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Commitment, Versatility and Balance: Determinants of Work Time Standards and Norms in a Multi-Country Study of Software Engineers

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ABSTRACT

Corporate lawyers, investment bankers, engineers as well as many other types of knowledge workers in the US are expected to work seventy and eighty hour weeks routinely, with extra effort during particularly hectic times. Our research on software engineers working in China, India and Hungary indicates that such work hours are not inherent in the work. Rather work time standards and norms result from reciprocal interdependencies with three interconnected relationships: between employees and employer, employees and other employees and employees and their lives outside of work. The theoretical and practical implications of accounting for variations in work time standards and norms based on these three interconnected relationships are explored.

INTRODUCTION

Kidder (1981), Kunda (1992), Moody (1994), Zachary (1994), Perlow (1997) and Kilduff, Funk and Mehra (1997) all describe the nature of engineering work in the US and Japan. These authors portray a picture of work consuming engineers' lives. Much of engineers' identity is wrapped up in their work. There is a sense that work is everything and there are no boundaries between work and life outside.

One need only read Tracy Kidder's *The Soul of a New Machine*, which describes the creation of a thirty-two bit minicomputer to grasp the intensity with which people work and the respect granted those who make this kind of commitment to work. Kidder found that before engineers were offered jobs, they were warned that "It's gonna be a real hard job with a lot of long hours" (pg. 66). Once they were in the group, they went through an initiation process, referred to as "signing up": "By signing up for the project you agreed to do whatever was necessary for success. You agreed to forsake, if necessary, family hobbies and friends -- if you had any of these left (and you might not if you had signed up too many times before)" (pg. 63). Kunda (1992), like Kidder, further stressed the all encompassing nature of engineering work. Kunda quotes one manager: ". . . . People are after you all the time. Before you know it, your calendar is full. . . . Most people I know are just married or divorced. It is incredible how many divorces there are" (p. 165). Similarly, in a study of engineers in Japan, Kilduff, Funk and Mehra (1997) found engineers "sacrificed holidays, family life and hobbies to the interdependent tasks of the group" (p. 586).

Despite the fact that engineers largely control their own schedules, there is perpetual pressure to be at work. As Van Maanen and Kunda (1989) observed at one high tech company, engineers watch over each other, and "perceptions of who's working and who's

shirking (at home or in the office) are matters of constant concern" (pg. 64). Moreover, managers are responsible for creating the "right environment" so that engineers will be able to work to the limits of their abilities (Van Maanen and Kunda, 1989).

Performing software engineering work allows little room to incorporate much work-time flexibility. By work-time flexibility, we mean the timing, location, and duration individuals must work in order to complete their jobs and receive recognition and rewards for their contributions. In the case of the engineering jobs being described, it is not that people cannot choose when they work as much as there simply is not much choice when one must work all of the time. It may not matter if one comes in a few minutes late in the sense that they do not punch a time clock. However, as someone once said: "If you have to work 100 hours a week, it really doesn't matter which 100 you work, you are always working."

The assumption then is that engineering work is incongruent with wholistic living. In a crisis-driven, high pressure, global world, there simply is no room or desire for flexibility. Kilduff, Funk and Mehra (1997) found: "So intense, indeed, was the commitment to the group's work that some of the engineers claimed they wouldn't know what to do with free time" (pg. 586).

In these accounts the nature of the work is responsible for placing extraordinary demands on individuals who in order to succeed, must respond with almost total devotion to work (Perlow, 1997). Kilduff, Funk and Mehra (1997) found "engineers . . . consciously and continuously promoted an isomorphism between the structure of the work group and the structure of the high-technology machines they were producing. The engineers looked to the product they were creating for clues as to how to structure their interpersonal relations" (pg. 581). They conclude:

> The individual engineer's allegiance to cross-cutting groups inside or outside the factory was weakened by the interdependent nature of tasks within the group, by the daily rituals of togetherness, by the shared social space within which all activity was publicly visible, and by the joint production of new machinery. . . engineers appeared to be underindividuated in their commitment to a work-group identity that left little time for family, hobbies, or other interests. (pg. 590)

Kilduff, Funk and Mehra (1997) conclude that the work of engineering itself determines the way engineers work and in particular explains the priority engineers give to work above all else.

The purpose of this paper is to examine the intense devotion to work and to explore whether it is necessarily the case that engineers must work in this totally absorbed fashion. To be valued in today's world – one that demands responsiveness, adaptability, flexibility and creativity in responding to global markets and to customers -- knowledge workers must demonstrate total devotion to work (Perlow, 1997). The grueling schedules that once were typical only of top corporate management and self-employed individuals are becoming common in one occupation after another. Corporate lawyers, investment bankers, computer programmers and many other professionals are expected to work seventy or eighty hour weeks routinely, with extra effort during particularly hectic times (Kidder, 1981; Schor, 1991). However, is the nature of the temporal demands of the work such that this way of working is inherent in the work itself? It has been found to be the case in research on engineers in the US and Japan, but what about among engineers in India, China or Hungary? These three countries have diverse cultures, but have in common rapidly growing software industries. These countries were chosen to maximize cultural diversity under the premise that if variation in work time standards and norms existed,

these conditions would most likely highlight such variation. The sites were therefore chosen not as somehow representative, but rather as opportunities to reveal differences in work time standards and norms, if such differences indeed exist.

To explore the nature of work time, and whether the way of using time was inherent in the work, we studied small groups of software engineers in major software houses in each of these three countries. We found that the Indian engineers we studied were much like their Japanese and American counterparts in terms of their "passionate, identification with the organization" (Kilduff, Funk and Mehra 1997: 579). If anything, the Indian engineers exemplified less "parody, dismissive irony, and resistance"(Kilduff, Funk and Mehra 1997: 579), exhibiting intense attachment and devotion to their work.

In contrast, in both China and Hungary, the software engineers we studied demonstrated striking differences in their work-time standards and norms. In China, software engineers were subject to rigid, bureaucratic controls dictating when the work day began and ended. Engineers strictly adhered to these time intervals, working intensely during these periods, but rarely working significantly longer. Indeed, Chinese engineers indicated resistance to the possibility of working additional hours, as it was perceived as harmful to both their health and their ability to do quality work. In Hungary, we found work time was not rigidly controlled as in China, but nor were the hours overwhelmingly long as in India, the US or Japan. The Hungarian engineers we studied exhibited the greatest degree of flexibility in scheduling their work time. They also expressed the most passion and identification with aspects of their life outside of work, namely family and culture.

In this paper, we will first describe in some detail the nature of the work time that was observed in each of these three sites. Then, we will describe three underlying relationships -- between employees and employers, employees and other employees and employees and

their lives outside of work -- that have been found to account for these differences in work time standards and norms (refer to Figure 1).

INSERT FIGURE 1 ABOUT HERE

The first relationship between employees and their employers addresses how committed employees are to the organization. Employees demonstrate organizational commitment when managers invest in advancing the employees' interests. Managers at the same time express a willingness to invest in their employees when they have confidence that the employees will remain with the company long enough for the investment to pay-off. Either a negative or a positive self-reinforcing cycle exists. When employers fear the departure of their employees, they tend to limit their investments, and in the process increase the likelihood that the employees will leave. On the other hand, when employers are confident that employees will stay, they optimize their investments and thereby increase the likelihood that the employees will choose to stay. Ultimately, we found that the relationships between employees and their employer could be characterized as either demonstrating or lacking commitment to the organization on the part of the employees.

The second relationship between employees and other employees involves individuals' ability to do their work in the absence of others. The more versatile employees are, the more they are able to continue working when coworkers are absent. This, in turn, makes it more possible for individuals to be absent from work. In the extreme, employees develop ways that enable them to work alone part of the time, without mutually determining these times in advance. This liberates individuals from strict temporal requirements regulating when they must be in the office. The relationship between employees can therefore be characterized as either demonstrating or lacking versatility depending on how able

employees are to work together in a way that does not require one another's continual presence.

The third relationship between employees and their lives outside centers around how much employees identify with their work. When employees' identity is wrapped up in their work, they are more accepting of long work hours, work these longer hours, minimize their outside interests and in turn increase their willingness to work long hours. When employees' identity includes aspects of life outside of work, they spend more time away from work, develop and maintain outside interests, are less accepting of long hours, and in turn experience more balance in their lives. The relationship between employees and their lives outside can therefore be characterized as either demonstrating or lacking balance depending on how much employees identify with life outside of work.

The key finding from our research is that work-time standards and norms are not inherent in the work itself; rather, these standards and norms are strongly influenced by the employees' relationships with their employers, other employees and their lives outside of work. These relationships turn out not only to affect work time standards and norms but also to be affected by work time standards and norms and moreover to affect each other in the process. A framework emerges that integrates the effects of these three relationships on work time standards and norms as well as the reciprocal effects of work time standards and norms on these three relationships. This framework should account for differences in work time standards and norms within any occupation.

METHODS

Research Sites

We studied software engineers at three companies each of which had recently formed alliances with the same American headquartered, multinational corporation. One site was

a joint venture located in Bangalore, India, a region characterized as "the Silicon Valley of India." (Vijayan, 1996). The second site was a joint venture located in Shenzhen, China, a region noted because of its status as one of China's two special economic zones (Roberts and Ng, 1996). The third site was a strategic partnership, with longer-term plans to form a joint venture, located in Budapest, Hungary. In each of these regions, information technology was rapidly becoming a key area of focus for the local and national governments.

The Indian JV, "Ico," is four years old. With over 700 employees -- 400 of whom are software engineers -- this company is of average size for an Indian software house[1]. The Chinese JV, "Cco," is six years old. It employs about 100 people in total, of which 85 work in software related activities. While comparatively smaller than Ico, it is the largest software development house in Shenzhen. The Hungarian company, "Hco," also employs about 100 total staff which is considered large compared to the size of most of its Hungarian competitors.

Cco. The Chinese company is located in Computer City, an industrial park currently under construction. The company is sufficiently confident about their projected growth rates that they have leased three full floors, to lock-in the current low real-estate rates, even though at present they only require one floor[2].

The inside of the Cco office is much like that of US software engineering firms. Engineers sit in cubicles in wide open spaces with managers sitting around the edges in closed offices. The office is immaculate, air-conditioned, and well-lit. Every carrel is

1 All company names are pseudonyms.

2 They projected a growth rate of 35% a year.

equipped with a computer and a telephone. Printers, however, are scarce; about 30 programmers share one ink-jet printer. All long-distance calling and photo-copying are routed through a central office monitored by a woman who logs every page copied and every telephone number attempted. Any personal expenses are charged to the employee at the end of the month.

During the day, Cco engineers appear to work nearly silently and by themselves. Every time we walked down the pristine and sparkling linoleum floors, our footsteps echoed throughout the office, and heads routinely looked up at the "noise-makers." If engineers need to confer with their peers, they do so quietly. Group discussions generally occur in managers' offices or nearby conference rooms -- behind closed doors to minimize interruption. Except for during lunch or after 5:00 p.m., we never observed office conversations around the water cooler, in the bathrooms, or along the halls.

Ico. Ico is located in the heart of Bangalore, along a major, congested road. Like Cco engineers, the Ico engineers worked at carrels; however, the work space was configured in honeycombs, rather than rows. Also like Cco, Ico was well lit and air-conditioned – although since Bangalore experiences frequent power outages, the air conditioning stops and lights flicker about once an hour as the power shifts from the external, city source to the company's internal generator.

Similar to Cco, all engineers at Ico have a computer and a telephone at their desk. About 70 engineers share one worn-down laser printer. The printer usually has a large queue of print jobs and frequently runs out of paper (a scarce good at Ico).

In stark contrast to the silent intensity of Cco, Ico is filled with constant noise and interaction. Indian engineers often huddle around monitors, use each others' desks and

equipment, and shout across the office for help or to let someone know they have a phone call. Whereas the peace and quite in Cco resembles students taking a final exam, the environment at Ico seems more like a busy student union.

Hco. Hco is located in a residential neighborhood in the hills of Buda. Unlike at either Cco or Ico, the Hco engineers sit behind closed doors in offices on either side of a long, dark hallway. One locked room on the hall houses an air-conditioned network and printing center with one large, recently acquired laser printer. All the engineers have access to this room and, unlike either Cco or Ico, printing seems unconstrained. The level of interaction among Hco engineers falls between that of Cco or Ico. While engineers often appear to work individually, members of teams sit together in front of computers, facilitating interaction as necessary. Conversations most often occur in separate offices; few occur in the common hallway.

In many ways, the lunch period at these three companies foreshadows the differences we observed in work time standards and norms. At Cco, all employees – engineers and managers alike -- eat box lunches together at 12:00 p.m. sharp, along big tables in an otherwise almost empty room on the fourth floor of the building. During this period, employees engage in animated conversations; much laughing and teasing is heard. A ping-pong table in the middle of the room finds itself in constant use through the lunch period. At 1:00 p.m., lunch ends as decisively as it began, people all return to work, and again one can hear a pin drop in the office. At Ico, engineers eat sometime between 12:00 p.m. and 2:00 p.m. at the subsidized canteen on the second floor. Food is plentiful and conversation lively. Engineers within a group tend to eat lunch at the same time. Engineers often go for short walks in small sub-groups after they finish eating. The managers generally eat together in a nearby café that offers more selection and better food. Lunch at Ico lasts roughly an hour, employees choose when they want to eat

within the 12:00 p.m. to 2:00 p.m. interval. In contrast, engineers at Hco break for lunch whenever they choose. Typically, they run out to a nearby market and buy cheese, meat, and bread and then return to the in-office kitchen to prepare sandwiches. The kitchen is used on and off throughout the day as staff take smoking breaks, eat snacks, or drink from the free soft drink machine. Senior engineers and managers usually head to neighborhood restaurants for a "hot lunch," when time permits. Lunch time varies according to the work demands Hco engineers face. On a very busy day an engineer may choose to skip lunch entirely, while on other less pressured days they may decide to take an extended period to enjoy their lunch with coworkers, friends, or family members.

Data Sources

We focused on the work time standards and norms displayed by engineers at Cco, Ico and Hco. We observed when engineers come to work, when they leave, how much flexibility they have both at work and across their work/life boundaries. Moreover, we explored questions about why engineers work in the observed ways.

At each site, we focused much of our attention on a small group of engineers who were working together on a common project. At Cco the team consisted of a manager, a project leader and four engineers, working with a manufacturer to develop an internal banking system. At Ico the team consisted of a manager, a project leader and twelve engineers, managing the programming needs for a German product based company in financial services. At Hco the team consisted of a manager, a project leader, and six engineers working together to develop a hospital computing and information network.

Participant observation. In each location we observed the software group on a daily basis. We were present from when the engineers arrived until they left, observing them at work in their cubicles, in meetings and in hallway conversations. We typed field

notes throughout the day, as time permitted, and for several hours each night. We were on site at Ico for eight weeks, followed by six weeks at Hco and then three weeks at Cco.

At each site we had an office located on the perimeter of the room where the software engineers we were studying worked. These offices had large windows looking out into the common area enabling us to observe the activity outside even while we were in our office. These offices also enabled us to close the door and have confidential conversations with the engineers, both formally and informally. Often engineers would come into our office, shut the door, sit down and start updating us on events that had occurred.

Interviews. In each location, we engaged all of the members of the software group in an initial, formal interview lasting one to two hours. These interviews provided background information about the group members and allowed us to gain an understanding of group members' perceptions of their work. We asked questions about their work history, their work at the present company, their lives outside of work, and their career goals. Interpreters were used in China and Hungary when necessary.

We conducted additional interviews with other members of the companies, including other engineers as well as managers. These interviews were designed to collect information on additional individuals' backgrounds and their perceptions of their work, work groups and company. These interviews further sought to capture individuals' relationships with members of the software group we were studying and their perceptions of that group as similar to or different from the rest of the members of the company. In China we interviewed four senior managers, three managers, three project leaders, and six engineers. In India we met with seven senior managers, eight managers, six project leaders, and

eighteen engineers. In Hungary, we met with three senior managers, three managers, four project leaders and nine engineers.

We also interviewed academics in each region to gain their insights about the phenomenon we were studying. In China we met with a professor at Shenzhen University. In India we met with three professors at the Indian Institute of Management. In Hungary we met with five professors at the Budapest Technical University and the University of Economics.

Survey. In each site we also administered a survey to all engineers at the company that included questions about the number of hours that the respondent had worked during the previous week and whether it had been a typical week. In India we collected 242 surveys (a response rate of about 83%). In China, we collected 62 surveys (a response rate of 81%). In Hungary, we collected 28 surveys (a response rate of 43%).

Analyses

To analyze the data we collected, we followed the guidelines suggested by Glaser and Strauss (1967) and Miles and Huberman (1984). We developed an empirically grounded set of insights, and then used an iterative process where we developed hunches, compared those ideas to new data from the site and then used the new data to help decide whether to retain, revise, or discard those inferences. Periodic analysis throughout the data collection process helped sharpen questions, focus interviews and observations, and ground evolving theory.

WORK TIME STANDARDS & NORMS

Work Hours

At Cco we observed the most restricted work hours. While engineers have their choice of whether to work from 8:00 a.m. until 5:00 p.m. or 9:00 a.m. until 6:00 p.m., they must

designate this in advance and secure approval from their direct supervisor. On the survey, engineers reported working an average of 45 hours the previous week.

The Ico engineers refer to 9:00 a.m. - 6:30 p.m. as "mandatory time." In actuality, most begin their work days around 9:00 a.m. and end their days somewhere between 7:00 p.m. and 10:00 p.m.. The team we focused on began with a German language class at 8:15 a.m. since they were carrying out work for a German client. On the survey, the engineers at Ico reported working an average of 54 hours the previous week.

The engineers at Hco experience work hours that fall between the engineers at Cco and those at Ico, but they have far greater flexibility. Hco engineers speak about having discretion to choose when, how long and where they work. One of the company managers estimated official work hours to be five eight hour days a week, "but everyone works at least 10% more than a 40 hour week." Hco engineers typically work from 9:00 a.m. until 6:00 p.m., sometimes 7:00 p.m. However, it isn't unusual for someone to come in late, leave early or work from home. On our survey, the engineers at Hco reported working an average of 49 hours the previous week.

Evening and Weekend Work

At Cco, overtime is not encouraged. People rarely work beyond 5:00. At 5:43 p.m. on our first day, we found ourselves in a nearly empty office with Kenny Loggin's Greatest Hits from the 1970's blasting over the intra-office loudspeaker. Until 5:00 p.m. the office had been silent. Forty-three minutes later it had been transformed into a college dorm.

Engineers at Cco also rarely work over weekends. One project leader explained that over the past several months, people have, at most, worked two to three full Saturdays. "If there's an emergency and we must hurry to meet a deadline . . . resulting from some major

project shakeup . . . the management at Cco will ask their staff to work additional hours . . . but it must be absolutely necessary for the work" and this happens "only at the rarest times." The engineers share this perception: "They don't request it [overtime] unless it's absolutely necessary for the work. I've only worked two Saturdays of overtime in my three months at Cco." Typically fewer than ten engineers and two to three managers (out of 85 people working on software related activities) remain after 7:00 p.m.

The Human Resource managers echoed these norms, indicating employees are not supposed to have to work more than eight hours a day, five days a week. "If employees are needed to work longer, they must be asked and can choose to decline, it is voluntary." Managers are dissuaded from asking their engineers to work overtime because the Cco contract states that employees will not be asked to work more than 3 hours of overtime per day and not to exceed 36 hours per week (including weekends). The Chinese government does not encourage overtime, we were told, because it is not healthy for the workforce to "over" work.

In contrast, Ico engineers routinely work late into the evening. As noted above, most of the members of the team we studied began at 8:15 a.m. and finished between 7:00 p.m. and 10:00 p.m. In addition, weekend work is regularly expected. Saturday is a typical workday; the only difference is that engineers arrive around 10:00 a.m. rather than 9:00 a.m., and leave the office by 6:00 p.m. One engineer explained: "There is great pressure to spend the entire day in the office on Saturday." The expectation is that one will be at work whether or not one has work to do. As a project leader put it, "nothing happens if you are not around until something necessary doesn't get done because you are not at work ... then there is trouble."

At Hco, work hours are less predictable than at Cco and generally shorter than at Ico; the variability of hours is directly related to the work demands. Engineers put in long hours when the work requires it. At the very extreme, as when the engineers we were studying at Ico were preparing for a new system installation, they worked the last day from 5:30 a.m. until 11:00 p.m. One of the engineers said that during the prior month, he stayed past 6:00 p.m. six to eight times, usually remaining at work until 8:00 p.m. All of the engineers agreed that this period of time was extremely rare; they couldn't remember an incident within the past year that reassembled it.

Weekends also seem largely protected at Hco. Summer weekends are especially precious. Far from catching-up on work, individuals expect to use their weekend time to watch their kids compete in a kayak race, head to a weekend cabin, or entertain friends. This applies to engineers as well as their managers. One engineer who works on the major hospital computing system said "I will sometimes come in over the weekend one time every month or two for a few hours." He does this in order to conduct maintenance work. He picks the weekend time so he "takes the system down during low user periods to avoid peak times." He conveyed a sense of regret that this had to occur over a weekend, but he recognized the large impact it would have on the hospital if he didn't do this occasional maintenance work during weekend hours.

Vacation Time

At Cco, vacation time is highly regulated. One manager explained the complex set of vacation time policies. Most staff get 12 working days (not including weekends). If you have been at Cco more than 3 years, you get 15 working days; more than 5 years, 18 working days. Cco also has specific terms for those who are married or separated: If you are married and your family lives out of town, then you are given 20 calendar days vacation to enable you to visit your family (calendar days include weekend days). If you are

married but your parents don't live in Shenzhen, then every four years you get 20 calendar days -- to allow travel time to visit your parents. Finally, if you are physically separated from your spouse, you get one month of vacation.

The Ico engineers get twenty two days a year. However, they do not prefer to use the time in one consecutive block, often reserving it to manage responsibilities outside of work. For example, one engineer traveled 10 hours away to be with his sister as she went into surgery, another headed home to help her mother pack before moving, and yet another took time off to take part in pregnancy rituals preparing her for the birth of her child. Managers find this tendency to spontaneously use small quantities of vacation to be highly problematic for the work. They try to encourage engineers to take larger blocks of time-off, scheduled around the work.

In stark contrast to Ico, vacation time in Hco is viewed as a critical period of rest and revival. In determining the holiday schedule, one Hco manager said that the primary issue is what his engineers want, and if at all possible, he will accommodate their requests. In early July he said that he was not sure when during the rest of the summer his team would be taking vacation – it was up to them. He was confident that "they will do their best to spread out the vacation schedules, but I need to let my team go when they want to go. This is simply the way it must be."

Not only did we see Hco engineers plan their vacations around their families, but we actually saw people – in the midst of heavy job responsibilities – take their planned leave. For example, a project leader at Hco left in the midst of an extremely busy time for his team as they finalized their product for installation the following week. He had planned, in advance, this two week vacation to Greece with his wife and two children. He explained that "This time is very important. I need two weeks. It takes a week before I can think

about other things – the really important things in life . . . my wife and kids." And so, as planned, he departed in the middle of a maelstrom of activity at work. Not only did he leave the country, but he left no way for the group to get in contact with him. The clear sense was vacation time was sacred, to be protected at all costs. The Hco engineers do not always take their full one month summer vacation, but if they take less, they talk about it as if they have made a large sacrifice for work.

Flexibility of Time and Location

The Cco engineers regularly work their stated hours. We never observed engineers come in late or run out to do a mid-day errand. Rather, engineers recounted completing their errands after the work day. In contrast, the Ico and Hco engineers take time out of the normal work day to take care of life outside of work. At Ico, engineers are consumed by their work and they minimize such absences. Only when absolutely necessary will they squeeze them in, either in the early morning or in the middle of the day. At Hco, it is common for engineers to do errands during the work day, and to work later if necessary to complete their work.

Hco engineers have the greatest degree of flexibility. They indicate that it is they who decide when they work. If they remain at work late into the evening, it is at their own initiative, recognizing that they need to complete their work prior to upcoming deadlines. One engineer explained, "I decide for myself when I must devote more time to keep up with deadlines. I decide not just when I should work, but which projects are urgent or critical and where I prefer to do my work . . . I decide where and when by myself." Indeed, one engineer said that while his wife was pregnant he planned to work mostly from home. His two associates, "could pick up much of my work. If there is a problem they cannot solve, I am always available, but my first priority is to my pregnant wife." Another

engineer explained, "If someone has children who need to be taken care of the person makes his or her own decisions."

Comparing engineers' work time at Cco, Ico and Hco, we find distinctions in the type of boundary that exists between work and life outside of work. The Cco engineers work short, predictable, but highly concentrated and regulated hours. The Ico engineers work much longer hours, fully devoting their lives to work, and trying only on the margin to uphold obligations outside of work. The Hco engineers work more hours than the Cco engineers, but have the greatest degree of flexibility in terms of when, where and how long they work, which enables them to most fully meet demands at work and outside of work. In the next section, we describe the three fundamental relationships which we find explain these observed differences in work time standards and norms: 1) employees-employer relationship; 2) employees-employees relationship; and 3) employees-life outside relationship.

THREE SELF-REINFORCING CYCLES

Employees-Employer Relationship

When engineers work for an organization, an essential element is the willingness of the engineers to contribute their individual efforts to the cooperative system (Barnard, 1938). The more that the engineers and the organization's interests align the more willing the engineers to contribute to the organization and the more willing the organization to invest in the engineers (Rousseau and Wade-Benzoni, 1995). Hence, the engineers and the organization end up in a self-reinforcing cycle such that both parties are either encouraging the other to invest or discouraging the other from investing. Ultimately, the more investment on both sides the more commitment to the organization engineers demonstrate.

Engineers' Willingness to Invest. At both Cco and Ico, engineers' willingness to invest in the organization is based on their interest in advancing their own careers. One Cco engineer explained that Cco "provides a good environment that you cannot get in other companies ... in terms of platforms and machines. These enable people to develop skills." He further noted that Cco "pushes people to pick up industry skills that enable them to work in many different areas . . . this is useful for many different jobs." Another Cco engineer explained, "I chose Cco because I was looking for challenging work. I could have made more money elsewhere." However, there is a widespread belief that, as one Cco engineer made clear, "I don't see this as a long-time career."

The Ico engineers also saw their work as a chance to gain technical expertise that would help them in the future. One Ico engineer described: "Here there is a real sense of managing your own career. We want the best opportunities. If we don't get them, we are likely to leave. It makes it hard for managers because they must constantly keep their people happy or they can easily leave." Another Ico engineer explained, "There is no loyalty. It is very different from my parents' generation where you worked at one company until retirement. I have already worked at four companies [she is 26 years old]. What is most important is my growth as an individual. I want to do good work and be recognized for it."

In contrast to the Cco and Ico engineers who see their jobs as rungs on a ladder and exhibit limited company loyalty, at Hco, the engineers are thought of as "pseudo-owners" and their futures are highly connected to the company. One Hco manager explained, "Engineers have the incentive to work in order to build up the company and create a stable environment for their futures. There is little thought on either side about the engineers' career progression." When an Hco manager was pushed about his engineers' career path, he said, "If the company grows all of them could be project leaders. There is so much

company interest on the part of the engineers because there is much potential . . . if the company succeeds then there are great opportunities for the engineers who are part of the success."

The Hco engineers expressed similar beliefs that their individual advancement was tightly linked with the organization's success. One engineer noted, "I would like to grow up this company. I feel the company has quite a lot of potential. There is great opportunity for me as I have been in it from the beginning. I would like to see us as the market leader in medical areas in software consulting, developing and adapting software for the Hungarian market place. In ten years, I would like to be the head of the software consultancy arm for Hco."

Other Hco engineers appeared similarly loyal to the company and eager to be part of its growth. When one engineer was asked where he wanted to be in 5-10 years, he responded definitively, "at Hco." Then he added, "I really haven't thought much about my own future beyond that." Another Hco engineer noted that he thinks it important to get a graduate degree. He will go to school on Saturdays starting in the Fall. He says he will continue working at Hco while he's in school. "Longer term," he adds, "I would still like to stay at Hco."

Compared to the engineers we studied at Ico and Cco, the engineers at Hco demonstrated much greater awareness of the industry and the company's future. The Hco engineers have an ambition to make it a great company and they see big opportunities for themselves if this occurs. There is a sense that they are, according to one engineer, "all in the same boat," trying to achieve what is in the organization's best interest.

Macro economic conditions in each country further influence engineers' commitment. At Ico and Cco, turnover is pervasive. At Cco, they maintain about eighty- five engineers on staff, bringing in 10-20 new programmers each year while losing about the same number. About a quarter of the new engineers leave within the first year. One Cco manager explained, "Some engineers think they deserve more opportunity and they keep switching jobs looking for what they think they deserve. This leads to a lot of job switching."

At Ico turnover is also an accepted part of the work culture. According to one Ico manager, "There is a craze among the engineers to leave the country and go abroad, especially to the US; 60% of the people are always switching jobs and of that 60%, 30% move abroad." One Ico engineer noted, "I am well aware of other companies' efforts to recruit me away from Ico. I have many opportunities both here and in the US." Another Ico engineer reported, "I get calls as much as once per week for other jobs outside Ico from people who have found out that I have a specialty in Lotus Notes. I have no idea how they find this out."

During our eight weeks on site at Ico, in the group of twelve people we studied, three were reassigned to different groups within the company, one went abroad on an assignment, one left the company because he found a better opportunity abroad, one woman had a baby, and still another woman got married and moved abroad to join her husband. Two other engineers entered the group; of whom one came down with Malaria and had to take six weeks off.

In Hungary, job switching is viewed very differently than in either China or India. One engineer noted, "I would not have a hard time finding another job. There are plenty of jobs and I might get paid better, but there are other benefits to Hco." In general it seems to be both the perception of the engineers and the reality of the job market that there are indeed

many opportunities for Hungarian software engineers. However, there is also a looming fear of unemployment because of the changes in the economy in the past ten years, the stigma associated with being unemployed, and perhaps most importantly, the number of people that each engineer personally knows who are unemployed.

As one manager explained:

> For forty years of Communist rule, you were sent to jail if you didn't have a job and no one lost their job unless there was a real problem. To not have a job took on a very serious meaning. Today, with all the changes in the environment many people find themselves without a job but they haven't changed their idea of what it means to be unemployed and so they don't know how to handle it. It gets them totally down. People know so many others who are unemployed that it is terrifying for them. It could happen to them or their families at any time.

Hco engineers attach great importance to feeling that they have a secure job. As one manager summed it up, "There is a big fear of unemployment. Before we didn't have to worry about keeping our jobs. Now there is real pressure if we like our job to work hard so we won't lose it. The big issue with such high unemployment is knowing you have job security."

Ico and Cco engineers have multiple job opportunities and the industry reinforces the practice of job switching by giving engineers better opportunities when they change jobs. This feeds into engineers' lack of commitment to the organization and dissuades employers from investing heavily in its employees. In contrast, at Hco, jobs are perceived as being available, but job switching is less accepted and engineers fear the possibility of unemployment because of the negative stigma associated with this outcome. They are more

willing to stay with a company to ensure job security and this leads the company to increase its investment in its engineers.

Organization's Willingness to Invest. Managers at Cco and Ico realize that to keep engineers at their companies, they must provide them with challenging and career developing work. As one Cco manager noted, "What matters most to the engineers is good work." The Human Resource manager at Ico summed it up as follows: "What matters more than anything is the quality of the work environment. . . more than income or any benefits. People will switch jobs if they are not happy with the work."

However, the Ico and Cco managers find themselves in a quandary. On the one hand, there is incentive to provide better opportunities and sufficient training to the engineers to encourage them to stay. According to one manager, "Cco invests a lot in training its new hires. It takes about four months for engineers to come up to speed. . . . Investing in training is not only important for the company but also for retention of our people. They stay when they feel that they are able to grow." At the same time, by providing them these opportunities, their skill set is enhanced, which makes them more marketable." As another Cco manager explained: "There is a catch-22 of providing constant training for your staff. On the one hand it strengthens their work skills and is desirable for them. On the other, it makes them more desirable outside the company."

The Ico managers express a similar frustration. They clearly recognize what their engineers want. Yet, they cannot always provide them with these opportunities. All the work that needs to be done is simply not "good work." As one Ico manager explained, "The problem is that clients, when they start, give you boring work like legacy system maintenance. We try to convey to the clients that it is important to give a mix of work. The company also

tries to mix up the work of their employees . . . We could still do a better job of it." Another manager explained:

> People recruiting for Ico want to promote the company so they make promises that they then cannot keep. People are promised work they cannot do. They end up discontent, playing games, gossiping and generally being a bad influence on the work environment. This in turn is a big threat not just in terms of those leaving but in terms of the other employees. . . . We need to not just make commitments to people but to keep them. We lose credibility quickly when we don't and people leave.

One way that managers at both Cco and Ico try to increase the likelihood that engineers will stay at their company is by providing incentives. At Cco, some of the enticements to stay are built into the employment contract. In order to employ an individual just out of university, a private company must reimburse the government for five years, paying towards that student's tuition fees. Employees who leave before five years – even if they are fired – must pay several thousand yuan per year (approximately $300-$400) to get their documents back from the company. Engineers can get around this by getting a new company to pay-off their debt to Cco, "If the new company wants the engineer enough." However, one manager explained that this contractual commitment is a significant deterrent: "While competitor companies might pay this amount, most people end up paying for it themselves if they leave."

At Ico, to encourage engineers to stay, managers create plans that help individuals accumulate assets if they remain with the company. The HR manager explained, "To hold onto people we need to provide them ways to accumulate assets. People want houses, cars, refrigerators, etc. The middle class in India has much desire for these things. We are developing ways to help people satisfy their needs, if they stay with the company."

Another incentive used by Ico is sending their engineers to work abroad. However, as with investment in training decisions, this poses problems for Ico, because once the company helps an engineer attain a VISA and pays for the airfare abroad, the engineer often finds work in the foreign country and quits. The HR manager explained:

> Employees all desire to go abroad. We need to create these opportunities in order to keep them happy, but once you send them they are unlikely to come back. Ico has tried to create a moral contract to get people to feel committed to returning. Now, we are trying to create disincentives to discourage people from leaving. . . . We are making them pay their own airfare and charging them for costs incurred by the company if they leave . . . such as training a replacement . . . We want to make the costs high enough that everyone doesn't jump ship.

At Hco, engineers are more willing to invest in the company. The organization reciprocates this greater loyalty. Rather than employ contractual obligations, the company creates an environment that the engineers find desirable and one in which they feel that they have some ownership. Managers willingly invest in whatever necessary to maintain positive relations with their engineers. One Hco manager expressed great determination to uphold his commitments to his engineers: "If you are afraid of losing your engineers you will. . . If they want to go because they have a different career they want to pursue that is fine. Otherwise, I will do my best to satisfy them." He explained, "The key to success is for me to listen to my people and address problems when I hear of them." He added, "One shouldn't force engineers to do things. They are great guys. One should listen to their needs." He even went as far as to say, "I am quite concerned about maintaining good relations with my people even if they leave. I like them as people and we have much trust in each other." At Hco, unlike at Cco or Ico, managers have confidence that their engineers

will not take advantage of investments made in them and go elsewhere, provided the company is doing well. As a result, there was more commitment on both sides: the Hco engineers were more invested in the organization's success and the Hco managers were more invested in their engineers.

Employees-Employees Relationship

The second cycle between employees and other employees has to do with how employees temporally interact with each other. The more that employees are able to do their jobs without frequent interactions with each other, the less they need to always be present at the same time, and the more they can choose when they work. In contrast, the more focused employees are on a specific job function the more they need each other to complete the task of the group and the more pressure there is for all of them to be present at the same time. The cycle that exists either results in employees being versatile and therefore not needing each other all of the time or lacking versatility and therefore being highly interdependent and unable to conduct their work in each other's absence.

At Cco, the project leader is central to the completion of the technical work. The project leader assigns the work and acts as the central clearing house, working with each of the different engineers simultaneously. Work assignments are highly distinct and engineers work independently from each other. Engineers are encouraged to consult with their managers rather than their peers. One manager indicated that he "almost always helps engineers immediately when they come to me . . . I like to see people asking for help and direction. If they don't fully understand, I want them to clarify their questions . . . I don't want them working too independently." He breaks down team assignments based on time availability, skill, and an even distribution of responsibility. He then assigns team members individual tasks and prefers to hold informal meetings with individuals rather than

full team meetings so "I can monitor progress and individually clarify details or discuss how to accomplish particular tasks."

As a result of centralizing work assignments through the project leader, the Cco engineers have little knowledge about each others' specific areas of responsibility. It is therefore difficult for the engineers to pick up for each other if someone is absent. Yet, engineers must each be doing their work simultaneously to ensure the desired group output. Absences therefore present a large problem for the group.

At Ico, there is far greater interaction among engineers in the workplace than at Cco. Project leaders are more removed from the technical execution of the work. They assign work, monitor the progress, and intercede when problems arise or engineers do not take the necessary initiative. The work itself is done by the engineers in interaction with each other. We often observed engineers sitting together in front of a computer trying to figure out how to solve a problem.

Yet, despite the increased collaboration, the engineers at Ico, like at Cco, are specialized in their work functions and not likely to cover for each other. They do not tend to step into help either other out. At one stage, the Ico project leader was overloaded with work. Since the engineers did not jump in to assist her, an emergency staff meeting was called by her manager. "I've called this meeting because the project leader can't do it all by herself." He declared: "I want her to focus attention on the MAC problem so I've arranged the following redistribution of work." Obtaining the necessary assistance required a formal intervention and the reorganization of the team.

However, that is not to imply that the engineers never help each other. If they can provide their expertise to shed light on a problem, they willingly do so. Moreover, they wait for

each other if such expertise is needed from a peer. For example, we observed one Ico engineer who spent the better part of two days waiting for a peer to assist with her code. So reliant was she on his expertise that she was unable to proceed without him and found herself wasting time. Whether she could have created alternative solutions on her own is not clear. What is clear is that she never considered the possibility of finding other ways to work around the problem, instead of just waiting.

Not only do Ico engineers identify themselves as specialists in particular areas and therefore wait for others when expertise is needed, but they actively avoid becoming generalists. One engineer was trained in one area when he first arrived at the company. When the projects dried-up, his skills were not sufficiently transferable to other projects. As a result he returned to training and requested "a new and emerging sub-field." This engineer was delighted with his next assignment because he believed the new area of specialization would make him highly marketable. In contrast, when engineers have skills in areas that they consider to be steps toward future opportunities, whether at the company or elsewhere, they feel strongly about doing work in that area and building those particular skills. For example, another engineer came to Ico specifically to work with a program called "Small Talk." She explained:

> I have invested a great amount last year in learning Small Talk and now I want to use those skills rather than starting all over developing new ones . . . I came here because they promised me that I would have Small Talk opportunities . . . now they have broken this promise . . . I am resentful . . . . I think often about leaving.

In sharp contrast to the Ico engineers, the Hco engineers actively pursue opportunities to be generalists and assist each other whenever necessary. One Hco manager explained with pride that remaining well-rounded was something that Hungarians derived from their

complicated language and their deep interest in culture. Multiple times during our research at Hco the engineers and managers referred to their country's history as a necessary piece of information to understand not just their past but who they are and how they work. After our initial meeting with the senior manager, he went out and purchased a book on the history of Hungary which he presented to us saying, "Without this knowledge, you won't be able to truly understand what you are observing . . . our history and our culture . . . language, arts and music . . . are critical to how we work." Their interest in culture was believed to affect the work itself, in terms of their creativity and breadth of skill.

Moreover, as a result of their broader range of skills, the Hco engineers frequently step in for one another. One Hco engineer explained:

> We have really gotten to know each other. We know what each other can do best. Like I know that [another engineer] is very good at the technical work. I am better at handling the calls from the vendors. But, when he is away [on vacation], I can stand in for him. We work very closely.

It is not that the work assignments themselves are more interdependent at Hco. Engineers are still assigned distinct tasks. For example, one Hco project leader explained:

> Yesterday I created a list of what each of them [the engineers] have to do and I assigned some of these tasks today . . . I will wait to assign the rest. It is difficult for me to know how long work will take and so it is more efficient to assign the tasks when the person is ready . . . I know each of their capacities and try to divide up the tasks accordingly.

What is unique at Hco is the way in which the engineers go about completing these tasks. They are more willing and able to assist each other than engineers at either Cco or Hco.

We refer to this inclination and ability to help each other and fill-in for each other as versatility and therefore characterize Hco engineers as more versatile than either Cco or Hco engineers.

Employees-Life Outside Relationship

The third relationship between employees and their lives outside depends on employees' identification with work. The more employees identify with work, the more they accept and fulfill the demand for long hours (Aryee and Luk, 1996) thereby decreasing time available to do other things which might create alternate sources of identity (Hochschild, 1989; Tajfel and Turner, 1985). This leads individuals to further identify with their work and further accept the long hours. In contrast, the more employees identify with other things in life besides work, the less they accept long hours, the more time they spend outside of work, the further they identify with other aspects of life and ultimately the more they find balance in their lives. We found Cco and Hco engineers to be in a cycle that reinforces balance while Ico engineers are in a cycle reinforcing a lack of balance.

Work as a priority. The Cco engineers work a short, intensive day. The norm is that these engineers are expected to work hard and exhibit high levels of dedication when they are at work -- they neither choose to nor are permitted to waste time at work. Engineers move through an initial four month training program which one manager explained is to start the process of "employees falling in love with Cco." Part of this acculturation process involves "working on a Cco team and observing the dedication and hard work of the team members." At the same time that they are working very intensively, the Cco engineers work a constrained number of hours. As one engineer explained, "I work only eight hours a day, but I work very hard during those eight hours. I am very busy at work in order to avoid overtime."

At Cco, managers evaluate engineers' work within these rigid temporal boundaries, rather than based on whether or where those boundaries exist. As one Cco engineer explained, "Hours do not matter. . . If I worked more hours I wouldn't be any more successful at Cco. . . . If I was paid overtime during the week [at night] I wouldn't work any more than I already do." Another engineer explained that "One's output and efficiency is more important than the sheer number of hours one puts in. We don't get rewarded for long hours. . . Longer hours [beyond an eight hour day] will not result in a higher evaluation." The managers, in fact, agreed: "Hours worked are not important for evaluation."

Cco engineers further identify the positive implications of these bounded hours for their work. One engineer claimed that "It's good if employees don't work overtime. If you work too much overtime, your productivity is not as good." Another summed it up, "If I worked more hours I wouldn't be any more effective."

While at Cco the engineers work an intensely focused, rigidly bounded day, at Ico there is a strong sense among both the engineers and their managers that work should be one's first priority at all times. One engineer explained, "There is no acceptance that you might need some time off, that you would feel more sharp if you took some time off." She added, "People simply don't realize. They don't appreciate the importance of keeping away from the office sometimes. . . . Rest recharges you. It gives you a boost when you come back and you will get more done. No one recognizes that." Rather, according to this engineer, "I don't do much except get up and come to work in the morning. I don't even see my husband. He leaves for work after I do and returns home before me."

One manager at Ico made it clear to his engineers that he expected them to be willing to work at all times. At one point he wanted something from his project leader and when she indicated she would not be able to deliver until the following week, he was clearly

dissatisfied. Finally, she offered to work on it over the weekend, to which he responded, "That would be best." At another point, this manager was concerned that his team had not completed a developmental assignment he gave them unrelated to their project work. He estimated the exercise would require about two hours. When he found out none of them had done it, he said in a team meeting, "You have had three weeks to do this assignment and two weekends during which you could have worked on it. . . . Why haven't you done this over the weekend or one morning at breakfast? Don't you take breaks? Why haven't you done this during your breaks?"

It is important that Ico engineers demonstrate a commitment to work, "a mindset" as their manager referred to it, "a willingness to do whatever in response to the job." This manager models the desired behavior. His staff described him as "ambitious and extremely hard working. He often stays late into the evening and routinely works on Saturdays." We saw him at the office one Saturday night at 8:00 p.m. He came in for a conference call. When it failed to occur, he stayed to catch-up on various administrative matters. Not only does he work long hours, he seldom takes time off from work. One of his senior engineers noted: "I don't think he has taken much vacation at all."

This manager further uses employee devotion to work as a primary criterion for both staff selection and evaluation. Accordingly, he is extremely critical of those who do not match his self-direction and level of commitment. As he put it, "I actively ask about background when I interview candidates. . . . I look for commitment and extra efforts to succeed as indicators of future potential rather than simply focusing on their technical capability." He described one of his early teams who "clearly wanted to excel and knew when to set their priorities." This team, he said with total admiration, "never went on leave. . . and I never asked any of my staff to do this; it came from within them." On the opposite side of the continuum, he complained sharply about the loss of focus that sometimes occurs after

engineers get married. They "begin to have second thoughts about devoting themselves fully to work."

Ico engineers certainly register the importance of these long hours for their advancement within the organization. However, they have also internalized these beliefs. One engineer, for example, commented that "there is a sense of commitment among the engineers that they will work as hard as necessary to get the job done. People don't complain, realizing that they must work – sometimes even through the night -- until things are finished. . . . I'll do whatever it takes."

Unlike at Ico, but similar to Cco, at Hco long hours do not affect individuals' evaluations. According to one manager, "People are evaluated on their output, not on the amount of time they put into their work. . . . The team has a whole range of skill levels. Those with higher skills will take a shorter amount of time to complete the same tasks. It would not be fair to evaluate people based on 'face time.'" Another manager confirmed, "We don't evaluate people based on long hours. It is hard for me to even know if people are working or not because they can and many of them do work from home. Around here you are rewarded based on how well you solve the problems not how long you work." He added, "I can get a lot more done at home. . . I work at home whenever I can."

The lack of rigidity of their work schedules (differentiating them from Cco) and the fact that they are not evaluated on long hours (differentiating them from Ico) leaves the Hco engineers with the choice as to how they balance their own lives. This decision causes many of them much struggle. They complain about the quantity of the work that must get done, but at the same time recognize a need to do this work.

Life outside. As already hinted at above, the Cco and the Hco engineers desire balance in their lives, while the Ico engineers accept a lack of balance. Preserving one's health and achieving sufficient rest seem very important to the Cco engineers. They told us that they do not get paid overtime if they work late during the week, but even if they did they would not want to work it. Many engineers articulate the desire and need to rest, restore, and recover. One engineer explained, ". . . .more than eight hours is too much for me." He does not usually work overtime, about which he says, "I don't think I have the strength." Adds another engineer, "Employees need their rest." The Cco HR department issued guidelines to their managers: "Employees should not work too hard so they will avoid getting sick."

But beyond concerns about their own health, the Cco engineers talk about a desire for work not to dominate their lives, a desire to live a balanced life that includes family. One engineer said, "I define success more broadly as a 'happy life' and one in which I don't need to always worry about tomorrow." Not only on a daily basis, but longer-term as well, the Cco engineers strive to "avoid being around huge pressures." One engineer said, "Making money is not that important to me; what matters is that I will have freedom, time to relax and the opportunity to be close to my family. . . . Now I am young and must invest in my future, but later on other things will matter more."

Ico engineers are much less troubled by sacrifices that must be made outside of work. One illustration is the engineers' willingness to rely heavily on nuclear and/or extended family members for support, meal preparation, and child-rearing. Families play roles in supporting their children's professional development as early as University. Various engineers said that when they were in school, they needed familial support and assistance because their academic performance mattered greatly and thus they had to work extremely

hard. As a result, parents often came to live with their children to help while they studied for exams.

Ico engineers accept that their devotion to work must trump even their commitment to their children. One female manager at Ico with several children, mentioned with pride that "my managers are impressed with how little my family life affects my work." Women feel that they deserve to be treated as equals, and, as this engineer put it, "We cannot expect to have equality and get special treatment. People who need special arrangements should not accept the job since they clearly cannot do what is expected at work. If you accept the job, you accept these responsibilities. If there is a very occasional problem because your kid is sick that is acceptable, but that is about it." Another engineer was six months pregnant. She said, "I am not sure about the time I will be able to spend with my child. I would still be willing to accept on-site assignments if they are short, not more than 6 months. [These on-site assignments are overseas and would mean spending the time living away from home.] My in-laws and my parents will take care of the child."

Others agree that they are not actively involved in their children's upbringing. There is no expression of concern that they are missing out. One engineer with two children ages 7 and 9 years old described her familial arrangement:

> I see the kids in the morning from 7-8:30. We all get dressed together and leave the house together. My husband travels a lot. When he is home he does his part, but he is not dependable because of all the travel. But, that is not a problem. My parents are always around which enables me to travel for work. . . I am just back from spending three months abroad.

This engineer indicated that she doesn't have to worry about her children being left because her parents are with them. She did note that her daughter recently asked "Mom, why do

you have to work. . . . We could make it on Dad's salary." She recounted this story in a matter-of-fact way to illustrate that her daughter indeed loves her; there was no indication of regret about spending so much time away from her children.

At Hco, like at Cco, and quite distinct from Ico, engineers expressed concern about work dominating their lives. One engineer explained, "I would like to decrease my work hours, especially if I have children. . . . I would like a family, I am thirty and the time is coming." Another spoke about "needing to work less so he could have time for a family." A third explained:

> Success in life means success at work while also having a family and raising children. In order to achieve this goal, I will need to revise the time I spend at work in order to increase the time with the kids. I plan to share the responsibilities with my wife. . . . much of what I do on a normal day is not really important. I need more time in life for the really important things.

Those engineers that already have children expressed a similar desire to work less so they could have more time with their families. A manager at Hco described his struggles to succeed at work but also to "maintain a good relationship outside of work."

There is a desire among the Hco engineers and managers to find their own unique identity that merges a new entrepreneurial driven outlook with their high regard for culture, history and family life. One manager noted, "One's job is critically important but as a human being there are other more important things . . . culture and family. There are other things in life that matter besides money."

Illustrating their desire to balance both work and home life, one Hco manager contrasted the Hungarian experience with his perception of work life in the US. The prototypical American story unfolded in the following way:

> Father wakes up in the morning. He is 44 years old, has 3 daughters, 2 dogs, a big house in the suburbs, lives 20 minutes from work (except in rush hour when it is 45 minutes or at night after a whiskey when it is 10). He wakes up, has no time to talk to the kids because everyone is rushing. The kids head to the school bus. He has some bad coffee, kisses people good-bye, and jumps into his car. He travels 5 minutes to the highway, eating his breakfast in the car. He listens to the radio and makes phone calls in his air-conditioned car which he drives into his air-conditioned garage at work. Never does he actually smell the real air. He goes up the elevator and stops on the 44th floor to get a coke. . . . Then up another 40 floors. He speaks briefly to his secretary and begins to read the paper but gets interrupted by the ringing phone. He then puts on his telephone headset and spends the rest of the day talking and gesticulating. Later he has a business lunch. In the afternoon he visits a customer. Rush, rush. At night he may find some time with his children . . .whom he barely saw in the morning. He is always working. He has no time for a vacation.

The Hco manager then compared this life to the prototypical Hungarian family:

> The Hungarian wakes up and spends time with his family, sitting together for breakfast. They do not bring food with them enroute to work. Instead they eat and visit together. Why? because the mother has to head to work too, so while she cleans up, the father sits and talks with the children. He adds that Hungarians would also never consider drinking bad coffee. At 5 or 6 Hungarians go home. Often the father then begins a second job -- at

> another work site or at home, to earn extra money. This is especially the case if the father works for the government which pays very little. On weekends [Friday afternoon -until Sunday night] Hungarians go away to their weekend homes -- usually within one hour from their city home. . . . By going away, people feel free.

These contrasting tales highlight the Hco engineers' struggle to devote the necessary time to work so the company will succeed without bowing completely to the pressure of work. The Hco engineers identify with aspects of their lives both in and outside of work and therefore find it important to maintain some balance. Cco engineers face more rigid work schedules that ensure greater predictability of work hours and therefore balance. This balance in turn enables Cco engineers opportunity to identify with life outside of work and as a result they attach greater important to this balance both for themselves and their work. In contrast, Ico engineers face the greatest work demands, work the longest hours, identify most with work, and therefore are most accepting of these work demands.

MAKING THE CONNECTIONS

Each of the cycles -- employees-employer, employees-employees, employees-life outside -- results in a relationship that ranges from a presence to an absence of commitment, versatility or balance, respectively. In each case the three relationships and their resulting conditions affect work time standards and norms. Interconnections further exist among these three relationships: the employee-employer relationship (amount of commitment) affects work time standards and norms which in turn affect and are affected by both the employee-employee relationship (amount of versatility) and the employee-life outside relationship (amount of balance). (Refer to Figure 2).

INSERT FIGURE 2 ABOUT HERE

Commitment, Balance and Work Time Standards and Norms

In an earlier section, we described the relationship between employees and employer and the fact that at Cco and Ico there is low commitment relative to Hco. As a result the managers at both Cco and Ico impose tighter controls on their engineers' work time to ensure the timely completion of quality work. In turn these controls affect work time standards and norms. Bureaucratic controls exist in the form of measures of performance which may affect both work hours and the intensity of work. Bureaucratic controls may be such that they ensure rigid work schedules, limiting individuals' flexibility while at work but providing greater predictability in their work days. Cultural controls require the acceptance of work as primary above all else in life and erode the possibility of balance, as one must work all of the time.

At Cco, engineers have the most rigid work schedules that result from a tightly regulated set of bureaucratic controls. There are many standards, policies and rules governing when engineers come to work, when they leave work, when they eat lunch, when they take vacation, when they work overtime, and as a result when they have time for their lives outside of work. There are also expectations that flow from the tight bureaucratic controls about the level of intensity with which they work.

At Ico, the same type of policies exist as at Cco relating to when engineers are required to be at work and how long they can take vacation. However, while there is a sense at Cco that the bureaucratic rules actually determine the engineers' work time standards and norms, at Ico these rules are explicit statements of minimal expectations that have little to do

with the reality of how much engineers actually work. The Ico engineers also experience high levels of cultural control and are expected to (and in fact do) work many more hours than mandated.

At Hco rules are for the most part absent. There is a lack of standards or policies that guide behavior. Furthermore there is a lack of deeply ingrained cultural assumptions that operate at an unconscious level compelling engineers to do what is in the organization's best interest. The high commitment and comparative lack of controls provides engineers more flexibility to make choices about when, where and how long they work.

Commitment and the resulting presence or absence of controls therefore affects work time standards and norms. In turn, work time standards and norms further affect the degree of balance. Because of the bureaucratic controls and ensuing rigid schedules, the Cco engineers have time outside of work. They place great importance on this non-work time and therefore desire ongoing balance, expressing great reluctance to work long hours – they feel that it would be detrimental both for themselves and their work. In contrast, at Ico, culturally embedded beliefs about the dominance of work in one's life pervade the work environment. The Ico engineers identify with work and accept long hours. This limits the possibility of identifying with other aspects of life and they further accept the work demands as necessary for the work and for themselves. Unlike either the Cco or the Ico engineers who are both heavily affected by the forms of control in place, the Hco engineers experienced neither of these forms of control. They have much greater discretion to choose when, where and how long they work. The presence of balance in the Hco engineers' lives is a direct reflection of their values and priorities. They consciously choose how much to trade-off the demands of work and life outside.

Versatility, Balance and Work Time Standards and Norms

As described above, commitment directly affects work time standards and norms and indirectly affects balance through work time standards and norms. Balance, in turns, further affects work time standards and norms and indirectly affects versatility. Moreover, versatility affects work time standards and norms and indirectly affects balance. What happens is that balance increases the likelihood that employees will develop versatility because the frequent absences of others (balance) encourage employees to find ways of working that can accommodate these absences (versatility). Versatility, at the same time, increases the likelihood that there will be balance because employees are able to cover for each other enabling individuals to be more flexible about their work time standards and norms, and therefore sustain balance.

At Cco, bureaucratic controls rigidly structure work time. These strict temporal requirements ensure that everyone works at the same time. Predictable schedules result but no incentive exists to develop versatility because everyone must work at the same time. The resulting lack of versatility reinforces the need to work the same hours and take the same times off.

Overtime at Cco is rare; however, when overtime is necessary to get the job done, engineers all accept the need to be present. As one project leader explained:

> Engineers are usually aware that if others are working overtime, they must too. Otherwise, their absence may negatively affect the rest of the team. . . If one cannot come in, it may prevent others from getting their work done. Projects have fixed time components, everyone knows this and has a responsibility to complete their own work to meet that deadline.

In addition to affecting work hours and overtime requirements, the lack of versatility at Cco makes it difficult for engineers to take separate vacations. In order not to inhibit the

group's progress, vacations are highly structured. At Cco, typically the organization closes for Spring Holiday each year during which time everyone goes home. One manager explained:

> It becomes difficult when developers go on vacation and work needs to be done. So we close up for a week and engineers usually head home for the Spring Holiday. If customers request work to be completed during that week, we will explain the situation and try to move the deadlines to accommodate our employees' leave schedules.

At Ico, unlike at Cco, there are not rigid bureaucratic controls determining work hours. Rather, there is a shared expectation that everyone will make work a top priority. Therefore, as soon as a few individuals need to stay late to work on a problem then everyone is expected to stay late in case they are needed. In the end, since some people are always staying late, the norm is for everyone to always stay late. As one engineer observed, "At Ico, staying late is a habit." As a result, like at Cco, there is no incentive to develop versatility because everyone is always present, which further diminishes time available for individuals' lives outside of work.

The lack of versatility puts pressure on Ico engineers to always be present in case they are needed; this is necessary both on a daily basis and in terms of carefully planning vacations. At one meeting an Ico manager became very upset because engineers were all taking different times off for vacation without regard for their work demands. He felt that it was highly important that time-off be carefully scheduled and adequately handled such that arrangements existed to transfer or suspend work. "You guys have an attitude that if you go on leave, if work doesn't get done, you don't care. Stop breaking up your leave days and take them in one block. This is much easier to plan for and cover and you will be more revived as well." Despite the critical importance to engineers of using vacation days

spontaneously to meet family responsibilities (described up front), the engineers are strongly discouraged from doing so. Instead, they are expected to consider the impact of their time off for their work, and make this their primary concern.

At Hco, engineers are more committed and face fewer significant bureaucratic and/or cultural controls. As a result, there is less pressure from either managers or peers to all be present at the same times. The frequent absences of people further encourages engineers to develop ways of working that are versatile and ultimately enable them much greater flexibility in terms of when, where and how long they work. One engineer went as far as to say, "It is important to define a range during which everyone is present. . . . 10:00 a.m. - 3:00 p.m. or 4:00 p.m. would accomplish that. Beyond that, we don't need to all be at work together to accomplish our tasks."

At Hco, versatility enables the same type of flexibility around vacations as around work hours. As a result, work is scheduled around individuals' vacations, instead of the other way around. And, as we saw in the case of one project leader, employees leave on vacation despite the demands at work. Moreover, neither engineers nor managers find this problematic. Rather, they have confidence that others will be able to fill in if a problem arises. One engineer described:

> I have extra work this week because [the project leader] is away. The two of us are theoretically interchangeable but since we each develop certain functions, it is much easier for the one who developed it to work on it later if a problem arises. . . . If such a problem does arise and the one of us responsible is away, we can either postpone fixing it if it isn't urgent or the other one of us will invest the time to figure out the solution.

When asked specifically if he would ever call the project leader on vacation he responded, "No. I can figure it out. It just might take some time." With this greater confidence that individuals are versatile and therefore do not continuously need to be together to get their work done, the possibility to establish balance in their lives increases. Similarly, the more true balance in individuals' lives (as opposed to predictability imposed by bureaucratic controls), the more flexible individuals' work time standards and norms, the more pressure there is on engineers to be versatile such that they find ways to cover for each other to enable the work process to continue even in peoples' absence.

In the end, the employee-employer relationship (amount of commitment) affects work time standards and norms which in turn affect and are affected by both the employee-employee relationship (amount of versatility) and the employee-life outside relationship (amount of balance). The employee-employer relationship and the resulting controls (or lack of controls) affect work time standards and norms directly in terms of the rules and/or expectations about work hours and work intensity that result. Furthermore, such controls affect the employee-life outside relationship through work time standards and norms because the type of controls affect the quantity and predictability of work hours which in turn affects whether individuals have time outside of work to develop sources of identity other than work. The more individuals identify with life outside of work, the more balance they achieve, the more unplanned and non-overlapping absences from work that occur, and the more employees need to develop ways of working together (versatility) that sustain this balance. At the same time, the more versatility that develops, the more balance possible.

DISCUSSION

We started this paper by asking whether the long hours and total devotion to work characteristic of engineering in the US and Japan was inherent in the work itself. Studying engineers in China, India and Hungary, we found quite large variation in the quantity of

hours engineers work and the flexibility they have in choosing when and where they work these hours. We further found that three self reinforcing cycles -- between employees and employers, employees and other employees and employees and their lives outside of work -- and their reciprocal interdependencies with work time standards and norms account for the observed differences in work time standards and norms (refer back to Figure 2).

At Cco, we found a lack of commitment and imposition of bureaucratic controls that ensured predictability and therefore enabled time for life outside of work and the identification with this time spent outside of work. Moreover, because balance was rigidly structured by bureaucratic controls, there was little incentive to develop versatility and therefore create more flexible forms of balance. At Cco work hours were therefore short but standardized, and vacation time was used but highly regulated.

At Ico, we found limited commitment and the imposition of cultural controls. In turn this form of control ensured long hours, limited balance and reinforced individuals' willingness to work long hours. Moreover, because individuals were always present there was little incentive to develop versatility. Work hours were therefore long and predictable because everyone needed to be present all of the time, regardless of the demands of one's own work, in case someone else needed them. Furthermore, vacation time was frequently not used and when it was there was pressure to take well-planned vacations to minimize the effects of one's absence.

At Hco, we found commitment with an absence of controls. Moreover, we found an identification with life outside of work which further reinforced a desire for balance. The emphasis on balance also encouraged versatility because of the need to accommodate individuals' absences and in turn made flexible work scheduling feasible. Work hours and vacation time were subject to individuals' decisions about how they desired to allocate their

time; most individuals struggled to find a balance between the demands of their work and their lives outside.

Work time standards and norms can therefore be characterized at Cco by low commitment, low versatility, and high balance; at Ico by low commitment, low versatility and low balance; and at Hco by high commitment, high versatility and high balance. One would further expect the three relationships identified could be used to characterize work time standards and norms in most any occupation. Moreover, one would expect variation in work time standards and norms to be possible in any occupation where these three relationships can vary. If some but not all three of the relationships vary, then the possible variation in work time standards and norms will be limited, because work time standards and norms are in that case partially inherent in the work. However, only if a case exists where the work itself *prevents* employees from exercising commitment, versatility and balance should work time standards and norms be totally inherent in the work and therefore need no further explanation.

Since our research indicates that at most any site variation in these three relationships should be possible, up to eight ideal types of work time standards and norms should emerge. The three relationships underlying work time standards and norms can each reduce to a dichotomy based on the presence or absence of the associated condition -- commitment, versatility and balance. The possibility of eight combinations should therefore result (Refer to Figure 3). Our research at Cco, Ico and Hco captures only three of those possibilities, box 6, box 8, and box 1, respectively.

INSERT FIGURE 3 ABOUT HERE

Future research might consider alternative combinations of conditions and the work time standards and norms that follow. Research by Brannen and Salk (forthcoming) on engineers working in a German -Japanese joint venture, "Nutech," indicates that their sites might exemplify two alternative combinations (Boxes 2 & 4). Brannan and Salk found that both German and Japanese engineers at Nutech exhibited high organizational commitment. Moreover, the German Nutech engineers were found to have balance while the Japanese Nutech engineers were found to lack balance. One quote by a Japanese manager working at Nutech illustrates this difference:

> Soooo. [A] big difference between German and Japanese people is the workers. Workers working in Germany care very much about private hours. . . . [Even though] there is some big order from the boss, if they have some appointment they will stick to their private life. . . . Japanese will give up their personal time. (As quoted in Brannen and Salk, forthcoming: 24)

In terms of versatility, the Japanese are trained more as generalists than the Germans. As Brannan and Salk found, "the Japanese felt that the Germans had a too narrowly-defined job scope while the Germans felt the Japanese had an unrealistic expectation of broad role responsibility." Yet, the Japanese were so highly interdependent in their sources of identity that they chose to minimize all absences, including planned vacations (Kilduff, Funk and Mehra, 1997). Moreover, when the Japanese took time off they took it collectively (i.e. Sundays). They therefore had no need to develop ways to cover for each other. Versatility was likely minimal for the Nutech engineers at both the German and the Japanese JVs.

The German side of the Nutech joint venture could likely be characterized by high commitment, high balance and low versatility (Box 2) while the Japanese side was likely an example of high commitment, low balance, and low versatility (Box 4). One would

therefore expect the Germans to exhibit work time standards and norms similar to the Cco engineers in that they work short, regulated hours and they take their scheduled vacations. The Japanese would be expected to exhibit work time standards and norms similar to the Ico engineers in that they work long, regulated hours and they minimize their vacations, which if they do occur need to be scheduled. The key difference between the Germans and the Cco engineers and the Japanese and the Ico engineers has to do with the degree of commitment that exists. The Germans and the Japanese at Nutech both express much greater company loyalty than the Cco or the Ico engineers. We could expect the greatest effect of this to be observed not in the hours worked but in the ways the time while at work is used, which itself will be highly effected by the forms of control that are imposed.

The German and the Japanese engineers working at Nutech further differ from each other in terms of balance. One would therefore expect them to differ from each other in the length of work hours and the likelihood of taking vacations. As our typology would suggest, Brannen and Salk report a struggle between the Japanese and the Germans over work time. The Germans make sharp distinctions between work and life outside of work and insist upon taking their vacations while the Japanese work much longer hours, engage in late night and weekend socializing together and willingly give up vacation time if the work demands it.

Brannan and Salk's research highlights the possibility that alternative combinations of commitment, versatility and balance do exist beyond those observed at Cco, Ico and Hco. Research by Saxenian (1994) comparing engineers working on Route 128 and in the Silicon Valley during the 1970s further offers possible examples of alternative combinations. Saxenian found that in the Silicon Valley, average turnover exceeded 35% in local electronics firms and was as high as 59% in small firms. As one engineer noted, "mobility has become the norm" (pg. 35). In contrast, on Route 128, the desired career

path was to move up the corporate ladder of a large company with a good reputation. As one engineer explained:

> There is tremendous loyalty to the company and tremendous will to make things succeed within the company [on Route 128]. There were pockets of brilliance at Honeywell, but these individuals never took the leap to go off on their own or join another company. I stayed at Honeywell for more than twenty years. I had lots of opportunities to leave, but I never took them seriously because I had too many personal commitments and business ties. (Saxenian, 1994: 63)

Commitment was therefore much higher on Route 128, than in the Silicon Valley. Further exploring the balance in the engineers' lives, neither exhibited balance. In the Silicon Valley, there was a blurring of the boundary between work and life outside. As one engineer explained:

> . . . the people to your left and right are almost universally talking about semiconductors, operating systems, networking typologies, interfaces, high technology start-ups, and high technology rocket drops.
> It's constant. Its everywhere. In the mills, at church (if you have time to go and haven't given up that eastern custom), in the newspapers, on the television, in the bank queue. It is a 24-hours-a-day, seven-days-a week activity. (Saxenian, 1994: 61)

Compare that picture with life on Route 128 where engineers also found themselves totally absorbed in their work. As one manager said about his engineers, "These guys don't realize how dependent they are on that [the product] to create their identities" (Kidder, 1981: 232). In both cases, the engineers spent long hours together, the difference was

only that on Route 128 their work was confined to the office and not the surrounding bars and restaurants where conversation frequently spilled over in the Silicon Valley.

While both Route 128 and Silicon Valley engineers worked much of the time – only marginally differing from the Japanese or the Indians discussed above – they likely display higher levels of versatility. The Japanese and Indian engineers experienced much pressure to schedule overlapping work hours and vacation times. For example, neither the Indians nor the Japanese hardly ever worked on Sunday but they regularly worked on Saturday. In contrast, the engineers both on Route 128 and in the Silicon Valley worked long hours but with more tendency to work different times of day and the week from each other. The greater flexibility in work times likely reinforced a greater versatility which enabled engineers to accommodate each others' less rigid and therefore less overlapping work schedules.

As described by Saxenian, in the 1970s, Route 128 firms might be characterized by high commitment, low balance and high versatility (Box 3) while Silicon Valley firms might be characterized by low commitment, low balance and high versatility (Box 7) . Because the variance between Rt. 128 firms and Silicon Valley firms has to do with commitment, the observed number of hours worked and vacation days used would not likely vary; only the underlying motivation to work those hours and possibly the intensity with which they are worked should vary.

The one remaining case outlined in Figure 3 that we have not discussed is characterized by low commitment, high versatility and high balance (Box 5). This might be the case if an organization like Cco implemented flex-time and the engineers developed new ways of working to accommodate this flexible scheduling. In that case, like at Cco, there would be low commitment and low balance but there would be an incentive to develop ways of

working that accommodate the fact that everyone does not work the same hours. In turn, this would encourage versatility and likely accommodate the fixed but not set work hours.

It is interesting to note that in the decades since the 1970s, Silicon Valley firms have been much more successful than those along Route 128. It may be that the possible combinations of the three core relationships indeed exist. However, it may also be the case that all possible combinations are neither optimal for worker flexibility nor for firm profitability.

IMPLICATIONS

"How we choose to parcel our time, slice it up among different activities, how we make and revise our commitments to each other over time, are all matters of profound moral import in our everyday lives" (Siranni, 1991: 267). Much research on engineering work has indicated that the way of working characteristic of engineers in the US and Japan is required by the nature of work itself and the globally competitive market place. However, what this research has revealed is that this way of parceling up our time and allocating it to work and other activities in life depends on more than the work itself, and indeed depends on employees' relationships with their employers, other employees and their lives outside of work. We previously have not owned up to the fact that employees are creating the very temporal conditions that are controlling their lives. Social constructionists have been telling us this for over 40 years (Berger and Luckman, 1966); and more recently structuration theory has applied this concept to temporal structures in particular (Giddens, 1984). What this paper highlights is that engineers are constructing the work time standards and norms that guide their work. Whether in the US, Japan, Germany, India, China or Hungary, engineers are constructing their temporal demands and constraints; moreover, they are constructing them differently based on their relationships with their employers, other employees and their lives outside of work.

When one has genuine flexibility, as the Hco engineers approached, then individuals consciously make choices between work and life outside, most directly influencing their own work time standards and norms. In contrast, when individuals lack genuine flexibility whether because of a lack of commitment, versatility or balance, they are less consciously determining their work/life tradeoffs. Yet, individuals' collective decisions are still core determining factors in the resulting work time standards and norms. In China, India, Japan, Germany and the US, engineers, just like those observed in Hungary, are at the source of the three interconnected self-reinforcing loops. They may not be able to create change on their own, but each of them is part of a larger group that is reinforcing the very conditions that structure their lives.

Understanding how the system of interconnected relationships between employees and employer, other employees and their lives outside of work functions provides potential levers to change work time standards and norms. However, in this paper we have not addressed the question as to which combination of conditions is preferable. Is it desirable to exhibit, all three, none or some combination of commitment, versatility and balance? It is not clear that the answer is or is not the case of the Ico engineers who have none of the three or the Hco engineers who exhibit all three. Certainly, the Ico engineers believe the long hours are necessary while the Hco engineers believe that their work benefits greatly from their experiences outside of work, enhancing both their work creativity and breadth. The question becomes one of preferable towards what end. Future research might consider the benefits and limitations of the possible outcomes, keeping in mind the broader effects and the longer term consequences for individuals, families, communities and corporations.

In the US there has been much interest in creating a more flexible work place that will better help individuals balance their dual career relationships, families and home responsibilities

and their fast-paced, temporally demanding careers. What often happens is that corporations superimpose flexible work options on an existing set of work time standards and norms. For example, employees are given the opportunity to work part-time, flexible hours, or to work from home, but without addressing the relationships that employees have with their employer, other employees or their lives outside of work. The result is often negative career consequences for the employees who take advantage of these options (Shamir and Salomen, 1985; Perin, 1991; Bailyn, 1993; Perlow, 1997)

This research provides an explanation for why these options often fail. Different underlying relationships make an organization's environment more or less conducive to flexible work options. The more commitment, versatility and balance, the more an environment should be able to embrace flexible work scheduling. The less these conditions exist, the more resistance and resulting risk that will be incurred by those who take advantage of these options when offered. Ico is a case that lacks all three conditions. To use flexible work options at Ico would likely be detrimental to one's career because of the cultural controls, the expectations that work will be one's first priority and the evaluation of people based on hours. A person who took advantage of a flexible schedule in a system without versatility or balance would likely cause problems for other employees not used to working in a person's absence. Moreover, in a system with low commitment and high cultural controls in place, working flexible hours would conflict with the definition of the successful employee and employees would run the risk of being seen as less committed and less productive (Bailyn, 1993; Perlow, 1997).

Currently much literature on flexible work programs concludes that there is a need for greater acceptance of flexible work policies as part of the way business is done (i.e. Solomon, 1994). The problem is that this stream of research rarely addresses what specifically must change for these programs to be "accepted." Some do recognize the need

to change the corporate culture (Mason, 1992; Hall and Parker, 1993; Bailyn et al., 1997). Our research highlights what must change to better accommodate these policies. One cannot simply create flexibility as it exists at Hco by superimposing flexible work options on the types of conditions existing at Ico. The system at Ico is set up such that any attempt to superimpose flexibility on the existing system will be undermined. To create a flexible work environment requires altering the underlying relationships between employees and employers, employees and other employees and employees and their lives outside of work to support individuals' efforts to create more flexible work schedules.

Our research has implications not only for creating a more flexible work place, but also for managing globally. Employees doing the same type of work in multiple locations may differ in terms of their three underlying relationships. Any attempt to create common work time standards and norms requires understanding how imposing new work time standards and norms will affect these existing relationships and ultimately how these new standards and norms will be affected by the existing relationships.

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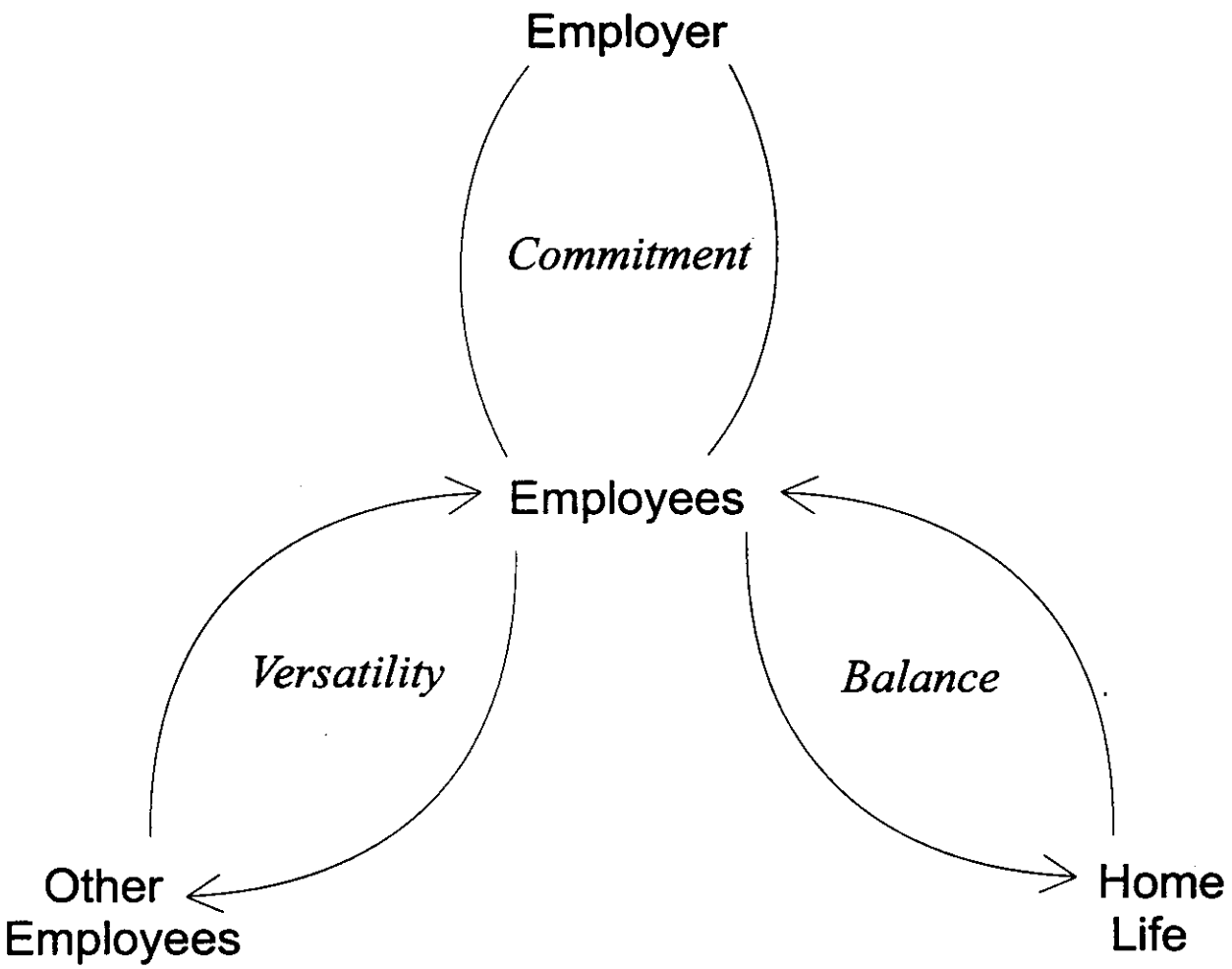
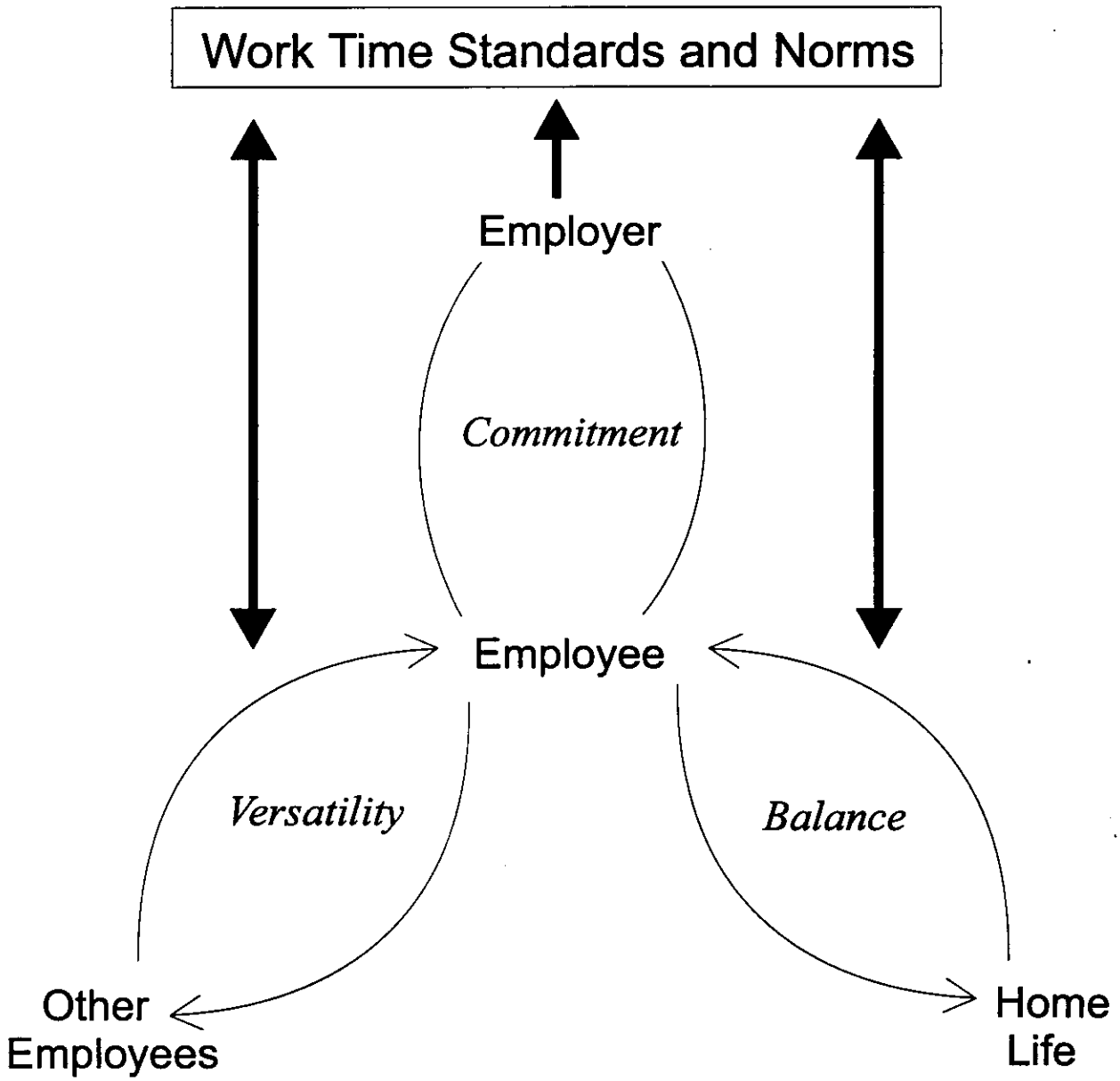
Three Underlying Relationships

Figure 1



Dynamic Understanding of Work Time Standards and Norms

Figure 2



Typology of Work Time Standards and Norms

Figure 3

High commitment

	High Versatility	Low Versatility
High Balance	Hco 1	*Germany?* 2
Low Balance	3 *Rt 128?*	4 *Japan?*

Low commitment

	High Versatility	Low Versatility
High Balance	*Flex-time?* 5	Cco 6
Low Balance	7 *Silicon Valley?*	8 Ico