



Technology Transfer Cell – An Overview

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Abstract:

Technology Transfer (TT) joins the dots of a research outcome with real products, to benefit the society. It is an important component of the IIC at SGT University aligned with the local innovation ecosystem. This document provides an overview of steps and process involved in Technology Transfer of innovations by the students, faculties, and researchers of SGT University.

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1. Introduction

Technology Transfer is a logical process by which an innovator of technology makes the technology available to a commercial partner that will exploit the technology.

It joins the dots of a research outcome with real-world products, to benefit the society, and generate profit, part of which can go for further research and development. TT is the process of handing over data, designs, inventions, materials, software, technical knowledge, or trade secrets from one organization to another for the set purpose. This document provides an overview of steps and process involved in Technology Transfer of innovations by the students, faculties and researchers of SGT University.

The developed technology generated from new ideas and transformed into prototypes needs to have a level of maturity that meets the organizational needs of the TT recipient.

The Technology Transfer Center at IIC – SGT University is aligned to its set objectives and the TT process followed.

2. Objective

The TT Cell has an objective to

- associate with external agencies and partner bodies for TT
- facilitate partnerships with outside organizations so that patents & innovation can reach the public.

3. Role

TT is guided by the policies, procedures, and values of each organization involved in the process. To substantiate its work areas, TTC engagements are classified in the following subsections.

3.1 Agreements

Negotiate co-development agreements, transactional agreements, and licenses with universities, non-profit organizations, and companies to ensure compliance with Federal statutes, and regulations prescribed by the concerned authorities.

3.2 Guidance

Provide guidance to intramural and extramural scientists on all technology transfer matters. It also provisions guidance, advice, and assistance on the development and management of the intellectual property.

3.3 Review

Review, track, and report on active cases, patent licenses, and royalties.

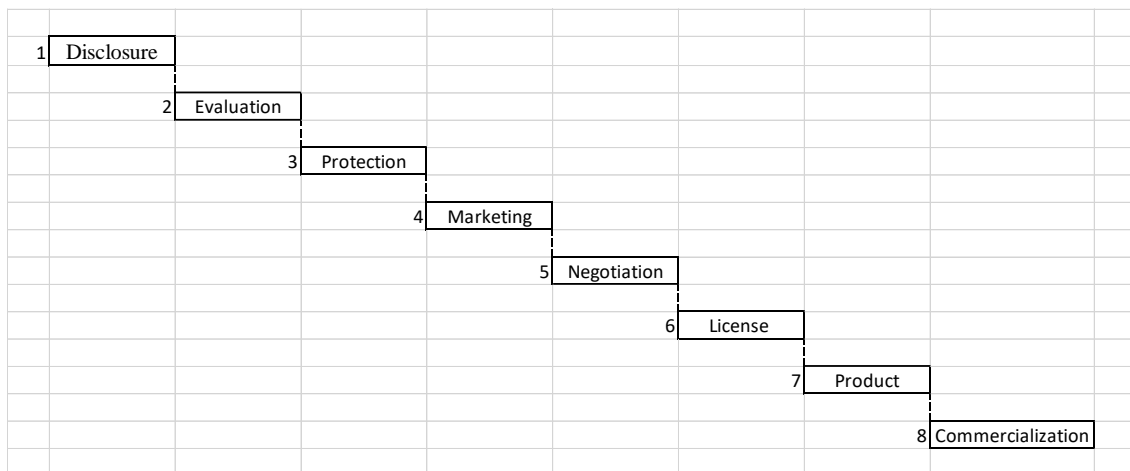
3.4 Training

Organize appropriate training on the TT process with clarity on the operational flowchart.

4. Process

Technology Transfer is a collaborative approach between two entities that involve the identification, protection, and commercialization of intellectual property.

The different stages of the TT process are sequentially linked as depicted in the following process flow diagram.



4.1 Disclosure

A technology disclosure is a document formally providing the details about an innovation developed at SGT University. During this phase the innovation is evaluated for its commercial potential and possible patentability.

4.2 Evaluation

Through the evaluation process, a decision is made on whether or not commercialization efforts for a particular invention or technology should be pursued.

4.3 Protection

Patents as a process assist in the protection of the invention. During this process, the technical details, data, etc. are provided to assist in securing invention.

4.4 Marketing

At this stage, it is necessary to identify companies that have the resources and business networks necessary to bring the technology to market. Active involvement of the researchers at this stage is critical to enhancing this process.

4.5 Negotiation

This phase begins when a company expresses interest in the marketed invention or technology. TTC is actively involved in handling various aspects of the negotiation, with appropriate input from the inventor and keeping them informed.

4.6 License

TTC can supplement by making the inventions from SGT University research available to the public through licenses. Certain rights in the technology are granted to the licensee, under specific terms and conditions, as specified by SGT University policy.

4.7 Product

Product development involves product design, engineering, and testing. Start-ups can work together in the SGT University incubation center with the necessary faculty involvement whenever needed.

4.8 Commercialization

The TT recipient company continues the advancement of the technology and makes other business investments to develop the product or service. This step may include further development, regulatory approvals, sales and marketing, support, training, and other activities.

5. Stakeholders

Technology Transfer involves different stakeholders for a successful TT cycle completion. The members involved in the process can be categorized into stakeholders group are

- 5.1 Technology producers
- 5.2 Technology Consumers
- 5.3 Product Producers
- 5.4 Product consumers
- 5.5 Resource Providers

The table below helps to identify people involvement at various stages of TT ecosystem.

#	Stakeholder Group	Members (representative)
1	Technology producers	Students, faculties, and researchers in SGT University
2	Technology Consumers	Private sector, manufacturer, government agencies, start-ups
3	Product Producers	Private sector, manufacturers, distributors, retailers
4	Product consumers	End-users, professional, service providers
5	Resource Providers	Government agencies, institutions, financial sector, TT intermediaries

Source: adapted from [1]

6. Technology Transfer Protocol

The TT protocol lists the intended and sequential stages of the transfer process.

It typically includes,

- 6.1 Title / Project Name
- 6.2 Scope
- 6.3 Key persons with their roles and responsibilities
- 6.4 Materials, methods and equipment with comparison, if any
- 6.5 Transfer stages with documented evidences / accomplishments
- 6.6 Identification of critical points / risks
- 6.7 Experimental design and acceptance criteria
- 6.8 Information on trial, qualification, and process validation
- 6.9 Change control, for any process deviation
- 6.10 Assessment of end-product
- 6.11 Conclusion
- 6.12 Sign-off by project manager

7. Documentation:

The documents used in technology transfer, apart from core technology areas captured in section 6; require other documents on confidentiality agreement, licensing, MoUs, legal issues etc.

7.1 Confidentiality

A confidentiality agreement aims to protect the information of the parties entering into TT. As a preamble, it is important to evaluate the technology offered and its commercial possibilities.

A draft confidentiality agreement includes standard clauses of an agreement, including the parties, terms for termination, applicable law etc. It also briefs the technology to transfer with clear description, key specifications, relevant applications, etc. with a reference to the property rights of the party offering.

7.2 Licensing

The legal core of a TT is constituted by a licensing agreement. By signing such an agreement, the owner of a technology, the licensor, gives the right to another company, the licensee, to make use of this technology.

A license does not alter the property rights of the owner. However, as the proprietor of the technology, he can sell his technology to the buyer to change owner to the seller. If an owner of a technology prefers to enter into an agreement with a licensee, he will give him limited rights. The licensee cannot dispose of the technology but can use it.

A limitation in time, geographical market, product market etc. can be introduced in a license apart from determining the relationship between the licensor and licensee for the whole duration of their co-operation, if at all intended.

7.3 MOU

A collaborative research effort with external institutions is termed as the Memoranda of Understanding (MOU). It is signed before any other agreements are executed. An MOU defines how intellectual property will be shared and the roles and responsibilities of the involved parties. For any plan to enter into a collaborative relationship with an outside party, it is important to discuss the possibility of an MOU.

MOUs typically identify a lead institution for managing intellectual property and provide details on how licensing income will be shared.

7.4 Legal Issues

TT related legal issues are correlated to,

- Legal contractual agreements
- Tax implications
- Legal issues in intellectual property transaction
- Problems associated with IPR litigation
- Legislations covering IPRs in India

8. Documentation

The documents used in technology transfer are extensive covering the project details, legal processes, financial implications, commercial viabilities, protecting information, etc. A representative list of key tasks and related documentation are tabulated below.

Table: Documentation (representative list) for technology transfer

Scope	Description	Transfer documentation
Project definition	Project plan with risk and gap analysis	Project implementation plan
Health & safety assessment	Product-specific waste management	Contingency plans
Skill set analysis and training	Training documentation (product-specific operations, analysis, testing)	Training protocols, Assessment results
Analytical method transfer	Specifications and validation, In-process quality control	Analytical methods transfer protocol and report
Starting material evaluation	Equipment list (makes, models, etc.)	Gap analysis.
equipment selection and transfer	Drawings, manuals, SOPs (set-up, operation, maintenance, storage)	Qualification and validation protocol and report
Process transfer: manufacturing and packaging	Development report, Change control documentation, Manufacturing process, Process validation reports, Product review	Process development, Experiences for reference Process description (process map, flow chart) Process validation protocol

9. Support Model

Technology Transfer Center helps to translate new innovations coming from the lab into products that will improve people's lives. To manage and implement the process from research to partner with outside companies and to bring these new ideas to market a support model is important to set up.

The support model interfaces require office representatives for roles in technology licensing, technology management, research contracts, IP services, interface for industry liaisons etc.

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