BY THE SANDPAPER 2.0 TEAM

ADMISSIONS – THE ISSUES & THE ALTERNATIVES

Much has been discussed about the modality of admission to BITS, Pilani – a top choice for many of India's brightest engineers. Though the current system clearly has problems, we commend the genuine efforts, constant soul searching and sense of urgency amongst BITS management to find a better alternative. This article also tries to clear up many misconceptions which are circulating on the Internet. The BITS proposal under review internally is to conduct a GRE-type exam which will likely help the system. We thank many current and former students, faculty and alumni for their valuable input. **Since we are unable to verify the figures, any facts should be taken to be directional at best, rather than 100% accurate reflection of the reality. The article cites the opinions of alumni who volunteered to share their views on this theme. The Sandpaper Team did not pre-select people or endorse specific opinions in this regard.**

A NOTE ON NORMALIZATION

We'd like to make a point about the normalization system before we examine the issues. It is a purely merit based, transparent system that has been appreciated by many, including the honorable Supreme Court. Dr. Raghurama says "Many institutions wanted to follow the normalization procedure abandoning their existing entrance tests since they found many problems with the tests. In fact, some institutions have started following the normalization procedure".

The system clearly aims at fairness. This means that all Board toppers in India, irrespective of their actual marks, are admitted to Pilani every year. It is quite interesting that BITS gets 16-17 Board toppers every year, clearly to its advantage in attracting the best student from every state in India.

However, the problem is that the system works in theory, but no longer in practice. Here's why.

THE ISSUE OF BRAND

BITS has a significant branding issue in many states in India. According to the Vice Chancellor (at a meeting in the Silicon Valley recently) he observed that students from certain southern states are willing to come to BITS irrespective of what degree is offered to them, because the value of the BITS brand is so high. **Ashish Garg** ('97 Instru), an alum from UP mentioned that in his hometown, Dehradun, BITS is not well known. Students from his class preferred to go to lesser-ranked schools if they did not obtain the degrees of choice at BITS (which generally are EEE and Computer Science).

Dr KRVS "Raja" Subramanian, KRVS) former Former Head of Computer Science

Department & Dean of Distance Learning, adds "If an applicant needs to improve his/her chances of getting admitted, he/she must not "cross out" any option. There are so many times I have seen guys with huge percentages just apply for EEE, CS and Mech, (or a select few disciplines) and crossing out all other options. Based on the competition, if he does not get the above 3, he has kicked himself out of reckoning from all others." He adds that a significant proportion of students do this.

KRVS then goes on to compare the pattern of filling applications from AP, TN and Maharashtra, "In this category, the number of persons crossing out options at all is very insignificant. These guys appear to be ready to go to BITS and do anything" he says.

We risk making a "chicken and the egg" argument if we look at only a snapshot of this data. We believe there is a lack of role models in many Indian states which reduces the brand awareness of BITS so significantly. If admissions began creeping up in these regions, the awareness would result in more champions for BITS Pilani, and may gradually drive up applications in under-represented states.

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WHAT'S WRONG WITH THE BOARDS ?

What about the actual numbers coming from various Boards? According to KRVS, approx. 35% students came from the CBSE Board (till 2001), followed by Boards of two primary states in India. This changed when the AP Board students became the largest group in the last two years, causing the current uproar.

PROBLEM #1: TIMING OF DECLARING EXAM RESULTS

KRVS admits that the application date presents a problem for key Northern states. He says "The last date for receiving applications at Pilani is 30 June 2003. There are a number of boards which have almost never released the results of Class XII exams before this date. Examples of these are UP, Rajasthan, Punjab (and oh, there are others too). During those few occasions when these results were released on time, we found that the number of applicants from these boards were relatively smaller."

This is likely due to the lack of role models; although we have seen that a significant percentage of second semester admits seem to come from the Northern States, although these total numbers are quite small, since only a few seats are offered in the second semester.

PROBLEM #2: THE LANGUAGE ISSUE. OR THE "SCOURGE OF ENGLISH" IN THE CBSE BOARD

One issue is the BITS decision to have a broader focus – Language plus PCM instead of PCM alone. This is good for Boards where it is easy to get high marks in the Language. For city dwellers, who generally take the CBSE Board and choose English, it means that there is very little chance of them getting into BITS. CBSE Board students entering BITS generally choose Hindi, French or some regional language where one can get 95-100% in the exams. Those who took English will know how hard it is to get more than 70%-80% in these exams. With the normalization cutoff hovering around 98%, CBSE students who take English or a difficult-to-score regional language are always at a disadvantage. Ganesh says "In the TN board it is not uncommon to get close to 100% in French and Sanskrit."

According to an ISC Board student "The same is true for the ISC board where it is tough to score good marks in English. A lot of students who have high PCM marks but low marks in English lose out due to the normalization based on EPCM."

Santhana Satagopan ('90, TN Board) says "Language should not be part of any admission criteria. Look at all the Chinese/Taiwanese students in Grad schools here [in US]. Not great in spoken and/or written English, but fairly intelligent and hard working students."

PROBLEM #3: SKEWED MARKING

Normalization works if all Boards allot scores on a similar, say bell curve. If there is a major skew near the top, with concentration of a number of people in the same area, it would result in very high normalization results. The skew is the reason why normalization fails in the AP case.

Bhavana Thudi ('97 EEE) from the AP Board says, "In addition to the hard working, seat-deserving AP student, there are many students who take advantage of the easy scoring exams." Another student noted that the AP system is not controversy-free. We agree with Bhavana's view about the AP Board that "Currently, the remarkable concentration of high percentages" requires a careful review of their (AP Board's) system.

WHAT'S THE FALLOUT OF ALL THIS ?

There are two problems both of which may have a long-term detrimental impact on the BITS brand.

PROBLEM #1: THE IMPORTANCE OF DIVERSITY

Diversity can be defined in many ways – religion, geography, gender, income levels etc. We don't want to be drawn into an academic debate on diversity, so we'll

quote from The Office of Diversity at the Rensselaer Polytechnic Institute. The Office says "Students graduating today will live and work in a global community of myriad geographies and cultures. We should provide them the opportunity to learn in one as well."

We agree with this emphasis on creating diversity at universities based on geography and cultures, and add a third – gender, since we believe it is important.

Our conclusion – Only by living and learning in a diverse environment representative of the outside world will we be trained to work and live in it.

Sandeep Mukherjee ('95 ISC Board) says "In the Indian context there's a definite relationship between the region an applicant is from and his/her style of thinking, working, goals so a predominantly single, dual-state applicant pool is certainly not diverse." BITS Pilani has gender diversity, but lacks geographic and cultural diversity found in the Indian workplace. The current system of admissions does not address it.

If you speak to successful BITSians, they will say that BITS created well-rounded students, which was due to a combination of the curriculum and the peer group that consisted of Marwaris, Oriyas, Mallus, Gults and Illar men and women, working side by side with Punjabis, Bhaiyas and Choms to solve problems ranging from a difficult integration exercise in

Complex Equations to figuring out how to land a chopper on stage. This experience was invaluable. Almost every BITSian CEO, entrepreneur and corporate leader, in fact every BITSian who has experienced diversity will tell you this.

Gender diversity makes BITS unique too, and we'll discuss this later.

BITS does not have diversity as a stated goal, but it is important enough to merit consideration in designing an admissions process.

PROBLEM #2: THE QUESTION OF STUDENT QUALITY

We cannot run IQ tests on every BITSian applicant. So it is difficult to know whether the student quality is going down academically. BITS has gained in prestige in the last two decades, as the demand for brand-name engineering degrees has grown substantially. So it is difficult to say whether there is a marked deterioration of quality when we accept the top 400 students from AP and say, the top 40 from Maharashtra. But fundamentally it is difficult to accept that so many students from one state are better than a fraction of students from another state.

BITS MAKES CHANGES TO THE CURRENT SYSTEM

Dr Raghurama says that is not possible for BITS to grade different boards differently for the purpose of admissions or try and establish create quotas. Any such attempts go against the

BITS philosophy of being transparent, distort the well understood, albeit controversial current system, and be subject to legal challenges.

Dr. Raghurama adds "So in 2004, BITS made a few tweaks to its normalization method to improve it. Though the procedure adopted was still normalization of marks, the provision the AP Board had of writing improvement exams for class 11 was not considered for admissions to the Institute. This resulted in a significant reduction in AP students on the Pilani campus in 2004".

We believe the seats went to TN.

The Central Board of Secondary Education (CBSE) operationally has five regions throughout India. The toppers of these five zones were considered separately and their marks normalized separately. State Boards like the Maharashtra State Board, J&K Board which had more than one division in the state were also considered for separate normalization."

But although the same numbers of AP Board students could not make it to Pilani campus, which typically was the first choice, large numbers fell into the bottom half of the cutoff, and they ended up getting admitted to the Goa campus, which has 560 seats this year. According to a comment made by a BITS Goa student, a significant majority percentage of the Goa students are from AP. Approx. 35 students are from

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Maharashtra and Goa and approx. 75 are from the rest of India. The struggle to find a solution continues.
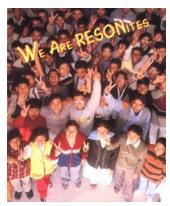
KRVS emphatically states that "The only system that can be designed to provide [a desired] uniformity of geographical distribution would be some form of a "quota system". In my opinion, BITS has rightly rejected the quota system!"

So what other options are available to BITS ?

OPTION 1: SHOULD BITS JOIN THE IIT JEE SYSTEM ?

BITS suggested that it be allowed to join the IIT-JEE system. However, this was not approved by the government. The IITs, being an autonomous body themselves, possibly wanted their system to be independent of others.

Even if BITS were allowed to join the IIT-JEE system, it would be no reason to celebrate.

An ad for an IIT JEE preparation school in Kota, Rajasthan

There are a number of weaknesses with the IIT JEE system. Firstly, the system suffers from a lack of class and gender diversity. "The typical IIT student is male, hails from an urban middle class family" says Frontline Magazine in an article in 2003, and then points out that "The IITs have an even more dismal record in admitting women."

Let us discuss the IIT JEE Exam preparation. Preparation for IIT JEE begins as early as the 9th standard, and a very high percentage of entrants are taking the exam for the second or the third time. Typical IIT entrants come from urban cities where the coaching standards are quite high. The one exception is the small town of Kota, Rajasthan which accounts for a startling one third entrants to the IITs. (2002 figures, Indian Express).

There are 90 institutes in Kota, of which Bansal stands head and shoulders above the rest (484 IITans in 2002!). The centers are huge money-spinners, with annual fees of Rs 40,000 per student, and salaries of Rs 10 to 15 lakh to faculty members, 40 per cent of whom are ex-IITians.

Kota students focus on preparations for the IITs, and their attendance to coaching classes is accepted in lieu of classroom study for 11th and 12th standard Board exams in the city. Board exams are an unwanted distraction for IIT aspirants. This is an important reason why people who get into IITs typically don't get into BITS Pilani either. You either study for the Boards or the IITs.

The IIT preparation is grueling, expensive and has barriers to entry. The top JEE coaching institutes in India have entrance exams to enter the coaching classes !

Coaching for Board exams, on the other hand, is clearly not as expensive, nor does one need to physically relocate oneself. This makes the BITS system equitable from a cost standpoint.

We do not argue that the IIT JEE system, (if we could join), would give BITSians access to a similar pool of hard-working, intelligent, male, mostly urban, students that IITs have today. It will leave out the poor, those from semi-urban and rural areas and almost all women.

OPTION 2: SHOULD BITS JOIN AIEEE?

BITS fought so hard to avoid being put into the AIEEE system, which is used to admit students to 42 colleges in India. (Source: AIEEE website) Why is this not in BITS' interest ?

Before we undertake an analysis there are two interesting bits of information. Firstly, 50% of all AIEEE seats are filled by Andhra students, due to their strong showing in these exams. Secondly, if BITS were to go to the AIEEE exam, simulations have shown that the geographic distribution will look no different than it does today – with a tremendous skew to one or at most two states. These are not the reasons why BITS does not want to join AIEEE, but it is

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important to know this. We can only speculate.

Firstly, most of these colleges are second and third tier schools. Secondly, under AIEEE, the students are allotted their engineering seats centrally. Thirdly, as some members of the BITSAA Delhi chapter pointed out, the AIEEE exam is only for Engineering and not for Science and other subjects. This would complicate admissions to dual degree programs at BITS, which uses the same exam for all admissions. Fourthly, the examinations are administered by the government, and there are bound to be potential delays, and even the possibility of the system being manipulated or cheated. For these reasons, AIEEE is considered unacceptable to BITS.

OPTION 3: SHOULD BITS CONDUCT ITS OWN EXAM?

KRVS says "Let me tell you that there is no emotional attachment to the existing system at BITS. There is a constant debate regarding nearly all aspects of education. Too many things change at BITS, but admission seem to have fewer changes. That does not mean there is a lack of debate on that. Far from it, I have participated in some many such discussions that have gone for such long hours that I have hardly spent any time with my daughter at home."

We believe that BITS is not wedded to the normalization process. But having examined the existing alternatives, there are three pressing problems that would occur if BITS implemented any entrance system, be it JEE, AIEEE or something similar.

PROBLEM #1: WOMEN WILL DISAPPEAR AT BITS

One of the reasons for continuing with the normalized system of admission was the increasing number of the girl students that are admitted to BITS every year (in the year 2003, a student said 42 percent of the students admitted were girls). Girls are rare at other engineering schools, especially IITs where students are required to take an entrance examination, although they do better on the board exams. It is quite well documented that girls do

exceedingly well in the boards, but don't' fare as well in entrance exams.

The reasons are easily explained. According to Prof. Raghurama, girl students have a disadvantage in competing for entrance exams since the societal

system does not favor them to attend coaching classes which are critical to getting in. Classes are held early morning or late at night, which is a disadvantage for girls. Ganesh agrees. "In the most popular coaching classes in Madras, you might just find about 5-10 girls in a class of 100-150 !" he says.

Many parents with scarce resources would also choose to invest the coaching class money on boys rather than girls.

We have also heard the comment often that many girls don't think about applying to engineering schools, so they do not prepare for the JEE/AIEEE exams in large numbers. But when they obtain high marks in the Board exams, it requires little additional effort to send in an application to colleges like BITS that accepts these results.

PROBLEM #2: BITS WILL LOSE ITS 22-ODD BOARD TOPPERS

Another issue was that BITS attracts more than 15 board toppers every year and it is sad that such bright students are denied education in good Institutes simply because they concentrated on 12th exams rather than entrance tests. As a fact, in the year 2004, 23 board toppers have joined BITS (22 at Pilani and the Goa topper for very obvious reasons joined Goa campus!). Any option which totally ignored the performance of the students at the 12th boards

therefore did not seem to be a satisfactory solution.

PROBLEM #3: STUDENTS WILL BE BURDENED WITH MORE EXAMS AND COSTS

We discussed the tremendous cost of IIT coaching. Another entrance exam will add to the already existing multitude of exams and will be considered as additional burden. While BITS management always believed in critical analysis of existing systems and open to procedures for improvement, it did not favor the idea of abandoning the normalization scheme in a hurry and taking up admissions purely on the basis of entrance examinations.

**Graduate
●Record●
Examination
(GRE)**

GRE-TYPE EXAM: A SERIOUSLY UNIQUE PROPOSAL FROM BITS

BITS has proposed to conduct a computer-based entrance examination (something along the lines of GRE but with a focus on Physics, Chemistry and Mathematics). Although this would mean another new exam, it has many inherent advantages. It is really a test of aptitude, so it is not something that students have to prepare for 3-4 years (like JEE) although there will be advantages in being coached. It will be affordable, since students can study at home; and even if they take coaching classes, it would not be as expensive and could be done in the neighborhood. Girls will appear for this exam in greater numbers than

do for IIT JEE, since it will be an extension of their Board-exam preparations.

We believe that BITS should continue to place importance on the XIth and XIIth standard education. The all-round development of the child is provided by being in a collegial high-school environment with a diverse range of activities rather than a residential coaching institute. It is a pity that school education is becoming irrelevant to students in India, especially for entrance exam takers. BITS could implement a system that may give students another chance to return to the classrooms at school. BITS could also require students to score at least 80% in the Boards to qualify for the BITS GRE-type exam.

Dr. Raghurama says "The Institute has suggested this exam to the UGC and the government as a model for all universities. This would be technically a 'first of its kind' in India and BITS could take leadership in making it a reality. The admissions office and core teams are preparing details "

IN CONCLUSION

We believe the end of the debate on the BITS admission procedure is near, since we are confident that BITS will replace its current system shortly. It is willing to foot the entire bill for creating the infrastructure around this exam.

The GRE-type exam is the only solution that will reduce, but not eliminate the inherent problems with an entrance

exam – it will mean that less women will get in, but not drastically so, and the students will be burdened with some additional coaching costs.

We also propose that BITS give automatic admission to the 20-odd Board toppers that we get every year. But their disciplines could be determined by their performance on the GRE-type entrance exam.

It must be noted that changing the current system will not guarantee diversity. But it will certainly be a bold attempt to regain it, and potentially create the "gold standard" for entrance to engineering schools in India, similar to the much-respected exams in the US.

Dr. Raghurama says "BITS management will announce the admission procedure for the next academic year soon and announce it to BITS aspirants well in time. "

We are confident that BITS management will proactively make the changes that will continue to shoulder BITS to new heights. If you have any suggestions about this GRE-type, BITS and especially Prof. Raghurama welcomes them. ♦