
Basic Research in Corporate Labs

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Basic Research in Corporate labs?

- This talk focuses on corporate research Labs
 - Labs where one corporation pays the bills and expects the results
 - (In contrast to contract research labs with many funders)
- Can corporate labs do basic research?
 - Yes, but it requires the right circumstances
 - The right people and facilities
 - The right corporate attitudes
 - The right funding models
 - The right research management models
- Should corporate labs do basic research?
 - Yes! It is in the long term interest of the corporate parent

People and Facilities

- To do world class basic research you need
 - World class people
 - (Neither harder nor easier to get in corporate labs)
 - World class facilities
 - (Gratifyingly inexpensive in computer science)

- Corporate labs have some key advantages
 - Highly skilled intermediate technical staff
 - Highly collaborative atmosphere
 - The ability to push projects forward rapidly with large teams

Corporate Relationship

- To do world class basic research you need
 - A parent that wishes the lab to create significant new ideas
 - A corporation needs short term benefit
 - But this is better if it is based on truly new ideas, not merely incremental developments
- MERL's rule of thirds (each third is essential)
 - 1/3 effort on short term
 - 1/3 effort on mid-term projects,
 - 1/3 effort on the long term

Funding Models

- To do world class basic research you need
 - Significant “umbrella funding”
 - Micro-managed funding stifles creative new ideas
 - The best new ideas must be hidden while they germinate
 - Later they need to be exposed strongly to the light of day
- MERL’s Funding
 - 1/3 for specific deliverables from business units
 - 1/6 for agreed mid-range projects from CR&D
 - 1/2 unrestricted umbrella funding from CR&D

Research Management

- To do world class basic research you need
 - For innovative ideas, let many flowers bloom
 - For quality, expose ideas to open external criticism
 - For company relevance, make everybody responsible
 - To make space for good projects, sick projects must die
- MERL's project assessment
 - “Activities” not assessed
 - “Projects” assessed by
 - Scientific, Market & Parent company merit

Conclusion

- At corporate labs a minority of activity is basic research
 - The majority is more closely related to products
- At universities a minority of activity is basic research
 - The majority is more closely related to education
- However at both kinds of institution, significant numbers of people can direct a majority of their time to basic research
- It is important for a corporation to have its own basic research, so the research can be more closely in tune with the long term needs of the corporation