EDITOR Alan M. Saks, Ph.D. York University

INTERNATIONAL ALLIANCE FOR HUMAN RESOURCES RESEARCH

HRM RESEARCH QUARTERLY

RESEARCH FOR HR PROFESSIONALS

FALL 2001
VOL. 5 #3.

Emerging HRM Paradigms for a Knowledge Economy[1]

Anil Verma, Ph.D.

I. Introduction

The economic make-up of global and national economies has changed rapidly in the past twenty-years. Deregulation, freer trade and technological change have been ubiquitous, redefining the competitive landscape in a significant way. While some aspects of this change such as 'globalization' are hard to describe, other changes are clear and unmistakable. One of them is a shift away from manufacturing to services and within services from low value-added to high value-added services. These shifts in the sectoral make-up of our economy has led to a plethora of writings on the changing nature of work. In this paper, I take the changed nature of work as a given and ask the question of whether our human resource practices that took shape during the era of growth in manufacturing, can meet the challenge of work in the high value-added services sector, also referred to as knowledge work.

Work in the manufacturing sector is mostly repetitive work. Influenced by ideas of Frederick Taylor, work in mass production industries requiring endless repetition of simple tasks, is frequently referred to as "busy-finger" work that requires almost no thinking on the part of the worker. In the 1980s, as the Canadian and American economies moved into higher value-added products and services, it became necessary to reform the Taylorist paradigm of work to accommodate greater employee input. A large number of quality circles, workteams and other such programs were introduced to increase flexibility, employee involvement and learning of new skills. This movement to reform Taylorist work organizations resulted in an alternate paradigm, referred to as high commitment or high involvement work systems.

I argue that high commitment work systems (HCWS), although a great improvement on the paradigm of repetitive and boring work, do not fully meet the challenge of knowledge work. Since the point of departure for HCWS was the Taylorist paradigm, they are both rooted in the manufacturing logic. Also, work teams, central to HCWS, are most compatible with manufacturing needs rather than with those of knowledge work. Thus, to accommodate knowledge work and workers, a growing segment of the economy, we will need to further update human resource practices. It is not that we need to reject the HCWS paradigm to come up with a new paradigm. Rather, it is argued that the nature of knowledge work calls for an updating and enlargement of existing paradigms and policies.

Based on an analysis of knowledge work, this paper shows that knowledge work can not be effectively managed under either Taylorist or HCWS paradigms. To encourage learning and creativity, two processes valued greatly in knowledge organizations, there is a need to upgrade human resource policies. The need to facilitate learning and innovation is driven by both the demand and supply in the labour market: employers need learning and innovation for competitive strength, while employees want it

HIGHLIGHTS

- From Traditional to High Commitment Work Systems
- Knowledge Work: How is it Different from Routine Work?
- The 'Disconnect' between Knowledge Work & HRM Policies
- Knowledge Work: The HRM Challenge
- Some Illustrative Cases
- Lessons from the Case Studies

1 Excellent research assistance was provided by Kim Chung.

for enhancing their employability in the labour market.

For the human resource manager, the challenge is to create new HRM policies and programs that would meet these needs of both managers and employees. What kinds of policies would enable the firm to encourage learning and creativity? While informal systems exist in many companies, only a handful of firms have formalized these policies so far. This paper briefly examines a few such policies and programs to derive their underlying principles. There appear to be two dimensions along which these programs stand out from traditional HRM policies. First and foremost is their ability to give knowledge workers more autonomy and say in what they do within the organization. This removes the perception of being "locked-in-a-box" and allows employees to learn at their own initiative and to be creative. Second, the autonomy and say granted to the employee leads to a job description in which routine or repetitive tasks occupy only a fraction of their time. This fraction varies from place to place but in many such cases it falls in the range of 40-60%. The rest of their time is taken up by non-routine work such as learning, special assignments, project work, inter-departmental taskforces, etc. Each of these activities contributes significantly to learning and creativity. The challenge for HR and line managers is to create an organization in which the routine aspect of every person's job is no more than, say, 50-60%.

II. From Traditional to High Commitment Work Systems

Work in the manufacturing sector is mostly repetitive work. Influenced by ideas of Frederick Taylor, work in mass production industries requiring endless repetition of simple tasks, is frequently referred to as "busy-finger" work that requires almost no thinking on part of the worker. In the 1980s, as North American economies moved into higher value-added products and services, it became necessary to reform the Taylorist paradigm of work to accommodate greater employee input (Cappelli et al. 1997, Cappelli 1999a).

Recent research on Canadian workplace systems including HRM policies does suggest some shifts (Picot and Heisz, 1999). Although there is no clear evidence of job tenure becoming shorter (Heisz, 1999) there are plenty of anecdotal stories of people changing jobs and careers at a pace much higher than in the past (Cappelli, 1999b, Boers and Martin, 2000). A survey of Canadian workplace practices did show increasing incidence of quality management and employee involvement programs (Betcherman et al., 1994).

A large number of quality circles, workteams and other such programs were introduced to increase flexibility, employee involvement and learning of new skills (Cole, 1998). This movement to reform Taylorist work organizations resulted in an alternate paradigm, often referred to as high commitment or high involvement work systems. It may be argued that high commitment work systems (HCWS), although a great improvement on the paradigm of repetitive and boring work, are still rooted in the logic of manufacturing work. Work teams, central to the HCWS, are more compatible with manufacturing needs rather than with those of knowledge work where teams may be less central to the task. In knowledge work, teams may be used for coordination but work itself is often individualized. Multiskilling, another prominent part of the HCWS paradigm, was a significant reform for the manufacturing sector where skills were too narrowly defined within job descriptions. In most knowledge work this is not an issue since knowledge workers possess a broad knowledge-base within which their specific job duties change and evolve continually.

III. Knowledge Work: How is it Different from Routine Work?

One way to think about knowledge work is to simply think of the work of professionals. Professionals such as doctors, teachers, nurses, engineers, lawyers and accountants, are trained in a body of knowledge informed by various theories. They are taught not simply the way things are but also why things are the way they are. The hope is that once on the job, these professionals can also help create new products and services in addition to practicing the state of the art of their profession. To create new knowledge, these professionals must use judgement and discretion in how they use their knowledge to solve given problems. Some procedures may be routine but often the professionals will be asked to tailor a new solution by combining different strands from a broad knowledge base.

Our concern reaches out well beyond the realm of professionals. The salience of knowledge workers, as opposed to a narrower definition of professionals, has increased since our economy began to move away from manufacturing and in the direction of high value-added services, a sector not confined merely to services but to manufacturing as well. Reich (1991) coined the term 'symbolic analysts', to refer to people who draw upon a knowledge-base to manipulate symbols and ideas to create new products and services.

There are many ways to describe knowledge work. For the purposes of this paper, a few key features may be abstracted (see Table 1). One key aspect of knowledge work is the relative autonomy that is expected, demanded and given to knowledge workers. Table 1 also tries to distinguish the different approaches to various aspects of work by employees and employers. For example, close supervision is not only disliked by knowledge workers but also not seen as being needed by managers. The opposite is true for routine work. Recent empirical research finds support for the theory that all else being equal, employers pay knowledge workers more because no supervision is provided (Gomez, 1999; Adams, 2001). The employer appears to be striking an implicit bargain in which knowledge workers are expected to provide their own supervision. The employer saves money and is thus able to pay the employee some of the savings thus accrued.

This sort of difference continues in other areas of the job as well. Knowledge workers are expected to participate in developing the scope of the job and other requirements. They have greater autonomy in exchange for which they are expected to exercise judgement and take care of learning and creativity processes (Stewart, 1997). The routine worker, in contrast, is given a standard process that he or she must master and then perform repeatedly without any judgement or creativity on their part. Routine workers are not to worry about learning new skills or engage in any experimentation. Knowledge workers on the other hand are encouraged to experiment and are not punished for failures (Fisher and Fisher, 1998). For knowledge workers, their career identity is linked strongly to their knowledge-base and only secondarily to the employer (Defillippi and Arthur, 1996, Horibe, 2000). For routine workers, the primary work identification is with the organization that employs them.

The nature of knowledge work across industries, new and old, is not always well understood. Knowledge work is not simply confined to "hi-tech" industries. Nor is every professional such as an accountant or consultant engaged in knowledge work. Reich (1991) points out that many professionals could be engaged in routine work. This is also true of managerial work. The managers most often likely to be laidoff during the 1990s and least likely to find new employment at previous wage levels were those who performed routine jobs in Reich's terminology. Fisher and Fisher (1998) develop a typology of work along two dimensions. One dimension is along routine work to knowledge work; the other dimension is the 'linearity' of work, i.e., the extent to which work methods may be pre-programmed. Typical assembly-line factory work is both physical and linear. An example of physical but non-linear work would be repair of a machine where some aspects of work are routine while others require thinking in innovative patterns. Similarly, an example

of linear knowledge work would be processing such as writing of software using well-known routines. Finally, true knowledge-intensive work is both knowledge-driven as well as non-linear in nature such as creating a new advertising campaign for, say, a new type of beer.

At the same time, many production jobs have been "knowledgized" for lack of a better word. What this means is that nearly all jobs even in traditional industries, have twin requirements. The first requirement is that the holder must perform the job as it is laid out in the job description. We may call this the system maintenance component of the job. The other part of the job is to think about how this job may be done better. This is what the Japanese call kaizen or continuous improvement. This requirement is not limited to managerial jobs. The Toyota production system made famous in the MIT-study as lean production is based, among other things, on a high degree of employee involvement in kaizen, i.e., developing ideas for small improvements in the design and production of Toyota cars. Thus, knowledge work is diffusing across all industries and is not confined simply to a few high technology industries.

The need to be creative comes from market needs for innovation. In a market characterized by value-added goods and services, firms must innovate constantly to stay competitive. Consumers have more choice and they prefer higher quality at a lower cost. Firms such as Hewlett-Packard (HP) and others have set a high pace for new product innovations. Every year since the early 1980s, between a quarter to a third of HP's sales have come from new products. No computer or printer or fax that they sell is the same from year to year. And every year either these products have added new features or entirely new products are introduced. For employees at HP, the need to be creative in their thinking is an essential part of their jobs.

Let me conclude this discussion by pointing out two processes that form the essence of knowledge work: continuous learning and creativity. Both of these demands have become critical in the present context in contrast to conditions prevailing a generation ago. It may be argued that the pace of new knowledge creation is faster today than ever before. A fast pace of knowledge creation means that at all times there are new developments in every field of knowledge. This requires every knowledge worker to continually learn new skills to keep updated. Such upgrading of knowledge is both demand and supply driven. Not only do the employers require that employees continuously upgrade but the employees themselves want jobs that will allow them to learn and upgrade. Many knowledge workers switch employers primarily because their current jobs may not provide opportunities for learning and upgrading skills.

IV. The 'Disconnect' between Knowledge Work & HRM Policies

Based on the preceding discussion of knowledge work, the needs of managing knowledge work can be examined against both traditional HRM systems as well as those promoted under the label of HCWS. Two processes most characteristic of knowledge work, continuous learning and creativity, get short-changed in these paradigms. The traditional system provides little incentive to learn or to be creative. In fact, many Tayloristic systems explicitly exclude any scope for initiative or learning. Most skills on the current job are simple to learn while skills for the next job would be learned when the time comes for a promotion or transfer. Since those skills are also simple, not much training is needed any way. Moreover, seniority-based promotions further reduce the incentive to learn at a faster pace. Knowledge workers who find themselves placed within such (or similar) systems feel stifled. The room to learn and be creative is extremely limited.

The HCWS developed out of a movement to reform the traditional manufacturing system. The essence of HCWS is to try and restore some of the flexibility and worker identification with the job that was lost to excessive routinization and simplification within a Taylorist paradigm of mass production. Thus, employee involvement and teams are two of the founding principles of HCWS (Ichniowski et al., 1996; OECD, 1999). While these and other aspects of HCWS are still useful in managing knowledge work, it is not expressly designed to address issues of learning and creativity. Wood (2000) argues that while HCWS touts the benefits of employee involvement it is essentially greater involvement in a production process that remains largely routinized. Because the origins of HCWS lie in the reform of manufacturing systems, its internal logic is rooted largely in correcting the excesses of Taylorist production.

HCWS did not evolve in response to the growing demands of knowledge work. Teamwork which is central to this paradigm, is of lesser importance to knowledge workers whose work is done mostly at the individual level. Teams do play a role albeit a minor one in terms of time spent in team activities. In manufacturing the team is central to the work of production workers who may spend almost all their time in work area teams. Multi-skilling, another significant HCWS feature, is a moot issue in the case of knowledge workers. Knowledge workers work off a knowledge-base which means that they have a broad range of skills right from the start. Other features of HCWS such as financial incentives may be applicable to knowledge work. Thus, it is not that HCWS need be rejected completely for dealing with knowledge work. Rather, it must be noted that HCWS was not designed to deal with issues of knowledge work. Hence some of its features may be applicable while others may be less relevant. Further, the HCWS addresses issues of learning and creativity at a very limited level which is localized around the worker's work station.

V. Knowledge Work: The HRM Challenge

For the human resource manager the challenge is to create new HRM policies and programs that would meet these needs of knowledge work for both managers and employees. What kinds of policies would enable the firm to encourage learning and creativity? While informal systems exist in many companies, only a handful of them has formalized these policies so far. In this section I briefly examine a few such policies and programs to illustrate how new HRM policies can respond to this need.

Table 1: Knowledge Work vs. Routine Work

	Knowledge Work		Routine Work	
From the perspective of:	***Employees***	***Employer***	***Employees***	***Employer***
Close Supervision	Disliked	Not needed; low supervision saves money	Expected	Needed
Individual input such as judgement, creativity	Demanded as part of the job	Needed and encouraged for competitive advantage	Not expected; not prepared	Not wanted; can create problems in highly standardized production processes
Developing the Scope and Process of the Job	Want to be involved	Required to participate	Not expected	No involvement wanted or desirable
Autonomy	Expected and demanded	Granted with focus on output rather than input	Desired but not expected	Controlled and limited
Flexibility	Expected and demanded	Granted	Desired but not expected	Controlled and limited
Networking for learning	Integrated into the job	Encouraged & expected	None	Not needed
Core Processes of the job	Experimentation; thinking	Learning, creativity	Physical	Physical or routine procedures
Career Identity	Individual and knowledge-based	Knowledge-based	Employer-based	Employer-based

When one considers the HRM system more typical of the recent past, it is clear that formalization of job descriptions and a formal organization of jobs by "departments" is fundamental to all bureaucratic organizations. However, what we know about creativity suggests that the more individuals are put into rigid job descriptions the less autonomy they have and the more routine their daily tasks. When individuals lose autonomy and discretion they tend to be less creative. Thus, to encourage innovation, creativity and initiative, employees need to experience environments that provide for more autonomy and room for exercising judgment.

It is instructive to consider the traditional set of HRM policies in terms of autonomy and room for judgement in respect of hiring, transfer, promotion and other significant policies governing career progression. Traditional hiring is done against a specific job opening. The employee's only input is to decide whether to accept the job or decline it. Thereafter, the employee (or a knowledge worker) has very little say in the choice of job assignment or in the choice of a boss. The question is whether a newer set of HRM policies could give the individual more say in these decisions which have a great deal of impact on learning and creativity on the job. A word of caution to point out that the idea is not to transfer these responsibilities from the employer to the employee but rather to allow for some input (ideally, half of the decision) from the employee in what they do for the organization and how they do it.

To allow for both employee autonomy and for giving them say in career matters, a number of firms have begun to introduce new HRM policies. The initial motivation for many firms has come from the need to attract and retain talent in labour markets where talent is scare. However, such labour market conditions of skill shortages are not necessary to introduce such policies.

VI. Some Illustrative Cases

A pioneer in this area is Hewlett-Packard, which initiated employee input into job selection in their labs more than twenty years ago. In this firm, the annual performance appraisal is used by the manager and the employee to develop a list of skills that would be desirable for the employee to acquire. Both the firm's needs as well as the employee's aptitude for learning and long-term career goals are used to develop employee development plans. The firm then provides the opportunities for learning. These may include formal education, off-site training, and work assignments within the current department or other departments. The employee's obligation in turn, is to make the best of these opportunities and to use these inputs as fuel for their own learning and creativity. In this system, an employee can initiate an exit from the current job, department or boss. Managers have to attract talent by offering excellent leadership. A poor manager would lose good people; a good manager, by reputation, would attract more talent. Other firms such as IBM, have also developed variations of such systems.

Statistics Canada, a department of the Government of Canada, introduced a program called the Corporate Assignments Program (CAP) more than twenty years ago, to encourage employees to seek alternate assignments within the agency to learn new skills (see Text Box 1). A cell in the HR department manages the program. Under CAP, all employees, including managerial, professional and clerical employees, may ask for an assignment in another part of Statistics Canada for six to twenty-four months. The employee's boss may not refuse such a request. The employee can move on to the new department permanently if a permanent vacancy exists there. Or, the employee can return to the home department. The job one leaves to go on a corporate assignment is guaranteed should the employee decide to return. The program encourages people to opt for corporate assignments by minimizing the potential risks to the employee. A rough indication shows a significant number of employees have participated in the program.

Facilitating Learning and Creativity through Career Transitions: A Case Study of the Corporate Assignments Program at Statistics Canada

Statistics Canada, a department of the Government of Canada, is the national statistical agency for Canada. Formally, it is a part of the government organization that has been highly bureaucratized for over a hundred years. Yet, the nature of work at Statistics Canada is very knowledge-intensive. It is the leader in its class of work, i.e., collecting data to develop demographic, social and economic profiles of the nation that will inform policy and debate. There are no comparable organizations in the private sector. Statistics Canada's peer organizations are other national statistical agencies. In this way, its benchmarks are international, not national in scope. Thus, Statistics Canada faces the unenviable task of creating a knowledge-intensive organization when it is integrally a part of a very large bureaucratic organization.

There are numerous programs, both formal and informal, that set Statistics Canada apart from other government departments. One of them is a program called the Corporate Assignments Program (CAP) introduced more than twenty years ago, to encourage employees to seek alternate work assignments within the agency. The expectation was that this program would encourage learning, allow people to shift careers at their own initiative within the agency and provide some ownership of their own careers.

A cell in the HR department manages the program. Under CAP, all employees, including managerial, professional and clerical employees, may ask for an assignment in another part of Statistics Canada for a period from six to twenty-four months. The employee's boss may not refuse an employee-initiated request for a corporate assignment. The employee can move on to a new department permanently if a permanent vacancy exists there. Or, the employee can return to the home department. The job one leaves to go on a corporate assignment is guaranteed should the employee decide to return. The program encourages people to opt for corporate assignments by minimizing the potential risks to the employee.

A rough indication shows that a significant number of employees (10-12%) have participated in the program since its inception. Although no formal assessment of the program has been carried out, both managers and employees who have participated in the program appear to be satisfied. Statistics Canada remains committed to the program based on the support the program has received from managers and employees.

The CAP is a radical departure from HR policies in other government departments. It gives significant control to employees in guiding their own career at Statistics Canada. Under this system, bad bosses could lose talent more easily than in a traditional organization where frequently the only escape from a bad boss lies in quitting the organization. All bosses compete for talent internally and it may be surmised that the presence of the CAP reduces opportunistic behaviour of some bosses in taking undue advantage of an employee.

It may be theorized that the CAP encourages employees to develop their own careers internally. It encourages managers to provide training and learning opportunities. Overall, the program provides a big boost to learning and creativity within the organization.

Based on interviews and in-house brochures on the Corporate Assignments Program, Statistics Canada.

At Monitor Consulting in Boston, high turnover among young professionals encouraged the firm to develop a system in which work was no longer simply assigned to a junior consultant by project leaders (see Text Box 2). A senior partner assumed the role of a "match-maker". In this role, he began to match incoming projects with employee talent. It allowed young consultants to "bid" for projects that interested them. Once the system took shape it paid rich dividends in terms of lower turnover but also in terms of generating new business for the firm. Young professionals did not simply accept assignments offered them by the firm but also told the "match-maker" about skills and knowledge they possessed and areas where they would have liked to work. Such information was later parlayed into developing new areas of consulting practice for the firm.

Case Study: Monitor Consulting
Facilitating Learning and Creativity through Better Work Assignments

The Monitor Consulting Company was founded in the early 1980s by a number of people then studying and teaching at the Harvard Business School. Although primarily focused on strategy consulting, Monitor has pursued a vision of offering a portfolio of services to customers, with an early focus on managerial and organizational development. Since inception it has grown rapidly, opening in Europe and Asia during the first five years and, on average, opening a new site every eight months since inception. In addition to its core practice in corporate and competitive strategy, Monitor offers leading-edge skills in marketing strategy, operations analysis, systems dynamics and corporate finance. More recently, the firm has moved into the emerging domain of e-commerce.

Given their emphasis on new knowledge creation, Monitor placed a high priority on attracting, keeping and developing talent. High turnover among young professionals, a feature common at many consulting firms, was another impetus to try a more innovative approach to career progression. What developed at Monitor is a system in which junior consultants became highly involved in their own work assignments. Traditionally, consulting firms assign work based on new contracts with clients, to junior consultants. In a fast-paced competitive environment work is assigned as it comes in. There is relatively less time to worry about the junior consultants' own preferences. The result is high turnover in the case of those who leave and of missed potential in the case of those who stay. When interviewed about their reasons for leaving, young people often say that work was limiting their opportunities to learn new skills and that the firm was not utilizing many areas of their knowledge-base.

To remedy the situation, Monitor began an experiment with junior consultants who had proven track records. This included those with 3-5 years' tenure with the firm but it excluded new hires. It was deemed most appropriate to intervene at this stage of the career for a number of reasons. First, the highest numbers of young talent left the firm at this stage. Second, Monitor wanted to invest in those who had already demonstrated proficiency and expertise. Lastly, the employer was most likely to get a return on their investment on consultants at this stage of their careers.

A senior partner assumed the role of a "match-maker". In this role, he began to match incoming projects with employee talent. As a senior partner in the firm he had good knowledge of the business as well as good rapport with both senior partners and junior employees. He used his intimate knowledge of work needed by clients and the skill sets of available consultants to obtain the best matches. Sometimes he would need to "shop around" a particular assignment a few iterations before finding a good match. But it was well "worth it" given the rich dividends paid by this approach in terms of high quality work, the commitment of consultants and the lower turnover.

This system allowed young consultants to "bid" for projects that interested them. It allowed them to have input into a decision that affected their work experience significantly. Their involvement in work assignments issues led to theoretically predicted increase in commitment to both the work and the organization. An even greater impact was felt in the area of learning. Consultants' input led to bidding for work that would enhance their skill sets. In some cases, individuals made significant efforts to learn skills that would allow them to "bid" for some types of work. In this way, individuals became much more engaged in the upgrading of their own skill sets and in the progression of their career at the firm.

Monitor Consulting

Once the system took shape it paid rich dividends in terms of lower turnover but also in terms of generating new business for the firm. Young professionals did not simply accept assignments offered them by the firm but also shared with the "match-maker" their skills and knowledge as yet unutilized and other areas where they would have liked to work. Such information was later parlayed into developing new areas of consulting practice for the firm.

In the early 1990s, Monitor began merchant banking activities based on the feedback they received from their own employees. There were individuals with such expertise who would have otherwise left the firm. In this case, by expanding their activities they were able to retain talent and enter new areas of business. Their success in this area led to an expansion of those activities to include venture capital and advisory services.

The Monitor system of matching talent with incoming work assignments and giving the consultants significant input into their work assignments has worked to the benefit of both the firm and the employees. The firm gains more committed and loyal employees. The consultants obtain more interesting work that is better suited to their expertise and potential. This ensures that they can give their creative best to the job at hand. They also become more engaged in their own learning and skills upgrading process. This ensures that the individuals and the firm stay at the leading-edge of knowledge in their areas of expertise.

Based on interviews with Bill McClements during June-November, 2000.

VII. Lessons from the Case Studies

There are many variations of such programs in practice. I have focused here on programs or policies that have been formalized. For our purposes it is important to find lessons from these experiences that can be used elsewhere. There are two dimensions along which these programs stand out from traditional HRM policies. First and foremost is the ability of these programs to give knowledge workers more autonomy and say in their work allocation and career progress within the organization. It is a significant improvement over the traditional practice in which the boss or some senior level executive makes this decision. Yet, it is a logical extension of the trend to increase employee involvement in a variety of decisions over the last twenty-five years of the twentieth century. In the past, most employee involvement had been limited to decisions affecting work on the job. These developments extend employee involvement beyond work-related decisions (e.g. quality, work planning, etc.) to line management decisions such as work allocation and HRM decisions such as career progress. Thus, these programs expand the scope of employee involvement significantly.

These programs dispel the perception of being "locked-in-a-box" that comes with traditional employment for knowledge workers. In traditional employment workers have little say in selecting the job they might do. An employee's only input comes at the time of hiring when one can accept or reject a job offer. Traditional recruitment occurs against a specific job opening. Once hired the individual worker loses control over work assignment, choice of a boss or department. In many of the programs described here, employees gain a measure of control over their work assignments and by extension over their career progress. This process allows knowledge workers to direct some of their work assignments in areas where they could learn new skills. In this way significant learning can take place at worker's own initiative. This in turn fuels and facilitates innovation and creativity. Second, the autonomy and say granted to the employee leads to a job description in which routine or repetitive tasks occupy only a fraction of their time. This fraction varies from place to place but in many such cases it varies in the range of 40-60%. The rest of their time is taken up by non-routine work such as learning, special assignments, project work, inter-departmental task-forces, etc. Each of these activities contributes significantly to learning and creativity. The challenge for HR mangers and for line managers is to create an organization in which the routine aspect of every person's job is no more than, say, 50-60%. Only then would we have created a system to cultivate and foster knowledge work and knowledge workers.

Dr. Anil Verma is Professor of Industrial Relations and Human Resource Management at the University of Toronto where he holds a joint appointment at the Faculty of Management and the Centre for Industrial Relations. His primary research interests are in the area of management responses to unionization, participative forms of work organization, wage and employment outcomes, and the contribution of workplace innovations to organizational effectiveness and performance. Professor Verma consults with a wide range of businesses, unions, and government agencies and has been a speaker at many national and international conferences. He has published over fifty articles in research journals and books.

References

Adams, Christopher. 2001. "The Use of Performance Pay when Firms Delegate Decision making Power: Evidence from a survey of Manufacturing Workers". Paper presented to Study Group 9 on Pay Systems, Annual Meeting of the Industrial Relations Research Association, New Orleans, January 4-8.

Betcherman, G., N. Leckie and Leslie Caron. 1994. The Canadian Workplace in Transition.

Kingston, Ontario: Industrial Relations Centre, Queen's University.

Boers, N. and John P. Martin. 2000. "Going Mobile? Jobs in the new economy" , OECD

Observer, http://www.oecdobserver.org/news/fullstory.php/aid/319. October 6, 2000

Bowman, Robert J. 1997. "The Joy of Six-Sigma." Distribution, August, 62-67.

Cappelli, P., Laurie Bassi, Harry C. Katz, David Knoke, Paul Osterman, and Micheal Useem.

1997. Change at Work. New York: Oxford University Press.

Cappelli, Peter. 1999a. "Careers are Dead", California Management Review, 42 (1), 146 - 167.

Cappelli, Peter. 1999b. The New Deal at Work. Boston: Harvard Business School Press.

Cole, Robert E. 1998. "Learning from the Quality Movement: What did and didn't happen and why?" California Management Review, 41(1), Fall, 43-73.

Cortada, J. W. 1998. Rise of the Knowledge Worker. Woburn, MA: Butterworth-Heinemann.

Defillippi, R. J. and M. B. Arthur. 1996. "Boundaryless Contexts and Careers: A Competency-based Perspective". In M. B. Arthur and D. M. Rousseau, eds., The Boundaryless Career. New York: Oxford University Press.

Fisher, K. and M. D. Fisher. 1998. The Distributed Mind: Achieving High Performance through the Creative Intelligence of Knowledge Work Teams. New York: AMACOM.

Galagan, Patricia A. 1997 "Smart Companies", Training & Development, 51(12), 21-24.

Gomez, Ralph. 1999. "The Effect of Social Capital, Salary Compression and Equity on Individual and Organizational Performance", unpublished PhD Thesis, Centre for Industrial Relations, University of Toronto.

Graham, W., Dick Osgood, and John Karren. 1998. "A Real-Life Community of Practice",

Training and Development, 52 (5), 36 - 38.

Heisz, Andrew. 1999. "Changes in Job Duration in Canada", Industrial Relations, 54 (2),

365 - 385.

Hendricks, C.A and Richard L. Kelbaugh. 1998. "Implementing Six Sigma at GE." The Journal for Quality and Participation, July/Aug, 48-53.

Horibe, Frances. 2000. Managing Knowledge Worker: New Skills and Attitudes to Unlock the Intellectual Capital in Your Organization. New York: John Wiley & Sons.

Ichniowski, Casey, Thomas A. Kochan, David Levine, Craig Olson, and George Strauss. 1996. "What Works at Work: An Assessment". Industrial Relations, 35(3), 299-333.

OECD. 1999. OECD Employment Outlook. Paris: OECD. Chapter 4: New Enterprise Work Practices and Their Labour Market Interpretations.

Picot, G. and Andrew Heisz. 1999. "The Performance of the 1990s Canadian Labour Market."

Statistics Canada: Business and Labour Market Analysis Division, 1-41.

Reich, Robert B. 1991. The Work of Nations: Preparing Ourselves for 21st Century Capitalism. New York: Alfred A. Knopf.

Stewart, T. A. 1997. Intellectual Capital: The New Wealth of Organizations. New York: Doubleday.

Tichy, Noel M. and Eli Cohen. 1998. "The Teaching Organization", Training and Development, 27 - 33.

Wood, Stephen. 2000. Do High Performance Systems Work? International Journal of Management Reviews.

INTERNATIONAL ALLIANCE
IAHRR
FOR HUMAN RESOURCES RESEARCH

Who are we? The International Alliance for Human Resources Research is just that: a global alliance of HRM experts, including academics, associations, executives, and HR professionals, who support research in human resources management. We are the catalysts for the discovery, dissemination and application of new knowledge about HRM.

Our Vision To be the first choice for those seeking valid, research-based knowledge about the management of human resources.

Our Goals To create new knowledge about human resources management, thereby facilitating the achievement of employee and organizational goals.
To distribute this knowledge in many ways to academics, students, HR professionals and executives.
To foster a dialogue between researchers, HR professionals, and policy makers in order to unite research with practice.

The International Alliance for Human Resources Research
Room 256, Atkinson Faculty of Liberal and Professional Studies
York University
4700 Keele Street
Toronto, Ontario, Canada M3J 1P3

Phone: 1 (416) 736-2100 x 66626
Fax: 1 (416) 736-5121
E-mail: hrresall@yorku.ca
Web-site: www.yorku.ca/hrresall

HRPAO
Human Resources Professionals Association of Ontario

IAHRR wishes to acknowledge the support of HRPAO for research in human resources management.
