SCALING VOCATIONAL EDUCATION

A CASE STUDY OF TISS-SVE

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1
INTRODUCTION

Vocational education in India has not received the attention that it deserves and has therefore languished. Currently, less than five percent of the Indian workforce in the age group of 19-24 receives formal vocational education. In comparison, this number is as high as 96 percent in South Korea, 75 percent in Germany and 52 percent in the USA. The Industrial Training Institutes (ITIs) and the Polytechnics that have been largely responsible for offering vocational education in the country so far have not been able to deliver adequately, either in numbers or in quality. There is an urgent need to expand the delivery of vocational education to cover the millions of youth that need to be skilled for the jobs of the future.

It is important to ensure that besides receiving practical skills training, students receive holistic education in which hands-on practical training is supplemented with theoretical knowledge as well as other courses that provide essential life skills. Educational institutions are best placed to offer such holistic education, but higher education institutions have not been involved in this effort until recently. Currently, these institutions do not have an understanding of the skill gaps in the various sectors of the economy and therefore the demand. They are also grappling with ways of delivering vocational education in a financially viable manner. This has led to a situation in which employers are unable to find trained youth even as students struggle to find employment. It is important to bridge this gap at the earliest.

Realising the need to involve higher education institutions in the provision of vocational education, the Ministry of Human Resource Development (MHRD) had approached the Tata Institute of Social Sciences (TISS) in 2011, with a request to incubate a National Vocational University (NVU). Given the lack of expertise and models for doing this, the Institute made an alternative suggestion, that a School of Vocational Education be started at TISS as a precursor to the NVU. The suggestion was accepted and a Memorandum of Understanding (MoU) was signed between TISS and the All India Council for Technical Education (AICTE) in March 2012, to start a School that will follow the work-integrated model of education. A seed grant of Rs 10 crore was given to TISS for a period of three years, which was later extended to five years, and the School of Vocational Education (TISS-SVE) was born.

Today TISS-SVE imparts vocational education to thousands of students in different regions of India. In the past six years, it has expanded steadily, and currently offers courses in 19 different verticals, across 90 locations spread over 22 states. In the process, it has catered to 19,553 students so far, including the students currently on roll. As a result of the unique and scalable delivery mechanism devised by them, TISS-SVE currently has 350 batches of students and conducts several thousand examinations each year. The list of 19 verticals include agriculture, automotive, electronics, healthcare, media and entertainment, pharmaceuticals, printing and packaging, and renewable energy, as also the more popular, BFSI (Banking, Financial services and Insurance) and MEPS

(management, entrepreneurship and professional skills). The full list of verticals and courses is available in the five-year report put out by TISS-SVE in the year 2017.[1]

The ability to deliver courses in as many as 19 professional specialisations has been developed through a partnership model involving three types of institutional partners - Vertical Anchors (VAs), Hub Partners and Skill Knowledge Providers (SKPs) [***Refer to Section 3***]. The SVE staff, and many individual experts who have been empaneled in different roles, also support the activity with their expertise [**Refer to Section 4**]. A Centre of Excellence (COE) consisting of five to seven experts in each of the 19 verticals that TISS-SVE is operating in has also been set up at TISS-SVE [***Refer to Section 3***]. The members of the COE are drawn from the industry as well as academia.

At a time when the country is striving to skill millions of youth through numerous schemes that are yet to achieve quality at scale, TISS-SVE has been able to create a model that delivers quality education and is self-sustaining, low-cost and scalable. This case study by the Observer Research Foundation, an independent, non-partisan, public policy think tank, is an attempt to showcase their model of vocational education and training, one that pays meticulous attention to the quality of education delivery, through instituting many checks and balances in the functioning of all the partners. The case study is also an attempt to assess the replicability of such a work-integrated model at other educational institutes in the country.

Given that the Centre as well as several states in the country are currently contemplating setting up Skills Universities, it is essential to understand the most feasible and cost-effective way of scaling out vocational education that combines hands-on practical training with the appropriate theoretical knowledge and other general courses that bridge the gap between the formal and vocational streams of education. TISS-SVE has been able to evolve its model over a period of five years, and this study is an effort to document their learnings with a view to replicating/ adapting this model at other institutions. From content creation, to assessment, to legalities of on-boarding the partners, this case study is a quick guide for institutions who would like to create a similar scalable and financially sustainable model.

2

ACADEMICS AT TISS-SVE

The TISS-SVE conducts different types of programmes including the 3-year B.Voc programme, certificate and Diploma programme as well as Post Graduate Programmes. We focus here on the B.Voc programme under which there are 30 programmes presently operational, with 8196 students on roll and 565 students having graduated so far. We describe the care and rigour that goes into formulating the curriculum, training the trainers and conducting examinations and assessments, in the most effective manner.

The process of initiating a B.Voc programme at the TISS-SVE begins with the VA submitting a plan for it along with the syllabus, the reference material and other details to TISS-SVE. This is then vetted very carefully by the COE, and after some back and forth between the VA and the COE, the plan is submitted to the Academic Council at TISS for ratification. Once the plan is ratified, the VA begins the process of creating the detailed curriculum. This again is vetted very carefully by the COE before the programme is started.

Curriculum and pedagogy: The courses in the B.Voc programmes at TISS-SVE comply with all the guidelines laid down by the UGC[2] i) the courses are designed to match the requirements of levels 5, 6 and 7 respectively of the National Skills Qualifications Framework (NSQF); ii) students are able to exit the course at the end of the first year with a Diploma and at the end of the second year with an Advanced Diploma if they wish to; iii) the curriculum includes general education courses as well as vocational theory and practical training; and iv) the time spent by students in getting practical training is 60 percent relative to coursework, which covers the remaining 40 percent[3]. Students are evaluated using a credit system in which each theory credit and each practical credit corresponds to 15 hours and 30 hours of work, respectively. Students must take 6 credits in vocational theory, 12 credits in general courses, and 12 credits in practical work in each semester, making a total of 30 credits spanning 630 hours, of which 360 hours are spent in receiving practical training. In case a student exits after either the first or the second year, s/he can always rejoin at a later date for progression to the next level.

As mentioned earlier, the detailed curriculum for each B.Voc programme is prepared by the respective VA, in consultation with experts from the COE at TISS-SVE and with industry experts. The VA collaborates with TISS-SVE to prepare a facilitators' guide and a participants' workbook for each course in vocational theory in the programme across each of the 6 semesters. These are then vetted by the COE. The staff at TISS-SVE then run a plagiarism test on the content, proofread the material and send it for printing and distribution to the hubs. The printing costs of textbooks are shared by the hubs, to the extent of 70 percent of the cost.

The curriculum for the general education courses is prepared by TISS-SVE themselves, and is

common across all B.Voc programmes. There are currently 15 general education courses in place, including courses in English, basic communication skills, financial literacy, digital literacy and even a finishing school course. Facilitator guides contain lesson plans, which are self-explanatory and are therefore very helpful for the concerned trainers. Each B.Voc programme consists of 12-14 vocational theory courses, besides 12 general education courses, adding up to a total of approximately 400 courses for which content has been created at TISS-SVE so far.

The practical skills training component is delivered through partnerships with SKPs - who provide paid internships in most cases and paid employment in some cases, to students. This model of work-integrated-training, also referred to as On-the-Job-Training (OJT), is a variation on the very successful Dual Model used in Germany and other countries. Students spend their days doing their respective jobs and then go to the nearest hub partner of TISS-SVE in the evenings or during the weekends, to learn the theory associated with their fields as well as other generic courses. Each student is given a logbook designed by TISS-SVE in which they maintain careful records of the work they have done each week at the SKP. These have to be checked and signed regularly by their supervisor. These logbooks then become the basis on which students are assessed for vocational practicals. Students also maintain logs of the theory studied by them during their training using the workbooks.

Appointment and training of trainers: Trainers are identified by Hub Partners and are referred to TISS-SVE for vetting. This task is performed by members of the COE through telephonic conversations or in-person interviews. For the general education component, trainers are interviewed and appointed by TISS-SVE. 'Train the trainers' programmes are conducted by TISS-SVE and also by the VAs. Trainers are usually required to be well qualified, holding a Masters' degree in the subject they intend to teach. The facilitator's guide for each vocational theory course, prepared by the VA, assists the trainers in their task, and the workbook for students, that is maintained by them, helps TISS-SVE evaluate how well the students are learning. Similar facilitator guides have been prepared by TISS-SVE for the general education component. The supervisors on the shop floor of the SKPs are the trainers for the practical component.

Assessment: The UGC guidelines for B.Voc. programmes[4] suggest designing the examination and assessment strategy in association with the Sector Skills Councils (SSCs) or using SSC designated assessors to assess the skills component of the B.Voc programmes. However, this is not really feasible if costs of the programmes are to be kept low. The charges levied by the SSCs are high, (Rs 1,500 per student for each examination) and this would increase the cost of the B.Voc programme considerably. Fortunately, TISS is a deemed university and can conduct its own examinations and provide certification to students.

TISS-SVE has created a Board of Examination and Evaluation that has standardised the processes of assessment. This Board appoints invigilators, paper setters, examiners and referees, region wise, for each B.Voc programme, on the basis of their qualifications and experience. The invigilators and examiners work on behalf of TISS-SVE to maintain the sanctity of the examinations and conduct them smoothly. Grades are awarded to students after each semester as per the UGC guidelines. The theory and practical components are each examined in two parts - internal assessment and external examinations. This helps ensure fairness in the evaluation of students.

The internal assessment of the theoretical component is based on participant workbooks maintained by the students as well as on their attendance in class. The external examinations are conducted locally at each Hub. A question bank of about 9,000 questions has been created that has been vetted by third party experts. The format of the examination presently is a paper-based examination that is evaluated online. The paper-based answer sheets are all brought back to TISS and scanned in preparation for online assessment. The scanned copies of the answer sheets are shared with

empaneled assessors who assess the sheets and enter the marks into the Enterprise Resource Planning (ERP) system being used by TISS. As of now, these assessors are not SSC approved. TISS is also working on making an online portal for examinations.

The question papers for the written examination include a combination of objective and subjective questions. During the first year the questions are 75 percent objective and 25 percent subjective. In the second year the ratio of objective to subjective questions becomes 60:40, and in the third year it is 50:50.

With regard to the practical component, the SKPs assess their students/ employees and provide the internal assessment marks. In addition, the logbooks are used by TISS-SVE as the basis for conducting viva voce. The viva is conducted at the hubs by a panel of examiners. The panel typically includes an external examiner as well as an internal one. The two sets of marks are combined into the final score.

Certifications/ Awards are given out as per the cumulative credit system of the UGC:[5]

NSQF Level	Skill Component Credit	General Education Credit	Total credit awards	Normal Duration	Exit points/ awards
7	108	72	180	Six semesters	B.Voc Degree
6	72	48	120	Four semesters	Advanced Diploma
5	36	24	60	Two semesters	Diploma
4	18	12	30	One semester	Certificate

Monitoring for quality: In order to understand the efficacy of this entire arrangement and to ensure that students have a seamless experience, approximately 15 -20 percent of the students at each Hub are interviewed each month by TISS-SVE staff for feedback through telephonic interactions. This helps TISS-SVE to assess the health of all moving parts in this model, which ultimately serves the interests of the students.

Another way of getting first hand information from the students is through the counsellors empanelled by TISS-SVE at most cities/towns where there is larger concentration of students. The counsellors conduct a group counselling session each month and send a report to SVE. In some cases the students share the issues related to course delivery, SKP related problems or anything else that bothers them. Based on these counsellor reports appropriate corrective action is initiated.

All the students are given a handbook explaining the rules and regulations related to attendance, discipline, etc. The contact details of the Dean and other key functionaries are also listed in this handbook. Students do make use of the opportunity to contact functionaries in case they have problems/queries/complaints.

3

DELIVERY MODEL OF THE TISS-SVE

As mentioned earlier, the TISS-SVE offers courses in 19 verticals, namely Agriculture, Automotive, BFSI, Child Care, Dialysis Technology, Electronics, Geriatric Care, Healthcare, Hospitality, Industrial Safety, Industrial Tool Manufacturing, Information Technology Enabled Services, MEPS, Media and Entertainment, Pharmaceutical, Printing and Packaging, Renewable Energy, Telecom, Travel and Tourism.

Several types of courses are offered within the above-mentioned verticals. These include:

a) Bachelor of Vocational Education (B. Voc) Programmes: These are three-year full-time programmes that are run as per UGC norms, in the work-integrated model. The courses in the programme are aligned to NSQF Level 5, 6 and 7.[6]

b) Certificate and Diploma Programmes: These programmes are run as per the credit system of UGC, of 20-39 credits and 40+ credits, respectively. These can also be work-integrated programmes.

c) Skill Enhancement Programmes: These are short-term programmes that do not fall under either of the above two categories. These are customised as per the need of the industry.

d) Post-Graduate Diploma programmes - TISS-SVE presently offers 9 Post Graduate Diploma programmes, each of one-year duration.

Roles and responsibilities of partners
In order to develop such an extensive system that is serving well over 19,000 students, through 19VAs (with multiple partners in some verticals such as Healthcare and Agriculture), 233 active Hub Partners and 957 SKPs, TISS-SVE has carefully crafted a model that has sufficient incentives for each of the interdependent partners to deliver on their respective goals. In doing so, the German Hub and Spoke model has been utilised, wherein hubs are learning centres and spokes are skill providers. While VAs are the domain experts, TISS-SVE anchors and monitors the entire process.

Given the work-integrated nature of this model of education delivery, it was pertinent to initiate only those courses that are demand-driven, so that SKPs can be found who will provide work for students. TISS follows an intricate methodology, with meticulous checks and balances, to carry out operations in this model.

Vertical Anchors

VAs are appointed by TISS-SVE to create job-oriented, demand-driven course content based on their knowledge of skill gaps that exist, and the geographical mapping of available Hub Partners and SKPs. Since TISS-SVE does not have the in-house expertise in all the 19 verticals, VAs bring in the sector specialisation to the process and help TISS-SVE initiate the operations in the model. Vertical anchors also select the Hub Partners and facilitate training of the trainers for the theoretical component of vocational education.

During the early days, TISS-SVE released an advertisement in Economic Times to invite Vertical Anchors for 50 sectors as they wanted diversity of sectors under their programme. At least two players from each sector were asked to present their proposal and the most promising proposals were accepted and appointed as VAs. Initially, some of the selected VAs had to be dropped due of lack of performance and new ones were added eventually. In time, TISS-SVE arrived at the 19 verticals mentioned earlier.

VAs research courses that are in demand by the industry and are not the conventional ones offered at regular institutes. They then interview CEOs of companies to understand the demand for various professionals in the sector. After a thorough understanding of the needs, they design courses, with the help of sector professionals. They also provide a list of reading material in the syllabus design. These are recommendations for reading beyond the prescribed textbook.

The VAs identify hubs that can offer classroom education as well as get the SKPs on board. There is a process of due diligence to sign up hubs. Hubs need to provide evidence of their ability to bring SKPs on board, and show infrastructure availability, their presence in education delivery under universities or NSDC as well as tie ups with SKPs. Once hubs are identified by the VAs, the appointment is done by TISS-SVE post due diligence.
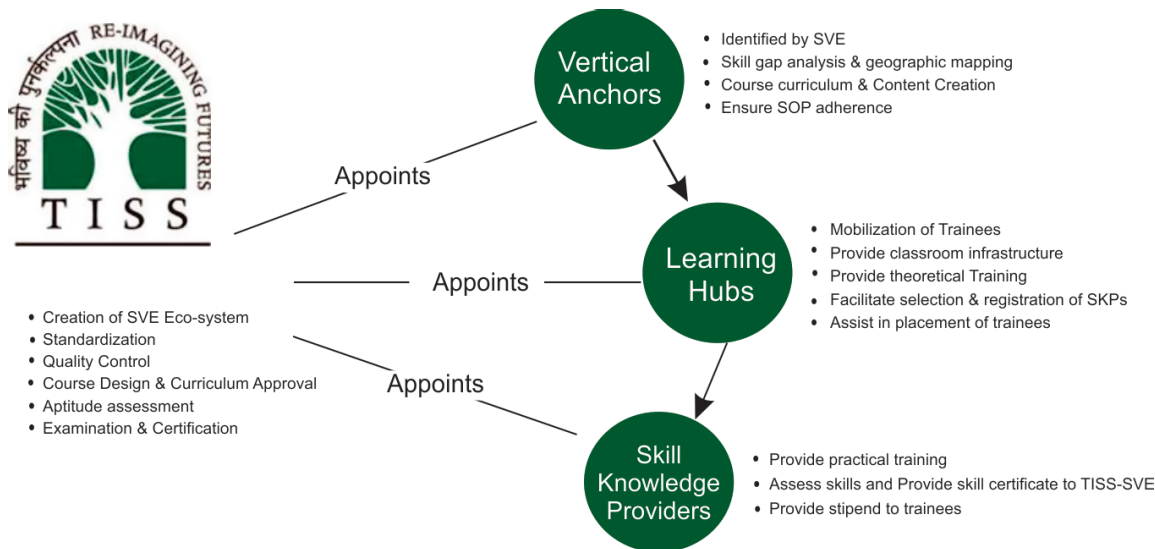
VAs look over the agreements signed between TISS-SVE and the SKPs via the hubs. In fact, it is the task of the VAs to ensure that the hubs have valid partnership with SKPs to provide practical training to the students. VAs have to train newly signed up hubs in the ERP process so that hubs can login and provide student details and use the ERP in other ways. [***Refer to Section 5***]

VAs are also involved in monitoring and training of the trainers for the vocational education component of the course. They visit each of their partner hubs once in three months to check aspects such as facilities, adherence to procedures, collect student feedback and understand the progress of their learning, record necessary hours completed by students, as well as check if the hubs have enough SKPs to support all the students.

This model also allows VAs to have their own hubs, as it helps them generate additional revenue. However, under their contract with TISS-SVE, VAs can only run three self-hubs for every two third-party hubs they affiliate. This ensures that there is no monopoly of VAs in delivering the courses. Whistling woods is an institution that provides high-end courses in the Media and Entertainment Sector and is also a VA in the same space. They do not have self-hubs but count prominent partners such as Mithibai College as one of their many third-party hubs. A second example of a VA is Tiksna Livelihood Private Ltd. in the healthcare sector, which runs several self-hubs. It has a staff of 15 members, besides 40 freelancers, but also outsources specialised work as needed.

Hub Partners

Hub Partners are the "learning hubs" that perform some of the most important tasks in this work-integrated learning model and they are given 70 percent of the revenue [***Refer to Section 6***] from student fees. They mobilise and select students, provide theoretical training in classrooms, identify and register SKPs and even assess students by hosting written and viva examination. Hubs deliver

Vertical Anchors
- Identified by SVE
- Skill gap analysis & geographic mapping
- Course curriculum & Content Creation
- Ensure SOP adherence

Appoints

Learning Hubs
- Mobilization of Trainees
- Provide classroom infrastructure
- Provide theoretical Training
- Facilitate selection & registration of SKPs
- Assist in placement of trainees

Appoints

- Creation of SVE Eco-system
- Standardization
- Quality Control
- Course Design & Curriculum Approval
- Aptitude assessment
- Examination & Certification

Appoints

Skill Knowledge Providers
- Provide practical training
- Assess skills and Provide skill certificate to TISS-SVE
- Provide stipend to trainees

the content created by TISS-SVE and VAs for general education and vocational theory component.

While most hubs are identified by VAs, sometimes hubs also apply directly to TISS-SVE based on newspaper advertisements. Post application, they receive a concept note from TISS-SVE explaining the model as well as their role and responsibility in the delivery mechanism. Even when hubs apply directly, they are routed through VAs who educate them about the basic minimum requirement of physical, legal as well as financial requirements for final appointment. They remain associated with the VA within the partnership model.

Hubs go through two levels of due diligence by the VA and TISS-SVE before being appointed as partners. Once appointed, a coordinator is identified from the hub, who works closely with the Vertical Managers (VMs) at TISS-SVE. VMs initiate the on-boarding process by educating hubs about the model as well as the basic requirements from them for the delivery of courses.

Post on-boarding, hubs mobilise students for either the January or July intake sessions. They then sign up for the ERP using forms shared by their VMs, which is then sent to the IT team at TISS-SVE. The IT team then creates an account for this hub on the ERP which they use to input student data and course details provided by their VAs [**Refer to Section 5**]. A single hub can run courses in two to three different sectors.

Hubs formulate the course fee structure through discussions with their VMs. Once their account on the ERP is ready, hubs create a fee payment schedule based on the paying capacity of students. This can be monthly, quarterly or annually. They then announce the launch date for the course and if it is a new hub starting a new course, the TISS-SVE staff participates in the student induction session. Hubs also identify trainers who are interviewed by the VAs.

Another important responsibility of hubs is to prepare time tables, which can be announced weekly, monthly or quarterly as all students are also employed with the SKPs. Students are required to undergo 12 hours a week of theory (usually 20-22 weeks of teaching in a semester), and the distribution of this over a semester depends on the requirements of the SKPs and are thus scheduled by the hubs accordingly.

Hubs ensure that there are sufficient numbers of SKPs for its students to receive OJT. The Hub coordinator also monitors processes for OJT at SKPs and interacts directly with students and

trainers for feedback as part of the regular functioning of the Hub and SKPs.

Hubs send the course completion report and student attendance to SVE, which is eventually also entered into the ERP. TISS-SVE suggests plausible exam dates and number of exams based on which hubs propose an examination schedule. Once approved by TISS-SVE the schedule is put up on the notice board for students at the Hub.

Hubs host the viva and written examination, which is carried out by empanelled staff of the SVE [*Refer to Section 2*]. The internal assessment marks are given by the assessors at the hubs, on the basis of the participant workbooks maintained by students, and their attendance. The answer sheets of the written examination are couriered by the hubs to TISS-SVE for assessment.

Skill Knowledge Providers (SKPs)
SKPs are the industry partners that facilitate practical, OJT by employing trainees full-time or on internship-basis, and offering stipend. SKPs also assess students on the vocational training component and provide internal assessment marks to TISS-SVE for inclusion in the final marksheet. SKPs are identified by hubs, but their appointment is done by TISS-SVE post due diligence. If the number of OJT positions in an SKP is less than 20, a letter of intent is given to the SKP by TISS_SVE. However if there are more than 20 student admissions, a legal agreement is mandatorily signed between TISS-SVE and the SKP.

Based on how much they learn on the job, students have to get a logbook signed by their supervisors at SKPs, which then becomes the primary resource while calculating internal assessment marks. This can either be done every week, or as and when a student feels confident about their job roles and the learnings. After the course completion, SKPs may absorb some of the students placed in their companies for OJT.

Centre of Excellence (COE)
To safeguard quality and interest of students as well as all concerned stakeholders, all appointments of trainers are approved by TISS-SVE with due diligence done through their Centre of Excellence, the legal team as well as a team of management consultants.

COEs vet the curriculum and content prepared by VAs and approve appointment of the trainers at the learning hubs. Each vertical has one COE to itself. Each COE has a chairperson and consists of five to seven members. Each member of the COE has at least 10 years of industry or academic experience.

Trainers identified by the hubs are assessed through telephonic or in-person interviews by COE before getting appointed by TISS-SVE. COE members are paid an honorarium for their services.

TISS-SVE
TISS-SVE performs the role of an anchor, monitoring all aspects of the activity, while also taking charge of assessment and certification. It collects a Performance Guarantee Fee from all partners and conducts the necessary due diligence to keep up the health of the system. Students make the fee payments directly to TISS.

TISS-SVE also appoints all the respective partners and thus controls the quality of the partnerships. Virtual Managers at TISS SVE guide the newly appointed hubs and monitor them by appointing coordinators at each hub. It performs due diligence for all partners, including VAs, Hub Partners as well as SKPs.

Additionally, the TISS-SVE approves curriculum designed by VAs, standardises course delivery

processes, and conducts exams to certify trainees enrolled under it.

While VAs design syllabus and create content for the vocational education component, TISS-SVE performs the same task for the general education component. It creates 180 hours of general education courses each semester, which is the largest share of the content creation task. These courses are approved by the Academic Council and are common across all programmes. They include communication skills, financial literacy, basic accounting among others. TISS-SVE also interviews and appoints the trainers identified by hubs for the general education component and trains them for efficient delivery of courses at the classrooms.

TISS-SVE has also played the role of the VA and designed courses in some areas such as Childcare and Geriatric care, which are now being offered through Hub Partners.

TISS-SVE is essentially the administrative hub and has 70 staff members who are all contract employees. [***Refer to Section 4***] It conducts all the examinations and charges separate examination fee from students, which is not part of the shared revenue [***Refer to Section 6***] model. It empanels external invigilators, paper setters and assessors for conducting the examinations. It collates all the marks provided by the hubs and SKPs to create a marksheet for the students.

Given the nature and spread of this model, it is difficult to maintain personalised relations with students. TISS-SVE has attempted to resolve this by appointing freelance counsellors at each hub location. Trainees interact with counsellors and share their concerns pertaining to their study environment - the hubs or SKPs - or any other challenge that they face during their course. It has also facilitated a grievance redressal cell in each hub where students can complain about any inconvenience caused to them. Students can also write directly to TISS-SVE for their concerns.

Being a Category 1 institute under UGC, TISS-SVE enjoys freedom on territorial jurisdiction and has the autonomy to offer courses across the country and abroad. However, the intent is to ensure that trainees/students find education and jobs in the vicinity of their residence.

4
THE TEAM AT TISS-SVE

TISS-SVE has scaled up its operations significantly over the years. It now runs upto 350 batches with more than 11,000 students on roll presently, and does so with a team of just 70 persons. Almost everyone is on two-year contracts, paid out of revenues from SVE. For example, the examination team that started with just one person now has 18 members and handles more than 500 examinations every year.

Following is the organisational structure of the TISS-SVE and a brief description of the functions of the different departments:
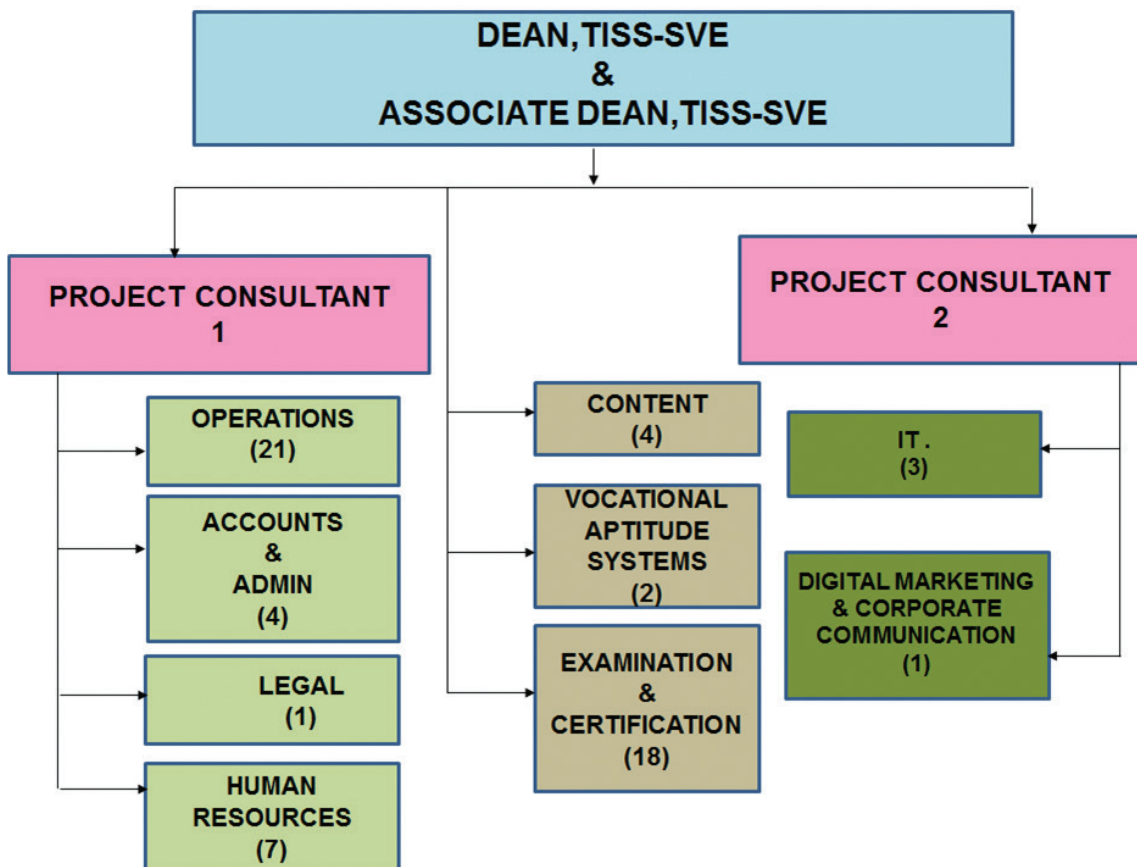
1)   **Project Consultants:** Two project consultants work closely with the Dean in order to decide upon changes in policy of TISS-SVE and ensure smooth management of daily operations. They also give continuous inputs for customisation of the ERP.

2)   **Operations:** This groups comprises 15 Vertical Managers (VMs) and six senior VMs. The VMs play a major role in the management of the hubs within the verticals they oversee. They ensure that end to end processes for the batch enrolled in a hub is completed on time. The partner shares of revenue are not released unless the VMs check and certify the papers submitted for payment. They are in constant touch with the hubs and escalate the issues to their senior managers, if necessary. They also make visits to the hubs for student orientation and for monitoring of the hubs and sometimes also conduct surprise visits during examinations. Each senior VM oversees three or four sectors.

An important responsibility of this team is to coordinate between the internal and external arms of TISS-SVE. This involves liaising between teams within SVE such as the COE, Legal and the Hub Partners, Vertical Anchors and SKPs. Their responsibilities also include checking on fee payment status of students, following up with Hub Partners for payments etc. In addition to the above mentioned functions, the senior vertical managers also prepare managerial reports pertaining to a certain sector or location.

3)   **Accounts & Administration:** In addition to the usual function of handling the accounts of the institution and its employees, the three accountants of TISS-SVE also handles the payout processes of 233 Hub Partners (on a monthly basis) and the Vertical Anchors. While the ERP significantly facilitates this process, the external processes at the banks for instance have to be handled by the accounts team manually.

4)   **Legal:** The one person Legal team has the important task of handling the due diligence for all hub partners and VAs. While this may seem like a mammoth task for one person, given that partners keep coming on board as a gradual process and not all at once, the workload is evenly spread out. As TISS-SVE has grown, several partners listed on the Bombay Stock Exchange have come on board. These partners are not subjected to as rigorous a process of vetting.

5)   **Human Resources (HR):** It manages all the conventional HR functions of the organisation. Since SVE has grown significantly over the years, the HR team is always looking to expand their team.

6)   **Content:** This team is responsible for all the textbooks and facilitator guides. This includes getting all the content checked for plagiarism, coordinating with designers as well as ensuring that everything is printed on time. This team is responsible for checking and printing of approximately 1,00,000 textbooks every year.

7)   **Vocational Aptitude Systems:** This team has two important tasks -
i) TISS-SVE has empanelled 25 counsellors all over India. These counsellors conduct one session per batch per month. After every session, the counsellors share their feedback with the VAS team. The VAS team handles all these counsellors in terms of allocating them to different locations, ensuring each partner is covered and analysing their feedback.

ii) It also runs the Vocational Aptitude Testing portal (http://psychometric.sve.tiss.edu:9090/), which involves significant amount of research and analysis to develop, test and conduct a battery of tests on students to better understand their abilities in different sectors. The test development is yet to be completed. Once rolled out, it will help in guiding the students to choose from available courses offered by the hub [***Refer to Section 8***].

8)   **Examinations and Certification:** This team is responsible for handling all examinations for 350 batches every semester across the country. It comprises two supervisors, four program officers and eight data entry operators. They have multiple responsibilities including sending materials to different centres, arranging for invigilators, examiners etc. After the introduction of online paper checking, the examination team also coordinates collection and scanning of thousands of exam papers, sharing them with assessors and preparing results including grade cards and certificates.

9)   **IT:** The IT team has a crucial responsibility of handling the functioning of the ERP. This includes managing levels of access, portal maintenance, upgradation etc.

10)   **Digital Marketing and Corporate Communication:** In addition to promotional and marketing duties on conventional and social media, the one person team also shoulders the important responsibility of verifying marketing content created by different hub partners and VAs.

5

ERP SYSTEM AND THE ABILITY TO SCALE

An ERP system is a customised, integrated and well packaged software application that imbibes within itself deep knowledge of business practices and facilitates different processes using new and evolving technologies. It enables automation of a number of activities and provides ready access to information to aid better decision making. In order to accomplish this, IT managers work closely with all the relevant stakeholders to understand their needs and capture processes. They can subsequently also define new processes.

TISS-SVE's ERP

In the case of the TISS-SVE, the ERP system has been vital in achieving scale. Given that its delivery model involves partners of different types working at many locations, there is a need for a central hub for coordination and monitoring purposes. TISS-SVE, realising early on that its delivery model and partnerships are likely to be unique, went in for a customised ERP. Over time, it has designed an efficient ERP platform to handle all its processes. In collaboration with its vendor, it has integrated several modules, including accounts, curricular content, operations and examinations into the ERP. As a result, TISS-SVE has managed to streamline processes, cut costs and significantly enhance its delivery mechanisms. The operations module controls all these processes and consists of mediators (TISS-SVE employees) who facilitate the working of the ERP. The level of access granted to the ERP varies for the different stakeholders. Since all the TISS-SVE stakeholders are working in tandem, the ERP has also proved to be valuable in identifying bottlenecks and delays. Some of the benefits accruing to TISS-SVE are listed below:

Minimising paperwork: It is commonplace for public education institutions in India to struggle with paperwork. Its sheer volume often makes it impossible to locate relevant documents at the right time. One of the primary objectives for SVE to design the ERP was to secure soft copies of all documents and thus cut through all the paperwork. An internet connection and a username-password is now sufficient to access documents from any location at any time.

Streamlined accounting: An important reason behind designing the customised ERP was to achieve ease in accountability. Since TISS-SVE follows a partnership model wherein knowledge is imparted to students through Hub Partners and by extension through Skill Knowledge Providers that are connected to hubs, it is extremely difficult to maintain a robust fee collection and payment to partners cycle without an ERP platform.

The accounts model in the ERP has been inserted with a customised fee payment structure. Students can pay fees in the online mode but also in the offline mode which involves the hubs generating an

invoice and students making a payment at the nearest bank. Once the payment is done, the details for each student and each installment is updated in the ERP and this becomes the basis of payment to the other partners namely the hubs and VAs.

The revenue sharing model used by TISS-SVE with its partners [**Refer to Section 6**] is also inserted into the ERP which takes into account all the criteria for computing the payout to every partner each month. These amounts are reflected on the screen of the ERP and the accountant only needs to verify it and make the actual payment. This entire cycle is followed for more than 2,000 batches of students and each payment is processed within just 7-14 days.

In contrast, if monthly payments were to be made to all Hub partners and VAs, it would typically need 100 accountants. Approximately 20 senior accountants would be needed to supervise them in order to eliminate manual errors. Further approvals and queries notwithstanding, a time delay of three months for a single payment would be routine.

The customisation needed for partner - payment agreements was one of the key reasons that TISS-SVE did not opt for existing ERP systems for colleges and universities. Such customisations that are imperative for streamlined functioning are important to take into account while implementing technology based solutions like the ERP. The technology frameworks needed to be created as per the needs of the institution and not vice versa.

Collaboration with Vertical Anchors and Hub Partners: At the time of conception, TISS-SVE believed that it would be sufficient to simply maintain a list of Hub Partners and VAs within the ERP system. Gradually they realised the value of tweaking their working model to assign some work to their partners so as to share responsibility and create multiple decentralised centres of control within an overarching central framework.

Thus tasks like adding students and the trainers to the ERP is being done by the hubs while the VAs update information on their respective courses and also design a payment structure (total fees, time of collection, number of installments, etc.) for the same. Since TISS-SVE has no direct role in these processes, the ERP plays a crucial role is assisting it to oversee the entire process. Without an ERP, Hub Partners and VAs would have to coordinate offline using Excel sheets and emails. Given the magnitude of the task, it is highly likely that there would be poor communication, adding to the costs and delays apart from sub-optimal partner and student experience. The ERP solves this issue since all of the relevant documents are accessible within a few clicks.

In terms of oversight, the ERP helps separate supervisory roles. For example, the VAs are responsible for the hubs and the VMs at TISS-SVE are responsible for the entire chain. In addition, there are 'admin' as well as 'observer' modules to maintain an overall check on the various delivery mechanisms. Skill Knowledge Providers don't use the ERP very much, since most of their role of monitoring students is being performed by the hubs at present.

ERP Phase 2

In time, TISS-SVE realised the need to use the ERP to facilitate and oversee marketing processes by its partners. For example, a Hub Partner advertising a certain course in a railway station needed to follow a set of guidelines in terms of content and images. The ERP has set up an approval-based model for this purpose wherein the marketing team at SVE passes or rejects the banner or other kinds of promotion collaterals from Hub partners. In addition, the managers of the marketing module have access to a number of basic reports about Hub Partners, VAs, details of batches and students etc., to supply them with latest data that can be used in marketing material.

Facilitating creation of content: The content module was a significant addition to the ERP

during Phase 2. Google drives and emails have been replaced by this module, and it now handles all the content approval for SVE. VAs upload content for the workbooks and facilitators' guide into the ERP system. The content team at TISS-SVE coordinates with the COE for approvals. After some back and forth between the VA and the COE to finalise the contents, the content team does a plagiarism check after which the book is finally sent out to be designed and printed for distribution.

The whole process takes anywhere between a few weeks to a couple of months depending upon the amount of expertise required for the subject and the availability of COEs. As a result of this feature, all versions of facilitator guides and participant workbooks are just a search away. COEs themselves are not part of the ERP system since most of them are empaneled subject experts who are only required from time to time and thus do not need access to the common platform.

The printer module: A related advantage of the content module in the ERP was the accuracy and speed of printing that became possible. The printer's office was also given an ERP login to access the latest version of a book, and avoid confusion among its different versions. This prevented accidents such as printing the wrong versions of books (which had happened earlier) and saved significant time and money. Any time the printer was assigned a task, the latest version had to be downloaded and printed. In addition, the ERP provided a clear timeline of when a certain textbook was submitted by the vertical anchor, when it was approved and when it was sent to the printer etc.

A similar process is followed for ID card printing. For example, problems like sending the wrong ID cards to hub partners in Assam was solved since everything is put online on the ERP by the TISS-SVE content team. Once again, this facilitated the streamlining of processes and smoothened out the bottle necks.

Scheduling Examinations: All examinations are conducted locally at hubs. However, all the related controls such as generation of questions papers, sending answer sheets for students to the hubs, correcting the papers, releasing marks of students, distributing grade cards and certificates etc. is done by TISS-SVE. The exam controller module in the ERP system is important is this regard. Although it was introduced during Phase 1, it was augmented to a very large extent during Phase 2 with the examination scheduling module.

One of the major issues faced by TISS-SVE was the haphazard and irregular scheduling of examinations by different hubs. To solve this problem, it was decided to ask the hubs to propose an exam schedule on the ERP for all their batches. This schedule was expected to conform to the examination pattern already decided by the TISS-SVE team (for example, a certain exam may entail a theory exam and three interviews) as well as a pre-decided date range of 10-15 days during which to conduct exams. The TISS-SVE team then approves the exam schedule and if there is a clash or other difficulties, it has the power to overrule the Hub partner and schedule the exams to the convenience of the students. As a result of this module, approximately 2500 examinations conducted every year is handled by a team of just 18 people from SVE.

ERP Phase 3

This is an ongoing phase and consists of 70 percent of fixtures based on user feedback and 30 percent enhancements. One important enhancement is the introduction of student logins wherein more than 5000 students are now part of the ERP system. This significantly increases the number of transactions in the system. Students can see all their personal information and if need be, get it corrected by the hubs. Secondly, students can see keep track of their payment structures and download invoices directly for offline payment, instead of approaching the hubs.

6
FINANCIAL SUSTAINABILITY

As mentioned earlier, TISS-SVE began as an incubator for a National Vocational University with a seed grant of Rs 10 crore from AICTE, under the aegis of MHRD, for a three-year period which was later extended to five years. This initial grant provided the cushion that TISS-SVE needed to explore different models, overcome initial setbacks and develop a viable model for the provision of vocational education at scale that is now financially self-sufficient. The 5-year period was completed in March 2017 and the table below shows how the funds received from AICTE was allocated and spent.

TISS-SVE - AICTE Fund Usage Summary

Payments/Expenditure Heads	Sub- Heads	TOTAL
Expenses on Incubation of NVTU	Staff Salaries/Travel/Consultancy	5,79,96,360
Mobilisation	Student Mobilisation/Public awareness	1,16,93,491
Content Development	Curriculum development/Content Digitisation	1,24,57,517
Running & Maintenance Expenses	Communication/Internet connectivity	17,91,313
Setting up Project Office/Infrastructure	Computers /Purchase/Maint	34,75,818
Seed Capital for Pilot Project - REEMAP	Reemap	5,87,791
Technology	Server space/ERP development (II Phase)	48,13,625
Test Development	Examination Software/Creation of Test papers	53,87,514
Train the Trainer	Train the Trainer	8,43,105
Total (Rs.)		**9,90,46,534**

TISS-SVE has succeeded largely in achieving its goal of keeping vocational education at a relatively low cost and, therefore, affordable. The fees for the courses are capped at a figure between Rs 1500 per month and Rs 4000 a month depending on the type of the course. Given that students receive stipends and salaries in some cases, and TISS-SVE negotiates with SKPs to provide them with a reasonable sum as stipend, most students are able to cover their fees from their own stipends. Only some courses such as Child care and Geriatric care for example, do not have opportunities for paid OJT and, students have to advance the fees. Even in this case, TISS-SVE was able to get support from the Navajbai Ratan Tata Trust to keep the course fees low.

The revenue generated from the student fees, which is collected exclusively on behalf of TISS-SVE, is shared with all the partners in the proportion indicated in the table below. This revenue supports the

partners of the skilling model and assists them in becoming financially self-reliant. All the partners of TISS-SVE are for-profit entities and the generous revenue split made by TISS-SVE between the Vertical Anchors, Hub Partners, and itself has resulted in the creation of a sustainable model of running courses in tandem. TISS-SVE has taken other measures to ensure that all partners remain engaged and have adequate incentive to continue playing their role in the best possible way.

Stakeholder	% of Fee Revenue
Vertical Anchors	10%
Hub Partners	70%
TISS-SVE	20%

Each VA is required to deposit a fixed amount with TISS-SVE and provide a performance guarantee of a pre-agreed amount over a period of 6 years. If the VA is able to meet the performance guarantee, they qualify to recoup their deposit should they wish to discontinue. Otherwise, the agreement is extended for a further period of 6 years. If, on the other hand, the VA violates the conditions of their mutual agreement in any way then TISS-SVE is free to terminate their agreement with the VA. So far, only three VAs have had to be terminated. The agreements have been well drafted with the involvement of the legal team at TISS and there has been no need to take recourse to the courts.

If VAs choose to do so, they can also run hubs of their own to create additional revenue. TISS-SVE then postulates that VAs have to support at least two third-party hubs for every three hubs that they set up of their own.

Hubs in turn also deposit pre-agreed amounts and are subject to performance guarantees that are variable for big cities and small towns. If either side terminates the activity at an earlier date the hubs forfeit their deposit. If, on the other hand, they have not been able to meet their performance guarantee after six years they can still claim their deposit on a pro-rata basis. So far, approximately 30-40 hubs have been terminated and have forfeited their deposits.

The use of the ERP system ensures that TISS-SVE never makes excess payments to its partners. Partners are paid each month on the basis of the fees that have come in during the month. This ensures that that there is an incentive for Hub Partners who manage the students to also oversee the fee payment process adequately, since their own income depends on it. Irrespective of how the fee payments are scheduled to be paid by students, the fee payment to partners by TISS-SVE is always made on a monthly basis. The payment share of 70 percent to the Hub Partners includes Goods and Services Tax (GST). TISS does not pay GST since it is a non-profit educational institution.

The TISS-SVE team of 70 members is almost entirely paid out of the revenues generated from fees. The AICTE grant was finished in March 2017. As of April 2018, all the expenses including salaries, travel, honorariums, software development, purchases, etc., are managed through the revenue earned from fees. The ability to achieve scale with a very large number of students has ensured that TISS can cover all of its costs from keeping just 20 percent of the revenue from fees. The costs of counselors, salaries, technology development, laptops for staff, on-site supervisors, content development for generic courses, costs of due diligence etc. is all being paid from here.

Examination fee at a modest Rs 1,600 per semester, covering theory and practicals, is charged separately to students and is not shared with partners. This is used for conducting examinations on a no-profit, no-loss basis. A separate fee is also charged for supplementary exams. The money is generally collected online. The ERP system also has an offline payment mode in which the challan is downloaded and paid in two banks.

7

MEASURES FOR QUALITY CONTROL

The success of the TISS-SVE model is largely due to the fact that even though it has pursued a partnership based model, with many moving parts including empaneled experts of various kinds, it has been able to create a system of checks and balances that ensures that the activities of each of the partners follow a virtuous cycle leading to good outcomes for students.

Student support: As mentioned earlier, students are given workbooks and logbooks that guide them through their daily work, and they are supervised at all times both at the SKPs and the hubs. One recently completed initiative by TISS-SVE, on behalf of students, has been the setting up of libraries at each of the Hub Partners. The goal was to provide them with access to all the books that were considered essential reading for students and were listed in the course outline created by the VAs and vetted by the TISS Academic Council. One copy of each book has been purchased for every eight students in the batch, with the respective Hub Partners paying half the cost, thus providing students with reference material for further study.

The process of setting up the libraries was started two years ago and the books were procured centrally at TISS-SVE in order to benefit from discounts available for large orders. The books were then dispatched to all the hubs and they all have libraries now. TISS-SVE has not yet gathered feedback from students on this initiative, but students are well looked after in this model in more ways than one. TISS-SVE's share of the costs of reference books was once again born out of the 20 percent share that TISS keeps of the revenue from fees.

Due diligence for appointment of VAs: VAs were appointed by TISS-SVE directly by releasing an advertisement in the newspapers. Among all the candidates that responded in each vertical, TISS-SVE chose the one that has the most potential and the best expertise in delivering a course in that particular sector, based on an assessment of their presentation and other follow ups such as due diligence on their financial stability and their past history. The accounts team did the financial due diligence and the legal team performed the legal due diligence by checking all their documentation. A professional company was also paid to run checks on them, and only once their credibility was established did TISS-SVE collect the performance guarantee deposit and sign the legal agreement with the VA. If the VA happened to be a listed company then no financial due diligence was done.

As mentioned earlier, the performance guarantee fund ensures that VAs are incentivised to play their role effectively and accomplish their goals. In the case of a default or failure to begin a course, this deposit is forfeited. In case the VAs are non-performing or violating the terms, then too their deposit is forfeited.

Due diligence for appointment of hubs: The VAs scout for Hub Partners and educate them about TISS-SVE's policies for entering into an agreement. They recommend the hubs to TISS-SVE which then appoints a search team that performs the on-site due diligence of the hubs to ensure that they have the requisite infrastructure for students. The legal team at SVE verifies details such as PAN card, legal presence, property rights, etc, and the accounts department cross checks their viability in terms of audit reports and IT records and decides if the hubs can be taken on board. TISS-SVE then sends a draft agreement to the hubs to fill in their details, and once received, the legal team prepares the final agreement.

TISS-SVE has prepared a list of tasks that the Hub Partners are required to perform under their agreement with TISS. Personnel (with at least a master's degree) are deputed to visit hubs randomly and perform checks on them based on the checklist provided by TISS-SVE. Agreements of non-performing partners are terminated on the basis of such checks. Students are then accommodated in other hubs in that location so that they can finish their classroom education. A third-party team is needed in this model to perform checks as hubs are spread across the country. It is practically impossible for TISS-SVE to keep a check on all partners by itself.

Due diligence for the appointment of empaneled members and staff.

A professional company is paid to check the credentials of not just VAs, Hub Partners, and SKPs (those getting into a legal contract with TISS), but also individual trainers, assessors, COE members, other empaneled partners and even students (verification of certificates). Physical verifications are always done for hubs, but only for some SKPs. It is not done for all SKPs as some of them are also stock exchange listed companies.

8

FURTHER IMPROVEMENTS THAT ARE UNDERWAY AT TISS-SVE

TISS is presently in the consolidation phase during which no new Hub Partner or VA is being added despite the fact that there are as many as 100 Hub Partners waiting to be added. However, new courses continue to be added in the existing verticals. The consolidation phase involves weeding out non-performing partners and stabilising the ERP among other tasks. The verticals are also in review. TISS-SVE would like to see consolidation of VAs, Hub Partners and so on, and take decisions on how much to expand and in which verticals. Other decisions to be taken include creating policies for having multiple VAs in the same vertical. For instance, in healthcare, there are already three VAs working in non-overlapping areas, and in agriculture, there are two. Other decisions that need to be made include a careful examination of the numbers and the spread of hubs across verticals (see Fig 1). This phase will last until December 2018 by which time it is expected that the online systems and the Learning Management System (LMS), described below, will also be ready.

Learning Management System

A recent enhancement within the ERP is the introduction of the Learning Management System (LMS) which is a collection of quality training material uploaded by the ,, VAs and trainers for the students. The idea is to provide a platform to encourage quality content to proliferate to other hubs. Once uploaded into the LMS, students across the sector can access it, pending approval from the vertical anchor. It is important to understand that this is distinct from conventional learning material and textbooks which cannot be uploaded online due to copyright issues. LMS content can be just a simple powerpoint presentation or a video which is relevant to the subject. As of now, the LMS has just been introduced and the response is still being gauged.

Online question banks and checking

In parallel to ERP Phase 2, TISS-SVE has also started developing an online examination application. Gradually, they came to the conclusion that the same module could actually be used for question paper generation. SVE designed a section on this application to upload question banks of different subjects (both subjective and objective type). Vertical anchors provided these question banks from which multiple-choice question papers could easily be generated for different exams based on a fixed ratio for the type of questions.

In conjunction, SVE also recently introduced another platform for online paper checking. Since it wasn't always possible to find subject experts in every area, a mechanism of getting papers to them anywhere in the world had to be introduced. In order to fulfill this process, all physical exam papers are sent to SVE, scanned and bar coded to enable student and subject recognition,

and uploaded into the online checking software. Examiners can then login and start checking the papers. The platform is extremely user friendly and does not require examiners to be trained.

Vocational Aptitude System (VAS)

Right from the first day of SVE's functioning, the school has had a Vocational Aptitude Systems (VAS) department to develop a customised test for students to help them choose an appropriate vertical or trade for either work or educational purposes. It's main objective is to aid students who are mostly confused about selection of trade either for work or study.

The first phase of VAS (2012-14) focused on the initial four verticals of the SVE and conducted job analyses on each of them. This included desk research, interview of factory supervisors as well as ground level workers and statistical analysis to arrive at a list of abilities. These abilities were then used to develop tests. For the initial four verticals, seven tests were developed. These were developed completely in house and were developed with the guidance of two scientists from the Defence Institute of Psychological Research, a department under the Defence Research & Development Organisation.

The first battery of tests included Colour Matching, Colour Distortion, Hand-eye Coordination, Attention and Concentration. Subsequently, these tests were deployed on a pilot batch of around 500 students in Mumbai. On the basis of the data collected, time and item analysis helped the SVE team to understand just how much time was the norm for a certain task as well as the average difficulty level. After this study, all the components of the tests were modified in collaboration with the IT department and the tests were then administered live to 172 students to calculate reliability and validity. Out of seven tests, five were found to highly reliable whereas a couple were moderately reliable. In addition, all of the tests were found to be valid under the normal probability curve. After this entire process, the tests were actually administered to the first batch of students from the SVE Dialysis Technology course in Mumbai and Calicut during the time of their admissions by the Hub Partners.

In the second phase, thirteen verticals were selected (bringing the total to 17) and the entire process mentioned above was set in motion again. It was found that in addition to the existing seven tests, five more need to be developed, thus making it 12 tests in total. The additional ones include English Language, Numerical Tests, Empathy, Abstract Reasoning and Communication. Currently, the battery of tests are almost ready to be administered and are pending final improvements.

Once complete, the final objective will be to administer these to all potential SVE students to help them gauge their own aptitude. While it will not be an admission criteria, this test will be especially useful for students at hubs that offer multiple courses.

Although TISS-SVE has been evolving continuously since the early years, and has been making improvements constantly, the team is keenly aware that there is a lot more that can be done to ensure that the interests of students are always at centre stage. The partnership model can be fine-tuned and systematised further, the course offerings as well as course content expanded and improved, and the delivery model tightened so that students receive quality education in a smooth and seamless way.

9

REPLICABILITY OF THE TISS-SVE MODEL

It is evident that the TISS-SVE has been fairly successful in developing a vocational education and training model that is scalable, cost-effective and mutually beneficial for all parties involved. With regard to replicability, some of the characteristics that make this model rigorous, quality conscious and adaptable at other institutions of higher education include:

Partnership model: TISS-SVE collaborates with many partners who bring in the expertise, infrastructure, and human resources, required to conduct vocational education courses that are attractive to students and to industry. Its partnership with Vertical Anchors brings in knowhow at different verticals that TISS-SVE itself does not have. The Hub Partners help manage large numbers of students and provide access to students in different geographies where skills training is available but TISS-SVE itself does not have a presence. The Skills Training Providers provide the hands-on training that is the crux of vocational education. Students work with them full time while they are getting trained and have 3 years of work experience at the end of their B.Voc programme. TISS-SVE lends its name and reputation to the exercise and the degree from a premier educational institution such as TISS is a coveted one.

In addition, TISS-SVE holds all these disparate groups together seamlessly and also serves a very critical function for students. It gives them a holistic education, combining theory and practicals, along with education in critical life skills, turning them into independent, autonomous learners, who have learned 'how to learn'. This kind of holistic education for every student is the need of the hour in the country today and more educational institutions need to come forward to evolve their own models based on the work of TISS-SVE.

Skills University: The model of a skills university that has emerged from the efforts of the TISS-SVE, is one in which the campus of the university/college serves primarily as an administrative base that ensures the quality of vocational education and as a research centre. TISS-SVE did not need to hire a large faculty base but instead drew on experts from industry, from their respective fields. This allowed them to flexibly start new courses and shut down old ones in response to demand from the industry. Such flexibility is critical for the sustainability of the entire vocational education enterprise and would be a convincing reason not to hire too many faculty at the very beginning.

Lastly, concerns often expressed by educational institutions that they do not have the expertise, and that vocational education is not part of their DNA and therefore not something they should engage in, have all been laid to rest. The entire effort of the TISS-SVE has resulted in minimal interference

with the day-to-day running of the rest of TISS and did not require formal involvement of all but a two or three faculty members.

Work Integrated Training Programme (WITP): The WITP wherein skills are imparted through on-the-job training (OJT) is provided on real and live locations within businesses and industry. This gives students the opportunity to gain work experience as part of their certification process, making the courses very attractive. In addition, WITP enables students to earn a stipend for their work, which they can then use to pay for their tuition making them financially self-reliant. This model also ensures locational viability as most hubs and SKPs are located close to each other and within a convenient distance of the students' residence.

WITP is also a requirement under the B.Voc guidelines of the UGC and is the most essential part of vocational education that prepares students for actual employment. From the TISS-SVE point of view, the availability of work was proof of demand and new courses and additional batches were started on this basis.

Going ahead, the concept of demand-driven skill education will need to be interpreted more creatively by educational institutions. Some of the courses at TISS-SVE for which they brought in their own expertise, such as Child care and Geriatric care, did not have opportunities for paid work associated with them but TISS-SVE had assessed that the demand was there, and indeed students are finding jobs. Educational institutions will have to engage with their local communities and create new opportunities for students and for the community. Data from fine-grained skills gap analysis done by SSCs and NSDC can help them in this task, but they must also do surveys on their own to gather information on the local economies.

Cost-effective, minimum infrastructure model: The fact that TISS-SVE did not need to set up any infrastructure for skill training within its premises saved the costs of having to invest heavily on labs and mitigated the risks of running outdated courses given the rapid advancement in technology in specialised fields. Despite this, students get to learn on the latest and most modern equipment at their respective workplaces, in completely real world settings. The main requirement for setting up an institute such as the TISS-SVE is some 10-20 acres of land. The key characteristic of the TISS-SVE model is that each of the three sets of partners and all the individual experts, are all working to their own individual strengths. Their coming together is coordinated successfully by TISS-SVE, through their focus on quality, benefiting students.

In terms of financial viability of the educational institution itself, TISS-SVE has been able to become self-reliant despite keeping only 20 percent of the revenue from fees, and despite picking up all additional costs relating to improving quality because they run a mix of B.Voc and short-term courses, particularly customised courses for the corporate sector that brings in much more funds. This approach of providing a mixed basket of courses to different stakeholders, for financial viability, is also worth emulating by other educational institutions.

Quality-controlled: The TISS-SVE framework has been created with adequate checks and balances, including cost and revenue sharing and due diligence conducted by TISS at every level, to ensure quality and effective course delivery by its partners. Such a financially viable model, that incentivises each institutional partner and individuals (assessors and other experts) to do their best, and work towards excellence is critical to the success. Educational institutions will need to keep this in mind as they create their own models based on the learnings from TISS-SVE.

Controlled and Scalable growth: By following the TISS-SVE model, which does not create any local infrastructure, any interested institution and government can begin by running courses in as few verticals and add more gradually with time. If allowed to scale with appropriate freedom, they

can become financially self-sufficient quite early, well within 5 to 10 years.

Quick Launch: A new School of Vocational Education can be incubated within any educational institution in the region of interest, so it can be launched immediately in a timeframe of just a few months.

Online management for scalability: As described in detail in this case study, TISS's customised ERP system ensures real time management of all the activities of the many stakeholders within the entire ecosystem allowing for quality-control and scalability.

Value for students: The keen attention to quality of vocational education delivery, by TISS-SVE, and the opportunity to learn practical skills in a real world setting are some of the most important benefits that students get from this model. While the ability to 'earn while they learn' by way of the stipend offered by the SKPs is attractive, students will take up any course that is well thought of by the market and by future employers, even if they have to pay fees on their own. For this reason, courses in the healthcare sector wherein students are often not paid a stipend until the second year are still very popular. Students begin with learning from their seniors and mentor technicians, watching them while they are at work, and then gradually they take over that role and start performing the tasks on their own, without much supervision.

In the future, students will be given an aptitude test at the beginning of their course, which will analyse them on criteria such as abstract reasoning, concentration, attention, hand-eye coordination, colour distortion, colour matching, dexterity, visual ability, persuasive communication, among others. This will help them identify the right vocation for themselves which will also be of great value.

10

POLICY RECOMMENDATIONS

That skills development is a collaborative effort among many stakeholders has been known for some time, but top-down efforts at doing this has not helped so far to bring all the stakeholders under one ecosystem to help them work in a coordinated way to produce mutual benefit. The real benefit of the TISS-model is that it has done this. It has demonstrated that a large number of people with diverse expertise can come together to deliver value when their efforts are coordinated by an ethical, caring, and well-respected academic entity. Government policy must therefore encourage the involvement of many other educational institutions by addressing the bottlenecks that are in their way:

Autonomy: The autonomy enjoyed by TISS was crucial for its success. TISS-SVE was in turn granted considerable operational autonomy by TISS. This was important to enable the speed and agility with which TISS-SVE worked to touch the lives of almost 20,000 students in just 6 years. Other academic institutions must have similar autonomy if they are to succeed. They must have flexibility regarding faculty qualification and sole discretion on hiring staff. The usual UGC requirements of faculty qualifications are not relevant for vocational education where experience of the trainers matter more than their qualifications.

Jurisdiction issues: TISS-SVE took the decision very early on, to sign up partners along the length and breadth of the country because its mandate, as stated in its MOU with AICTE, was to incubate a National Vocational University using a WITP model involving hubs and spokes. TISS-SVE therefore signed up partners wherever SKPs (spokes) could be found, helping them achieve scale and spread quickly. It is only as of February 2018 that TISS received its status as Category 1 institution of the UGC, one that frees it formally from jurisdictional constraints and allows it to have a national footprint.

State-run educational institutions have regional constraints and also constraints on signing up students from other states. For example, in Maharashtra, only 10 percent of seats in PG courses can be offered to students from other states! Given that the need to scale out quality vocational education is so severe and urgent, state governments must consider reviewing these constraints and waiving or mitigating them so that educational institutions can serve the entire region in their neighbourhood wherever SKPs are available, and not be tied down by state boundaries. This will help create more opportunities for students and foster competition among educational institutions to identify and sign up the best SKPs in their regions which would be a positive development for students.

Availability of Seed Funding: The seed funding provided by AICTE was critical in giving TISS the confidence to venture into creating the SVE and exploring opportunities without worrying about failures. Similar seed funding must be made available to all higher educational institutions that are willing to explore vocational education. That the financial support TISS needed was so modest is

extremely encouraging. It means that with more spending many students who are not in a position to pay their own fees can be supported with scholarships. If institutions are told that they have to become self-sustaining eventually they will find their own models and work to their strengths. Institutions also need sufficient financial autonomy to share revenue with partners and so on.

Review of government spending on short-term skilling courses: Short-term certificate courses that are presently the predominant method of providing skills training to youth in government programmes such as PMKVY can only be a starting point. Young people need holistic education, and short-term courses cannot compare with the value addition that students receive during the three years of the B.Voc programme or even a one-year Diploma programme. It is imperative that the government looks to similar industry academia partnerships to convert all skills training efforts for youth into a more holistic education. The short-term courses will always remain as an important avenue for skill enhancement and lifelong learning, and educational institutions must continue to have them in their mix.

Industry-academia collaboration for review of standards: The TISS-SVE experience has thrown light on some of the inadequacies in the NSQF that require review. The levels 5, 6 and 7 of NSQF, corresponding to the three years of B.Voc are too demanding. Similarly the National Qualifications Register (NQR), which is a good way to share the course content of TISS, needs to be reviewed for its processes, which are slow and cumbersome. The basic mechanism for uploading of course content namely, scrutiny by NQR staff, ought to be bypassed in the case of courses that are vetted by the TISS academic council.

Skills Universities: The TISS-SVE model has provided a new starting point for many other institutions to discover their own models for vocational education. Evidently the TISS-SVE model is very different from conventional universities and this is one of the main take away messages. At the time TISS started it would have been hard to imagine that this would be the model that would emerge. The draft bill for the NVU was submitted to MHRD in 2016. However, by assessing what TISS-SVE has achieved so far, not just in numbers but also in the quality of the vocational education it has provided, it is apparent that the need of the hour is not new vocational/ skills universities, but a more bottom-up approach in which educational institutions experiment the way TISS-SVE has done and find their own models of providing vocational education and reach out to large numbers of students.

¹ Neela Dabir, "Tata Institute of Social Sciences-School of Vocational Education – The Brochure", *TISS-SVE*

² UGC, 2013, "UGC Guidelines for B.Voc", *University Grants Commission*, December 19, 2013. https://www.ugc.ac.in/pdfnews/8508026_Guidelines-on-B-Voc_Final.pdf

³ UGC, 2013, "UGC Guidelines for B.Voc", *University Grants Commission*, 6.3, 5, December 19, 2013. https://www.ugc.ac.in/pdfnews/8508026_Guidelines-on-B-Voc_Final.pdf

⁴ UGC, 2013, "UGC Guidelines for B.Voc", *University Grants Commission*, 7.2, 8, December 19, 2013. https://www.ugc.ac.in/pdfnews/8508026_Guidelines-on-B-Voc_Final.pdf

⁵ UGC, 2014, "Guidelines for providing Skill Based Education under NSQF – UGC", *University Grants Commission*, 4.13, 7, August 13, 2014. https://www.ugc.ac.in/pdfnews/6556003_ Guidelines-for-providing-Skill-Based-Education-under-NSQF.pdf

⁶ UGC, 2014, "Guidelines for providing Skill Based Education under NSQF – UGC", *University Grants Commission*, 4.8, 6, August 13, 2014. https://www.ugc.ac.in/pdfnews/6556003_Guidelines-for-providing-Skill-Based-Education-under-NSQF.pdf

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