



Australian Government
Australian Research Council

Keys Challenges for Australian ICT Research

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ICT Deans, Annual Meeting, Coolangatta, July 2-3, 2012

The ARC

**National Competitive Grants Program
\$810M in 11-12**

**Evaluation
and Policy**

**Discovery &
Fellowships
\$502 M**

**Linkage & Centres
\$308 M**

**Excellence in
Research for
Australia**

- Support research excellence
- Funding for facilities and equipment that researchers need to be internationally competitive
- Support future researchers
- Provide incentives for partnerships and collaboration nationally and internationally



NCGP Funding

- Funding for the NCGP in 2011-12 is \$810 million
- June 30 announcement of \$58.4M in funding for Linkage Grants scheme (Rd 2, 2012) supporting 185 projects (13 in IT areas, 4 in 0801 and 3 in 0806; success rate 25.5%) – overall LP success rate 36.7%
- Current rounds of FT, FL, DP, DECRA, LIEF, IN

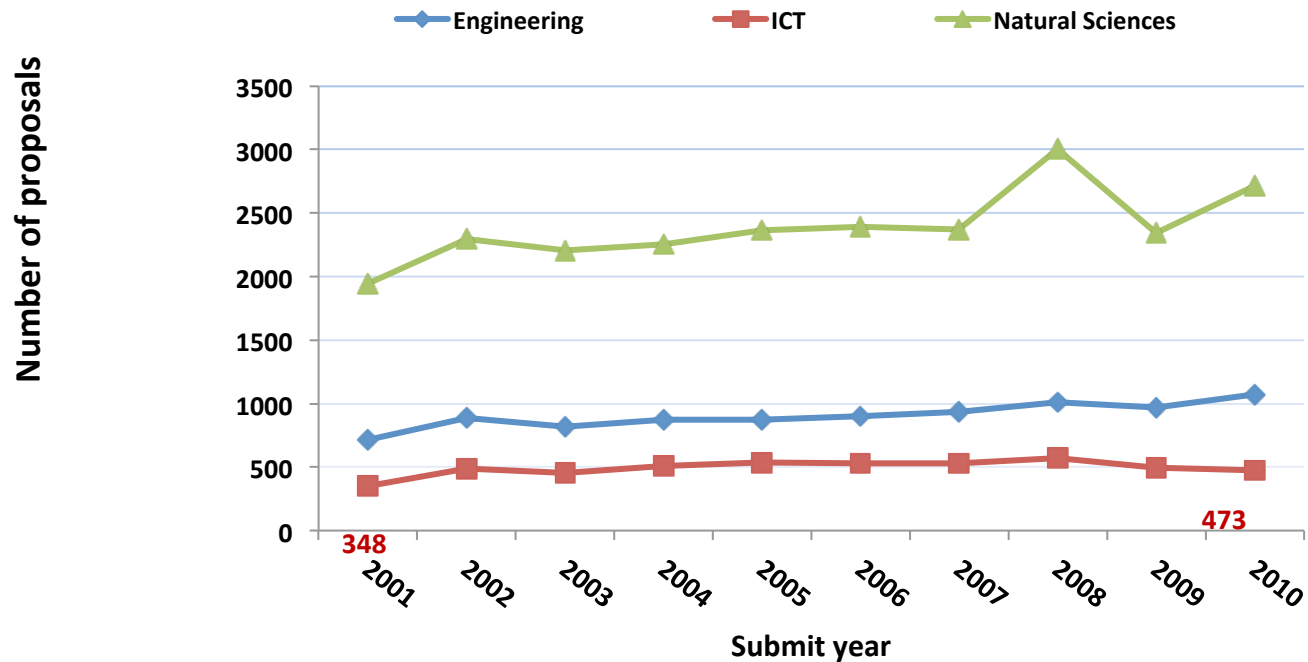
ARC Changes

- New schemes/substantial changes:
 - Discovery Early Career Awards (DECRA)
 - Changes to Discovery – Discovery Outstanding Researcher Award (DORA)
 - To come – Industry Transformation Research Program; Centres of Excellence; LIEF?
- Revision and simplification of Funding Rules
- Changes to Peer Review of NCGP schemes (A-E)
- Updating of assessor databases, assessing of assessors; New coding of RMS modules
- New CEO – Prof Aidan Byrne starts July 23
- New ED for EMI??

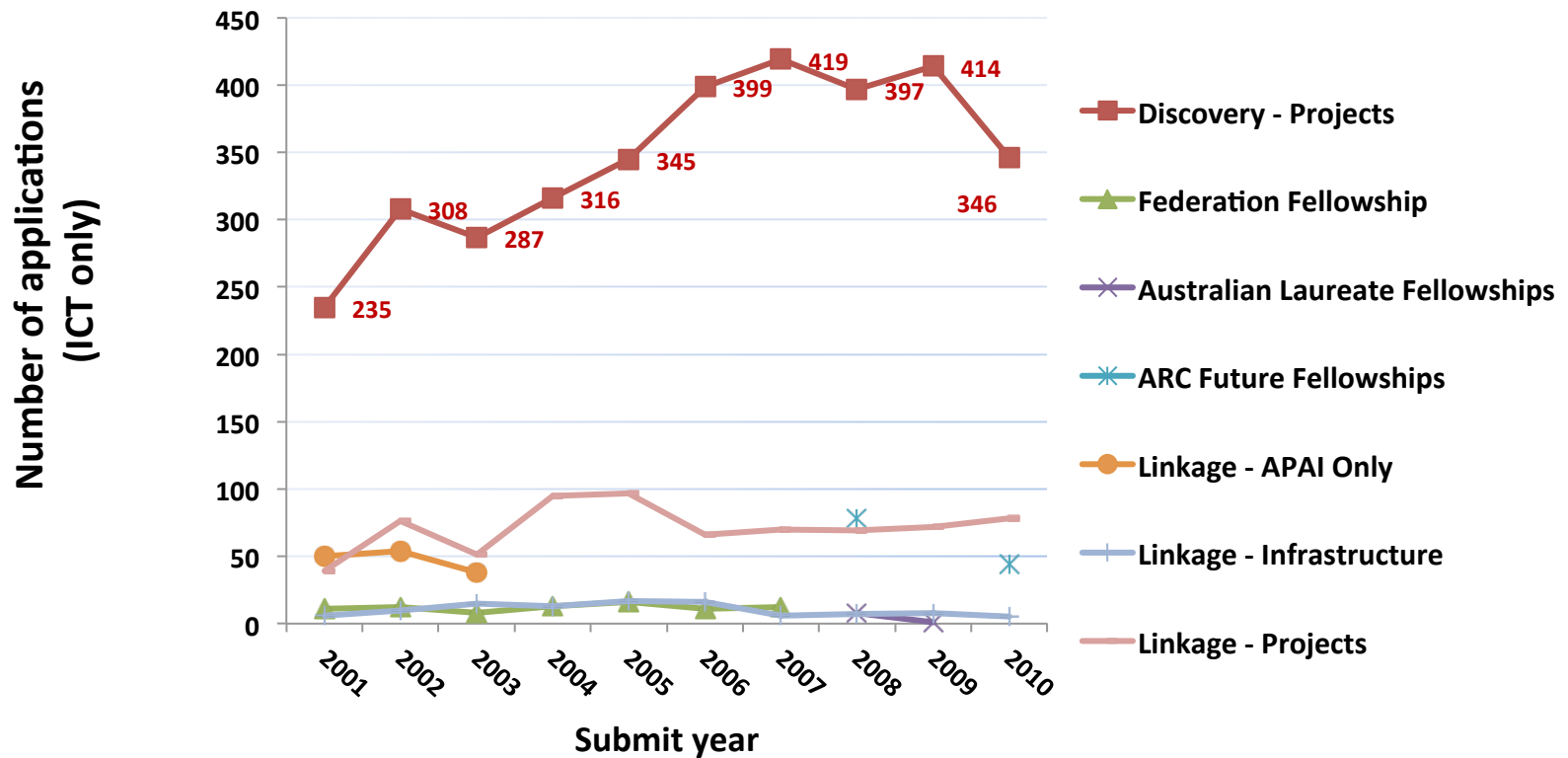
ICT issues

- Success rates lower on average than other disciplines within the panel (MIC/EMI) and outside (physics)
- Proportion of cross-discipline proposals looks to be decreasing
- Assessor behaviour as applicants?
- Applicant behaviour – larger number of submitted proposals of “poorer” quality from small group – 5 x more ICT have submitted >6 DP02-DP12 proposals with no success compared with non-ICT applicants
- Repetitive projects and keywords (‘machine learning’ – 116 x; non-ICT max keyword was 34 x)

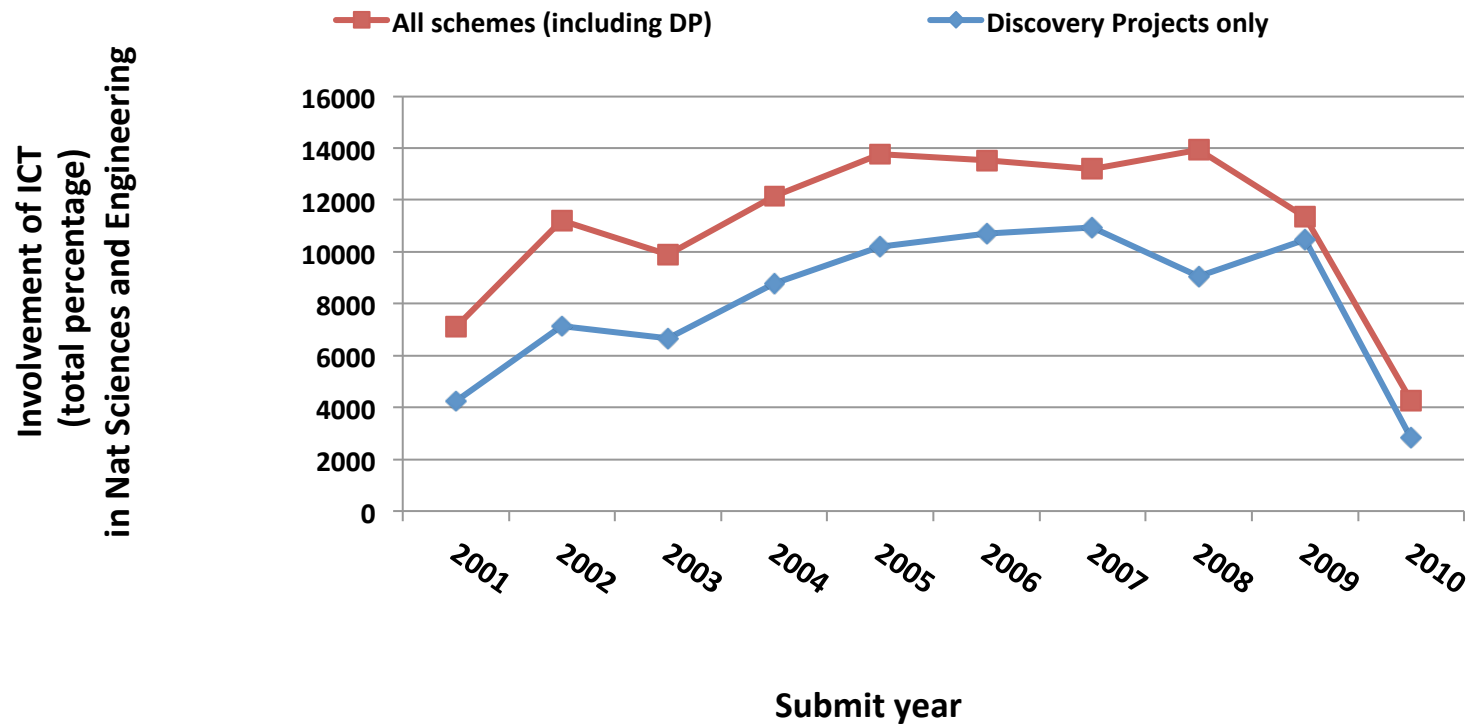
Proposals received in ICT with comparison to Engineering and Natural Sciences



Proposals received in ICT by schemes and submit year



Involvement of ICT components (by RFCD) in natural sciences and engineering research (cross-disciplinary research)

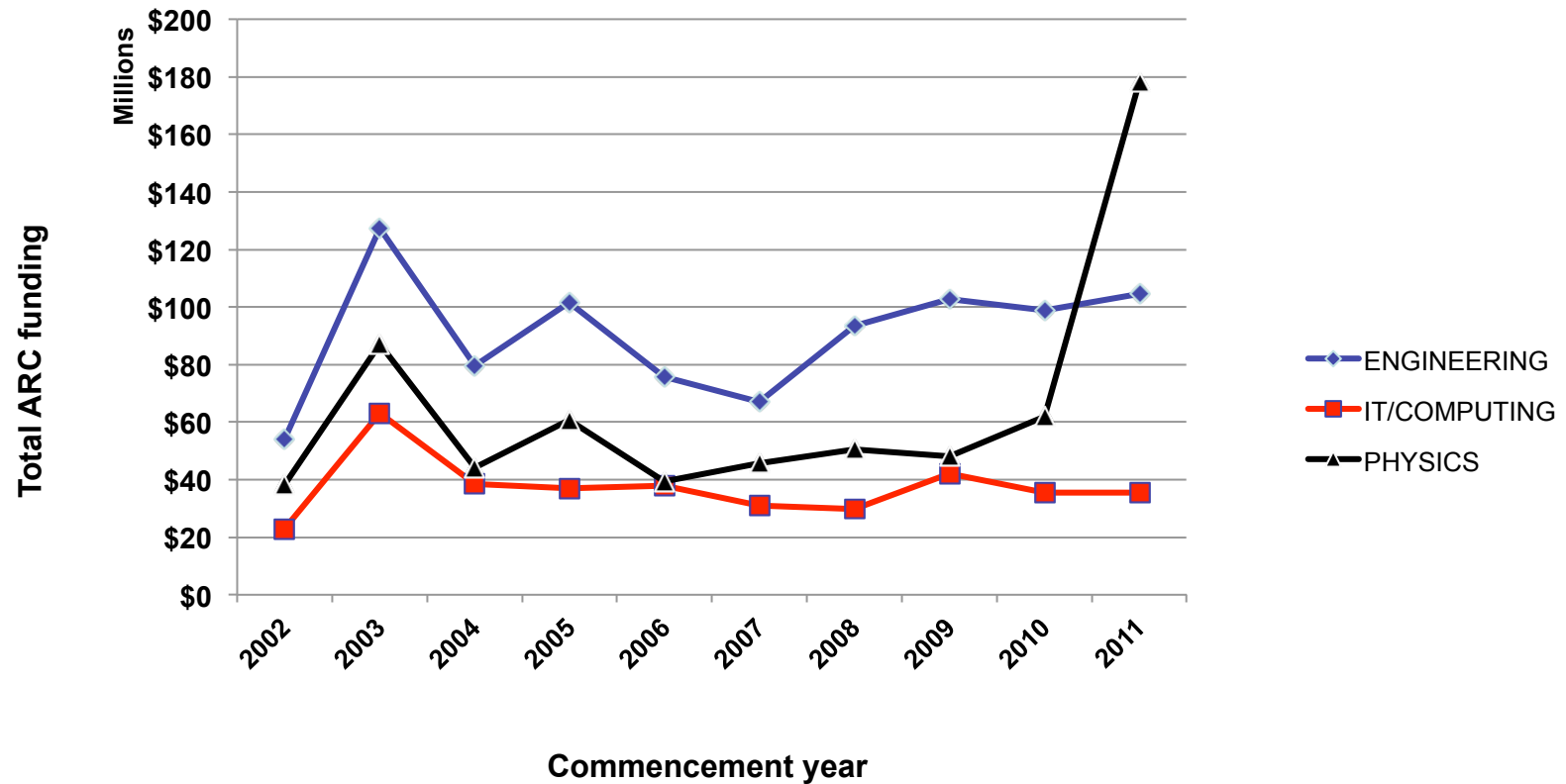


Number of proposals received in ICT in Submit Year 2011 and comparison with Engineering and Natural Sciences

| | DECRA | DP | IN | LE | LP | Total | % |
|----------------|-------------|-------------|----------|------------|------------|-------------|-------------|
| Engineering | 341 | 593 | 0 | 47 | 103 | 1084 | 25% |
| ICT | 168 | 299 | 1 | 9 | 31 | 508 | 12% |
| Nat . Sciences | 996 | 1507 | 6 | 104 | 163 | 2776 | 64% |
| Total | 1505 | 2399 | 7 | 160 | 297 | 4368 | 100% |

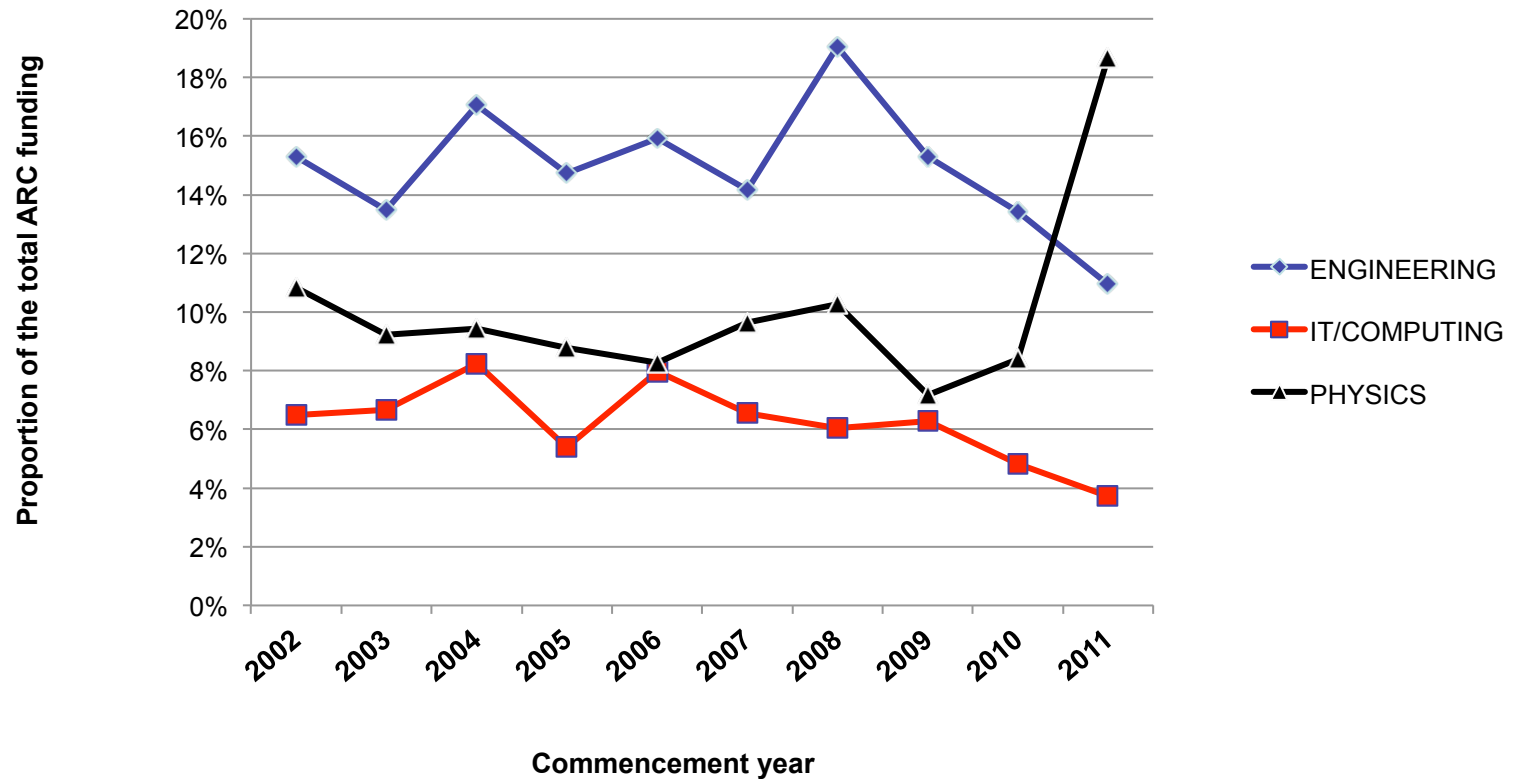
FL – 8 applications; FT – 37 applications (~50% in 0801)

Total ARC Funding across various selected disciplines



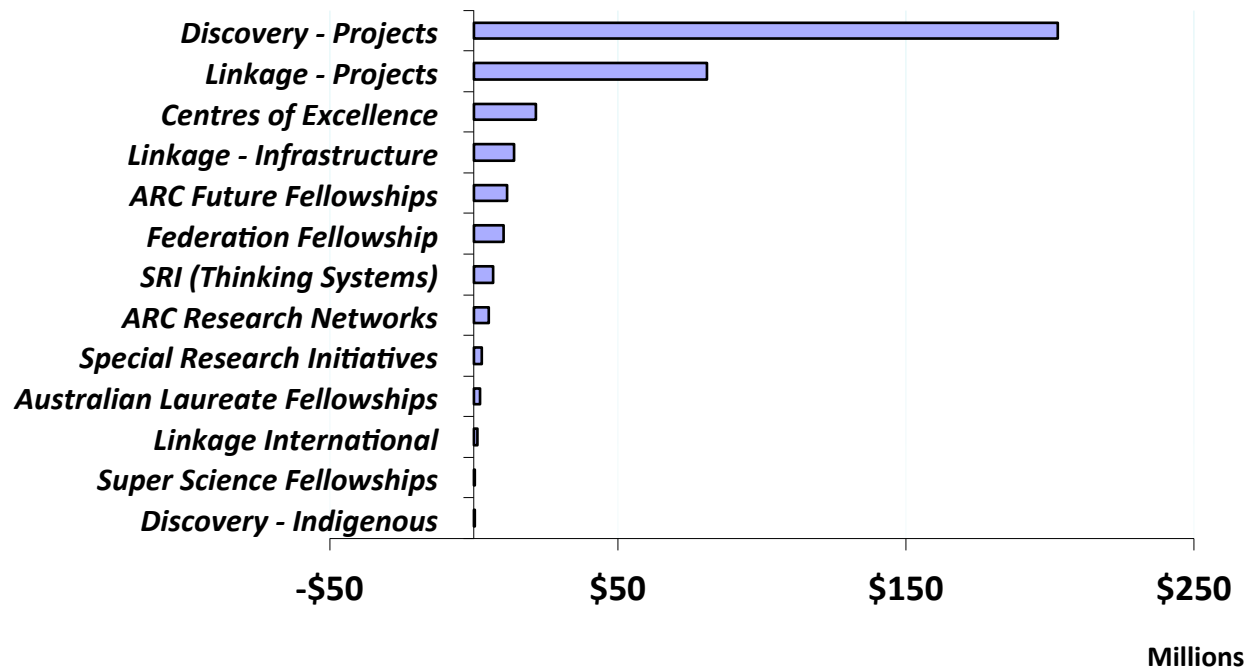
Proportion of ARC funding for various disciplines

Proportion of funding is based on funding announced each commencement year. NICTA is not included in IT/Computing



Funding for ICT by scheme (since commencement year 2002)

Total funding for ICT by scheme since commencement year 2002 (inclusive)

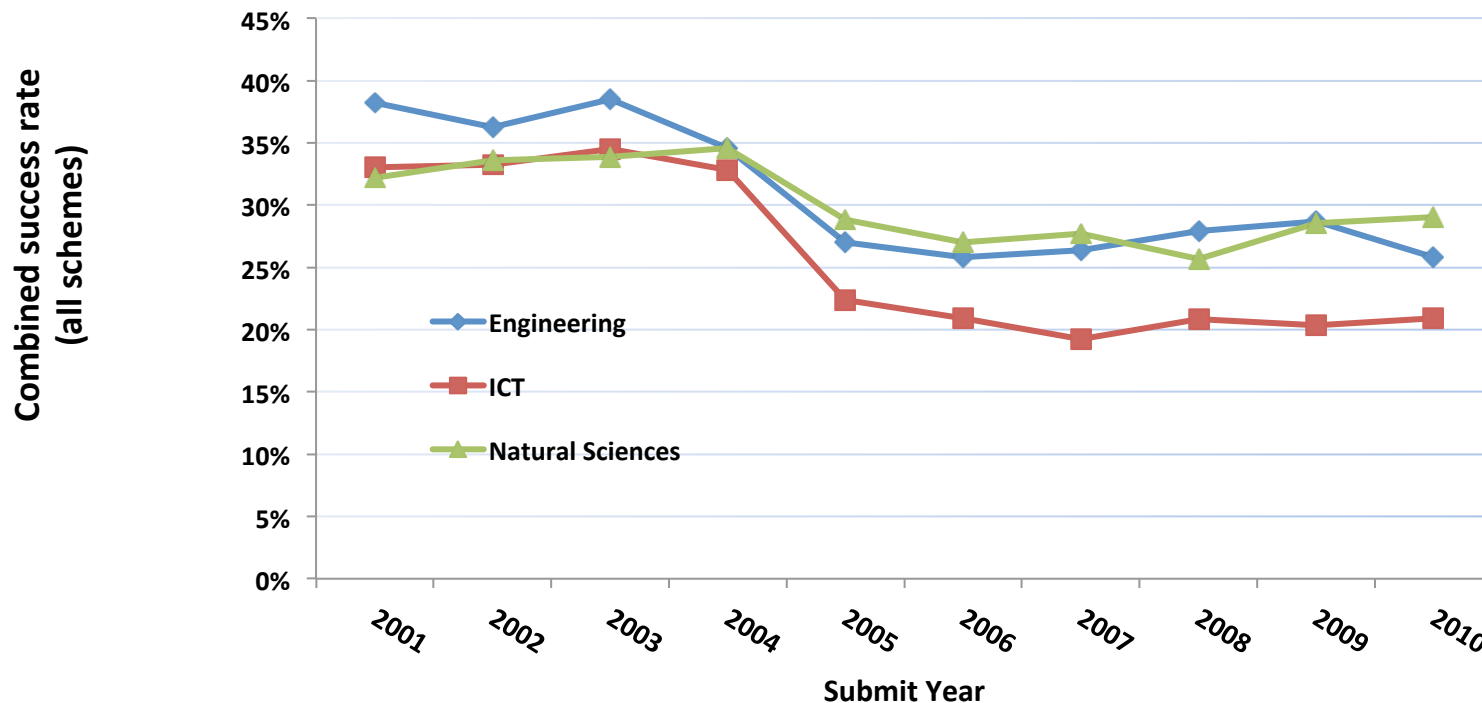


Funding for ICT by scheme and commencement year since 2006

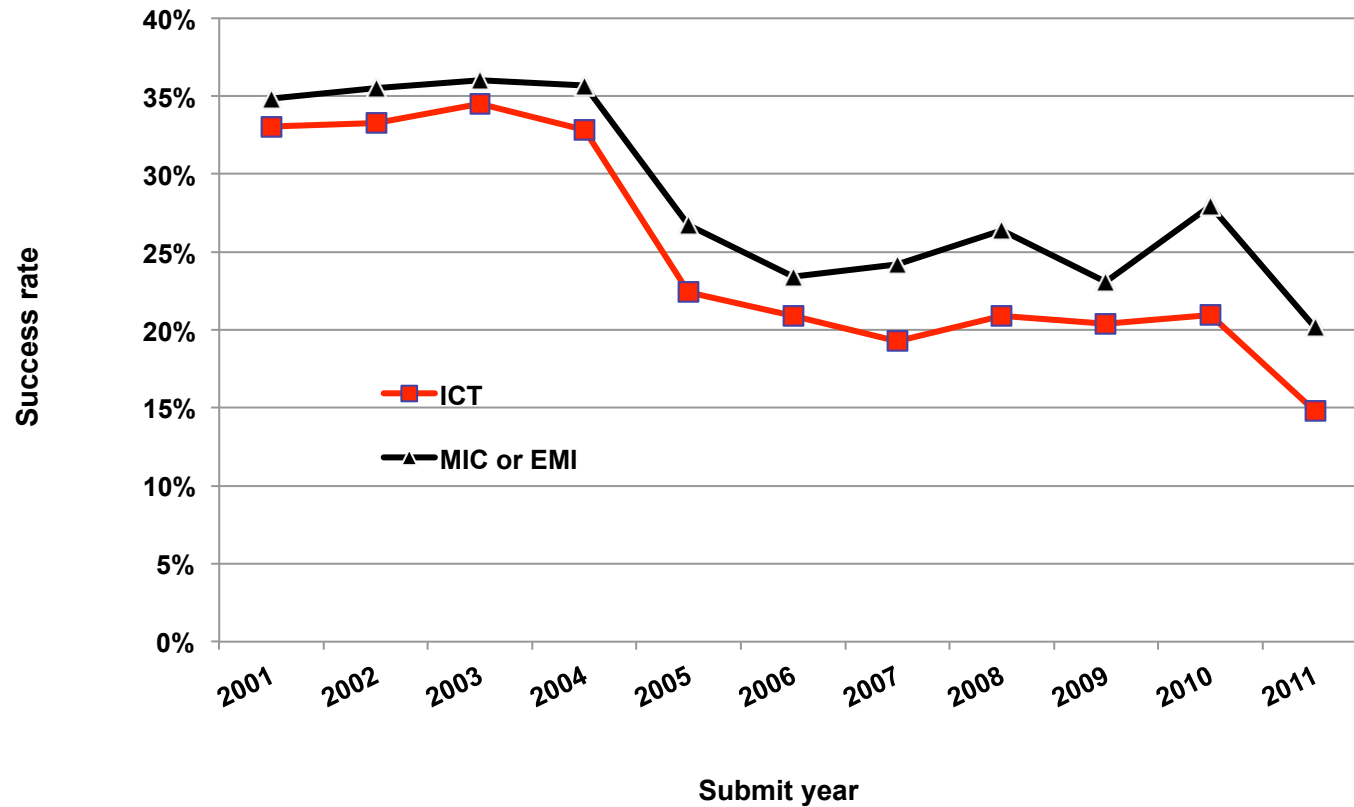
| Scheme\Commencement year | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|---------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| ARC Future Fellowships | | | | \$6,689,600 | \$4,761,591 | |
| Australian Laureate Fellowships | | | | \$2,064,351 | | |
| Discovery - Indigenous | | | | \$30,000 | | |
| Discovery - Projects | \$20,406,072 | \$20,832,243 | \$20,992,493 | \$23,798,140 | \$22,106,000 | \$20,675,176 |
| Federation Fellowship | \$1,581,110 | \$1,606,210 | | | | |
| Linkage - Infrastructure | \$2,402,000 | \$1,741,967 | \$429,776 | \$150,000 | \$469,410 | \$1,230,000 |
| Linkage - Projects | \$6,704,697 | \$6,804,102 | \$8,102,791 | \$9,256,420 | \$7,928,459 | \$8,249,371 |
| Linkage International | \$219,730 | \$51,900 | \$153,083 | \$255,100 | | |
| SRI (Thinking Systems) | \$6,600,000 | | | | | |
| Super Science Fellowships | | | | | \$278,400 | |
| Total | \$37,913,609 | \$31,036,422 | \$29,678,143 | \$42,243,611 | \$35,543,860 | \$30,154,547 |

NICTA funding – 2002/03-2010/11: \$379.1M (ARC \$187.2M)

Success rate of ICT proposals in comparison with natural sciences and engineering disciplines, by submit year

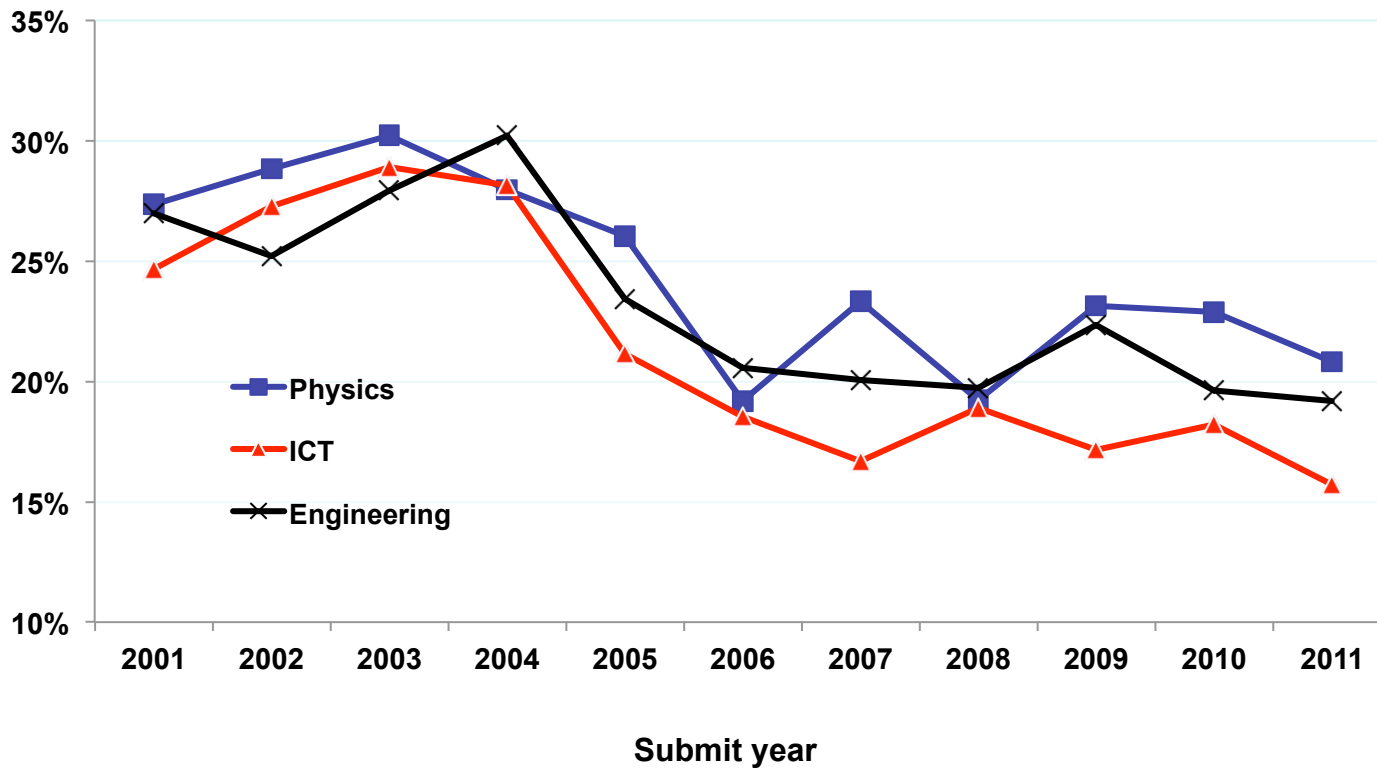


Success rate of ICT-proposals in all ARC schemes



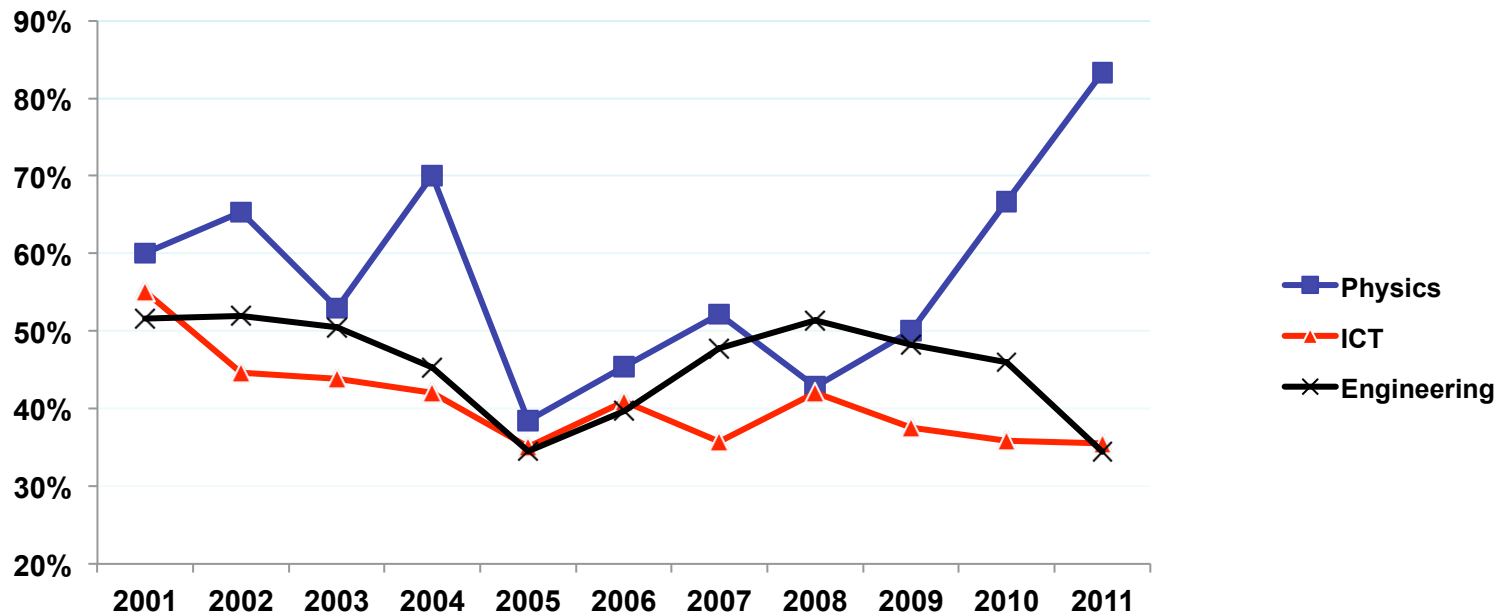
DP Success rate for ICT proposals in comparison with Physics and Engineering

Success rate in Discovery Projects



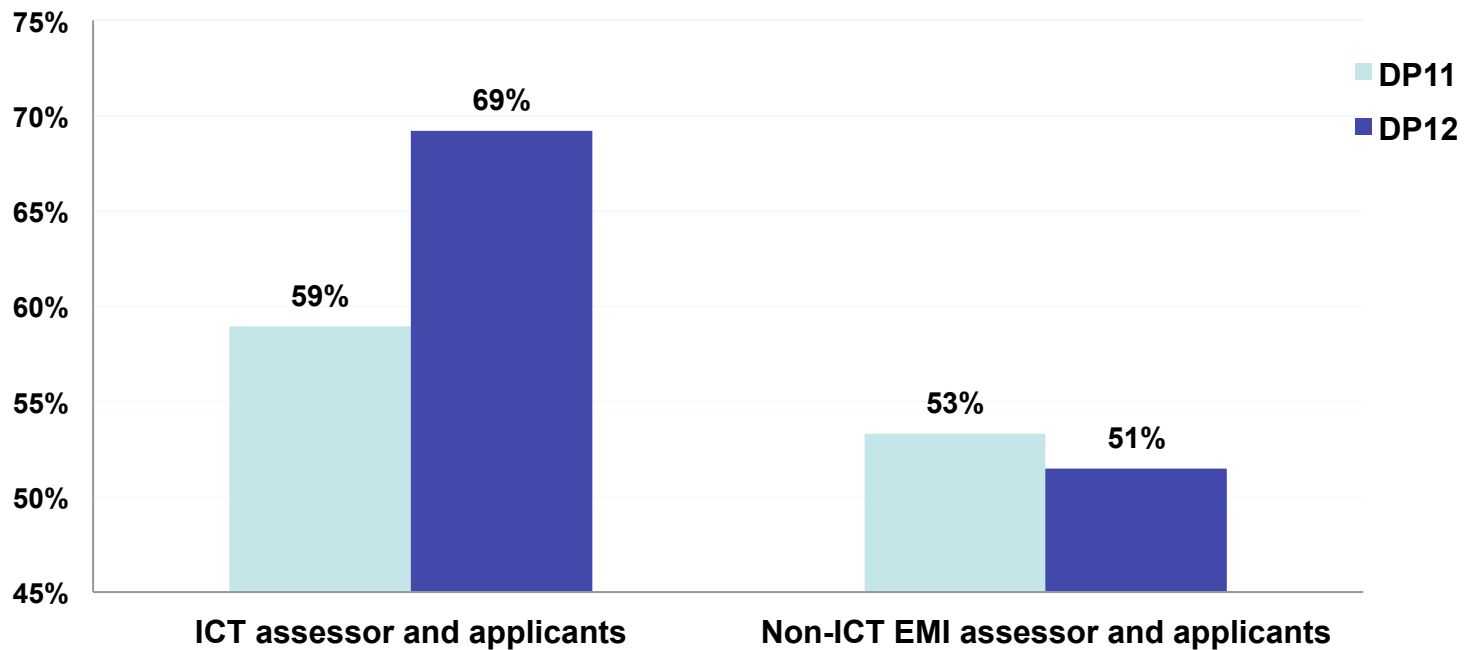
LP Success rate for ICT proposals in comparison with Physics and Engineering

Success rate in Linkage Projects



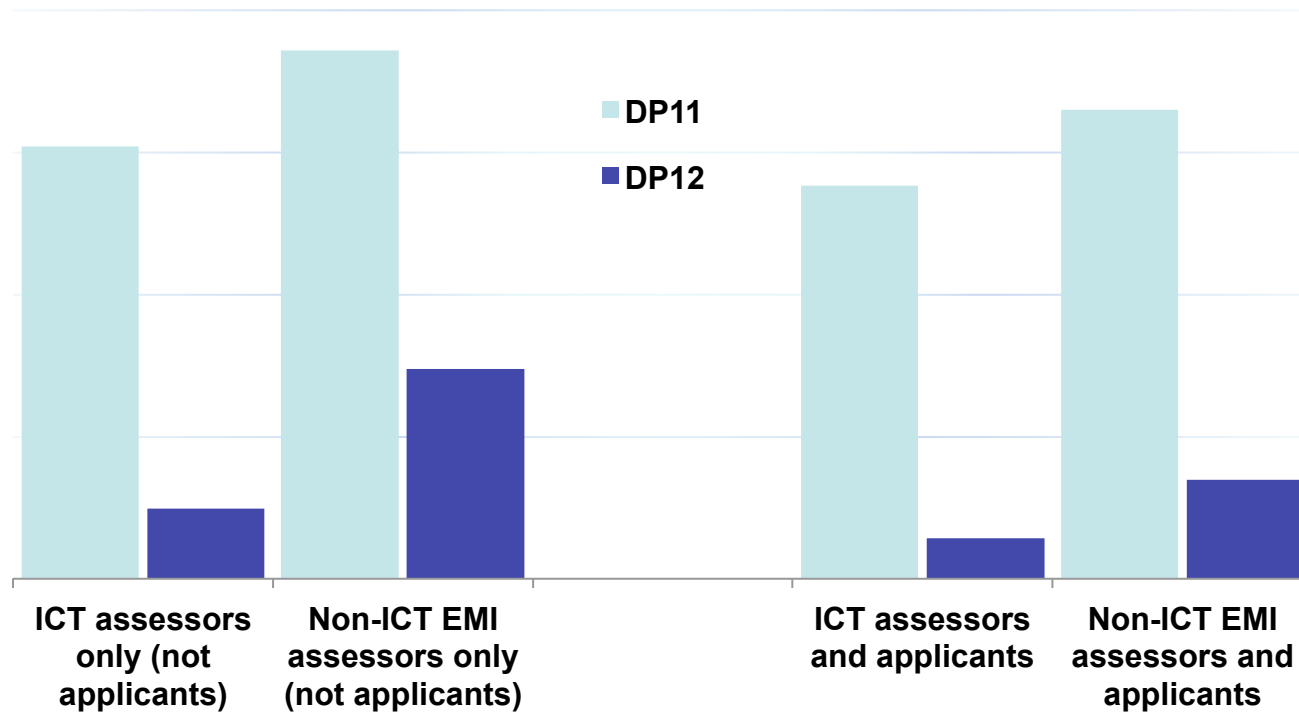
Assessors of ICT proposals also applicants on DP proposals in the same round

Proportion of assessors for ICT and EMI proposals who were also applicants in the same round



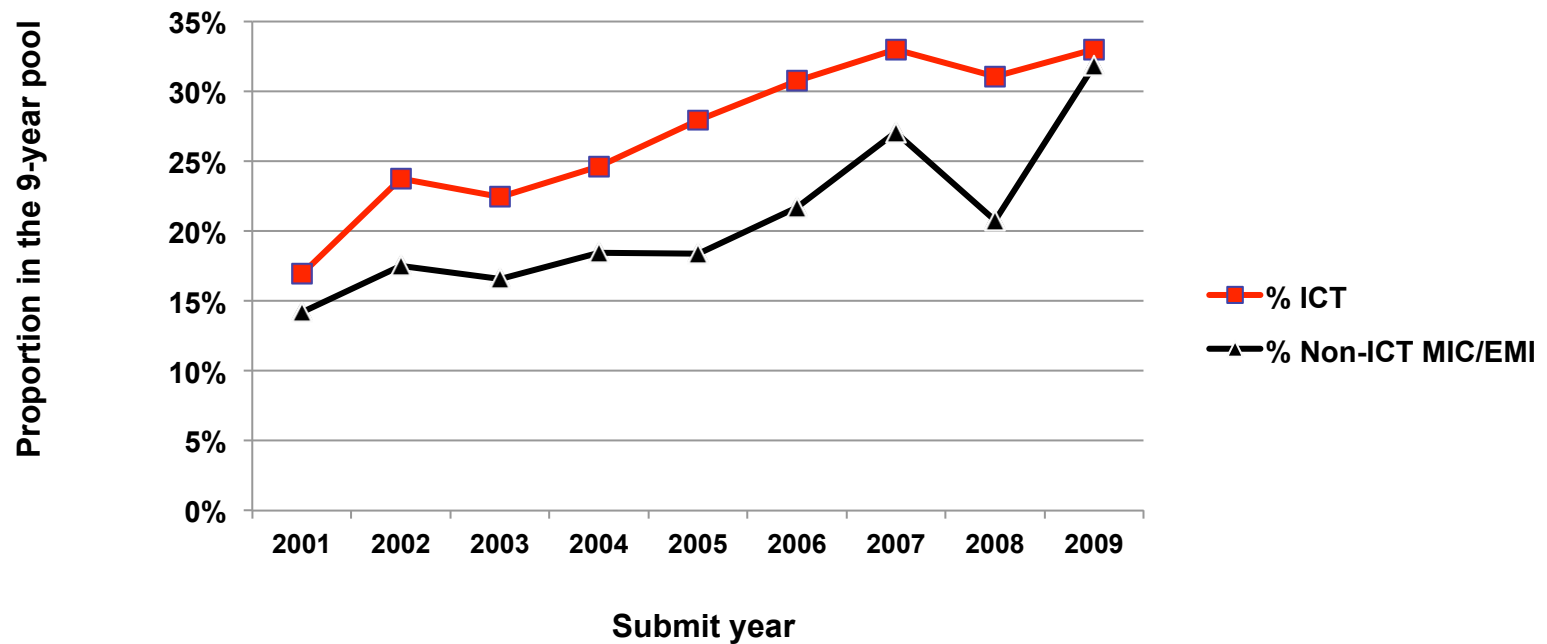
ICT

Average scores given by assessors for ICT and non-ICT EMI proposals



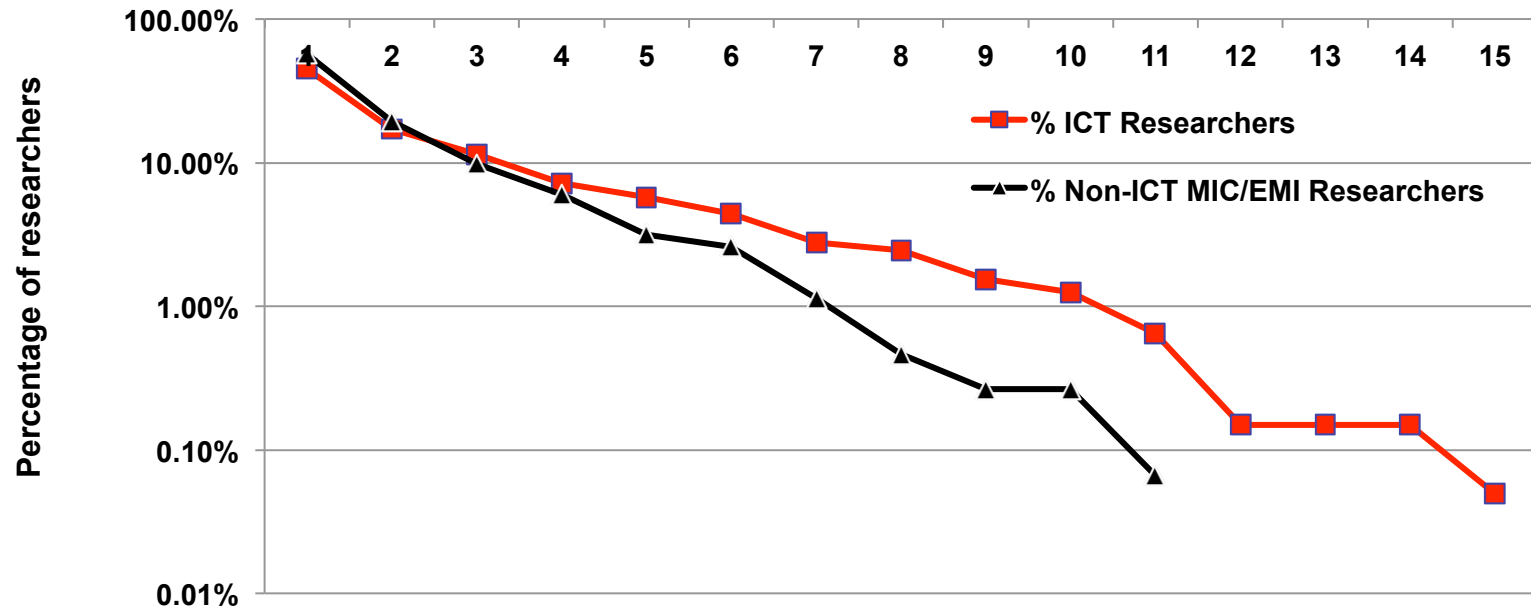
ICT applicants in DP as a proportion of all ICT applicants in each year (data for DP11 and DP12 is inaccurate and not included)

Proportion of DP applicants (not PI) in the 9-year pool each submit year - graph suggesting ICT researchers are more static than others in MIC/EMI



Proportion of ICT applicants submitting more than a specific number of proposals over the years

Number of DP proposals submitted by the same researchers (2001 to 2009)



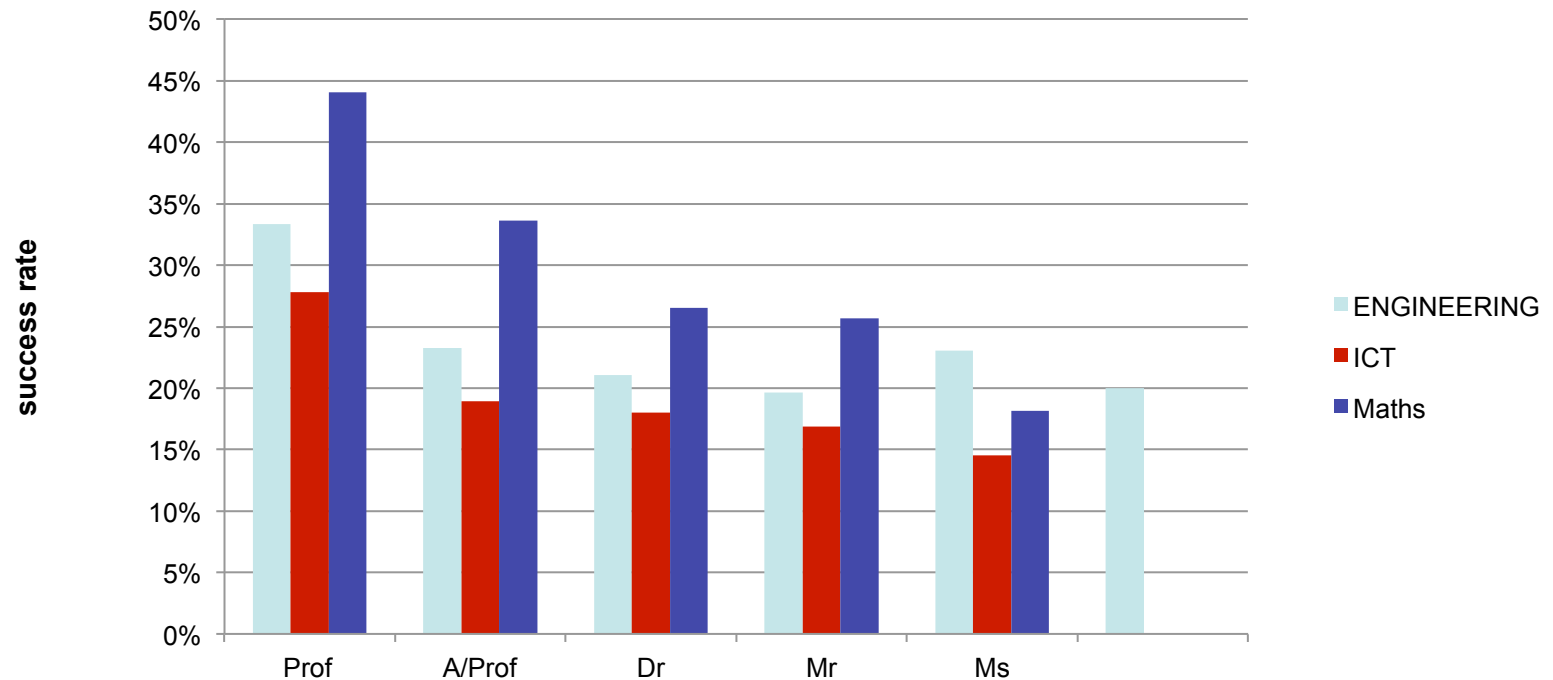
Success rate of ICT proposals after removal of applications from those who submitted more than 5 proposals in total over the years (DP02 to DP09)

| Number of proposals from the same applicants over 9-year period | Total number of proposals from other applicants in ICT | Total number of funded proposals from other applicants | Success rate of other applicants' proposals in ICT |
|---|--|--|--|
| >5 | 1503 | 322 | 21.4% |
| >6 | 1853 | 419 | 22.6% |
| >7 | 2140 | 489 | 22.9% |
| >8 | 2433 | 553 | 22.7% |
| >9 | 2649 | 603 | 22.8% |
| >10 | 2855 | 653 | 22.9% |
| >11 | 2989 | 665 | 22.2% |
| All ICT included | 3120 | 677 | 21.7% |

Comparison between ICT and non-ICT proposals in terms of proportion of DP proposals from non-performers (DP02 to DP12) - Non-performers are defined as applicants who submitted 6 or more DP proposals and are never successful

| Submit Year | ICT proposals from non-performers | Total non-ICT proposals | % from non-performers in ICT | Non-ICT EMI proposals from non-performers | Total non-ICT MIC/EMI proposals | % from non-performers in non-ICT MIC/EMI |
|-------------|-----------------------------------|-------------------------|------------------------------|---|---------------------------------|--|
| 2001 | 28 | 235 | 12% | 3 | 142 | 2% |
| 2002 | 50 | 308 | 16% | 10 | 186 | 5% |
| 2003 | 49 | 287 | 17% | 6 | 170 | 4% |
| 2004 | 66 | 316 | 21% | 9 | 181 | 5% |
| 2005 | 66 | 345 | 19% | 7 | 189 | 4% |
| 2006 | 72 | 399 | 18% | 13 | 211 | 6% |
| 2007 | 80 | 419 | 19% | 15 | 264 | 6% |
| 2008 | 69 | 397 | 17% | 16 | 188 | 9% |
| 2009 | 67 | 414 | 16% | 17 | 298 | 6% |
| 2010 | 55 | 346 | 16% | 19 | 548 | 3% |
| 2011 | 47 | 299 | 16% | 18 | 663 | 3% |

Success rate per Academic Level for DP12



Assessor Comments

- A total of ~4% of ICT applicants have been involved in > 6 DP proposals (17% of DP02-DP12) and never funded
- One applicant has submitted 17 proposals over the same period with the same non-funded record
- Success rate of ICT DP would increase by about ~4% when these 'non-performers' are removed from pool
- In comparison, only 0.85% of non-ICT MIC/EMI applicants have been involved with >6 DPs and never funded; max. of 10 proposals submitted; increase in success rate of ~1.3% if 'non-performers' removed

Options?

- Internal peer review of proposals before submission
- Priority areas of research
- Look to increase assessor database, especially international assessors
- Experienced teams of researchers, mix of levels
- Impressions of applicants
and assessors