

## **Annual Quality Assurance Report (2016-17):**

### **Tata Institute of Fundamental Research, (Deemed-to-be-University)**

#### **Two Best Practices by the Institute**

##### **Best Practice 1: [TIFR Integrated Information System \(TIIS\) and Datanet](#)**

###### **1. Title of the Practice**

TIFR Integrated Information System (TIIS) and Datanet

###### **2. Objectives**

The main objective of this system is to automate TIFR's core administrative functions like payroll, pension, PF, establishment, accounts, budget, procurements, and materials management with an integrated approach, thereby reducing the effort required of staff members, avoiding data redundancy, and increasing overall work efficiency and transparency in the functioning of the institute. All administrative information and records are available to authorized users of the institutes through a web-based interface available on the institute's intranet. An up to date record of financial progress and budget status is also available. Many of the paper-based processes have been replaced with computerised workflows on the TIFR Datanet. The institute canteen operations are also computerised and made cashless with a unique QR-code based authentication system that allows deductions from employees' salary directly.

###### **3. The Context or challenging issues:**

TIFR was one of the first institutes to adopt such practices. The inherent complexities of government processes and the academic setup provided hardly any alternatives for adopting/customizing any 'known' standard package from the market. The system was therefore built in-house. The challenge has been in defining the complex processes, with little documentation available, and then designing the system keeping in mind the diverse user groups in the institute with varying levels of computer skills. The architecture is complex as it supports other Centres, field stations, and campuses of TIFR at various locations connecting and using the system over the network. It allows 24-hour operations and ensures backups at different locations.

###### **4. The Practice**

- a. TIFR has built its TIIS (TIFR's Integrated Information System) which is an integrated Enterprise Resource Planning (ERP) solution for TIFR which includes Personal Information System, Payroll, Pension, Provident Fund, Procurements, Material Receipts, Inventory, Budget, Accounting, Finance, and Accommodation.
- b. TIFR Datanet is a web-based information and workflow portal built in addition to TIIS. It provides information to staff members on their desktops, e.g. service record, salary, purchase orders, indent status, etc.

- c. Most of the administrative workflows are automated and provided under Datanet. These include Online indent requisitions, online guesthouse bookings, lecture room bookings, transport (vehicle) bookings, canteen service, gate-pass management, cash purchases, and workshop requests.
- d. Accommodation Allotments are also automated where users bid for available flats and flats are allotted according to the user's seniority using this computerized system.
- e. Datanet also includes a facility for generating appraisal forms online by fetching employee details. The system provides various notifications to staff members via emails including bank credits, claims processing, etc.
- f. Since the system is in-house, it is very responsive to changes in rules and user requests for modifications. There is no dependence on outside vendors.

### **5. Evidence of Success**

The process of automating any administrative process includes a study and analysis of the overall workflow. In developing the systems for TIIS, BPR (Business Process Re-engineering) was included as the first step in this process wherein the process flow was analyzed and re-engineered taking into account the technology and system capabilities and the use of best practices. Many of the processes at TIFR like budgetary approvals, cash purchases, gate passes, procurements, etc., are now well defined and documented with little scope for errors. The system ensured a uniform application of rules like leave, payments, budgetary approvals, etc., at all locations. Many of the systems became very efficient. For example, allotting of housing flats earlier required scheduling and arranging a physical meeting. This was replaced by online bidding and allotment of housing flats through the system automatically. Similarly, the period for closing of accounts and having the audit was reduced from several months to less than a month. Operations like canteen systems became streamlined with the introduction of a cashless system running on Android-based tablets.

### **6. Problems encountered and resources required**

The main problems encountered include lack of well-documented systems and processes. Hence, most of the systems had to undergo several changes even after release. Connectivity issues with centres (located in other cities) is another bottleneck that needs to be constantly monitored. The lack of manpower for the development of systems contributed to the delay in releasing systems.

### **7. Notes:**

This system is adapted to an environment that combines research and teaching, and hence would be useful even for other academic and research institutions.

**Best Practice 2: [Synopsis scrutiny and feedback](#)****1. Title of the Practice**

Synopsis scrutiny and feedback

**2. Objectives**

Ph.D. theses written by the students of TIFR are the culmination of their years of research in TIFR. It is important that the final products of this work, viz., the synopsis, and the thesis, should be of high quality. Not just the advisor and the thesis committee, but also other experts in the field, as well as faculty members in the general subject area but not necessarily experts in the specific field, should be convinced of the high quality of the thesis work. This acts as the final internal quality control from the university before the thesis goes out to the external examiner.

**3. The Context or challenging issues:**

While the advisor and the Thesis Committee of a student strive to ensure a quality thesis, it is always advisable to have an outside perspective on the importance of the work done. Moreover, TIFR policy is that for students getting a Ph.D. from the university, it is not enough to be able to talk with peers in their specific subjects; they should also be able to address scientists from other areas and convince them of the importance of their work. To gauge the understanding of the student, a seminar is a good method. Of course, a final thesis viva-voce is given by the student, however, that is too late by then to take any corrective measures that do not jeopardize the career of the student. Therefore, it is advisable to have an internal mechanism that ensures that any lacunae in the synopsis and thesis work are identified and corrected well in time.

**4. The Practice**

While the general practice in universities is to have a Thesis Committee that approves the submission of Synopsis, the practice adopted by many TIFR Departments is:

- a. There is an open Synopsis seminar that is well advertised, where any member of the institute can be present and ask questions.
- b. The Synopsis Seminar Evaluation Committee consists of local experts in the area of work, as well as at least one faculty member from a different area. The committee is a mix of theorists and experimentalists to provide a comprehensive overall perspective. The advisor is not a part of the evaluation committee.
- c. The Evaluation Committee members have the responsibility of examining the work thoroughly. Even after the actual seminar, they are given 5 days within which they can give written feedback to the student and the advisor via an online form provided for this purpose, which may be anonymous. They may also contact the student/advisor directly and ask for certain changes to be made in the thesis.
- d. The Synopsis is accepted by the University only after all the evaluation committee members have agreed to the Synopsis, with changes made, if any.
- e. This process is overseen by the Subject Board Convener.

**5. Evidence of Success**

As a result of this practice, the quality of the Synopses (and hence consequently, the theses), increases. In some cases, comments from the evaluation committee members have acted as a wake-up call to the student, who has then improved the contents and the presentation substantially, sometimes also redoing some of the experimental checks. Another important visible result is that most of the theses sent to the external examiners are accepted in their current form, or with only minor changes requested. The last quality-control stage, in the form of Synopsis scrutiny, has surely played an important role in this.

**6. Problems encountered and resources required**

This Best Practice has been in operation since the inception of the TIFR Deemed University and has been well-accepted. Although it means an additional responsibility for the faculty members, however, the student-faculty ratio in TIFR is rather small, and this is not a large burden, given the net advantages. Also, it was necessary to ensure that this process of extensive feedback does not result in unnecessary delays in the submission of the Synopsis. To minimize the time delay and make the process easier for evaluation committee members and the students, we developed a web-based form, which would be accessible to only the evaluation committee members.

**7. Notes:**

This Practice is adaptable in institutions that have wide in-house expertise. It utilizes this expertise for the benefit of the students as well as the university as a whole.