

Interviews with firms on innovation investment

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Overview

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Background

The purposes of this study are:

- To gather answers on R&D asset lives (section A)
 - To gather answers on the characteristics and asset lives of other intangible investments (section B)
 - To test the feasibility of the study. Can companies provide data on this type of information? Can a survey form collect sufficient information?
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- **Recommendation from the revision of the SNA 1993 is to include R&D as an intangible fixed asset.**
 - How do firms classify different forms of R&D?
 - How does long it take firms to develop an R&D project to a usable product / process?
 - What is the average time over which products / processes resulting from R&D benefit the business?

Method

- The development of the survey:
 - Pilot phase one = 10 Interviews (9 face to face & 1 telephone)
 - Phase two ≈ 30 telephone interviews
- Feasibility study vs. Data collection objectives
- Input from:
 - National Endowment for Science, Technology and the Arts (NESTA)
 - Organisation for Economic Co-operation and Development (OECD)
 - New Economy Measurement (ONS)
 - Economic Methods (ONS)
 - Surveys and Administrative Sources (ONS)
 - Survey Methodology and Quality (ONS)

“High-tech” / “Low-tech” split

“High-tech” example industries
Pharmaceutical
Aerospace
ICT
Engineering

“Low-tech” example industries
Consumer goods
Services

Respondent sector split	
"High-tech"	54%
"Low-tech"	46%
Total	< 40 firms

The two sections of the questionnaire

A: Technical (R&D) - Spending to resolve scientific and technological uncertainty.

B: Non-technical (R&D) - Spending to support the commercialisation of new knowledge in your business, or spending to develop new business processes or organisation.

“We do not distinguish between technical and non-technical like this... all departments are encouraged to work together on a project”

“I am the right person to talk to about section A (technical R&D), but section B is too wide ranging for one person to answer”

“It is very hard to separate technical and non-technical”

“This should be two questionnaires”

Characteristics of firms interviewed

Size of firm: Employment

Mean:	758
Smallest:	< 20
Largest:	> 7000

'Technical' R&D spend

"High-tech" mean:	£17 mil
"Low-tech" mean:	£955k
Smallest:	< £100k
Largest:	> £100 mil

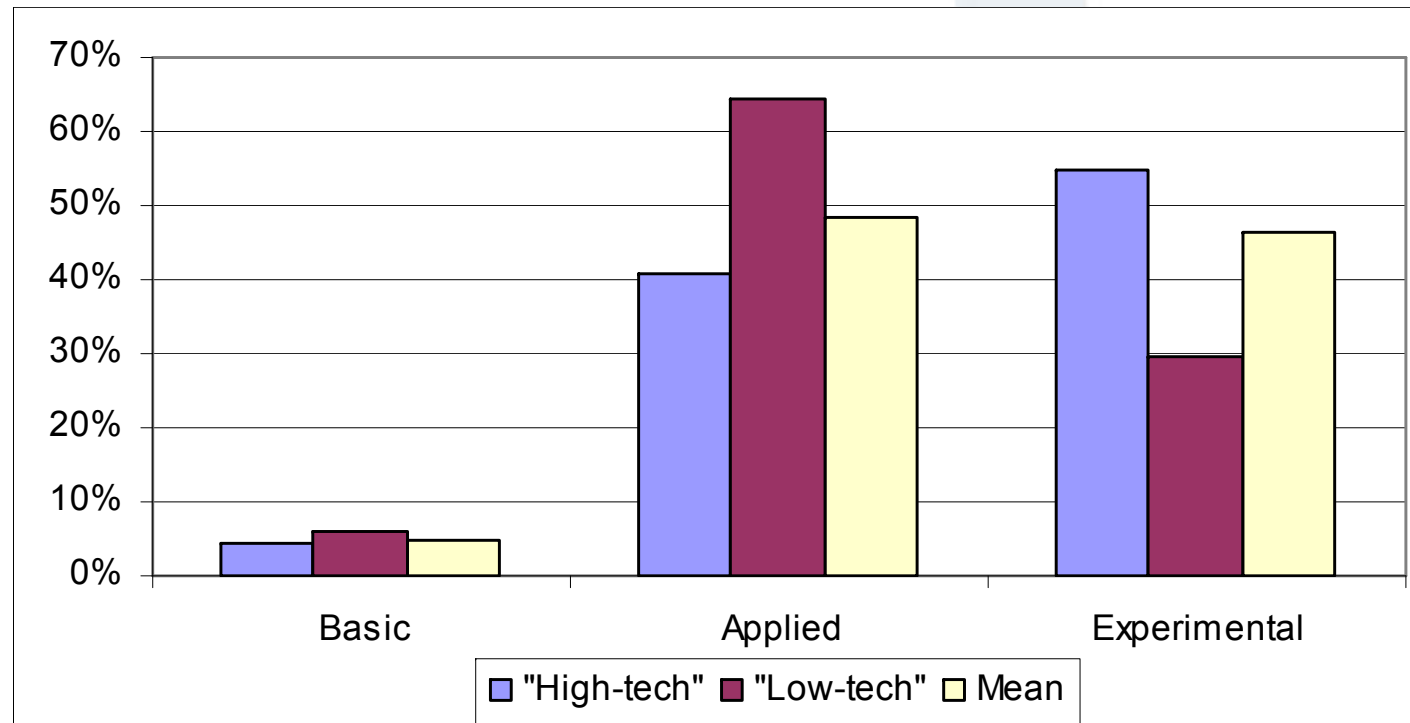
Response rates (ability to provide data)

	Part A	Part B
R&D manager	86%	64%
Finance manager	88%	88%
Director	71%	100%

Method of interview

Face to face	9
Telephone	≈ 31

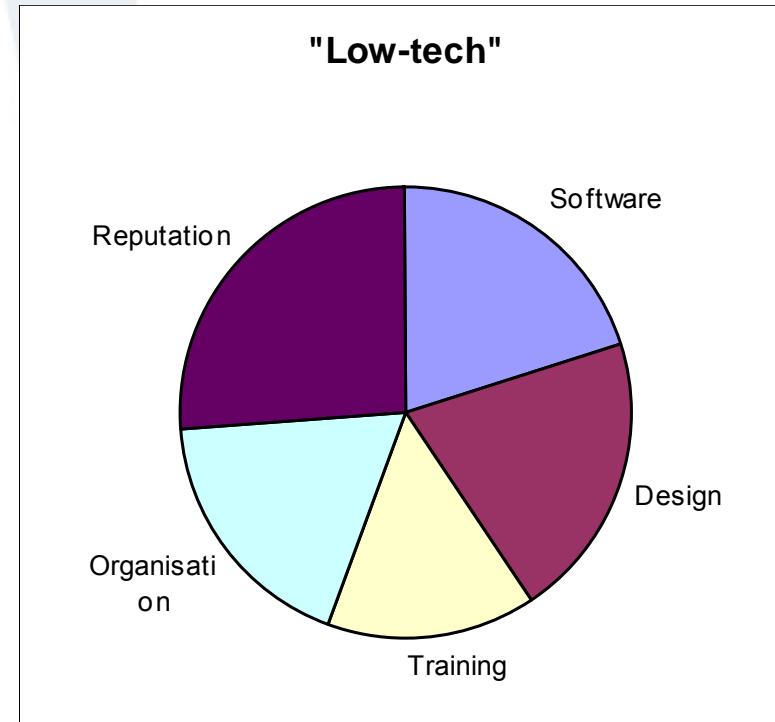
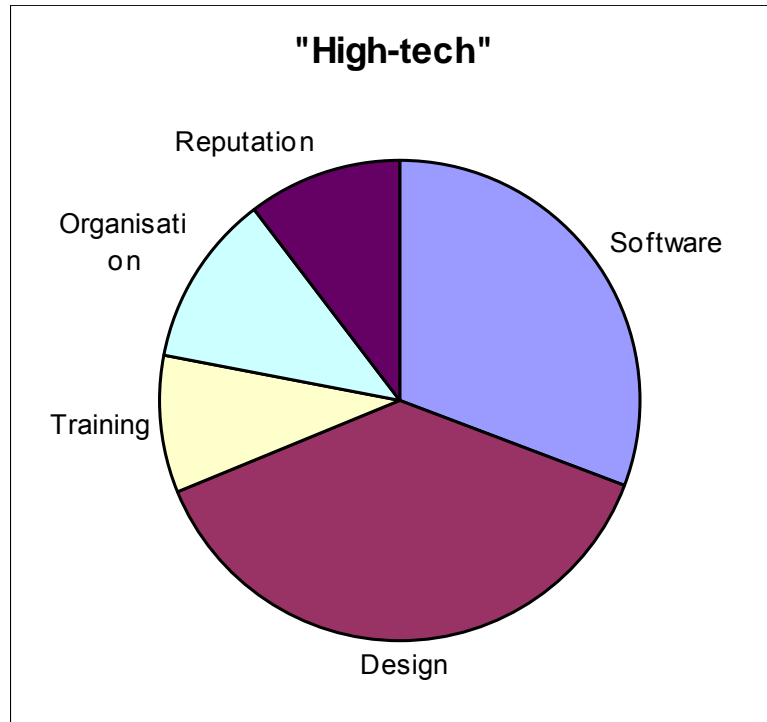
Section A results – Categories of research



“It is very hard to give figures here, categories are not pigeon holed like this”

- All sectors spend smallest proportion of their R&D spend on “Basic” research
- Basic research not seen as a commercial activity
- High-tech sectors spend most on “Experimental development”
- Low tech sectors spend most on “Applied research”

Section B results – categories of spending

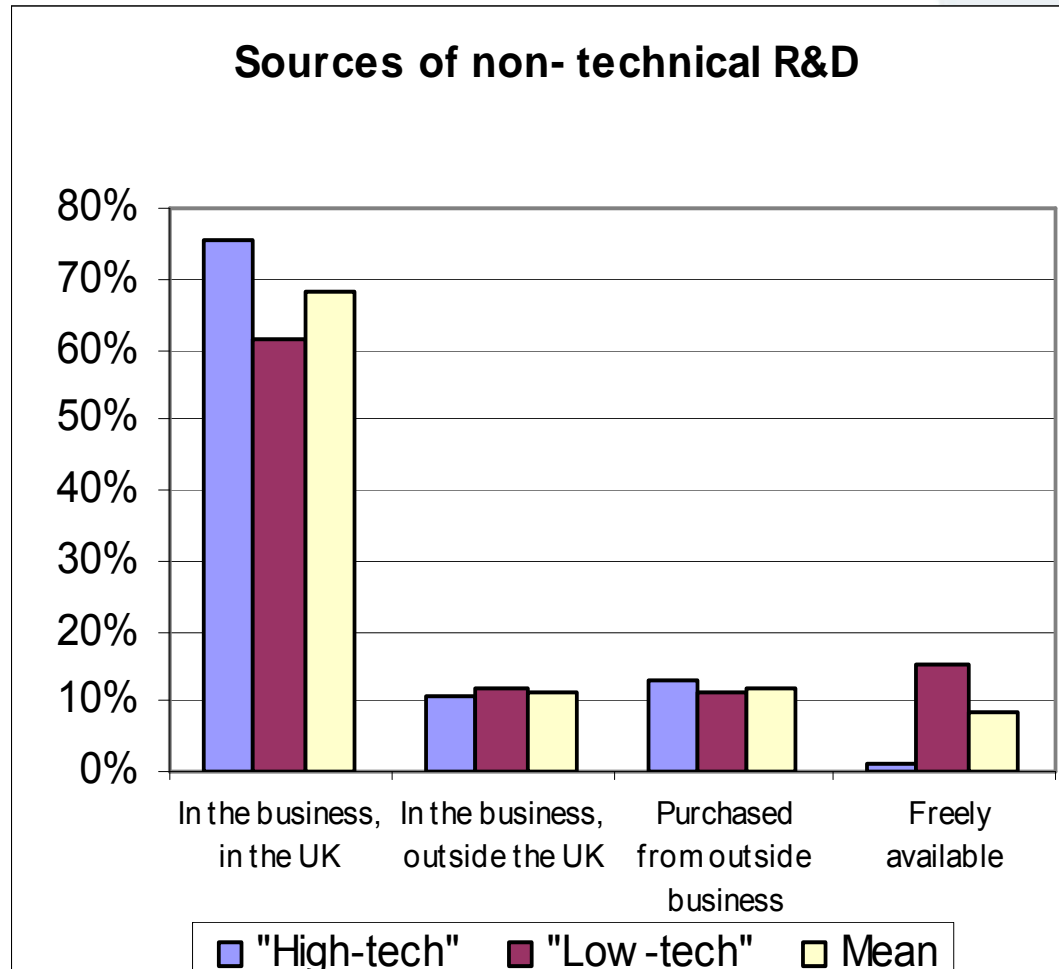


"Some of these activities are answered at group level; I can only speak for this plant"

"There is a residual amount of IT to keep the business running. I don't consider there to be any innovation involved in the IT spend"

"The product is the reputation. Branding is taken care of at head office"

Section B results – Sources of knowledge



- Fairly consistent answers across “high-tech” and “low-tech” sectors

- “Low-tech” sectors utilise noticeably more ‘freely available’ sources of knowledge. “High-tech” sectors hardly use this option (if at all)

- Further questioning has shown this category to include:

- Trade conferences
- Trade journals
- Relationships with academia
- The internet
- Copying competitors

Section A life-lengths

	Development (years)	Transition (years)	Use (years)	Total (years)
"High-tech"	2.4	1.0	8.5	11.9
"Low-tech"	1.5	1.0	6.0	8.2
Mean	1.9	1.0	7.1	10.1

"These life length phases feel unrealistic and not a reflection of real life"

"There is no 'transition phase'. This is a milestone, not a period of time."

	Projects
Shorter	14
Typical	40
Longer	9
Total	63

- 'Use' is often interpreted as an anticipated period (before obsolescence)
- One year "high-tech" development yields 5.1 years use
- One year "low-tech" development yields 5.5 years use

Section B life-lengths

	Development (years)	Transition (years)	Use (years)	Total (years)
“High –tech”	0.7	0.7	5.2	6.5
“Low-tech”	0.6	0.4	5.0	5.0
Mean	0.6	0.5	5.1	5.7

- From the descriptive statistics:

	Projects
Total	48

- Fewer examples given
- Consistent results between “high-tech” and “low-tech”
- Projects tend to be slightly shorter in “low-tech”

One year “high-tech” development yields 7.8 years use

One year “low-tech” development yields 8.8 years use

Life lengths – Summary

- Section A (technical R&D) projects have longer development transition and use periods
- Section B (non-technical) projects have very short ‘development’ and ‘transition’ stages and actually yield relatively longer ‘use’ lives
- “High-tech” sectors have longer life lengths across all stages

Conclusions – From results

Section A:

- High-tech sectors spend most on “Experimental development”
- Low tech sectors spend most on “Applied research”
- All sectors spend smallest proportion of their R&D spend on “Basic” research

Section B

- High tech sectors spend a lot more on software and design
- Low tech sectors focus on ‘reputation & branding’ and ‘organisational & business process improvement’ (within a smaller total)
- Section A (technical R&D) projects are about 55% longer
- Section B (non-technical) projects yield relatively longer ‘use to development’ ratios
- “High-tech” sectors have longer life lengths across all stages

Conclusions – From methodology

- **Positive responses:**

Managers feel that R&D has been neglected as an economic driver in the firm

- **It matters who you speak to:**

Section A – R&D representative

Section B – Manager with broad overview of company affairs

- **Generally feasible topic for survey:**

BUT the scope is too broad for a single respondent in all but the smallest firms

- **More work needed:**

Redesign the questionnaire so suitable without an interview

Not yet ready for large scale responses but there are issues which require more observations

Some definition / interpretation issues remain

Feedback has requested industry specific examples for definitions

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