Academia- Industry Linkage

Entrepreneurship

Entrepreneurship has been described as the

"capacity and willingness to develop, organize and manage a business venture along with any of its risks to make a profit."

- Entrepreneurial activities of scientists are by no means totally new phenomena.

- Such things occurred in **17th century** German pharmaceutical science.

- The formation of industrial consulting and scientific instrumentation firms by scientists also took place in the **late nineteenth century at Harvard and MIT** but were **anomalies** at the time.

- This was because traditionally, the most deeply held value of scientists is the **extension of knowledge**.

- To contribute to this is the highest goal of a scientist.

- But nowadays to earn from knowledge has become totally acceptable.

- The incorporation of **‘extension of knowledge’** into a compatible relationship with **‘capitalisation of knowledge’** is a profound **modern change in science.**

First academic revolution

- The **first academic revolution**, taking off in the late nineteenth century in the U.S., **made research an academic function** in addition to the **traditional task of teaching**.

- This revolution is by **no means finished** and we all practice it as a routine.

Second academic revolution

- But in the most advanced segments of the worldwide university system, a **‘second revolution’** has taken off.

- These entrepreneurial universities **integrate economic development into the university as an academic function** along with teaching and research.

- It is this ‘capitalization of knowledge’ that **links universities to users of knowledge** more tightly and establish the university as an **economic partner**.

Criticism of entrepreneurialism

- However, many academics and others view the entrepreneurial paradigm as a **threat to the traditional integrity of the university.**

- Some critics believe entrepreneurialism should be **resisted**.

- Or at least **encapsulated** in a special class of institutions of higher learning, fearing that an intensive monetary interest will cause the university to lose its role as **independent critic of society.**

- They argue that **publication of research and production of graduates** are the **most appropriate roles** for an institution dedicated to the public good.

Academia and industry think on different lines

- **Academic institutions differ from industries** with respect to their innovation goals and how they innovate.

- They focus predominantly on **basic research** to extend and deepen the existing stock of basic knowledge and technologies.

- They are, in general, **willing to share** their findings with the public by, for example, publishing them in scientific journals.

- **In contrast**, the ultimate goal of **profit maximization** forces industries to focus more on **applied R & D**.

- This help to introduce **innovative products** into markets, using the basic knowledge and technologies which they have **explored on their own** or have **obtained from external sources** such as academic institutions.

- Big industries have their **own research cells**.

- The results are kept **secret** and therefore not published.

In general industries may obtain innovation-related knowledge and technologies from academic institutions through engaging in the following **three types of academia-industry linkages**:

1. Industries can take **academic institutions** as their sources to acquire **patents and licenses** by **academic consultancy**.

2. They can take **academic institutions** as their **innovation partners.**

In this case, they **financially support** academic research or **directly undertake joint research projects** with academic institutions.

3. They take academic institutions **only as training bases**.

   It means that they **directly hire students or graduates** and **attract researchers** to join their research teams to enrich their innovation capabilities.

Research funding for academics from non-university sources

- Who will **fund public policy (non-university) research** done by the academic is a **difficult problem**.

- Some institutions have begun to use the **"soft money"** approach in public policy research, whereby research units **seek out their own funding** for research projects.

- This is **problematic**:

  Who will **control the outcome**—the researcher or the contracting entity?

  Ethically, the academic **cannot and must not frame results** to fit the agenda of the contracting entity.

- But without funding, the research **may not be done at all**.

- Policy choices could be **recklessly** made, without benefit of any reliable information.

Guidelines are needed

- In the **absence of an independent funding source**, free of ties or obligations regarding the research outcome (the preferred option), **clear and consistent guidelines** for research projects must be developed.

- These guidelines **must stress ethics** and must be **agreed to by both parties up front.**

- These guidelines must **stress independence for the researcher's sake** and **protection of the data collection for the sake of the contracting entity.**

- The researcher must recognize the **importance of protecting any data collected in the research** and **securing appropriate permission** before using said data in any **publishing** effort.

- Both participants are at **risk**.

- Researchers risk **loss of academic freedom**, and those seeking the research **risk loss of privacy and protection** of the information.

Why Researchers Partner?

- Access to data
- Sample groups and research subjects
- Application of research to real problems
- Practical ‘on the ground’ expertise & understanding

Why industry partners?

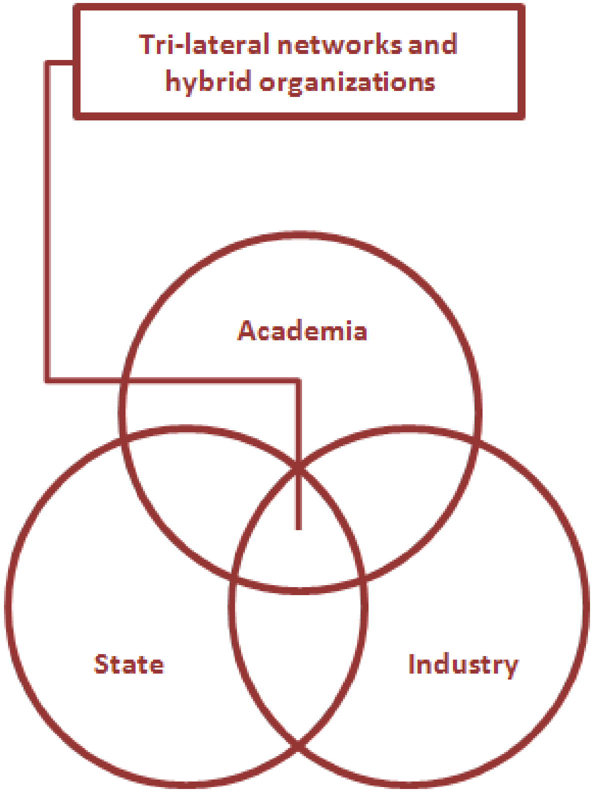
- Independent validation
- To collaborate with others on issue of common importance
- To test new system, strategy, idea that is outside immediate organisational priorities
- Personal interest in research or improving research skills
- Forming a link with University

And why they don't?

- Time from submission to start of project may be too long
- Researcher objectives are not compatible with industry
- Long term project and relationship needs budget commitment
- The fear that what is expected or promised is not delivered
- Confidential or personal details may be leaked
- Problems are not reported or discussed

Triple Helix

- A **triple helix** of **university–industry– government** relations surpasses previous models of institutional relationships.



- Industrial development **in the past** had only two components, **industry and government**.

- So industrial policies focused upon the government–business relationship, either by **improving the ‘business climate’** with **lower taxes** or by **influencing location decisions** through **subsidies**.

There are **four processes** related to major changes in the production, exchange and use of knowledge which the **triple helix model has identified**:

- The **first** is **internal transformation** in each of the helices.

  It includes the development of **lateral ties among companies** through strategic alliances.

- The **second** is the **influence of one institutional sphere upon another** in bringing about transformation.

    For example, governments in Sweden and the US have **revised rules of intellectual property ownership** to transfer rights from individuals or government to the universities.

- The **third** is the **creation of a new overlay of trilateral linkages, networks, and organizations** among the three helices.


Thank You!