Building an industry-academia open source community

Gabriel Hanganu

Open Source Junction: cross-platform mobile apps
Trinity College, Oxford
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Entrepreneur-in-residence

- THESS: Brunel University appoints "entrepreneur-in-residence"
- 3 d/w on a voluntary basis, not attached to any department, no line manager, free to work with who he wants
- one-to-one sessions with students to thrash out business ideas
- broker deals with local businesses to ensure students have "live" projects to work on
- will work with academics to help them make the most of their research findings and IPR
- director of corporate relations: first step towards creating a pool of business people working in the same way within the university

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Cultural difference barrier

- Main barrier: cultural difference; divergent orientation of activities
- lack of time and resources
- some problems related to IP and university regulations - but far less than their industry collaborators
- Little or no acknowledgement by department or university

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Academic entrepreneurship

- survey of UK academics by Adv Institute of Mgm Research:
- academics 5 times more likely to be entrepreneurs than general public
- in all disciplines, including humanities and social sciences
- entrepreneurial in various ways (contract research, consulting)
- British universities income from contract research and consulting is 20 times their income from intellectual property

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Research-driven collaboration

- 2010 survey by UK Innovation Research Centre of investigators in physical and engineering sciences:
- most academics engage with industry to further their research
  - secure additional research funding
  - find interesting research problems
- main motivation for starting new ventures: develop research into practical application
  - Impact, not money, makes academics entrepreneurs

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Network-driven engagement

- Few academics engage with industry for purely financial gain
  - patenting and spin-off company formation are motivated exclusively by commercialization
  - joint research, contract research, consulting are strongly informed by research-related incentives
- Increasingly academics engage with industry for building research networks
  - first 2 factors remained constant over years; engaging with industry to build networks increased

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Industry perspective

- Generic distrust in academic business ability
  - academics can't conduct outsourced research delivered in short time frames
  - take universities as equal partners, value them for what they are good at:
    - test new ideas, use research labs for projects that are not yet mainstream but potentially highly promising

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University assets

- highly educated people who create new ideas
- scientists who can serve as industry consultants
- collaborative research opportunities
- natural flow of new talent to companies

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IP and admin burden

- Other main barriers: admin burden and IP costs
- In research mainly funded by industry, academics don't mind industry partners controlling IP, as long as they can publish research papers
- Problems when research is partly publicly funded - universities try to claim some ownership
- Cost of managing IP weighted against benefits of research leading to scientific innovation

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Creative partnerships

- Despite very different cultures, creative partnerships can be set up
- IBM nuggets:
  - well-managed communication to avoid misunderstandings
  - comprehensive memoranda of understanding and IP agreements
  - joint leadership of faculty and industry researchers
  - long-term strategic relationships and goals
  - **consortium with multiple industry and university partners, leveraging multiple funding sources**

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Turn tables

- Flip the way universities pursue industry partnerships
  - Currently universities seek industry partner for commercialization when a product or process is discovered
  - Instead, clusters of industry pulling relevant research from universities by jointly identifying and communicating their needs for pre-competitive research

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Joint applications

- EU attempt to bring sectors together to address health issues and develop new medicines
- Innovative Medicines Initiative - sponsored by European Commission and EU-based pharmaceutical companies
  - Commission € 1billion for 5 years + Companies € 1billion of in-kind contributions
  - independent committee determines most important research areas each year
  - academic-industry consortium that submits best proposal wins funding
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Software collaboration

- Similar issues, challenges, opportunities
- Developers are part of their sector's culture
- IP issues, divergent goals, mistrust etc
- Even when software is released under open source license

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Open development **practice**

- Open source your code
- Build or become part of community
- Use established tools and processes
- Think sustainability from the outset
- **Do all these for practical benefits: makes life easier and a better product**

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Open development

- Ross Gardler: 'a way for distributed team members to collaboratively develop shared resources in a managed and sustainable way'
- Gianugo Rabellino, Senior Director, Open Source Communities at Microsoft: people contribute to os projects both because this helps them 'scratch an itch', i.e. find solutions to a problem that affects them directly, and because they feel that by doing this, all the other people involved - and society as a whole - are likely to benefit

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Practice-led transformation

- Initial contributions: adapt existing software to their needs, or improve piece of code
- Choice to contribute back to the community, or keep modified version on their machine
- contributing back can save work later - no need to apply their changes to every new release
- also community benefits, incl. opportunity to monitor online activity of senior developers
- “come for the code and stay for the community”

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Change “from within”

- Improving collaboration through policy, education, change perception of each other etc. are changes “from outside”
- Open development results in change “from within”
- In software collaboration the second is critical

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Conclusion

- To foster industry-academia collaboration both change from within and outside is needed
- Sustainable change from outside: long term strategic partnerships
- Sustainable change from within: open development as software development practice

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