

# Technology and Development Consultancy Cell

## A consultancy and process incubator

Head, CTARA  
7th December, 2012

## 1 Introduction

This note is to describe the governance and method of operation of the Technology and Development Consultancy Cell (TDCC) as outlined in the proposal document:

[www.cse.iitb.ac.in/~sohoni/tdcc](http://www.cse.iitb.ac.in/~sohoni/tdcc)

As we have noted, the key objectives of TDCC are three-fold, viz.,

- To encourage graduating IIT-B students to seek opportunities in development. To incubate budding consultants in its various sectors and to encourage process and knowledge innovation. This will constitute the **supply** of development professionals into the development arena.
- To help create a market for development related knowledge products. To seek out and establish opportunities for development professionals to deliver solutions. To seek meaningful collaborations with various stake-holders, such as state governments, state agencies, companies in the development sector including NGOs, elected representatives, civil society and so on. To help set up business models and good practices so as to aid knowledge generation for national development needs. This will constitute the **demand** side of the development arena.
- To serve as an exemplar to other professional colleges and institutes of higher education in its capacity to engage with the development objectives of the country and its people. To enable the adoption of a practice oriented and inclusive and sustainable pedagogy of engineering.

## 2 Core values and definitions

The core values of TDCC will flow from those of CTARA which are to work for the well-being of the bottom 80% in the core areas of food, agriculture, water, energy, environment, public health, and so on. This will be implemented by offering policy, technology and knowledge products and services which will enable the betterment of the bottom 80% and bring about a more inclusive and convivial society. The above will be the operating notion of development.

TDCC will deliver solutions and consultancy services in the development sector. These will illustrate the highest quality of innovation, intellectual sophistication and social sensitivity which will bring prestige to the institute.

The financial objectives of TDCC will be to make profits to pay for its establishment costs and the salaries of its member consultants, occasional faculty consultancy charges, and for acquiring capital goods such as instruments, softwares etc., for in-house use. The salaries of consultants will be marked to market and will have rough parity with the engineering job market. However, TDCC will be judicious in its consultancy charges and will serve the knowledge needs at all price-points.

A consultant employee of TDCC will be a fresh graduate of IIT Bombay who will have illustrated through his course and project work the qualities of (i) interdisciplinary and interfacial

abilities, and (ii) an ability to work and deliver value in the development sector. His/her responsibility will be to address development situations and deliver composite solutions by innovating on existing knowledge products and to enhance the repository of knowledge products within TDCC. The tenure of a consultant will usually range from 1 year to 2 years.

A knowledge product will be a technological or policy, product or process, its documentation, computer programs, outputs, presentations, case-files and so on. As far as possible, TDCC will use open-source tools for its knowledge production and will assist in the their dissemination.

### 3 The TDCC Sectors

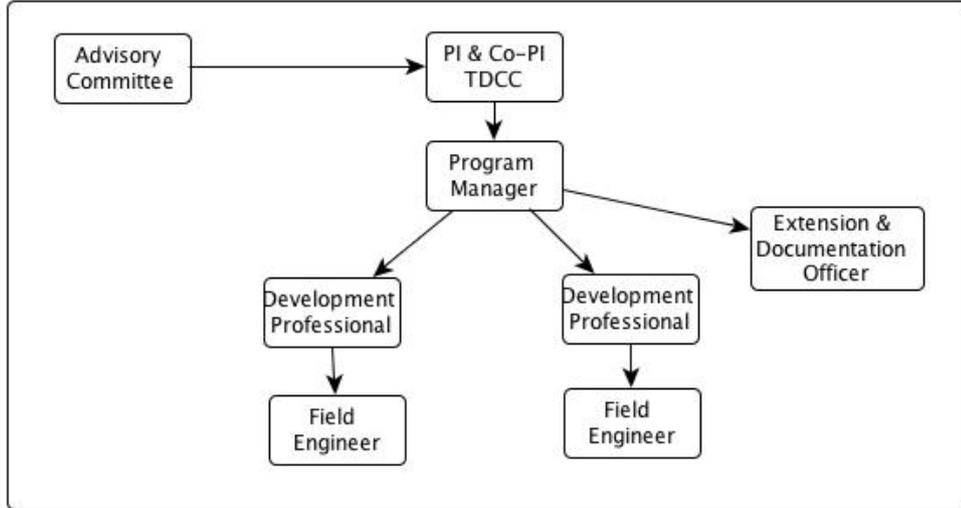
TDCC will operate existing knowledge products within CTARA and other departments of IIT-B. This will include already existing products in the basic sectors including water, agriculture, energy, food, health, planning and environment and would provide products/services in these sectors. Some of the examples of products/services which would be made available include:

1. Feasibility study for rural drinking water pipeline
2. Analysis of the rural drinking water scheme failure and plan for revamping the scheme
3. Situational Analysis of Community and Household Bio-gas options
4. Development Intervention Analysis for National Rural Employment Guarantee Scheme for GP/TP/ZP
5. Feasibility Study of Solid Waste Management Technological Options for Small Towns
6. Village Development Plans
7. Energy Audit for Jaggery Making Units
8. Evaluation of rural electricity grids

The list of knowledge products will be updated as student outputs from various departments, including CTARA, come about. CTARA assures that TDSL and student project outputs, if suitable, will be offered and maintained within TDCC. The knowledge outputs maybe classified as *sectoral*, i.e., involving specific sectors such as water, energy, or in *planning and coordination*, such as in NREGS, village and town plans, infrastructure design and so on.

### 4 TDCC Organization

The Technology and Development Consultancy Cell proposes to begin with a consultant staff of 3-4 engineers, an Extension and Documentation Officer (EDO) and an overall Project Manager (PM). The organization diagram appears below:



The consultants will be addressed as **Development Professionals (DP)** or **Development Engineers (DE)** in line with their ability to assess development situations and handle multiple stakeholders. Typically, a DP is expected to have experience in delivering a composite knowledge product before he/she joins TDCC. DPs will also be entrusted to seek consultancy opportunities. A DE will have field experience and would have executed design and analysis works within a societal context.

The role of the EDO will be to maintain the documentation of the knowledge products and to enable their dissemination. He/she will interact with other professional colleges, develop course material and training modules, organize events and so on. He/she will also assist the PM in his/her overall objectives.

The PM is to implement the TDCC project and its objectives and to develop it as a sustainable entity. The PM will ensure the day-to-day functioning of the TDCC, make stakeholder contact, build rapport with state and non-state agencies and build business and knowledge opportunities. He/she is also the chief executive officer and be responsible for policies and internal processes. He/she will report to the PI and co-PI and the advisory committee on the progress of the cell.

The Principal Investigator (PI) will be a faculty member of the institute and guide the overall conduct of TDCC and provide access to the institute machinery and prestige. The PI will be the final signatory of the TDCC reporting and will hire the PM. The co-PI is ex-officio Head, CTARA. The PI and co-PI will provide the thought leadership and the liaison between various IIT departments, labs and resources. They will also lead the TDCC at various public fora and pave the way for the growth of TDCC.

The advisory committee will be constituted by the Institute to oversee the working of TDCC as an entity of the institute.

## 5 Resources requirements of TDCC

The start-up financial requirements for TDCC is as given below:

Title	Salary p.m.	Responsibility
Project Manager	Rs. 60,000 p.m.	Overall Delivery of Project.
Development Professional (S)	Rs. 35,000 p.m.	Problems in sectors such as water/agriculture/energy
Development Professional (P)	Rs. 35,000 p.m.	Problems in environmental planning and regional development
Field Engineer (S)	Rs. 20,000 p.m.	Liaison with field agencies
Field Engineer (P)	Rs. 20,000 p.m.	Liaison with field agencies
Extension and Documentation Officer	Rs. 45,000 p.m.	Course material preparation Relationship with regional institutes
Running Expenses	Rs. 20,000 p.m.	Travel, office etc.
Overall Per month Cost	Rs. 235,000 p.m.	

This project proposal seeks seed capital for the above monthly expenditure. Space and initial access to labs, resources, equipment, such as GPS, instrumentation, office help etc., will be provided by CTARA. It is expected that TDCC would make enough money to sustain itself by 3-4 years.

**The Business Model :** The TDCC aims to demonstrate to both colleges, young engineers and professionals, district administrators and elected representatives that there is a knowledge supply and demand market for development projects, which is rewarding financially, and which produces value. This is a long-term objective and TDCC will serve as seed venture.

TDCC will proceed in three steps:

- *Team selection.* TDCC will select core employee-consultants based on the student projects which seem attractive and developmental. TDCC will build a multi-disciplinary team of such consultants.
- *Outreach.* TDCC will then reach out to agencies and NGOs who typically require consultants for developmental tasks. These agencies are, e.g., state nodal officers, district collectors, big NGOs and so on.
- *Project selection.* These will be selected for quick completion time and visibility, and where we have the best expertise. The initial focus will be on project success and impact rather than on financial returns.

A preliminary strategic review will be done 6 months after starting. This will cover the items above, i.e, review team selection, outreach and project selection and status of project delivery. If found suitable, external experts will also be invited for this evaluation. Based on these inputs, it will also set up and refine a billing strategy. This should match industry standard practices such as on man-months and on %-age of asset value. As an example, a feasibility study is typically valued at 1% of project cost, while an evaluation/failure analysis at 2% and so on. Designs are valued higher. These are the general norms as followed in the government. Our objective will be to execute projects and use the above norms to show economic value created.

It is hoped that the TDCC, in a span of 3 years, demonstrates to state and central governments, the viability of R&D and problem solving at the district level and in the development agenda. The essential step will be to convince appropriate government agencies to pay this amount.

## 6 Evaluation of TDCC

The first review and course correction will be at the end of 6 months and is already detailed earlier. Besides this, the project will be evaluated economically at the end of 1 year and financially, at the end of the second year. TDCC would also have a regular monitoring and evaluation exercise so as to know the impact on the society and the social cost-benefit analysis. The performance metric will be (i) turn-over and financial profit/loss, (ii) independent consulting/development professionals launched by the cell, (iii) visibility for IIT and CTARA in the development sector as solution providers, and finally (iv) course material developed and launched, and its partial adoption by other colleges.

The TDCC hopes to achieve financial viability by the end of the 3rd year. One concern however, is the range of products which TDCC should offer. This should also cover products at the bottom 50%, such as NREGA plans, for which the norms are much lower. However, such projects are important enough and sorely need knowledge inputs.

In the course of the 3 years, TDCC hopes to motivate other students in IITB to undertake such ventures in the development sector. It will provide across-the-board assistance and mentorship to such students. It is also hoped that this induces various government programs and agencies to better understand the need for professionals to implement development programs and allow for greater participation by them as consultants, entrepreneurs and business entities. A single financial/economic target would be as below.

Title	1st year	2nd year	3rd year
Economic value (lakhs)	6.0	15.0	30.0
Revenues (lakhs)	4.0	10.0	20.0
Projects (No.)	10	20	30
Employee Consultants	4	6	6
Salaries (lakhs)	24.0	28.0	28.0
Consultants graduated	2	4	4
Extension/Training	1	2	2

Similarly, a project-wise account of the activities of the TDCC in every 6-monthly period will also be given. This will cover the following points.

Project-wise account
Projects Won (number and size in Rupees)
Projects Work started (number and size in Rupees)
Projects Work completed (number and size in Rupees)
Projects actually implemented (number and size in Rupees)

Each project will have the following summary description:

Funding agency
Projected Person-months
Amount (project value, TDCC expected revenue)
Location
Short 3-4 line description of the project

The rise of a functioning market for development professionals would be the single most desirable outcome. A meeting at the end of 2.5 years with internal and external experts (such as senior bureaucrats, elected representatives and civil society leaders) will assess the progress made by TDCC on this single-point objective. A decision on the future of TDCC will be made in this meeting.