Standards Driven Research

Key Note

By

Prof. Debabrata Das

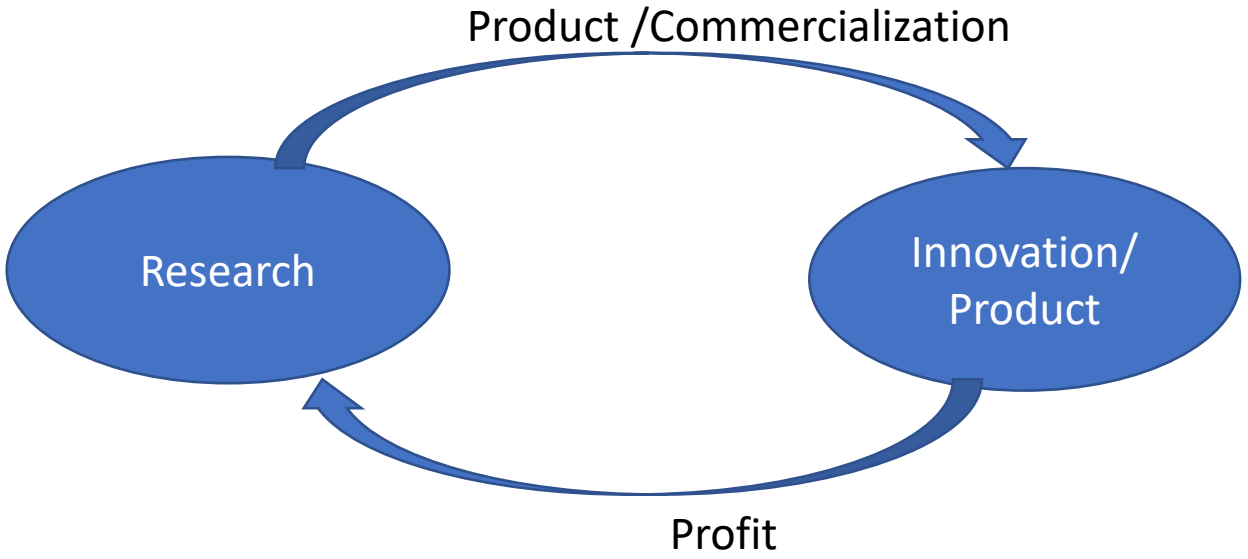
Director,
IIIT Bangalore

Overview

- Introduction → Why Standard Driven Research Very Important?
- Present Challenges in Academia for Motivating Faculty for Standard Driven Research
- How to achieve it in Academia?
- Summary

Introduction

Research to Innovation



Innovation to Product

- A set or sub-set of novel ideas/solutions from multiple research Problems make a product
- A product for mass adaptation and commercialization needs **standards**
- Without commercialization we cannot do financial profit
- Without profit we cannot do further research and development
- Hence "Standard Driven Research Inevitable"

Introduction (Continued)

- Why Academia for Standard Driven Research?
- Indian Higher Education Institutes (say, Engineering) → is well known for Teaching, research
- There is a possibility → online and NEP may reduce tuition fee drastically for any degree/diploma programs → How the educational institution will survive?
- Last a few years Patent filing also added to expectation list → but the number still low!
- **However, a Patent or a pool of patents have no use → without a goal to push a standard or Transfer of Technology to a product line of industry → Because it generates revenue**
- **Faculty will play a role for the above → How?**

Challenges in Academia for Standard Driven Research (SDR)

- Research and Teaching are two main focus of a faculty
- Research:
  - Orientation towards paper → academia promotion is evaluated by research papers
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  - Research Projects → majority project expects paper and a few PoC (however some projects expects now a days industry collaboration) and rarely standard contributions (10:1)
  - Even we file patents → due to lack of standard acceptance, very rarely it is being used
  - In India rarely funding agency support travel for standard presentation or participation
  - Majority of Industry collaborations → while presenting the joint ideas in standard body, industry person is sponsored by industry and faculty donot get any travel support

Challenges in Academia for Standard Driven Research (Continued)

- Teaching:
  - Majority of service oriented companies in India → Developers look at software requirements specification (SRS) and without much understanding the innovation, develop the codes, etc.
  - In R&D companies or project given to service IT companies → Most of the SRS documents are derived from Standards
  - Unfortunately, to the best of our knowledge, most of the institutes in India donot teach, what is standard? standard process, etc.?

- As a country most of our faculty members, students, scientific staffs and Engineers are **not STANDARD AWARE** in high tech areas!
- Next question arise in our mind → How to motivate Faculty, scientist, staff and Students for Standard Driven Research?

How to motivate for SDR?

- Incentives:
  1. Orientation → Why it is important? For Management and Faculty to realize
  2. How to participate? → awareness
  3. Financial
  4. Career path
  5. Research and Innovation

How to Motivate for SDR? (Continued)

6. Standard Meeting Travel and Academic Calendar
7. Teaching
8. Collaboration
9. % IPR rights to the faculty
10. Startup support for product
11. Which area/standard to follow for SDR?

Orientation → Why it is important? For Management and Faculty to realize

- Due to advent of New Technologies (online and virtual-AR/VR etc.) and Policy change (NEP) → dynamics of delivery of education and revenue may change
- Existence of some institutions may be difficult → due to online, may be less teaching load for some faculty members
- Research papers will bring in project →
  - but it may not collect enough revenue (overhead);
  - secondly may not be perennial source of income for institute or faculty
- Hence, Standard and Startups will be trend in academia → new source

How to participate? → awareness

- Workshops like “Standard Driven Research” is very important
- Academia and standard bodies should make presentation and workshops on “Standard and Impact”
- Present Students are future standard contributor → orientation of students in class/curriculum to be added

Financial Support to Faculty and Staff

- Standard participation needs → Technical/Research, Public Relation and Communication Skills
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- In addition to above one has to travel and attend meetings in odd hours due to global standard meetings
- With respect to above → faculty and staff involved may be paid extra incentives on top of their salary
- % of IPR can be in name of faculty in case of commercialization

Career Path

- A novel contributions accepted in a Standard body → should be given a good amount of weightage in promotion and other incentives (equipment to labs, fellowship etc.)
- Standard participation can be given weightage for promotion
- Every department/institute can allocate a few Professors and scientific staff cadre for standard participation
- Institutes should start thinking of creating “Standard Centre”
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Research and Innovation

- More Focus on Research and Innovation related to “Standard Driven Areas”
- Funds to be allocated for above
- Indian academia should create “Working Groups” in standard body with respect to emerging new technology areas → Like, RIS: Reconfigurable Intelligent Surface, Digital Identity, etc.

Standard Meeting Travel and Academic Calendar

- Travel: at present most of the research funding or institutes donot support standard meetings travel → more funds to be allocated for standard meeting travel

- Calendar: Indian academia driven by Semester based calendar, where standard meetings are quarterly and various places of world → Hence, a faculty may miss the teaching for a week.
  - How to manage the teaching schedule? → adjust the respective faculty class and give official leave to travel

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Collaborations

- Multiple Academic Institutes can collaborate for a particular area standard participation
- Academia and Industry collaborate for a standard area's participation
- However, above case, IPR sharing should be clearly discussed

Which area/standard to follow for SDR?

- Generally, we the faculty members are passionate for a research area with respect to our interest → this is very good, but it is not sufficient!
- We need to find a good technology area with financial/business value which can be standardized for global adoption
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Conclusion

- Standard participation and pushing the novel ideas from Indian academia will be requirement for growth
- Standard areas along with technology should have business vision
- We should have policy from Government and Academia to support faculty and scientific community.
- There should be financial incentives for faculty and scientific community to attend as well as IPR sharing

Thank You!

ddas@iiitb.ac.in