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AISECT (PART A): LEADING INDIA'S SKILL DEVELOPMENT MISSION

INTRODUCTION

The evening of March 7, 2005 was memorable for the All India Society for Electronics and Computer Technology (AISECT). Its Chairman, Santosh Choubey, had just received the inaugural Indian Innovation Award from the then President of India, Dr. A. P. J. Abdul Kalam, to rousing applause from the distinguished audience assembled at the Vigyan Bhavan, a historic conference center in New Delhi. The award recognized AISECT's innovative model of multipurpose information and computer technology (ICT) kiosks, especially in the largely neglected rural and semi-urban regions of India. The full award citation read:

“The AISECT model integrates ICT supported services, covering various social and economic development sectors, with education and training. It has provided new self-employment opportunities to local populations in the form of micro-enterprises for ICT-based services and electronic and electrical repair and maintenance work. AISECT has emerged as the largest all-India network of semi-urban and rural ICT centers. The widespread diffusion of AISECT model kiosks is a good indicator of its viability to spread even further, thereby contributing to lessening the digital divide in India.”¹

Choubey was overwhelmed by many emotions as he climbed down from the podium, award in hand. He thought back to the late 1970s when he first felt the urge to promote science and technology in rural areas. Since then, he and the organization he founded had come a long way towards bridging the ICT literacy gap between urban and rural India and providing better job opportunities for rural people.

¹ (2015). Santoshchoubey.com. <http://www.santoshchoubey.com/Visitor/Personal.aspx>

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As proud as he was of all that AISECT had achieved thus far, his thoughts turned to his current primary concern: How should AISECT's skill education enterprise be sustained in India over the next 20 years? What strategic changes would AISECT require in its business model to self-sustain in the future?

A LOOK BACK

Born in 1955 in Khandwa, a city in the central Indian state of Madhya Pradesh (MP), Choubey did his schooling at the Khandwa government school. He went on to earn a Bachelor's degree in Electronics and Telecommunication Engineering from Maulana Azad National Institute of Technology (MANIT) in Bhopal, the state capital of MP. He was selected to the Indian Engineering Services (IES) in 1976. However, his interest in basic science and technology innovation led him to quit the IES and join Bharat Electronics Limited (BEL), a public sector organization in New Delhi, in 1978. BEL's mission then was to manufacture advanced electronic products for the Indian Armed Forces. The same year, driven by a growing desire to contribute to rural development and science and technology (S&T) education in India, Choubey became a founder member of the Delhi Science Forum,² a policy planning non-governmental organization (NGO), whose main agenda was to promote and popularize S&T in rural India. In 1981, Choubey was recruited to the prestigious Indian Civil Services (ICS).

While a civil servant, Choubey continued his work with the Delhi Science Forum. Choubey was convinced that the fastest and most effective way to spread S&T know-how across India was to communicate in the local language on subjects such as general science, electronics, agriculture, environment, water, soil management, etc. However, at the time, there were very few publications in India that provided basic science content in a language other than English, and even those were rarely in tune with the rural Indian environment. In a bid to close this gap, Choubey created original S&T educational content in the local vernacular to be distributed in MP, his home state. Among the first of their kind, these learning materials proved to be very popular among rural folk, his target audience. They soon attracted the attention of Indian government officials who were leading an initiative to take S&T skill education to the masses via "science *yatras*"³ or tours in different parts of the country. Impressed by Choubey's efforts, these officials selected him to coordinate several science *yatras* in MP.

The Premise behind AISECT

As coordinator of the science *yatras* in MP, Choubey was quite satisfied with his work, which allowed him to interact with and get to know the rural populace. However, the occurrence of a traumatic event near Bhopal led Choubey to quit his secure civil services career and devote himself full-time to spreading S&T awareness and education in the state's rural sector. This event, the world's worst industrial disaster, occurred on December 2, 1984. A Union Carbide pesticide plant in Bhopal accidentally released at least 30 tons of highly toxic methyl isocyanate and other poisonous gases into the atmosphere, killing 15,000 people in the surrounding districts.⁴ The horrific toll of the disaster convinced Choubey that the only way to avert such calamities in the future was to educate and empower the residents of small towns and villages in rural India to make the right technology and

² Company sources

³ Science *yatras* were part of a government of India outreach program to take science and technology to remote areas of the country, trigger the interest of the masses by imparting knowledge in regional languages, and promote the use of S&T among rural youth.

⁴ Taylor, A. (2014, December 2). Bhopal: The world's worst industrial disaster, 30 years later. *The Atlantic*. <https://www.theatlantic.com/photo/2014/12/bhopal-the-worlds-worst-industrial-disaster-30-years-later/100864/>

industrial development choices for their communities. On quitting the civil services, Choubey and a group of like-minded individuals formed the Society for Electronics and Computer Technology (SECT) in 1985 in Bhopal. SECT was a non-profit NGO whose mission was to disseminate S&T knowledge, services, and solutions to the underserved rural areas in India's heartland. Twelve years later, in 1997, as SECT's purview of activities expanded beyond MP and across India, it was renamed the All India Society for Electronics and Computer Technology (AISECT). (Purely for expositional ease, the organization is hereafter referred to as AISECT, even when discussing its pre-1997 activities.)

Growth of Microcomputers: Industry Report

The period 1975-1984 witnessed a revolution in technology, with the first-ever personal computer (PC), the MITS Altair 8800, launched in 1975, followed by its clone, the IMSAI 8080.⁵ A year later, Apple co-founders Steve Jobs and Steve Wozniak designed their introductory "kit" computer, Apple I, followed by its second and third versions in 1977 and 1980, respectively. However, it was not until 1981, when IBM launched the IBM PC, that PCs became widely popular. The PC industry boomed over the next couple of years, and by 1983, nearly 10 million PCs were estimated to have had been in use in the US alone. A more affordable version of Apple's Macintosh was introduced in the market in 1984.

The Advent of Microcomputers in India

Although the computer age in India began as early as 1955 with the installation of the UK's A.D. Booth-designed HEC-2M at the Indian Statistical Institute (ISI), Kolkata, it was not until 1978 that the country saw a sharp rise in the use of computers, from 1,000 in 1978 to 80,000 in 1990.⁶ In 1998, the then Prime Minister, Atal Bihari Vajpayee, declared that IT stood for "India Tomorrow."⁷ In the 1980s, British computer company Acorn Computers Ltd. designed and developed a series of microcomputers and associated equipment known as the British Broadcasting Corporation Microcomputer System (BBC Micro). Around 1987, India encouraged and promoted its computer literacy programs and brought BBC Micro⁸ to the country.

During the mid-1980s, the Indian government introduced the Computer Literacy and Studies in Schools (CLASS) initiative to introduce digital literacy as part of the school curriculum. The advent of microcomputers in India and the government's initiative to include ICT in education coincided with AISECT's intention of taking science and technology to remote parts of the country. ICT and its potential to transform the lives of rural youth gripped Choubey's attention and imagination.

Santosh Choubey's Vision

Choubey was convinced that even basic ICT literacy and related skills could improve the lives of the masses in rural India. However, he was aware that more than 90% of India's rural population did not know about computers or the benefits that urban India and the developed world were deriving from them. He saw that India's rural youth were in dire need of basic ICT training. This knowledge was

⁵ Knight, D. (2014, April 26). *Personal computer history: 1975-1984*. Low End Mac. <https://lowendmac.com/2014/personal-computer-history-the-first-25-years/>

⁶ Rajaraman, V. (2012). *History of computing in India (1955-2010)*. Indian Institute of Science. https://ethw.org/w/images/8/87/Rajaraman%2C_V._History_of_Computing_in_India%2C_1955-2010.pdf

⁷ IANS. (2018, August 16). Vajpayee was in Bengaluru prison during emergency. *Business Standard*. https://www.business-standard.com/article/news-ians/vajpayee-was-in-bengaluru-prison-during-emergency-118081601491_1.html

⁸ *BBC Micro*. (2021, July 16). In Wikipedia. https://en.wikipedia.org/wiki/BBC_Micro

critical for youth to qualify for a well-paying job in the burgeoning computer hardware and networking technologies industry and avail of digitized services that could enhance their lives and the lives of their families. Consequently, Choubey and AISECT joined a government initiative to introduce and provide basic computer education to high school students in government schools in Bhopal and the surrounding rural areas. Choubey recalled:

“Initially, it was an idealistic decision. When I left the civil services, I thought I would pursue science and technology promotion for the upliftment of the people living in rural areas. The idea got more clearly defined when we realized that there were a lot of business opportunities that could be explored. And while the Indian market was focusing on software exports, we thought of the domestic use of software, domestic promotion of IT, and empowerment of people through IT.”⁹

Thus, Choubey became one of India’s first social entrepreneurs to recognize the potential of ICT in India’s heartland, unlike much of the country’s intelligentsia whose focus was on opportunities for employment and revenues from software programming, services, and exports outside India.

EARLY INITIATIVES AND CHALLENGES OF AISECT

One of the first steps Choubey took to fulfill this new mission was to write the first introductory book on computers in the Hindi language, *“Computer Ek Parichey,”*¹⁰ and make it easily accessible to local people who did not know English. This book sold over a million copies between 1986 and 1990 and received the Dr. Shankar Dayal Sharma Presidential Award and the Meghnad Saha Award for science content creation in Hindi. Urged by the MP State Education Secretary, who also made available about 1,000 microcomputers donated by the British government, Choubey developed a course based on his book to be taught in about 120 targeted government high schools in the state. The course covered computer theory, the importance of computers, and their usage. Village youth with ICT knowledge was encouraged to take on the role of training instructors in these schools. The course was structured to introduce computer knowledge to rural youth such that it would open new avenues for them. Students could use this knowledge to connect with opportunities in urban areas, access a wider range of jobs, and offer paid services requiring a basic knowledge of computers. This became AISECT’s first big project, with the government also paying for each student trained.

An immediate hurdle for the organization was raising the necessary resources for the initiative, including hiring instructors to provide ICT training at many government schools in a short time. With no family wealth or personal savings to draw upon, Choubey raised much of the initial funding through small grants to AISECT from the central and state governments' science and technology departments. The revenue from these small projects was plowed back into AISECT’s activities. He addressed the challenge of recruiting course instructors by setting up a model training center in Bhopal and identifying and training unemployed but entrepreneurial young college graduates living in the surrounding area to become instructors themselves. The idea was to set up an ICT training center in each selected government school and deliver the *“Computer Ek Parichey”* course there. Each center was allocated three of the donated microcomputers and required an investment of about INR 75,000 to INR 100,000 from each entrepreneur-trainer, whose subsequent earnings would be derived from the bulk of the money the government paid for each student trained. The remaining portion of these

⁹ Most of the information and quotes in the case have been derived from internal company records and personal interviews with AISECT executives by the case authors.

¹⁰ *Computer Ek Parichay* roughly translates to “An Introduction to Computers” in the Hindi language.

funds went towards running AISECT's operations. This approach proved to be a success. Students received a government-issued certificate on passing the end-of-course examination, which was introduced in 1987. By 1990, about 300 government schools housed ICT centers operated by AISECT entrepreneur-trainers.

Notably, many young entrepreneurs recruited for the government school training centers came from the surrounding villages. This facilitated and strengthened the program's outreach and connection to the local people. Some of the entrepreneur-trainers were graduates with some knowledge of computers while others had none. AISECT trained and certified these youth and then provided them with the necessary teaching materials to join government schools as teachers and IT faculty in their local areas. By 1992, AISECT's Computer Literacy and Electronics Awareness programs had trained over 100,000 students in elementary computer education.

While AISECT's government school-based computer training programs were successful, it soon realized that these government-funded projects were of a relatively short duration (one to three years) and were constrained by each school's activities and calendar. The training sessions could not be held during school holidays and breaks and were only permitted when the schools were willing to accommodate them in their schedule. In 1987, Choubey thought of setting up AISECT franchised IT training centers outside of schools in rural and tribal areas to accelerate the spread of computer literacy in India. This led him to create AISECT's network of franchised rural multipurpose ICT training centers, which fueled the organization's subsequent rapid penetration into India's interiors.

ESTABLISHING A FINANCIALLY SUSTAINABLE BUSINESS MODEL

The Launch of Multipurpose Training Centers

After much deliberation on how AISECT could gain financial stability while pursuing its social mission, Choubey realized that the rural market could be penetrated via a franchised system of multipurpose training centers (MPTCs) and kiosks that imparted ICT-based skill education and other services to rural youth. In the early 1990s, AISECT decided to set up skill training centers for rural youth at the block level¹¹ in semi-urban and rural areas around Bhopal. Choubey chose not to focus on major cities and towns, which were more likely to take a "software development and export" path. Rather, he wanted to spread computer awareness and information technology within the domestic heartland. Therefore, he chose to concentrate on franchising one center in each block. This proposition would create a geographic "trading area" of the appropriate size to support an economically viable training center that would draw people from rural and semi-urban areas.¹²

¹¹ In India, there are five stages of multi-level planning recognized by the central government: (1) National-level planning (including inter-state and inter-regional planning), (2) state-level planning (including inter-district and inter-regional planning), (3) district- and metropolitan-level planning, (4) block-level area planning, and (5) Panchayat-level village planning. A block is an important unit of micro-level planning. Each district is divided into a number of blocks. In 2000, each block comprised about 100 villages, with a population of about 150,000-200,000.

¹² Each MPTC functions in a typical field area of about 100- sq. km. and is accessible to a population of about 75,000 people. It is located at a block headquarter or at an active hub of activities within the block.

Investment Needs of MPTCs

The setting up of an MPTC had to be self-funded by the entrepreneur. An investment of approximately INR 500,000 was required to set up a block-level MPTC. When entrepreneurs could not produce these funds from their resources, AISECT stepped in to help them get loans from local banks. The one-time fixed costs of setting up a block-level MPTC, including installing computer systems, printers, modems, telephone connections, furniture, application software, a package for competitive examinations, games for children, and educational software in Hindi and local languages, was approximately INR 300,000. Further, running a center typically involved employing three or four people: (i) a center coordinator (usually the entrepreneur), (ii) a high-school-educated youth with a background in software, (iii) a multipurpose electrical/electronic hardware mechanic, and (iv) a general-purpose assistant. The annual recurring costs, including all employee salaries, rent, overheads, and travel, were estimated to be about INR 200,000. Even with these expenses, after earning about INR 50,000 as annual compensation, the entrepreneur could make an additional INR 30,000 to 40,000 per year to reinvest in the business.¹³

However, it was apparent to Choubey that a center primarily focused on IT training was not sustainable due to the relatively low demand for such focused training in a rural block. That gave rise to the idea of an MPTC that could also provide training in other subjects and offer day-to-day services that were in demand among the villagers, such as hand-pump repair, photocopying, motor repair, etc. Thus, the business model became one of franchising AISECT-certified IT and other vocational skill education programs to young village-level entrepreneurs (VLEs), many of whom had already worked as teachers in the organization's government school-based training centers. Under this model, about 30% of a center's earnings from IT and other vocational skills training would go to AISECT to cover its day-to-day operations while the VLE retained the rest. However, the entrepreneur retained earnings from all the local demand-based services offered by the center.

(Exhibit 1 summarizes economic data on potential demand, costs, and revenues associated with a typical block-level MPTC. Examining the data, it should be evident that young entrepreneurs taking up these franchises could make a reasonable return within a year or two of setting up a center).

The prospects of a good return on investment were bright, especially because of the government's strong push and funding for digital literacy dissemination and ICT usage to meet its targets for numbers of employable skilled rural youth in the country. Consequently, many entrepreneurial rural youth and teachers became interested in joining AISECT's rural network and owning and operating an AISECT multipurpose training center. Supported by the organization's rural marketing efforts, the network grew rapidly. By the year 2000, the number of franchised centers had surpassed 1,000 and were spread all over India.

Factors Contributing to the Success of the MPTC Model

In an interview with the *Education World*,¹⁴ Choubey spoke about how AISECT's business model had evolved:

¹³ AISECT data.

¹⁴ AISECT: India's pioneer skilling university. (2017, October 17). *Education World*. <https://www.educationworld.in/aisect-indias-pioneer-skilling-university/>

“Skills development has always been our [AISECT’s] focus. We have a clear understanding of grassroots realities and are aware that 90% of jobs in this country are in the unorganized industry and agriculture sector. We are also aware that large corporates, including Microsoft and Google, are looking for skilled workers. So, when the demand for skilled—and not merely white-collar—graduates warmed up after the liberalization of the economy in 1991, we were ready. By 2001-02, we had opened 1,000 skill education centers. We found that skills training centers in rural and semi-urban areas could also provide an array of services.”

The success of the MPTC model was largely due to AISECT’s flexibility. As the network grew, it became evident that a self-sustainable rural economy could be attained through practical and vocational skill development in other fields besides IT, such as metal fabrication, construction, retail, healthcare, etc. Beyond offering IT training, AISECT developed a menu of vocational courses and their curricula (all in the local language) and allowed franchisees to choose courses from the list that were in demand in their regions to encourage greater revenue generation. Choubey explained, “Each center’s choice of activities is flexible and is based on local demand. Basically, a menu approach is followed, and depending on the competence, capability, and local demand, one or more activities are chosen from the menu.”

A typical multipurpose center had three major parts: (i) an “information window” that provided information on government services to local villagers in need of such assistance, (ii) a skills training center, and (iii) a service center (see **Exhibit 2**). The entrepreneur could choose the mix of activities in each part of the MPTC. The additional services and training programs offered by an MPTC had to adhere to two basic principles: They had to be (i) *demand-led*, i.e., the centers had to provide different services and platforms that offered the highest utility to the local people in the unorganized sectors in their area; and (ii) *run by trained rural entrepreneurs* in a countrywide network of such entrepreneurs. For example, if a center was located in an agriculture-oriented area where the service and repair of farming equipment was a constant need, the center franchisee was advised to appoint a technician who could provide such services for a fee. However, AISECT’s primary objective for its MPTCs was to provide computer and IT training even if people approached the centers for other services. The demand-based service offerings, in AISECT’s view, served to bind these centers closer to the rural population in their communities and helped the rural entrepreneurs and the organization as a whole win people’s confidence, trust, and support, which in turn bolstered youth enrollment in the skill education training programs offered by the centers. Upon completing these programs and courses, students would receive AISECT-stamped certificates issued by the franchisees to help them find vocational jobs and become gainfully employed in their communities or nearby semi-urban and urban areas. Local government offices employed many of the students trained at MPTCs to carry out ICT-based work such as digitization and documentation management across MP and other states.

Many AISECT students, their friends, spouses, and relatives were also encouraged to consider opening AISECT franchised MPTCs at other locations. In this manner, AISECT’s MPTCs reached 4,500 in number by the end of 2004 and were spread across 29 states and three union territories, together comprising 388 districts of India. This made AISECT the largest network of semi-urban and rural ICT training centers in India, earning it the tag of India’s “leading social enterprise working in the area of skill development” and recognition in the form of the 2005 Indian Innovation Award.

Other Contributors To AISECT's Network Growth

Emphasis on Private-public Partnerships (PPPs): Choubey's first-hand understanding of the requirements and sentiments of the rural populace had made him realize that the best strategy for penetrating the market was the public-private partnership model, i.e., tie-ups with government-sponsored skill development and vocational education initiatives. Rural youth preferred government-run programs over independent initiatives because of their credibility at the grassroots level. Indeed, most AISECT centers became sustainable almost immediately because of government funding for skill training programs.

For example, at the behest of the Indian government, AISECT conducted an All India Co-ordinated Program (AICP) to set up MPTCs in the country's rural, tribal, and underprivileged areas between 1995 to 1999. The program, jointly funded by the government's electronics department (DoE, now MCIT) and the department of science and technology (DST), was implemented in ten states and registered significant results. Over 600 training, servicing, and information resource centers were set up during this project period. AISECT prepared a large variety of training and servicing modules with standard content in Indian languages and established a methodology for rural IT intervention. Indeed, one significant output of the AICP was an operating manual for franchisees that provided detailed guidance on operating successful ICT training and servicing centers or "electronic *dhabas* (kiosks)," where there was a convergence of electrical, electronic, and computer technologies. The program took Choubey's organization out of MP and transformed SECT into AISECT, with its first formal office opening in Bhopal in 1997.

Franchisee Relations: Another strength of AISECT was its inclusion and enablement of franchisee participation in several central and state government-funded training, skill development, and capacity-building schemes and programs. These projects were first bagged by AISECT's head office, based on its long experience in skill-based training, vast network, and reliability. AISECT then handed over the projects to the franchisee network for implementation. Such inclusive behavior bound the franchisees closer to AISECT and increased their motivation to conceive, develop, and execute innovative rural skill training programs. Innovative program ideas that worked well for some centers were shared across the network. Additionally, the franchisees themselves served as AISECT's voluntary sales force when it could not afford one of its own. The leading block-level franchisees became AISECT's "district managers" who would effectively identify and initiate new MPTCs in the deep interiors of the rural countryside. Also, AISECT would periodically hold meetings of all the franchisees in a district or region that included creative brainstorming sessions¹⁵ that went on well into the night to generate new ideas for greater revenue generation and further penetration of AISECT in rural India.

Not surprisingly, AISECT's activities were widely recognized during this period and became the subject of an IIMA-World Bank case study and presentation in 1999.¹⁶

¹⁵ It was at one of these sessions/meetings that a training program for handling the Y2K problem and opening of "1000 by 2000" centers was developed.

¹⁶ Choubey, S. (1999). Multipurpose electronics and computer centers: Promoting IT-centered maintenance and employment in rural areas. In *information and communication technology in rural development* (pp. 146-151). IIMA-World Bank.
<https://documents1.worldbank.org/curated/en/543321468338476969/pdf/389200Info0and1cation0200001PUBLIC1.pdf>

Customer Empathy and Orientation

Choubey's interest in empowering rural India helped him fulfill his dream of making a difference in this domain. He stated, "AISECT wants to reach out to the remotest corner of India and promote ICT-based training and services to empower people, generate employment for the youth, and unfold entrepreneurship-based initiatives to create an inclusive society."¹⁷

His journey had been neither easy nor smooth. Choubey and his organization had to overcome the enormous challenge of motivating and educating rural residents to use science and technology as a means of earning a livelihood in an environment characterized by severe constraints in terms of education levels, availability of electrical power, internet connectivity, and communications. However, they were heartened by the genuine curiosity of the rural youth about computers and their benefits, which provided an opportunity to propagate IT literacy. Therefore, they pressed on, and with some trial and error, evolved a sustainable model for propagating IT education to better the rural masses, beginning with the introduction of learning content in regional languages. Above all, Choubey felt that AISECT's model had been successful over time because of its bottom-up, non-exploitative, friendly, compassionate, and adaptive structure, as well as its long-term orientation. In contrast, many other enterprises that had gotten into the rural skill education game and started networks with short-term profit orientation had failed, primarily because their programs had been top-down and not well-aligned with their markets. AISECT, on the other hand, had accessible and dedicated personnel with whom rural people could identify, and it flexibly adapted to the needs of its franchisees and their customers. Indeed, many entrepreneurs from other networks were eager to apply to and join the AISECT network when center openings were advertised.

Thus, by motivating and empowering unemployed graduates in small towns and villages to become entrepreneurs and owners of their economic futures, AISECT had effectively brought about a quiet but powerful revolution in India's rural heartland and made a significant contribution to bridging the digital divide.

THE NEXT STEPS

As Choubey took his seat, certain hard facts intruded on his contemplation of AISECT's past. First, as the AISECT network expanded, it was evident that course content, examinations, and delivery quality were becoming more variable and harder to control across the large network. The course certification issued by various franchise operators, even with the AISECT stamp, did not mean the same thing in different locations. Potential employers in many areas were not convinced of AISECT franchisee-certified applicants' skills, and having good placements was critical to sustain funding from government sources. Moreover, the competition for government funding was intensifying as more companies and their networks entered the skill education space with new business models. The financial returns for AISECT and its franchisees from spreading the network across India were diminishing. More innovation and marketing efforts were needed for AISECT to remain at the leading edge of skill education. Finally, to stay viable and meet its long-term mission, the pressure was mounting on AISECT to raise revenues from non-governmental sources, become more profitable, and provide the resources and support required by its expanding MPTC network.

¹⁷ Mitra, M. (2012, April 20). Pathbreakers: Santosh Kumar Choubey and how he bridged the IT literacy gap. *The Economic Times*. <https://economictimes.indiatimes.com/pathbreakers-santosh-kumar-choubey-and-how-he-bridged-the-it-literacy-gap/articleshow/12732493.cms>

One option for AISECT to sustain its franchisee network and expand its revenue sources was to go beyond simply educating rural youth for employment in government organizations, like the Indian Railways, or joining its franchisee network. More specifically, AISECT could perhaps promote entrepreneurial incubation cells for the graduates of its training programs. For instance, AISECT could become a seed partner of some entrepreneurial graduates interested in starting small businesses in domains such as IT or other areas where they had become skilled, such as welding, tailoring, or equipment repair.

Another option was to address the perceived need for greater centralized control of skill education/training and examination quality by AISECT. Specifically, there appeared to be an opportunity for AISECT-issued rather than AISECT franchisee-issued certification that suggested an entirely new avenue for greater revenues beyond the government-funded skill education programs. AISECT could take advantage of the tremendous opportunities opening up in India's higher education space. The demand for seats in quality degree-issuing colleges and universities far outstripped the supply, especially in small towns and rural India. Starting an AISECT University system would help fill the demand-supply gap for higher quality formal education in small towns and rural areas and provide an opportunity for issuing an AISECT diploma certifying the training of rural youth by its franchisees across India. This could improve the employment prospects of AISECT franchisee-trained students and provide motivated rural youth with a path to higher education and better careers. However, while the AISECT University concept appealed to Choubey, he wondered whether it aligned with his social entrepreneurial goals and mission of educating India's rural youth. As he mulled over the organization's future course, Choubey realized that settling its strategic direction and business model had to be his topmost priority upon returning to Bhopal.

Exhibit 1
Economics of Multipurpose Training Center (MPTC)

A. Data for estimation of potential annual demand (vocational training course enrollment) at a typical AISECT MPTC based on data for the year 2000

- (1) The norm is one MPTC per “block.” A block is an administrative, geographic unit in India of about 100 square km comprising about 150 villages and a population of 150,000 to 200,000. There were about 5,500 blocks in India in 2000 when the country’s population then was about a billion people. <https://www.statista.com/statistics/615532/number-of-blocks-india/>
- (2) The proportion of youth in the age group of 15-29 in India at the beginning of the new millennium was roughly 35%.
- (3) An AISECT center located in a block headquarter town was assumed to be accessible to 40%-50% of the block’s youth population.
- (4) The proportion of these youth in Madhya Pradesh with a secondary level (Class 8-10) education necessary for a skills education course at MPTC was about 5%.
- (5) The unemployed proportion of youth with secondary level education in the 15-29 age group was about 20% in 2000. That is, these youth could enroll in an MPTC training course if they were not self- or family-employed.
- (6) Based on their experience, AISECT estimated that about 60% of eligible unemployed youth per year would consider taking a skill education course.
- (7) It was estimated that, on average, one interested, eligible young person would take one 3- or 6-month course in a year.

B. Data for estimation of costs and contribution per student of an AISECT skill education center

- (1) On average, the typical 3-6-month course fee per student (paid by the government to AISECT) was INR 1,500. (The MPTC VLE or franchise operator kept 70% of this fee while the remaining 30% went to AISECT)
- (2) The recurring fixed costs per year for operating an MPTC were approx. INR 200,000. Also, to be part of the AISECT skill education network, the franchisee paid AISECT an annual “affiliation fee” of between INR 1,000 and 2,000.
- (3) The variable cost per student (e.g., exam + materials) was approx. INR 500.
- (4) It was estimated that 20% of block households (average size of five members) with access to an MPTC would use one other service of MPTC of about INR 50 per year.

Source: AISECT.

Exhibit 2
AISECT's Multipurpose Center Model

Information Window	Training Center	Service Center
Provides information on:	Conducts training and skill development programs on:	Acts as:
Government schemes	Computer operation, Internet, office automation	Internet and e-mail communication center
Agriculture commodities	Computer hardware and first-level installation and maintenance	DTP and screen-printing centers
Health	Electronics audio and video equipment	Video mixing, titling unit
Education and employment	Electrical and household appliances	Data processing center
	Supports Institutional Training in:	
Legal issues	Schools and colleges	Service center for computers and electronic and electrical items
Self-employment opportunities, technology and resources, information collection, periodic surveys	Rural banks, Scheduled Caste/Scheduled Tribes training schemes, Panchayats and elected bodies, women's programs, under-specified programs	
Insurance and related services		

Source: AISECT.

Exhibit 3
Major Milestones in AISECT's Journey: 1984-2005

Major Milestones in AISECT's Journey	Timeline
Society for Electronic and Computer Technology (SECT) founded	1984
<i>Computer Ek Parichay</i> first edition published	1986
Computer Literacy and Electronics Awareness programs in more than 100 schools	1985-1990
<i>Electroniki</i> , the first Hindi magazine on electronics and computers, launched	1989
First computer-based information center at the village-level established in Kotmi Sonar, Chhattisgarh	1993
All-India coordinated program for computer literacy in schools	1994-1999
All-India coordinated program for promoting multipurpose IT training centers in 10 states More than 40 training modules prepared Core support from DST	1995-1999
All-India coordinated program for establishing IT centers for women in 13 states Women EDPs conducted	1999-2002
More than 1,000 AISECT multipurpose training centers established	2000
Launch of IT <i>yatras</i> in Chhattisgarh, Maharashtra, and Madhya Pradesh	2000-2003
Centers cross 2,000-mark PLAN 5000 prepared to accelerate coverage in other states Massive entrepreneurship development efforts	2000-2005
More than 4,000 multipurpose training centers established Computer literacy program set up in up to 1,300 schools	2003
Indian Innovation Award and Golden Icon in National e-Governance Awards	2005

Note: In 2005, India's per capita income was approximately USD 800, about INR 36,000 per year, according to the USD-rupee exchange rate for that year. Thus, an MPTC entrepreneur's income was about 38% higher than the per capita income in 2005.

Source: AISECT.