Abstract

The software exporting industry in India has several distinguishing features – its high degree of integration into the global economy, relative freedom from state controls, and dependence on a steady supply of highly educated 'knowledge workers'. From the point of view of labour relations and the workforce, the industry is distinctive in its apparently employee-friendly HR policies, put in place largely because companies have to compete with each other for a small pool of well-qualified employees. The software industry also claims to be woman-friendly, and in fact computer programming is a more attractive option for female graduate engineers than many 'old economy' jobs, as a result of which a large number of women have entered this field. Many software companies pride themselves on their enlightened HR policies, coupled with strong claims about equality of opportunity and meritocracy that are supposed to give equal opportunity to women. Yet the objective conditions of work in the software industry present greater obstacles to women than men: long working hours, the high pressure work atmosphere, and the necessity of frequent travel abroad force many women to drop out of the industry or to stagnate. HR managers and corporate leaders fail to recognise that although they might treat women employees on par with men and even provide special facilities (such as crèches) to cater to their needs, women still live in highly unequal domestic situations which make it difficult for them to manage such high pressure jobs. The problems faced by female software engineers stem from a larger labour issue that affects both men and women in the industry: the profitability of software companies depends on extracting the maximum work out of employees, and companies are not answerable to the state or to unions. As a result, they are able to claim that they treat their employees better than any other industry and well above standards set by law; while at the same time engaging in what could be called super-exploitation of labour. In addition, despite the entry of a number of women in this sector, information technology is still a male-dominated industry, and in many companies a masculine culture has developed that tends to exclude or marginalise women.

Introduction

This paper is based on an ongoing sociological study of the Indian IT/ ITES workforce in Bangalore and abroad.[1] The study focuses primarily on software engineers, who constitute a new kind of global technical workforce (usually referred to as 'knowledge workers'), in that they are highly educated, well paid, mobile, and work primarily within the global rather than local or national economy. Most Indian software companies are global workplaces that operate through dispersed and virtual systems of organisation and communication on projects outsourced primarily by companies in the west. One aim of the study is to explore the ways in which sociality, culture and identity among software engineers are being reshaped by the nature of the work and the workplace in the software outsourcing industry. Gender issues and changes in gender relations are among the many aspects of the IT phenomenon that we are studying.

Overview of work in the software outsourcing industry

The software outsourcing industry (commonly referred to as the 'IT industry') in India dates to the late 1980s, but its growth really took off from 1995 due to liberalisation and improvements in the telecom infrastructure. India has become an important player in the global software outsourcing business, with a compound annual growth rate of about 50 per cent during the 1990s. The IT sector is also the poster child of the liberalised Indian economy – a glamour industry closely linked into the global economy as well as the fastest growing sector of the economy, with total export revenues of $13 billion in 2003-04.

Work in the software industry ranges from relatively 'low end' software services to 'high end' software solutions and products. Although Indian companies are increasingly moving towards higher-end work such as design, the majority of work still remains at the lower end, consisting of coding, testing, and maintenance. The relatively new IT enabled services (ITES) sector is usually lumped together with software, but it is a very different kind of business with a distinctive workforce. Within IT, however, there is also a large 'informal sector', which would include contract work, small DPT/ Xerox shops, and internet cafes.

Most of the Indian companies focus on software services outsourcing, and most of their clients and customers are located in the U.S. and Europe, while the software development centres of multinational companies mostly work on products as well as embedded software for non-computer products. There are a few very large players, including Infosys, Wipro, TCS, with workforces of 15,000 and more, a number of medium size companies employing 500-1000 (many of them are the MNCs), and a large number of small companies with less than 100 workers. Bangalore is a major centre of global software outsourcing and other IT-related services in India, with at least 600 software exporting and other IT-related firms.

The most important resource or input required for the software production and services industry is the availability of a flexible pool of educated technical labour, which in India is supplied primarily by the engineering colleges. The major advantage that the Indian IT industry has had, and continues to have,

in the global market is the difference in cost of labour, compared to the U.S. or Europe. Although the salary gap is now narrowing and there is increasing talk of 'quality' rather than 'price' as India's selling point, the fact remains that MNCs would not be setting up development centres here, and American companies giving contracts to Indian software companies, if it were not significantly cheaper to outsource the work.[2]

The labour market: job security and mobility

The current official figure for number of software engineers (and those working in other IT-related occupations, but excluding the 'informal sector') in Bangalore is about 150,000 (plus about 30,000 ITES workers), and about eight lakhs in the country as a whole (including ITES employees). But these figures are probably collected only from registered companies, and exclude the uncounted hundreds of contract and informal sector workers in this industry and those working in very small companies. As is the case in the U.S. and Europe, women are under-represented in the IT industry in India. According to NASSCOM figures, women constitute about 23 per cent of the IT workforce (NASSCOM 2004).[3]

By and large, software companies recruit only engineering graduates, but there is a wide range in terms of competence and ability to compete in the job market among these graduates, depending on which college they attended.[4] As more and more women are opting for engineering degrees, the gender ratio in the pool of potential IT hires is increasing. While IT companies generally prefer engineering graduates, they also sometimes hire those with computer science degrees such as MCAs (Master's in Computer Applications).

For the established software companies, Indian as well as the MNCs, it is a seller's market for software engineers: these companies have difficulty attracting and retaining the 'right' kind of employees, and their major HR problem is the high attrition rate prevalent in the industry (now around 10-15 per cent). Employees are continually looking for new opportunities, because many believe that the only way to move up to a more responsible position or get a higher salary is to change jobs. It is not uncommon for engineers to switch companies every two to three years. While HR managers bemoan the fickleness of software engineers, from the point of view of employees jobs in IT are notoriously insecure – people are liable to be laid off or transferred at any time, in response to downturns in the economy, the loss of a customer, or closure of a project.[5] Job insecurity for software engineers is exacerbated by the policy that many companies have of shunting out the bottom 5-10 per cent of the workforce (based on their performance appraisals) each year. All this makes for a very fluid job market, with software engineers continually floating between jobs and companies competing with each other to attract personnel. Software engineers are regarded by companies as replaceable commodities, and it is significant that they are usually referred to as 'resources'.

Apart from job mobility, there is also a high level of geographical mobility in this industry. Workers tend to go where the jobs are, rather than settling down in one city and then looking for work there. In addition, employees are liable to be shifted between different centres, and those in service companies may be sent abroad at frequent intervals for 'on-site' assignments, despite

the increasing trend towards offshoring. (Earlier much of the work was done on site, hence the term 'body shopping', but with improved telecom infrastructure and increasing restrictions on visas, more and more work is being done in India, or 'offshore'.) Indian software services companies still have a fairly high proportion of such onsite work, in which engineers are located at the client site for stints of a few months to more than a year.

Due to these factors, IT workers tend to be highly itinerant, unable to put down roots in one place, at least during the early years of their careers. The workforce itself is quite young (the majority being less than 30, with a median age of about 27), in tune with the recent origin and rapid growth of the industry. As a result, a large proportion of IT professionals are young unmarried men and women, whose single status enhances the much desired 'flexibility' of the workforce. As they grow older, get married and move into managerial positions, IT workers (especially women) look for more stability in their jobs, creating a potential source of conflict with their employers. However, the shift away from onsite work to more offshoring means that the nature of the linkages between Indian IT workers to the customer or parent abroad is changing, away from the movement of people to the movement of 'knowledge', or software products and services, using new technologies and complex dispersed forms of organisation. This change may reduce physical mobility in the industry somewhat, but it has given rise to a new set of issues in the workplace – especially what are perceived as cultural and communication issues between Indian IT workers and their American/European customers or counterparts. The increasing demand for good 'soft skills' among engineers has implications for the gendering of work.

Gender-related HR policies

As noted above, women are under-represented in the software industry. The major determinant of the adverse gender ratio appears to be the availability of female graduate engineers. As more girls are opting for engineering, this ratio can be expected to increase – but the many factors that still inhibit girls from taking up science and technology courses are not like to change drastically in the near future. Some managers claim that they have been trying to improve the gender ratio in their workforces by formulating 'woman-friendly' policies, such as options for part-time work or working from home, provision of crèche, and so on. All companies give three months' paid maternity leave as mandated by law, with an option for a further three months' unpaid leave. Several companies have instituted special programmes or organisations aimed at mentoring women and addressing their specific issues. In general, software companies claim to have very employee-friendly HR policies, but these are put in place largely because they are competing with each other for a small pool of well-qualified employees.

The official line of software companies is that that their hiring and promotion practices are gender neutral, and that the proportion of women (ranging from 15 to 25 per cent) reflects the proportion of women graduating from engineering colleges. However, married women with children may be discriminated against even at the hiring stage: an HR manager at a multinational software centre said that during the interview they ask questions such as how she will manage her domestic responsibilities, whether there is a support system at home, and so on. Apart from the low gender ratio in software companies, women tend to be over-represented in the lower level

jobs such as programming and testing, and under-represented in higher level and managerial jobs such as architecture, consulting and project management. The reasons for this are discussed below.

The context of software work: work culture and management systems

Gender issues in the software industry need to be understood within the context of the distinctive work culture and system of management that have developed in this sector. IT companies appear to have highly enlightened managements, and HR executives and other top managers espouse all the politically correct ideas about having a gender-neutral and woman-friendly workplace, providing equality of opportunity, non-discrimination on the basis of gender, and so on. However, there is a gap between official company policy and actual practice and the experience of women – and this is true with regard not only to gender but also to broader employment and management issues.

Corporate culture and 'normative management'

On the surface, software engineers appear to be the most privileged workers in the country: the physical environment in the workplace is equal to that in any American or European office, they have much higher salaries than those with equivalent qualifications working in other sectors, and they are offered a variety of facilities and incentives, from employee stock options to in-house gyms and crèches. As noted above, high attrition rates have prompted IT companies to institute what they regard as employee-friendly policies. In addition, they claim to have put in place American-style or international systems of management, and they pride themselves on having more 'democratic' and 'open' work cultures, compared to the rigid, authoritarian and hierarchical cultures supposedly characteristic of 'traditional' Indian companies.

Following the dominant trend in management theory during the last couple of decades, Indian IT companies have moved away from direct forms of control/authority and hierarchical bureaucratic structures, towards indirect and 'moral' or 'normative' management techniques (Kunda 1993) and 'open' and flexible structures. The concept of 'corporate culture' has been central to this movement – corporations deliberately 'manufacture' their own cultures to create a normative context into which employees are indoctrinated in order to induce loyalty to the company, control behaviour, and motivate employees to increase their productivity. Rather than driving employees through external structures of reward and punishment, the 'culture' itself is supposed to motivate and control them. Thus, the 'new workplace' entails new systems of control and surveillance that are all the more insidious for being somewhat invisible. These include the internalisation of work ethics (especially the widespread acceptance of long working hours and working against deadlines), enforcement of discipline through peer pressure, and subtle 'cultural' control over the work process. In a successful 'normative' system of management, employees are so inculcated with the dominant values of the company that their motivation to work comes entirely from within. For instance, workers are made to feel personally responsible for finishing their tasks on time, even when faced with impossible deadlines, and they are driven by competition

among themselves as well as the desire to be 'visible' by working longer and harder than others.

Cultural control over the work process is implemented largely through the organisation of employees into 'teams' -- a key feature of work in software companies. Linked to team-based organisation is the high value placed on 'teamwork'. A team usually consists of 10-12 employees, led by a team leader, and several teams together usually work on a project, led by a project manager. This mode of organisation is ubiquitous in software companies, even on projects in which there is no clear cohesion or need for cooperation among members of a 'team' in terms of the actual work to be done. Because the logic of team-based organisation does not flow from the organisation of software production itself, one must assume that it has a different function – that of normative as well as direct control over the workforce and the work process. Although corporate spokespersons and employees alike stress the informality of relationships and management style in the workplace, team-based organisation and normative management produce a subtle yet insidiously coercive system of control. Also, teamwork tends to foster competition rather than cooperation, as it is supposedly designed to do: individual team members are assessed on the basis of team performance as well as their own, which leads them to put pressure on one another to complete the work in time, but they are also assessed on their own performance, which drives them to compete with one another. Team-based organisation also produces conflict between the individual employee's aspirations and the company's need to extract the maximum profit from his labour.

While peer pressure and corporate culture work together to keep the worker's interests 'aligned' with that of the company and to drive productivity ever higher, software companies have also brought in more direct methods of control due to the trend towards standardisation of software production. Because Indian services companies aspire for international quality certifications such as ISO 9000 and CMM Level 5, the industry is becoming increasingly 'process-driven', making everyone from managers to ordinary coders subservient to the requirements of CMM and other such processes. These entail a rationalised and rigid process for the division and allotment of work, the setting of specific productivity goals for each worker on a daily basis, and detailed monitoring, measuring, reporting and evaluation of work done (coding, testing, and other such tasks). Apart from reducing software production to a highly routinised and mechanical process, these systems put additional pressure on engineers, who must meet their production goals in order to maintain their individual and team ratings. While not all companies, or roles within companies, are so routinised, it is a growing trend that puts additional pressure on individual workers to perform.

'Time slavery'

A key feature of the 'culture' of the Indian software industry -- one that helps these companies to maintain a comfortable profit margin -- are the long hours routinely put in by software professionals, or what one of our respondents called 'time slavery': 10-12 hours is an average workday, and it is not uncommon for employees to work up to 14 hours when faced with a project deadline, or even to stay overnight in the office (known in the industry as a 'night out'). Often they work on weekends as well. Long working hours are

central to the industry's 'work culture', and it is taken for granted that employees will stay in the office at least till 7.00 or 8.00 in the evening (although often they come in only at 9.30 or 10.00 a.m.). In part this is due to the time difference between India and the client site, such that conference calls tend to take place in the evening when the working day in the U.S. begins. These extended working hours are legitimised by the common management practice of 'flexi-time', which in theory gives the employee freedom to choose his or her working hours but in practice means that they have to work as long as necessary to finish the task at hand. Although most companies claim to have some sort of flexi-time policy, they also usually have 'core hours' when everyone has to be in the office, and some also have fixed times for coming in (but not for leaving). In essence, this allows employers to squeeze the maximum work out of employees while representing their HR practices as being unusually liberal, democratic and generous.

Apart from the need to attend evening conference calls, there are other reasons for the IT industry's long working hours. First, overwork is built into the structure of outsourced projects themselves. When providing an estimation of the time a project will take, on which basis the costing and billing are done, companies are supposed to estimate based on an eight-hour day or forty-hour week. However, the actual estimations presume longer working hours, even if they are not reflected in the project document. They many also underestimate the number of days the project will take, in order to keep the costs down and beat the competition – and even if they have not done so, the project schedule may get disrupted due to miscalculation. As a result, the engineers have to put in extra hours and days in order to meet the deadlines, which are usually unrealistic and are rarely flexible. The rhythm of work is regulated by the tyranny of deadlines and project timelines: engineers are always struggling to meet deadlines that have been set by someone else. Overtime is of course not paid extra – long hours are considered to be compensated by the high salaries in this industry. While most HR managers acknowledge that these long working hours and high stress lead to burnout and contribute to high attrition rates, and several companies have undertaken initiatives to control this problem, this pressure is built into the structure of software contracts themselves.

Even when there is no real work pressure, engineers tend to stay in the office till late either due to peer pressure (everyone else is doing it), or to their desire to show the boss that they are working hard – it is commonly said that no one wants to leave the office before the boss does. Also, many software engineers are young unmarried men who come from outside Bangalore and share rented accommodation with a few other bachelors – they have nothing to go home to, and if they stay late in the office they can chat online or with their colleagues, have their dinner there, and then go home to sleep.

The structuring of work in the software industry and other factors mentioned above create a pattern of overwork that is justified by management in terms of the individual motivation that is supposed to be produced by a strong corporate culture. Industry spokespersons claim that IT professionals are strongly motivated to perform, and that there is an intrinsic reward for good performance. They argue that the software engineer is self-driven and therefore you cannot impose fixed working hours on him. Although a few companies have tried to limit working hours, it is clear that this pattern of

overwork benefits the industry, which in any case is avidly opposed to any form of labour regulation.[6]

Gender issues in the IT industry

Management practices and the mechanisms for control over work in the software industry are described at length above in order to show why women engineers tend to be at a disadvantage when it comes to appraisals and promotions.

First, many women are unwilling or unable to put in as many hours as their male counterparts, for several reasons. Unmarried women are less likely to be able to stay in the office till late night, unless there is a pressing need, because they may face objections from their parents or in-laws, or social disapproval. While young bachelors find a social life in the office that motivates them to stay late, women rarely become part of this camaraderie, and in fact the men might find women's presence to be a drag. Also, women need to reach home safely (although companies usually arrange for drops in the night). Married women face additional constraints in that they have domestic responsibilities (from which married men usually escape) that require them to leave at a reasonable hour. Finding an adequate support system for children is a major issue for women: apart from long working hours, many spend at least two hours commuting, which means leaving children for ten to twelve hours a day. A senior woman executive acknowledged that the long hours typical of software companies are most stressful for women, especially those with young children.

Because of these constraints, when there is work pressure or an urgent deadline to meet women are often faulted by their male colleagues for being unavailable or not pulling their weight in the team: the perceived unwillingness of women to put in the required work in such a high pressure job produces resentment and a tendency to marginalise women in terms of allotment of work. Data from one study indicate that women indeed put in fewer hours than their male counterparts (Rothboeck, et al 2001:45), but this could be an artefact of the differential distribution of men and women in different types of work. Men in all male teams have been known to protest when there is talk of recruiting a female engineer for the team – they believe that this would not only bring down the performance of the team, it would also spoil the working atmosphere of male camaraderie and general informality, in which off-colour jokes, for instance, are permitted. The system of control through peer pressure within the team can be turned against women, who any case are in a minority, producing subtle pressure on them and marginalising them when they do not come up to the expectations of other team members. For instance, the allotment of work within the team is done by the team leader through a process of negotiation with the engineers: women may be given less responsible tasks because they are perceived as unable or unwilling to handle more difficult jobs.

Another impediment to career growth for women is the requirement for frequent travel and short and long-term stints of onsite work. While unmarried women usually accept onsite assignments eagerly, and one finds quite a few women working abroad along with their male colleagues without

much difficulty, married women prefer not to take up these assignments due to domestic or other pressures. While an engineer cannot be forced by the company to go onsite, such refusal does become a black mark on her record if she consistently refuses these assignments, and this in turn will affect her growth.

Interruptions in women's careers due to childbearing have particularly adverse effects on their growth, given the rapid changes in technology and the need to keep abreast of new developments. Most companies give three month's maternity leave with the option of an additional three months' unpaid leave, and some offer women the option of returning to work after maternity leave on a part-time or consultancy basis, or may allow them to work from home, for a year or more. Some companies even allow women to take leave without pay for a year. However, such measures provide only temporary respite to the problem of juggling childrearing with work. Even though some companies provide crèches, we found that most women do not avail of them but prefer to make their own arrangements for childcare at home or at a private crèche – often because of the long distances they have to travel to work. In a high-pressure job such as software development, women with young children often find it difficult to cope and end up leaving employment.

Women also often find it difficult to make up for the loss of experience and learning during this period, and maternity leave can cause a major setback to a career. A 29-year-old female software engineer in an MNC, who was married a year ago and is now expecting, said that she is planning to take six months' leave, including three months without pay, although she is adamant that she will return to work. She agreed that this decision would affect her career growth:

> Yes it surely affects it. Taking a gap all of a sudden will affect your career. Promotions are due in April. When they draw objectives for the new role, what will they be able to do with me? If it is a long-term project, it is okay. But we only have short-term projects. There will be performance review in January. I am planning to go back only in November or December. How can they assess my performance if I have worked only for a month? I surely will have forgotten many things when I go back. There will be another round of training. One year will be wasted. But it is the same with all women. I am not an exception.

She also said that her recent refusal to take up an onsite assignment, due to family pressures, had cost her a promotion.

Young IT couples employ various strategies to manage their domestic situation, from heavy dependence on servants and crèches, to reconstituting the joint family by inviting one or the other set of parents to live with them, primarily to provide childcare. But making and maintaining these arrangements often only add to the stress on women. In some cases such couples even leave their children with grandparents in India when they are working abroad. Because of these difficulties, many women postpone having children until they feel they are more 'settled'.

Another factor that affects women's careers is the husband's career. According to HR managers who conduct exit interviews to find out why employees are leaving, the main reason for men quitting is to further their careers or because they are getting better offers elsewhere, whereas women usually leave when they get married, when they have children, or because of the husband moving. When both husband and wife work in IT, the husband's job usually takes priority in case of transfer or overseas assignment, which means that the wife must forego opportunities or else they have to live apart. This asymmetry too is understood by managers as a matter of personal choice:

> Career is more important for men than it is for women. After completing engineering, many women get married and go abroad to join their husband. Every other day, I get requests from women engineers for transfers. They would want a transfer to Delhi, Cochin, etc, because their husbands have gotten a job there. They tell me if we don't transfer them, they would quit. Man's career is more important for our society. Wherever husband gets the job, wife should follow.

The pressure of travel and the long hours that are ubiquitous in software development lead more women to opt for jobs in testing or 'quality assurance', rather than in software development itself. These jobs are considered to be more low-end and are usually paid less, and offer fewer channels for growth, yet women often prefer them because they tend to have regular hours with little chance of being sent abroad. This self-selection tends to push women towards the bottom of the heap in terms of status and earning power, and is producing a pattern of gendering of work in the IT industry.[7] Although one does find many women tech leads, architects, and even senior managers in the industry, the proportion of women steadily declines the higher up the ladder one goes. Due to the same constraints, women engineers tend to stay in the same company for longer periods than men – their mobility is usually constrained by the husband's career and other domestic issues. Given that job-hopping is a primary means of career advancement in the IT industry, this puts yet another impediment on women's upward mobility.

Although some managers acknowledge these structural and social constraints on women's careers in IT, they also retail the politically correct line that "we don't distinguish between men and women in selection or promotions", thereby throwing responsibility back on the individual. In her narrative about the problems that women face in the IT industry, a senior manager in a large software company (who also happens to lead an inclusivity initiative for women in her company), after outlining the constraints on women's mobility that lead to their marginalisation, attributed these problems to inadequacies in women themselves. Elaborating on the faster rate of career growth for men in IT, she said that there is "less ambition in women":

> Although there are some women who are ambitious, men are always more aggressive. Women don't push themselves forward as much as men do. It is a negative point for women. Men want to go ahead in the race more than women want to.

What are clearly structural factors that disadvantage women engineers are often framed in terms of personal responsibility, pointing to the internalisation of working norms in this industry:

> If she is not married, it is convenient to work extra hours. When she sees her peers working for long hours, she too feels impelled to match them. If she does not work for long hours, she suffers from a guilt feeling. She thinks she is not able to work on par with her peers. Sometimes they may just want to quit the job.

This informant at first strongly denied that women are not given responsible tasks by managers, but she admitted:

> However, women don't move up. If you see two people -- one man, another woman -- with eight years of experience, you would see that the man would have gotten promoted faster than the woman. Moving up the ladder is very stressful.

Still, she admitted that managers do discriminate on the basis of gender:

> When there are constraints for women, especially when they have small kids, managers hesitate to give difficult projects for them. If the project requires lots of efforts and time, managers might prefer men over such women.

She acknowledged that this reduces women's chances of moving up the ladder:

> When managers prefer men for difficult projects, women lose out opportunities. Only if you get tough ones, you will prove your worth. If you don't get them, how do you prove your abilities?

Finally, she said:

> Managers also have some amount of preconceived notions about women [notions about women's family responsibilities]. These small things will affect her overall growth. We are trying to bring more gender sensitivity to the culture. But we should not be one-sided. We are also trying to educate women.

This interview has been cited at length because it illustrates the kind of discursive gymnastics through which the IT industry fashions its self-image: while it claims to have highly enlightened and gender-neutral or woman-friendly HR policies and management practices, in reality there are many aspects of IT work that hinder full and successful participation by women. While these factors may be acknowledged by managers, they more often put the blame on individuals or on society at large, and do not see a role for IT companies themselves in creating a more conducive working atmosphere for women (and men).

Networking and managing

Despite the obstacles to mobility mentioned above, a number of women have

moved into management positions in software companies and are leading teams or projects with both male and female engineers. While most men deny that they have difficulty reporting to a woman boss, and women may not face any gender-specific prejudices when managing software projects, gender does sometimes become an issue. An HR manager of a large IT company noted that one reason that some male engineers seek counselling is for "managing gender issues at workplace":

> In IT, the number of women engineers is much lower than that of men. Some people are not used to reporting to a lady boss. Many also do not know how to work with lady colleagues.

However, this informant argued that this issue is not very significant because the number of women who rise to the project manager level is quite low:

> Ladies get married at around age 25. A good percentage of them quit their jobs after marriage, and 25 is too early to reach a project manager position. So many women don't reach project manager level.

This informant pointed to another feature of the work culture that impacts women and men differently – the need to be part of informal knowledge networks within a company in order to be successful:

> Networking is a major issue among women. As soon as they finish work, they go home. There is so much work at home that she will not be able to stay back in the office for a cup of coffee or be able to go out with men colleagues for beer, dinner etc. So she misses out on lot of informal information flows. She would not know what's happening in the industry, what's the inside story. Women are usually not into the gossip circles.

Another HR manager articulated a similar issue in the following way:

> When women enter IT companies, they are mentally prepared to be in the minority. Networking among women workers is also very strong. But guys have a problem and don't know how to deal with women. They find it difficult to develop good working relationships when they are cross-gender.

Although software companies value informality in the workplace, cross-gender interactions are very formal, which means that women may miss out on the benefits of such networking, although they may find other ways to make themselves 'visible':

> Informality of relationship is very rare across gender. When there is a lady boss, there is a clear gap between her and the rest of the team. Ladies also miss out parties after office.

When this comment was put to a senior woman manager, her response was:

> One thing is for sure. We feel that there is lot of ego among men. In some cases I too have seen that. They are not very comfortable reporting to me. Of course it's all in our hands to

> manage it. If you are authoritarian, people don't listen to you. The current generation does not expect authoritative bosses, they want participative management.

Software companies emphasise informal, non-hierarchical management systems based on networks and teams, and depend on the development of interpersonal relationships and 'team spirit' for their functioning rather than bureaucratic structures, yet in their stress on 'gender neutrality' they fail to acknowledge that gender is a primary determining factor in social relationships, which women much more than men must negotiate.

Changing gender relations?

The continuing salience of asymmetrical gender relations among software professionals in their personal lives suggests that gender continues to be a central issue at work as well as outside.

Given the nature of work in the IT industry descried above, it is no wonder that most male IT professionals say that they would not prefer to marry women in the same profession: they are well aware of the heavy commitment of time and energy involved, and prefer wives who are willing to stay at home to look after the family, or who have less stressful jobs. Most women IT professionals, on the other hand, say that they prefer husbands working in IT, because they would be better able to understand the demands of the job. This mismatch between IT women's and men's expectations in terms of marriage is symptomatic of the ways in which gender relations are being altered by the entry of women into this new kind of workforce. Most women expect and desire to work after marriage and to grow in their careers, while most men articulate conservative values about marriage and the family, based on women's central place in caregiving and maintaining the household. Most women engineers value the financial and social independence that they have gained due to their jobs, and are loath to give them up for marriage (which they assume would mean loss of freedom). For this reason, many women are postponing marriage or refusing to marry altogether, while male engineers look forward to having a traditional marriage with a supportive wife who will manage all the domestic issues and childcare.

The gender implications of working in the IT industry go much beyond software engineers themselves, extending to the family: the larger social effects tend to be reactionary because of the large burden that it places on the stay-at-home spouse. One does find many working couples that are rethinking gender roles within the family and have evolved more egalitarian relationships. Nonetheless, most men working in the software industry have substantial support on the home front to enable them to devote the time and energy required to move up the ladder, while most women are hindered by various social and family pressures. The pressure of work in software appears to be reinforcing 'traditional family values', although one does find strong undercurrents of resistance among women.

Sexual harassment

> A major indicator of the nature of gender relations in the workplace is the incidence of sexual harassment. Most HR managers and executives of software companies deny that sexual harassment is a major issue in

their companies. Nonetheless, most of the larger companies have set up committees and procedures to handle such cases in accordance with the Supreme Court directives, especially after the highly publicised Phaneesh Murthy case, and several companies have formulated more proactive initiatives to sensitise employees. However, in the absence of a specific law on sexual harassment there is no real compulsion for companies to follow the Supreme Court mandated procedures or to take action against offenders. Industry spokespersons argue that the industry itself should evolve a common code of 'best practices' that would provide a framework for dealing with this issue. But at present, it is up to individual companies to establish and enforce a policy on sexual harassment.

Major IT companies do have procedures in place to handle complaints, but as several spokespersons admitted, they usually end up in a grievance committee and there are no set norms for punishing offenders. One executive said, "If it is a one-off case and the accused is really repentant, we let him go. We give punishments depending on the level of misbehaviour". In many cases, the complaint never even makes it to the committee – it is hushed up, the accuser is paid off, and the offender (usually a manager, or someone senior to the complaining woman) remains in his position. However, at least one of the software majors has come out with an anti-sexual harassment initiative, through which they try to create sensitivity and awareness on the issue through induction programmes and other activities, including special orientation sessions for women about their avenues for redress. The coordinator of this initiative said that after four years of functioning, women are starting to come forward with complaints:

> It has not happened overnight. It has taken a long time for women to break social barriers and come out with complaints. Earlier retaliation and confidentiality issues were inhibiting women from coming out with their complaints in the open.

She said that their committee had handled a number of cases, from

> … simple cases to complicated and extreme cases. The complaints ranged from keeping objectionable pictures on the desktop, to calling for dates, sending objectionable matter over emails, and so on.

But she maintained that the situation is "not alarming", and that the pressing need is to create awareness of what is inappropriate behaviour and that such harassment is punishable. "Many times it is innocent. He assumes that the girl likes him." Most managers take positions such as the following:

> Though there is no sexual harassment in the strictest sense of the term here, techies show immaturity as they are very young. They could be using objectionable wallpapers or screensavers without realising that this would create a hostile environment for fellow employee. Ninety per cent of these cases are unintentional to start with.

Still, this informant admitted that most incidents take place between managers and subordinates: "Sexual advances are usually not from the

software engineering category. It's only from the senior category." Punishments in this company have ranged from termination to a simple apology: an offender may not be given onsite assignments, or his promotions held up, or it might adversely affect his appraisal.

Although industry spokespersons deny that sexual harassment is a major issue (it is said to be more rampant in BPO companies), the Labour Commissioner's office has received a number of complaints from IT employees. However, it does not have the power to act on such complaints, unless it is a police case. The Labour Department does not conduct inspections of companies to see if they have established committees to handle for sexual harassment cases according to the Supreme Court directives. Moreover, the IT industry is exempted from the Industrial Standing Orders, in which the SC guidelines are incorporated. In a nutshell, there is no regulatory framework in place to force companies to take the problem of sexual harassment seriously. While this issue is of course not specific to the IT industry, given the 'hands off' policy of the government towards IT companies, such cases are even less likely to find redress in this sector.

Conclusion

The software outsourcing industry in India provides an apparently employee-friendly and gender-neutral working environment, and software engineering as a profession has attracted many women who for the first time are coming into technical and managerial careers in large numbers. Software companies pride themselves on their enlightened HR policies and modern management practices, and make strong claims about equality of opportunity and meritocracy. Yet the reality is very different from the image that has been created: the working conditions and management systems in this industry present greater obstacles to women than men in terms of entry, retention and career growth. Long working hours, high pressure work atmosphere structured by deadlines, and frequent travel abroad force many women to drop out of the industry or to stagnate in lower-end jobs. The 'work culture' of software companies also tends to be male-dominated as stress on informal networking and 'teamwork' may work to exclude women.

HR managers and corporate leaders fail to recognise that although they might treat women employees on par with men and even provide special facilities to cater to their needs, women still live in highly unequal domestic situations that have only been exacerbated by the nature of IT work. While software companies may be 'global' workplaces, they are not entirely divorced from the society they inhabit, and relationships at work are partially shaped by the conflictual and asymmetrical gender relations that prevail more broadly in the middle class. Yet in clinging to the argument of meritocracy and gender neutrality, and in throwing responsibility for failure and success onto the individual, software companies do not see a role for themselves in countering these inequalities. While it is necessary to take a balanced view and recognise that the software industry has provided opportunities to women that they would not have had otherwise, and IT is clearly not the more exploitative form of work – we should not uncritically accept the industry's image of itself.

The problems faced by female software engineers stem from a larger labour and management issue that affects both men and women in the software

industry: the profitability of software companies depends on extracting the maximum work out of employees, and companies are not answerable to the state or to unions for their labour practices. Through their intensive image-building exercises, the large software companies can claim that they have very enlightened HR policies while at the same time engaging in what can only be called super-exploitation of labour. The immunity that the software industry enjoys from most forms of government regulation extends even to issues such as sexual harassment. The industry's mantra is that it should be self-regulating on all fronts by developing models and codes of 'best practices' that can be voluntarily adopted by companies. But it remains to be seen whether the industry will voluntarily address not only gender issues in the workplace, but also labour issues such as overwork or use of contract labour, or broader social issues such as reservations or affirmative action in the private sector.

Notes

References

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[1] The study is being carried out by A.R. Vasavi and myself, along with a research team, at the National Institute of Advanced Studies, Bangalore, and is funded by the Indo-Dutch Programme for Alternatives in Development. This is an ongoing study and the data collected are yet to be analysed, hence this paper is based more on our impressions gathered over the last 1 ½ year.

[2] While a programmer in the U.S. earns at least $70,000 a year, the same work can be done here by software engineer earning Rs 30,000 to 40,000 per month, or about $10,000 a year. Overall the saving from the wage differential, taking into account other costs of outsourcing, is said to be around 30 per cent or more.

[3] This figure tallies with our own data collected from individual companies, whose gender ratios range from 15 to 30 per cent. Most reported having about 20 per cent women among software engineers. The gender ratio in ITES companies is much higher, with the proportion of women at 50 per cent or higher (according to NASSCOM figures, the ratio of men to women is 35:65).

[4] India churns out large numbers of engineering graduates each year, and many are from the southern states of Karnataka and A.P. which have the highest number of engineering colleges. The number of engineering colleges in the country has grown from 375 in 1995 to 1208 in 2003, with an annual intake of 350,000 students.

[5] This happened during the downturn of 2000-02, when many workers were laid off and many Indian engineers also were forced to back from the U.S., swelling the pool of people looking for jobs. The Indian software outsourcing industry is almost entirely dependent on business from the U.S. and other developed countries, and so is deeply affected by shifts in the global economic scenario. At present, it is on an upswing and there is heavy hiring going on, but this situation could rapidly change.

[6] In a consultation on employment policies that was organised under this project, a labour lawyer pointed out that India has subscribed to the ILO Core Standards, which mandate eight hours per day of work and maximum 52 hours per week, over which overtime is to be paid. Industry representatives responded that IT companies do not put any restrictions on breaks or on working hours, nor would they be able to, due to the need for flexibility.

[7] Another study also found significant “clustering” of women professionals at the lower end of the job hierarchy, “leading to feminisation of certain service activities” (Rothboeck, et al 2001:67).