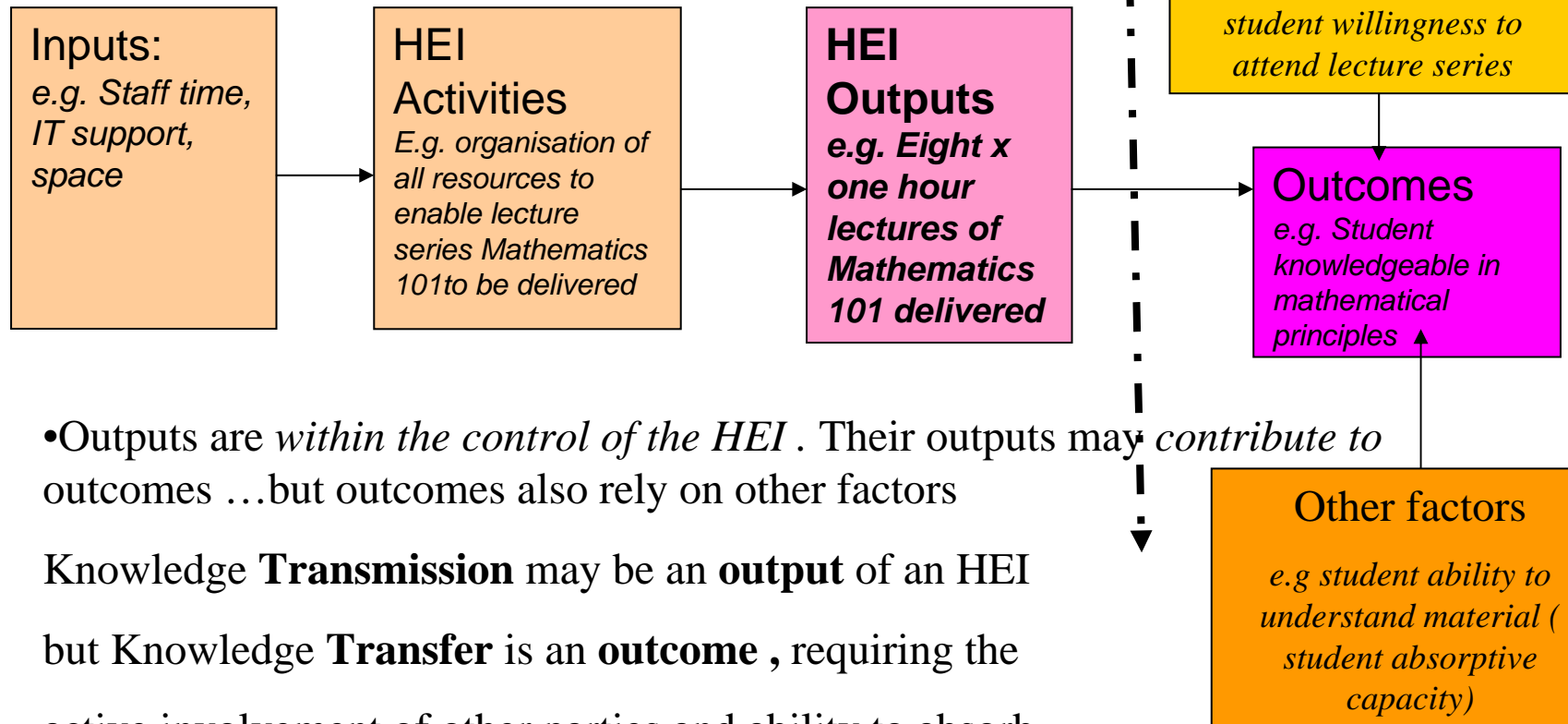
- Initial pilot case study work (supported by Nuffield Foundation) 2004
- Methodology development report
- ‘Next Steps’ pilot project for the SFC (Kelly, McNicoll & Brooks 2008) applying the methodology to 3 areas of activity:
 - cultural outreach
 - community outreach,
 - public policy advisory work
- Aimed to use real HEI data to illustrate how these areas of external engagement can be quantified and estimates of economic value made
- Also developed conceptual framework further to identify potential PIs or ‘metrics’ for some non-market areas of knowledge transfer



Development of 'metrics' for Knowledge transfer and HEIs : Key issues

- The legal and economic status of UK higher education institutions and how this affects motivations and behaviour
- Complex relationship between UK HEIs and government and crucial importance of differentiating between higher education **institutional outputs** and government's **wider desired outcomes**
- Understanding different types of 'value' (financial, economic, market, social etc)

Outputs and Outcomes



•Outputs are *within the control of the HEI* . Their outputs may *contribute to* outcomes ...but outcomes also rely on other factors

Knowledge **Transmission** may be an **output** of an HEI but Knowledge **Transfer** is an **outcome** , requiring the active involvement of other parties and ability to absorb

the knowledge transmitted. Hence an HEI cannot be measured on its success in knowledge transfer as this is beyond its boundaries.

Estimating economic value of HEI outputs

- Definition and Identification of outputs
 - *what an HEI actually produces*
 - Quantification
 - Volume terms
 - *how much of each output does the HEI produce*
 - Value Terms
 - *the market price of each output*

Economic Value = Volume x unit price

- *ALL HEI outputs are, in principle, quantifiable in natural volume units*
- *But many outputs are non-market*

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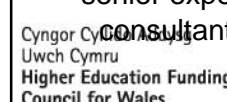
Public Policy Advisory Activity SOME EXAMPLES						
Type	Description	Type of staff (Senior academic/ Professor, Lecturer, Senior Manager (etc))	How Many staff	Approx time involved	Paid?	'Parallel market' or Free Market price comparison
Parliament Adviser	Advisor to Rural Affairs Committee	Senior Academic	1	15 days per year	Expenses only	Commercial consultancy rate for senior expert consultant
Member of Scottish Government Expert Advisory Group	SG Statistics Expert Users Advisory Group	Senior Academic	2	4 mtgs/yr x 3 hr mtgs	None	Commercial consultancy rate for senior expert consultant
Member of public policy network group	Local NHS Trust pharmacy network	Lecturer	3	Varied estimate 4 hours/month input per member of staff	None	Commercial consultancy rate for expert consultant
Board Member Government Agency	Regional Development Agency	Senior Manager	1	6 mtgs/yr x 3 hour nmtgs	Nominal/ honorarium	Commercial consultancy rate for senior expert consultant
Board Member Government Agency	Local NHS Trust	Senior Academic	1	6 mtgs/yr x 3 hr mtgs	Nominal/ honorarium	Commercial consultancy rate for senior expert consultant



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SOME EXAMPLES OF USING TIME COST FOR NON MARKET OUTPUTS						
Type	Description	Number/opening length	Av Visitor no	Estimated length of visits	Total time spent	Economic value
Temporary exhibition	James Joyce Exhibition	6 weeks, 6 day week	30/day	45 mns on average	6x6x30x45 =48,600 hours spent	Hours spent x DfT hourly rate for leisure time hourly rate (£4.46 2002 prices) = £216,756
Public Lecture	Annual Astronomy Guest Lecture	1 hour	200 attendees		200 HOURS SPENT	Hours spent x DfT hourly rate for leisure time hourly rate (£4.46 2002 prices) =£892
External Library visitors	External Library memberships	FTE Number (from SCONUL) 400	Est. annual no. of visits per FTE user (from SCONU) 64	EG. 1.5hours	400x64x1.5 =2880 hours spent	Hours spent x DfT hourly rate for leisure time hourly rate (£4.46 2002 prices) =£51,200