The power of myth in the IT workplace

Creating a 24-hour workday during the dot-com bubble

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Abstract *The central purpose of this paper is to demonstrate that managers of several IT companies, during the dot-com bubble, used the myths that were readily available in the wider American culture of the time to motivate and manipulate their employees. These managers motivated their employees to put in long hours at the worksite, to be continually on-call, to intensify their work pace, and to self police their co-programming teams. The methods used were qualitative social research including interviews, observations, self-reported organizational charts and time diaries. This is a single case study conducted during a specific period of time. The implications discussed in this paper may provide insight to the managers of IT personnel who seek to motivate their employees to greater efficiency. This paper adds to a discussion on the role of myth in managing IT personnel.*

Introduction

The purpose of this paper is to illustrate the power of cultural myths used to motivate employees in the ICT-enabled workplace. Managers of the IT workplace have attempted to motivate employees to become highly productive and efficient through the use of traditional "carrots", such as additional benefits, increased salary, revenue sharing, and autonomous work environments. In this paper, I argue that during the years 1996 and 2001, commonly known as the dot-com bubble, managers of IT workplaces in addition to the methods mentioned above used non-traditional "carrots." These methods were subjected to the purposeful exposure and manipulation of commonly available cultural beliefs, or myths from the wider American culture to motivate employees.

In this paper, I am working with the definition of myth as an imaginative story using symbols and colorful images to help people understand concepts either too complicated or too difficult to express in words. Myths may have originated in truth or may continue to hold a kernel of truth as they are told, but what most clearly defines them is their exaggeration, fanciful elaboration, and interpretation of that kernel. Most modern readers consider myth to be equivalent to fairy tale – a good story perhaps, but without truth. Myths usually tells a story about a person or thing existing only in imagination, or whose actual existence is not verifiable. I suggest that modern myths are passed from person to person through telling stories through a variety of media. These stories serve to build aspects of our wider American culture and may prompt individuals to behave in new, culturally specific ways.

During the time period in question, 1996-2001 in the United States, modern myths concerning the earning of millions of dollars by technical wizards through

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breakthrough innovative, entrepreneurial behavior became ubiquitous. The stock market was thought of as unstoppable, venture capitalists funded anyone with a good idea, good ideas founded companies, employed tech workers and some became so wealthy that their names appeared on immense stadiums and bowl games. New wildly successful individuals became the "rags to riches" stories of the day on the evening news and in the national papers. New heroes were born in the IT sector daily. These myths were born during a time of "Gold Rush" like behavior on a national scale.

The dot-com bubble has been characterized as possessing a gold rush mentality, a period of time in which there is rapid economic growth, individuals and corporations take risks, which they might not have taken, and traditional business practices and social values are ignored. During "rushes" an average person believes that he can become very wealthy without passing through traditional steps. This dot-com era can be characterized by enormous contagion of optimism, constantly changing opportunity, *ad hoc* organizational structures, very rapid growth, highly mobile workers, massive early investment that exerts enormous pressure to "produce the goods" quickly to achieve positive cash-flow, fast and often unpredictable rate of change and a loss of traditional human resource programs and regulations. Instead of a pickaxe, gold pan and a mule as in the California gold rush, the tools of the dot-com gold rush were computers, domain names, high-speed connections, software and investors. The dot-com boom and bursting of the dot-com bubble resembled other episodes of unreasonable speculation in history.

I assert that during this time of gold-rush like behaviors modern myths were propagated that led an average tech worker to believe that he can quickly become wealthy. These tech workers abandoned the traditional paths to employment and wealth, such as legitimate education and entry-level jobs in large companies. These tech workers assumed that managing a new company was a simple task, easily accomplished by someone with technical skills. These tech workers believed that they were short-term employees, because the company they worked for would either be bought by another company, and make a lot of money, or would have an initial public offering (IPO), in which they would also make a lot of money. It is clear that these ideas came from the wider American culture through the Internet, television, paper media, and colleagues.

The central point of this paper is to demonstrate that managers of several IT companies, during the dot-com bubble, used the myths that were readily available in the wider American culture of the time to motivate and manipulate their employees. These managers motivated their employees to put in long hours at the worksite, to be continually on-call, to intensify their work pace, and to self police their co-programming teams.

Theoretical background

Workplaces and information and communication technologies have changed dramatically in the last 15 years. Since the early 1990s "...we are now seeing a new type of postindustrial, post bureaucratic, post-Fordist workplace..." (Daday and Burris, 2001), while most authors agree that a change has taken place, they are divided according to the nature of the change. On the utopian side, this new workplace has been characterized by social scientists as having a decentralized locus of control, a reduction of hierarchy, an upskilling of work, a centrality of educated knowledge

workers, and more flexible democratic forms of work environment (Attwell, 1992; Bell, 1976; Block, 1990; Clegg, 1990; Hirschhorn, 1984; Piore and Sabel, 1984; Powell, 2001; Smith, 1997). Hammer and Champy (1993) state that "...the real power of technology is not what can make the old processes work better, but that it enables organizations to break old rules and create new ways of working – that is, to re-engineer," On the critical side of this debate the belief is that although workplaces have changed they have remained highly centralized and have adopted new forms of managerial control, including new forms of peer driven and self driven control, along with a polarized workplace involving expert and non-expert sectors bringing up strong issues for gender and race (Burris, 1993, 1998; Daday and Burris, 2001; Vallas, 1999; Vallas and Beck, 1996; Prechel, 1994; Hodson, 1988, 1996).

Richard Sennett (1998) in his work, The Corrosion of Character – The Personal Consequences of Work in the New Capitalism, states that recent efforts at corporate re-engineering cause workers to experience an increasing insecurity, making it impossible for them to achieve a moral identity. Sennett's book challenges the reader to decide whether the so-called flexibility of modern capitalism might be "merely a fresh form of oppression". The new flexible, reinvented corporation has "redefined work" in a context of ceaseless change – change which is leading inexorably to the "loss of anchorage and self-understanding of the employee". Sennett finds three elements of the present system corrode the characters of employees: "discontinuous" reinvention of institutions, flexible specialization of production, and concentration of, without centralization of power. Corporate-sponsored rhetoric is all about "flattening out" the old hierarchical authoritarian structures of workplaces and getting rid of the "interference" by the State and employee associations. Sennett believes that in at recent years, capitalism has been increasingly structured for a short-term gain. This can be corrosive of both individual and social senses of purpose. He has sought to identify the effects on people's emotional and psychological well-being. Even in menial jobs, personal self-image depends on an idea of progressive achievement, of continuous development through a "career". People now talk about trying to "get a life". Formerly people's lives were based on loyalties, attachments, and acquired skills and understandings that made them feel important to others. Now personal and family lives are increasingly marked by instability of income and location, the rupture of attachments and learned work routines, the fragmentation of experience into dislocated episodes, the preoccupation with consumption, and the difficulty of understanding and coping with feelings of alienation.

Dot-coms typify the dramatic organizational changes that have occurred in recent years. Initially, the success of these companies ostensibly indicated the utopian view of the new workplace was largely accurate. However, when the dot-com bubble burst, what had been a picturesque landscape of stock options, IPOs and millionaire retirements by ago 30, suddenly became a graveyard littered with the hulks of insolvent and shuttered companies. What may have seemed at the time to be an overnight phenomenon of collapsed companies and bankrupt businesses was rooted in more fundamental problems involving poor business decisions. Overextended growth, insufficient management and the lack of an effective business model are the common reasons for failures of dot-coms found in the business press (Glass, 2001).

Moreover, these anecdotal causes for typical dot-com failures are supported by the literature on strategic decision-making in "high velocity environments" (Eisenhardt,

1989). These are environments in which "changes in demand, competition, and technology are so rapid and discontinuous that information is often inaccurate, unavailable, or obsolete" (Bourgeois and Eisenhardt, 1988; Eisenhardt, 1989). The dot-com environment of the 1990s fits this definition of near constant change and competitive uncertainty. In Brown and Eisenhardt's comparative case study of six firms in the computer industry in the 1990s, the authors identified the need for managers to:

(1) initiate "semi-structured" environments for employees by delineating responsibility and priorities while allowing freedom to improvise and innovate;

(2) strategically explore the existence of future product opportunities without becoming entirely wedded to a specific course of action; and

(3) seamlessly transition of employees from one project to the next (1997).

I chose to focus on dot-coms because of the rapid boom to bust cycle in which they existed. These types of transitions are an excellent phenomena to study the relationships among organizational culture, structure and IT. The connections and effects among these are forming, raw and visible to those trained to observe such phenomena. The boom can be described as comprising entrepreneurs who enthusiastically set-up Web-based enterprises selling everything from infrastructure, services, domain names, advertising, toys, graphics, and anything else. In 1999, the Nasdaq gained 128 percent. In 1999, there were 546 IPOs that raised over $69 billion. The average first-day gains of IPOs in 1999 were 68 percent compared to 23 percent in 1998. Success was generally not measured in return on capital or return of capital, but rather in raising capital from investors (Bob Kerstein CEO http://Scripophily.com).

However, during the years 2000 and 2001 this bubble burst. Stock prices plunged, investors lost confidence, and Web-based businesses started closing down. Evidence of the dot-com bust includes the 4,854 Internet companies acquired or closed (3,892 acquired and 962 shutdown) during the first quarter of 2000. Moreover, the first 16 months of the bust saw 44 shutdowns per month. The bust was having a wide ranging occurrence; failed dot-com companies included Internet content providers, infrastructure companies, Internet-services providers, and providers of Internet access (www.webmergers.com/, University of Maryland data).

When the dot-com bubble burst, it was revealed that scores of companies lacked either the strategic management savvy or technical skills to successfully navigate this trying terrain. Furthermore, applying Brown and Eisenhardt's work to the late 1990s landscape of failing small high-tech forms, Riolli-Saltzman and Luthans' comparative case study identified the need for management to develop a flexible culture and "future time orientation" (2001). The authors indicate that managers in small, high-tech firms must reconfigure traditional strategies by emphasizing speed, innovation, communication and employee involvement, while remaining grounded in sound business principles. Whereas "a lot of the earlier growth of most of these firms was in spite of, rather than because of, the way they were managed," the tighter economic environment following the dot-com crash accentuated the stringent managerial requirements that Brown and Eisenhardt (1997) identify as necessary in high velocity environments.

Time

It is clear that in the early 1980s workplace environments have changed to include elements such as longer working hours, an intensification of working pressures and increasing demands for employees to manage their time more efficiently, i.e. multitasking (Robinson and Godbey, 1999; Schor, 1991). Workplace technologies have played a central role in these changes as it has been perceived, perhaps correctly or incorrectly, as the facilitator of efficiencies in the workplace in terms of automation, mass production, and information processing.

Robinson and Godbey (1999) finds that modern society experiences time famine, time starvation and time deepening in which people strive to make use of the time they have in a more efficient way by completing many more tasks at once and suffering extreme stress when the multiple tasks are impossible or difficult to complete at that breakneck speed and level of complexity. In her book, The Overworked American: The Unexpected Decline of Leisure, Harvard Economist Juliet B. Schor shows how the US has increased its work-time while decreasing leisure time. People are also working more hours. Juliet B. Schor backs her point stating, "...the average person is now in the job an additional 163 hours, or the equivalent of an extra month a year" (p. 29). The causes of this decline in leisure are found in the decline of unions (which fought for reduced work days earlier in this century), and a consumer-oriented society in which workers take on an additional overtime to pay for a material lifestyle fed by abundant credit. In addition, employers seeking to increase revenues can reduce their labor costs by asking their employees to work overtime rather than to hiring additional workers. Automation and downsizing increases the workload on remaining workers after each round of cost-cutting.

Between 1982 and 1994, the average hours worked by full-time workers increased from 42 to 45 h per week, there has been a trend toward longer working hours during the past 20 years. The relatively small increase between 1992 and 2002 in the average number of hours worked by all full-time workers appears to be the result of a growing number of people working 50 h or more per week. In August 2002, around 1.7 million Australians worked 50 h or more per week, twice as many as in 1982. As a proportion of full-time workers, those working for 50 h or more per week increased from 20 to 30 percent (Source: ABS Labour Force Survey).

Recently, time has become a central focus for several prominent organizational theorists (Epstein and Kalleberg, 2001; Perlow, 2001; Thompson and Bunderson, 2001). Very recently, in many papers, authors have discussed the breaking down of the physical limitations of the traditional workday. Through innovations in organizational structure and communication and information technology, work time is no longer constrained by physical location, climate, environment or limits of employee abilities. Owing to these innovations, institutions other than medicine and the military have the ability to develop into "greedy institutions" (Coser, 1974) demanding a time commitment unseen before in these smaller work environments. Several authors have examined the changes in the concept of time within the high technology sector (Kunda, 1992; Perlow, 2001) and arrived at diverging explanations for a common phenomenon. While there is a clear agreement on the shape of the phenomenon, some authors attribute the changes in work time to the changes in technology, while others attribute it to the changes in management.

Methods

The research method followed for this study was based on a case-study with the intended goal of grounded theory development (Eisenhardt, 1989; Yin, 1984). Following the general roadmap outlined by Pare' and Elam (1998), I gathered and analyzed data from multiple cases. The grounded theory method (Glaser, 1992; Strauss and Corbin, 1990) is a "qualitative research method that uses a systematic set of procedures to develop an inductively derived theory about a phenomenon" (Strauss and Corbin, 1990, p. 24). It involves a general approach to analysis that does not depend upon particular disciplinary perspectives, that is, it is appropriate for the multidisciplinary nature of research in IT focused workplaces. The benefit of the grounded theory approach is that the resulting theory is intimately tied to the evidence (Eisenhardt, 1989). A requirement of the grounded theory is that the researchers demonstrate theoretical sensitivity (Glaser, 1992) by being well-grounded in technical literature, from personal and professional experience and in the collection and analysis of data (Strauss and Corbin, 1990).

The research was conducted by a small research team which included myself, as the Principal Investigator, and four advanced undergraduate students. These students participated in this research to fulfill their research internship component of their education in Sociology. This research began as a larger study in which three IT companies who fit the description of a dot-com were examined at various points during their life cycle. The goals of the larger study were to understand the organizational culture and structure of the dot-com and its relationship to technology. In this paper, I present some of this data from one of these three cases, which, in many ways, is representative of the other two.

I selected a mixture of methods, which would result in a rich detailed thick description, including short-term observation and in-depth interviews, the drawing of self-reported organizational charts and time diaries. It provides a very detailed snapshot of CSC during a specific period of time.

I conducted a year of informal observation within the working environment of CSC. Continuous informal observation was carried out as members of the research team spent time at the CSC worksite conducting interviews, attending social engagements and making appointments over the next several months. To clarify my approach, qualitative observational research is a systematic inquiry into the nature or qualities of observable group behaviors in order to learn what it means to be a member of that group. The researcher's job, rather than to describe a stable entity, is to give continually updated accounts of observations on multiple levels of group interactions that occur on both a temporal and continuous basis simultaneously. This type of research attempts to identify and explain complex social structures within the study group. Observations were completed between January 2001 and December 2001.

I conducted a series of semi-structured, in-depth interviews with nearly all employees. Several employees were hired later during the interviewing process and thus were excluded. In addition, several employees ceased employment with CSC early in the interview process and thus they were also excluded. Twenty employees, including the owners, were interviewed. Included in this group are employees who have worked with CSC since its inception, new hires as well as all those in-between. No sampling was needed since the entire population at any given moment was to be

selected for interviewing. Interviews were completed during the months of June, July and August 2001.

The interview had several core questions that all subjects were encouraged to answer in a structurally similar manner. While all of the questions would be considered open-ended in that no choice of answers was provided, several questions allowed the subject to respond more freely, leaving the confines of the interview. The interviews were structured more like a conversation between two individuals than as a formal interview to increase the free-response effect, build rapport and decrease anxiety. Interview data were coded using a set of categories that stemmed originally from the literature on the IT workplace, but soon expanded to encompass a set of patterned responses found among the subjects' responses. Categories were tracked for frequency and intensity among all respondents. Systematically, I reviewed each interview for relevance to my research questions. I noted the variation in types, frequency and intensity over time. Every instance of the research categories was catalogued. A short list of the categories tracked includes: control efforts, concertive power, time famine, boundary loss, teamwork, and mythologies.

Along with the observations and interviews all of the employees were asked to draw an organizational chart depicting position and power within the company and to fill out a time diary for one week detailing how they spent their time. Included in the analysis are the results from 20 organizational charts and 19 completed time diaries.

Case study: cool software company

Cool software company (CSC) is a small, but rapidly growing firm that writes business to business, B2B, software and constructs Web sites specifically geared to large-scale e-commerce. Their product is a custom software with no hard physical products. CSC describes itself as:

> The mutant offspring of an artsy designer and a Web technology guru, [CSC] is a Web development firm with a unique grasp on user experience through all its technological manifestations. What does that mean in plain English? We took the two clashing forces of modern Web building – technology and design – and melted them down into something cohesive. The result? An integrated team with the strength to examine a Web project from all sides, from visual branding and identity development to content management and data syndication. And the experience to architect solutions that flow seamlessly from the first user click all the way into management systems and legacy applications. Our Development Group brings enterprise-level integration skills and technology to every Web project we take on, from high-end Web application development...to full-featured, self-managed presence sites... When they're not creating a branding and identity strategy from the ground up for clients... our Creative Group builds intuitive interfaces and architectures that provide a guided experience for users. The design philosophy is user-centric, but we take it one step further than most – we recognize all the users, including the ones paying for the Web project. That's why we build management tools that are as easy to use as the sites themselves (taken from CSC Web site, not listed here to protect confidentiality).

The company was founded by two individuals (from this point forward called the owners) in 1999 and began with five employees, all of whom were some form of computer programmers. At the time I did this work, CSC had over 30 employees and had offices in two states. While the majority of its employees were computer programmers, other professionals were hired as the business grew. Demographically, the employees are 85 percent male and 93 percent white (Anglo). Fifty percent have

a terminal high school degree, and others have some college experience. The average age is 23 years old, and 75 percent are married. This company failed and was dissolved in December 2001.

Time data

Although the actual number of hours spent at the office changed over the course of the year in which this fieldwork was conducted the numbers varied across individuals, and these numbers presented in aggregate here may be useful. I have three sources of data included in this section, my observational data, self-reported interview data and time diary data. Each possess certain merits and disadvantages. My observational data can be seen as biased by my personal value system, research agenda and social science training, but remained unbiased by a marked lack of love for software development and a sense of loyalty to CSC. The self-reported interview data are highly valuable as it comes from the mouths of the informants, however, on certain occasions I will point out the self-reported data as also self deluded data. The time diaries present similar problems with honesty, and problems being completed in a week's time, yet, they provide a very detailed and rich data on the actual time spent (Figure 1).

From the time diary data, an average day for an average employee at CSC during the summer months of 2001 can be reconstructed. The time diaries were Web-based programs in which each employee was reminded once per hour during 8:00 am and 10:00 pm to make an entry into the diary. Each morning they were asked to report the previous night's activities. This lasted for a week. This average software developer began his average day around 8:30 am. He arrived at the office, stopped in at the office kitchen and grabbed some coffee and a bagel or doughnut. He managed his e-mail until about 9:30 am. At 10:00 am each development team would hold their morning meeting for about 30 min laying out the tasks for the day. The average employee would then find his co-programming partner and either take on the role of typists or guide. Between 10:30 and 12:30, approximately 2 h, the two employees would either create new code for the developing site or fix/append old code. At approximately 12:30 someone would walk through the office and yell that the food had arrived – some takeout that had been ordered, or that a game was about to start in the game room. The average employee would break from work and play and eat for 45 min to an hour, between 1:30 and 4:00 pm, approximately 2.5 h, the co-programming teams of the two employees would come back together and continue coding. This time period was

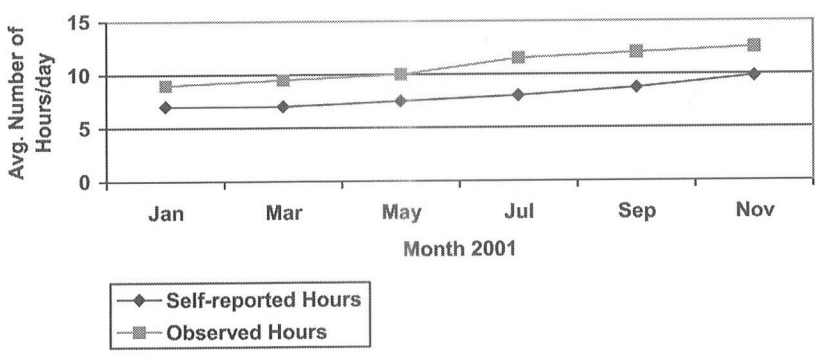

Figure 1.
Daily hours spent at work

described as the most productive. At 4:00 pm all developers stopped working to either return to the game room for another console game or played a Web-based game from their workstations for about 30 min. After this game the average employee put in his third 2 h shift at co-programming. The average employee wrapped up the days work and left the office around 7:00 pm. After 7:00 pm is where the diversity among the employees asserted itself. The employees all listed that they went home and then ate either at home or elsewhere. However, 10 out of the 20 employees stated that they were back on a computer by 9:00 pm at home every night. These ten employees stated that they did a variety of things online including some work, some e-mail, some Web surfing and playing some game each night.

Two nights during the week in which the employees filled out their time diaries, 15 out of the 20 developers did not leave the office until after 10:00 pm because of a demonstration production that was shipping out later in the week. On both days, Saturday and Sunday, the developers were asked to come to the office. This was a common practice, but did not occur every weekend. On weekends the developers, on an average, began their day an hour and a half later and stayed at the office approximately 6.5 h.

Most notable is that of the 21 observed meals for each employee (estimated at three per day for seven days) 17 were shared with co-workers not friends or family members. In general, entertainment was television watching alone or console and PC game playing with other co-workers. Socialization was also for the most part with other co-workers.

The role of myths drawn from the wider national culture

The founder of CSC stated,

> I founded CSC because I saw lots of stupid people becoming millionaires around me. I said this is wrong. I am a smart guy and I know a lot of smart guys. We can start our own company and make our own millions. Why not? ... I had a good idea that I knew we could sell. So I called a few guys and made it happen. We got big really fast because our idea DID sell [his emphasis] ....I wondered what the big deal was with managers. I never thought they did much. We were smart guys so we thought we could manage it all too. We didn't need no stinkin' business degrees.

CSC used two main recruitment strategies, personal references and recruitment parties. After the initial hiring of few employees, all other employees were hired in either of these two manners. The initial growth spurt was accomplished via the first method, personal references. During that phase the company grew from 5 to 20 employees. When asked, these 15 employees stated that they were friends of the original five. They had known them at college or in a past job or through a friend of a friend. One of the original five said,

> Well... we all knew each other. I worked with John at CompanyX and so he knew I was good. When he came up with the idea for this company, we both quit CompanyX and decided to make this work. I called my friend from school, Tom, to come and join us too. He quit his job and moved down. Dan called Sam and Bob, two guys he used to work with when he worked for CompanyY and they came down too. We all ended up living at John's house until we got to the first big launch. It was tough but cool. We worked our a***s off. Drank lots of coffee and beer and ate Domino's continuously...it was good.

The original 20 employees were very homogeneous. They were all computer programmers, all male, all in their mid to late 1920s and had zero drag (Kunda, 1992; Perlow, 1998, 1999): no competition for work time like families, pets, girlfriends or hobbies. Another of the original five stated,

> When John called me to come down and work with him and Dan I said woah, what perfect timing. I had just broken up with my girlfriend, hated school and my lease was running out. So I said, sure man, I'll be there next Tuesday! I stuffed my s**t in my car and just left, just cut loose.

Later in the year, another of the original five said,

> I knew that John had made a lot of money with another start-up. I heard he was good. So I said why not. I came 'cuz I thought we could go IPO and I'd get stinking rich. I knew there was that chance. Why pass it up? It could happen.

Anticipating that they needed to grow fast, the initial five then developed the second method of hiring. They developed the college tour recruitment party. I argue that the development of this recruitment party was an extension of the first effort to hire more individuals who were just like them, but on a larger scale without the personal ties. The first phase of the recruitment party was to send invitations to the university's MIS, CS, IS departments and computer labs on campus. The recruitment party itself was held in a college town in the ballroom of a large hotel. The ballroom was set-up with several SEGA Dreamcast wall – projection video games, catered high end Asian snacks and sushi, beer and wine, music and lots of comfy chairs. The initial five would circulate among the invited candidates chatting and what they call "geeking," discussing technical issues in fun, lively banter, with a one-up-man-ship-style seeking which person knows the most obscure technical facts. They ate, chatted, drank and played one-on-one fighting games like "Soul Caliber" against one another for hours. One of the developers stated,

> I couldn't believe it was a job interview. I am *so* glad I didn't wear a suit. [his emphasis] It was just so cool. It was like I fit right in. Some dude with blue spiked hair handed me a diet Pepsi and the console and said 'hit me' you know, just like Keanu in Johnny [Mnemonic – a film] I knew then and there that this was the place I wanted to work.

No formal interviews were ever held, no formal questions about the applicants' technical expertise were ever asked, no credentials or references were ever examined or checked, yet six new employees were hired from that party alone. All six were male and left college to travel across the country to work for CSC. It struck me that the criteria that the initial five expected to use as the grounds for hiring an applicant were radically different from the stated criteria and hiring methods of traditional workplaces. Although in most traditional settings, cultural fit, is an element of the hiring practice, overt attempts to determine that fit are frowned upon.

It became apparent to me that the initial five and the 15 from the first wave of hiring used the recruitment party as a cultural sifter, sifting out those that were the closest match for the company's needs. In order to get this job: first, one must be a student at a particular college; then must hang out in a computer lab or pass through the MIS, CS, IS or related departments to get an invitation; next, one must appear at the party and have the clothing/appearance to attract one of the initial five; at the party one must be able to be competitive verbally in the "geeking" and pseudo-physically in the Sega

one-on-one fighting game; must talk about the appropriate movies (like the Matrix and other Martial Arts movies, and Japanese Anime) the appropriate Television shows (like Start Trek Voyager); laugh at the initial fives' jokes and recognize their obscure sense of humor; one must comment on their cool Asian, Ambient, or electronic music and have your own MP3 collection; must have no close ties with family, significant others and friends and be willing to drop them, one's school, one's geographic location all at once; must buy into the myth of Silicon Valley and believe that with the help of CSC, one will be a millionaire before one is 30 years old just because one is that good at programming. John, an owner, stated,

> We really wanted to find good programmers. But beyond that we wanted people that could make the commitment to being here, you know. We didn't want any whiners who were gonna take time-off all the time because their kids were sick. We knew the kind of people that would be able to give us the kind of commitment we require. We could tell almost immediately who these people were.

After the company failed, I asked several employees why they believed it had failed. They blamed the drive to become millionaires at all costs as the main reason the company failed. They saw the founders and top management as striving to increase corporate size not for rational business reasons, but rather just so they could cash in by either selling out to another company or taking CSC public through an IPO. Either way, the founders stood to earn a considerable amount of money. They saw CSC as caught up in something larger than itself – a wave of dot-com hype that seemingly produced overnight millionaires – that ultimately helped to speed its downfall. Chris, a programmer, stated,

> I think the failure was a mixture of the marketplace and some outrageous over hiring, as well as some dot-com hucksterism that came back to kill them involving [their merger partner]. Had some of the higher ups been focused on raking in new business instead of IPO-ing and the whole dot-com hype, things might have been different.

Robert, a programmer, stated,

> They obviously grew too fast, but it really wasn't their fault because it was more of a case where they thought that they were going to go for an IPO and go to make everybody a million dollars and become rich. And in order to do that, they thought that they needed to expand and get bought out by some huge corporation. They got caught up in dot-com fever essentially. Every other dot-com company was IPO-ing for millions of dollars and I think they wanted to IPO and make lots of money instead of slowly build a company.

Software change: social change

Within CSC several technological changes transpired during the investigation period. The biggest change was a change in the programming language in which the company created its products. The company began in 1999 programming in PHP, a language that was considered an open source, free and uncontrolled. The small group of original programmers who were responsible for most of the initial products were a tightly knit group who exerted significant control over the business. In a surprising move at the end of 2000 the owners decided to change the language from PHP to JAVA. The employees of CSC characterized JAVA as an unstable, complicated, more tightly controlled and inferior to the PHP language. They moved from their own proprietary architecture to an off the shelf, more standardized architecture.

The employees believed that they had made the switch because the owners wanted to please a very large client and that JAVA, as an object-oriented language, was easier to sell to the non-technical managers of their clients. At the time of the change the owners fired the original PHP programmers and physically moved around all of the other employees. When asked why, John, one of the owners stated,

> I don't like the way these guys [the PHP programmers] were operating, all isolated from the rest. I especially didn't like their issues around marking their territory...we can't have any little fiefdoms here.

The owners then asked all of the remaining programmers to rewrite all of the existing software in JAVA. Most employees were not skilled in JAVA, so the slow learners were fired, the quick learners were forced up a steep learning curve, and the few, new, "hot-shot" Java programmers were hired. During this time, the employees that were kept on were expected to spend 80-100 h at the office rewriting products in the new JAVA language while spending their free time learning the intricacies of the language itself. The owners instituted a "testing" policy in which all programmers had to pass the online "Brainbench" JAVA certification test. John, one of the owners, stated,

> Hey, look, these guys are making out like bandits here. We pay 'em top dollar. Yeah, sure, there was some grumbling about the JAVA conversion at first. But that was they way I wanted it. I got rid of the real grumblers. I hired a new guy who will knock the other guys' socks off. These guys should just keep their mouths shut, put their nose in a book, read the goddamned manual, and learn it. Most of them will, you know. They will do anything I ask them to so long as there is something in it for them too. [my question] So what's in it for them? [John]Riches, my dear lady, riches!

The older employees, who were previously seen as experts in PHP, were thus placed on a level playing field with all other employees where learning JAVA was concerned. The hierarchy was destabilized, restructured, and competition was fostered between employees to see who would learn and adapt the fastest, measured by the date on which they took their Brainbench test as well as their score and ranking. Effectively, the owners' choice of moving to a new programming technology allowed them to reassert control over the workplace, the employees and the relationship with the clients. In the case of CSC we see that the technological change was the result of a struggle for power in which the owners gained control by eliminating the need for difficult-to-control-experts, and replacing them with new technology and new employees who were seen as easier to control. Dan, the other main owner, stated,

> We are hiring so many more guys these days. We started out really small, but the work kinda piled up so we needed more guys. It was easy to find guys too. We put up a few ads online and *poof*, there were 100 resumes. Most of these guys just wanted to come in, get the job done, and get out. I don't think they cared much who we were as long as we paid them well, left them pretty much alone, and promised them millions.

This was only possible in an era in which the wider culture was infused with the belief that software programmers were disposable, short-term employees. In this case, the PHP programmers easily moved on to other work and new JAVA employees were easily hired. The dot-com bubble was a time of excess, not scarcity. The owners/managers of CSC had little fear of a lack of workers and had every hope of enticing new employees to come and work for them using the wider

cultural view that IT software work was cool, cutting edge, and could make you a millionaire.

The building of a workplace social environment

This paper addressed to forms of culture, the wider American culture as seen through television, paper media and the Internet on a national scale, and smaller, workplace-specific cultures that exist within the confines of a single organization. I do not view culture as autonomous. Culture is continuously created and recreated by those who live within it. The definition of organizational culture that I work with is, "A pattern of shared basic assumptions that a group learned as it solved its problems of external adaptation and internal integration that has worked well enough to be considered valid and therefore to be taught to new members as the correct way to perceive, think and feel in relation to those problems" (Schein, 1996). Since the advent of Taylorism, managers and owners have seen workplace cultures as consciously "creatable". Top-level managers and owners became "cultural engineers" who intended to create a shared culture made up of new values and practices. Hochschild, in her look at Amerco in *Time Bind,* notes that ...within the company people readily spoke of "engineering" culture. They spoke of "having" values and, in nearly the same breadth of "managing" them. ...Layer after layer of thin culture was thus poured out from the top" (Hochschild, 1997, p. 19).

In the case of CSC, during the course of the year, each of the owners and one of the managers described himself as "making" or "creating" CSC culture. John stated,

> We are really doing cutting edge kind of stuff here. We are on that edge. The guys know it. I want them to know it. I think that's why many of them came on board. I think that's why many of them stay. Hell, I know they could go someplace else, maybe even the Valley, but we got our own little valley here.

At one point, an owner leaned close to me and in a hushed tone said that he was not satisfied with the culture that he had created. He stated, "There are just a couple lone-wolfs here and we can't have that. I've got to move a couple people out of the group room so that one or two bad apples don't spoil the bunch. We need them to be a team." Later that owner did move some of the developers and most of the tools group to another physical location with the intention of preserving a budding "team" culture in the large room. A few months later he commented again, "I know that I created the culture where the guys could play games at work, but now I'm a bit worried about it. Now that the workload has come down a bit I want them to play less, but I made this culture, now I've gotta live with it." It was clear that the owner believed that he had been the engineer of the workplace culture.

This engineered culture does not spring full-formed from the managerial creator. The company looked outside itself for models. In the case of both Amerco and CSC, the company borrowed from family and community cultures (Hochschild, 1997, p. 19) The formal explicit culture of the workplace now blended with the informal culture of family and community life, where informal understandings became a key part of corporate culture and formal workplace understandings invaded the home environment. As described earlier the owners/managers of CSC provided an environment as close to home-like as possible, encouraging the employees to feel comfortable, relaxed, and well rewarded.

The boundary between home and work as described in Christopher Lasch's work *Haven in a Heartless World* (1977) in which home is the arena where the worker is most relaxed, comfortable, him or herself, and receives the most valued rewards. According to this model, the work arena is a harsh, cruel, cut-throat environment, which is filled with competition, deception and human mechanization. This model assumes that the employee merely tolerates the work environment to gain financial security in which they simply sell their time for money. This employee desperately wishes to diminish his or her hours spent at work and increase those spent at home. Lasch's model does not hold true within the modern technologically focused workplace, chiefly due to the changes in engineered workplace cultures. In order for an engineered culture to truly function, it must be complete, encompassing both home and work environments. The boundaries erase and work becomes home and community and vice versa.

In the case of the CSC employees, their work environment became more inviting and socially fulfilling and their home/community became more work-like. They carried pagers, cell-phones and laptops home with them to maintain a constant connection to work. They spent their free time reading books about programming to improve their skills at work. They brought their laptops to cafes where their friends would silently program and sip coffee alongside. Their social circle and their work circle became one. Sam, a developer stated,

> Why go home? I got everything I need right here. Work is not like *work*, you know. It's good here. [his emphasis]

The miracle of Amerco's engineered culture is that the company has managed to give employees, who labored according to a schedule imposed on them by others, the sense that they are still in control. This achievement has turned what might otherwise be a continual, heart-pounding, tension-provoking crisis at work into a kind of endless flow of communal problem solving time (Hochschild, 1997, p. 46). This does not assume that the old traditional need for Tayloresque efficiency has disappeared from the workplace. It means that the "engineered culture" has created means for the employees to demand more efficiency of themselves both at home and at work. In a Foucaultian sense they become their own jailers with stopwatches and clipboards, and are happy to do it. Amerco's Bill, states, "long hours did not seem imposed from above. Instead, in his view, the corporation simply attracted people ready to attune themselves to the company needs. "No one tells us to work long hours," Bill explained. "You don't get the – leaving early again?" 'We impose it on ourselves. We're our own worst enemy.'" (Hochschild, 1997, p. 57).

At CSC and as with other high-tech software development companies, the increasing demand for creativity in the creation of its products is mounting. Many small software companies exist because of a single initial technological innovation and are forced to continue to produce innovations if they are to continue to exist. Managers have concluded that not only do they have to hire creative people but also to foster creativity daily.

Authors such as Molella (symposium, 2001) and Gopnik (2000) state that playful work environments that foster exploration appear to help drive the innovation that defines the high-tech sector. "From workers sprawled on their stomachs using laptops, to employee playrooms full of Legos and easels, to the rebellion against hierarchy, the culture of the new economy makes work feel unmistakably like play. Consciously or

unconsciously, it recalls the atmosphere of early childhood – the stage of human life when the learning curve is steepest and the pace of learning is unrivaled" (Milwaukee Journal Sentinel, May 2000).

The owners of CSC were aware of this management trend and used it to create their own organizational subculture. They have recreated the elements of a playroom in the workplace including filling the environment with toys, colors and music. They have taken down most of the internal walls of the building, covering all remaining walls with erasable white boards and providing all of the employees with colored markers. They have organized game times each day where all of the technical teams play together and a few times a week have organized meal times where they eat together on company property. Constant free, cool and fun junk food is provided to all employees whenever they wish. They have even recreated naptime by providing soft couches and beanbag chairs for lounging or napping while on the job. Dan said,

> All the game playing, well... its stress relief, first off. It helps the employees avoid burnout longer. If I encourage them to play everyday they'll go back to work with a fresh start afterwards, and work harder and better because of it. After they let off some steam killing their virtual coworkers they can attack a problem with a clean slate and maybe come up with something they hadn't thought of before.

I suggest that CSC uses this playroom management style to create an atmosphere in which managers can demand increasing inputs in hours and effort from their employees, increase employee competition, increase self and peer generated control systems, increase hierarchies within technical and non-technical employees and do this all in an atmosphere where the dominant ideology is that the employees have more autonomy and fun at work.

Perlow (1999) states that organizational culture assumes a crucial control function in knowledge-based organizations where the work preformed is creative, open-ended, individually styled and highly demanding. Attempts are made to elicit and direct the required efforts of members by controlling the experiences, thoughts and feelings that guide their actions – the intent is for the workers to be driven by internal commitment, strong identification with company goals and intrinsic satisfaction from work. It compels employees not only to do what is expected at work but also to conform to norms that determine how they lead their lives outside their work environment.

CSC does this by erasing the boundary between home and work. CSC has identified the activities that employees would do at home, such as playing computer games, watching TV, lounge on the couch and bean bag chairs, eat lots of junk food and hang out with friends and has incorporated all of these elements into the CSC work environment. The owners have created a work environment that is so much like home that it becomes a second home for many employees. They even have provided higher quality technology, food, games and atmosphere than many of the employees could hope to afford on their own, further inducing them to stay a little longer.

According to CBS 60 min II,

> In the new corporation, job satisfaction is a big deal. Excite@Home offers employees so many conveniences; they barely need to leave the office. There's a golf pro available to improve your swing and a dental truck that rolls into the parking lot every week. Employees get your dry cleaning picked up and delivered daily; a masseuse provides rubdowns... The rationale: by making life much easier for the employee, the company gets the best out of him or her...What's happening with companies these days is that they're becoming sort of part of

> your life. Its not like you go home, and then you go to work, the two worlds are merging and blending (CBSnews, March 13, 2001).

John said,

> We tried to make work as much like home as possible so that it would be easier for the guys to spend a lot of time here.

This is yet another element of CSC's ideology, in that the employees feel that work is so fun and comfortable that staying there for 12-15 h a day is less painful, and perhaps, even desirable. Brett, a member of the development group said,

> I used to go out for coffee and lunch almost everyday, but now what's the point? They make coffee at work and there are always some food things in the fridge downstairs. I just heat up a burrito or somebody orders pizza and I don't have to even leave my desk.

Time famine

Time famine is the feeling of having too much to do and not enough time to do it in. I believe that the creation and maintenance of a culture in which time famine is a central feature is a method of exerting control over workers. The culture of software developers celebrates and rewards workers' intensity and total devotion to work. (Kidder, 1981; Moody, 1990; Zachary, 1994) The culture develops a system based on constant crisis and a reward system based on individual heroics, which results in workers doing whatever it takes to solve the crisis of the moment. The managers and peers model the desired behavior themselves, also putting in long hours. Ted, a developer, stated,

> I put in very long hours. I try to get here every day at about 7:00 am and I never get out before 8:00 at night. Sometimes, I stay even later. I've pulled a few all-nighters here and I come in at least for a few hours every weekend. Once I get home I also get a little done there, I've got a pretty good computer and connection there too. When the deadlines are getting close you just gotta get it done no matter how much time it takes. I know it's a lot to ask, but I'd never ask anybody to do anything that I wasn't willing to do myself.

CSC also developed a culture of time one-up-man-ship, in which employees challenged each other to stay for longer and longer hours. For example, one of the employees said to another,

> I was here last night until 10:00 finishing up the clean up on that code.
>
> In response the other team member stated, "Oh yeah, well I've been here until at least 10:00 every night this week. I'll probably have to pull an all-nighter tonight or tomorrow just to get it all cleaned up by the deadline."

John stated,

> I really didn't realize that the guys were pulling that one-up-manship stuff around the hours until recently. Had I known that was going on during the big crunch time I would've been cheering. That's exactly what I wanted to hear.

From this statement it is obvious that the owners desired the employees to goad each other into working longer and longer hours, releasing the owners from the position of having to ask for additional time directly from the employees. The owners were pleased to know that they got what they wanted and did not have to ask for it.

It is ironic that CSC's employees spend so many hours at work. One would think that with the nature of the product being software, and that every employee has high quality computer equipment and connections from home, and that they carry tool-belts full of pagers, cell-phones and palm-top computers, that they could work from anywhere at any time. It has been theorized that all of this communications technology would grant workers more leisure time and foster telecommuting (Burris, 1998). This is not the case with CSC and I believe that it supports my claim that there are still more forms of insidious worker control. The owner has recently asked the employees to be around more of the traditional business hours so that he can see them at work. He stated,

> Sure they could work from home, but so much of what they do is teamwork, bouncing ideas and questions off one another. We have this one guy who works alone. He's good but, he doesn't play the games or share code with the teams and we just can't have that. They really need to be here and working together.

Co-programming teams

Management creating a team-based organizational structure has been theoretically examined in two ways, again, with both an utopian and critical bent. On the utopian side, teams are said to grant the employees autonomy and a more democratic work environment through determining their own work organization, communicating horizontally with the organization instead of a hierarchy, building close relationships with suppliers, and sharing information. Teams are framed in a positive light, intensively monitoring their own activities and as self-managed (Hodson, in press; Smith, 1990).

On the other side, the critical view of team-based management states that supervision, responsibility and discipline are shifted from managers to peers without any compensation or security. Workers are asked to do more without any increase in pay. There has been a shift from traditional bureaucratic control to concertive control in that workers collaborate to develop the means of their own control. They control their behaviors through a complex system of values, norms, and rules. Increased production pressures and intensification of work have been found to be legitimated by the peer relationships among the teams and as the team encouraged workers to push themselves to the limit for the good of the work group (Barker, 1993; Endo, 1994; Gottfried and Graham, 1993; Graham, 1995; Parker and Slaughter, 1994, 1998; Smith, 1990).

Considering only the language used by the CSC employees to describe their own work experience on the co-programming teams, one would have to support the utopian view of teams. The employees state that they feel like they are "just a group of guys hanging out working together." They don't feel controlled, nor do they have a sense of any external management. They acknowledge that some teams are "cooler" than others, but that is explained by those teams being especially "clueful," meaning that they possess specified technical knowledge. The state that their work environment feels, "relaxed, casual." Because they have a sense that they can wear anything they want, come and go as they please, eat whenever or whatever they desire, all once traditional signs of bureaucratic control, they believe that they are not controlled at all.

However, evidence was found among the teams of CSC to support the shift to concertive control. Individual members of the teams, especially the tools and

development teams, stated multiple times that they felt that they had to work long hours for the good of the team. A member of the development team said when asked what he was working on. He stated,

> I'm trying to get this script hammered out. We've got a deadline in a few days and I don't want to be the slacker here. It's bad if (another developer) has to bail me out and pick up my slack just to get the stuff done on time. I'm just trying to hold my own, you know pull my own weight.

John said,

> Putting these guys into teams was one of the best things I ever did. They get each other to work harder and better. If one of the members of their team is not doing their work, the other guys come down on him pretty hard. They do my job for me. Plus, I think they like getting criticism from one of the guys rather than from me. It's not so top down that way.

On several occasions while observing, it was noted how two members of the development team were always working to get the others to work faster. They would play loud thrash music to motivate. They would yell over the din to the others to get going, to write clean code and write it fast. In another situation, Roger, one of the developers stated,

> Yeah, I've put in my fair share of 80 hour weeks and that number seems to be growing. It's because we've got a big deadline coming up. They'll be some downtime after that.

The fact is that almost all of the CSC employees expressed that there would be downtime coming soon, however, over the course of the year they went from crisis to crisis, deadline to deadline, and lessening of the hours was never expected. The number of hours spent working has steadily increased for all technical employees. I call this the myth of the future downtime.

The myth of the future downtime is yet another example of concertive control. The employees express to each other the belief that their workload will lighten in the near future, they convince each other of its coming. They use the myth as a "carrot" to exact more work from their team members while participating in the myth itself. At no point did the employees gain a consciousness of having falsely predicted downtime. Similar to millennia lists, when their predictions failed they just reset the clock and expected the downtime to happen in the future. I find that the utopian view of teams is actively used to create an ideology among the workers. The employees felt that they had more autonomy and freedom from the manager's watchful eye, yet, they were more closely and continuously watched than ever before. Their control moved from the external manager, to the internal self and peer-based control.

Discussion

In order to understand these actions taken by the mangers and employees of CSC, I had adopted a critical perspective. I was principally concerned with the efforts made by managers to intensify control of the employees' time, productivity and work culture. I believe that although we have seen increases in the number of hours of work and the intensity of work generally over the past ten years in the United States, that during the dot-com bubble more tools were available to IT managers to control employees than ever before.

This critical orientation can be seen to have its roots in the critical theory of the Frankfurt School (Adorno and Horkheimer, 1947; Heidegger, 1977; Marcuse, 1941). Critical theory, in general, can be characterized to be explicitly concerned with critiquing domination with an orientation toward praxis focused against domination. If there is one central concept running throughout the literature of critical theory, it is domination. Critical theory is also oriented toward helping people understand why and how they are dominated, and then empowering people to do something to ameliorate their misery.

The theoretical standpoint taken in this paper is that IT has been institutionalized as a multifaceted force of industries, techniques for carrying out tasks in organizations, and principles for organizing that is closely associated with a particular form of business management. The narrowness of the managerialist perceptions and normative knowledge that has been prevalent in much of the information systems literature and practice has been subject to a great deal of critical debate. For the most part the normative orientation can be seen as the managerialist orientation, supporting the status quo, seeking to further the interests, through increased efficiency, effectiveness and product output, of the managerial class (Avgerou, 2002). The analytical orientation, in contrast, can be seen as a scientific, hands-off, orientation in which information is gathered and categorized, but rarely used by theorists themselves to enact any sort of social change.

It is clear that in the case of CSC the number of hours that each employee worked increased steadily over the course of the year. It is also clear that the employees acquiesced to all the temporal and demands of the owners and managers during the course of this year. The employees worked far more than average and did not complain or resist in any observable way.

There is a strong evidence that the owners and managers used several techniques to increase the time commitment of their employees. They created a culture, which included the following elements.

- The hiring of a homogeneous worker population with zero drag. The employees had no outside interests or responsibilities.
- The creation of a culture based on crisis that rewarded heroic behavior.
- The creation of self-policing, co-programming teams which developed systems of concertive control over each other.
- The dissolution of the boundaries between home and work life. Employees' physical and social needs were met by the workplace.
- The manipulation of operating systems and programming languages to maximize owner control over workers and products.
- The development of a short-timer culture in which anything goes.

Why would these employees agree to work a 24 h workday? One could argue that the employees were in some way unique, perhaps obsessive compulsive, socially stunted, or easily duped. Those explanations may have been applicable to one or two employees, but not an entire company. In this case, the answer must come from the wider national culture. I argue that the social environment of the dot-com bubble provides the answer. The dot-com bubble allowed several myths to propagate widely and affect human behavior.

- *The myth of Silicon Valley.* This myth was the belief that during the dot-com rush any intelligent, hard-working individual could become a millionaire before the age of 25 working in the IT industry.
- *The myth of circumventing rules.* This myth was the belief that during the dot-com rush any intelligent, hard-working individual need not follow traditional pathways to wealth. The rules were gone. The legitimate, socially acceptable means to wealth including education, 20 years of steady employment, 20 years of smart investing, long term real estate ownership for example, were seen as circumventable. A culture of the get rich-quick mentality was created.
- *The myth of the future downtime.* This myth allowed any intelligent, hardworking individual to believe that the dot-com bubble was a short-term phenomenon in which one had to seize the opportunity while the opportunity was there. Work as hard as possible for a short time, and the rest and relaxation would come later. Hard work now guaranteed huge pay-offs in the near future.
- *The myth of engineer managers.* This myth was the belief that during the dot-com rush any intelligent, hard working software engineer could do the job of owner and manager of any new business.

The owners and managers of CSC used these myths to increase their control over the workers at CSC. They were aware of them, manipulated them and took advantage of them. The answer to the question "why" would these workers agree to a 24 h workday is that they traded their time for hope. They gambled that the high cost to them at the time of the moment would pay-off in the future. They were speculating that their backbreaking labor would fill their metaphorical pans with gold. They acquiesced to the owners and managers demands because they believed that they would become millionaires soon, they believed that they could become a millionaire by unconventional means, they believed that once they made it they could rest, and they believed that the managers and owners knew what they were doing.

Further evidence that the organizational culture that developed at CSC was tied to the dot-com bubble is the changes that occurred after the bubble began to burst. In 2001, the economy began to falter. Stock prices plunged, investors lost confidence, and Web-based businesses started closing down. Since the first quarter of 2000, 4,854 Internet companies had been acquired or closed (3,892 acquired and 962 closed). The first 16 months saw 44 shutdowns per month (www.webmergers.com/, U of Maryland data). The four myths that were operating on a wide cultural arena also began to falter.

CSC laid off half of its employees and its most lucrative account was cancelled. The employees of CSC began to doubt whether they would become millionaires as they had hoped to be, or even if they would have jobs in six months. They started to doubt the expertise of the managers' ability to run the company and lead the workers. They seemed to develop a collective consciousness of the number of hours they had been spending at work and the little they had to show for it. They began to complain.

As with all social control from below, these strategies are never direct, tend to be more for the benefit of the other exploited workers, and have a high cost attached to them if they were recognized as resistance and the resistor was singled out. As discussed earlier, every wall was covered with erasable whiteboard material to encourage creativity. Several drawings appeared on the boards in the development team room, which have depicted a development team member being sexually assaulted

by a member of management from behind. Another drawing portrayed the development team waving from a boat deck labeled "The Titanic" with the management as its captain, and a third image portrayed the cartoon robot from the TV show Futurama demanding that next time he wrote an interface it would be with hookers and blackjack. When asked, the members of the technical teams only smirked and refused to talk about the authors or artists. Nearly, all the technical team members mentioned the drawings on the whiteboards.

Another form of resistance was also the computer games. Ironically, the games are seen as integral to tying the playroom culture together by the management, however, several employees have had the opportunity to play a member of management and beat them at these games. They expressed pure joy at the experience to their co-workers and to myself.

Employees within the technical teams seem to be negotiating a fine line between acceptance and resistance of the workplace norms espoused by the owners. I would hesitate to state that they have developed a sense of class-consciousness and have become aware of their group exploitation and control systems, yet they have begun to grumble. At the beginning of my study the employees were clearly in support of the workplace norms governing their time, they accepted the long hours and the lack of remuneration for working overtime. Upon hire the casual clothing, the games and playtime, the relaxed atmosphere, the non-traditional and non-bureaucratic environment dazzled them. Along with this environment came the feeling that the employees were climbing aboard a ship that was sailing toward incredible success. Some software development companies had made billions very fast and turned young, formerly uneducated geeks into millionaires. The owners/managers of CSC used the myth of Silicon Valley and its success, and the very "coolness" of the cutting edge nature of the technical character of their businesses to recruit new employees and maintain the old ones.

For the owners/managers, that carrot disappeared. The employees began to complain about the hours and the lack of economic compensation. The owners began to complain about the gaming getting in the way of getting "real work" done. Kunda (1992) and Perlow (2001) can be seen as representing the two arguments explaining the move toward a 24 h workday in high technology firms. Kunda represents the argument that the technology and technical work itself restructures the work environment, therefore, software engineers work continuously because the changes in communications technology itself have made it possible and desirable. Perlow represents the alternative view, that despite the changes in technology, it is the management and the organizational norms and structures that are created by management that maintain a 24 h workday. I believe that Perlow is on the right track, in that the organizational culture as created by the management is at the core of the concertive control systems that have developed at CSC. CSC folded in 2001 because it was unable to produce a new carrot that would adequately motivate the employees in a manner similar to the dot-com bubble.

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