FORTESS- Annual Report for the year April 2019 to March 2020

It is yet another year of development in the area of Computing and Communication technology globally. TCS, an organization in which all of us worked at some time, has seen this field evolving from bulky computers doing simple data processing to intelligence embedded in various equipment and guiding our daily lives. Computing has made a big difference to critical areas – whether it is Education, Healthcare, Manufacturing, Entertainment and the list goes on. The question is whether this powerful technology makes positive difference to the lives of everyone wherever they are located, whether in urban areas or rural areas. Also whether the benefits are equally shared by everyone and that digital divide does not result in further accentuating inequalities in society.

FORTESS, an association of former employees of TCS, was established to help us give back to the society. The idea of FORTESS started with Mr.Ramadorai interacting with Jayant Pendharkar on engaging people who were part of TCS for a fair amount of time which left a mark on their careers and through it , it vested in them a commonality of purpose .The population of such past employees was sizable and since it was an association with a shared past in a value based organisation, it was possible to positively contribute to the society in a number of ways.This could be in Education,Health,Livelihood or Teaching . Major competencies that the former employees of TCS possess in abundant measure are the ability to apply technology , collaboration,and learning and mastering new areas. The guiding vision was to provide the enabler for creating communities of different interest groups.

As we developed our approach based on this vision, we realised that the objects of our association need not restrict ourselves to social activities. We are together creating a forum which encourages networking and additionally to create communities of practice. FORTESS has a governing structure which enables us to keep track of the multiple activities and programs being pursued under its umbrella.

This year has been a year of planning and also seeding some activities. In May this year, Jayant Pendharkar, the stalwart of FORTESS who was passionate about the vision and who worked hard to institutionalise it, passed away suddenly due to a massive cardiac arrest in the home of his daughter in the US, where he had gone for a visit. As we mourned his sudden passing away, we rededicated ourselves to achieving this dream.

Activities

Mr. R. Chandrasekaran took over as the Hony. Secretary of FORTESS. The following activities have taken shape during the year:

1. **Design and development of Portal:** Given the fact that our members are distributed globally, we have conceptualised a platform which not only enables us to post notes, but also to create communities and help these communities to carry out their work as projects. All Fortess members get access to the Fortess Collaboration platform that has been designed and developed under the supervision of our members. Built on an open source platform and customized for our requirements, the Fortess collaboration platform can be accessed on any desktop or handheld device. It helps organize conversation topics under the five categories – Education, Health, Technology, Culture and Heritage, and Environment.Members can initiate a conversation thread or a project under any of the above headings and can also respond to threads initiated by others. The platform sends automatic mail updates to members whenever a thread is initiated or responded to. By keeping all conversation under a project together in one place, the platform helps

collaboration and also acts as a store of reference for the future. In addition to projects related collaboration, the platform serves as a billboard for posting activities undertaken by Fortess members that are newsworthy and also for posting articles of interest written by thought leaders among the Fortess members. While still in its early days, we have already seen encouraging adoption of the platform by members. We are working on several enhancements to the platform to have more features and tighter integration with social media. Do visit https://www.fortessgroup.org/ website to gather details. We hope that this portal will not only serve to initiate and manage projects, but it will also be a knowledge repository and benefit future generations of Fortess members.

2. **Computer History Museum:** Some of our members in the US promoted the idea of creating a Computer History Museum inspired by the Museum in Mountain View, California (https://computerhistory.org/) which helps us explore the evolution of our technological world and discover stories and insights that illuminate the people and innovations that have transformed our world. Where ever possible each exhibit combines artifacts with the history, the underlying technology, its impact on society, audio-visual pieces (many from the creators) that provide the background and motivations, and the story of its development, along with hands-on, interactive, exhibits to attract younger visitors. The web site www.computerhistory.org/exhibits extensively supplements, and provides details of most of the exhibits. We realised that setting up such a museum in India with similar content will be a large multi-year project, but well worth doing it, especially to bring out Indian and India's contribution to the Information and Communication technology development for the past 60 years . Given the knowledge on computing and all related technologies that exist with FORTESS members and also after noting that many of us have been a direct witness to its evolution globally, we felt that FORTESS would be best placed to work on this. We intend to use the Museum as a platform to shape the minds of young people , who can learn from the evolution of computers and how it has gradually extended its application to having an enormous impact on the lives they lead. We hope that this Museum will foster innovation and creativity and help reduce the digital gap. Our initial idea is to go virtual, capture and curate the content, package the stories and deliver it through channels already setup. We started having preliminary discussions with experts who have set up virtual museum in India, and with a foundation with a track record of working with economically disadvantaged children and teachers in India. It seems COVID 19 has validated this approach. Soon, we expect to resume and develop the concept further by incorporating valuable learnings from the whole world going virtual post Covid 19. Our intent is to come up with a blueprint for the virtual museum by December, 2020. We need a champion for this initiative in India who can drive this.

3. **Enhancing Computer Education in Government Schools:** It is felt that one of the key sectors that needs intervention is Education, especially Primary and Secondary education.   Most of the Govt and Govt. funded schools are handicapped by lack of proper infrastructure, good qualified teachers etc, resulting in high drop out rate and poor performance of students. Also there is strong need for students coming out of school to be Digitally Literate so that they can be successful in whatever they pursue after completing secondary education – whether they go in for higher education or select vocational stream. With this in view, a member, working with a Govt School in a small town in Tamil Nadu, which was his alma mater, has established a Computer Centre, equipped with Desktops, Laptops, all of them networked, along with Printers. Couple of faculty members have been hired to teach basics of computer and also train the students in using some of the Digital tools like Word processing etc. The goal is to ensure that by the time the students complete 8th standard, they should be proficient in using computers . This will help them pursue IT related courses which are part of course curriculum from 9th

standard. The feedback from the Head Master of the school is very encouraging. To quote his own words " I have never seen students so enthusiastic in attending classes whenever they have computer lab period". Given this positive experience thus far, our member plans to set up Digital Class room(s) and introduce online classes for regular course curriculum for classes 6-8, so that the learning can be significantly enhanced. These online courses will be offered by an established non profit organization. Our member is carrying out this program under the banner of FORTESS. The idea is to leverage the learnings from this pilot to scale it up. There are a number of FORTESS members who have come through the Government Schools system in remote areas of India, who would like to give back. If we can standardize the process of data centre creation and bring cost efficiencies, develop an acceptable course curriculum along with teaching aids, it will enhance the learning outcomes of the economically disadvantaged sections. Through FORTESS, we intend to take this as a special program.

4 . **Preparing students for a Career:** Since the inception of FORTESS, our members have been working with the Mumbai based Young Scholar Trust, which supports a number of students in the premier and one of the oldest Engineering colleges of India- VJTI. These students are from the economically weaker section and they come from rural areas. While they are academically very bright, their social skills which make them suitable for employment need improvement. A group of committed FORTESS members have been going to VJTI to engage with the third year students. Through lectures, group discussions and one on one interaction, they prepare the students for a career in an organisation. This has proved to be an extremely effective interaction. The need is now to standardise the approach and take it to many colleges across India, with a focus on students from rural areas.

5. Improving Engineering Education in India: While there are a number of engineering colleges, not all of them have access to the best teachers. Along with the alumni association of IITs, we are currently participating, through volunteering by our members, in a programme to improve the quality of engineering education in tier 2 and tier 3 engineering colleges spread over Tamil Nadu. The components to this programme, where our members participate as a faculty, include conducting competition to encourage innovation and entrepreneurship(called INNOVA), , lecture series with a deep dive in an advanced subject like AI/Machine language (ACQUIRE), lecture series with industry practitioners and IIT professors linking theoretical knowledge with practical problem solving (ASPIRE), engineering quiz series (QUESS), Faculty Development Programs in IIT Madras and partner institutions, and Annual industry and Education summits.

Our members who have volunteered have found this to be of immense benefit to students in these colleges. IIT Alumni Association would like to extend this programme to other States in India. Given the wide distribution of our members across India, we feel that we can be an effective partner to IIT Association in this endeavor.

6. **Music as an experience:** We intuitively feel that any initiative in the area of Music will generate a lot of interest among our members. With that in mind, we have been exploring possible avenues for our involvement. One of our members has taken a major initiative in this area and we have been supporting him in his experiments in the area of experiencing music and generating global opportunities. The support so far has come through getting sponsorship from our members, with FORTESS getting a byline in his events. Our plan is to provide a community of FORTESS members to help him and perhaps branch off into other initiatives globally.
His initiative, called MadRasana, addresses three areas , namely, how to leverage technology to enhance the experience of enjoying the Indian Classical Music, how to enable young artistes to showcase their talent and finally how to leverage social media tools to have a better reach

globally for this art form. A brief note on each of these is given below, so that we can firm up our plan for support and to take up newer initiatives:

a. Leveraging Technology: In 2019, 6 albums of Indian Carnatic music using Binaural audio technology and visually using 360 cameras were produced. Technology is used to create a virtual 3D space of the sound so the listener can know where each source of sound is placed in a 3D space. By listening through the headphones and sitting close to the artists, the audience gets a true immersive experience.

b. Platform for musicians: Using a Youtube Channel to feature young musicians who perform with just a tanpura, videos are brought out on a regular basis. This has been very successful as the videos till date have got more than 2.5 million views with watch time of more than 6.5million minutes.

c. Global reach: Videos produced by MadRasana have got global reach - with several countries reaching out to understand more about this art form. Some videos have been featured globally in BBC World radio, Japan Broadcasting Corporation, used as sound track for US School Quad competitions, and several interests shown by Korean Cooking Channel, a french movie wanting to use our music. Global artistes have also been featured - like a Sarangi player from Japan.

d. Unique Concert Venue: During the much acclaimed Music Season in Chennai, MadRasana pioneered the idea of organising live concerts of popular artists in a Cinema Theatre, where the audience experience greater comfort while enjoying the performance with very high quality acoustics.

7. **Newer initiatives:**
   a. Attention to health has come out as a common concern of our members. One of our members has been working with a group of doctors specialising in the Indian medicine system, called Ayurveda. This is a well developed system of care which holistically looks at the health of person and the intervention is of a holistic nature. We have started holding webinars addressed by senior physicians practicing in the Ayurveda area.
   b. Biomimicry is emerging as a major field of design , where we design products and services which are in harmony with nature all around us. A member who is teaching in IIT Madras has started this group and there is enthusiastic participation from our members.
   c. The aspiration for most people from the economically weaker section is to get their children learn in an "English Medium" school. We have been engaging with a social activist in Mumbai who has been involved in upgrading the capability of rural schools in teaching through the medium of English. Teachers themselves need o be extensively trained. We feel that FORTESS can enable the involvement of a number of volunteers with appropriate skills and knowledge of local language.
   d. COVID19 has had an unbelievable impact on our society in general. There are two areas that our members decided to examine. One, can we look at technologies which can help in managing this pandemic? Two, can we help in bringing businesses back to normal using technology? We have put out write ups on these topics in our portal, with the intention that this will generate further discussion among our members.

8. **Contribution towards COVID19**

In response to the Indian Prime Ministers appeal to provide support to the nation to fight against COVID19 , FORTESS quickly shortlisted the following four projects to support

Mumbai Roti Project

AID INDIA project supplying food grains in villages

Development of MASK and Ventilators using 3D Printing technology at IIT Madras Incubation centre

Annual Accounts

For the year under review, 6 new members were added in the Life Member category contributing Rs. 1,50.000 towards Membership Fee, which have been taken to the Corpus Fund. Income for the year ended March 31, 2020 comprised of Interest on Fixed Deposits of Rs 1,25,112, Total expenses for the year was Rs 1,47,573 resulting in a deficit for the year of Rs. 22461.

As at March 31, 2020, FORTESS balance sheet comprised of Corpus Funds of Rs. 9,65,000 and surplus of Income over Expenditure from inception of Rs. 21,21,783, including the year under review adding up to a total funds of Rs 30,86,783. Significant part of these funds was available in the form of Fixed Deposits (Rs 20,00,000) and Bank balances (Rs 8,84,698).

FORTESS is expected to spend at least 85% of its Income on the objectives laid out for the Trust, within a period of five years in order to enjoy tax-free status. Amounts unspent at the end of five years would be liable to Income Tax. Amounts carried forward for the year ended March 31 2018 and March 31 2019 are Rs 8,73,972 and Rs 6,64,804 respectively to be spent within five years from those dates. For the year ended March 31, 2020, the question of carry forward does not arise in view of the deficit of expenditure over income.

Conclusion: While one feels happy with the shape FORTESS is taking, we need to increase our membership and connect from across geographies in an accelerated manner. The COVID-19 crisis has brought about an awakening with regards to concern for fellow human beings. We realise that we should do a lot more to protect Nature and the Planet. The demand on us will only increase and I must say it will be very rejuvenating.