Session 16 :
Understanding the activities of a TTO

Venturing and spinouts – Indian context, other commercialization models, Exercise 5

Premnath V, Shruti Devasthali

Who's Speaking

Premnath Venugopalan

PhD, RTTP, FSTEM

Dr. Premnath, Director of Venture Center and Head of NCL Innovations, is a leader in technology transfer, IP commercialization, and venture creation. He has shaped national policies and established award-winning innovation management initiatives, fostering technology commercialization, startups, and deep-tech incubation across India through CSIR-NCL and Venture Center.

Affiliation

- Director, Venture Center, Pune

Who's Speaking

Shruti Devasthali

CA

Shruti is a Chartered Accountant and a certified Financial Risk Manager. She is responsible for seed fund activities, monitoring and mentoring of Venture Center's portfolio companies, monitoring funding under grant programs operated by Venture Center.
During her previous work engagements, Shruti has worked with CRISIL Ltd and Dun & Bradstreet Information Services India Pvt Ltd in the areas of credit and financial analysis.

Affiliation

- Head- Funding and Investment &
  NIDHI PIP- Project Manager, Venture Center

Venturing and spinouts – Indian context

Premnath V

New Venture Creation: Types

- TYPE 1:
- New company (with unrelated founders) created with a **traditional technology/ IP license** backing them

- TYPE 2:
- New company (with unrelated founders) created with an **equity/ equity linked engagement** with the University/ R&D Lab

New Venture Varieties

- Axes for variants:
- Is the institute the source of founding technology?
- Are founding team members associated with the institute?
- Will the institute going to support with joint research, consultancy, technical support etc. ?
- Will the institution enjoy equity linked benefits?

Equity linked arrangements

- General rules:

- Can be done by a) non-profits without tax exemption, or b) approved non-profits incubators with tax exemption
- Can be done in following ways:
  - -- Equity only
  - -- Equity and running royalty combination
  - -- (Deferred payments linked to valuation milestones)
- Shareholding of institute: Usually kept low (<3-5%); sometimes with a limited, non-dilution clause

Founders from Institute

- Axes for variants:

- Students/ Staff/ Faculty/ Alumni
- Sometimes, equity arrangement available only if student/ staff/ faculty/ alumni involved
- Sometimes, preferred party for licensing
- Sometimes, preferential terms as encouragement

What is Faculty Entrepreneurship?

Faculty Entrepreneurship

- My definition: Faculty or Staff Scientist has the role of a **founder shareholder** in a new startup company (usually privately held, not listed)

- In that role, the faculty member is likely to contribute to:
  - Conception of the business idea; foresight
  - Getting the new venture started
  - Championing the new idea; Evangelizing the opportunity
  - Tying up critical resources; Motivating cofounders
  - Dealing with the earliest risks/ uncertainties

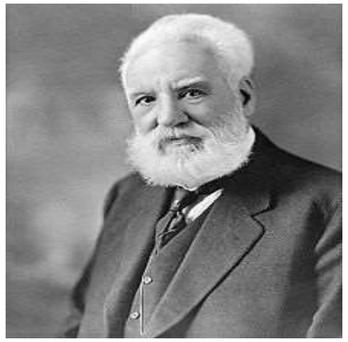
Examples

Faculty Entrepreneurship > Global

Frances Arnold, Cal Tech
Nobel Prize (2018)
Gevo, Provivi, Aralez Bio

Jennifer Doudna, UC-B
Nobel Prize (2020)
Mammoth, Intellia, etc

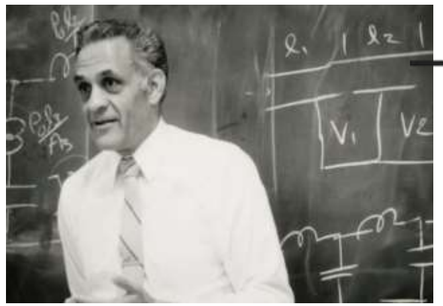
Bob Langer, MIT
Patents 1400; h index 280+
More than 40 startups; Moderna



Alexander Graham Bell
AT&T

Richard Friend, Cambridge
1000 publications. 20 patents
3 startups

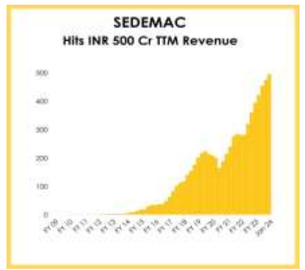
Emmanuelle Charpentier, Max Plank
10obel Prize (2020)
CRISPR Therapeutics (Casgevy)



Amar Bose, MIT
Bose Corporation

Faculty Entrepreneurship > India

SEDEMAC



Shashikanth Suryanarayanan
IIT-Bombay

ImmunoACT

Rahul Purwar
IIT-Bombay

strand

Vijay Chandru
IISc Bangalore

Examples : NCL & Venture Center

Examples of Faculty Entrepreneurship from NCL

MODULE INNOVATIONS

GENRICH Membranes Pvt. Ltd.

ABHIRUCHI PROBIOTICS
Your Health our Interest

SERIGEN

BARE FEET ANALYTICS

ANNWESON SCITECH

OrthoCrafts

Rechargion™

VIVIRA

ZeroPlast

Tridiagonal® Solutions
compute | innovate | develop

Examples: Faculty from other institutes & Venture Center

Actorius Innovations and Research Pvt Ltd

"Fighting cancer – one cell at a time."

The company has developed a proprietary Circulating Tumor Cell (CTC) test that has major clinical significance in monitoring disease progression and early detection of cancer relapse.

ONCO DISCOVER
Liquid Biopsy Technology

Supported By

- 1st indigenous medical device to get **DCG(I) approval**.
- **2,000+** clinical tests; **20,000+** CTCs detected.
- **"Innovator of the Year – 2019 (Healthcare)"** at Global Bio India - 2019.
- Clinical study done on 500+ patients of Head and Neck Cancer at Tata Memorial Hospital, Mumbai.
- European Patent granted, US patent awaited.
- Clinical data published in prestigious international forums like **AACR, ASCO** and **ESMO**.
- **ISO 13485:2016** manufacturing facility certified by the British Standards Institute (BSI).

Nayam INNOVATIONS
Nayam Innovations Pvt. Ltd.
www.nayaminnovations.com

PERSONALIZED INTRA-OCULAR LENSES

isite
Tanuj Gigras
info@nayaminnovations.com

VISION *Develop, Scale & Provide Disruptive Products at Affordable Prices in Ophthalmology*

PROBLEM

"More than 25 Million patients per year do not get spectacle free vision after cataract surgery – due to pre-existing or surgically induced refractive errors which are unique to every patient"

OUR PERSONALIZED INTRAOCULAR LENS

Our IOL made of Proprietary shape changing material... → Can be customized for individual patients by our shape changing device.... → Providing spectacle free vision

Shape changing IOL

Shape changing device

Our product vs conventional IOLs

Cataract is No. 1 among WHO Priority Eye Diseases

Patents

- Composition of Polymer Material
- Manufacturing Methods
- Instrumentation

MARKET SIZE

Global IOL Market:
$ 4.5 Billion Annually (2020)

No. of Cataract Surgeries per year:
32 Million Annually (2020)

Stage

Completed animal studies

Begin human clinical studies

Low-cost, scalable manufacturing developed

Tanuj Gigras
Co-founder, CEO
Investor

Dr. S. Ponarathnam
Co-founder, Investor

Prof. JA Kornfield
Co-founder, Investor

David Green
Advisor, Investor

Prof Bala Ambati
Advisor, Investor

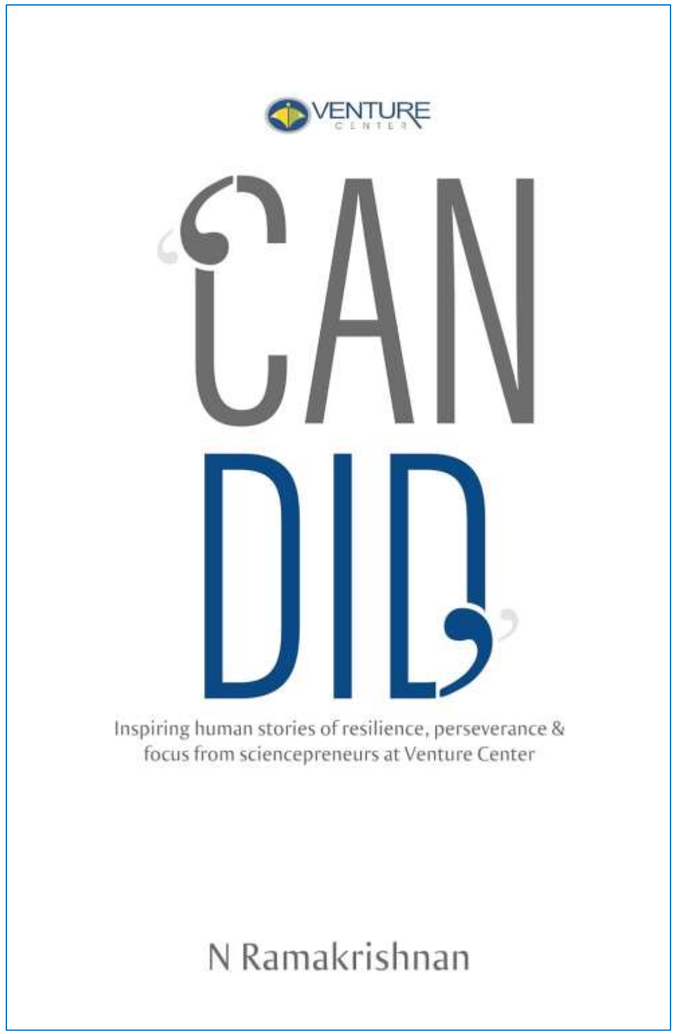
Investors

birac · villgro · VENTURE CENTER · KeraLink INTERNATIONAL · Indian Angel Network Fund · BHARAT INNOVATION FUND BY CIIE.CO

Next two years

Complete clinical study and Setup pilot manufacturing facility of 100,000 lenses per year capacity

CanDid: 15 entrepreneurial journeys

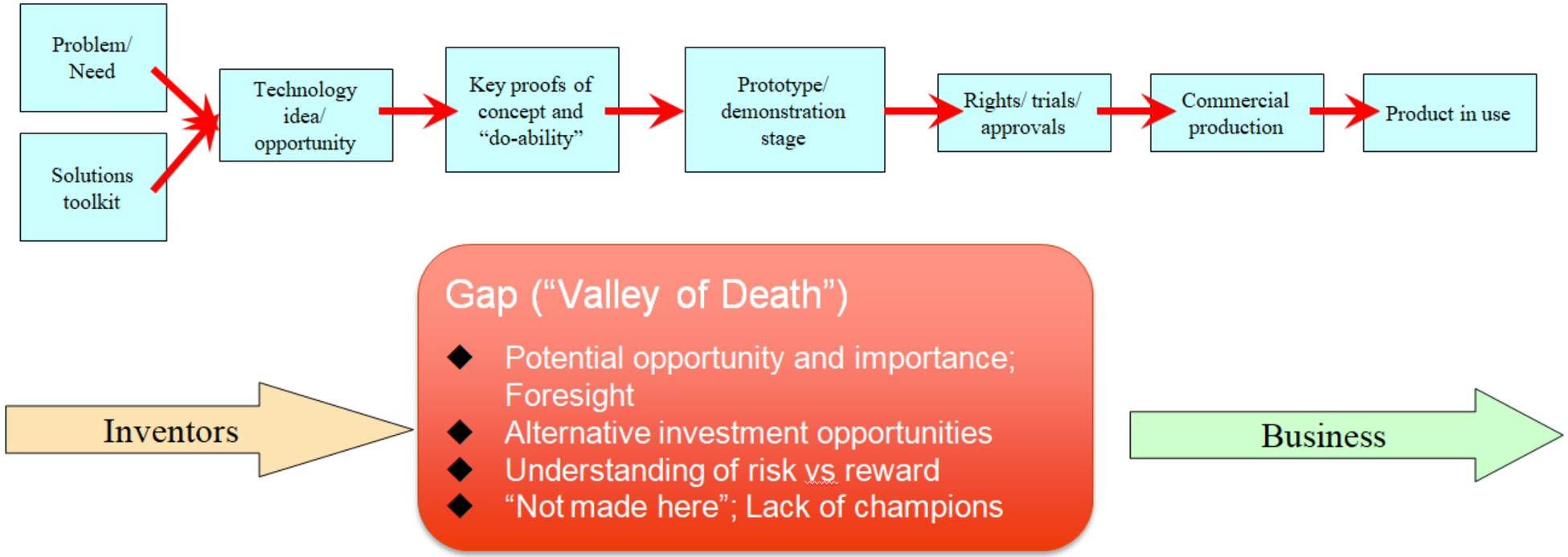


CANDID: Inspiring human stories of resilience, perseverance & focus from sciencepreneurs at Venture Center

https://www.amazon.in/CANDID-Inspiring-resilience-perseverance-sciencepreneurs/dp/9394887652

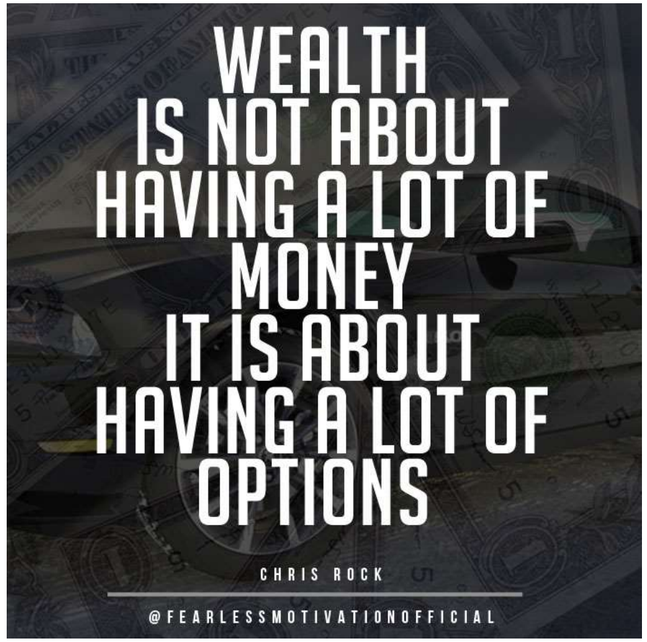
Why are faculty interested in entrepreneurship?

The gap: Interests, motivations, expectations, trust



What motivates entrepreneurs?

- Realizing one's full potential; challenging oneself; achievement; pursuing one's own ideas
- Mission; solving the problem; having an impact; accompanying satisfaction, respect etc
- Money; financial stability; Money brings options and freedoms (**Very often, this is not the main purpose – but a happy by-product!)**



Startups can be the "best friends" of researchers

BULLETIN ON ENTREPRENEURSHIP: NO. 1, APRIL 2023 | Subscribe

Startups Drive Commercialization of High-Impact Innovations

Patents commercialized by startups are more likely to be disruptive than those commercialized by incumbent firms or universities.

"Start ups have more incentive than incumbent firms to engage in potentially disruptive R&D because large, established firms have more to lose from the discovery of new technologies that replace traditional ways of doing things. With no existing operations, startups have nothing to lose and much to gain from disruptive innovation."

NBER | NATIONAL BUREAU of ECONOMIC RESEARCH

https://www.nber.org/be/20231/startups-drive-commercialization-high-impact-innovations

Differences compared to other entrepreneurial journeys

Key differences in faculty entrepreneurship

- Faculty founder is constrained by obligations to academic/ R&D organizations and has to follow its rules
  - Permissions
  - Time commitments
  - Use of resources
  - Conflicts
  - Provisions to go on leave / on lien

- Very often, the background IP is owned by the academic/ R&D organization
- Provision of rights; License/ assignment

Enabling provisions/ policies & processes

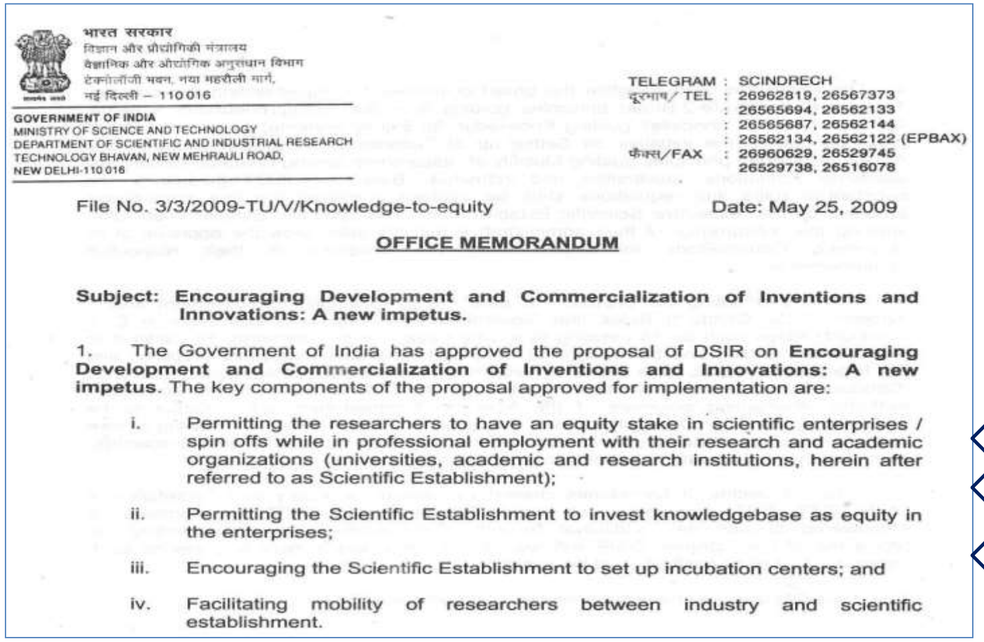
Key policies and provisions

- Policies:
  - Permission to found a startup
  - Time commitments
  - Use of institutional resources
  - Management of conflict of interest/ commitment
  - Provisions to go on leave/ on lien
  - Rights to IP

- Support mechanisms:
  - New venture creation awareness and training
  - Networking opportunities
  - IP protection support
  - Technology licensing office
  - Incubator
  - Investment funds

DSIR notification

Corresponding DBT notification: http://www.nbrc.ac.in/newweb/wp-content/uploads/2019/12/NBRCDBT-Entrepreneurship-Policy-190923B.pdf



भारत सरकार
विज्ञान और प्रौद्योगिकी मंत्रालय
वैज्ञानिक और औद्योगिक अनुसंधान विभाग
टेक्नोलॉजी भवन, नया महरौली मार्ग,
नई दिल्ली – 110 016

GOVERNMENT OF INDIA
MINISTRY OF SCIENCE AND TECHNOLOGY
DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH
TECHNOLOGY BHAVAN, NEW MEHRAULI ROAD,
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26529738, 26516078

File No. 3/3/2009-TU/V/Knowledge-to-equity Date: May 25, 2009

OFFICE MEMORANDUM

Subject: Encouraging Development and Commercialization of Inventions and Innovations: A new impetus.

1. The Government of India has approved the proposal of DSIR on **Encouraging Development and Commercialization of Inventions and Innovations: A new impetus**. The key components of the proposal approved for implementation are:

i. Permitting the researchers to have an equity stake in scientific enterprises / spin offs while in professional employment with their research and academic organizations (universities, academic and research institutions, herein after referred to as Scientific Establishment);

ii. Permitting the Scientific Establishment to invest knowledgebase as equity in the enterprises;

iii. Encouraging the Scientific Establishment to set up incubation centers; and

iv. Facilitating mobility of researchers between industry and scientific establishment.

Implemented by CSIR: Approved by 174th GB of the CSIR on 11 Aug 2009

- Scientists/professors can promote companies
- Institutes/labs can give technology in lieu of equity
- Incubators and mobility of researchers

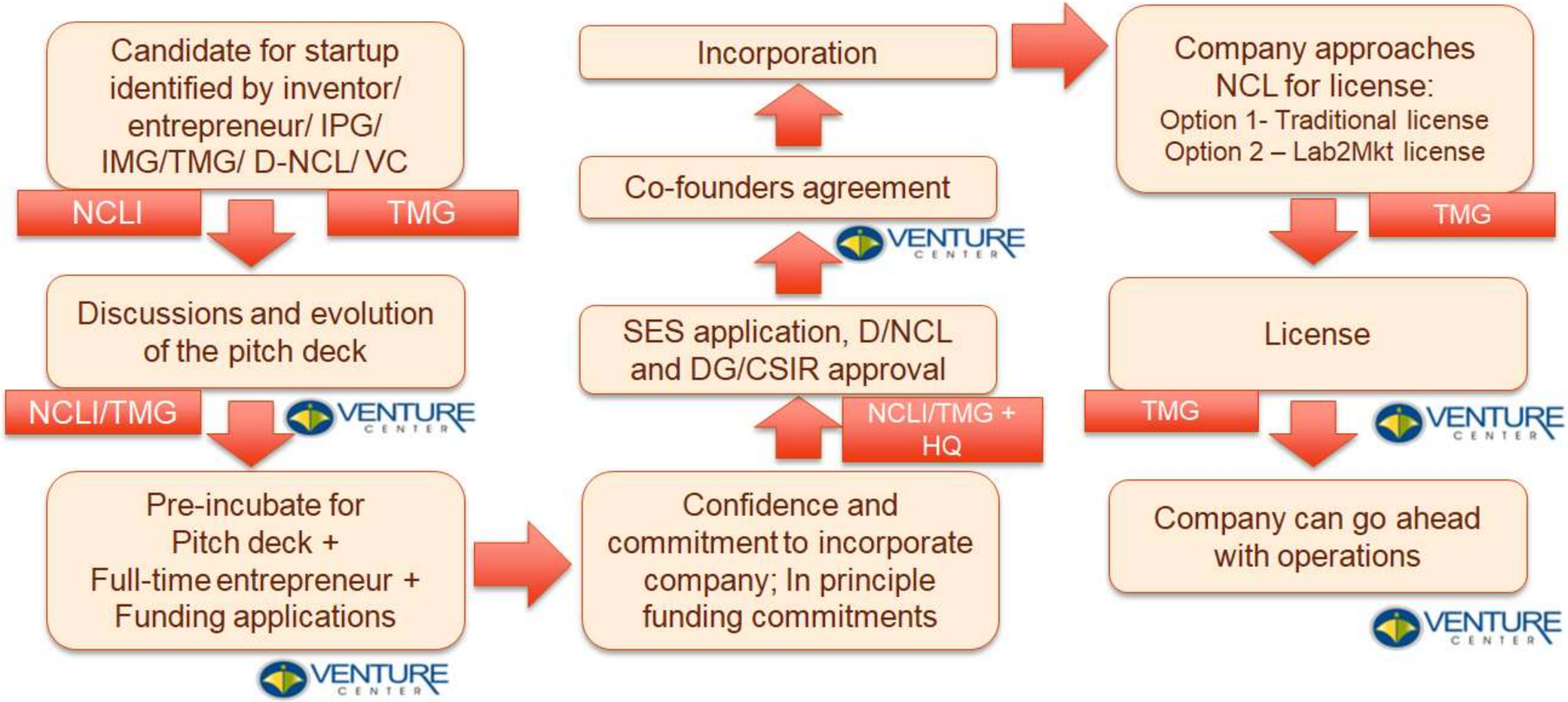
DSIR/CSIR Initiatives

- ***25 May 2009*** - DSIR notification
- ***11 Aug 2009*** – CSIR GB note on Scientist Entrepreneurship Scheme (SES)
- ***2 Nov 2009*** – GB note approved by President, CSIR
- ***30 Nov2009*** – OM from CSIR with guidelines issued
- ***NCL Innovations puts in place the mechanisms to operationalize SES***

DBT Initiatives

- ***25 Nov 2014*** - DBT notification
- ***2018***– Revised notification from DBT

Process Flow

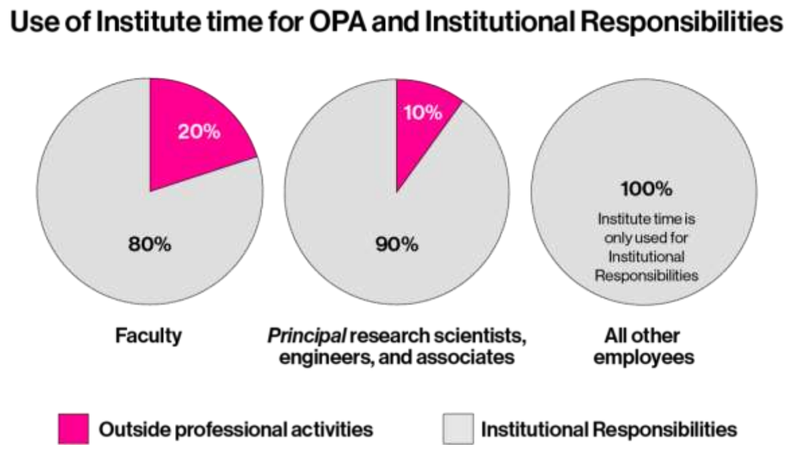


Sample Policies

An MIT Inventor's Guide to Startups:

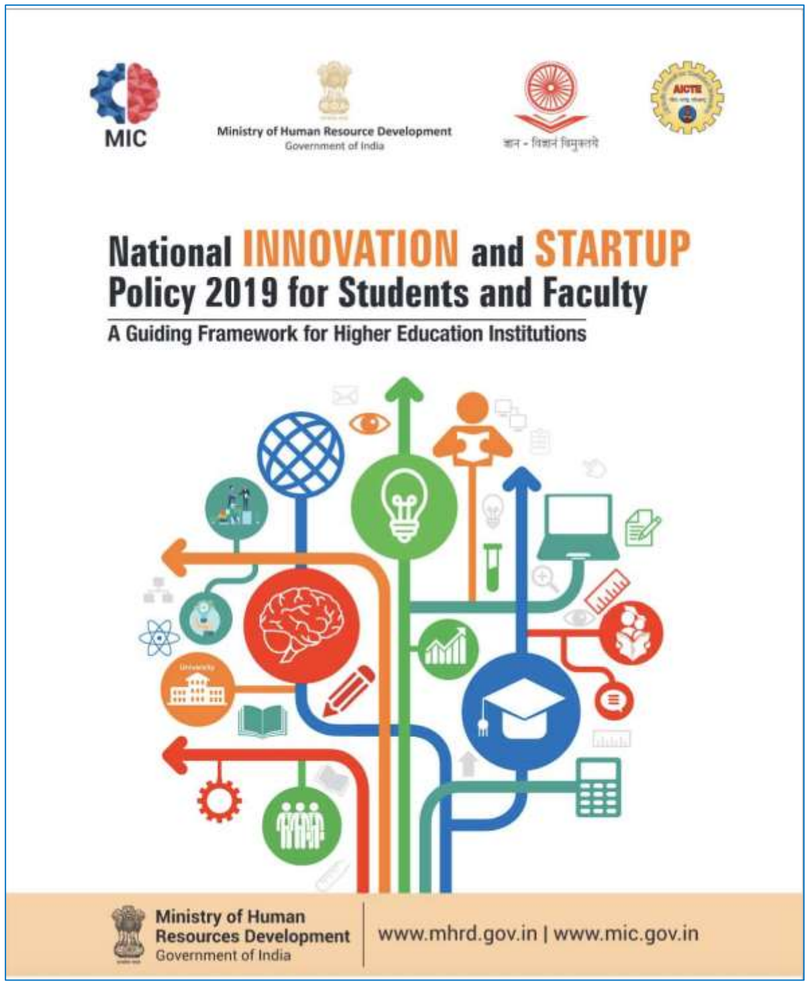
https://web.mit.edu/tlo/documents/MIT-TLO-startup-guide.pdf

- IP Policy: https://policies.mit.edu/policies-procedures/130-information-policies/131-intellectual-property
- Conflict of interest: http://policies.mit.edu/policies-procedures/40-faculty-rights-and-responsibilities/44-conflict-interest
- Outside professional activities: http://policies.mit.edu/policies-procedures/40-faculty-rights-and-responsibilities/45-outside-professional-activities ; https://provost.mit.edu/resources/outside-professional-activities-2/



National Innovation & Startup Policy 2019 for Students & Faculty:

https://version2024.iitb.ac.in/sites/version2024.iitb.ac.in/files/basicpagefile/NISP.pdf



7. Norms for Faculty Startups

a. For better coordination of the entrepreneurial activities, norms for faculty to do startups should be created by the institutes. Only those technologies should be taken for faculty startups which originate from within the same institute.

   i. Role of faculty may vary from being an owner/ direct promoter, mentor, consultant or as on-board member of the startup.

   ii. Institutes should work on developing a policy on 'conflict of interests' to ensure that the regular duties of the faculty don't suffer owing to his/her involvement in the startup activities.

   iii. Faculty startup may consist of faculty members alone or with students or with faculty of other institutes or with alumni or with other entrepreneurs.

b. In case the faculty/ staff holds the executive or managerial position for more than three months in a startup, they will go on sabbatical/ leave without pay/ utilize existing leave.

c. Faculty must clearly separate and distinguish on-going research at the institute from the work conducted at the startup/ company.

d. In case of selection of a faculty start up by an outside national or international accelerator, a maximum leave (as sabbatical/ existing leave/ unpaid leave/ casual leave/ earned leave) of one semester/ year (or even more depending upon the decision of review committee constituted by the institute) may be permitted to the faculty.

e. Faculty must not accept gifts from the startup.

f. Faculty must not involve research staff or other staff of institute in activities at the startup and vice-versa.

g. Human subject related research in startup should get clearance from ethics committee of the institution.

IIT Bombay Startup Policy 2021:

https://version2024.iitb.ac.in/en/innovation-entrepreneurship

Indian Institute of Technology Bombay

Startup Policy 2021

A. Preamble

The Indian Institute of Technology Bombay (IITB) is recognised worldwide as a leader in the field of engineering education and research. Reputed for the outstanding calibre of students graduating from its undergraduate and postgraduate programmes, the institute attracts the best students from the country for its bachelor's, masters and doctoral programmes.

As part of its objective to take up research that makes a difference, IITB encourages its faculty member, employees and students to take up R&D from early on and convert their technology ideas and innovation in various disciplines of science and engineering into commercial ventures for wide public good.

Indian Institute of Technology Kanpur: Faculty Entrepreneurship Policy: https://version2024.iitb.ac.in/en/innovation-entrepreneurship

1. Kind of Companies

IIT Kanpur encourages and prioritizes the Companies in the following order.

a. Companies jointly owned by the faculty members and/or graduating students/alumni (along with possible others).
b. Companies owned by the faculty members (one or many) along with possible others.

Companies eligible under this "Policy":

Such a Company must pursue businesses that are a direct result of the research and development activities of the faculty member of IIT Kanpur. In such cases, the faculty member(s) and student(s), if applicable, will be known as a founding member(s)/Promoter(s) in a Non-Executive position of the Company.

Companies not eligible under this Policy:

A faculty member cannot associate, either as a Promoter or in an "Executive Capacity", with:

a. Companies involved in Teaching and/or development of educational content. On the other hand, companies developing innovative technology platforms that facilitate delivery of content are permissible.
b. Companies whose business will be to provide consultancy services.
c. Such class of Companies that may be prescribed and notified by IIT Kanpur from time to time.

2. Role of the Faculty Member

permission from the competent authority at IIT Kanpur and entering into an explicit agreement with the Institute following existing processes.

b. Take a sabbatical and/or Leave without pay and work full-time for the Company in an Executive Capacity (COO, CEO, Vertical Head etc). Eligibility and approvals of such leave are governed by the extant rules of the Institute.

It should be noted however that the faculty member of IIT Kanpur should take all possible steps to ensure that his/her duties and responsibilities as a member of IIT Kanpur faculty, take precedence over all other activities regardless of the nature of his/her engagement with the Company.

3. Intellectual Property Rights and Usage of Institute Resources

As stated in the preamble, faculty members of IIT Kanpur are only allowed to incorporate Companies whose business objectives can only be fulfilled by using the know-how and/or technologies developed at IIT Kanpur. Thus it is critical that there is clarity vis-à-vis policy of usage of institute resources, know-how developed using institute resources and IP Rights.

a. In the event the Company uses any "know-how" for business purpose, which has not been secured through any IP prospects, the Faculty member has to disclose the source and origin of such "Know-how".
b. In the event the faculty member(s) would want to use an existing Intellectual Property developed at IIT Kanpur and protected by filing/grant of patent where IITK is an applicant & the Faculty member is an inventor, the Faculty

3

COEP: Student & Faculty: Innovation and Startup Policy

https://www.coep.org.in/sites/default/files/coep%20student%20%26%20faculty%20-%20innovation%20%26%20start%20up%20policy%20.pdf

1. Strategies and Governance

a. **Entrepreneurship promotion:** COEP supports and promotes the formation of students clubs which are engaged in conducting entrepreneurial activities for students, faculty and staff. Institute Innovation Council is a guiding agency for Bhau's E cell which is driven by students, guided by faculty and supported by the college. Apart from supporting student activities, COEP promotes Innovation & entrepreneurship through many other conduits such as academic reforms in terms of syllabus, course contents, major & minor projects, incessant interaction with industry, pursuing support from alumni in terms of guidance and finance and effective interaction with startup ecosystem by conducting various programs through institute innovation council. (IIC)

b. **Governance:** The head of the Institute is the president of IIC and a senior faculty having entrepreneurial mindset is selected as convener to facilitate the activities. Two different committees, namely "Governance Committee" and "Review Committee" have been formulated to amend, accept and implement the entrepreneurship policies, approve proposals of students, enable funds disbursement to them and monitor their progress. The prime responsibility of these committees is to facilitate the use of resources provided by the College to the startups and ensure the proper utilization of resources by periodic meetings/interviews with the students.

c. **Resource mobilization plan:**

3. Nurturing Innovations and Start ups

Human Capital Development: Inculcating the habit and embedding the idea of innovation and entrepreneurship in the minds of students in every aspect of economic activity is essential for promoting the culture of innovation. This needs to be achieved through strong educational and administrative support from the HEI to bring out innovators and technopreneurs from among the youth.

a. Registering as pre incubate: A student who wishes to work on any innovative idea/business plan/ prototype expected to lead to a start up has to apply to the director COEP in given format (to be formulated) initially. The form will be assessed and recommended by "Review Committee" after an interaction with the student. It is expected that a business idea will be clearly distinguished from a pure research. Such "Review Committee" meetings may be scheduled in the beginning of every semester. After the approval from the Director, COEP the student has to register with BEC.

b. Academic Reforms

   i. Modification in syllabus: The students are allowed to take electives from other departments/moocs/nptel courses related to their topic of start up, having equivalent credits in place of given set of Department level /Institute level Elective.

   ii. Faculty may be allowed to design an elective subject (having equivalent credits) as per the specific requirement of an entrepreneurial project under consideration to replace an

BITS Pilani : Faculty Entrepreneurship Policy

https://id.bits-pilani.ac.in/Uploads/Pilani/centerforentrepreneurial/FEP_BITS_Pilani_June_2023.pdf

1. Engaging with Startup

A faculty member may be engaged with following categories of Startups:

a. Startups founded by Faculty, alone or along with other faculty members of BITS
b. Startups founded by Faculty along with BITS Students (FD/HD/PhD)
c. Startups founded by Faculty along with Non-BITS Students or Faculty Members
d. Startups not founded by Faculty

2. Role of Faculty

The role of the faculty in startups could be as a

a. Promoter
b. Mentor / Advisor (with or without equity)
c. Consultant, with compensation
d. Investor / Shareholder
e. Director
f. Executive / Manager level employee

While taking any of the above-mentioned role in an FSU/NFSU, the faculty shall ensure that there is no conflict of interest with their core job responsibilities assigned to them at BITS Pilani.

3. Faculty as a Founder / Co-Founder

In case a faculty member is forming a startup, the brief procedure is listed as below:

i. Inform the campus Faculty-in-Charge, CIIE about the Idea

Managing conflict of interest and commitment

Ex: Conflict Management

- OK -- Product startups; “Productized services startups”
- NOT OK – Consulting services
- NOT OK -- Scientist starting company with current student of subordinate
- Simple and transparent systems for services provided by institute
- IP firewalls; Collaborations against agreements
- Clear understanding of roles by all players
- Periodic reporting of potential conflicts
- Conflict management vs avoidance

Share holding

- Shareholding for founding company and owning up to responsibilities (for the identifying and defining the opportunity; championing it; raising resources and engaging partners; taking responsibility to help all stakeholders succeed)
    - Full-time entrepreneur founders
    - Non-full time founders
- Shareholding for technology/services/others (Small minority)
    - Technology provider
    - Incubator
- Shareholding for investing funds

Terminology of roles in startups

- Shareholders
  - First shareholders
  - Promoter: Those who take up promoter obligations
  - Founders: Those who are signatories of a co-founders agreement
- Member of the Board of Directors
  - Can be “Independent” --- no share holding
  - Can be “Executive” – have employment contract with company
- Employee; Has a contract with the company; “Executive”
  - Management Team
    - CXO: Report to the Board; Compensation set by the Board
    - Others
- Consultant/ Advisor
  - Has a contract with the company
  - May be part of Advisory Board
- Pro bono advisors/ mentors
  - No commercial arrangement
  - May be part of Advisory Board

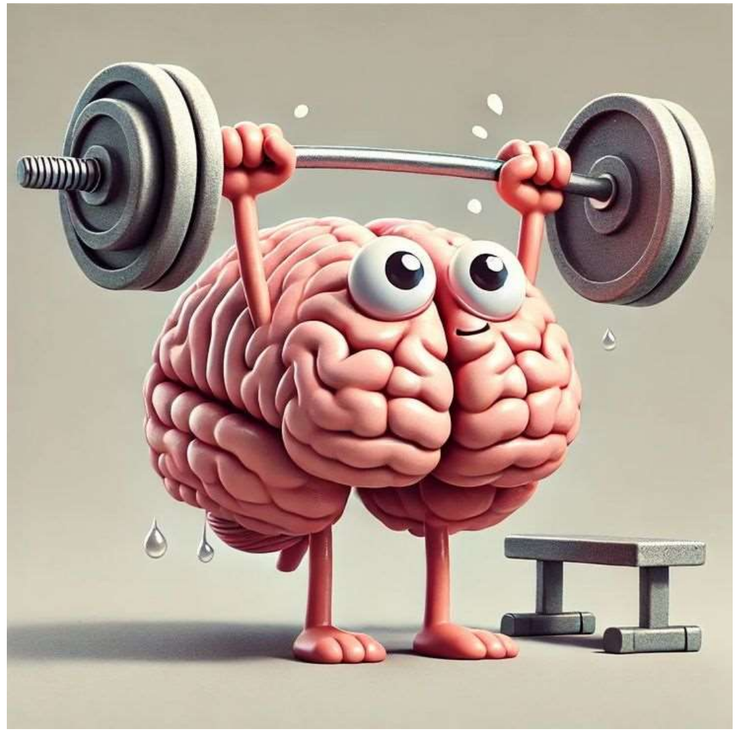
Tips and Pointers

Spinouts from CSIR-NCL: Lessons for Scientists/ Faculty

Recipe:

- Large (!) and pressing problem
- At least 1 full-time cofounder who can advance technology within company
- The most challenging aspect: Finding good co-founders
- Cap table where full-time founders lead the company & are majority shareholders
- Understand importance of the “champion”
- Ability to pitch. Story telling is key!
- Being mentorable. Willingness to seek out and take help/ advise
- Willingness to raise money!
- Growth and scaling ambition
- Commitment to seeing product in market and company reaching full potential

Exercise coming up next



Time to put your neurons to work!

Exercise 5:

Share progression chart

Shruti Devasthali

Learning goals

- This exercise is designed to teach the following:

❑How share progression charts look
❑Illustrate the “journey” of a share progression chart for a spinout
❑Understand the consequences/ impact of deal structuring terms
❑Understand that the academic institution makes the most by helping valuations grow fast and high; for that predictable and reasonable terms are better.

Instructions

- What is available to you:

❑A Case

❑An Excel sheet of Share Progression Chart

- What you need to do:

❑Understand the Excel Sheet

❑Change parameters as suggested and see the consequence

- Time plan:

❑10 min: Background

❑10 min: Understand the Excel Sheet

❑10 min: Change parameters and see what happens. List learnings

The Case: Outline

About Party 1: Academic institution

About Party 2: Spinout company with Scientist/ Faculty as Co-Founder

Facts:

-- Academic institution holds 3% at inception (in lieu of any licensing fee; exclusive license)
-- Incubator holds 3% at inception
-- Scientist/ Faculty Founder (not full-time) owns 10% at inception
-- Team gets a grant of Rs 1 Cr (last them for 2 years)
-- Investor 1 (Say, Seed) puts in Rs X Lakhs for 15%; insists on 10% ESOPs; Lasts for Year 3-4
-- Investor 2 (Say, Pre Series A) puts in Rs nX Lakhs for 15%; Lasts for Year 4-5
-- Investor 3 (Say, Series A) puts in Rs nX Lakhs for 15%; Lasts for Year 6-7
-- Investor 3 offers to buy out shares of other non-founder share holders to the extent of increasing their shares to 20% but this will be at a discount to the agreed valuation.
-- For the base case: X = Rs 100 lakhs; n=3

Thumb rules

- Investors will seek “predictable” terms of engagement from technology provider. Uncertainties or unreasonable terms will depress valuation or closure will not happen.
- The general thinking is that much of the heavy lifting in startups happens in the journey and not in the invention or technology conception. So people committed to the journey should be kept motivated to succeed. And Founders should gain mainly from the “upside” and not from salary (like employees).
- The full time founders should hold >50% ownership in the company by the time the Series A investment happens / product hits the market. In order to keep the founders motivated and to keep company on track to achieve its vision.
- If the funds requirement is high a startup (like in deep tech), then the company needs to dilute more to raise funds. This means shareholding for Fulltime Founders needs to be even higher at inception.
- Anyone having only advisory position or part time contribution is preferred to have <5% equity in the company.
- Non contributing shareholders like family members should be < 1% to 2%
- Exits by Secondary transactions are possible for early investors and non-core shareholders (academic institutions, incubators) but not for Founders. And this usually happens at a Discount.
- The incoming investor in a Secondary transaction will say limit the “outflows” to say less than 10% of the total deal size (unless they are very very bullish on the company)

Understand the Excel Sheet

- We will now go through the Excel sheet: Link to Sheet

https://docs.google.com/spreadsheets/d/1KtX_5MxocmFDWzAxS2udLQt-fyAEl96K/edit?pli=1&gid=563743402#gid=563743402

Parameter changes :

Change this parameter	Report what happens to: • Exit proceeds • Exit multiple
Shareholding of academic partner: 3%, 10%	
Shareholding of the Scientist Founder: 5%, 10%, 20%	
Valuation is lower at fund raise; X is lower: X = Rs 50 L, Rs 100L, Rs 200L	
Valuation growth rate, n= 2, 3, 5	

Well done &
thanks for participating

Other commercialization models, including patent pools, SEP/FRAND

Premnath V

SEP/FRAND

SEP and FRAND

Standard Essential Patents (SEP)
A standard essential patent (SEP) is a patent that protects an invention essential to the implementation of a particular technology standard.
Examples:

- ***-- Wi-Fi (IEEE 802.11)***
- ***-- USB (Universal Serial Bus)***
- ***-- Advanced Video Coding (MPEG-4 Part 10/H.264)***
- ***-- 4G LTE (Long-Term Evolution)***
- ***-- 5G***

Fair, Reasonable and Non-Discriminatory Licensing (FRAND)
Licensing under FRAND terms seeks to strike a balance between SEP owners' interests in recouping research and development investments, on the one hand, and access to standardized technologies by implementers, on the other.

Source: *https://www.wipo.int/en/web/patents/topics/sep*

Example : 5G

3rd Generation Partnership Project (3GPP)

Standard Setting Organizations (SSOs)

Top 5G SEPs Declaring Companies

S. No.	Declaring Company	No. of Simple Families	Percentage (%
1	Huawei	6676	14.5
2	Samsung Electronics	5420	11.7
3	Qualcomm Inc.	4512	9.8
4	LG Electronics	4390	9.5
5	ZTE	3306	7.2
6	Nokia Corporation	2942	6.4
7	Ericsson	2595	5.6
8	CATT (Datang)	2299	5.0
9	Oppo	2198	4.8
10	Sharp Corporation	1779	3.9

(Source: SEP Omnilytics, January 2022)

Printed from
THE TIMES OF INDIA

IIT scientists present India's first 5G patent before global body

TNN | Jun 16, 2017, 11.04 PM IST

NEW DELHI: With India gearing up for the commercial roll out of 5G (high speed fifth generation of wireless networks) by 2020, scientists at IIT Hyderabad and Centre of Excellence in Wireless Technology (CEWiT), an R&D society under IIT Madras, have tabled the country's first 5G patent before an international body that defines the global cellular radio standards for different generations of wireless network.

Once this global body of seven countries - called Third Generation Partnership Project (3GPP) - gives its nod to the technological specification, Indian manufacturers would be able to use it in their equipment and save huge amounts of money in royalty and licensing fees.

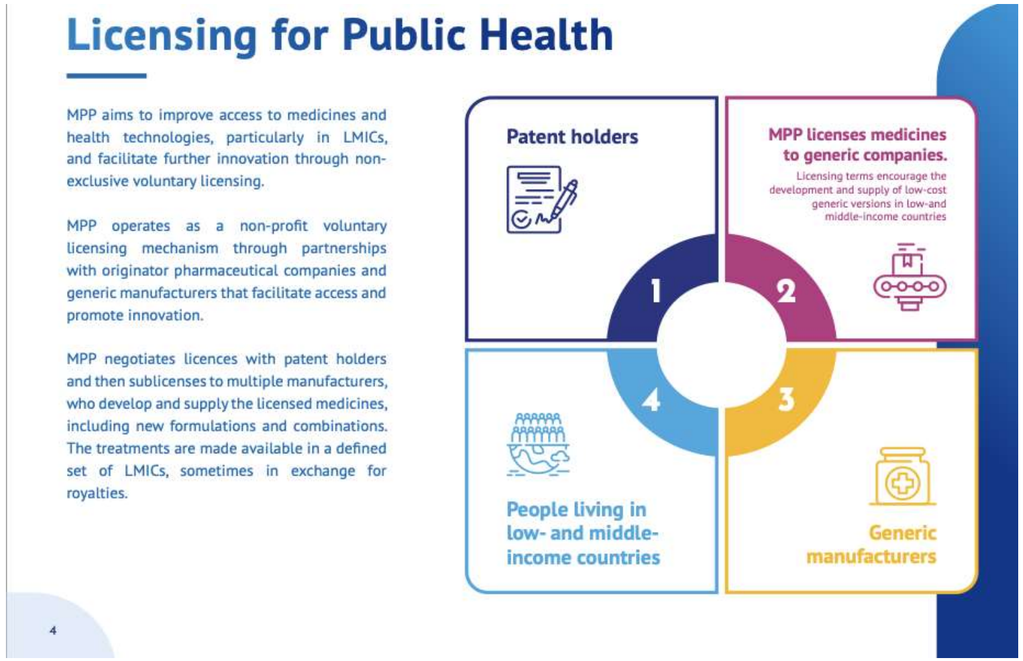
India had joined the international body, which is making standards for 5G, two years ago. US, China, Japan and South Korea are other member countries of this body.

The scientists - Kiran Kuchi, associate professor of IIT Hyderabad (principle inventor of the indigenously-developed waveform technology that forms the backbone feature in the up-link of 5G networks) and co-inventor J Klutto Milleth, chief technologist at CEWiT - have developed the technology under a research support project of the Union ministry of electronics and IT.

Source: *https://www.copperpodip.com/post/5g-standard-essential-patents-seps-all-you-need-to-know#:~:text=Top%205G%20SEPs%20Declaring%20Companies,-(Source:%20SEP%20Omnilytics&text=The%20above%20table%20illustrates%20the,with%20a%20share%20of%209.8%25*.

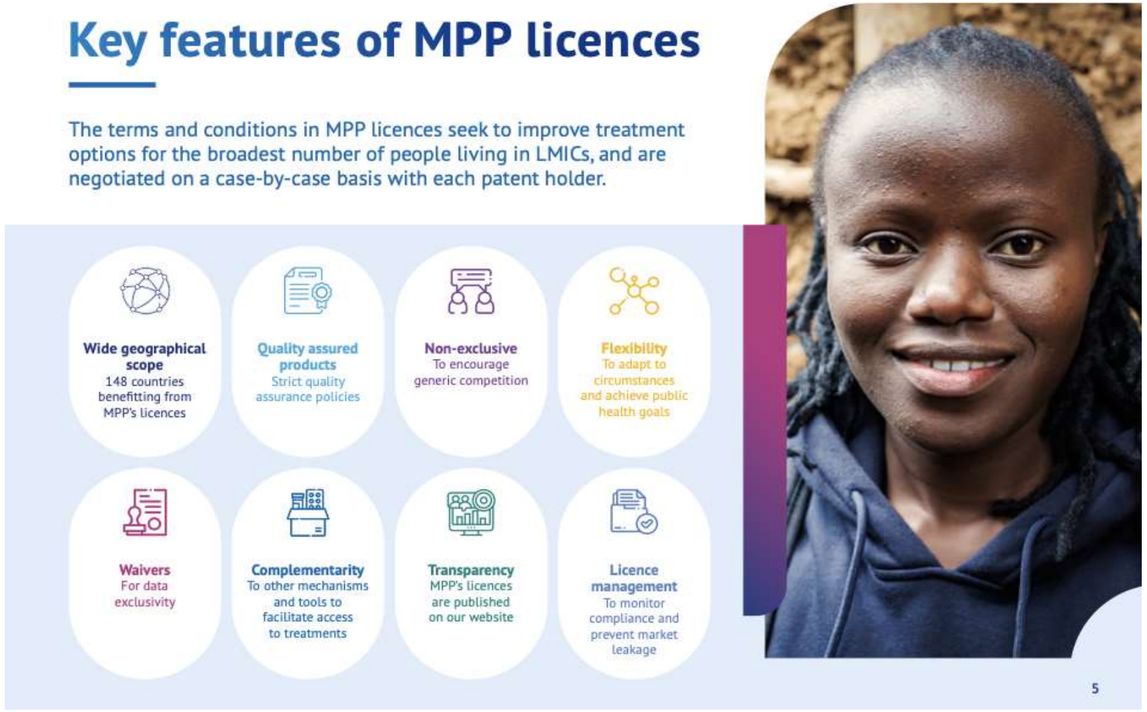
UN Medicines Patent Pool

UN Medicines Pool



Source: https://medicinespatentpool.org/news-publications-post/mpps-brochure-greater-access-to-medicines-and-health-technologies-for-those-who-need-them

UN Medicines Pool



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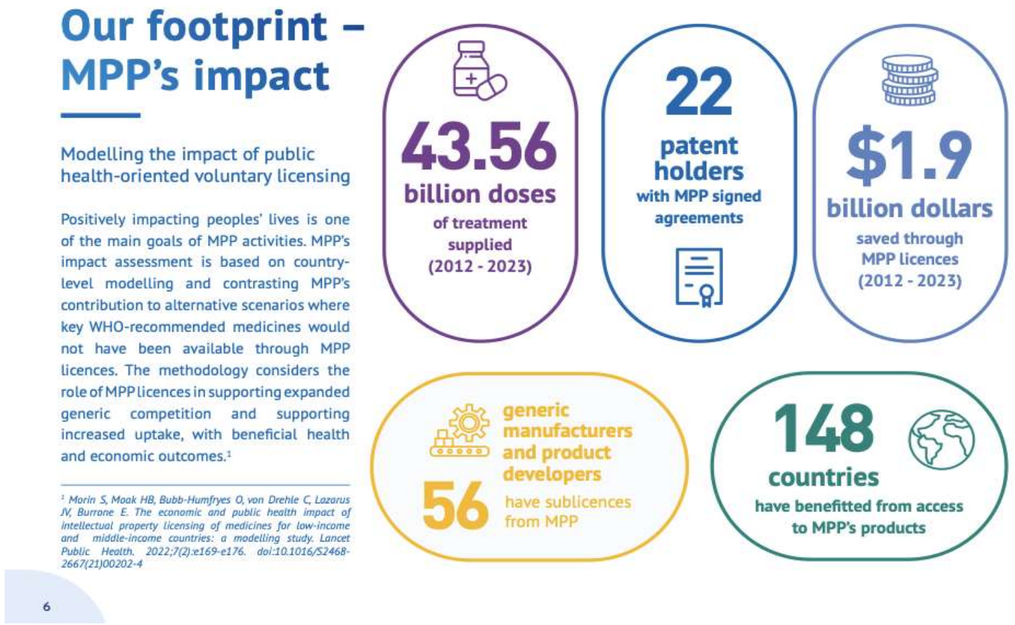
UN Medicines Pool



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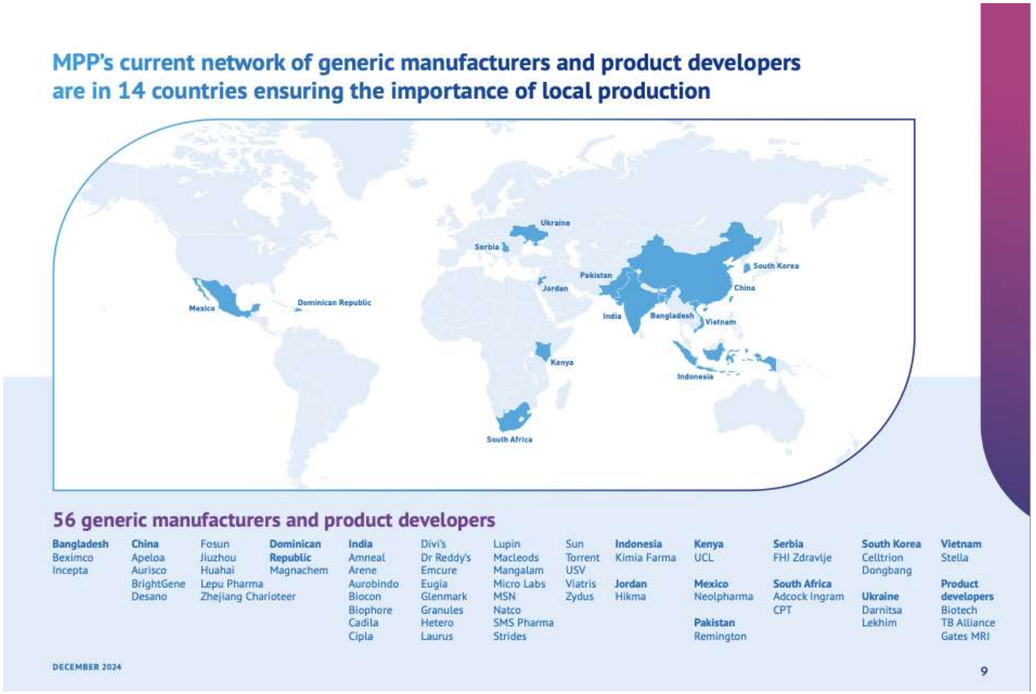
UN Medicines Pool



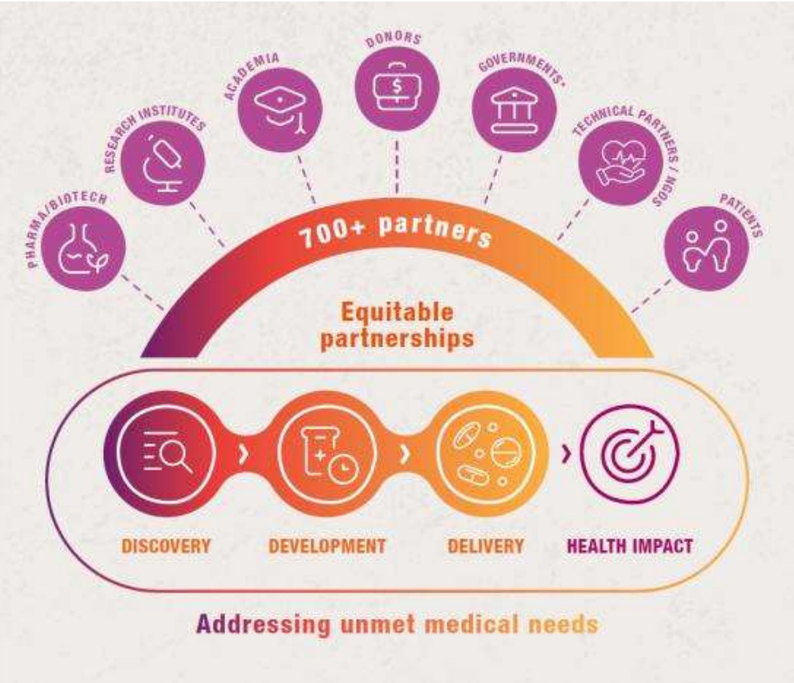
Source: *https://medicinespatentpool.org/news-publications-post/mpps-brochure-greater-access-to-medicines-and-health-technologies-for-those-who-need-them*

UN Medicines Pool

Source: https://medicinespatentpool.org/news-publications-post/mpps-brochure-greater-access-to-medicines-and-health-technologies-for-those-who-need-them

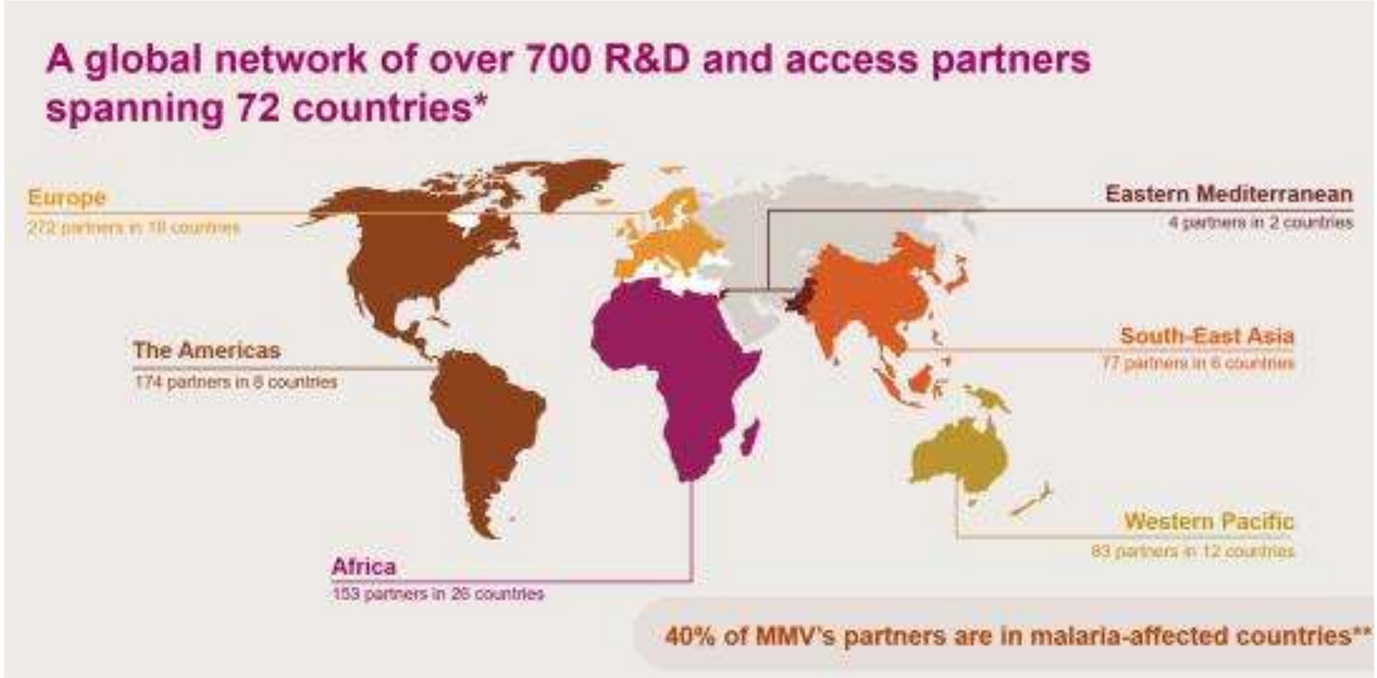
Medicines for Malaria Ventures

MMV



Source: https://www.mmv.org/partnering/mmv-partner-map

MMV



Source: https://www.mmv.org/partnering/mmv-partner-map

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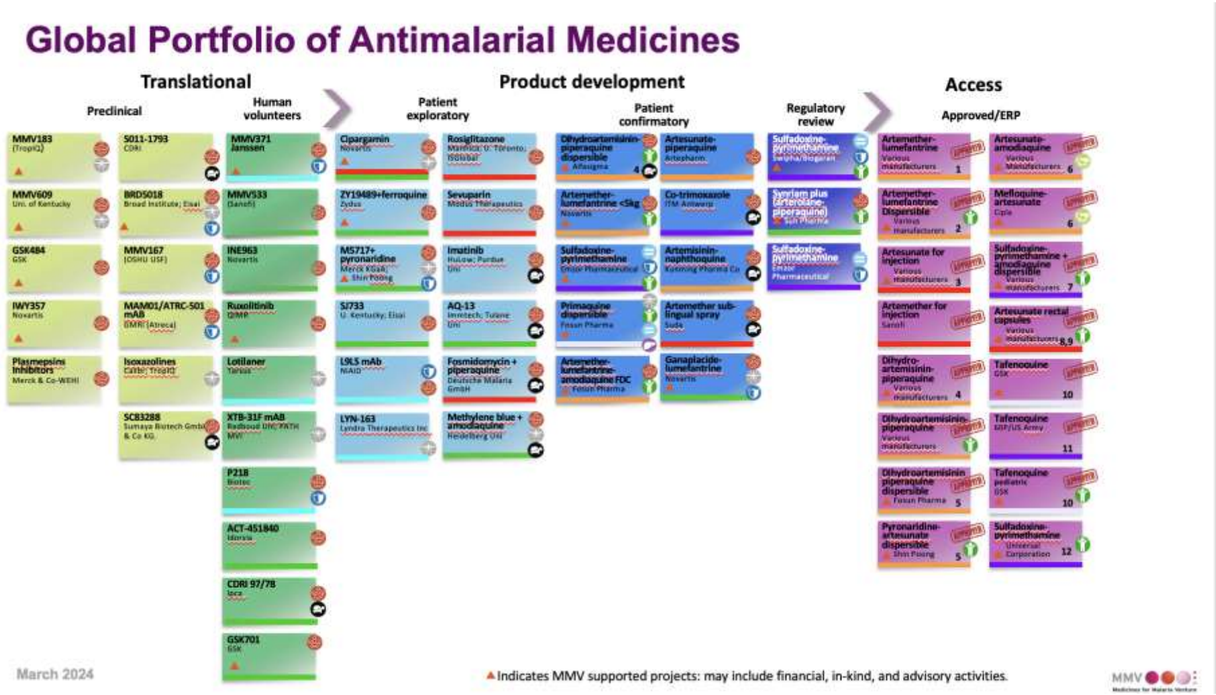

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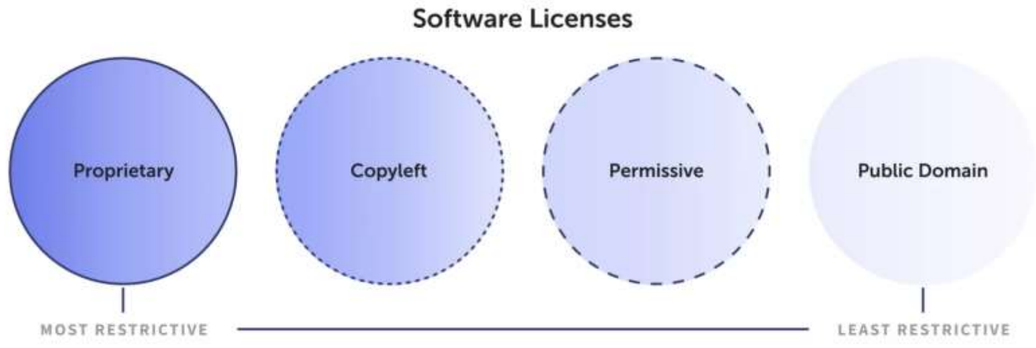

Software licenses have different levels of restrictiveness

Open-Source Software License Types

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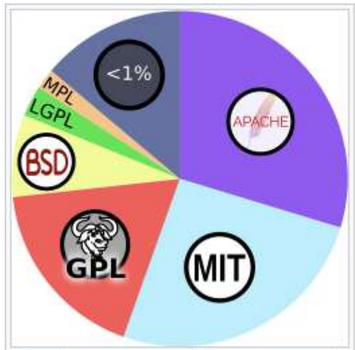
Most Popular Open-Source License Types



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Source: *https://en.wikipedia.org/wiki/Open-source_license ; https://solutionshub.epam.com/blog/post/open-source-licenses-definition-types-and-comparison*

Standard Essential Patents (SEP)

Raj Hirwani

Standard Essential Patents

What are SEPs?

SEPs refer to any patented technology which has been accepted as a standard to be uniformly accepted and implemented in order to ensure uniformity and compatibility.

These technologies are accepted as standards to be uniformly accepted and implemented across various countries to ensure uniformity and compatibility across the world.

Any technology accepted as a standard would have to be mandatorily followed by all enterprises involved in the particular industry and its manufacture would necessarily require license from the patentee holding the SEP.

Contd...

In order to accept and lay down standards, various Standard Setting Organizations'(SSOs) have been established. The European Telecommunication Standard Institute("ETSI") is one such body setup to lay down standards for telecommunication industry.

In order to ensure that the patentee cannot prevent access to SEP, according to ETSI's Intellectual Rights Policy, patents which are essential must be licensed on a **fair, reasonable and non-discriminatory (FRAND) terms.**

There are no non-fringing alternatives for SEPs.

Once a patent is declared as SEP, it faces no competition from other patents until that patent becomes obsolete due to new technology/inventions

Importance of Standardization and SEPs

Today's interconnected and interactive world is made possible by **standards based on patented technologies** which enable machines to interact among themselves.

Standardization ensures interoperability of standard-based products.

Without standards, devices would need to have to rely on additional connectors, plugs and converters from various manufacturers, increasing cost and decreasing functionality of the devices.

These technological building blocks are often protected by Standard Essential Patents(SEPs)

How does it work?

Representatives of the industry come together under Standard Developing Organisations such as ETSI to develop technical specifications of a standard. They commit to make their patented technology available under Fair, Reasonable and Non-Discriminatory (FRAND) terms.

Manufacturers of standard-compliant products which use one or more SEPs, negotiate with the SEP holders the conditions to use the technology.

The outcome of this negotiation is formalised by a license agreement which has to reflect FRAND terms.

Licencing under FRAND terms

Each party is bound by an obligation to act reasonably, as a willing licensor and a willing licensee.

If, within a patent portfolio, certain patents are proven to be SEPs and certain patents are disputed, the licensee has a right to obtain a license against the proven SEPs and deny the rest, irrespective of the fact that it comes as a part of a patent portfolio.

Base level information should be provided by the licensor without a Non-Disclosing Agreement(NDAs)

Refusal of a licensee to not enter into NDA shall not be considered as unwilling.

The patent portfolio should be open to royalty and value reductions through negotiations.

Well known Indian case : Ericsson Vs Micromax (including CCI)

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