

WHAT HAPPENED TO AUSTRALIAN INVENTIONS?

1986-2005

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How many and by whom?

Which technologies?

How successful were they?

What is associated with 'success'?



HOW MANY AND BY WHOM?

Number inventors per application, 1986 to 2005

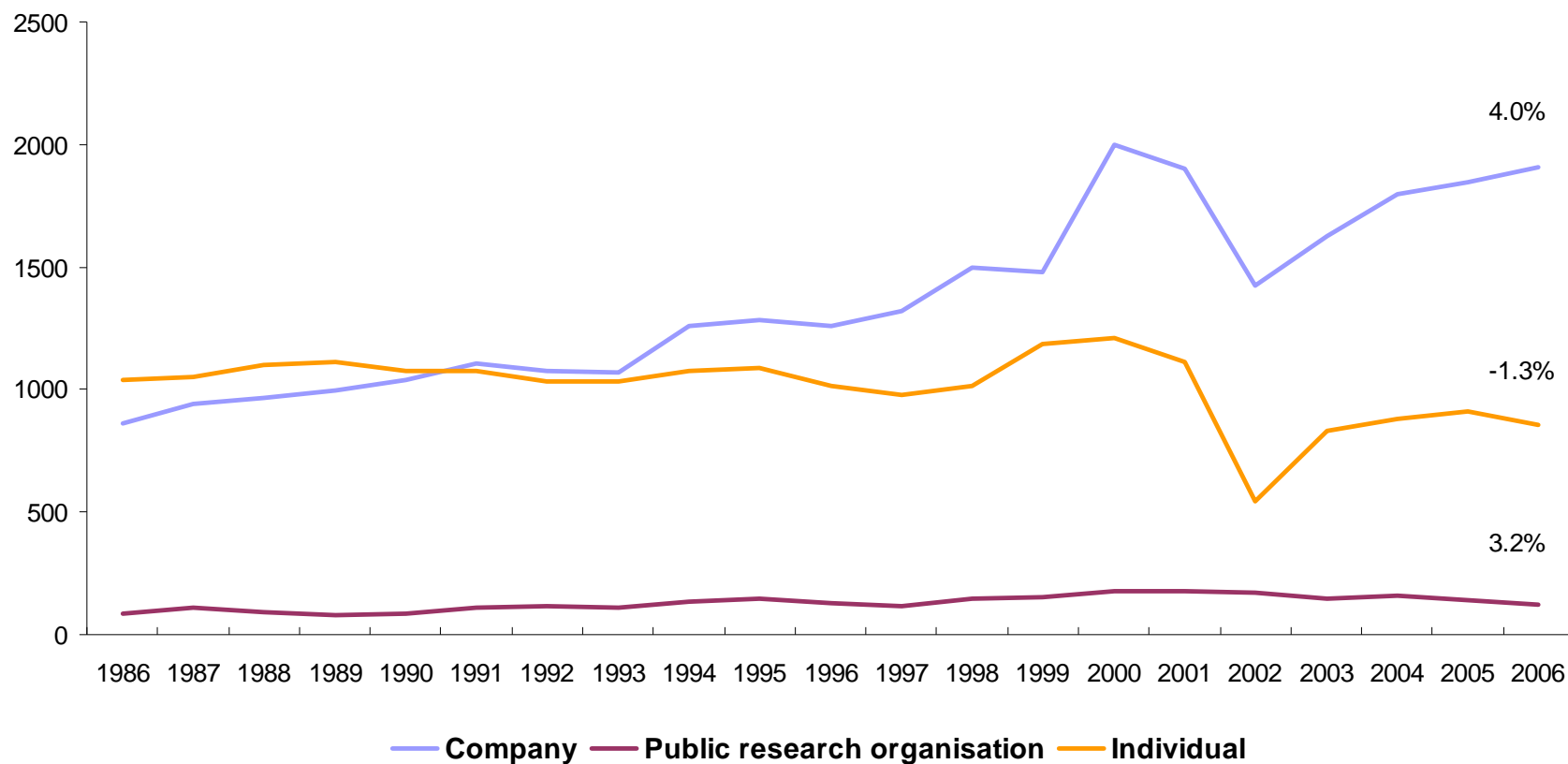
Inventors per application	Number of applications	%
1	23,866	76.2
2-5	7,225	23.1
6-10	218	0.7
>10	4	0.0
Total applications	31,313	100.0

Number of applications per inventor, 1986 to 2005

Applications per inventor	Number of inventors	%
1	26,360	82.5
2-10	5,506	17.2
11-20	66	0.2
>20	15	0.0
Total inventors	31,947	100.0

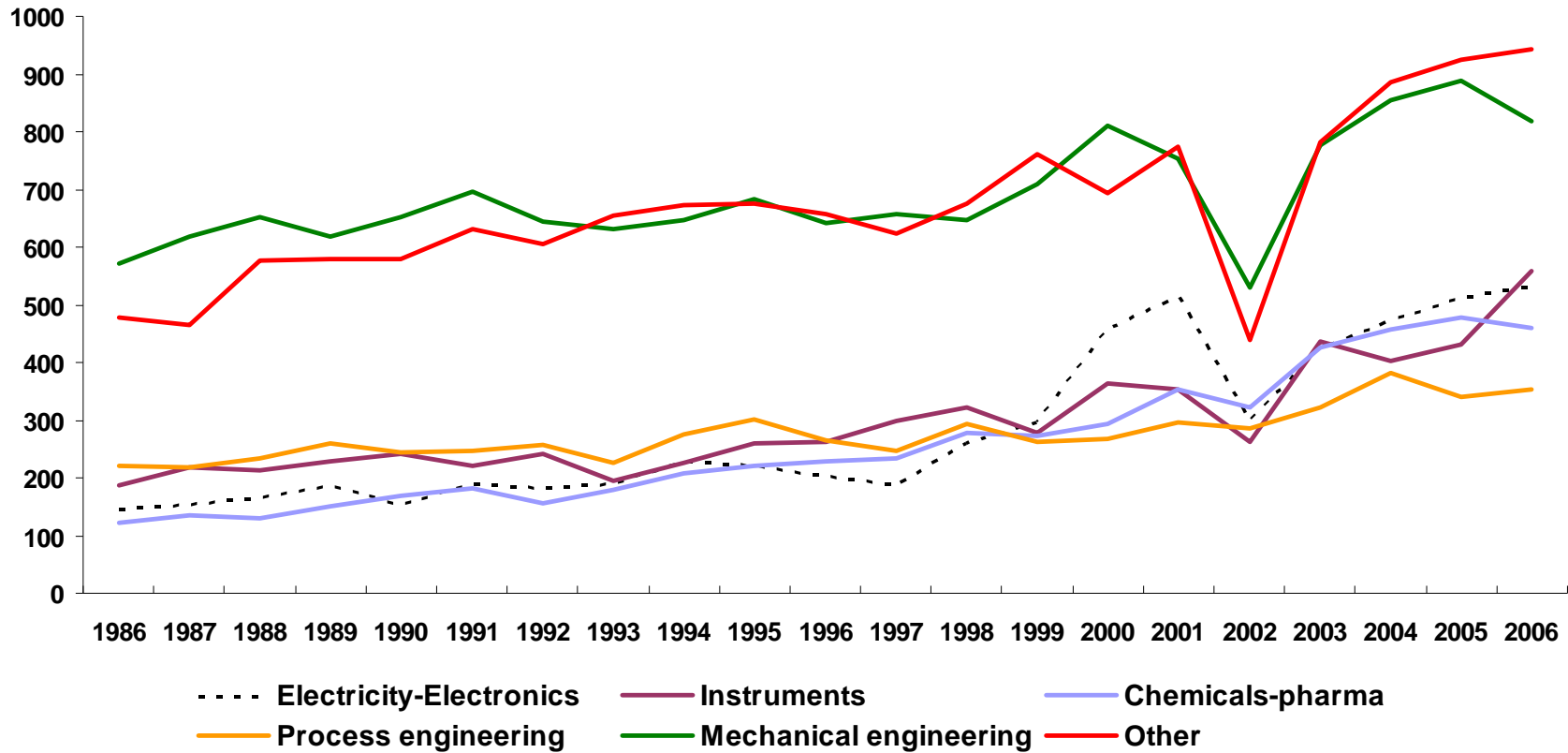


Number of patent applications - Australian inventions only



WHICH TECHNOLOGIES?

Number of patent applications - Australian inventors only



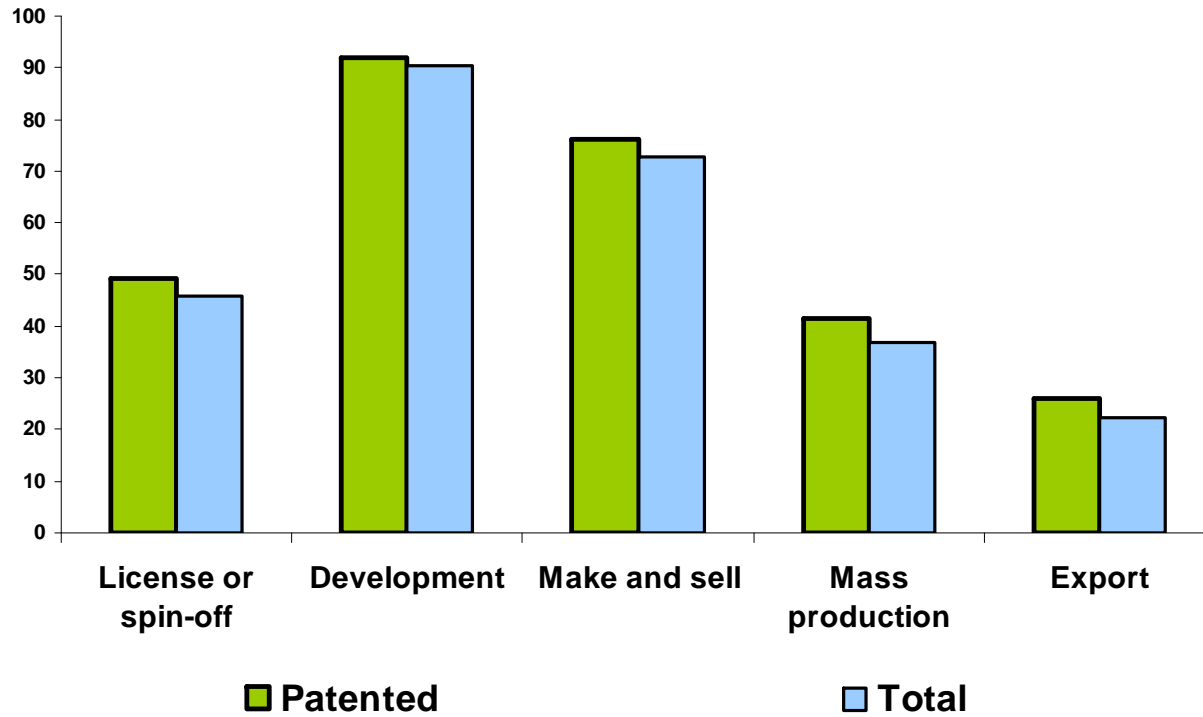
HOW SUCCESSFUL WERE THEY?

- data from survey of 3736 inventors named on patent applicants
- conducted in 2007
- response rate 40%
- basically representative but small bias to granted patents & recent applications

Status of patent (in 2007)	Number of completed surveys
Withdrawn	414
Pending	889
Rejected	382
Granted	2,051
Total	3,736



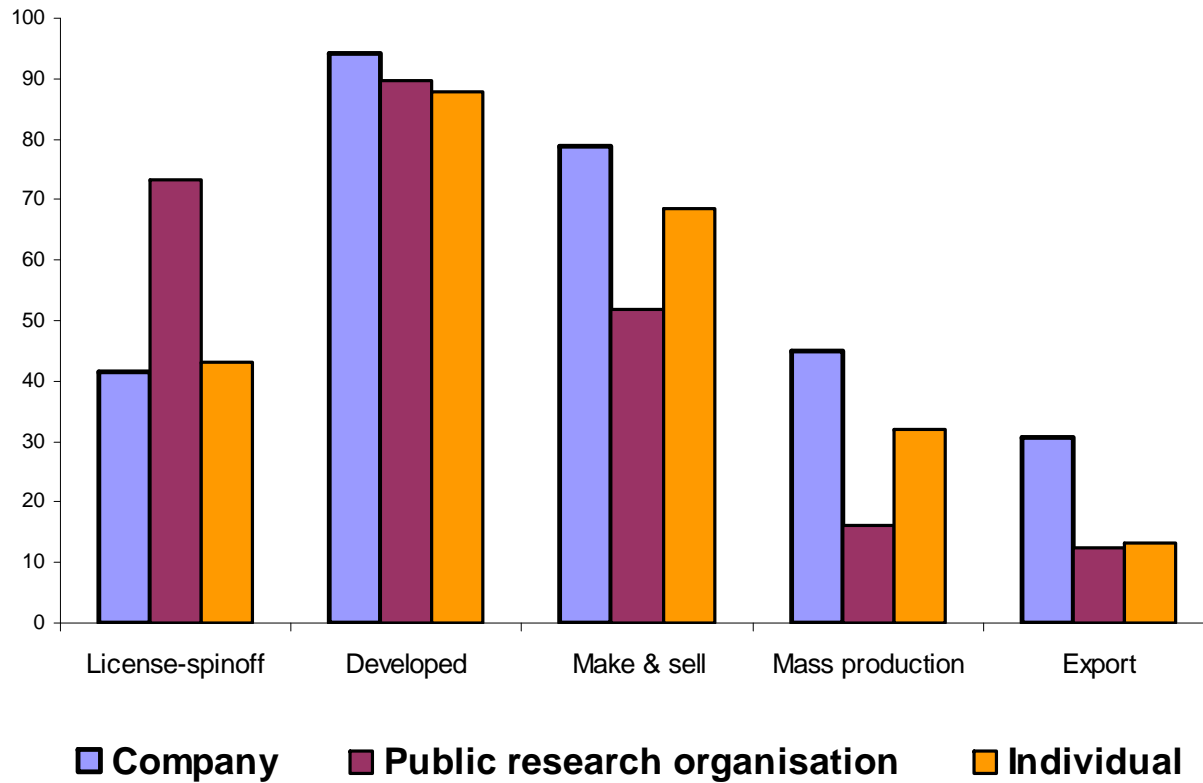
% attempting each stage of commercialisation



Source: Jensen and Webster (2009)

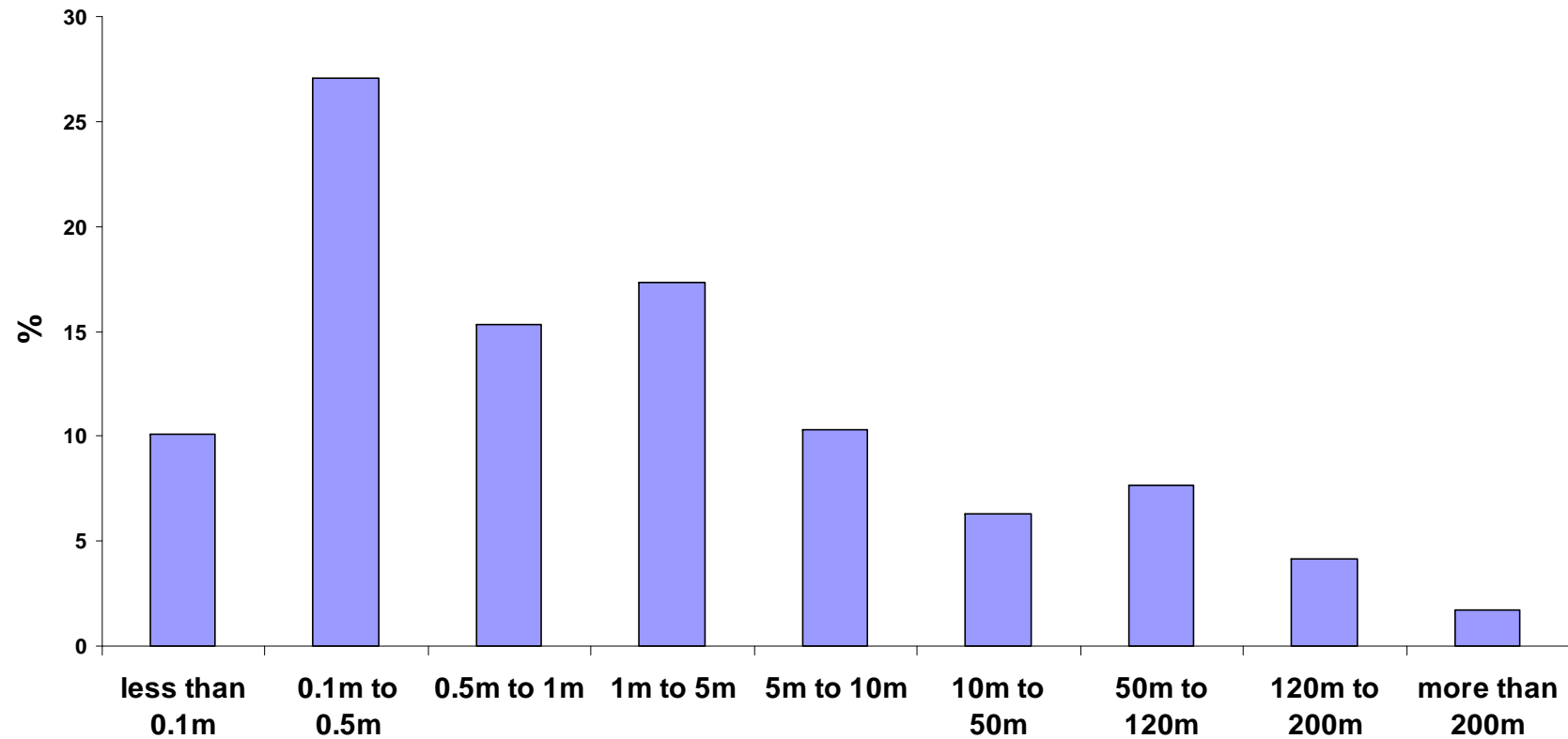


% inventions attempting each stage of commercialisation



Source: Jensen & Webster (2009)

Commercial value of invention (+ patent if relevant)



Combination of inventor-reported backward and forward estimates.

Source: Yong, Jensen & Thomson (2009)



WHAT IS ASSOCIATED WITH 'SUCCESS'?

(After controlling for quality of underlying invention)

3 themes emerge:

- Access to complementary assets
(testing, validation, manufacturing, distribution, marketing)
- Appropriation of profits
(patent esp. in a codifiable technology)
- Macroeconomic conditions matter

Access complementary assets

- Owners without access more likely to attempt to license or spin-off (public research organizations, and to lesser extent, individuals)
- Attempted a development phase (proof of concept, testing & validation, prototype, other) increases likelihood of licensing or spin-off
- Companies most likely to attempt mass production or export.

Appropriating profits

- Possessing a granted patent in highly codified technology area (pharmaceuticals or chemicals) matters **a lot** for attempt at licensing or spin-off
- Possessing a granted patent raises probability of attempting mass production by 8 percentage points (across all technology areas)
- Australian patent not important for attempting to export

Source: Jensen & Webster (2009)



Macroeconomics

Commercialization stages attempted statistically correlated with :

- Growth of the relevant industry
- Rate of interest (negatively)
- R&D tax subsidies
- Change in level of public sector R&D

Source: Jensen & Webster (2009)



THANK-YOU

