

The Information Technology Revolution and Human Resource Management in Japan

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論文の要旨

日本においては、情報技術 (IT) 革命, e-economy といった環境変化の波を受けることによって、経営の基本方針・活動を根本的に変化に即応させねばならない状況に置かれている。労働市場の変化は、組織・働き方・従業員自身までに変化を及ぼし、この結果新しい環境に適応できる戦略的人的資源管理システムの開発が必要とされている。本論文では、これからの人的資源管理モデル (Figure 2) がどのようにあるべきかを、主として文献研究により、現IT時代の環境影響特性を検討する。IT革命によって、組織フラット化とコミュニケーション・人間関係、契約基準と役割基準経営、並びに、階層制の弱化といった変化要因が注目されている。即ち、ITの物理・機械的部分と人間要素とをMIXできるかが重要課題になる。

Keywords: IT Revolution, management strategy, HRM, organizational change, mechanical/ “hard” technology and “soft” people-friendly approaches

Introduction

The advent of the “Information Technology (IT) Revolution”¹ and the ensuing “e-economy” in Japan has received considerable attention in many quarters of Japanese society. The Japanese government has committed itself to the development of infrastructure and education² in preparation for the profound influence the IT Revolution will have over society. Government statistics (as quoted in *The 21*, 2000, p.

1 The term “IT Revolution” is a direct translation of the Japanese term *IT Kakumei* (IT革命) or *Joho Gijyutsu Kakumei* (情報技術革命) in common use by the mass media, in government documents and by academics. The *Asahi Gendai Bijinesu Yougo 1996* (Asahi Shuppansha 1996, p. 587) ((Dictionary of) Contemporary Business Terms 1996) defines *IT Kakumei* as “...referring to the revolutionary changes to the conduct of economic and management activities and subsequent influence on general society brought forth by the advances in information technology centering around computing.” (Translation mine.)

2 Refer to the summary of Prime Minister Mori's general policy speech to the Japanese Parliament in the *Asahi Shimbun Newspaper* (2000) p. 4.

11) indicate that in 1999 there were 27 million people (21.4% of the total population) in Japan using the Internet and that this was expected to increase 2.8 times at 76.7 million persons (60.1% of the population) by the end of the year 2005. It was estimated that Internet related business (including connection fees) generated more than 31 hundred million yen in revenue. For Japanese businesses, the IT Revolution is impacting the fundamental ways they operate.

Traditional managerial approaches to communication, cooperation and organizational authority are proving inadequate in responding to challenges born from a dynamic, changing environment powered by IT. Companies are experiencing the flattening of their organizations, the formulation of new communication styles/systems and human relations, the emergence of role-based management, and the deconstruction of organizational power hierarchies. Japanese management is need of new approaches to what is essentially the merging of hard mechanics / technology and soft people dynamics. For human resource management (HRM) this challenge means that it must strategically re-model itself by re-evaluating traditional practices in line with changing modern contexts.

This paper draws from academic and management literature, as well as projections by the author, to outline the major impact that the IT Revolution in Japan will/is having on (1) organizational change, (2) the labor market, (3) work and (4) the worker, to formulate a (5) strategic model of HRM (Figure 2.) In developing the model, traditional models will be re-visited and managerial tools and concepts examined and modified in line with a modern business environment impacted by the IT Revolution. Underlying the main arguments of this paper is that, true to its name, the IT Revolution represents a new era in the way companies “manage” people.

Re-visiting Management Approaches

To further modify practices in line with the IT Revolution and emerging e-economy, it is first necessary to appreciate the environments in which meanings have already been ascribed. Figure 1 streams the evolution of management approaches to the business organization into three broad phases- (1) traditional (2) liquidity and, (3) mechanical-human mix. Each phase represents a major change in the business environment that required a paradigm shift in management approaches. Following is a brief characterization of each phase, including a brief list of the management thought that evolved during the phase.

(1) “Traditional Management” Phase

The traditional management phase spans a timeline commencing from the industrial revolution through to

Table 1
Three Major Phases in Management Approaches

Phase	Description	Management Thought	Management Style / Philosophy
I “Traditional Management” (I.R. ~ 1970s)	Birth of the large company, mass production, improving productivity through scientific methods later balanced with human relations.	Scientific management (Taylorism), Fordism, human relations, administrative management, behavioral science	Strictly hierarchical and administrative, labor as a commodity or cost, personnel management as an operative function.
II “Liquidity” (1980s ~ 1990s)	Strategically focused in a rapidly changing (liquid) business environment, pursuit of organizational flexibility, first growth-orientated with greater diversification- management of group of companies- later shifting to rationalization strategies - downsizing, merging and restructuring.	Contingency theory, competitive advantage, learning organization, globalization, flexible organization, reengineering and restructuring	Strategic, proactive, competitive advantage through people, human resource management as a top management and organizational function.
II “Mechanical-Human Mix” (Present ~)	<i>Emergence</i> of the IT Revolution and “e-economy” , merging hard technology with soft people-friendly approaches, blurring organizational boundaries, diversification of work locations.	<i>Emerging:</i> The complex organization, strategic networking and collective processes, infrustruational organization	<i>Emerging:</i> strategic merging of mechanical elements of the IT system with people-friendly approaches (revisiting human relations and behavior science)

the 1970s. Characteristic of this phase is the large organization, mass production, and the focus on raising productivity through scientific methods shifting later to human relations. The evolution of management thought in this phase includes scientific management (Taylorism), Fordism, human relations, administrative management, and organizational behavior. Management styles and philosophy during this phase tended to be strictly hierarchical and administrative. People were viewed as a labor commodity or cost and so Personnel Management held only an operative / administrative function.

(2) *“Liquidity” Management Phase*

The liquidity management phase extends through the bubble economy period in the 1980s to the ‘rationalization’ period that ensued through to the end of the 1990s. During the bubble period, many companies were growth-orientated strategically and had achieved a considerable degree of corporate diversification. Management was therefore largely concerned with management of a group of companies and organizational liquidity to achieve corporate competitiveness. The growth strategies were later

replaced with rationalization strategies to downsize (numerical flexibility), restructure, or even seek alliances or mergers with other companies to remain competitive and re-focus on corporate core competencies. The evolution of management thought in this phase therefore consisted of the contingency theory, competitive advantage, globalization, the flexible organization, and reengineering - leading to restructuring / downsizing. Management tended to be strategically focused and proactive. Within this formula, management viewed its human resources as pivotal, thus explaining the emergence of HRM as a top management and organizational issue.

(3) *“Merging the Mechanical-Human” Management Phase*

Management is currently on the verge of the “merging the mechanical-human” phase. Spearheaded largely by the impact of the IT Revolution, the organization's boundaries are becoming blurred and formal organizational structures are transforming into network infrastructure in support of collaborative approaches to work. Work locations are becoming more diverse and a number of companies are now working with both brick-and-mortar and virtual realities. The main challenge facing management at this point-in-time is how to merge hard technology with soft people-friendly approaches. Emerging management thought includes the complex organization, strategic networking, collaboration and collective processes and the “infrastructural” organization (Ota, H. 1999.)

Evidenced by the evolution in the phases above, approaches to managing the organization and its people have shifted in accordance with changes in the business environment. Though the basic tenets of management remain unchanged (articulating a corporate mission and formulating corporate goals, and the building of a management philosophy and corporate culture that supports this,) the meanings ascribed them have changed.

In the Traditional Management Phase, for example, management largely saw people as a source of labor or a cost that needed to be administrated and thus Personnel Administration was given only an operational role. Flowing from this approach was the scientific method, (which was later balanced by human relations), in increasing the productivity from its labor force. The Liquidity Phase elevated management of what was now referred to as “human resources” or “human assets” to a top management strategic issue as people became the important component in the company attaining competitive advantage.³ Currently, at the commencement of the Merging of the Mechanical-Human phase, people still hold an important meaning for management, but applications of traditional theories of human relations and

³ For a more detailed discussion of the shift from Personnel Management to Human Resource Management refer to Hanaoka, M. & D. McDonald (1998)

behavioral - especially communication, authority, and commitment - are being reconsidered and modified.

In order to characterize the dynamics involved in the modification of past managerial approaches for the modern era of the IT Revolution, a model that sketches this impact is provided and described in the following section.

Model of the Impact of the IT Revolution on the Organization, the Labor Market, Work and the Worker

Figure 1 outlines the dynamics of the impact that the IT Revolution has on the organization, labor market, work and the worker. ① Changes in the business environment brought on by the IT Revolution realize new challenges to the organization ("Influence on the Organization"). For example, the impact of the IT Revolution on the organization can be seen in the flattening of the organization, contract-based performance and a weakening power hierarchy necessitating new approaches to communications and human relations, a role-based management system, and a consultative and modified take on behavioral science. As the organization changes to meet these challenges, ② newer demands are placed on the labor market for certain skills ("Labor Market") to be used for ③ work performed in ways different than before ("Work Style"). ④ The worker markets her / his own talent in line with these objectives while also bringing other new demands related to individual needs and lifestyles ("Worker"). In this way, ⑤ the worker provides a feedback function ("Feedback") for the labor market and influences the way work is performed.

Following the dynamics of this model, a sketch of how the IT Revolution is / will impact ① the organization, ② the labor market, ③ work styles and eventually ④ the worker is provided together with an outline of the implications for management. The sketch of impact and outline of the implications for management is based on background reading of Deroito Toomatsu Konsaruteingu (ed.) (2000), Hamaya (1999-2000), Kamimura (ed.) (2000), Matsushita (2000), Nikkei Venture (1997), Shukan Daiamondo (2000), Shukan Ekonomisuto (2000), Shukan Toyo Keizai (1999 & 2000a & b), The 21 (2000a - d), and Yamada (2000), as well as a large number of projections by the author.

① *The Organization (Table 2)*

The organization is becoming flatter, organizational boundaries are becoming blurred and the organization is functioning as more of an "infrastructural" (Ota 1999) support for the execution of work projects conducted within and outside of the brick-and mortar location. In order to respond faster to a speed-driven business environment, workers are making direct contact with people-in-charge in the

organization and thus disposing of hierarchical lines of communication. At the same time, technology-based communications, such as e-mail and the Internet, make it possible for workers to communicate with others without direct face-to-face contact. Technology is also enabling digital-based communication to be

Figure 1
Impact of IT Revolution on the Organization, Labor Market,
Work Style & the Worker

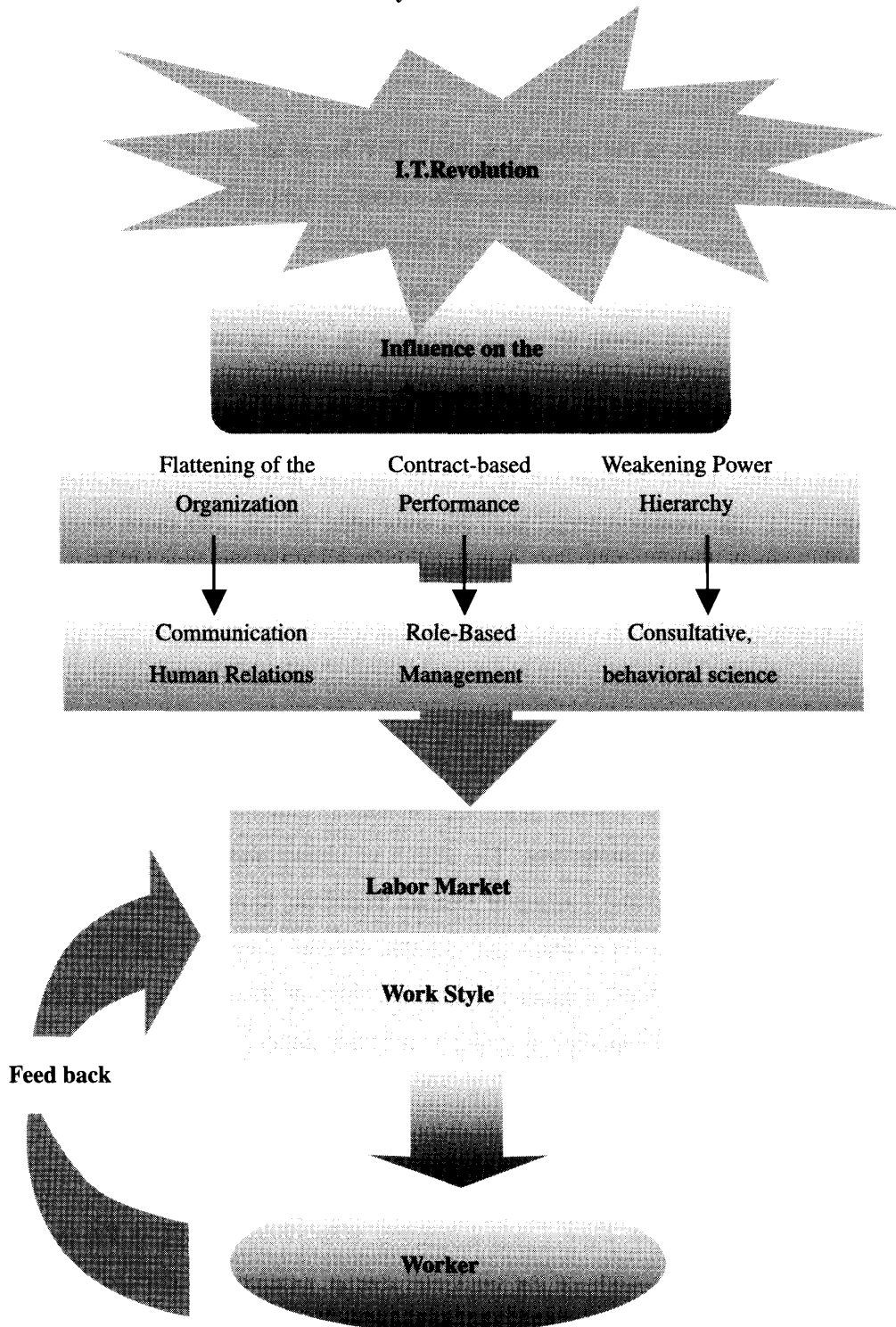


Table 2
Impact of the IT Revolution on the Organization

Characteristic Issues	Managerial Challenges
<p>Organizational Structure</p> <ul style="list-style-type: none"> ● Flattening of the organization ● Blurred organizational boundaries with organizational units more widely distributed, more specialized and composite. ● ‘Infrastructural’ support to members of work projects. <p>Communication</p> <ul style="list-style-type: none"> ● Stratum in organizational communication (hierarchical lines of communication) will make way for direct linkages. ● Communication styles will be less face-to-face and grow more diverse (“technologized.”) ● Content of communications will become more specialized, voluminous and recorded for later (cross-) reference (database.) <p>Networking & Organizational Links</p> <ul style="list-style-type: none"> ● Strategic networking of processes and the individual. ● Tie-ups and other links forged with other organizations and individuals - spinouts. <p>Organizational Performance</p> <ul style="list-style-type: none"> ● Contract based - SOHO, haken, outsourcing <p>Authority & Decision-making</p> <ul style="list-style-type: none"> ● Weakening power hierarchy. ● Direct decision-making, partly automated, built in all processes. 	<ul style="list-style-type: none"> ● Management functions composite each component of the organization - example: personnel functions contained within project team management. ● Strategic focus on the function of corporate culture. ● Organizational diversity management. ● Borderless management systems - example: training not contained within the one organization. ● New systems of communication - direct grievance functions, skip communication, “flat” organization of communication flows. ● Development of newer approaches to human relations that merges “mechanical” components of I.T. with people-friendly approaches - example: merging and enhancing face-to-face components of communication.. ● Role-based management of job control. ● Translucent management practices. ● Shift from power authority (orders) to collaboration, leadership and “acceptance.” ● Remodeling of decision-making practices compatible with a diversity of work environments and geographic locations.

recorded and stored, becoming a database of specialized and voluminous information. Networking and the collaboration of individuals, teams, and processes this entails, are creating small hub communities rotating around the key company organization. The spin-off of network activities may lead to creation of new

services or products forging tie-ups with other key organizations and individuals in the form of new companies. To provide more organizational flexibility, the organization is becoming more contract-based as it sources out its functions to other companies, workers in SOHO, and *haken shain*⁴. As the organization becomes more dynamic and process/role orientated, the power hierarchies of the past become obsolete and need to be replaced by systems of direct decision-making which will grow more partly automated and built into all the different organizational functions.

In response to the impact that the IT Revolution has on the organization, management functions will need to become more composite in each component of the organization. For example, Personnel functions would be contained within project team management. HRM itself would have to modify to become more service orientated. As the boundaries become less visible and the organizational components more spread out, management will need to pursue borderless management systems and place a more strategic focus on the function of corporate culture in providing organizational stability and a point of organizational reference. With the large impact on communications, management will need to develop new systems of communications that utilize a greater variety of tools over a wider sphere. As communication also impacts human relations, newer approaches to that merge human elements and technology need to be formulated. Face-to-face meetings need also to be encouraged, especially in settings where it is possible avoid such contact. As the employment structures of those who make up the organization diversify, management policies (especially as they relate to employment) will need to become more translucent and easily accessible and built into each organizational component. For example, an engineering specialist contracted to work with a particular project team would need to have free access to human resource management policies (by accessing a database or the like) and project management have human resource management as one of its roles supported by the organization's central human resources group. Finally, obsolete power hierarchies will need to be replaced with remodeled decision-making practices compatible with a diversity of work environments and geographic locations.

② *The Labor Market (Table 3)*

The IT Revolution is enabling greater movement of workers between organizations. Workers are able to gain easier, timely, and more specialized access to employment opportunities. Employers benefit by having access to a workforce that in the future may resemble the traditional “just-in-time” manufacturing systems. At the same time, however, there is intense competition amongst potential employees for the

⁴ *Haken Shain* is a dispatched worker from a private agency as defined under the Employment Security Law of 1947 and the Worker Dispatching Law of 1985 both of which were amended on June 30, 1999. For further information refer to <http://www.jil.go.jp/bulletin/year/1999/vol38-09/06.htm> and <http://www.jil.go.jp/bulletin/year/1994/vol33-08/05.htm>

Table 3
Impact of the IT Revolution on the Labor Market

Characteristic Issues	Managerial Outcomes
<p>Open & Fluid</p> <ul style="list-style-type: none"> ● Greater movement of workers between organizations. ● Wider and more specialized access to employment opportunities. <p>War for Talent</p> <ul style="list-style-type: none"> ● Intense competition for I.T. skilled workers. ● Worker can gauge own value on the open labor market. <p>Diversity of Labor Sources</p> <ul style="list-style-type: none"> ● Increasing utilization of outside contract-based labor sources- outsourcing, <i>haken shain</i>, SOHO, and so on. <p>Technology-aided Functions</p> <ul style="list-style-type: none"> ● Digital trading of human competencies. ● On-line recruiting. ● In-house and strategic sharing of personnel data for labor source-utilized for project team formulation and so on. <p>Globalization</p> <ul style="list-style-type: none"> ● Labor market not constricted to within national borders. ● 24 hour, on-demand labor source. 	<ul style="list-style-type: none"> ● Development of borderless, flexible and continuous-learning employment HRM functions- example: on-going career development that is not based on long-term continuous employment in the one same company. ● Clear and translucent employment policies built into each organizational component. ● Re-modeling of reward systems- diversity of compensation plans suited to the needs of the labor market. ● QC programs for outsourcing and other work conducted outside of the organization - integrated within TQC. ● Promotion of direct, face-to-face components of the management of people. ● Development of technology-based HRM services and systems. ● Strategic ties and alliances with other organizations for sharing of human resources. ● Global HRM strategy development.

limited number of workers skilled in IT - in essence, a “war for talent.” The combination of easier access to information and intense competition has made it more possible for workers (and the employer) to measure their own value on the open labor market. Employers are able to draw from a wider range of workers under a diversity of employment structures- for example: outsourcing, *haken shain*, contract workers, SOHO. The ultimate use of information technology in human resource management functions can be seen in the digital trading of human competencies⁵, on-line recruiting and in-house and strategic

⁵ For a more detailed description of digital trade in human competencies refer to Lang, A. & Y. Pigneur (1999).

sharing of personnel data. The Internet has ‘globalized’ the functions of IT extending the scope of labor markets beyond national borders while local times enable a workforce that work through shifts covering a full twenty-four hours.

To rise to the new challenges presented by the impact of the IT Revolution on the labor market and the needs of the organization, management will need to develop flexible and continuous-learning functions. For example, in HRM functions, with the greater movement of workers between organizations, on-going career development programs need to be developed- programs that are not based on long-term continuous employment in the one same company. Remodeling of rewards will also be necessary- systems that provide a diversity of compensation and other plans suited to the needs of the labor market. With the growing trend towards outsourcing and utilization of *haken shain* (Futagami, K. ed. 1998), management will need to implement QC programs flowing from the company's TQM. Sharing personnel data with other organizations for the utilization in joint project teams and the like will first necessitate strategic ties and alliances with other organizations in the sharing of human resources itself. Finally, a global labor market necessitates the development of a global HRM strategy, even when the company's brick-and-mortar location is contained within one national border.

③ *Work Styles (Table 4)*

Work is being redefined with the advent of the IT Revolution. Jobs are becoming role-based with the roles founded more in work processes. Workers are being given more discretion in determining their own work conditions (Asahi Shimbun Newspaper 1999) in a system that is focused on work outcomes. The places people work are becoming more diverse to include SOHO, the mobile office, and teleworking (Imaizumi 1999) and merging of these with the “brick-and-mortar” office. Finally, a growing amount of work is being conducted within networks and ‘distributed work communities.’ (Grantham, C. 2000. pp.27-28)

To cater for the changes in work styles and the needs of the organization to respond to the IT Revolution, management systems need to be role-based and competence driven. A multi-target management design is required to deal with the myriad of varying needs on part of both the organization and the work. Harnessing the movement towards worker discretion in determining work conditions, management needs to recognize their employees as pro-active agents in the design and implementation of management systems that offer greater freedom and flexibility. In the attempt to merge brick-and-mortar and virtual workplaces, management should seek synergy to gain added value. Management would also need to be proactive in establishing standards for the work environment (based on ergonomics, for example), no matter the location, so as to create circumstances conducive to the worker's productivity. Approaches in the management of workers need to be extended to various networks and communities. Such approaches would strive for collaboration and synergy from network relationships.

Table 4
Impact of the IT Revolution on Work Styles

Characteristic Issues	Managerial Outcomes
<p>Role-based Job Function</p> <ul style="list-style-type: none"> ● Role-based job function with authority, accountability and responsibility in-built. ● Roles founded more in work processes. <p>Work Conditions</p> <ul style="list-style-type: none"> ● More worker discretion in determining own work conditions - consultative style focused on outcomes. <p>Work Locations</p> <ul style="list-style-type: none"> ● Diverse work locations - SOHO, mobile office, teleworking, and so on. ● Brick-and-mortar office merging with the virtual office. <p>Networking</p> <ul style="list-style-type: none"> ● Work is conducted within networks and 'distributed work communities.' 	<ul style="list-style-type: none"> ● Role-based (job / task) management - competence driven. ● Multi-target management design - to cater for a myriad of varying needs on part of both the organization and the worker. ● Greater freedom and flexibility in the design and implementation of work ways - recognition of workers as pro-active agents. ● Developing synergy from interaction with brick-and-mortar and virtual realities while also promoting face-to-face contact. ● Work environment standards and management. ● Management of workers as members of various networks and communities- contingent collaboration, synergy from network relationships.

④ *Impact on the Worker (Table 5)*

The impact that the IT Revolution has on the worker can be traced from two angles: the influences of the needs of the organization and the labor market, and the characteristics of the worker her / himself. The organization is placing a stronger focus on individual competencies that are not necessarily directly related to technology. Workers are required to apply creativity in their application of technology so as to add value to especially technology-based services. For example, information technologists/engineers should not simply operate or formulate systems, they are required to become creative system designers and break the traditional boundaries of engineering work to draw from other, more creative fields. Management no longer solely implements career development; it is becoming the mutual responsibility of the worker and management. Flowing from this is that upgrading and developing skills will become a part of the

Table 5
Impact of the IT Revolution on the Worker

Characteristic Issues	Managerial Outcomes
<p><i>Stronger Focus on Individual Competencies</i></p> <ul style="list-style-type: none"> ● Specialization, self-management, professionalism, interpersonal skills and other competencies not necessarily directly related to technology become important. <p><i>Creativity</i></p> <ul style="list-style-type: none"> ● Creativity to add value to technology-based services. (Information technologist = Creative system designer.) <p><i>Human Resource Development</i></p> <ul style="list-style-type: none"> ● Career development becomes mutual responsibility of worker and management. ● Developing skills becomes part of job role. <p><i>Lifestyle</i></p> <ul style="list-style-type: none"> ● Shifting importance towards individual lifestyle - changing meaning of "work." <p><i>Workforce Diversity</i></p> <ul style="list-style-type: none"> ● Shifting values- traditional worker vs. emerging worker /gender / job structure. <p><i>Skills Gap</i></p> <ul style="list-style-type: none"> ● Skill gaps between younger and older workers. <p><i>Multi-Dimensional</i></p> <ul style="list-style-type: none"> ● Workers are growing more multi-dimensional in org. commitment. 	<ul style="list-style-type: none"> ● Competence management - example: development of competence based training, evaluation and reward systems that assist workers in achieving work goals. ● Value-added use of technologies in non-technical type jobs. ● Fundamental shift in education - from rote learning to creative application. ● Creativity as a job competency. ● Career development and training programs that extend outside of the organization - conducted in consultation with worker. ● Flexible range of work conditions to suit individual needs while also strategically meeting organizational goals. ● Development of a corporate culture that not only welcomes, but also thrives on diversity. ● Proactive education and training programs for older workers - joint programs with educational institutions and community groups. ● Re-evaluation of traditional HRM tools - open discussions about meanings of commitment, fairness, and so on.

Influenced by the Needs of the Organization and Labor Market

Characteristics of the Individual Worker

individual worker's job role. Issues that characterize the individual worker include the growing importance being placed on individual lifestyles, shifting values along the lines of gender and job structure (for example, between core workers and peripheral workers) and age- the traditional and emerging worker

(Grantham, C. 2000, pp. 5-7) - a skills gap in the pertinent area of IT, and the increasing multi-organizational commitments held by the individual which is redefining the very nature of commitment and work.⁶

Management of the worker in the era of IT will require “competency management” (Oota 1999.) Workers performing non-technical work should be encouraged to gain added value through the use of technology. Alternately, workers involved in jobs directly related to technology should apply creativity to induce added value. Application of creativity should be nurtured through education that does not rely on rote learning and be included as a job competency. Career development programs should not be restricted within the one company, but performed jointly with other organizations when it is beneficial for the future development of the individual worker. Diversity should not only be welcomed but also harnessed by corporate culture to achieve corporate goals. Considering the aging of Japanese society and the increasing number of workers choosing to continue work after the retirement age, management will need to forge links with educational and community institutions for the education of these workers in the rapid development in IT. A re-evaluation of traditional HRM tools is required in order to meet the changing values of the emerging worker. In pursuing this, discussions should be open and frank and conducted with a diversity of employees on topics that deal with the relationship between the business organization and the worker - commitment, fairness, and so on.

An Overview of the Implications of the IT Revolution for Management (Especially HRM)

Considering the myriad of implications that the IT Revolution has for management discussed above, the following major themes need to be noted when modifying management systems and practices, particularly HRM systems and practices. Underlying the major themes is the role of management in merging hard technology (mechanical) with people-friendly approaches (human) as determined by the new ways companies manage people.

● Remodeling of Communication & Management Feedback Systems

Utilizing a greater variety of communication tools in a wider sphere of influence. Recognizing communication as a tool in a new approach to human relations and using direct grievance functions, skip communication, flat organization of communication flows that overrides traditional modes of hierarchical

⁶ For a more detailed discussion of these and other trends related to workforce diversity in Japan, refer to a study by the author, McDonald, D. (2000)

power orders and commands. Merging and enhancing face-to-face components. Use of digital technology to create a database of information derived from electronic communications.

● Development of Role-Based Management Systems

Greater focus on job roles and competencies in the formulation of jobs in order to cater for the growing reliance on contract-based work. Will require the deconstruction of the traditional *nenkou* (seniority)-based job classification systems and establishment of competency management. More job responsibility, authority and accountability is delegated to the individual. Recognizes the shift towards processes in place of traditional formal organization.

● Larger Degree of Flexibility in the Application of Management Systems

Management systems should not adhere to absolute, unchangeable rules and guidelines. Rather, while keeping in mind the final goals and outcomes intended, management and employees should be guided and educated in the ways of being flexible enough to cater for changing circumstances as they arise in the workplace. Workers should be viewed as pro-active agents in organizational change and development.

● Multi-target Management Design

Traditional HRM tools (rewards, evaluations, career development, and so on) need to be remodeled to meet the diverse needs of the labor market. Jobs should be segmented into narrower groupings with different types of evaluation and wage systems being applied to suit each type of job. Career development programs and such need to be mutually developed (between management and worker) and extend beyond the traditional understanding of (long-term) organizational commitment to the same organization. (For example, career development that may prepare the worker for a future in a different organization.)

● Management Functions Composite in Each Component of the Organization

Management functions need to be integrated in all organizational activities thus delegating more discretion to lower management and the workers themselves.

● Networked and Borderless Management Systems

Management systems that drive the potential in networked and borderless systems. Views workers as members of various networks and communities and is geared to take advantage of the new business opportunities that may emerge through these links. Strives for strategic ties and alliances with other organizations through networks. Perceives itself as borderless in applying practices thus providing for better organizational flexibility. Borderless also refers to national borders. HRM needs to develop truly global strategies even when the brick-and-mortar component of the company is located only within one

national border.

● **Managers as Leaders & Consultants and Translucent Management Practices**

Traditional power hierarchies that create orders and demands are replaced with managers that provide leadership and are consultative in the application of translucent management practices - practices that have clearly defined objectives and are implemented “fairly”. In this way, workers are not only able to accept the practices but are also empowered to meet organizational goals.

● **HRM as Service Provider & Continuous Learner**

HRM activities center around providing HRM services and information to support the personnel functions delegated lower management and (project team) leaders. Provide digital information services to all employees, especially pertaining to the company’s human resource management policies. HRM should have continuous-learning as a built-in function for all its practices and activities and thus keep up with the rapid changes brought forth by innovations in technology.

● **Gaining Added-value through Technology**

Added value should be gained from the merging of hard technologies with people-friendly approaches-synergy from the interaction between brick-and-mortar and virtual realities, and job functions/tasks with technology systems.

● **Diversity Management - Increasing Organizational Creativity and Flexibility through Adjustment of Organizational Composition**

Companies, in their pursuit to attract workers skilled in IT, will be drawing from a much more diverse workforce. Management should harness the potential that diversity has in increasing organizational creativity and flexibility. Human relations and communication will play a more critical strategic role. Diversity management will involve specially focusing on the particular needs of certain types of workers so that they can reach their individual potential while at the same time considering the whole mix of diversity in organizational effectiveness. For example, education of older workers in IT should not be viewed as an obligation by management, but as a means of unleashing potential that the interaction of technology with experience may bring, together with the benefits of the links and corporate citizenship in diverse communities.

● **Strategic Utilization of Corporate Culture**

Management, so as to provide organizational stability while also functioning flexibly, should strategically harness corporate culture. With organizational members scattered throughout various work communities

and networks, corporate culture can be used in having all members focus on a shared vision and goal. Corporate culture can also form a competitive basis in attracting the best workers. In communication, corporate culture should be viewed as an important tool.

● QC and Standardizing Function of HRM

QC issues should extend to all HRM activities, including those that are outsourced. HRM should be proactive in its efforts to standardize some personnel related functions (for example, providing standards for an ergonomic work environment). This should be pursued with continued discussions as to what denotes human resource quality.

● Organizational Performance and Individual Job Creativity.

Management needs to draw on creativity in gaining added value in technology-based services and thus should be included as a job competency. In enhancing creativity, a fundamental shift in education from rote learning (memorizing “facts”) to creative application of skills and talents is required.

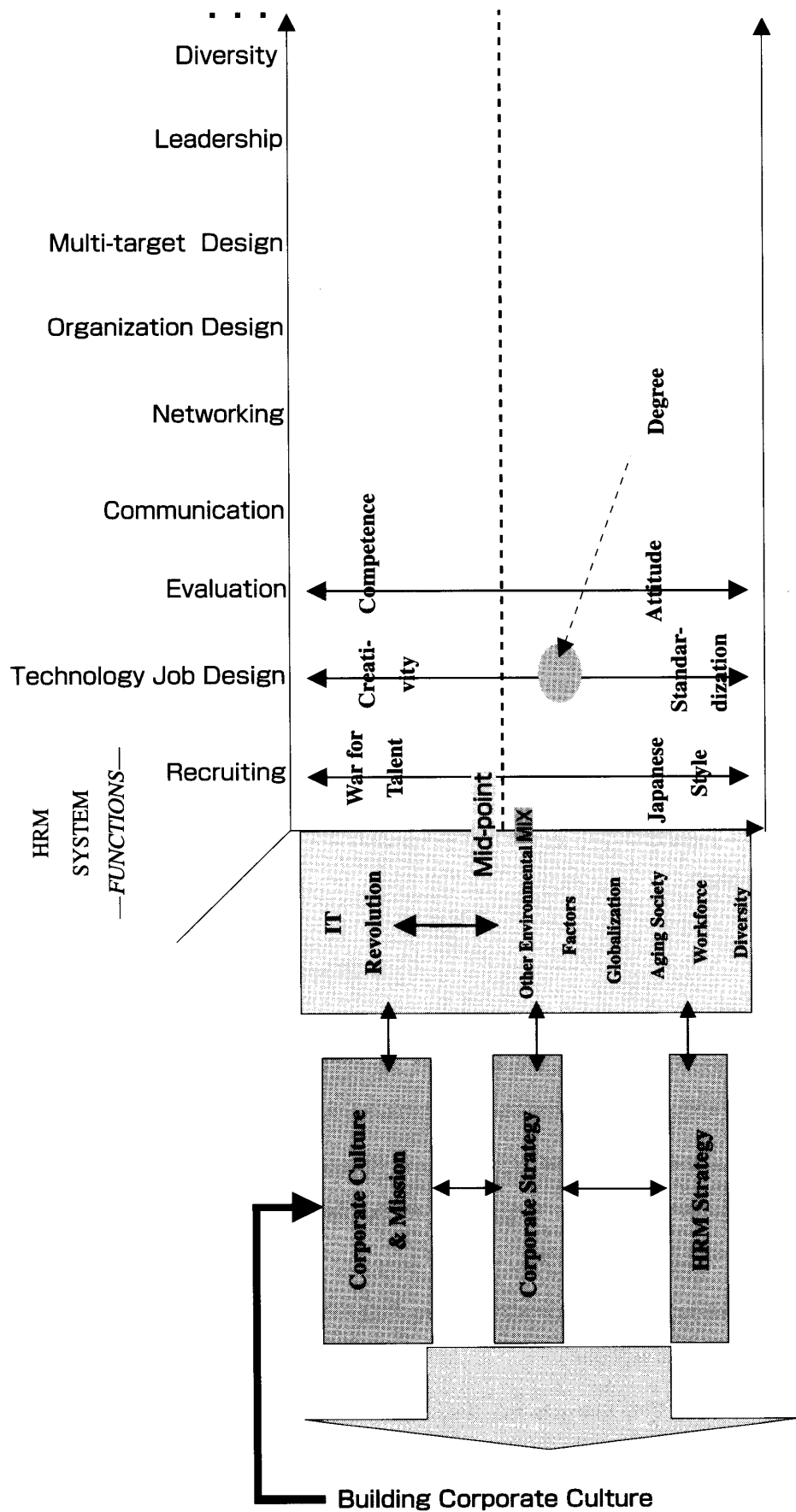
A New Strategic Model of HRM

Figure 2 outlines a new strategic model of HRM that harnesses the challenges of the IT Revolution. Characteristic of this model is the (1) interaction of the IT Revolution and other environmental factors with (2) the contingent mix of scaling range of HRM functions (for example, reward systems that range from results-based to pre-determined) which is (3) linked to HRM strategy to (4) harness and mold corporate culture to (5) achieve corporate goals.

Depending on the environment of the company, and the needs of the organization and the worker, each individual function in the HRM system is adjusted on the scale in line with the targeted management practices described in the previous section which in turn is ultimately determined by HRM strategy. For example, a company that is up-to-date with the latest technology, may need to focus more on creativity rather than standardization of the use of technology in job design in an HRM strategy that strives to obtain added value through creativity. For a company that has just procured new technologies, the focus may be more on standardization in the pursuit of a more stable organization.

The model recognizes the importance of the role of corporate culture in achieving company goals. As corporate culture permeates throughout the entire organization, having each component of the organization, from corporate strategies to operations, involved in the building (and re-building) process is critical. The scale in HRM functions provides for a HRM system that is responsive and pro-active in

Figure 2
Strategic Model Human Resource Management



building corporate culture by reflecting strategic choice contingent on the needs of the individual organizational member, environmental change, and the goals of the company. As each company strives to achieve competitiveness, while harnessing its corporate culture and responding to its environment, the total mix in the model for each company will differ.

Conclusion

Understanding the way in which Japanese companies are succeeding or failing in their attempts to deal with the challenges brought forth by the IT Revolution present many important lessons for HRM.

The most important lesson is that the IT Revolution has changed the very landscape in which businesses operate. As a result, traditional “one-size-fits-all” homogenous approaches will prove inadequate with the growing complexities of the organization, labor market, work styles and the worker. Secondly, management is faced with the challenge of merging the harder components of technology with people-friendly approaches. In achieving this, management has to redefine and retool its approaches in the management of people.

As companies learn from these lessons, opportunities arise for the development of an organization more flexible and in-tune with the business environment. For HRM, the IT Revolution, true to its name, represents a paradigm shift in the way companies manage people, enhancing the company's vibrancy and competitiveness.

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