

Innovation and Commercialisation

The R&D and Intellectual Property Scoreboard



Why Value Intellectual Capital

- because IC is often more valuable than the tangible assets
- enable managers to understand where value lies in the company
- have a metric for assessing success and growth
- as a basis for raising finance or loans

[Brooking, 1997, p. 177]

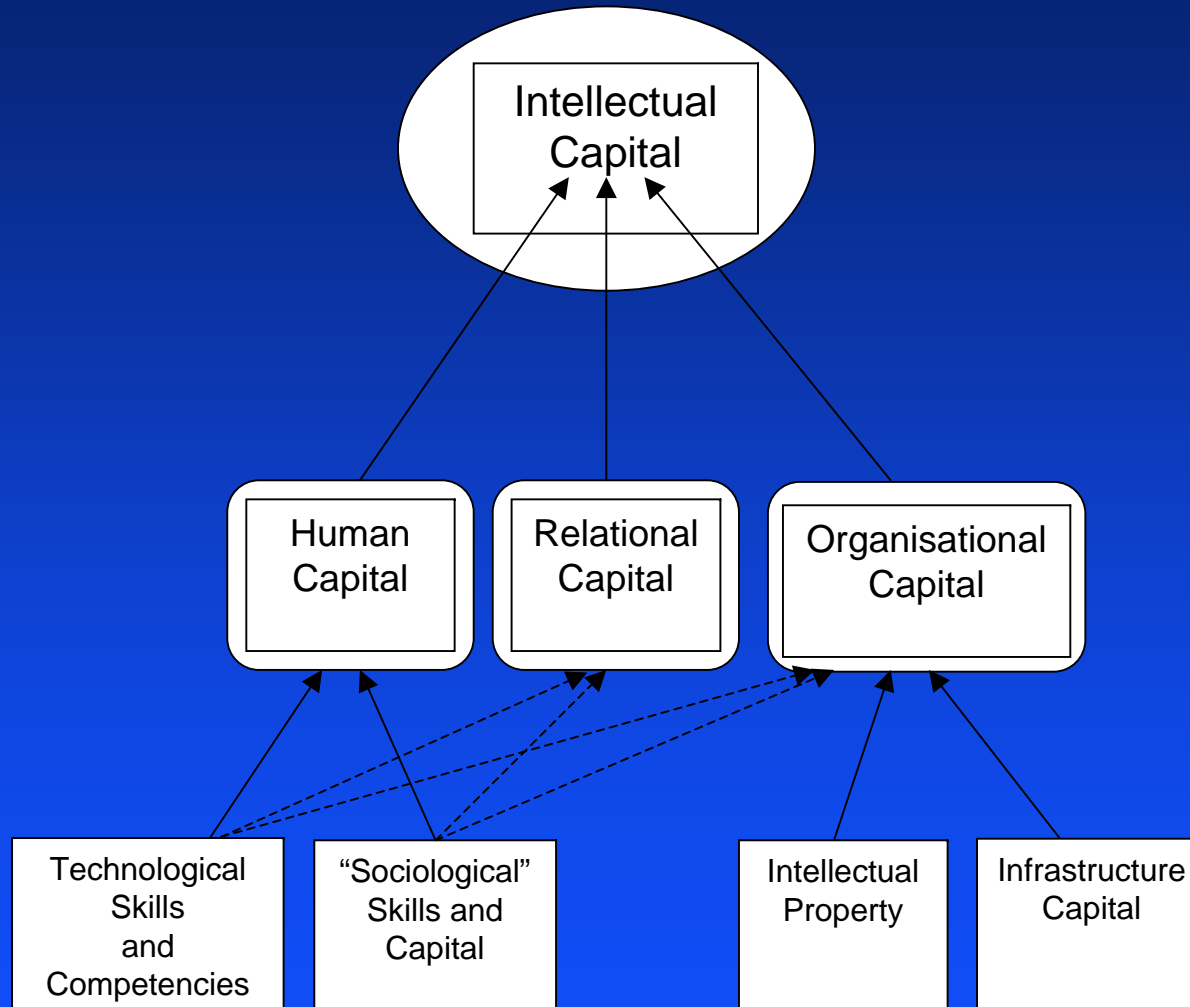


Borrowing Against Intangibles

Borrower	Intellectual Property	Transaction Value	Date
Borden	Trade marks	\$480m	1991
Disney	Copyright portfolio	\$400m	1992
Liggett	Trade marks	\$150m	1992
Chemical Company	Patent portfolio	\$100m	1994
Calvin Klein	Trade marks	\$58m	1993
GE Capital	Trade marks	n/a	1995
Fashion Company	Trade marks	\$100m	1996
News Corporation	Copyright	\$260m	1996
Nestle	Trade marks	n/a	1996



IP as a Component of IC



Intellectual Property Indicators

i. R&D expenditure

ii. “Count” indicators – can be constructed for all registered forms of IP, including:

- ◆ patents
- ◆ designs
- ◆ trade marks
- ◆ innovation patents
- ◆ plant and seed varieties



Rational for the Scoreboard

- To focus company attention on:
 - ◆ role of intellectual capital in success and growth
 - ◆ value of IC
 - ◆ need to manage IC
 - ◆ their relative performance vis a vis competitor companies with respect to IC
 - ◆ international comparisons of the generation of IC



The General Approach

- ratio of market value to book value of assets reflects the importance of intangible assets
- MV/BV is higher the greater the (unaccounted) value of intangible assets
- some authors, such as Lev and Webster, adjust the book value to include “knowledge capital”
- general approach adopted in statistical studies is to relate MV/BV to measures of the intangibles



R&D and IP Rankings

- R&D spend
- patenting activity
- trade mark activity
- registered design activity
- R&D intensity (i.e. per unit sales)
- patent intensity
- trade mark intensity
- registered design intensity

plus corresponding trends over time in each level or intensity ratio



R&D Expenditure and Intensity

Company name (balance date)	R&D 2001/02 (\$'000s)	Company name (balance date)	R&D intensity 2001/02
1. Holden Ltd (12/01)	190,464	1. AMRAD Corporation Limited (6/02)	127.7%
2. Ford Motor Company of Australia Limited (12/01)	124,398	2. Australian Wool Services Limited (6/02)	20.7%
3. CSL Limited (6/02)	93,277	3. Bishop Technology Group Limited (6/02)	19.6%
4. Rio Tinto Plc – Rio Tinto Limited (12/01)	75,000	4. Technology One Limited (6/02)	17.2%
5. Vodafone Australia Limited (3/02)	73,300	5. Cochlear Limited (6/02)	16.8%



Patent Activity and Patent Intensity

Company name	Patents 2002	Company name (balance date)	Patent intensity 2002
1. Unisearch Limited	27	1. Chemeq Limited (6/02)	8.772
2. Cochlear Limited	17	2. Intec Ltd (6/02)	5.618
3. James Hardie Industries NV	17	3. Bionomics Limited (6/02)	3.400
4. ResMed Holdings Limited	17	4. Gradipore Limited (6/02)	1.105
5. BHP Billiton Limited	15	5. Ventracor Limited (6/02)	0.607



Innovation Index

Based on an estimated relationship between:

MV \leftarrow f (tangible assets; R&D; patents; trade marks; designs)

Innovation Score \leftarrow weighted sum of R&D, patents, trade marks and designs

Innovation Index \leftarrow $\frac{100 * IS \text{ (company ranked } j)}{100 * IS \text{ (company ranked } 1)}$



Innovation Index, 2003

	Company name	Index	R&D 2001/02 (\$'000s)	Patents 2002	Trade marks 2002	Designs 2002
1.	Cochlear Limited	100	42977	17	1	0
2.	Schefenacker Vision Systems Australia Pty Ltd	93	10589	14	0	0
3.	ResMed Holdings Limited	60	27810	17	1	1
4.	Australian Wool Services Limited	50	21880	0	3	0
5.	AMRAD Corporation Limited	39	16577	0	6	0



Changes in Innovation Performance

	<i>Cochlear</i>	<i>Resmed</i>
<i>1999</i>	6	3
<i>2000</i>	10	1
<i>2001</i>	2	1
<i>2002</i>	2	1
<i>2003</i>	1	3

