Chapter 4
LITERATURE REVIEW

This chapter aims to review the literature and introduce the objectives, hypothesis, research methodology and the profile of sample respondents of this study.

In common parlance, research refers to a search for knowledge. It is original contribution to the existing stock of knowledge making for its advancement. It refers to the systematic method consisting of enunciating the problem, formulating a hypothesis, collecting the facts or data, analyzing the facts and reaching certain conclusions either in the form of solutions towards the concerned problem or in certain generalizations for some theoretical formulation.

For formulating the research problem and objectives it's fundamental that a review of existing literature is done. Hence, various theories, models, papers, researches from books, journals, magazines were studied. However, only that literature was reviewed which had direct or indirect relation to the field of this study.

India's emerging competitive advantage in services, Devesh Kapur and Ravi Ramamurti, Academy of management Executive, 2001, vol 15, 20pp

We examine the business opportunities created by the economic and political changes underway in India. Despite shore-time political volatility, we believe India's deep-rooted democratic institutions give it systemic resilience and stable economic growth, at rates that will reach 8 to 10 percent within a decade. The early evidence following economic liberalization suggests that India's emerging international competitive advantage and the corresponding opportunities for multinational corporations - lies not in natural resource industries or low-skill, labor-intensive manufacturing (as in much as Asia), but in skill-intensive tradable
services, as exemplified by software. We analyze India's virtual diamond in software and argue that this success will generalize to other knowledge-based services. As a result, India is likely to emerge in the short to medium term as the back office of global corporations and in the medium to long term as a leading provider of knowledge-based tradable services. We also explore the contribution of overseas Indians to India's skill-intensive service exports, contrasting it with the contributions of overseas Chinese to China's manufactured goods exports. We recommend that foreign firms enter India sooner rather than later to seize the emerging opportunities, and that in doing so they pay attention to the considerable differences in business environments among Indian states, rather than focus simply on the policies of the central government.


We are witnessing an explosive growth in the size and complexity of problems that software can address. Software organizations and their environments-, which includes their market conditions, customers, suppliers, and recruitment base for future employees-, are also experiencing complex interactions, as well as the implications of rapid changes in technology. But there is an important distinction between acknowledging complex interactions and understanding or controlling them.

Unfortunately, researchers and managers within the software community tend to share a belief that success depends on the ability to predict changes in the environment and to develop rational plans to cope with these changes. Predictability, however, is a property of simple system. Reality is different- an environment is not a simple system, is not predictable, is not entirely knowable, and is definitely not controllable by the software manager or software organization. As I'll use this article to show, the sooner we admit this to ourselves, the sooner we can develop more useful models for improving software development.
In a knowledge-based economy, the creation of wealth becomes synonymous with creating products and service with large software content. However, despite a few major players, the software industry as a whole is fragmented and consists mainly of small, niche market entrepreneurial ventures. The authors study the California software industry to characterize the major barriers to success for these ventures. Simultaneously, a fundamental shift of software technology to a component-based development paradigm will reinforce the industry's fragmented nature by fuelling a third party, independent software component economy. Coupled with the globalization of the IT industry in general, the need for startups and small companies to form strategic partnerships will become increasingly critical to their ability to create wealth. In recent years, innovative public-private partnerships have attempted to assist startups by addressing their lack of physical resources or capital. This is best illustrated by the dramatic growth of incubators and regional capital networks. In this paper, the authors propose a "virtual incubator" model to facilitate startup success and business network formation, shifting the focus to the "virtual value chain" and to connecting startups with business expertise and strategic partners in the marketplace. The authors provide a theoretical basis for the model and its implementation, important to potential investors in virtual incubators.
With the world's second largest pool of English-speaking scientific and technical professionals, India boasts a US$5.7 billion software industry with an annual growth rate of more than 50 percent. As the software industry increasingly becomes a major driver of the nation's economy and policymakers devise ways to fuel its growth, India's software industry is poised for massive expansion. As a matter of facts, policymakers and industry leaders envision this industry's growing to more than US$80 billion by 2008 (with US$50 billion worth of software exports).


Most of you have heard about the skills shortage in the software industry - you may even be tired of hearing about it. In this issue, we present three articles that address several interesting aspects of this topic, from three completely different perspectives. As usual, Capers Jones offers hard numbers shedding light on the extent of the problem. Subroto Bagchi gives us a fascinating perspective about efforts in India to help the rest of the world with this problem while elevating the Indian export business to breathtaking levels. Finally, Ahmed Seffah looks at a private-industry attempt to fill a gap in the traditional educational system.

First of all, let's put aside and doubts as to whether this problem is real or imaginary. Some skeptics claim that the reported shortage of about, software workers in North America (including a shortage of, in Canada) is a ploy by special-interest groups to open the immigration tap to an inflow of low-wage workers who would take work away from local talent. There are several arguments against such a hypothesis. I was a member of the US advisory panel for a study initiated by the US Department of Commerce to investigate the labor shortage in 1998. The panel was chaired by Howard Robin and included such well-known experts as Capers Jones, Lawrence H.Putnam, and Ed. Yourdon.

As we move towards the new millennium, one thing in certain: the global service economy is dawning. If the 20th century was characterized by the rise and maturity of the manufacturing economy, the 21st century will see the emergence of a service-based economy in which every conceivable element will be either software-enables or software-constrained.

Given the reality, we will surely witness near-insatiable demand for software talent. The information Technology Association of America informs us the nearly 340,000 technical positions are open in the US- most of them for programmers. Other industry sources estimate the worldwide numbers at close to 400,000. The global talent shortage is causing much concern among information technology executives worldwide. Given that the shortage will not soon ease, India's ability to train well-qualified, English-speaking talent rapidly has been a boon to many global corporations.

India's New Export: Software Services

India's National Association of Software and service Companies (Nasscom) reports that 158 fortune 500 companies have outsource a wide range of software service needs to India companies. Many have also set up their own development centres in India. Telecommunications giant Nortel engages the services of 1,200 Indian software engineers through development centres run by Indian software houses like TCS, Wipro, Infosys, and Silicon Automation. US multinational GE has contracted with Indian software companies for the services of 2,500 engineers on a variety of software projects. from engineering design to fixing code to making information system programs Year 2000-compliant. Microsoft is building a 50-acre facility in Hyderabad, a software center second in size only to Bangalore, which many call India's Silicon Valley. Other multinationals with serious engagement in India today include Compaq, NEC, Samsung, Airbus, BMW, Busch, Philips, Oracle, LG and Lucent.

The success of distributed development via satellite links and the continued demand for software professionals have made India's software industry an impressive success story. In 1999, Nasscom reports indicate, industry revenues
will total 54 billion US, at which $2.7 billion comes from software exports—mostly to the US. India’s software industry employs close to 200,000 people and represents one of the fastest growing sectors of the economy. Pleased with the success of the nation’s software exports, India’s government has set as aggressive target of $100 billion in revenues by the year 2008, half expected to come from exports. This requires the creation of about a million new jobs.

Developing Talent
India boasts of being home to the world’s second-largest pool of English-speaking scientific talent. Its 338 universities and 48 engineering colleges churn out 115,000 engineering graduates every year in assorted disciplines, and 67,785 software professionals join the industry every year. According to Microsoft, India already ranks second worldwide in the number of Microsoft Certified Engineers produced. Leading the supply side are premier institutions like the Indian Institute of Technology, the Indian Institute of Science, the Regional Engineering Colleges, and the Birla Institutes of Technology and Science.

Evaluating HRM effectiveness: the stereotype connection, Stephen Gibb
University of Strathclyde, Glasgow, UK, 58 pp

The perspective and concert considered here is the internal subjective evaluation of HRM effectiveness. This involved investigating managers and employees perceptions about standards of HRM and of the work of human resources (HR) staff in their own organizations. Survey research indicates that there is a pattern of more positive perceptions of HR staff than of overall standards in HRM. This disassociation presents a challenge to the validity of internal subjective evaluations. One explanation is that features of stereotyping are influencing subjective evaluations of HR staff. The concept of stereotyping is applied and consideration is given to "cognitive efficiency", inter-group dynamics and broad social power theories. The author concludes that HR staff have benefited from the stereotype connection in the past but in an era where more explicit objective standards are increasingly expected, they may not continue to benefit from such
positive effects. Nonetheless, an enhanced awareness of the positive behaviours that can arise from dealing with stereotyping can be useful in achieving high standards of HRM.


Burnout is an experience relevant not only to psychosocial professions, but also to technical work. It is predicted that in a technical profession work stressors are related to burnout and that this relationship is moderated by control at work, task requirements, and the quality of team interaction. In a sample of 180 software professionals from 29 software development projects, stressors were found to be positively related to burnout measures Control at work, complexity at work, and openness to criticism within the team were all found to be significantly negatively related to lack of identification. Moderated regression analyses revealed that high cognitive requirements, high learning requirements, and low competition within the team enhanced the relationship between stressors and burnout.

There is little existing research pertaining to long-term effects of working conditions in technical professions such as software development or other fields of research and development (Curtis, Krasner & Iscoe, 1988, Goldstein & Rockert, 1984, Keenan & Newton, 1987) Long-term effects can exist both in performance and strain areas. One issue linking these two areas is the burnout phenomenon. It is important to examine whether or not burnout occurs in technical professions, and if so, under what conditions, because the consequences of burnout may have an impact on the long-range adjustment of people within a company and on the teams in which they work.

The concept of burnout
The term burnout is usually applied to strain symptoms in psychosocial professions. Across various definitions, burnout is described as an individual's
negative emotional experience leading to a chronic process (Maslach, 1982b, Shirom, 1989). It is experienced as exhaustion on a physical, emotional and cognitive level (Pines, Aronson & Kafry, 1981; Shirom, 1989). Most definitions include withdrawal and decreasing involvement in the job, especially by persons who have been highly involved in their work.

In one uses a broad concept of burnout including physical fatigue and cognitive weariness (Shirom, 1989), it becomes evident that burnout symptoms also occur in technical professions. There are studies showing burnout to exist outside the field of psychosocial works, for example in engineers (Erzion, 1988) or secretaries (Nagy, 1985). These findings suggest that there are factors other than those inherent in a psychosocial job which may lead to burnout, such as the discrepancy between one's expectations concerning the work and one's experiences (Lauderdale, 1982), or stressors in the work situation (Carroll & White, 1982; Maslach, 1982a, Perlman & Hartman, 1982, Pines et al., 1981). In relation to this Jackson, Schwab & Schuler (1986) have indicated that burnout is associated with involving and demanding work.

**Work characteristics in software development projects.**

The possibility that burnout also occurs in software development is suggested by studies such as that of Kumashiro, Kamada & Miyake (1989), which showed the stress scores of software engineers to be higher than those of other professionals. Factors in the work situation contributing to the overall high stress scores were pace of work and overtime Fujigaki (1990) reported that especially during requirement analysis and debugging, i.e., under conditions of time pressure, strain level rose. In another study (Ivancevich, Napier & Wetherbe, 1983, 1985), problems in communication, time pressure and overload were identified as typical stressors among software professionals. In addition, work in software development is characterized by high intellectual demands (Glass, Vessey & Conger, 1992). It is very involving and requires permanent acquisition of knowledge and learning (Brodbeck, Sonnentag, Heinbokel, Stolte & Frese, 1992, Walz, Elam & Curris, 1993) Rubin & Hernandez (1988) reported high intrinsic work motivation in software professionals, which may make them prone to the
development ob burnout if they work in a stressful environment (Pines & Aronson, 1988).

Towards a conceptual framework of employee volunteerism: an aid for the human resource manager, Gary D. Geroy (Colorado State University, Colorado, USA), Philip C. Wright (Hong Kong Baptist University, Hong Kong) & Laura Jacoby (Colorado State University, Colorado, USA); Management Decision 38/4(2000), 280-286 pp

The purpose of the research is to provide HR managers with some guidance, as they develop employee volunteer programs to meet specific workforce needs. Structured interviews were conducted with eight employees. The data suggest that employees who volunteer time believe that such experiences benefit them personally and improve their ability to perform their work duties. There were slight differences in program type, with those employees involved in programs characterized by high management support and commitment tending to perceive that they reap high overall rewards for their volunteer activities. The perceived impact of volunteer activities on employees included: an improved ability to cope with job challenges; the development of contacts and skills that can be used on the job; improved self-esteem and a sense of pride. These factors can increase employees ability to be proactive problem solvers on the job.

Same indifference, Graeme Buckingham, people management, 17 February, 2000, 44 pp

Retaining and motivating "Knowledge workers" has been a primary aim for many employers. These individual are assets who appreciate in value through the skills, knowledge and experience they acquire during their time in the organization. When they leave, the business loses an essential element of intellectual capital. Often the loss is compounded when they join a competition.

The company then faces the challenge and cost of replacement. The Corporate Advisory Board of Washington DC has identified the cost of replacing a technical expert in IT, project management or marketing as 1.75 times the individual's
survey 40,000 to 60,000 ponds perhaps. For front-line employees who are selected and trained to provide a good service to customers, the cost is still nearly half of annual pay-say 6,000 to 8,000 ponds. With staff turnover often exceeding 50 percent in call centers, for instance, employers are hemorrhaging money. So it is vital for them to find out why people leave and what inclines them to stay.

While there are many reasons for mobility - not least the rationalizations, mergers and re-engineering that cause so much job insecurity - there is clear evidence identifying the key influence on staff turnover. Put simply, employees leave managers, not companies. Exit interviews over the years have shown this, but most employers have taken little notice and done less in response. But increasing financial importance of retaining knowledge workers has brought the question of managerial competence to the fore.

Hitting an Air-Pocket; Dataquest 15, July, 2002, 151 pp

Training companies were in for a rude shock in Year 2001- registrations fell, interest waned, and revenues crashed 37%. Only the big guns revived, with the smaller players blown away.

Year 2001 is one that IT training vendors would not like to forget for only one reason – it is good future reference for how every calculation and forecast can go wrong at times! Long used to heady growth year after year, the slow-down threw up a doubly nasty shock for IT training firms. Not only did demand for re-training and skill upgradation slump, but a general lack of interest in IT sent normal news enrollments crashing to all-time lows. And as layoffs became common news, things got even worse, hitting both the top line and bottom line of the bigger vendors, and driving some smaller ones out of business.

After witnessing some of the best years in terms of performance, the training industry watched with dismay as the dream went sour. The nightmare that began with the slowdown in late 2000 resulted in cautious students adopting a wait-and-
watch policy and delaying their decision of enrolling for IT courses, preferring to wait and evaluate industry prospects. This trend had instant fallout on the IT education and training market, with most players facing a severe drop in sales. The IT education segment shrank by 38% to Rs 1,595 crore in 2001-02, down from Rs 2,591 crore in 2000-01. This brought about significant changes in composition and focus. It also brought a semblance of sanity to a market where low entry barriers had made it easy for non-serious players to make a quick killing and disappear overnight, giving the entire industry a bad name.

A shakeout occurred in IT education, eliminating smaller training institutes. The larger players, though hit, used the opportunity to consolidate and enhance their market share. By the end of the year, the industry had lost a large part of the low-quality, short term, fly-by-night players in the ensuing melee. This is also evident after an observation of the contribution of the 15 training vendors to the total IT training industry – their share increased to 75% in 2001-02, from 76% in the previous year.

The timing of the slowdown could not have been worse. As news of a tech-led slowdown in the US broke in early 2001, many students held back on enrollments in IT courses in the peak season – April to September. The result was that training centers, usually full of activity with packed schedules, suddenly looked empty. Enrollments took a massive dip and training majors issued profit warnings, especially as it became clear that revenue targets would be missed. Revenues from the individual training segment in 2001-02 were down 41% against the previous year.

Even though NIIT has been announcing a huge growth in enrolments during the third quarter – up by 200% year on year-this can not be used as an industry-wide yardstick, or a sign of renewed interest in IT courses. While NIIT weathered the storm better than most other players, most of this jump in numbers came from its low-priced Swift program and its 'Million Registrations in a day' campaign in December 2001, NIIT's Swift accounted for 130,000 of its 160,000 enrolments for the quarter. Also, thanks to the slowdown and the accompanying whiplash on IT
workers, India had a surplus of 12,000 IT professionals in 2001-02. FY 2002-03 is expected to prove a borderline year, with a drastic 85% drop in surplus numbers. The rational behind this was the sharp drop in registration for long-term IT courses since 2001—the same time that IT majors officially issued profit warnings and the media started painting dismal pictures of Indian IT's condition.

According to a Merrill Lynch report on the top IT education companies, "The key takeaway on Indian education industry, based on the results of both NIIT and SSI, is that the contraction of the industry. In FY 9/2002 (year ending September) will likely be higher than originally anticipated. While both NIIT and SSI have forecast a contraction in the education industry to the tune of 20% for the period, early signs indicate a significantly higher number, considering the 51% and 44% declines seen year on year by both companies in the December quarter."

Lesson learnt; Dataquest 15, July, 2002, 153 pp

Fiscal 2001 was clearly a period of consolidation for the IT training segment, which differentiated the serious players from the others. While the serious players used this period to consolidate and gain market share, it was also a time for some innovative thinking. Vendors tinkered around with different business models in order to target hitherto unaddressed segments, such as housewives and working executives. NIIT's swift campaigns on 'World Literacy Day' and SSI's "Dial-a-Trainer" scheme were examples of such a push.

Another trend that marked this phase was the attempt by some of the top training companies to gain acceptance in the global markets. NIIT and Aptech, for instance, went all to establish businesses in other geographies where the need for IT manpower was acute, in order to acquire a stronger foothold in those markers.
Light at the end of the tunnel

While the global slowdown had an impact for the short term, the importance of IT is beyond doubt. The general lack of interest among prospective students resulted in declining registrations in 2001-02. An industry wide explanation of the number game in 2001 is that the lack of interest is that it is a short-term phenomenon associated with job squeeze. Students have become more discerning and selective. A technical certification is recognized as a self-investment that provides a tangible and relatively immediate return. IT professionals are now vying to obtain more than one technical certification to boost their existing skill set. This will continue to propel demand for IT courses.

There is a clear shift taking place. While retail training is and will continue to be dominant in the near future, institutional training is picking up rapidly across the country, and across the training companies. Also, many IT training and education vendors already have or of are putting together a software solutions division, which, in most cases, is growing at a rate much faster than the traditional division. The industry will witness a demand for specialized courses in newer categories. The upgradation of IT skills will not be restricted to IT departments alone, but will pervade all walks and departments.

Industry Analysis; Dataquest 15, July,2002, 154 pp

A single catastrophe often teaches you far more than a few good years do. The euphoric millenium year saw a lot of backslapping, pampering and applause. But the good times also brought in rampant instances of irresponsibility on the part of IT employees- they carelessly flitted from company, often leaving projects (and customers) in the lurch. Riding high on the boom, companies too splurged on holding them back, with little concern about spiraling costs. Practicing good HR essentially meant frantic hiring in droves and thinking of innovative ways to see that these employees stayed put.
Today, with the semblance of a turnaround in place, no one wants a re-run of the shock and depression that set in with the downturn, but the bad times taught people and companies to be cautious, pennywise, and also led to the emergence of a responsible, more mature workforce. Though considerably watered down by the omnipresence of 'cost-cutting', companies are abuzz with terms like retraining, skill development and team building. The HR people back there have finally stopped chasing impossible recruitment deadlines and have found the time to practice what they wanted to-building human resources. Attrition rates across the industry fell from 18% in 2000-01 to 4-6% (DQ estimates) in the year 2001-02.

As opportunities have begun to open up in the past few months, the attrition rate is expected to rise between 8-10% in coming times. The total strength of the IT industry in India grew by 7% (24% last year), with the total number of employees rising from 525,000 in 2000-01 to 562,356 in 2001-02.

The average employees recruited per organization fell from 315 to 128. In the domestic industry, the average fell from 135 to 37, while among software exporters, it fell from an impressive 540 in the last fiscal to 218. But even during a bad year, there were companies that recruited in large numbers. Among the domestic companies, NIIT recruited 654 professionals and Accel ICIM 338 last year. Among software exporters, TCS' strength grew by 4,544 during the fiscal, Infosys brought in 1,548 new employees, Patni 1,242, Moser baer 1,050 and HCL Tech 1,029. If such recruitment is not good news during a slow down year, what else is there?
Lessons from the workplace; Dataquest 15, July, 2002, 141 pp

Year 2000-01 had ushered in a mad scramble for IT courses. High-powered crash courses resulted in whiz kids flashing fancy jobs as Web designers and Java professionals, a set of skills required largely by dot coms. By the end of FY 2000-01, shell-shocked youngsters had discovered that the disappearance of the dotcoms meant a crash in their own market value. Not only was the demand for people with Web-based skills low, professionals with a non-IT background and short-term diplomas topped the retrenchment lists, as re-skilling was difficult in their case. Companies made it clear that computer science engineers and graduates were far more valuable to them, given their strong understanding of the fundamentals.

As word spread, young graduates who had thronged private training institutes runned tail, either deferring or abandoning their plans of pursuing an IT course. This lack of interest, or rather new breed of discerning students, certainly scared the wits out of the IT training industry, which had made a killing during the boom, their key USP – of guaranteeing placements for all their students at the end of the course was blown away.

Along with the drop in registrations came the very realistic fear of a squeeze in quality manpower. While the demand for knowledge workers is expected to see a near three-fold rise from 416,000 in 2001-02 to 1,17,240 in 2004-05 – supply is just expected to double from 428,000, resulting in a shortage of 301,240 IT professionals. But this is the future. If we look just at fiscal 2001-02, the fate of diploma-holders was bleak and job prospects for the BCS' (Bachelors in Computer Science), MCMs (Masters in Computer Management) were only marginally better. Even for the traditional hot-shots-the IIT graduates and MBAs from institutes of good repute-campus placements had never been this difficult. Fewer companies visiting campuses, most slashed salary slabs, and in the worst cases-deferred joining dates-IT pros have encountered a slew of professional hazards even before landing their first jobs.
Meanwhile, there's been a small but sure increase in the number of professionals in the 'experienced' bracket. As companies froze recruitment, vacancies in the lowest rung were plugged first. The problem of ensuring maximum return on investment (ROI) applied to human capital too. A larger set of employees in the 0-3 years' experience bracket does cost lower than hiring professionals with more experience. However, it also calls for significant investment in training and orientation in order to make the most of the freshers. And even when it came to the painful task of retrenchment, companies in the red were quick to defer the joining dates of students placed on campus. For these 'letters to defer joining dates' came with a rider- "Your date of joining has been deferred to...(three-four months down the line.) In the interim, if you come across any other employment opportunities, you are free to pursue them."

Unfortunately, for several students, it took the better part of the year of longer before opportunities knocked again. The number of employees in the 0-1 years' experience bracket fell from 20% to 19% in the domestic sector, and from 19% to 12% among software exporters.

The drop in the number of employees in the 1-3 years' experience bracket was even more obvious in the domestic segment—where it fell from 36% to 19%. The drop in the number of lower-rung professionals meant that the number of professionals with a greater level of experience was higher than before. The number of professionals in the 3-5 years' experience bracket rose from 23% to 33% (domestic) and above' segment also showed a significant rise. Even during the IT boom, there was an acute shortage of professionals with 2-3 years of experience and above. It is still a challenge to hire an experienced IT professional with skills that match perfectly, but the unsteadiness of the past year has ensured that employment value stability.
Employers, at one point in time, were increasing salaries twice a year to retain employees. There were always options, so the slightest discomfiture would mean the employee walked away to what seemed like a better proposition. The furious growth in the number of entry-level professionals and the predominance of the 0-3 years' experience bracket in the years led to the maturing of the IT workforce, Hard times do teach times a tough, but quick, lesson.

The benched at school; Dataquest 15, July, 2002, 144 pp

While recruitment was frozen by several companies, most resorted to retrenchment only after all other options had been exhausted. For those companies that could afford it, employees on the bench were put on training programs. The average training days per person per organization among software exporters rose from 3.7 to 4.1 per year. However, given that few domestic companies could afford to invest in training during difficult times, the count dropped from 3.2 to 2.8 man-days in this segment.

Also, while the importance of soft skills still holds, especially at a time when clients could afford to be extremely selective about the quality of manpower they would like to have on projects. Effective communication, team skills, fluent English (and in the last year German, Japanese and Spanish as well), and team skills certainly gave the old-fashioned technique a polished look. However, few companies had the luxury of devoting sizeable resources on these fronts. The focus was more on arming employees with new technology training and equally important, domain knowledge, as more IT professionals stepped out of their tech dens on projects deployed in enterprises from the banking, finance, insurance and manufacturing verticals, among some others. The year also saw the emergence of a new breed-the techno-functional-technical professionals with a sound understanding of the industry they were working in, or domain experts with advanced technical knowledge.
One of the positive aspects of the slowdown was that it gave customers (especially those on the enterprise side) tremendous confidence and bargaining power. No longer would enterprises fall into the trap of making a huge investment in hardware just because the vendor said it was important. No longer would they accept bug-infested software and have users struggling for days with a process they old system. Enterprises started demanding that IT cut through the technical mumbo-jumbo and provide them a working solution that actually suited them. Against this backdrop, training employees in domain skills before they were deployed on a project became the norm. TCS, for instance, puts its employees through an orientation course in bioinformatics. At IFlex, which is focussed on banking software, all employees are expected to hone both their banking as well as technical skills.

While re-skilling emerged as the need of the hour, event-based training (read large scale seminars and company-wide workshops) dropped significantly. As cutting costs because the mantra of smart companies batting the slowdown, plans for most such extravaganzas were shelved. In fact, smaller companies in the red simply did away with traditions like orientation programs for new employees or even bi-annual company wide meets. Event-based training dropped from a good 12% to 3% in domestic companies, and from 6.5% to 6% among software exporters.

The focus on people was not reflected in training programs alone, but in the fundamental manner in which companies interacted with employees. Even during retrenchment, trends like outplacement made a brief appearance. The concept of outplacement has not yet matured in India yet as a lot of companies do this only for the sake of formality-the market has not accepted this, not is it mature enough yet for such practices. The initial reaction in many companies was that the employee perhaps had some problem, and this was why he was being laid off, not because of any business compulsions. Yet, a beginning had been made. The two-way performance appraisal process followed by most IT companies is now gradually making way for the 360 degree feed-back process, in which
professionals are rated not just by superiors but by juniors and colleagues as well. The efficacy of this process is still to be established, but IT companies have started trying it out. The PCMM wave too has been catching up, as is the trend of outsourcing some of the HR functions.

IT’s Loaded Push; Dataquest, Top 20 Vol1, July 15 2002, 25pp

During the past few years, Indians viewed IT as more than just another industry. As a profession, it is supposed to have altered the rules of the methods of making money. At the risk rules of sounding simplistic, one could say that the success stories of IT professionals across the country proved that one didn’t have experienced professionals from other sectors like manufacturing, finance and banking expressed a keen desire to "get into IT".

As HR managers in IT companies would vouch-safe, moving to a better job and negotiating the salary was often not just about moving along the career path. It was also about being able to move to a bigger house, paying family loans and more...The slowdown killed many such dreams, IT aspirants started equating the fleshs of the dotcom bust with IT itself. Well, last year was bad no doubt and as per Naukri.com estimates, salaries across the IT industry in India fell by 105 to 25%. Even in companies where salaries have not dipped, there was a freeze on salary hikes. When it came to downsizing, the most expensive resources were asked to go first and were in fact, replaced by new recruits at lower salaries.

Among those who survived the downsizing drives in companies, employees were asked to take salary cuts (upto 30%). Increments in the range of 5-10% is the industry average as opposed to average of 25-40% two years back. There is more respect for rules across organizations and cash reimbursements are curtailed to a great extent. Even at the entry level, computer engineers from premium institutes who had starting salaries of Rs 2.5-3.5 lakh have had to settle for Rs 1.8 to 2 lakh. There would be exceptions with certain companies offering
Rs 3 lakh or so, but the stark reality is that 30% of the same batch is not placed at all.

Despite these negative factors, IT remains one of the most lucrative professions, with the average IT professional in the country (across years of experiences and companies) earns Rs 7 lakh per annum.

**Reality check, Dataquest Top 20 Vol1 July15, 2002 146 pp**

But before we conclude that salaries across the IT industry are this good, here's missing. The figures quoted above are based on a Dataquest-IDC India survey featuring 48 of the country's top companies. It does not include data from the SME (small and medium size enterprises) or 'B' and 'C' class cities, which employ a huge chunk (in terms of volumes) of the country's IT professionals. In order to compute this data and to ensure that we had an ear to the ground, we computed the career paths of professionals. What emerged was that a lot of them began their careers at salaries as low as Rs 36k to Rs 60k per annum, mostly in small companies. They have grown through the ranks, honing their skills and often changing jobs to cross over to the Rs 2.5-Rs 4.5 lakh bracket (see table). Not surprisingly, the significant jump in salary happened during the pre-2000 IT boom period when companies maintained a bench while bidding for projects. As projects got cancelled, companies found themselves bleeding money. Now, post 2000, complete the prescreening, short-listing and even selection of candidates, but actually take employees on board only after the project materializes.

Clearly, professionals have lost much of the arrogance that often crept in along with the tremendous bargaining power they wielded. juggling offer letters and using one to get what one wants against another, was a common phenomenon during boom time. The practice is not as rampant today, simply because there are fewer offers being passed around.
The hardware- software chasm; Dataquest, July2002, 147 pp

Average salaries depend not only on years of experience, but skills set also. For instance, technologies like ERP (Oracle Application 11i, Peoplesoft, SAP) which are in demand today, command much higher salaries compared to professionals with the same years of work experience in JAVA, Microsoft Technologies compared to professionals with 5-10 years of experience in ERP related technologies, would get a salary in the range of Rs 5-8 lakh. A professional with the same level of experience is areas which, are not considered so 'hot' today, would be in the Rs 3 lakh-7 lakh range. The IT industry always has its waves of 'hot' technologies, which are largely dependent on the availability of projects in that particular area. While professionals who fall into the 'hot skills' bracket at that particular instance will always command higher salaries, the disparity between the salaries of hardware and software professionals is sizable too. If a hardware professional with 5 years of experience gets Rs 4.5 to 5 lakh per annum, a software professional in the same bracket would get Rs 5 to 7.5 lakh. A marketing professional's salary would be on par with the software person or even higher in some cases. Marketing professionals usually have a higher variable component, which is dependent on the revenue they manage to rake in for the company. Similarly, the starting salary for a hardware professional would be around Rs 1.2 lakh p.a (though smaller companies and B and C cities could even have salaries as low as Rs 48,000 p.a.). By the same yardstick, software professionals would get around Rs 1.5 lakh p.a. and an MBA from a reputed institution about Rs 2.5 lakh.

Starting trouble; Dataquest, July2002, 143 pp

When it comes to comparing salaries on the basis of educational qualifications, computer science/electronic engineers from the IITs come out tops, commanding a starting salary of Rs 3 lakh or above. The next in demand are computer science/electronic engineers from other reputed colleges. These would command salaries in the range of Rs 2.75-3 lakh. Other computer science graduates from
institutes offering courses like MCA (Master in Computer Applications), BCS (Bachelor in Computer Science), and MCM (Master in Computer Science) would be in the range of Rs 2 lakh to 2.5 lakh. And the multitude of arts, commerce and graduates who joined expensive IT course with stars in their eyes, would have to settle for anything in the Rs 60,000 to the 1-lakh range.

Perks; Dataquest, July 2002, 147 pp

The perks still exist but companies are through with the pampering having said good bye to the frills they offered employees in an attempt to have them stay on. Perks often form 25% and in some cases upto 30% of salaries. Most companies are veering around to the CTC (cost to company) concept and the perks are being limited at junior and middle levels. In fact, for professionals in the 2-7 year bracket, PF and ESI would be the only two additional benefits offered.

For those in the 7 years of experience and above bracket, perks like company owned homes, cars, mobile phone and telephone at residence, laptops, home office furnishing reimbursement (hard furnishing), club membership, credit cards, overseas vacations with family etc. There has certainly been a cut in the extent to which these are offered – lesser domestic air travel, subsidized meals and office transport is not completely free any more.

Stepping around the slowdown; Dataquest, July 2002, 147 pp

Apart from the distinct downsizing in perks, salary structures have undergone a change too. The trend has been to go with more variable component, for instance, 60% fixed and 40% depending on company performance. Organizations have become wiser about the danger of inflating the base salaries (includes Basic, HRA, etc) to unreal levels. A higher base makes it impossible to reduce salaries, when the going gets tough, without attracting attention from Labour and IT authorities. What is being done is the concept of EVA (Economic Value Add) which is basically a variable pay coming out of a more liberal profit
sharing mechanism. Sometimes EVA or its equivalent may be up to three times the basic salary and is linked to individual performance, company performance.

Another concept is staggered performance bonus. After a year of good performance, a sizable bonus is announced and is paid out in three to five installments over the year. The balance due for the particular year is called the "Kitty" and this increases every subsequent year. In whatever form a company pays this out, it is money, and a nice hot boodle at that! And despite the fact that the pampered pashas have had to become pennywise, they still remain some of the best paid professionals in the country.

Retention practices; Apporva Sharma, Human Capital, Nov 2001, 49 pp

Apporva Sharma has made research on retention practices on selected organization.

With about 10 of the respondents having Japanese or Korean connections, it is pertinent to mention that while the family-based value system is also common among other Asian companies (especially Korean and Japanese), individual recognition does not find a wider approval among Korean and Japanese management. The concepts of lifetime employment and teamwork have been the hallmark of Japanese and Korean companies until the last decade. This trend is changing now. Even Korean and Japanese companies find it acceptable to poach employees from competitors.

Training: In most of the companies, the first 2-3 years are crucial in retaining an employee because young recruits are more ambitious and time is too short to inculcate bonds of closeness with the organization. Induction and training helps in reducing attrition in the initial stages of employment to a large extent.

Communication: A variety of initiatives like communications workshops follow a usual and familiar process of execution with only operational factors being
adjusted to suit each organization's needs. The objective is to ensure proper flow of communication in the organizations through a system of suggestions, recommendations and problem-solving. Though these are addressed with different names (morning meetings, diagonal meetings, samitis, communications meetings), the purpose behind their formation remains the same.

Incentives: It was found that among all types of incentives, most of the employees appreciate traveling expenses (with family, by air) and medical facilities (medical allowance, free medical checkup) club expenses, etc.

Fellowship: Initiatives like fellowship had a flavour of typically Indian ethos of affection for the family and local culture, as also the preference for individual recognition over the team efforts.

It was interesting to note that like HR or retention came into vogue, organizations like DCM have been organizing group activities like Ramlila, Diwali melas and music concerts. Business groups like Tata, Birla and Modi have been actively involved in caring for the employees by setting up education facilities and hospitals. These activities were perhaps undertaken more as a part of image building exercise; but nevertheless, did foster employee's loyalty and restricted job-hopping.

Family get together: In keeping with Indian tradition of family bonding, most companies conduct regular get together, picnics and cultural events, wherein the employees are invited along with their families. The intentions behind holding such activities are:

It gives an opportunity to the employees to have informal interaction with superiors and helps in easing communication among people at all levels.

These activities give the employees a chance to refresh themselves from their usual routine work.
As large numbers of employees get involved in organizing such events in one way or the other, the concept of teamwork is understood and appreciated. As their own hard work and effort will be involved, its success motivates them and inculcates a stronger bond with the organization.

Activities like star tally for social causes, etc, are good PR exercises for the company, and help promote and popularize the company's name.

Events like sports meets or cultural evenings are forums that give you employees an opportunity to display their talents. Appreciation or recognition of such kind is a welcome initiative to boost employee's confident and give a new outlook to his personality.

Possible retention tools

The first impression is the last impression. As soon as a new person joins the organization, the induction programme should be meticulously chalked out. The wok culture and the behavior of the superiors with the incumbent should be cordial. Such an atmosphere would give him more space to prove his mettle and he would be able to bind his identity with the organization. Mentoring is one such practice to facilitate this.

Major policy decisions that affect a wide section of employees should involve representation of employees from each department. This would enable senior management to know the needs and expectations of employees and in the process, the employees would also be assured of a fair decision.

Employs' motivation levels and expectations from the job change with time. So the company needs to regularly evolve new policies and amend older ones. Edification of employees need is possible by periodic surveys, exit interviews and feedback from internal communication channels.
Retention policy could be case specific for each target group identifiable in terms of employee's management level, location, job description etc. The target could also be a group of employees with similar professional knowledge or ethnic origins.

The organization should constantly look out for ways to relieve employees from deviations of personal life and let them focus on work. Concierge revises for depositing telephone or electricity bills, school fees, vehicle servicing, booking hotels and transports for holidays, renewing subscriptions and memberships, gas connections, etc. would be conceived as more valuable by the employee than of the formal incentives.

In so far as the MNC are concerned, initiatives should be taken to move manager across the globe as deliberate career development programs to facilitate vertical growth of employees and create a global talent pool. This could facilitate a faster replacement of talent in case of a sudden attrition in a particular country.

Traditional appreciation like "employees of the month" scheme may not be as effective as handing them theatre tickets, ball game passes or dinner coupons immediately after a good performance or outstanding results.

To ensure a regular workforce, many companies opt for slack manpower i.e. recruiting more than the required number of employees. This is more effective in industries facing high turnover. It not only insulates the company from productivity loss, but also saves the additional cost of recruiting and training of new employees.

Retention may be formalized as a tool. This is a repeatable question but very strong possibility. In the near future, managements would be challenged to abandon traditional perceptions about retention and adopt ever evolving and more creative ways of conceptualizing and designing the tools for identifying the retention needs and implementing policies for retaining talent.
The facilitator uses a whole repository of learning interventions to effectively complement the training in the classroom. These include arrangement of the classroom, audio tapes, CD's and online training modules to be used, and eye contact by the trainer.

Games are an important part of training. Word games, lexicon, JAM (just a minute), impromptu speeches are all an integral part of the training program. The topics of the speeches are made as innovative and whacky as possible like 'Diamonds are forever, Life is green'.

Another important practice is the use of audio and video in the training sessions. Songs such as "I will always love you", by Whitney Houston are played and the students are made to sing along with the tape. This helps in identifying the nuances in the American accent and helps in good listening. The use of video includes watching movies such as Top Gun, for an effective listening and communication using American accent.

Role-plays and simulations are also given a high priority in various training sessions in call centers. A script is prepared beforehand and a few volunteers are made to enact the script. This way the mistakes they make are learnt by the whole batch and effectively enhances learning.

One center had a scheme known as an informal training session wherein the instructor has lunch with the student and gets to know him better. Here there is a lot of knowledge transfer, which takes place in the informal atmosphere. The student is free to voice his doubts and the instructor also has the time to address students' personal queries with ease. These are also known as "learning lunches" in other call centers.
The list of incentives is getting longer each day. With 180,000 new software jobs up for grabs this year, and just 121,000 potential employees coming off the educational assembly line, retention and new appointments top the HR agenda.

Typically, attrition rates have been high in the industry, with 20-24% being the norm. GenX's latest employment mantra and the software HR manager's greatest enemy today - poaching by fellow recruiters from rival firms. Paradoxically, a country of a billion people - also the preferred software manpower outsourcing destination of the world-is facing an acute manpower shortage itself.

"Companies affected by job-hopping should sit together and consider the worsening situation. If we don't have a clear policy laid down to hire and retain quality people, all of us might end up losing." laments Chanda Hate, Vice President, HR, Tata Infotech. Navyug Mohnot, Executive Director, QAI, concurs. "Earlier, the top management was worried more about business development, stock markets and investment. Today, top managers realize the need to invest in human capital. The managers of IT companies are today completely seized of this issue."

The current scenario has created diverse pressures on HR departments industry wide. On the one hand, top priority has to be accorded to business goals. On the other, people needs have assumed an even greater mandate. "The real challenge for the HR manager is to keep this in harmony. The HR manager today forms an important part of all business meetings. His opinion is valued and sought in all important decisions," says Rosida Rabindra, head, corporate HR, NIIT.
Maintaining this critical balance between business targets and people needs is not an easy task for any company, and more so because the employee has more options to choose from. On an average, any IT professional has 3-4 jobs offers at any given point when he approaches the HR manager in his present organization to explore his options. An HR manager, therefore, not only has to assess and offer what he's looking for, but also needs to ascertain whether the employee wants to continue in the organization, and for how long.

And that's what companies like HSS are trying to do. Among Goyal's constant and continuous aims is to analyze what attracts people to HSS and what turns them off. "We are the top communications software developer in the country today but as far as recruitments go, we still have to work hard to hire the right people. We continue to look at why are we able to attract the people who are coming to us. What is the current brand attraction of the company? Who is influencing their decisions to come to us? Who takes the final decision on which company the prospective employee should join are what we have been trying to find out," he explains.

Infosys employees – pampered, paid and happy
Infosys- Last December, "The Far Eastern Economic Review rated Infosys Technologies Ltd as India's top corporate house for the year 2000 based on, among other things, management vision and financial soundness. Around the same time, in a newspaper-conducted poll Infosys was voted the most admired company in the country. In January this year, the company topped the list of India's Best Employers in a study by a business magazine. Last month, it reported quarterly earnings were up by 125%.
That's the cake. The icing is its 30-acre campus, golf links, food courts, bowling alleys and most of all, its employee stock option plan. Ask any Infoscian what attracts him most about the company and he'll say, "The money, Boss. The money is unimaginable. If I get 1,000 shares after my annual appraisal, at current prices, it is Rs 60 lakh. Two years ago, I wouldn't even have dreamt of that kind of money." It shows. Infosys employees today are pushing up rental and real estate prices in Bangalore and clogging the city roads with fancy cars.

Employee stock options are not a new concept. And one could argue that the fallout is accidental if the company wasn't doing so well at the stock market, the stock options wouldn't mean very much. The company's contribution to HR models in the Indian IT industry is not about offering ESOPs, its about articulating "wealth creation for employees' as a specific HR initiatives.

Hema Ravinchander, the company's HR head says: "We believe in a three-pronged value-add for our employees. The learning opportunities are immense, constantly equipping them to stay abreast of the latest technologies and skills; the financial benefits aim at an overall wealth creation for the employees; and the emotional support that the company offers is a third component that keeps the employees happy."

The other big high is of course, knowledge. In the new economy paradigm it directly translates to money and is therefore an important component of both personal and professional aspirations. To cater to that Infosys set up an education and research (E&R) department in 1992 that caters to the company's learning, research and knowledge management needs in diverse technology areas including e-commerce. It now has a 56-member faculty and in the first nine months of this fiscal alone delivered 240,000 training days. Says Ravinchander: "That's a number that compares well with that of any large University!"
HSS: Rewarding performance and relationships
Delhi-based Hughes Software Systems is in the thick of the war for talent. A look at its policies to retain its star performers is startling. Quarterly staff meetings where everyone gets to know the company's plans and question senior management; an adventure club which manages to get sponsors for a trip up Friendship Peak, Himachal Pradesh; and popular awards where employees can judge and vote on others' leadership behavior.

For those interested in a career in the company, HSS has a gentle way of putting it across: a page on its Web site helps potential candidates do an analysis vis-à-vis their potential career at HSS! So it may sound like it's retaining those who actually join that HSS is really interested in. But Aadesh Goyal, VP, HSS, says, "We still have to work hard to hire the right people. We continue to look at why are we able to attract the people that we are able to attract. What is the current brand attraction of the company."?

And on retaining staff, from time to time, HSS does surveys on relationship development, training and organizational behavior along the company strategy. It also conducts retention surveys of people who have stayed in the company long enough to learn what has worked right for them. Goyal says, "The question to be asked is how is the employee behavior changing – it is changing now and then-and what is the market forces. What's new, what is changed and how we as a company have fared."?

A performance yardstick for all employees is based on the six values that HSS stands for. Each employee does an assessment once in a year. They get feedback from the supervisor and manager to raise the emphasis of goal review and performance review when stock options are given. Then, there is the popular award, the purpose of which is to build culture. HSS has taken 12 leadership
behaviors. Every employee has one vote each for one behavior, for instance, there can be the best leader, best member or best reviewer. Every employee who gets a vote automatically gets an e-mail from the system saying, "Somebody voted for you for being a best mentor and here's what he has to say about you".

Managers go through a leadership development inventory program every year. They get feedback from supervisors, subordinates and peers. All these go to build a "team" within the organization, as Goyal says. "This motivates people. Peer recognition is the best recognition in the world: it is the most credible recognition.

It's All About Work; Dataquest, March 15, 2001, 116pp

Wipro's no-nonsense approach also clicks. They don't talk of Domino's pizza on the campus, Coffee Day outlets, golf-links or bowling alleys. They barely mention company-sponsored family meetings. At Wipro, they have a no-nonsense approach to HR. "We offer basic honesty and 100% professionalism. On compensation we have a stated policy that we will remain in the 75th percentile. And since 1995, we have a very individualized rating and appraisal system that takes into account, among other things, the market value of the employee and the criticality of his job says Dileep Ranjekar, corporate executive vice president, Wipro.

Despite the obviously cut-and-dried approach, not very much in fashion these days, Wipro is rated among the best five employers in the country today. The reason? A surprisingly philosophical one: Freedom. Ask any Wipro-ite, and he'll tell you what he likes most about the company is the freedom to take decisions, the freedom to speak up and most importantly, the freedom to make mistakes.

This leads directly to two things: a strong sense of loyalty and a steep learning curve. "Even today, 80% of our top management consists of people who joined us during campus recruitment, right from 1975 onwards." Ranjekar himself was a
campus recruit: "the first HR professional to join the company. And I joined at the very bottom rung of the ladders".

This is not to say Wipro hasn't had its share of employee migrations. The first wave was in the early 1990s and the last in 1999 when the start-up fever was high. "We don't have a trainee-ship concept here. A person comes in and directly takes on responsibilities. We believe learning on the job is a good thing. As a result, our people are good in processes. So whenever a new company is set up or people in the IT sector want to recruit, Wipro is their first hunting ground," says Ranjekar. It shows. In a recent informal survey done by the company a couple of months ago they found that at least 70 top people leading the Indian IT revolution today are former Wipro-ites.

In addition to all of this is of course-money. Starting from a limited ESOP base of 2-3%, Wipro has enlarged it to about 75%. And recently, Wipro took an internal decision to create a certain number of millionaires by the year 2003, a number it is understandably reluctant to divulge. It also one of the few companies in the country doing an EVA exercise and is currently in the process of implementing the people capability maturity model (PCMM).

"One sentence which explains our HR philosophy? We have an internal policy that says: F for freedom. R for Rewards. E for Excitement. A for Ambition and K for Knowledge," says Ranjekar. "In two words: FREAKing Out."

An Open Culture: Challenging work and a high learning curve; Dataquest, March 15, 2001, 111 pp

A company with 14,000 consultants in 23 countries with an attrition rate of 12%-much below an industry average 20%. The behind-the-scenes to this success is a time-tested hiring and retention program. Being among the biggest recruiters of engineers, TCS does not need extra effort to pull engineers to itself. And being
the oldest software development company with an image of doing good quality engineering and software work, it manages to get "day 1" in campus recruitment.

To ensure that it hires only the best of the lot, TCS has a rigorous selecting process. Senior employees of TCS visit only accredited institutions and the candidates are screened through a written test for analytical and logistical skills, a psychometric test, an interview and finally a technical test. The first part done, comes the more important retention.

Among its policies to retain the quality engineers it hires, TCS has an attractive flexitime package telecommuting, half-day or ¾ day, on request. Employees who sit late are dropped home and food paid for on such occasions; this is besides free transport to and from locations difficult to access. It also has subsidized canteens at its centers across India. Its new software development facilities are equipped with recreational facilities, for instance the one at Sholainallur, Tamil Nadu, has squash and tennis courts, and a gymnasium, TCS's attention to its employees is seen in its newly-designed corporate office, and as VJ Rao, VP, TCS, claims, "There are also some workplaces where you can't overhear when your colleague sitting beside you is conversing".

TCS's compensation has seen dramatic changes over the past 3-4 years, and is currently on par with the software industry. Rao says, "We've increased the variable pay and also introduced a concept called economic value added (EVA), which will bring in very large sums of money to the employee- an answer to the ESOP. With a fairly large amount in the bank, it becomes difficult to decide to leave." And to top this, TCS has bi-monthly appraisals, project-end appraisals, annual appraisals and performance reward evaluations to constantly keep employees motivated.

Around 50-60% of the staff moving out of TCS shift to jobs abroad while some leave to pursue further studies. Rao says, "Employees may join because of the company's image but they stay because of pay, continuous learning opportunities
and challenging assignments." These are plenty in TCS. Its training scheme provides sabbaticals of up to two years at full salary to those who pursue highly specialized courses. For instance, TCS currently has 12 of its staff in IIT, Chennai pursuing specialized CAD/CAM courses.

They are paid their full salaries, and their promotions and increments are taken care of. It also has a full-fledged training center in Thiruvanathapuram, which can train 600 people at any given time. Through computer-based training, staff can log on to their terminals and go through distance learning. The company insists that its employees go through a minimum of 20 days of training every year. And for challenge, employees can work on different platforms and varied technologies.

The Online Shift; Dataquest, Jan15, 2001, 57pp

Headed to be the biggest IT training market in Asia-Pacific by 2004, India will likely see e-learning emerge as the most cost-effective – and popular—training option for enterprises.

In India, as in the Asia-Pacific region, the e-learning market is likely to witness a sharp growth. "With recruitment managers vying to recruit and retain talent, e-learning will assume a crucial part of any organization's strategy," says Joseph Chacko, head, operations, education services, Tata Infotech.

Accordingly to IDC, with Indian IT training revenues reaching $ 695 million by 2004, the country is expected to emerge as the leader in IT training in the Asia-Pacific region. This will be a 7% jump from the current market share of 21%.

The revenues from IT training are expected to increase to $ 2.5 billion in 2004 from $ 981 million in 1999 as per recently released IDC (ID figures for the IT training market in the Asia-Pacific region).
Corporates untapped

Individuals rather than the corporate training segment have been the prime drivers of the IT training sector in India. Of the domestic IT training market, estimated by DQ in 1999-2000 at Rs 1,561 crore, the individual demand stood at a solid Rs 1,459 crore.

The IT training market for the corporate is yet to bloom fully. The demand for corporate training in India stood at a mere Rs 102 crore in 1999-2000, at an estimated annual growth rate of 4%, according to the DQ Top 20 survey.


The Emerging Paradigm: Connecting Diversity to Work Perspectives

Recently, in the course of our research, we have encountered a small number of organizations that, having relied initially on one of the above paradigms to guide their diversity efforts, have come to believe that they are not making the most of their own pluralism. These organizations, like Access Capital, recognize that employees frequently make decisions and choices at work that draw upon their cultural background-choices made because of their identity-group affiliations. The companies have also developed an outlook on diversity that enables them to incorporate employees' perspectives into the main work of the organization and to enhance work by rethinking primary tasks and redefining markets, products, strategies, missions, business practices, and even cultures. Such companies are using the learning-and-effectiveness paradigm for managing diversity and, by doing so, are tapping diversity's true benefits.
One reason for the scarcity of managerial greatness is that in educating and training managers, we focus too much on technical proficiency and too little on character. The Management sciences – statistics, data analysis, productivity, financial controls, and service delivery- are things we can almost take for granted these days. They are subjects we know how to teach. But we're still in the Dark Ages when it comes to teaching people how to behave like great managers-somehow instilling in them capacities such as courage and integrity that can't be taught. Perhaps as a consequence, we've developed a tendency to downplay the importance of the human element in managing. Managers are not responsible for other people's happiness, we say. The workplace isn't a nursery school. We've got market share and growth and profits to worry about, and anyway, power is too useful and entertaining to dribble away on relationships – we've got our own nests to feather. But the only people who become great managers are the ones who understand in their guts that managing are not merely a series of mechanical tasks but a set of human interactions.

The Internet e-volution-driven market for software and IT services presents a lucrative opportunity for Indian professional IT service companies.

A look at Goldman Sach's framework of critical success factors called the "eight-fold path to e-volution" to better understand India's IT services value proposition. The factors represent a roadmap of milestones that are critical for the success of Indian IT service providers.

Proactive Management Vision: India's IT service companies must start with a proactive approach to opportunities offered by continually evolving technology.
This entails keeping a broad vision and resource pool in multiple technology domains- remaining "technology agnostic". Customers today seek access to "best-of-breed" solutions rather than implement a "one-size-fits-all" package from a single vendor. A proactive technology focus on solutions recognizes that every customer has a different need, which requires a customized solution.

Fine-tuning the Channels Dataquest, Nov. 30, 2000, 105 pp

Rs 501 crore company has a workforce of 11 people.
The secret: efficient outsourcing, and careful management of its distribution

Five years ago, in 1995, not many people in India were aware of the Samsung brand. Five years down the line, there is hardly any IT person who does not know about it. That the great giant not only managed to create a market for its hitherto well-known brand in India, but also became a computer essentials company wanting to do business worth Rs 2,500 crore by the year 2003, is significant. It's a case study of how a team of 11 people, including four supporting staff plus five channel partners helped the company achieve a turnover of more than Rs 501 crore during 1999-00.

In mid-1995, when Samsung first set up its office in India, the IT market and the industry had just started opening up, with the total number of PCs shipped in India crossing the two-lakh mark for the first time. Yet, the majority of monitors sold at that time were monochromes. Local vendors were competing with MNCs on the price front and one of the key strategies they adopted was to bundle only monochromes, leaving little space for the color monitors players. For the 233,990 PCs (DQ TOP20) sold during 1994-95, only an estimated 20,000-25,000 color monitors were shipped. Samsung entered the Indian market with color monitors and fax machines.

Effective channel and brand management has been the key for Samsung's phenomenal success. Revenues are the key pointers to that; Samsung has grown from Rs 203 crore in 1997-98 to touch Rs 501 crore for fiscal 1999-00.
The maximum emphasis in the company is to manage the channel partners well and to create a strong brand awareness about Samsung in the country. Other activities like swap and service centers and market research are outsourced. Comments Prakash, "We want to remain a lean machine and do simple things, leaving the specialists to handle specialized task."

The US: Still # 1

Germany, Japan and others now woo Indian professionals for their IT projects. But the attraction of Silicon Valley remains too strong to resist.

Data Quest, Nov. 30, 2000, 53 pp

Indian software professionals have looked at horizons beyond India for wider experiences and better opportunities. The US has been the hottest destination for these migrating minds. There are 250,000 Indian software developers employed in the US— a fact well realized by the US congress. For the second successive year, it has increased the number of H1B visas to be granted to foreign professionals— from 115,000 in last year to 195,000 for each of the next three years. With the second largest scientific, English speaking manpower base, India is expected to contribute nearly half of this requirement.

US's reign is now being challenged. Japan, France, Italy, Britain, New Zealand, South Korea and Finland are all looking to hook Indian professionals. The competitive threat among countries eager to hire foreign manpower, has forced them to offer increasingly attractive packages.

New Zealand plans to recruit 200 experts from India using two common reference points— cricket and the use of its locations for Bollywood blockbusters. The appeal is a package that combines lifestyle and enjoyment. Britain has adopted a more direct approach. The lord major of London, Clive Martin, promoted the city with a USP of 393,000 Indian residents. Germany, in a bid to recruit 3,000 Indian IT experts has come out with a green-card scheme. German
companies, desperate to fill the shortage of 75,000 IT experts, have been promising delivery of Indian food everyday to the new recruits.

India Feels the HR Crunch, Data Quest, Nov., 30, 2000, 68 pp

A global provider of IT professionals today, India may not have enough numbers to meet its own needs a few years later.

During his visit to India, Jack Welch, chairman and CEO, General Electric, said, "The real treasure of India is its intellectual capital. "But it seems that the country itself is precariously close to facing a dearth of this capital in the coming years.

With more than 19 states pursuing IT policies, the demand for software professionals within the country would be immense. Outside, the US has increased the number of visas to be granted, while other countries are offering schemes to woo Indian IT professionals. Ramand Baliga, GM, IBM Global Services India, highlights another trend. After several success stories and cost saving benefits, most US enterprises have come to realize the value of moving work offshore to India, " he says.

The Shortfall
At present, India has an employed workforce of 5.5 lakh, of which 3.4 lakh work for the software industry and the rest in IT-enabled and other related services. If the current supply of 85,000 per annum is maintained, there will be only 6.8 lakh professionals by 2008.

On the other hand, as per Nasscom estimates, India will require 22 lakh IT professionals by 2008, of which 11 lakh will be for the IT-enabled services sector. The ministry of information technology (MIT) also estimates a demand of 20.7 lakh professionals by the same year – 2 lakh for software products, 5.8 lakh for IT services and 12.9 lakh for IT-enabled services and e-business. An estimated 20% increase in international demand will add to the pressure, says MIT.
The IT task force, in a draft report, estimates a shortfall of as many as eight lakh engineers and postgraduates by 2007.

Clearly, India has an uphill task of coping up with the rising demand.

Govt initiatives

As a measure to meet the demand, Nasscom has suggested that the output from all engineering colleges should be tripled. The government has decided to make investments of about $1 billion to increase the turnover of IT professionals from 100,000 per year now to 300,000 per year by 2005.

According to the task force, the cost of upgrading the computing and networking facilities in some 200 institutes will require Rs 10 crore per institute, excluding the funds needed for hostel and classroom facilities.

Increasing the number of professional colleges is one thing but to ensure good quality of the education being imparted is a daunting task. According to a survey done in AICTE-approved institutions there was one teacher for every 45 students for IT courses as against the AICTE norm of one for every 15. With such critical shortage of faculty, the increase in institutions will only compound the problem. In the face of such constraints, the task force's recommendation of establishing a "national cluster" of 65 institutions that will share faculty, courseware, resources and information can be of significant help.

Employee retention

Companies are working out solutions for retaining professionals. Infosys increased salaries by 30% last year and by 16% this year. ESOPs and other incentives are also among the prescriptions for Employee retention.

R Vidyasagar, head, human resources, I-Flex solutions, says that since work and travel are the two compelling reasons for which Indian professionals migrate, his
company ensures that the employees have a unique opportunity to travel, live and work in these countries.

As opportunities rise in India, the country will need its key asset—manpower. Be it through increasing its workforce base, retaining the professionals or luring back the wayward few, India has to ensure that it has the required numbers.

The Great IT Rush, Data Quest; Feb. 2001, 64 pp

Global outsourcing costs are pegged to scale $177 billion by 2004, with India grabbing a big slice of that market pie. Despite India having just the right blend of resources to emerge as a popular destination, not many of those billions will come from within the country.

Many Western countries have turned to India to outsource their IT requirements. In the past, software companies from India have provided high-quality software solutions to Fortune 500 companies such as Morgan Stanley, AT&T, GE, Sony, Citibank, GM, Boeing, Coca-Cola, and Pepsi.

India has a vast pool of skilled manpower, making it a much-preferred hub for outsourcing cross-border IT and IT-enabled services. Also, typically skilled manpower costs in India are significantly lesser than in any of the developed nations. India has been steadily building up a large and capable software services industry, which has earned export revenue of Rs 13,100 crores in H1, 2000-01, according to Nasscom, IT-enabled services is becoming a big market in India. Companies like Daksh.com offer a range of Web-enabled customer care services including e-mail response, real-time chat, knowledge management, e-CRM architecture and other value-added services to global companies like Amazon.com and Bigfoot.com. Given this strong value proposition in terms of skilled labour, long-term economics and a high position on the learning curve, India could build a $17 billion IT-enabled industry by 2008, says the Nasscom-Mckinsey report.
Should we do away with HR? In recent years, a number of people who study and write about business—along with many who run businesses—have been debating that question. The debate arises out of serious and widespread doubts about HR’s contribution to organizational performance. And as much as I like HR people— I have been working in the field as a researcher, professor, and consultant for 20 years— I must agree that there is good reason for HR’s beleaguered reputation. It is often ineffective, incompetent, and costly in a phrase, it is value sapping. Indeed, if HR were to remain configured as it is today in many companies, I would have to answer the question above with a resounding, "Yes-abolish the thing!"

But the truth is, HR has never been more necessary. The competitive forces that managers face today and will continue to confront in the future demand organizational excellence. The efforts to achieve such excellence—through a focus on learning, quality, teamwork, and re-engineering— are driven by the way organizations get things done and how they treat their people. Those are fundamental HR issues. To state it plainly: achieving organizational excellence must be the work of HR.

The question for senior managers, then, is not. Should we do away with HR? But what should we do with HR? The answer is: create an entirely new role and agenda for the field that focuses it not on traditional HR activities, such as staffing and compensation, but on outcomes. HR should not be defined by what it does but by what it delivers results that enrich the organization's value to customers, investors and employees.

More specifically, HR can help deliver organizational excellence in the following four ways:
First, HR should become a partner with senior and line managers in strategy execution, helping to move planning from the conference room to the marketplace.

Second, it should become an expert in the way work is organized and executed, delivering administrative efficiency to ensure that costs are reduced while quality is maintained.

Third, it should become a champion for employees, vigorously representing their concerns to senior management and at the same time working to increase employee contribution; that is, employees' commitment to the organization and their ability to deliver results.

And finally, HR should become an agent of continuous transformation; shaping processes and a culture that together improve an organization's capacity for change.

Make no mistake:
This new agenda for HR is a radical departure from the status quo. In most companies today, HR is sanctioned mainly to play policy and regulatory watchdog. It handles the paperwork involved in hiring and firing, manages the bureaucratic aspects of benefits, and administers compensation decisions made by others. When it is more empowered by senior management, it might oversee recruiting, manage training and development programs, or design initiatives to increase workplace diversity. But the fact remains: the activities of HR appear to be — and often are — disconnected from the real work of the organization. The new agenda, however, would mean that every one of HR's activities would in some concrete way help the company better serve its customers or otherwise increase shareholder value.

Looking for an HR Model; Data Quest; Nov. 30, 2000, 155 pp
Indian software companies confront the growing problems of quality, time and profits management, and models like CMM and PCMM get increasingly crucial.

The Indian software Industry's strength lies in the deep understanding of technology and delivering quality services through the projects it undertakes. But analysts and industry observers are of the view that there is still considerable scope for improvement. Especially when it comes to laying the ground for future markets and capabilities. There is also the question of managing a workforce of over three lakh. This raises questions of skills, which will be necessary in the coming years. Also on the positive side, the Indian software Industry has a global delivery model, a high-quality spread of clients and a good mixture of onsite and offshore projects. Sixteen of the thirty-two software companies with SEI CMM level 5-quality certification are Indian.

So what does the future hold in this scenario for Indian software companies? Among the key activities that Indian companies have to involve themselves with are addressing hardcore customer-oriented issues, which boils down to the management of the software and engineering processes. These manpower-hence the need for PCMM. In software, processes and the people management, the key projects are attracting, motivating, employing and retaining talented manpower. The PCMM model does exactly this: it improves workforce capability by describing evolutionary path for software development companies from ad hoc, inconsistently performed work-force practices, to a mature disciplined development of the knowledge and skills.

Workplace Diversity Helps Bring Success; Kallash B.L Srivastva, Indian management, Feb. 2001, 38 pp

Workforce diversity refers to all the ways in which people differ including the differences in style, culture, age, gender, education, geographic origin, kind of work race and ethnic character. There is need to understand and manage
workforce diversity as it has presented new challenges and policies to be addressed by the employers. Corporations need to recognize the importance of learning to embrace and manage diversity within the workplace to become more productive.

Gardenswartz and Rowe (1998) have identified four layers of diversity where personality is at the center, internal and external dimensions are in the middle, and organizational dimensions are at the top. All those dimensions form a filter through which people see the world. These layers can also create barriers to accepting others (See figure1).

Factors contributing to increased workforce diversity

After the economic liberalization process started in India in, a number of changes have taken place in organizations, worker behavior, workplace, and in workforce composition. Many external factors have contributed to growing workforce diversity such as a tight labour market, immigration, and worker behavior.

At present, labour markets are very tight, and it is expected to remain like that due to slower labour force growth in a labour surplus economy. As per the report of economic census (1998) of India, the total number of workers working in all enterprises has declined from 2.68 per cent (1980-90) to 1.30 per cent (1990-98). Apart from large number of women and minorities, retirees and those with limited skills have joined the workforce making the situation tighter for employment. Many firms have stopped recruitment drive, cut down their sizes offering voluntary retirement scheme to their employees to remain economically viable in information technology industries where the demand for skilled and knowledge workers are still high, employment opportunities have gone up creating more demand for computer skilled, professionals. This has created opportunities for individuals from different ethnic, cultural and racial background across the globe forming a diverse workforce. Demographics and immigration has also played a role in the changing face of Indian workforce.
Motivated employees are the biggest assets of an organization. Employees are becoming the competitive advantage for business in the modern world. No matter how much technology and equipment an organization has, these things cannot be fully utilized until people who have been motivated guide them. Think for a minute of an organization with the abundance of resources but the workforce not willing to exploit its capabilities to fullest extent due to lack of motivation. So where will this organization head for? Obviously, it will have its decline in near future. Bad employees even can cause a business to fail.

Now the big question is – what leads to motivated employees? If companies need hard-to-find workers, they will hike salaries, which increases the likelihood of someone leaving a job for the one that pays more. The reason for increasing job turnover is the lower levels of loyalties and loosening of bonds between employers and employees. Finally, more and more employees no longer tolerate bad bosses. "Money and perks can be used to attract people to your company, but they cannot be used to keep people there".

Good bosses drive employee satisfaction and retention. Good pay and good benefits are important, but the real focus must be on making work interesting and establishing good managers. Dealing with employees in the organizations and motivating them has its roots somewhere in psychology and social sciences, which leads to a special field of study that is Organizational Behaviour.

The total human resource strength of the IT industry as a whole stands at 425,609. A company-wise break-up of this figure reveals that nearly 525 com-
panies constituting 35% of the IT industry employ an average of 58 persons each, 750 companies constituting 50% of the industry employ an average of 275 persons each, and 150 companies constituting 10% of the industry employ an average of 726 person each. At least 40 companies have more than 1,000 employees, while some big companies like TCS, Wipro and Infosys have staffs above 5,000 each.

Despite having abundant English speaking skilled workforce, an average shortage of skilled workforce will infect the country's software export in the long run, if remedial action is not taken immediately. Last fiscal, 68,000 software students reportedly passed out of the various training institutes. But with 28% jobs expected to crop up in the last two years, this number seems unable to meet the demand. Incidentally Last year, according to media report 73,980 software professionals were recruited. Now, the differential number of professionals who pass out of the institutes and those shows that India's software professional strength still lags behind. It comes to expertise in cutting technologies and niche areas.

After the US relaxed norms of H1-B visas, at least 200,000 H1-B visas were provided to software professionals from India. But then there are 364,000 high-tech jobs that are vacant in the US. This shows as a high demand for software professionals across the globe, especially in the U.S. Over and above this with Germany courting Indian IT professionals from India has a big opportunity to make their presence felt all over the world.

**Qualification and the work Experience**

The pattern in the qualifications shows that post-graduates, along with engineers, constituted nearly 70% of the workforce in software export companies, and only around 48% in domestic companies. Surprisingly, domestic companies had a larger share of doctorates with 2.6%, while software export companies had only 0.5%. Comparing this figure with that of the previous year shows that the number of doctorates employed in domestic IT companies has gone up by 1%.
As far as work experience is concerned, software exporters companies employ marginally more people with 1-3 years of experience. While 39% of the total manpower strength of software exports companies are staff with 1-3 years of experience, such staff make to 35% in domestic companies.

Incidentally, 38% of workforce in the software IT industry comprises those who are in this category. Also, domestic IT companies employ more people with 5-10 years of experience and also people having more than 10 years of experience when compared to software exporters.

**Recruitment and attrition**

We looked at the human resource turnover of the IT industry through two variables-one, recruitment arising out of growth and expansion of an organization, and the other arising out of employees leaving the organization, or, attrition. On account of growth or expansion, the last fiscal saw software export companies recruiting on a large scale, with nearly 25% of recruitment being a result of their growth or expansion plans. On the other hand, domestic companies maintained the same level as during the previous year-16% of their recruitment being due to growth. The industry as a whole, with a tilt towards software exporters, showed 22.5% of the staff being recruited as part of growth or expansion plans of the companies.

As far as attrition is concerned, software exporters have been able to keep a close watch on their employees. They have managed to maintain the same level as in the previous year, that is 10.23%. The domestic companies, which had been combating a high attrition rate of 18% in 1998-99, have been able to scale it down to the software export companies. The ratio among domestic companies fell to 10% in 1999-2000. The attrition level in the IT industry also came down drastically to 10% in the last fiscal. On an average, while the average number of employees recruited by the IT Company was 208, the average number of recruits for a software export company was 334, as compared to the previous year. Yet
growth and expansion of activities of the software export companies led to a higher recruitment of staff, despite a low attrition rate.

Training
Growth in manpower among software exporters has also led to an increase in the number of man-days training per organization. While software export companies had 7,500 man-days of training per organization then per person per organization average was six days, the same as in the previous year. This is far above the figure for the previous fiscal, which were 5,500 man-days. Domestic companies, incidentally, spent a lesser number of man-days on training-over 750 man-days per organization-with an average of two days per person per organization. This trend shows that while the software export companies are constantly keeping in tune with the latest technological advancements, the domestic companies have not been able to spend as much time as is needed on training their staff. As a net result, on an average, number of man-days training per organization turns out to be more than 4,200.

Job deployment
Looking at the trends of job, deployment in the IT industry as the wont with any Knowles based industry, the highest number of manpower has been employed for skill-based activate while software export companies had deployed 32% of the workforce for project implementation. Domestic companies deployed 24% for project development. The industry as a whole deployed for project development and 29% project implementation. Domestic companies who need more of market and sales workforce had 15% of the workforce being deployed for activity, while software export companies who need less of these personnel around 7%. The industry average stood at around 9%. Domestic companies had relatively more workforce the support side with 15%, while software export companies had are12%. The net result for the India as a whole was around 13% and 6% of the workforce strength is software export companies was in research and developments and around 2% was deployed for domestic companies had more workforce being deployed on the quality control with around 2% while the
software export companies had 1.5% and identically domestic companies are more staff in the management research area with 27% of their workforce. Being deployed in this area, while software export companies deployed only 14%. The net figure for the industries as a whole has been around 29%. This shows the pattern among software export companies, which had more workforce deployed on the managements side. A higher figure would be affected the productivity of the companies.

**Information technology and human resource management**

Dr. Sushil Kumar Goel, CTW(New York), PhD(Psy)

Information resource management in a rapidly changing context calls for learning and application of specialized knowledge and skills. Information management is a base towards developing information systems and skills for handling information for productive use. The parameters of an information system are: Its Users, Information Sources and Technologies. New information technologies are on the verge of creating a major revolution in the way people access and use information resources. The development of well-integrated information system related to the users' need of a country implies the need for a suitable human resource management. In this paper, an attempt has been made

(i) To develop professionals for assuming responsibility of providing effective transfer of information to users;
(ii) To develop scientific outlook and awareness of their responsibility in tremendous developments in information technology;
(iii) To develop sensitivity to overall background and developments of Information Users in the concerned organization; and
(iv) To develop knowledge, skills and attitudes for effective Information handling techniques.

The author concludes by saying that the technological innovations will lead to changes in the ways we acquire, transmit and use information, and thence to
behavioral changes in individuals. Future changes will be marked by complex interactions among basic technologies, new communication media and new distribution concepts. These will affect the ways people are educated, perform their jobs, and carry out day-to-day activities.

The New IT Itinerary: Dataquest, Jan 15, 2000, 58 pp

"The Indian IT industry has been and continues to be responsible in no minor measure for the globalization and growth of the Indian economy. Its role in the next millennium appears to be no less promising. It is rightly recognized by everyone to be that sector of commerce, which can catalyze the transformation of our economy. During the last couple of decades immense improvements in technology have enhanced the power of computers by a factor of 10,000: the capacity of storage by 100,000; the bandwidth of communication lines by a million and reduced costs by a 1000 times. There have been many major discontinuities in the last five years that are bound to influence the way the world lives and conducts business in the next millennium.

These significant paradigm shifts including the Internet and the World Wide Web have brought the 'any-time-anywhere' model to consumers allowing them to execute dealings at their convenience. Thanks to the death of distance these tech-neologies have also enabled round-the-clock access distant expertise and knowledge. This is especially important for an immense country like India.

Dichotomy of Indian information technology Man-Power Development
INDIA claims to have emerged as the Leader in Information Technology. We seem to have played a significant role in the software exports, but there is a strange dichotomy in the total effort. We seem to have lost sight of the reality of the things. We have been training large number of students in various kinds of software tools, e.g. C, C++, Java, e-commerce, e-business etc. to what impact? Till recently it had become fashionable for every body, be it computer engineer or arts graduate or for that matter even 10+2, (all in the same basket) of an
Information Technology engineer / expert what type of trained manpower have we created so far? The country has spent lot of time and money in Y2K problem. What did we achieve? Couples of questions remain un-answered.

Indian software companies home in on quality assurance: Dataquest, Jan 15, 2000, 59 pp

The quality and productivity of software has been an issue that most IT companies have begun to face. Quality is said to be the driving, force integrating technology, process and people facilitating the company in achieving its goals. Motorola's invention of Six Sigma. Served as the wake up call and made 'Quality Assurance' an issue of concern for most Companies. Six Sigma which focuses on helping organizations improve quality initially attracted the attention of several non-IT companies such as GE, Johnson & Johnson, and Allied Signal etc. IT companies could not ignore the immense benefits derived from quality assurance, and they too joined the bandwagon.

According to a NASSCOM survey, the Indian Software Industry has not only been growing exponentially but has also been moving up the value chain. It says that one of the reasons for the success in software development in India is, the strict adherence to quality, namely reliability, stability and maintainability. As per industry standards, on an average, a company spends approximately around five to ten percent of its overall revenue on Quality Improvement initiatives. It also spends considerable time and effort on process improvements across the organization on an on-going basis.

HR and Corporate Strategy Linkage: Mukund R. Dixit; Vikalpa, Jan-March 2000, 21 pp

In addition to management of information technology, the new environment would emphasize the role of human resource management in creating corporate future. Despite writings on the subject, the human resource development efforts
have remained divorced from corporate strategy, strategic initiatives like expansion, internationalization, attacking new customer segment, new quality initiatives, new technological collaborations, divestment, and downsizing are announced without worrying about their implications for human resource management. As a consequence, HR managers became the receivers of the decisions and came under pressure to respond through quick recruitment, hurriedly drafted employee communication initiatives, and instant training programmer or design of an incentive programme. The HR executive's response was; "If only I have been a part of the strategic decision-making processes, I would have prepared myself better or suggested different alternatives." The issue, therefore, is how can strategy-making relate to HR? The other question is "how can HR initiatives relate to strategy?" In the wake of several management innovations, HR managers have brought in new appraisal systems and potential discovery processes. "What are we doing to harness the potential?" is not asked. Can HR initiatives be planned to respond to strategy concerns? For example, being flexible to respond to environmental change is a strategic concern. Can the multi-skilling training programmes, participation in inter-functional and inter-business task forces, and job rotations be customized for the corporation and aligned to this concern explicitly? The next equally important question is the extent to which corporate strategy has created opportunities for harnessing the flexibility of people.

A crucial HR concern is: as talents get attracted to fast growing and more lucrative industries like software, e-commerce, retailing, etc., what are the HR initiatives needed to attract, motivate, retain, and enable human resources to contribute to strategic objectives of the corporation? The associated questions are: Is our organization continuing to attract the same kind of talent as before? Are we required to change our recruitment process? If yes, is the quality of our manpower diluted? If yes, what are the compensating mechanisms to add value and raise the standards? Alternatively, are we discovering something more useful in the new recruits? Have we made a conscious effort in this direction? Are we tapping what we have discovered? A related issue is the reward for
contributions to the achievement of organizational goals. The search for innovative ways of rewarding and retaining contributors needs to continue to engage the attention of the HRD professionals. The emphasis should also be on creating a work environment where every team and individual could contribute his or her best voluntarily.

Complexity To Ubiquity: Dataquest, Jan 15, 2000, 77 pp

The information technology (IT) industry has been a history of shakeouts since it began. And it has always been a shakeout of standards. Standards for uniformity in computing. Standards to enable communication between entities. The PC revolution sets the ball rolling for the former in the early 80s. And the more recent Internet revolution sets the stage for the latter. Thus the IT industry has been a history of more paradigm shifts, or rather, more frequent paradigm shifts than say, the auto industry, which is the oft-repeated comparison. But the end result is very clear: It is the user who is becoming more and more powerful.

If one views any industry in that light, then one would understand that the end result has been the same. The frequency of developments becomes faster and faster and the market races, to be more and more mass oriented. And when a technology become Mass market. It is the market or the users who start dictating the nature and extent of developments that are carried out in the industry.

Wanna Job? Go to a Mela!: Amandeep Nurala; Indian Management; Aug. 2000, 35pp

The recent increase in demand for IT professionals in India has made an already had technical manpower situation worse. The present Dotcom frenzy in particular and the upbeat IT outlook for the near future in general has given rise to salary packages that may be unsustainable in the longer term though there is no escape from it now.
The unrealistic salary expectations coupled with massive opportunities have resulted in a high employee turnover rate of around 20-25 per cent in the IT industry. This causes not just disruption in work schedules but also results in high costs of finding replacements and time-loss, which they can ill-afford. With thousands of IT education institutes churning out semi-trained IT professionals, it is a nightmare for the HR manager to cope with the demand and separated the grain from the chaff.

Given the light labour market for IT professionals, the HR manager's job of finding the right candidate quickly and cost effectively is indeed very difficult. The need of the hour is therefore a recruitment tool that complements the therefore a recruitment methods walk in interviews, advertisements, placement agencies - to solve the present problems faced by recruitment managers.

What are the problem areas?

1. High recruitment costs - placement agencies charge between one and three months salary of placed candidate as placement fee.
2. Time consuming.
3. Inability to plan effectively for future manpower demand.
4. Low job retention rate.

What is placement fair and how does it over come these problems? Placement fairs are fair? with a difference the participants are IT companies and IT candidates. And on offer are IT vacancies. IT professionals, seeking job opportunities will be invited, thus making such fairs an opportunity where prospective employers and hopeful candidates assemble under one roof with the common objective of IT recruitment.

Typically, the Fair is organized in the convention hall of a five-star hotel or any other easily accessible and suitable area where companies are assigned a booth each that is manned by the HR personnel of participating companies. Candidates simply walk in, submit their resumes to the companies of their choice and can be
interviewed them on the spot. The organizers sometimes provide a facility for computer testing.

Role of Service Sector in Our Economy: R N Mishra; Indian Management, July 2000; 33 pp

There was time when we believed that the industrial revolution was the only solution to the problems of poverty, unemployment and other ills of society. Now however the service sector promises to fulfill the task. Services touch the lives of every person every day whether it is in the field of Foodservices, communication, leisure services, emergency services, to name only a few. Our welfare and the welfare of our economy are now based on services. Services lie at the very hub of economic activity in any society. World War II marked a milestone in the explosive rise of service industries. Throughout the second half of twentieth century services industries have attained considerable growth in most Western nations. After Green revolution and Industrial revolution the next possible popular revolution will be in the field of service sector. In Green revolution the man learnt to use, exploit and interact with nature (land and natural resources) In Industrial revolution man learnt to use, exploit and interact with the equipments and machines for development. Here man learnt to use, exploit and interact with other man made resources for development. No wonder that service sector will be the biggest driver of new economic growth and profit earner in the new millennium for the world, in general as well as for India in particular.

HR Strategy for Competitive Edge: S K Mishra; Indian Management, May 2000; 22 pp

A systematic attention towards human resources is the only way to increase organizational effectiveness in terms of productivity, quality, profit and customer satisfaction. This could be done only with proactive human resource development (HRD) strategy. It is HRD, which can set multiple goals requiring
the employees to have a number of competencies, knowledge, attitude, and skills in technical, managerial, behavioral and human relation areas.

Their role becomes crucial in an era where the nature of job is constantly changing with the profile of fellow employees, subordinate, boss and Colleague, etc. shifting by the day. Under such circumstances competency development and matching the jobs win skills becomes a major task. HRD does this through constant interaction with their peers, by constantly improving their skill sets, by creating competitive work environment and by providing incentives for competence. This HRD could do based on a sound network within the organizations between departments and planning and designing new methods and systems for organizational development to strengthen the HRD climate.

Learning to Learn: Knowledge Management: Dr. Nimit Chaudhary, Dr. Bhagyvati P Sarswat; Indian Management, April 2000, 30 pp

Globalization and increased competition also gives rise to new "solutions such as Business process reengineering, Total Quality Management, Kaizen etc. To paraphrase, Abraham Lincoln "the dogmas of the past are inadequate to the stormy present. The occasion is piled high with difficulty, and we must rise to the occasion. As our case is new, so we must think anew and act anew" we have the motivation to find the ways. In the face a complex dynamic environment the organizational survival hinges on adaptation. Survival and human competence. The ability to co -wiinate information technology and creative and innovative ability of human capital alone would make a difference between success and failure of any organization. The advent of new technologies, such as data warehousing, data mining, intranets, internets, video conferencing, web casting, etc. are changing the shapeA of business investment in IT.

The information era is marked by reality predictable change, the pontification of technology gurus, the hardware and software providers and networking. The out of box solutions offer the ways and means for storing the predetermined
solutions based on pre-defined parameters. The simplicity stated above is deceptive. The managers have become more and more information and advanced decision makers more informed or in some way enhance their ability to take decisions.

Training Dimensions of the Electric Age: Dr. F L Lobo; Indian Management, Oct. 2000; 65 pp

The impact of electronics on all aspects of living and the explosion of opportunities raises many issues for those involved in education. Training and development be the parents. Students, teachers or trainers. Where do we start, on what aspects do we focus, how do we prevent obsolescence, what about the future?

The training scenario can be divided into three main Zones:

Training in the development of the tool for use, the technical training in hardware and software training in the application of the tools, the operations and the managerial aspects.

Training in electronics as the diverse subject in other disciplines, e.g. electronics as the media for communications, entertainment, and education.

The first type of training is to develop professionals in electronics and computers. The other two types of training are required by professionals in other areas be they engineers, lawyers, teachers or doctors. Electronic and computer literacy, however, are essential for anyone who wants a decent standard of living in this modern world.

Challenges In The Millennium
With globalization, the IT industry today ceases to remain within any boundaries. Wherever one operates, global competition exists. The industry is characterized by shortening product life cycles. As a corollary, manufacturing has assumed a different significance in enabling organizations to compete effectively. And in order to succeed need to prepare themselves for the changing realities in the business environments.

The global IT environment has undergone a huge change in character. It is estimated that there are more IT appliances in the world today than people!

Internet has brought with it communication and transaction capabilities which were unthinkable a few years ago. And it is not just a business phenomenon but also one that has invaded the home.

Looking ahead the new value proposition is to move from "machine power" to "brain power" and leverage all the changes in the global environment to business advantage. With the value opportunity shrinking in production, organizations must move up the value chain to focus on value creating activities. The biggest areas of opportunity are now around the input and output to the manufacturing function-specifically in design engineering and marketing-sales. Owning design in product or processes and building a dominant brand have become the biggest opportunities to add customer value and hence organizational competence. Even in the supply chain of. Which traditional production has become a part, the value adding elements are efficient order management, vendor management to increase value-add time and logistics. And lastly enhancing the flow of information to the customer ten-fold will be a key proposition in earning a satisfied customer base. If there were 5 key success factors for manufacturing in the millennium, they would be:

Web based ordering systems
Customer auto-configured products
Assembly-to-order
Strong vendor partnerships to enhance value-add time
Assembly closest to point-of-sale for flexibility and cost efficiency

In a nutshell, the only business model that is relevant for the future is the one that is best at maximizing value creation. Manufacturing is now the thinnest slice of the value creation processes. The future is not just about size or economies of scale. It is all about value addition. Value addition rather than activity is the key to success in business.

India is also recognized as being very rich in human capital and has a demonstrated an ability both in professional and entrepreneurial terms, to be a strong member of the global IT industry.

Management Challenges by 2000 AD: Dr. A M Shaikh; ISTD Journal, July-Sept. 2000, 55 pp

Management Practices and Approach:
Organizations cannot respond properly to the challenges ahead if they rely on the management practices of the past. The old sluggish ways of doing business will not work in future. The success of organizations in future will depend on fundamental changes in management practices and approach. Management in future will be required to assume more active, growth-oriented and a creative role and not a routine role. There will be an increasing need for a flexible innovative and rational approach to management. This calls for development of effective management systems in our organizations for facing the challenges ahead successfully. Effective management system brings a degree of order and consistency to key dimensions of the organization. With it complex enterprises of future will become chaotic in ways that threaten their very existence.
Management will have to do many things to develop effective management systems in their organizations and make them successful enterprises of future. First of all, management should be willing move far beyond the issues on which it can claim expertise it should realize that its expertise is based only on the past
and it should be willing to debate about the future as equals not an omnipotent judges. Then management should analyze every aspect of how organization works, cut away bureaucracy, unnecessary levels of management and restrictive work rules. Classical, hierarchical layered systems of control and management needs to be replaced by flatter organizations. Corporate objective; and values must be understood and accepted right through the organization. Old ideas about the simplistic man-machine-money structure of business have to be eliminated and efficient wealth creation accepted as the kernel of modern business.

Management should focus on processes rather than on structures. Processes which add value must be retained while those which do not be unproved or eliminated. Management must emphasize psychodynamic quality of employees rather than their abilities and, skills; on creativity rather than on mechanical task; on organizational culture rather than material worth; on greater answerability to society as opposed to shareholders alone. Further, management must continuously review existing product lines and locus sharply on improvements. This allows the company to remain fresh and vigorous in the market place rather than becoming prematurely stale and stodgy. The chief priority needs to be firming up the base by adding new features, enhancing quality, advertising more broadly and cementing a market niche.

Traditional management has embraced a controlling philosophy being cautious of taking risks and emphasizing prevention of errors. This approach needs to be changed. Management should develop a new environment in their organizations in which risk-taking is encouraged in an experimental fashion and errors are errors as learning experiences. Corporate culture must permit failure, otherwise managers will not try aggressively to success. In Telco there is a licit assumption if a manager does not make a major mistake in five years, throw him in TISCO and NFLa mistake costing crores of rupees may be tolerated provided not committed in consciously and occurs despite the best intention of the concerned person. Management of these companies realize that the mistakes are the inevitable byproducts of innovation. This kind of environment encourages management members to develop more confidence and attitude of risk-taking.
and courage to go beyond the limited responsibility of their role. All our organizations need to develop this kind of climate for future success. Similarly, employees are to be seen as key resources, which are to be carefully nurtured and constantly developed. In future how management used and involves its employees will determine business success. The extent of an employee's contribution depends on sense of Commitment and belonging to the organization and on the challenges, excitements and the opportunities that the organization provides to those who work in it. To get the best out of its employees, the management must first create a culture -- which individuals identify themselves with their organization and find it psychologically rewarding to confront proceeds and discover solutions for them. Therefore, management will have to place more focus on developing a work climate. Which can motivate the employees for there better contributions and commitments In this context, it is necessary that employees should be implicitly trusted, respected and encouraged lo use their creative potential. Their legitimate demands must be continuously reviewed and fulfilled. They should be directly involved and empowered. Decision making powers must be pushed down to the lowest practical levels so that those closest to the problem can generate line-solution Empowerment will bring along the spirit of taking risks and enjoy of winning. Moreover, future prosperity and growth of employees should be linked to the organizations prosperity and growth. The system must automatically ensure that they get a fair share of the benefits of increasing productivity and prosperity of the organization. The System that encourages employees to give their best should be introduced.

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Past and Future: Transformation of the Human Resource Function:
Human resource management as a function of management has come a long way. People trace its history back to before 1900(Jacob. 1985) i.e. even before Taylor and Fayol evolved their management thoughts. Buts its status grew
during the 1930's and 1940s largely because of the wartime labour shortage, the union threat, and the need (in many companies) to adjust to being thrown out. Then it matured as union-management relations and become routinized (Strauss. 1996:26).

Looking at HR function (Ulrich 1977:6) argues that we should look at it keeping in mind the future rather than investigating its past. Tracing the evolution of this function, he concentrates on the developments that occurred during the last 40 years. He identifies each decade with a new set of HR tools as follows:

1940s-Labour Relations and Staffing
1950s-Training
1990s- -Mergers, Acquisition, Downsizing, Diversity.

In India, however, the history of the personnel function is not so long as in the developed nations. The Tata Iron and Steel Company (TISCO) was perhaps one of the first few organizations to establish personnel function in the year 1947. Gradually, a large number of large- and medium-sized companies set up separate personnel departments. Most of the Indian companies now boast of giving a good deal of attention to the HRM function, in actuality, however, they still have the traditional administrative anchoring with some cosmetic design. However, these companies are not averse and skeptical to term "HRM" as most of the companies feel in the UK. As in the UK, less than one percent of workplace managers responsible for the management of Human Resources had adopted the title of human resource manager according to the 1990-workplace industrial relations Survey (Guest and Hogue. 1993). It is surprising to note that in U.K. "companies have approached the issue tentatively rather than throwing all caution to the wind and embracing HRM wholeheartedly" (Guest, .1996: 22). Undoubtedly without saying that HRM can have a positive impact on
organizational performance. But as long as senior managers retain their short-term perspective and display limited enthusiasm for any notion of a consistent strategy, it will remain a subject of fads and fashions and a focus of justifiable skepticism (ibid. 1996: 23).

Commenting on the state of HRM function in the US, Strauss (1996: 26) Notes that HRM there are used in a broader sense encompassing employment relations generally, rather than in a more restricted sense, somewhat common in the UK, as a managerial counterpart of that chasm. He finds HRM philosophies of high commitment and lean-mean as somewhat conflicting. Commenting on HRM, He observes as follows:

A major drawback of high commitment programmes, from management's viewpoint is the expense of guaranteeing job security and the inflexibility this causes. Strong economic forces require employees to be more flexible. Contingent ones are replacing career employees. As a form of motivation, performance based pay and fear of discharge is displacing organizational commitment (but let's not exaggerate the extent to which organizational commitment ever existed in large companies). Workplace employee involvement such as teams may continue in "lean and mean" companies, but broader forms of participation, such as unions are out.... There will be fewer permanent jobs and greater mobility and insecurity. HR departments will continue to perform a significant function, but they are unlikely to follow a single set of policies to play a major role in setting corporate strategy (ibid. 1996:47-48)

This dilemma before HR managers is not limited to the US only but is a cause of concern for HR managers worldwide. In tomorrow's organization loyal, committed and involved employees will be the determining factor in its success and survival. Human capital has become an ongoing investment whereby employees are constantly learning. Unlearning, changing, adapting and reinventing themselves for super ordinarily organizational goals. Adaptability of organization has never been more important than it is today. In this Background, the HR function has to play a catalytic role in building and facilitating this kind of work environment in the organization.