



Overview ...

- Introduction to the Design Management Group
- Design Scoreboard
 - International indicators
 - Survey of design spend in the UK

Design Management Group

Understanding and improving the ways in
which design and new product development
are managed

Interests ...

The strategic role of design

Design trends and futures
Design as a strategic resource
Design in services
National design scoreboard
Design knowledge transfer

New product development

Fuzzy front end
Top management involvement
Boundary objects
New management tools

Design as an interface

Design in science
Consumer response
Design as an integrator in firms

Sustainable product design

Design principles
Product labelling

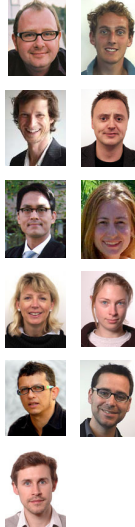
People ...

The strategic role of design

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Example projects ...

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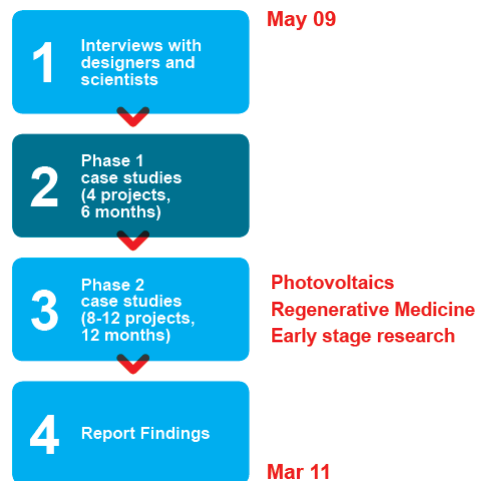
Design principles
Product labelling

Design in Science

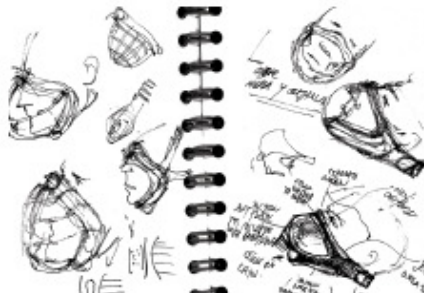
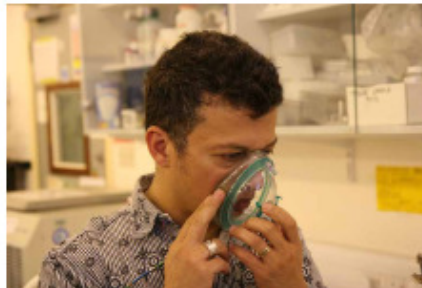
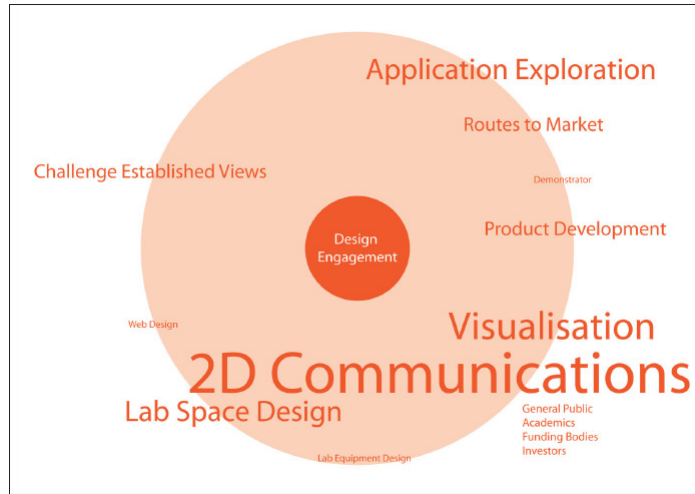
How and to what extent can design play a useful role in early stage scientific research?

How will the role and impact of design engagement be influenced by factors such as the type of science, the extent to which the science is applied and its complexity?

Design in Science



Design in Science





Motivations ...

- Little evidence to genuinely link design with economic performance
- No currently comparable international data on design
- Lots of data at a national level
- Design is often subsumed into discourse on innovation
- **Thus, to genuinely understand the impact of design, comparable data is essential**

Rank	Brand	Country	Revenue (\$B)	Market Cap (\$B)	Industry
1	COCA-COLA	USA	21.45	245	Food & Beverage
2	WALMART	USA	19.25	175	Retail
3	IBM	USA	17.75	145	IT
4	GE	USA	16.45	115	Energy
5	HELLER	USA	15.85	115	Food & Beverage
6	DUKE	USA	15.45	115	Energy
7	MICROSOFT	USA	14.95	115	IT
8	NIKE	USA	14.45	115	Retail
9	ROYAL	USA	13.95	115	Food & Beverage
10	WALMART	USA	13.45	115	Retail
11	WALMART	USA	12.95	115	Retail
12	WALMART	USA	12.45	115	Retail
13	WALMART	USA	11.95	115	Retail
14	WALMART	USA	11.45	115	Retail
15	WALMART	USA	10.95	115	Retail
16	WALMART	USA	10.45	115	Retail
17	WALMART	USA	9.95	115	Retail
18	WALMART	USA	9.45	115	Retail
19	WALMART	USA	8.95	115	Retail
20	WALMART	USA	8.45	115	Retail

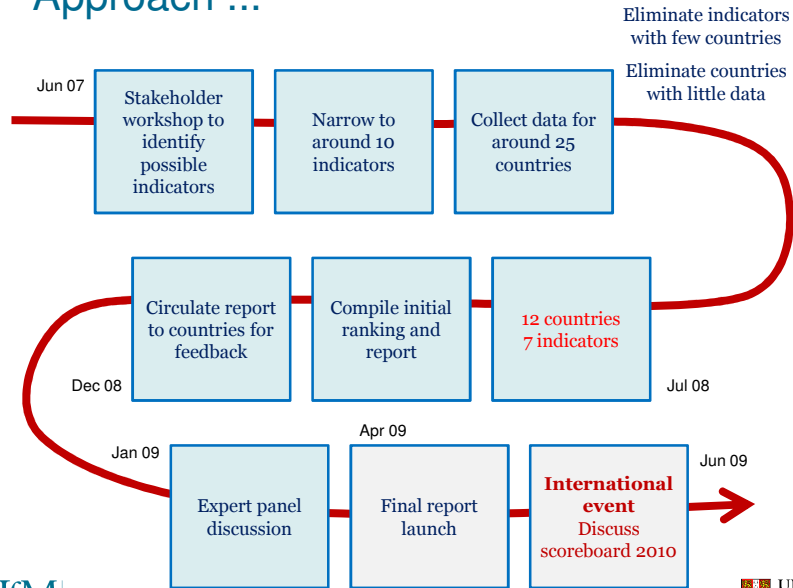
• Development of “knowledge”

- Includes ... Brand, Experiences, Promotions, Products, Services, Media, Information etc.
- **Not** a sub-set of innovation
- Many aspects of design do not result in “innovation”
- **Complements** innovation
- Often **necessary** for R&D

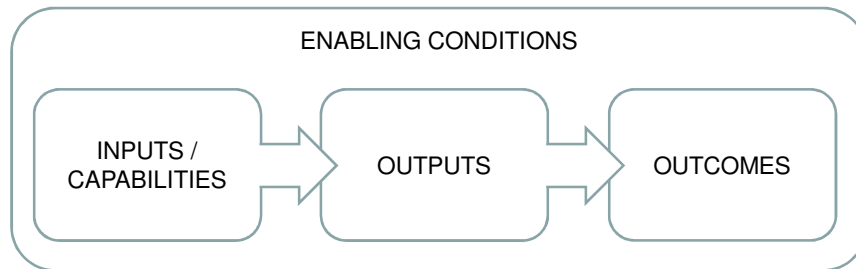
R&D ≠ Innovation ≠ Design

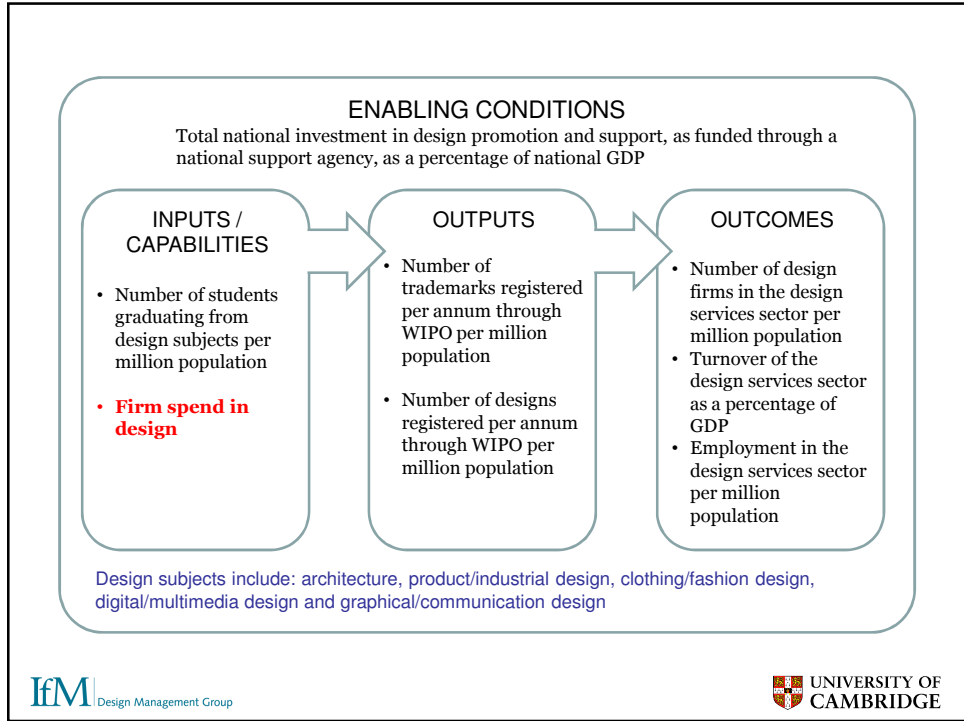
- Narrow definition “exploitation of technology”
- Includes “design” as a minor subset focused on products
- Ignores the wider benefits, uses and roles of design

Approach ...





ENABLING CONDITIONS



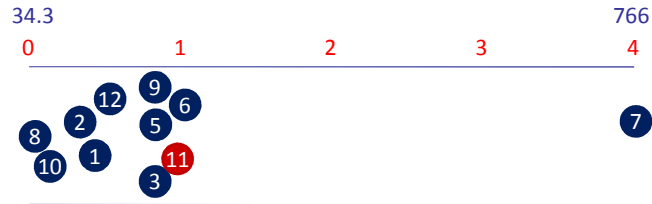


UK ...

	Units	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Total number of design graduates	No.	10,406	11,016	11,255	11,530	11,605	12,159	12,684	13,005	12,645	13,110	13,420	13,270
Total public spend on design promotion and support	UK £ (Millions)									7.25	7.83	8.50	6.00
Total number of WIPO Design Registrations	No.	8,970	9,592	8,511	9,655	9,768	7,828	9,192					
Total number of WIPO registered Trademarks	No.					34,534	30,595	28,351	28,755	29,821	32,044		
Total turnover of the design services sector	UK £ (Bn)					6.50	6.70	5.90	5.30	3.90	4.59	4.31	3.98
Total number of design firms	No.										12,450		
Total exports from the design services sector	UK £ (Bn)				0.358	1.00	1.00	1.20	0.63	0.55	0.70		
Total export of design goods	US \$ M										6,632		
Total export of design goods	KK £ M										3,863		
Total employment in the design services sector	No.					76,000	82,000	67,000	68,000	70,000	70,759	64,847	61,680
National statistics													
	Units	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Total National Population	Thousands ('000)	58,300	58,400	58,600	58,700	58,896	59,113	59,322	59,554	59,835	60,210	60,533	60,821
Total National Exports (goods and services) (UK £ M, current prices)	UK £ (m)					267,602	273,140	276,511	285,397	298,894	326,790	370,788	359,953
Total National GDP (UK £ Bn, current prices)	UK £ (bn)					950,561	994.3	1,044.1	1,118.2	1,184.3	1,234.0	1,301.9	
Design Indicators: Ratios													
		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Total number of design graduates per million population						197	206	214	218	211	218	222	218
Public investment in design support as a percentage of GDP										0.00001	0.00001	0.00001	
Public investment in design support as percentage of turnover of design										0.00186	0.00171	0.00197	
WIPO Design registrations per million population		154	164	145	164	166	132	155					
WIPO Trademarks per million population							584	516	476	481	495	529	
Turnover of design sector as a percentage of GDP						0.00684	0.00674	0.00565	0.00474	0.00320	0.00372	0.00331	
Total number of design firms per million population											206.776		
Export of design goods as a percentage of GDP											0.01182		
Exports from the design services sector as a percentage of GDP						0.00105	0.00101	0.00115	0.00056	0.00046	0.00057		
Exports from the design services sector as a percentage of national exports						0.00374	0.00366	0.00434	0.00221	0.00184	0.00214		
Employment in the design services sector per million population						1291	1387	1129	1142	1170	1175	1071	1014

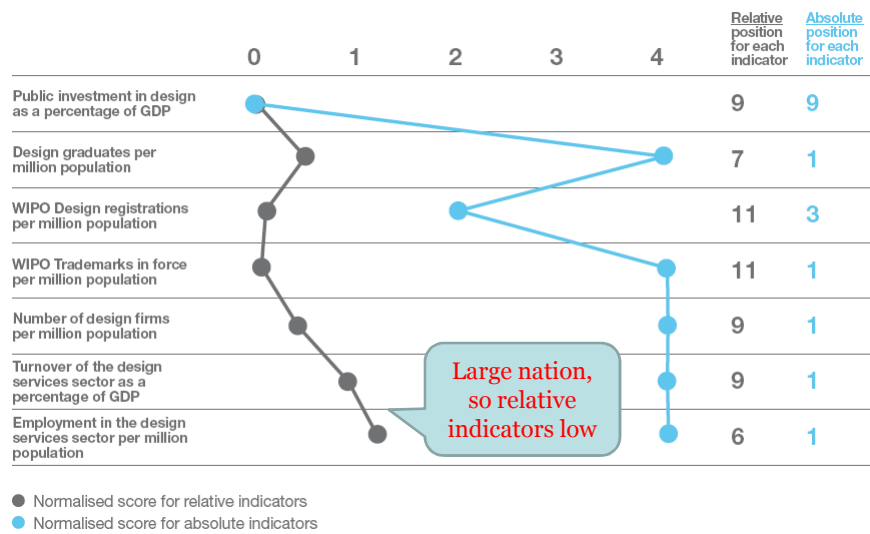



Design graduates per million popn ...

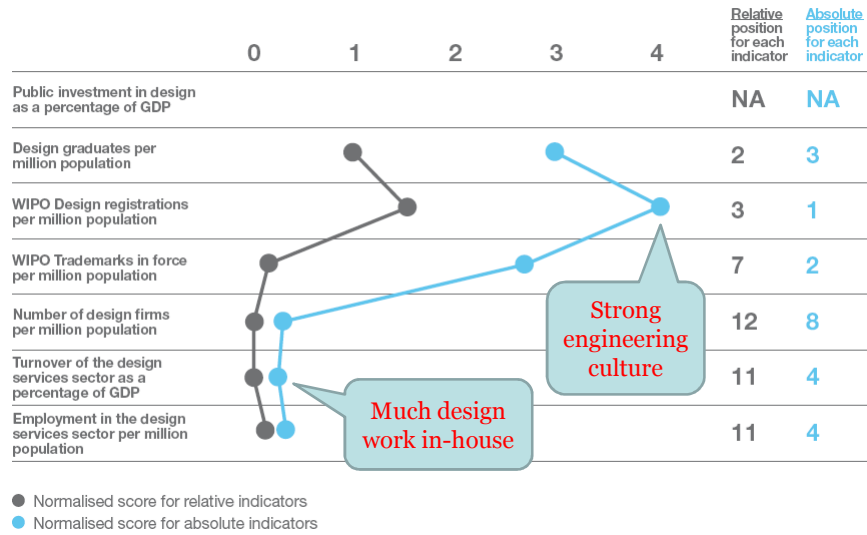


- 1 = Canada
- 2 = Denmark
- 3 = Finland
- 4 = Hong Kong
- 5 = Iceland
- 6 = Japan
- 7 = Korea
- 8 = Norway
- 9 = Singapore
- 10 = Sweden
- 11 = UK (218)
- 12 = USA

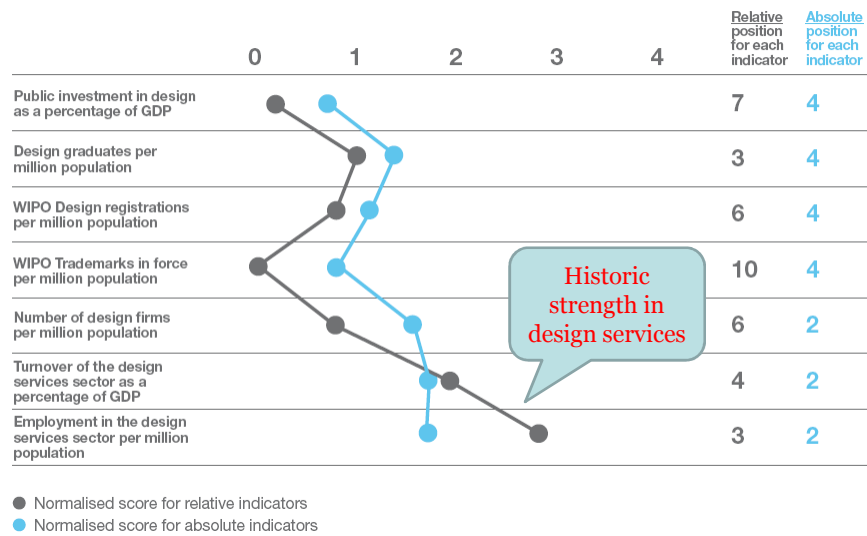
USA: Absolute ranking = 1, Relative ranking = 11



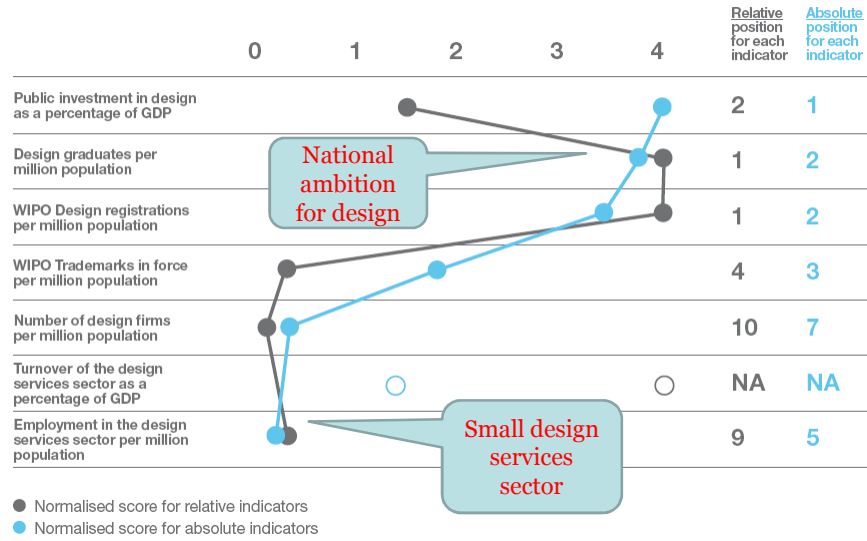
JAPAN: Absolute ranking = 3, Relative ranking = 10



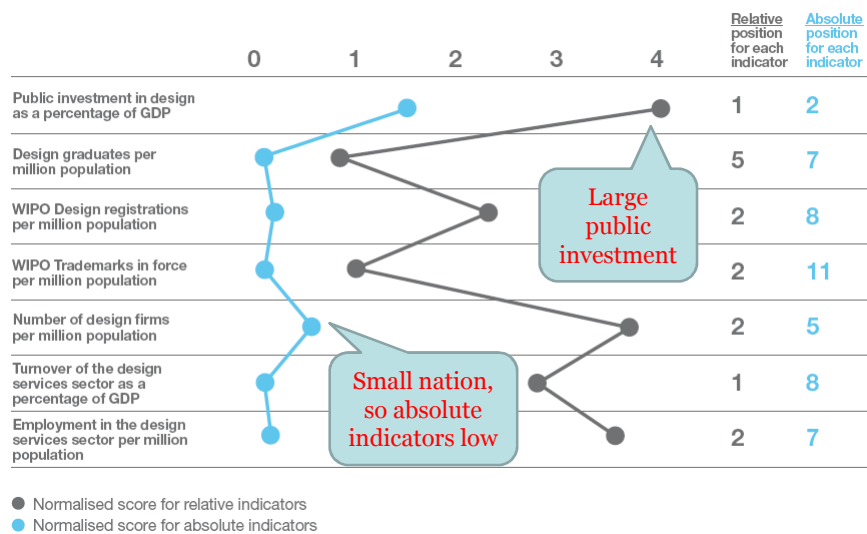
UK: Absolute ranking = 4, Relative ranking = 6



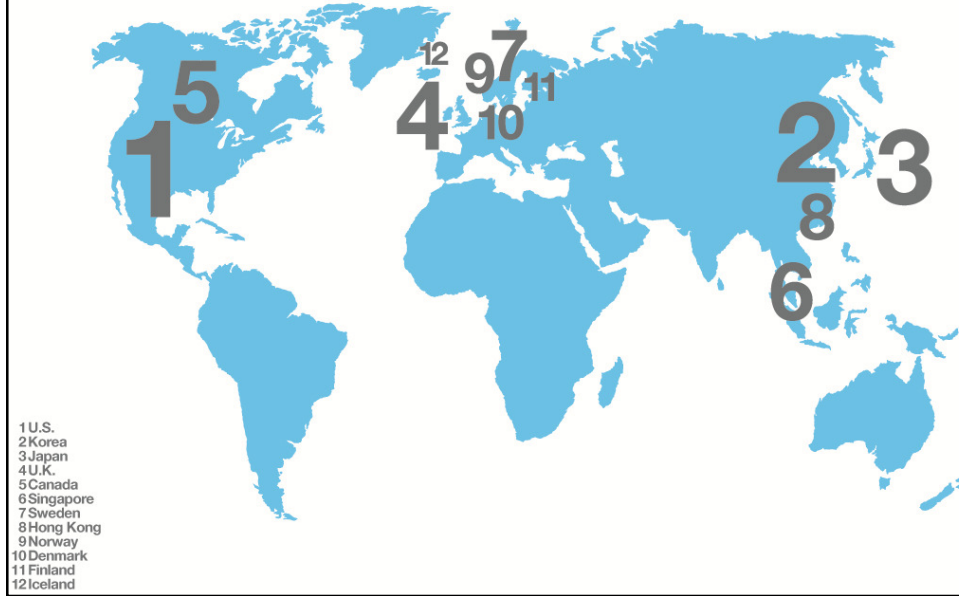
KOREA: Absolute ranking = 2, Relative ranking = 2



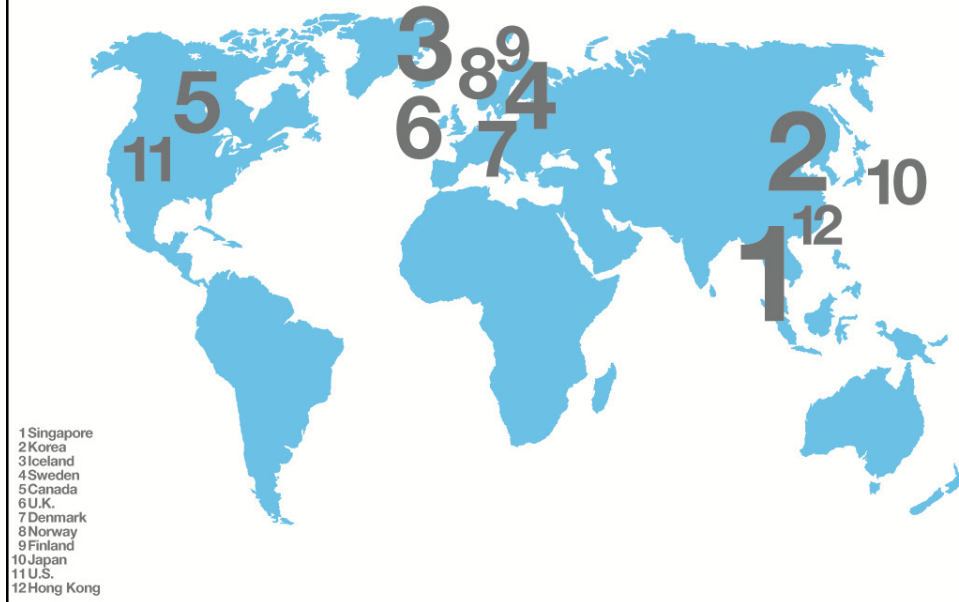
SINGAPORE: Absolute ranking = 6, Relative ranking = 1



National ranking of design capabilities:
based on absolute indicators



National ranking of design capabilities:
based on relative indicators



Other countries ...

- **Taiwan**
 - Some data, based on indicators available, would be 3rd, behind Singapore and Korea
 - Strength in public investment and design graduates
- **China**
 - Little reliable data, would be behind USA
 - But, emerging strength, masked by scale of country
- **France**
 - Sporadic data, would lie below Norway
- **Germany**
 - Sporadic data, would be positioned just behind the UK
 - Leading in WIPO design registrations

Implications for the UK ...

- **Significant strength in design education and employment in design in the UK**
 - But, an underlying downward trend, with a shrinking design services sector
- **Emergence of the far east as a growing centre for design**
 - Ambition matched with investment
 - Proximity to production an important factor

Methodological issues ...

- Used **best and most recent data** available
- Relative vs absolute measures; skews due to country scale (large and small)
- **Snap-shot data**, not trend data
- **Definitional inconsistencies**
- **Country selection** – insufficient data for Taiwan, China, Brazil, India etc
- Some **further measures** would provide a more complete picture

Further measures ...

- Employment of designers within industry
- Design graduates of overseas origins
- Number of design firms with >10 employees
- Exports from the design services sector
- Exports/imports of design goods (furniture, fashion, automotive, consumer electronics)
- **Design spend within firms ...**

Firm spend on design

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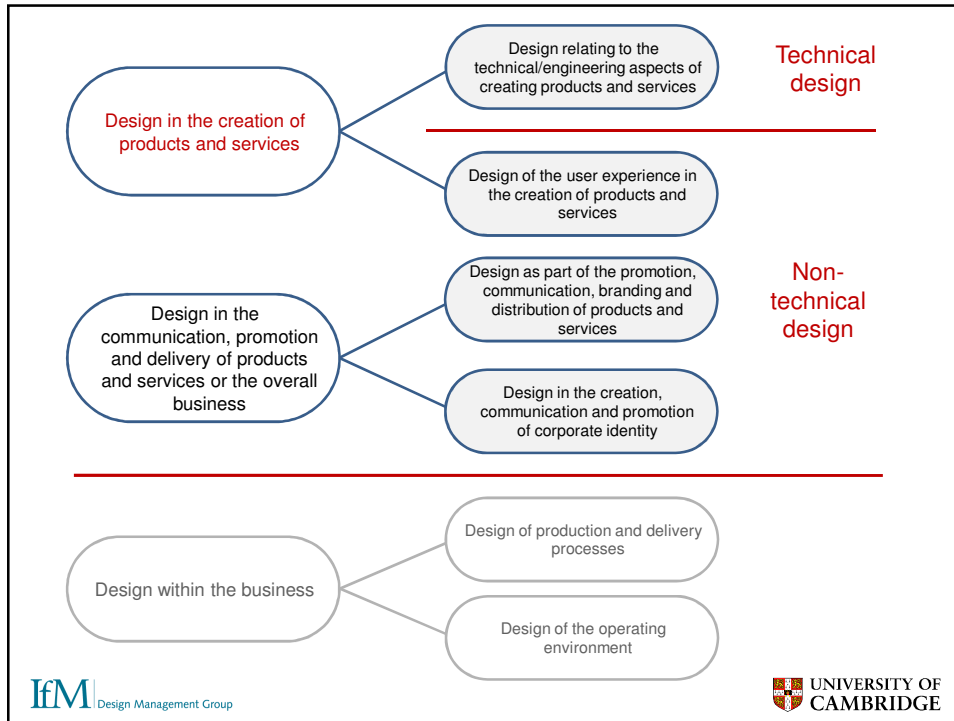
Methods ...

- 1 Initial survey instrument developed based on literature and case studies
- 2 Survey instrument piloted in face to face interviews
- 3 Simplification of survey instrument for use in telephone interviews
- 4 Telephone survey of UK based companies

3334 Contacts tried
824 Successful contacts
428 responses
12.8% response rate
358 usable responses

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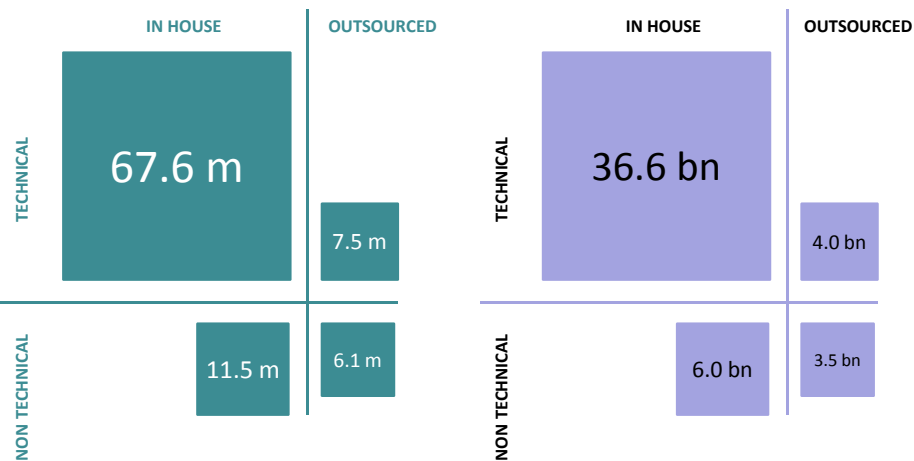
Division	Industry description	Whole economy	Survey
A, B	Agriculture, Hunting and Forestry; Fishing	4.0%	0.0%
C, E	Mining & Quarrying; Electricity, Gas & Water Supply	0.2%	0.3%
D	Manufacturing	7.3%	22.6%
F	Construction	20.6%	15.6%
G	Wholesale and Retail Trade; Repairs	13.0%	19.0%
H	Hotels and Restaurants	3.1%	9.5%
I	Transport, Storage and Communication	6.1%	0.6%
J	Financial Intermediation	1.5%	1.1%
K	Real Estate, Renting and Business Activities	24.8%	21.2%
M	Education	2.9%	0.8%
N	Health and Social work	5.5%	2.8%
O	Other Community, Social & Personal Service Activities	10.9%	5.9%
Total numbers of companies		4,466,700	358

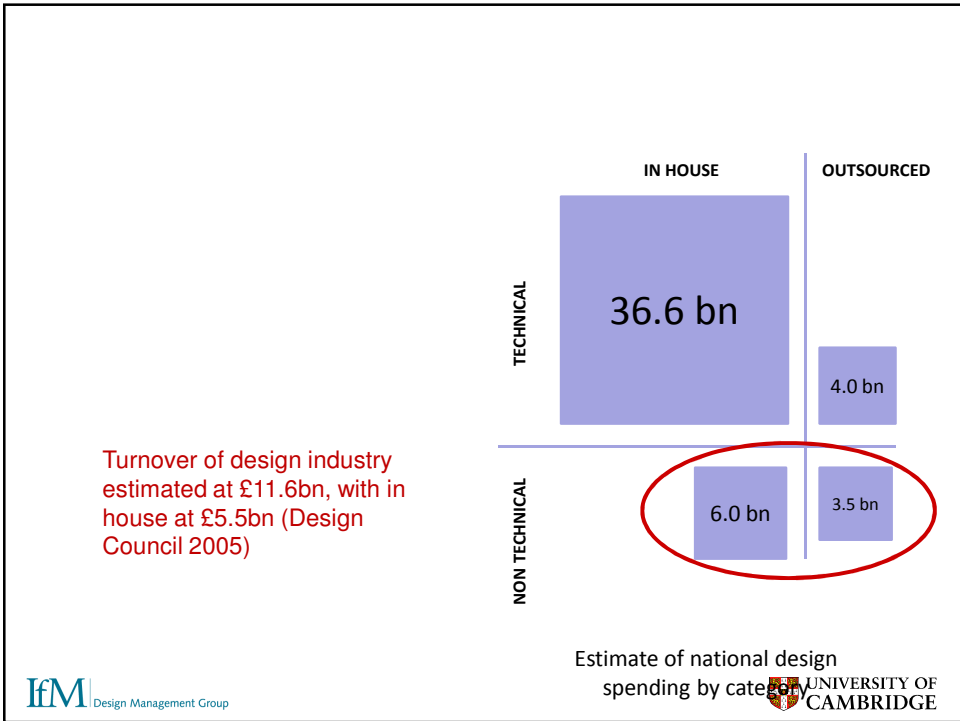
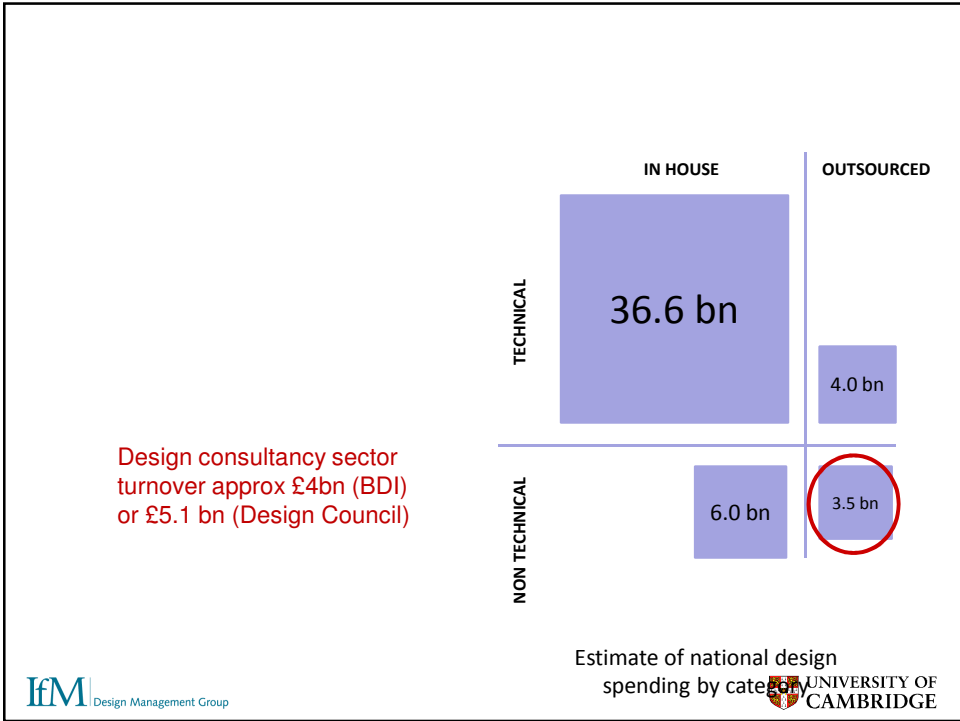
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National estimate for design spend ...

Company size	Sample turnover (£K)	Sample design spend (£K)	Design as percentage of turnover	Population turnover (£M)	Estimated design spend (£M)
0 to 9	156,896	3,204	2.04%	423,451	8,647
10 to 49	520,916	10,992	2.11%	421,259	8,889
50 to 249	1,332,960	24,212	1.82%	412,706	7,496
250+	1,657,900	54,403	3.28%	1,530,358	25,003
				Total	50,066

Total design spend by 'type' ...

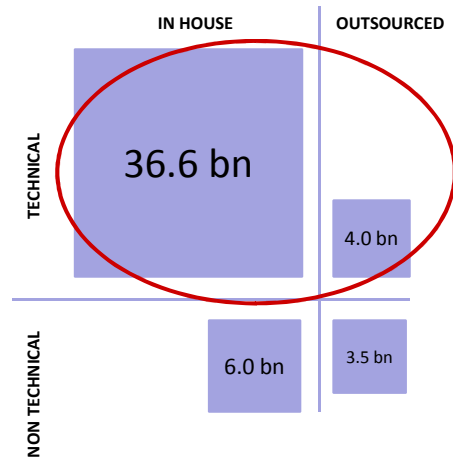




UK private sector R&D
Spend approx = £21 bn
(R&D Scoreboard)

Only 8.6% of companies in
sample indicated that they
claim R&D tax credits (only
8 non responses)

34% of companies have
internal technical design
spend



Estimate of national design
spending by category
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Implications ...

- A first estimate of private sector design spend
- Total spend around £50bn ... double R&D spend
- Outsourced design spend consistent with supply side estimates
- A focus on R&D spend might not be sufficient (Design tax credits?)
- A first step in beginning to estimate the importance of design

Outputs ...

- 2 academic/industry/government events
- Presentations to Design Council Board and Council
- Expert witness on EU consultation for European Community Innovation Survey
- 2 formal reports: Over 18,000 downloads
- 9 conference papers
- 1 Journal paper submitted, 2 in preparation



15,300 Downloads



3,660 Downloads

Our vision for future work ...

- To influence policy, through reliable and meaningful data on national design capability
- To better understand the relationship between national design capability and competitiveness
 - Internationally comparable data is essential
 - Long term data is also essential
- Understand impact of firm design spending on firm performance
- **Gain international support for scoreboard v2.0**

