The Relationship between Human Resource Management and Knowledge-Based Economy in Malaysian Multimedia Super Corridor (MSC) Status Companies

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Abstract: The study is critically investigates the relationship between human resource management and knowledge-based economy in Malaysian Multimedia Super Corridor (MSC) companies status. Also, it discusses the obvious differentiation between human resource management and knowledge management. Based on semi-structured interviews, this study provides evidences for the changing roles required for human resource management in managing knowledge workers In short, this study is perhaps one of the first to investigate the influence of human resource management in the knowledge-based economy in MSC companies' status in Malaysia.

Key words: Human Resource Management, Knowledge Management, Multimedia Super Corridor (MSC), Knowledge Workers, Malaysia

INTRODUCTION

Knowledge management is not only about the latest technology but also managing knowledge within the company and treating it as the most valued asset for the success of the company (Davenport and Prusak, 2000; Grayson and O'Dell, 1998; Kermally, 2002, Norzaidi et al., 2011, Norzaidi and Intan Salwani, 2011). In this view, knowledge workers have been considered to become an important asset by virtue of their possession of this knowledge (Amar, 2002; Beaumont and Hunter, 2002; Darr, 2003; Drucker, 1988, 1999 and 2003; Newell et al., 2002; Tymon and Stumpf, 2003), therefore, human resource management is another aspect that would help knowledge management in terms of managing the human resources as an invaluable asset for the company, by taking on a more strategic business partnership-like role (Greengard, 1998; Soliman and Spooner, 2000; Thite, 2004; Yahya and Goh, 2002).

Nonetheless, much is still unknown about how human resource management could contribute to knowledge-based economy. Issues such as knowledge workers and its link with human resource management have raised the question of whether Malaysian organizations have been on the right track in terms of their successful as Multimedia Super Corridor (MSC) status, particularly after making huge investments on business planning. Moreover, very little information has been made available on the relationships between (1) knowledge workers (2) human resource management and (3) knowledge-based economy, which reveals a significant gap in knowledge. Hence, if we do not look after the knowledge workers, do we think that they will leverage their knowledge for the success of the company or for themselves? Thus, we must start by taking good care of these knowledge workers in the hope that they will appreciate the company's benefits and remain in the company and contribute to its success and profits. The next section reviews pertinent literatures that have garnered impressive theoretical and practical support.

Review of Literature:
Understanding Knowledge Workers:
An overview of the discussion of the development of the term "knowledge worker" has been provided by Darr (2003) in his work on Testronic's sales engineers, who were working in various places in clients' offices. Beginning with the theories of the new middle class in the late 1970s and 1980s, Darr (2003: p. 31) wrote that the conservative and radical groups acknowledged the rising of a new middle class i.e. professionals and

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technical workers, in the twentieth century. He emphasised that this new class of workers, who were working at a variety of client offices, was under market control rather than Testronic's control. This meant that the client's manager and engineers became their (i.e. sales engineers) supervisors. In addition to that, Amar (2002) regarded knowledge workers as Generation X and Y (Nexters), who were born after 1977 and are now joining the workforce. He wrote:

> "The biggest challenge that management of knowledge organisations confronted during the 1990s, and will continue to face in the future, came from changes in work behaviour of the new generations of workers. These employees, even though young, have superior knowledge and skills, more so than the managers who are supervising them and who have responsibility to create the environment in which they work. If management is willing to work with them, it can make them the super smart employees it dreams of, but if it does not understand them, then it can in turn them into sloth." (p. 24)

In this case, before dealing with the issues concerning the management of knowledge workers, it is worth mentioning that there is an abundance of synonyms for the term knowledge workers. The definition of knowledge worker is indeed different from one author to another. For instance, Helton (1988) and Kelly (1990) defined the knowledge worker as somebody doing non-repetitive, non-routine work, which entails substantial levels of cognitive activity. They possess specialised skills and training, which they have acquired by investing significant resources (time and money) towards their education. Knowledge workers are also classified as "problem solvers" for the research and development companies, "problem identifiers" and "problem brokers" for advertising companies (Reich, 1991). Furthermore, Tampoe (1992: p. 16) described knowledge workers as "those who have traditionally been referred to as professionals, e.g. practising lawyers, accountants, the technologists and scientists of today, provided they work within a company context...". Several studies viewed knowledge workers as being related to knowledge work that is challenging and non-routine; it can be further described as being related to the solving of unstructured tasks and problems. Sveiby (1997) considered knowledge workers as those who are highly qualified and highly educated professionals. Their work consists largely of converting information to knowledge, using their own competencies for the most part, sometimes with the assistance of suppliers of information or specialised knowledge. In agreement with this view, Frances Horribe (1999: p. xi), in her book entitled *"Managing Knowledge workers: New Skills and Attitudes to Unlock the Intellectual Capital in Your Company"*, defined this group of workers as those who use their brains more than others do. She said:

> "… knowledge workers are people who use their heads more than their hands to produce value. They add value through their ideas, their analyses, their judgment, their syntheses, and their designs. They still use their hands, of course, but it's more likely to be putting into a computer than lifting a 50–pound sack …"

According to Reed (1996), knowledge workers are "information technology analysts". He further argued that these workers live an "informal way of life" and are not tied to any particular company. Thus, they are mostly self-employed and have a high degree of work autonomy. Looking at the earlier discussions, the common thread through the 1990s definitions of knowledge workers is that they are highly educated, well skilled and are differentiated in information technology criteria. However, more recently, the definitions of knowledge workers have seen some dissimilar points of view emerge. For example, most importantly, knowledge workers are empowered and have the autonomy to make decisions that have far-reaching consequences for the company for which they work (Hunter, *et al*., 2002; Newell, *et al*., 2002; Rowley, 2000). In fact, Dominique Goupil (2002), the president of FileMaker Inc., described knowledge workers as being any of the following: "employees, partners, contractors, freelancers and consultants. Some are mobile and may work in hotels, airports or even on the road. Others are stationary, working from home, in office buildings or manufacturing facilities. They populate all industries and have job descriptions ranging from assembly line workers to doctors and scientists. The one common thread running through this mosaic of knowledge workers is a connection to information…" (p. 2).

In another case, Beaumont and Hunter (2002: p. 4) used three different approaches for defining knowledge workers, which are quite similar to the view of Newell *et al*. (2002). Firstly, knowledge workers are usually created by the situation of high demand occupations, such as computer engineers and system analysts. Secondly, knowledge workers are seen to have a high involvement in knowledge work such as research and development, advertising, education and professional services such as law, accountancy and consultancy. Thirdly, according to the Organisation for Economic Cooperation and Development (OECD), those knowledge workers are well known for working with high-tech industries like aerospace, computer and office equipment, communications equipment, pharmaceuticals and knowledge-based services (telecommunications, computer and information services, finance and insurance, education and health). From here, Beaumont and Hunter (2002)

categorised knowledge workers into two groups: technical or content experts (e.g. law companies) and creative employees (e.g. advertising agencies). In the Malaysian context, looking for an appropriate definition of knowledge workers in order to provide the true picture of the current business scenario has been considered as one of the current study's main objectives.

The overall view of these definitions consists of two main perspectives. The first perspective is focused on the professional and information technology viewpoint. This view was especially evident during the 1990s. The second perspective seems to focus primarily on the professional and the view that everybody has the potential to become a knowledge worker. This opinion has emerged during the 2000s. However, we shall refer to the Multimedia Development Corporation's current definition of knowledge workers in the rest of the thesis, with the understanding that this term reflects the concept of knowledge workers as human resources in the context of the resource-based theory of the company. The definition of knowledge workers by the Malaysian government shows some dissimilarity from those used in countries such as the USA, UK, Australia and Germany etc. For example, looking specifically at Tampoe's (1992) definition of knowledge workers, not all university graduates or diploma holders can be regarded as knowledge workers unless they actually practice what they have learned. In Malaysia, knowledge workers are now becoming the crucial resource for the growth of Multimedia Super Corridor status companies (MSC IS, 2003; Tyndall 2002). Accordingly, all Malaysian workers who possess any higher qualification are considered as knowledge workers even though they may not necessarily continue to work in their field of study. Furthermore, the Malaysian definition of knowledge workers shows that information technology is the main requirement for being classed as such. In addition, Malaysia does not have any problems with a shortage of knowledge workers because it has a large number of universities graduates without permanent jobs (see for example Online Bernama Newspaper, 22nd December 2004). Therefore, further clarification of this definition is needed in order to portray the true picture of the current situation in Malaysia regarding knowledge workers. It is hoped that a clearer understanding of the characteristics of knowledge workers resulted from the current study may allow us to better identify them and to know who these workers actually are.

Linking Strategic Human Resource Management with Knowledge Management:

One may question whether strategic human resource management is required for knowledge management or whether knowledge management is required for strategic human resource management. Are they of the same importance, and are there any related roles? Thus, this section discusses the obvious differentiation between human resource management and knowledge management. In this regard, Greengard (1998: p. 90) argued that even though there are many ways to support knowledge management practices in the company through human resource management, there are still some standard strategies. He described seven ways to ensure that knowledge management takes hold within the firm with the help of the human resource department. The first is to provide human resource executives' support. This should be followed by establishing cross-functional teams to map knowledge and plan an initiative. Then the human resources department needs to ensure that a process of knowledge transfer is in place. At the same time, the human resources department is responsible for developing and/or providing the suitable technology in order to make knowledge management flourish and nurture a sharing culture. The human resource department also needs to demonstrate the value of knowledge management in encouraging a buy-in attitude. Finally, the human resource department needs to view knowledge management as a work in progress rather just as a corporate image. Soliman and Spooner (2000: pp. 339-342) further argued that human resource management might support knowledge management practice in the company by having a good understanding of the importance of using knowledge management techniques for leveraging their workers' knowledge. This can be done by first bringing the knowledge management in line with business directions. In order to do this, human resource management should play its role in identifying where the tacit knowledge resides and how it may best be utilised in order to achieve the company's goals. Besides that, the human resources department plays a key role in assessing employees' knowledge and determining whether it brings any major benefits to the company (i.e. identification of the benefits of knowledge management efforts). Furthermore, the human resource management in the company may also choose the appropriate knowledge management programme and/or activities in order to ensure the participation of knowledge workers (Thite, 2004; Soliman and Spooner, 2000). This can be done by creating supportive environments for knowledge management programmes such as social gatherings of staff, the office layout, trust between employees within the firm, understand and valued differences in culture and language, timeliness, the way in which learning and mistakes are handled, and involvement and commitment from senior management.

Also, it is argued that human resource management may propose that the company should provide enabling technology for the knowledge management programme, such as a knowledge-based system (Davenport and

Prusak, 2000). This in turn requires support from the top management. With this support, it is hoped that the company could storm the knowledge management programme, form knowledge management rules, perform knowledge management activities and reform the knowledge management programme. In addition, Hislop (2003) specifically highlighted the importance of human resource management in terms of developing and encouraging commitment among knowledge workers to participate in knowledge management. In connection with the work done by Nonaka and Konno (1998) on the SECI Model, Soliman and Spooner (2000: p. 344) put forward further roles of human resource management in supporting the knowledge management process, in the form of "knowledge mapping" as shown in Figure A below. In the other words, both models could work hand in hand by first disseminating knowledge during the "socialisation" activities, followed by the use and transformation of that knowledge to meet the needs of the company during the "externalisation" as well as the "combination" activities, and finally constructing or reinterpreting it accordingly during the "internalisation" process. This continuous process would then help the transformation of tacit knowledge into explicit knowledge and vice versa.

In relating the earlier review to the Malaysian context, Yahya and Goh (2002) found an association between four areas of human resource management (i.e. training, decision-making, performance appraisal, and compensation and reward) and the five areas of knowledge management (i.e. knowledge acquisition, knowledge documentation, knowledge transfer, knowledge creation, knowledge application). In this view, it has also been argued that human resource management needs to adopt a unique role to assist and support the successful input and/or factors of the implementation of knowledge management. In other words, it could be assumed that human resource management may support the "socialisation", "externalisation", "combination" and "internalisation" stages more efficiently. As a separate entity from knowledge management, perhaps what human resource management should do is to become more strategic in nature i.e. a strategic business partner, rather than just becoming a service provider. By doing so, the strategic alignment needs to meet several requirements of the issues that are closely related to managing knowledge workers, such as flexibility and freedom of autonomy, practising empowerment, having flat management and work-life balance.
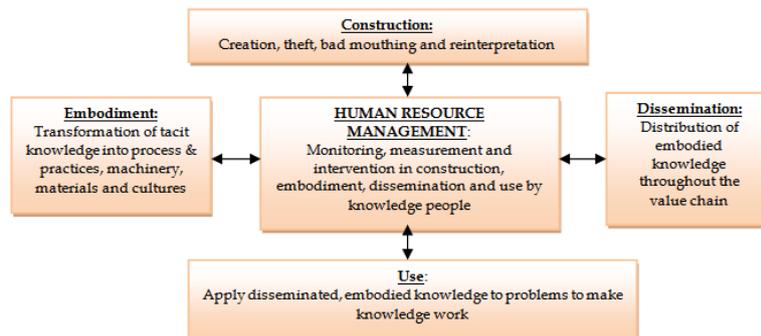
Source: Soliman and Spooner (2000: p. 344)

Fig. A: The Knowledge Mapping Model of Human Resource Management Role in Constructing, Disseminating, Using and Embedding Employees' Knowledge

Perhaps this work could also provide a signal of the active movement of the new concept of managing human resources in developing countries such as Malaysia. Here, it has been claimed that the emergence of Western human resource management will become crucial for efficient people management in developing countries (Budhwar, 2004; Budhwar and Debrah, 2001; Debrah and Smith, 2000; Rowley and Warner, 2004). This is because it has been argued further that with the existence of thousands of Multi National Companies (MNCs) in developing countries, such as African states and the Asia Pacific region, Western human resource management could become influential in these countries (Budhwar and Debrah, 2001; Rowley and Warner, 2004). In fact, it has been stated that:

"These MNCs often introduce new working practices which are in line with their global strategies. The MNCs generally have well-develop HRM systems. It is thus conceivable that as more and more developing countries succeed in attracting FDI [i.e. foreign direct investment], the local firms they work with might emulate their HRM policies and practices. Thus, indirectly, the local firms can learn from the MNCs regarding how to transform their personnel into HRM." (Budhwar and Debrah, 2001: p. 246)

Nonetheless, Rowley (2003) has argued that differences in HRM in any country could only be understood by looking at the pros and cons of four crucial approaches (i.e. convergence, contingency, culture and institutional factors). In this regard, the practice of human resource management stages is different in each country and thus requires the most appropriate approach for the company in order to fit in with the working culture of that company without neglecting the existing supporting social and economic values and local practices. For instance, in China, according to Cooke (cited in Budhwar, 2004: p. 31), little attention is paid to the practice of human resource management and the relationships between workers are very much transactional in nature (i.e. I have the money, I employ you, therefore you should do a good job for me). In Thailand, the principle of management taught in Buddhism, known as "Brahmivihaara 4", is applied in managing human resources (see, for example, Siengthai and Becther, in Budhwar, 2004). A similar thing happens in Malaysia, where the majority of the citizens are Malays and/or bumiputra (i.e. Princes of the Soil) and the national religion is Islam. Thus, these two aspects have undeniably affected the management of workers in Malaysia (Mellahi and Wood, cited in Budhwar, 2004). Aside from these differences, these developing countries have one thing in common, namely the applicability of resource-based theory in explaining further how their human resources are being managed. In relation to this, it has been pointed out by Budhwar and Debrah (2001: p. 251) that "In the era of globalisation…[and]…in achieving competitive advantage, developing countries must transfer their PM [i.e. people management] into HRM [i.e. human resource management]. It is for this reason that Kamoche argues that the resource based-view can be applied to understanding of the role of HRs in strategic management in Africa and might contribute to the formulation of an HRM approach that is more appropriate for the Kenyan situation and perhaps for all developing countries in general…". In the light of the earlier discussion on theories underpinning this study, the overall understanding on how human resource management may support knowledge management is shown here in Table A. The overall view on the impact of this understanding on the current research is that it will encourage as well as support knowledge workers to participate in any knowledge management activities. To take a simple example, during the socialisation processes as shown in Table A, knowledge workers are expected to participate in customer interaction activities such as having lunch together, visiting the site and regularly checking on the products and services sold to the customers.

In this regard, what human resource management of a company can do is to monitor these movements by assessing whether the company really has the right knowledge workers to present the company's deals to the customers. If the individual knowledge workers are lacking in self-confidence and/or have bad public relation skills, then perhaps they need to be sent on training programmes in order to improve. Other than that, knowledge workers could also be given group tasks and/or team projects during the externalisation processes. In this view, what human resource management could do is to use a better competitive compensation and rewards systems upon completion of the project. In this case, team-based rewards could be better than individual rewards. Also the need for an efficient system to encourage knowledge-sharing activities is important. Here, perhaps top management of the company should consider making an investment to this end. Furthermore, continued support must be provided and examples must be shown in order to encourage the rest of the workers to adopt the knowledge-sharing attitude. Finally, training and personal development are clearly pertinent, allowing knowledge workers to keep abreast of what is going on within their fields of work. Thus, strategic human resource management should consider this as one factor that could contribute to the retention of knowledge workers.

Methodology:

Using an in-depth semi-structured interview, an investigation of knowledge workers was carried out based on two main perspectives, namely knowledge management and human resource management. The respondents were selected and arranged from the volunteering Multimedia Super Corridor status companies. Multimedia Super Corridor status companies are those selected companies that are involved in the high tech industry and entrusted to become the growth engine of Malaysia's success (Vision 2020: p. 3). Therefore, the formation of the Multimedia Super Corridor is seen as the means to make this vision a reality for Malaysia. This research involved non-probability sampling and the techniques used were convenience sampling and snowballing. There were 79 initial respondents for the in-depth semi-structured interview. However, tape number 53 was voided due to poor recording quality. Thus, in this case, only 78 interviews were transcribed for further analysis.

Findings:

In this section, several important themes are developed from the transcripts, which are related to the above understandings. These themes have been seen as highlighting various aspects of human resource management,

such as the current difficulties faced by the human resource managers in keeping their good knowledge workers; the most preferable method for recruiting knowledge workers; training as a support tool for knowledge management implementation as well as for retaining good knowledge workers; compensation, benefits and rewards for knowledge workers, and finally further suggestions on the opportunities for new challenges and planning their own route maps, opportunities for work-life balance and the consideration of flat and flexible management.

Table A: Managing Knowing in the Knowledge–Based Company.

Knowledge Management Elements and/or Processes	Knowledge Management Activities	Strategic Human Resource Management
Socialisation	Brainstorming Informal Meetings Discussions Dialogues Observation On-the-job training Customer interaction Coaching Mentoring Learning groups	To provide suitable environments like 'family day', 'dinner or lunch with the customers', 'staff annual dinner', 'company retreat' etc. To encourage workers' participation in knowledge management activities by creating 'team-based performance assessment'. To ensure that the company's planning on staffing and recruiting is aligned with the needs of the company. It is essential to get the right workers who will fit with the company working culture, for instance. To ensure high commitment from the top management
Externalisation	Meetings Building hypotheses and models Communicating by cartoons After-reaction reviews Workshops Best-practice exchange Master classes Assignment	To support the embodiment and dissemination of knowledge management activities into the workplace. To provide competitive initiatives for workers to share more. To provide competitive compensation & rewards systems. To encourage the practice of 'flat' management that requires management to be more flexible, with an emphasis on worker involvement and empowerment. To emphasis the role of top management for encouraging team-based work.
Combination	The application of the uses of information technology groupware such as 'company yellow pages' and 'intranet system'.	To work with the relevant authorities in creating and/or providing effective IT system for knowledge management activities to run smoothly. To provide an effective training programme to introduce knowledge management systems among workers and utilise it at the maximum level.
Internalisation	Facilitation skills Knowledge sharing Client customer feedback review Development counselling and new ideas	Perhaps, the strategic human resource management in the company could apply the strategies suggested in the externalisation and combination processes, but the main focus should be on the following aspects: To create a situation of learning by doing. To provide more training and personal development programmes.

Current Difficulties Faced by the HR Manager:

Firstly, many respondents reported that they faced the possibility of losing their best knowledge workers. Thus, a discussion was carried out to discover how companies could keep their best knowledge workers in order for them to ensure continued company success. The following samples of interview sessions with R11, R32 and R21 offer a further explanation of the difficulties faced by organisations and the need to keep good knowledge workers. At the same time, they claimed that the current efforts still do not fulfil the country's needs. R11, who is the Vice President of a company with more than 1000 workers, emphasised the new role of human resource management, which is to fully utilise the knowledge of the top workers while they stay in the company. It is no longer a matter of keeping them for life. He said:

"… this is the measure, so if we truly believe in going back to the principle of knowledge workers, if knowledge workers are learning so fast, they can contribute very…very significantly. Then these people are in demand and they are highly mobile. So, forget about keeping them forever. Then, the philosophical question that you need to answer is 'How long should I rent his brain?' This is because you are only renting a knowledge worker's brain power…" (Page 6, line 4-8, Vice President with 18 years' working experience)

As the earlier statement shows, this is the challenge faced by many HR managers nowadays. R11 suggested that HRM should change from the old belief in keeping knowledge workers for life, towards the

issue of how to utilise their knowledge effectively while they are still within the company. He continued by saying:

"Now, that is where the challenge lies, because very often we think 'I offered you a permanent job and you are supposed to stay here'. But the point here is that you are only renting a person's brain-power. This means that during his stay with you, you need to gain his loyalty a hundred percent. You need him to contribute beyond what he was supposed to deliver. You need not only that, but also the fact that you know that he [the worker] is just rented brainpower. But you also need to find a way to transfer his knowledge to others…Much of the HR in our country is so backward…" (Page 6, line 9-15)

This quote illustrates that there is a need for a new HR role in managing this new group of workers, which is in agreement with the study carried out by Yahya and Goh (2002). Their study revealed that knowledge-based companies require a different management approach to that of non-knowledge companies. In this case, human resource management may be unique in that it has to transform itself from an ordinary service provider to take on the role of a strategic business partner and fulfil the needs of this new group of workers (Lengnick-Hall and Lengnick-Hall, 2002; Hunter and Beaumont, 2002; Solimon and Spooner, 2000; Ulrich, 1998). Returning to R11, when asked what he really meant by "backward", he mentioned that:

"They [HR people] are still very much administrators. HR managers don't have strategic perspectives of what HR is supposed to do. As a result, they tend to do the personnel administration. But they forget that if I'm renting a super brain here, and I know that the super brain is so good, then other people also want to make him a better offer ... [and]…I am not in the game to be beaten. You may offer twenty thousand in Malaysian money per month and I can give thirty thousand. There is no end to that…" (Page 7, line 1- 5)

Further to that, he suggested, companies should look into this matter seriously, as one day they would lose their good knowledge workers and this would have a negative effect on the company in particular and on the nation in general, as he said:

"So, good HR managers who manage knowledge workers must accept the fact that they are going to lose their best knowledge worker sooner or later. The question, while he is there, is how you extract all the value and how you institutionalise that knowledge. So if HR is not good, when these people leave, the company will become a forgetting organisation. So, good HR managers must be managers who are able to build a skill pool and capability management framework. This is something that, if you ask me, among the Malaysian HR Managers, I don't think people have even reached there yet…" (Page 7, line 5-10)

In another interview session, R32, the Human Resource Manager in a data centre, had the same view as above. When the researcher asked her "What is the most challenging task in HR at the moment?" she said:

"…the most challenging issue right now is to compete with other IT companies while sustaining your best staff. Because, I can tell you from now onwards…Malaysia is becoming the hub of the Asia Pacific region… That's why there are a lot of data centres right now… [and]…there are not many people specialised in setting up data centres and working in data centre environments. For example, Bank CBS (pseudo) needs 2000 people for its data centre and Bank STS (pseudo) needs almost 500 people. So how does this actually work? …The fastest way for them is to have a data centre …[and]… to 'headhunt' others, so the best way is to take these people over there, with higher pay and positions…" (Page 4, line 5-11, Human Resource Manager with 8 years' working experience)

Losing good knowledge workers would have an adverse impact on the company. In this case, R32 continued:

"For us… [this is not productive]…because we have already invested so much time in training and everything for them. So we always have to make sure that we are competitive enough with the outside market in order to retain all these good staffs. Sometimes, it just makes me wonder whether it is wise to retain them, because the cost is sometime so high. But you wouldn't want to lose them because you depend on these people to sustain your project as well. So it is a 'bread and butter' matter here. And I think it is getting to a stage where the market is not very healthy …for those 'hoppers', you will always see the same pattern. That is why it is becoming a burden on the company and me as well…" (Page 4, line 12-21)

This scenario is critical, particularly if companies are in the middle of certain projects. It is not only about money, time and the contract. The company's image is damaged if they cannot deliver the project on time. According to some researchers, such as Lengnick-Hall and Lengnick-Hall (2002: pp. 71-75) and Amar (2002: pp. 24-25), losing good knowledge workers will have a serious long-term impact on the company as a whole. For example, others may no longer trust the company to deliver their projects on time. Thus, human resource management needs to solve or at least reduce this problem by implementing new ways of managing these workers. In this case, human resource management needs to focus on people as the most essential resource. In the light of this, R21, a Business Development Manager, also admitted that the current focus of the company should be more on people rather than just the company. He said:

"Yes, although I think there are certain elements where HR today responds differently compared to say fifteen to twenty years ago. Today I have a feeling that … [in HR]… some eighty percent of the attention is placed on people and twenty percent on the company. And this is my personal perception, as opposed to the past where fifty percent was on the company and fifty percent on the people. So there is a better match…and I think this company has become more dynamic in that sense…" (Page 5, line 9-11, Business Development Manager with 30 years' working' experience)

Thus, if people are going to be the focal point of any company, planning and recruiting by the human resource department is the most crucial element in getting the right people and putting them in the right place, at the right time, with the right price, in the hope that they will remain longer within the company. This is because having the right workers will increase the likelihood that they will stay in the company. Furthermore, according to the earlier review, if workers are satisfied with what they are doing, then they will stay longer with the company, although the level of compensation might also become an influential factor in this decision. The overall understanding is that the first role that needs to be played by human resource management is to overcome these difficulties with hiring and keeping good knowledge workers. With regard to this, and from the strategic point of view, even though a company may not have enough knowledge workers, this does not mean that the hiring process should be informal, ignoring the quality of the workers. This is because if the company cannot get the right workers, the problems of losing knowledge workers will continue to occur. Therefore, human resource management plays a very important role in recruiting knowledge workers and keeping them in the company. In order to achieve this, a competitive package for hiring knowledge workers should be offered in order to fit with the current needs of the business scenario.

"Internal Contacts": Most Preferable Method of Recruiting Knowledge Workers in the MSC Status Companies:

In this section, another important issue was found, concerning the preferred method for recruiting knowledge workers in the MSC status companies. From the qualitative findings, it was revealed that many of the MSC companies are more likely to use "internal contacts" in order to hire new knowledge workers. Therefore, it is common for a knowledge worker to move from one company to another upon invitation (i.e. as a result of being headhunted) or perhaps through their own personal contacts. This is especially likely to happen after the knowledge worker has worked for some time in one company and has been noticed for his or her quality of work by personnel or top management from other companies. From there, the invitation and negotiation process begins. In some cases, this is done through their former bosses, but most of the time, their bosses do not know. If they find out, then they will generally offer better compensation, which only rarely succeeds (the knowledge worker will not go to another company if his or her bosses have made a better offer and promises). This is why the scenario illustrated in Table B is quite common to the MSC cluster. R1, the Finance and Human Resource Manager, R6, the Human Resource Manager, R3, the System Analyst and R20, the Director of Marketing & Business Development described this matter further.

Table B: Interview with R1 (Page 5, line 10-17, Finance and Human Resource Manager with 7 years' working experience)

Question: What if in the future, you have a very big project? Tell me how you would go about it.

R1: Do you mean how well we approach recruiting people?

Question: Yes, can you elaborate on this?

R1: There are quite few methods, I would say. We can always advertise normally in the newspaper or job centre, or maybe using 'word of mouth', which is quite effective. Do you know why? Because when you are in the IT line, I would say it is not a big world. It is a small world, so once we know what skills we require, it is quite easy to actually approach somebody and get them to join the organisation…

The above statement was also supported by R6, who agreed that internal contacts would be more beneficial to the company in terms of recruiting their knowledge workers. She reports that:

"The best way to go about it is through networking. That's always the best. Most of our staff here are engaged through networking. Basically, through someone, and when we find that the person is good we start talking to them. The other thing we do…[is]…the agency search. That means that you engage an agency to find the staff. Number three is through our web page. We just advertise there, but we get so many people applying, even with unrelated qualifications… [so]…basically, networking is the best way…" (Page 4, line 1-8, Human Resource Manager with 14)

Among the benefits of networking are that it may shorten the learning curve and allow the work to proceed faster. It is not a matter of being too demanding, but normally, someone who has been hired through internal contacts has gained a good reputation in his or her previous company and is renowned for his or her expertise within the IT industry. This is because, sharing knowledge with a slow learner will take more time, and is not productive for the company. Furthermore, R6 continued:

"…as an employer, because we are now in a very competitive industry, the shorter the learning curve, the better for us. And at the same time, we want to be able to actually have a competitive edge…" (Page 4, line 10-11)

Table C in the next page shows that R20 is very keen on recruiting people through internal contacts. When asked about what would happen to those who do not have any internal contacts, he was initially reluctant to answer the question. However, when the researcher asked again, he admitted the fact that those with internal contacts were at an advantage. From these findings, it would be expected that most of these MSC status companies would keep headhunting their knowledge workers from each other's internal contacts. Even though this practice does have some positive aspects, in the researcher's opinion, it will still tend to create an unhealthy competitive environment. This is due to the competition between the MSC status companies to attract the best knowledge workers within the cluster. This may end up by giving knowledge workers themselves less opportunity to settle down and specialise in a particular field. Also, it will create a cycle where ever-higher pay is offered to valued candidates, which is sometimes unaffordable. It is likely that the top management will be relatively unconcerned about the impact of this attitude for MSC status companies as a whole. For them, as long as the job is done and the project is completed successfully, that is the most important point. Hence, there will be a resistance to the existing objectives of setting up MSC status companies that are to play a role in the global high tech industry and to bring Malaysia towards success.

Table C: Interview with R20 (Page 2, line 5-24, Director of Marketing and Business Development with 10 years' working experience
Question: How do you recruit staff?

R20: Okay, we fortunately already have a process for recruitment in place, so when we look for new staff, we have a very specific process. Every job has a description and job grade. So, it is clearly laid out. When we are looking for somebody…that person [head of department] has to fill in a request indicating why they are looking for a new person and if the person meets all the requirements. Then they actually go out to hire through agencies or direct…[however]…we are keen on internal communication: there is a bonus scheme if you recommend somebody for the post.

Question: What makes you prefer to do so?

R20: Because when you rely purely on an interview, I think it can only cover maybe about fifty to seventy percent of the person's characteristics. Where other things are ignored, like trust and other such issues, you really need to know over time. For example, if you have an employee, especially a long-term employee in the company, who recommends somebody, you are obviously able to rely on the information more.

Question: You are right, but please accept my apologies for saying this. It seems to me to be a pity for those who do not have any internal contacts

R20: I think it is fine. Fortunately, we have people here for…I think some of them have been here for four years or more.

Question: What will happen to those who don't have networking?

R20: Yes, definitely, it is difficult.

Question: Do all the internal candidates fit into the needs of the company?

R20: Yes; it is not necessary, you know. We would still base our decision on the interview as well, but an internal recommendation will always have added value.

The overall impact of this method of recruitment will only be beneficial for a short time. As other companies may give better offers with higher job satisfaction, this will encourage knowledge workers to keep moving rather than staying with the same company. Other than that, it could also create a lack of equal opportunities among talented knowledge workers, who may represent the best fit for the current vacancy. Just because a candidate does not know anybody in the company, he or she may not be accepted. In this case, the blame must not be put on the knowledge workers who "job hop" but on the companies who encourage this type of attitude. At the end of the day, the project will not be completed; the company loses profit and the knowledge worker is no longer satisfied with what they are doing, as they have to keep moving. This will then downgrade their job and affect their work performance, as they cannot focus on one project anymore.

Furthermore, this situation may even have an impact on a national scale, if knowledge workers are offered positions abroad and settle down there with a better working environment. Therefore, one might argue that there should be a new policy among MSC status companies of not stealing others' workers, to counter this type of recruitment "headhunting". This will become the second important role of human resource management; that is, to build an agreement and/or a set of regulations dictating that if the service of a knowledge worker is needed, it must be negotiated through the company in which the knowledge worker is employed and not through the individual workers. This service is also known as "secondment". Extra payment and charges will be arranged for the company where the knowledge worker is based and also for the knowledge worker personally. In this case, companies must consider the success of the MSC as a whole, not just focus on the individual company.

Training as the Support Tool for Knowledge Management Implementation as well as for Retaining Knowledge Workers:
It was also found that after recruiting a person who knows how to do the job, the company also needs to train them in order for them to adjust and cope with the company's needs faster. This is because training has been argued to be one of the most important factors in keeping knowledge workers within the organisation, as it allows them to keep abreast of the latest technologies and knowledge (Amar, 2002; Cohen and Backer, 1999; Rossett, 1999; Sleezer *et al*., 2002; Sook Hwang, 2003). This was mentioned by R9, R20, R32, R38 and R69. R9, the Senior Executive of a Consulting Company, reports that:

"We have numerous training programmes, internal and external. So we have a lot of programmes. We have to meet certain hours; we call it continuous process education…we have to meet an average of - if I'm not mistaken - 120 hours in each year" (Page 3, line 20-22, Senior Executive of a Consulting Company with 7 years' working experience)

As a continuous process, training is vital for workers' development and career enhancement. However, when asked who decides on the training programme, R9 said that the "boss" (Head of the Department) was always the person who did so. He continued by saying:

"Normally, it is our head of department. They actually put us through because we have our own training, which is organised by the company. We also have external training at the beginning of each year…We are required to go for those training sessions each year…" (Page 4, line 1-2)

When asked about his feelings concerning the training programme organised by the company, he replied:
"That's right, it is a way of keeping abreast with new things in the market. You know what is happening and so on. And also, it is an opportunity to improve, because we also have self-improvement courses like performance, presentation, negotiation skills and communication skills. We have all sorts of training actually. It is compulsory for consultants to go on the consulting course…" (Page 4, line 33-36)

When R20, the Director of Marketing and Business Development, was asked to comment on the training programme within the company, he claimed that organising training is currently the most challenging part of his job. He said:

"Right now, our big focus is on serious training. This is because I think … [training is an] added value to our staff. This is in addition to what they get paid: training and knowledge. We are very keen on keeping good staff long-term. So, what we have is fairly a comprehensive training plan this year which starts from the departmental level …and each of the departments has come out with what they think should be the strategies for this year in terms of what technologies our people need to be good at…" (Page 3, line 18-23, Director of Marketing and Business Development with 10 years' working experience)

The above implies that the decision to send workers for training is normally a collaborative one, involving all heads of departments, as described by R9. The reason for doing so, according to R20, was:

"… [to find] …what the new areas for both soft and technical skills are. Then we map it in terms of the whole company… [to] make sure it links with the company strategy…so that is our role here…" (Page 3, line 25 -26)

Having done so, R32, who is the HR Manager for R20, commented on their training programme, as mentioned earlier by R20. She pointed out that:

"What I have got in my mind right now is to provide more incentives, especially in training. When talking about incentives, people normally look at training. Whether you provide training nowadays, you are going to lose. Why? A staff member will feel that he might only stay for two years. But after two years, if he doesn't get any form of training, he won't stay. Because he knows that in the market right now, especially in IT, the versions change so fast. So, if you are not going to upgrade yourself, you are going to exclude yourself from the market and it doesn't make you look good. So, that is training… [as]…one incentive. So training will become a very crucial element in retaining the right person. So, we have a proper training plan and we will conduct Training Needs Analysis (TNA) at the end of the year. And then, from there, we will identify needs, and in short we make sure that every single member of staff in this company has attended some form of training for at least 48 hours per year. That is our training objective, and this training can be external as well as internal…" (Page 3, line 16-30, HR Manager with 8 years' working experience)

The above implies that the company might encounter problems when knowledge workers leave the organisation due to being disappointed with the opportunity for self-enhancement. This supports evidence in the literature that training is a crucial aspect of knowledge workers' self-improvement (Goh, 1998; Kubo and Saka, 2002; Ramsden *et al.*, 2001; Rossett, 1999; Rowley, 2000; Salisbury, 2003; Sook Hwang, 2003). In fact, as a service provider and business partner of human resource management, training is considered as one of the key contributing factors in the successful implementation of knowledge management, as well as a success factor for companies. For example, regarding the Systems Applications Products (SAP) used for the supply chains in a company, one respondent revealed the importance of both knowledge (i.e. software) and business strategy. According to him, the continuous training of knowledge workers in both areas is crucial to ensure their competence in systems applications. Given that the versions of SAP keep changing, this up-to-date knowledge of SAP could also make this application competitive with others, such as Oracle and PeopleSoft. R77, the System Analyst, said:

"…in this regard [training knowledge workers], it is not only the software knowledge [i.e. SAP] but also the business knowledge that is important. I would say that we need a blend of knowledge. I can see that it is not easy to understand both types of knowledge, but training might be very helpful…" (Page 3, line 5-7 System Analyst with 7 years' working experience)

In this case, the decision about the investment in knowledge workers' training must be taken seriously in line with the company strategy. However, all money that is devoted to training knowledge workers must be money well spent. Here, R2 further says:

"There is always an argument about whether we should bind those people for whom we provide training. Because it will waste our money and all that… But that has not happened here much because we trust our employees. We provide them with a good environment. There is no reason why they would want to leave the job. These days, we go for RM5,000/= of most training. We will be bound by one year…" (Page 5, line 20-23, IT Manager with 7 years' working experience)

In another case, when the researcher tried to ask a question related to knowledge management implementation (i.e. the role of human resource management in supporting knowledge management), R38, an Administration Executive who only has three years' working experience, mentioned that training is the most important aspect in knowledge management practice as well as in keeping good knowledge workers. Joining the current company fresh from university could make people feel the need to improve their knowledge and skills. She said:

"Training, I would say. This is because training costs are limited. There is X amount of budget that has been allocated only for training. If you send ten of your staff to attend the same training, compared to sending one person, it's more cost effective. More people will get a 'piece of the apple' from that cost

[of] X for others training. So, I would consider this as a tool in knowledge management…" (Page 4, line 1-10, Administration Officer with 3 years' working experience)

Here, training allows the practice of "externalisation" among knowledge workers as promoted by the SECI Model (Nonaka and Konno, 1998). This is because when someone returns from training, it is his or her duty to impart and share the knowledge learned with others in the company. Ironically, in a different case, R69, a Computer Programmer, pointed out that even though his company is considered to be well established, he has not seen any significant knowledge-sharing activities among the staff except under his own initiative. There is no directive from the human resource management side. He said:

"Whether the system is in place to pass down knowledge, except through an IT system, I don't know. In other words, I don't see many people sitting alongside each other, where the senior person is training the junior person …" (Page 3, line 28-30, Computer Programmer with 4 years' working experience)

The above quotes illustrate the importance of training as one of the key needs for knowledge workers to upgrade their knowledge and improve themselves. This confirms the earlier finding that knowledge workers are challenge seekers and have great enthusiasm for the learning process. Instead of doing repetitive work most of the time, these workers are fond of doing things differently and gaining and using different forms of knowledge. Thus, training is one way for them to keep up-to-date with current knowledge. In fact, this finding is similar to the work done by Kubo and Saka (2002) and Yahya and Goh (1998), in which human resource development was one of the important aspects. Linking this to the human capital theory, these findings signify the importance of training as one of the motivational factors in both retaining knowledge workers and encouraging them towards knowledge management implementation (Baker, 2000; Harris, 2001; Tymon and Stumpf, 2003). Even though training has been identified as an important factor for knowledge management, there is still no clear direction on how to ensure that those who have been trained are willing to share their knowledge with others. Thus, this supports the need for a new role for HRM; that is, to be more strategic in planning and sending workers on training programmes. The plan must meet with the current needs of the business rather than embarking on training programmes merely because other companies have been doing so. HRM could also utilise the awareness of when knowledge workers are most likely to share. For instance, it might be helpful to consider externalisation processes as the best platform for encouraging knowledge sharing among knowledge workers, as mentioned in the earlier findings.

Compensation and Rewards for Knowledge Workers:

In this section, it was revealed that compensation, benefits and rewards are still important factors in companies' retention of knowledge workers. R51, a System Engineer in a company that applied a basic rate pay system, gave the researcher his comments on this matter. He said:

"I can't comment on this because my expectation is much higher than what has been given…" (Page 3, line 5, System Engineer with 2 years' working experience)

On the other hand, R6, an HR Manager, gave details of her experience of this matter and her company's provision of a pay system called "incentive schemes". In this view, the company still pays benefits to its workers, although other companies have stopped doing so, especially during the recession. She said that:

"…in terms of fear, of course this company is not so big. It may look big, but it's actually not. We just came out through 'masa susah' (tough times) in 1997-98 and near 2000 'punya cerita' (old stories)…but how we keep them is more through rewards. I believe that has more to do with reward and compensation: if you want to compare benefits, we are quite good in terms of benefits compared to other IT companies …" (Page 8, line 16-20 , HR Manager with 14 years' working experience)

She Further Said:

"Most companies take out life insurance from their benefits, because of cost issues. But we keep them in. We look after their life insurance, like the person's hospitalisation and GP costs. We give little, since we cannot give loans. Because we are not so big, we give soft loans. Interest-free kind of thing. We give maternity gratuity; we offer them quite a standard package. …" (Page 8, 21-26)

Similar to the above, R20, a Director of Marketing and Business Development, commented that his company also provides an "incentive scheme" for its workers by applying a specific reward scheme for employees. He said:

"We also have an employer with a sort of bonus-incentive scheme, different compensation and employee of the season. We do appreciate our people that way; especially being an IT Company, you know, your assets are your people so you know it is more important…" (Page 5, line 4-6, Director of Marketing and Business Development with 10 years' working experience)

Furthermore, one respondent (R43) from a small IT company pointed out that her company had developed a different scheme, which is seldom implemented in other companies. She named it "employee ownership". She said:

"We actually have a different way of rewarding our staff. Although we are a small company, we have managed to inculcate a sense of belonging…by having what we call the 'employee ownership' scheme. Normally, during meetings, we call all our staff and explain to them that if the company performs well, then they will get bonuses accordingly. But not only that, the staff are also offered the chance to be members of the company's board of directors, having their share in this company…In a way, the staff are encouraged to invest their knowledge …." (Translated: Page 3, line 11- 17, Executive Secretary with 10 years' working experience)

In general, when it comes to compensation and rewards, the management of knowledge workers in Malaysia is not much different from that found in other studies in the USA, the UK, Australia and other developed countries (see for example Despres and Hiltrop, 1995; Hunter *et al.*, 2002). The "Five Hierarchies of Needs" theory, developed by Maslow, is indeed vital for knowledge workers' self-satisfaction (Tampoe, 1992). However, it could be argued further that "basic rate schemes" are no longer suitable for the current needs of knowledge workers in the MSC status companies. This is because in relation to these workers' main characteristics, these findings concur with what Despres and Hiltrop (1995) and Hunter *et al.* (2002) have found in their works. It has been emphasised that in order to retain knowledge workers efficiently, the companies need to provide a compensation system that is more flexible, process-oriented and team-based. Thus, providing "incentive schemes" as highlighted by many strategic authors could become the next role for the new, strategic form of human resource management.

Opportunity for Continuing Challenges and Planning Own Career Map:

From the review conducted earlier on , knowledge workers are challenge seekers and dislike repetitive work, but this does not mean that they totally avoid such work. Having said that, this characteristic does suggest another important role for human resource management, and that is to provide the continuous opportunity for knowledge workers to develop their own career maps. However, from the qualitative findings, not many MSC status companies have implemented this type of policy, except for company C20 (Pseudo). This is not surprising, as the multinational company is well established and is comprised of more than 1000 workers. Thus, it is constructive to analyse the respondents' points of view, which could also act as a benchmark for other companies. According to R29, there has been a recent transformation in human resource roles. Being the most experienced senior in this company, he commented:

"From day one, when I joined this company … there was a specific plan to develop people and the plan must of course fit the customers' needs, the company and the people's needs… in a particular case, I wanted to grow in technology and know-how… [thus] every opportunity, support and money was given to make that possible" (Page 4, line 7-10, General Manager with 19 years' working experience)

When asked when it became evident that the changes had taken place, he continued:

"I think it was only recently, some five years ago that this emphasis shifted from the company looking after the people to the people looking after their own development. That has pluses and minuses…there is more focus on individual needs and independent decision-making rather than what the company needs me to do all the time." (Page 4, line 12-15)

His opinion on what HR should do gave the researcher a clear idea about how the world is seen from his eyes.

"I would like to think that HR should do both: first of all, it has to be a business partner because it has to be mindful of what the business needs are and what the challenges are for the future. Because if you are not, then you will be disorientated and you will become more and more isolated. And then, in my view, if HR becomes distant, it is useless for the company. So you need to be responsive to the business needs. At the same time, I think HR should be trying to be the mediator between business needs on the

one hand and personal needs on the other. There is always a risk of these two aspects drifting away from each other. But the challenge for HR is to provide a certain path that fits both. I think the idea of matching is always difficult but in terms of generality, I think strategically you can still grow…" (Page 4, line 22-33)

This supports the point mentioned earlier in the literature review that human resource management is now required to support the SECI Model in order to ensure the continuity of innovation in the MSC status companies. Here, Schuler (1989) supported the idea of strategic human resource management in providing an innovative working environment with features such as greater flexibility and encouragement of team-based work. Further to that, as shown in the HR Triad (see Chapter 3, Section 3.3), Jackson and Schuler (2000) emphasised the need to ensure that strategic human resource management needs are aligned with the wider business strategy. This means taking steps such as involving HR in board meetings and/or top management meetings. Other than that, the model of knowledge mapping proposed by Soliman and Spooner (2000) could be used to further describe how strategic human resource management helps knowledge management practice to become efficient and effective. This is discussed in the next section.

Introducing and Encouraging Work-Life Balance, Openness, Freedom and "Flat Management":
Human resource management in today's companies could become more efficient by introducing and encouraging a healthy work-life balance. This is because many interview participants, like R55 (Software Engineer), R42 (Business Development Manager) and R5 (Business Development Manager), when asked why their companies did not have a high turnover rate, gave remarks as below. R55 remarks that:
"…it has more to do with the culture, because we are quite young, with an average age of about 27 or 28 years. We have flexible hours; we don't really calculate the hours. If you have something to do in the morning, why not just come in a bit later, providing you just make the time up. So for us the flexi hours are good … [because]…we normally stay late. So we don't have to be in at 9 o'clock sharp. It is very much a family kind of environment. We have a flat organisation here…" (Page 5, line 3-8, Software Engineer with 5 years' working experience)

In a similar case, R42 responded:
"… I also find that young people have more of a work-life balance attitude; the young people are more determined to maintain a healthy work-life balance than the old people. We tend to come to work and do our work and not take time off. But the young people…say, for instance, they are going away on the Saturday, they will take Friday off because they need to relax before they travel the next day…so young people have got a better attitude towards work-life balance than the old people like myself. We are more likely to feel that we have to please the boss…" (Page 3, line 20-27, Business Development Manager with 18 years' working experience)

In another case, R5 said:
"Actually my expectation of my employees is not what you'd call a very…I'm not expecting them to come to work from nine to five-thirty in the evening. Right now, my staff are not punctual. You can come in at ten or whatever. It is okay by me. They can leave earlier or even stay late at night. One of my staff has taken home a PC so they can do their work at home. The most important thing for me is that the things come out on the day they should come out. No excuse, if possible. I give them flexibility, but I expect things to come out on time: that is all…" (Page 2, line 4-11, Business Development Manager with 10 years' working experience)

In the next case, R6, a Human Resource Manager, pointed out that helping workers to feel settled in their working environment is the best way to encourage innovative and creative ideas. She said:
"We keep it close. That means we have flexible hours. We dress casually and we talk using first names. We share a lot of information. There is not even a single memo issued. We don't believe in that way of communication. We do everything through email, through so-called IT. Knowledge workers hate paper; they cannot be bothered with sending memos or signing here or there. They can't really handle that much, so we reduce that. We still have signing, we still have leave applications to get signed, but that is all. Anyway, we don't have that *'canggih'* (latest/modern system) yet. But we still keep people happy here…" (Page 4, line 19-27, Human Resource Manager with 14 years' working experience)

All these quotations indicate the need for a new management style for knowledge workers. This could be due to the changes in the labour market, especially when more women are going out to work, some of whom have children, yet they are all skilled workers. Furthermore, changes in the institutional environment, such as pressure by certain groups to attain social awareness, legislation and government interest, have led companies to make an effort to provide flexibility, freedom and work-life balance for their employees (Nadeem and Hendry, 2003: p. 46). This has occurred since the 1980s, when management realised that companies were no longer performing as they had once done (Sheridan and Conway, 2001). Among the issues for which knowledge workers show the greatest preference are the need for flexibility, freedom and work-life balance, empowerment, especially in decision-making, and career development and the opportunity for continuous learning. In this case, flexibility, freedom and the work-life balance requirements of the knowledge workers do not equal total permission to do their work in their own way. They are known as numerical and functional flexibility and the desire to help employees to balance work and family responsibilities, i.e. a "family-friendly" approach (Sheridan and Conway, 2001) and a "balanced approach" (Hacker and Doolen, 2003). In other words, the meanings of flexibility, freedom and work-life balance are more objective. They represent the break given to knowledge workers to finish their tasks by utilising their own knowledge, idea and creativity. The company should not tell them what to do, except in terms of setting the deadline. What workers need, according to Sheridan and Conway (2001), is both numerical flexibility and work-life balance. In association with this, Holt and Thaulow (1996: p. 7) also identified three basic needs that are required for employees' flexibility. The first is related to salary and wages; the second is about flexible working hours and the third refers to emotional aspects and a healthy working environment. With regard to this, flexibility, freedom and work-life balance, or whatever we name it, should be considered as one of the key strategic human resource management issues. Thus, it is necessary for management and HR to work together in partnership, smoothing the conflicts in order to achieve mutual flexibility (Sheridan and Conway, 2001) and synergistic performance (Hacker and Doolen, 2003). However, to date, there is still a missing link between management's understanding of the human resource management policies and support for flexibility, freedom and work-life balance (Nadeem and Hendry, 2003; Hacker and Doolen, 2003; Sheridan and Conway, 2001 and Mayne, et. al, 1996). Thus, this could be also another important area relating to the needs of knowledge workers that needs further investigation.

Discussion and Conclusion:

To summarise, human resource managers still report on the difficulties of keeping top knowledge workers. Perhaps this is due to the current scenario within the recruitment scheme, which favours "word of mouth" recommendations. This creates an unhealthy working environment where many top knowledge workers have been "headhunted". Thus, there could be a need for HRM in the MSC status companies to take a second look at their current HR policies. This is because, according to Lengnick-Hall and Lengnick-Hall (2002: p. 171), the knowledge economy requires a different contribution from human capital (i.e. knowledge workers), and therefore a different kind of HRM. Thus, the focus will be more on making it possible for people to leverage other types of resource, to create capabilities, and to nurture core competencies within a context that rewards both consistency and innovation, and values both persistence and flexibility. Unfortunately, HRM can only provide a greater contribution to maintaining a creative tension by aligning talented people with established tasks (see for example Schuler, 1989 and Schuler *et al*, 1993). In this case, strategic human resource management needs to look at several important roles, such as how to overcome the difficulties in keeping their good knowledge workers by creating a new policy that will guard against "headhunting" through internal contacts within the MSC companies. Another significant step towards overcoming this difficulty is that strategic human resource management should embark on thorough, competitive training need analysis to allow knowledge workers to upgrade themselves. Furthermore, the interviewees in the present study also indicated that training was one of the most important factors for initiating knowledge management, together with support from the top management, alongside other factors raised in the questionnaire survey findings (i.e. team-based work and information technology structure). Besides that, compensation and rewards, as expected, remain the preferred factors encouraging knowledge workers to share their knowledge and stay in the company. Therefore a more competitive compensation and rewards package should be offered specifically for workers in these MSC status companies and/or high tech companies, as this will also curtail "head-hunting" activities. In this regard, compensation packages that more fully appreciate knowledge workers' knowledge and skills would be most welcomed. Furthermore, as described by Amar (2002), knowledge workers are challenge seekers, have high enthusiasm for learning and prefer freedom and flexibility, so it would be wise to suggest that strategic human resource management should consider all these issues and try to provide opportunities to fulfil the current needs of knowledge workers in particular and the company in general. In this view, an intensive pay system might be useful for the company.

The overall conclusion that can be reached is that the findings from this section confirm, in part, the earlier review conducted. Some redundant activities of knowledge management and human resource management can also be seen. This also concurs with what Yahya and Goh (2002) have found in their work *"Managing Human Resources Toward Achieving Knowledge Management"* that there is a relationship between the four key areas of human resource management (i.e. training, decision-making, performance appraisal, and compensation and rewards) and the five key areas of knowledge management (knowledge acquisition, knowledge documentation, knowledge transfer, knowledge creation and knowledge application). Thus, this provides a further indication that strategic human resource management and knowledge management should work hand in hand to achieve success in both personal and company objectives. From this, it may be suggested that with the help of strategic human resource management, MSC status companies could actively progress with an effective knowledge management strategy. For example, according to Thite (2004) and Ulrich (1998), strategic human resource management could diagnose and meet the needs of both knowledge workers and the company, allow knowledge workers to be more creative and innovative (Anthony *et al.*, 2002; Boxall and Purcell, 2002; Lado and Wilson 1994; Newell *et al.*, 2002; Soliman and Spooner, 2000) and ensure the smoothness of knowledge transfer and the effectiveness of knowledge-based companies (Yahya and Goh, 2002). This then leads to the viability and sustained advantages of the companies, as described by Boxall and Purcell (2002).

REFERENCES

Amar, A.D., 2002. *Managing knowledge workers*. Quorum Book: London.

Anthony, W.P., K.M. Kacmar and P.L. Perrewé, 2002. *Human resource management: A strategic approach.* 4th Edition, Harcourt College Publishers: Fort Worth.

Baker, W., 2000. *Achieving success through social capital: Tapping the hidden resources in your personal and business networks*. Jossey-Bass: CA. Balance paradigm. Career Development International, 8(6): 283-290.

Beaumont, P.B. and L.C. Hunter, 2002. *Managing knowledge workers: The human resource dimension.* Short Run Press: London.

Boxall, P. and J. Purcell, 2002. *Strategy and human resource management*. Palgrave: Basingstoke.

Budhwar, P.S., 2004. *Managing Human Resources in Asia-Pacific (Ed)*. Routledge: London.

Budhwar, P.S. and Y.A. Debrah, 2001. *Human resource management in developing countries (Eds).* Routledge: London.

Cohen, S. and N. Backer, 1999. Making and mining intellectual capital: Method or madness? *Training and Development*, 53(9): 46-50.

Darr, A., 2003. Control and autonomy among knowledge workers in sales: An employee perspective. *Employee Relations,* 25(1): 31-41.

Davenport, E. and B. Cronin, 2000. Knowledge Management: Semantic Drift or Conceptual Shift. Journal of Education for Library and Information Science, 41(4): 294-306.

Davenport, T.H., 1996. We have the techknowledgy. *CIO,* 9(21): 36-8.

Debrah, Y. and I. Smith, 2000. *Globalization, Employment and the Workplace* (Eds.). London, Routledge.

Despres, C. and J.M. Hiltrop, 1995. Human resource management in the knowledge age: Current practice and perspective on the future. *Employee Relations*, 17(1): 9-23.

Dominique Goupil, 2002. Knowledge workgroups: Knowledge workers, new workgroups and new demands for information management. *The White Paper on knowledge workgroups: Knowledge workers, new workgroups and new demands for information management.* At [WWW].

Drucker, P.F., 1988. *The effective executive*. Butterworth Heinemann: Oxford.

Drucker, P.F., 1999. *Management challenges for the 21st. century*. HarperCollins: New York.

Drucker, P.F., 2000. Knowledge work. *Executive Excellence*, 17(4): 11-12.

Goh, S., 1998. Towards a learning organization: The strategic building blocks. Advanced Management Journal, 63(2): 15-18.

Grayson, J. and C. O'Dell, 1998. If only we knew what we know: Identification and transfer of internal best practices. *California Management Review*, 40(3): 154-65.

Greengard, S., 1998. Storing, shopping and sharing collective wisdom. *Workforce*, October: 82-88.

Hacker, K.S. and T.L. Doolen, 2003. Strategies for living: Moving from the

Harris, R.G., 2001. The knowledge-based economy: Intellectual origins and new economic perspectives. *International Journal of Management Reviews*, 3(1): 21-40.

Helton, B., 1988. The 'best work' method of knowledge worker assessment. *Industrial Management*, 30(5): 19-21.

Hislop, D., 2003. Linking human resource management and knowledge management via commitment: A review and research agenda. *Employee Relations,* 25(2): 182-202.

Holt, H. and I. Thaulow, 1996. Formal and informal flexibility in the workplace. In Lewis, S. and Lewis, J. (Eds.), *The Work-Family Challenge.* Sage: London.

Horribe, F., 1999. *Managing knowledge workers: New skills and attitudes to unlock the intellectual capital in your organisation.* John Wileys & Sons: Toronto.

Hunter, L., P. Beaumont and M. Lee, 2002. Knowledge management practice in Scottish law firms. *Human Resource Management Journal*, 12(2): 4-21.

Jackson, S.E. and R.S. Schuler, 2000. *Managing human resources: A partnership perspective.* 7th Edition. South Western College Publishing: Cincinatti.

Kelly, R., 1990. Managing the workforce. *Machine Design*, 62(9): 109-13.

Kermally, S., 2002. *Effective knowledge management: A best practice blueprint.* John Wiley & Sons: England.

Kubo, I. and A. Saka, 2002. An inquiry into the motivations of knowledge workers in the Japanese financial industry. *Journal of Knowledge Management.* 6(3): 262-271.

Lado, A.A. and M.C. Wilson, 1994. Human resource systems and sustained competitive advantage: A competency-based perspective. *Academy of Management Review,* 19: 699-727.

Lengnick-Hall, M.L. and C.A. Lengnick-Hall, 2002. *Human resource management in the knowledge economy.* Berret-Koehler Publisher: San Francisco.

Mayne, L., O. Tregaskis and C. Brewster, 1996. A comparative analysis of link between flexibility and HRM strategy. *Employee Relations*, 18(3): 5-24.

Multimedia Super Corridor Impact Survey (MSC IS) 2003. At [WWW] URL: http://mdc.com.my

Nadeem, S. and C. Hendry, 2003. Power dynamics in the long-term development of employee friendly flexible working. *Women In Management Review*, 18(1): 32-49.

Newell, S., M. Roberston, H. Scarbrough and J. Swan, 2002. *Managing knowledge work.* Plagrave MacMillan: New York.

Nonaka, I., 1994. A dynamic theory of organizational knowledge creation. *Organisational Science*, 5(1): 14-37.

Nonaka, I. and N. Konno, 1998. The concept of *'ba'* building a foundation for knowledge creation. *California Management Review*, 40(3): 40-54.

Nonaka, I. and P. Reinmoeller, 2000. Dynamic business systems for knowledge creation and utilization: 89-112. In Despres, C. and Chauvel, D. (Eds.), *Knowledge Horizons, the Present and the promise of Knowledge Management.* Butterworth-Heinemann: New York, NY.

Nonaka, I. and H. Takeuchi, 1995. *The knowledge creating company.* Oxford University Press: Oxford.

Nonaka, I., R. Toyama and N. Konno, 2000. SECI, bank and leadership: A unified model of dynamic knowledge creation. *Long Range Planning*, 33: 5-34.

Norzaidi, M.D. and M. Intan Salwani, 2011. Evaluating the post-intranet usage: empirical study in Malaysian port industry, *Australian Journal of Basic and Applied Sciences, forthcoming*

Norzaidi, M.D., S.C. Chong, M. Intan Salwani and L. Binshan, 2011. The indirect effects of intranet functionalities on middle manager's performance, *Kybernetes,* 40(1/2): 166-181.

Online Bernama, Newspaper (22nd December 2004). At [WWW] URL: http://bernama.com.my

Ramsden, A., D. Turpie and J. Rea, 2001. Managing the Intranet: Trying a new tool. *VINE*, 31(3): 36-45.

Reed, M.I., 1996. Expert power and control in late modernity: An empirical review and theoretical synthesis. *Organization Studies*, 17(4): 573-597.

Reich, R.B., 1991. *The work of nations: Preparing ourselves for 21st. century capitalism.* Simon & Schuster: London.

Rossett, A., 1999. Knowledge management meets analysis. *Training and Development,* 53(5): 62-8.

Rowley, C., 2003. *The management of people: HRM in context.* Spiro Business Guides: London.

Rowley, C. and M. Bhopal, 2002. The state in employment: The case of Malaysian electronics. *International Journal of Human Resource Management*, 13(8): 1166-1185.

Rowley, C. and M. Warner, 2004. *Globalisation and competitiveness: Big business in Asia* (Eds: C. Rowley and M. Warner), Asia Pacific Business Review, Special 10th Anniversay Issue, 10(3-4). Taylor & Francis Ltd.: Oxfordshire.

Rowley, J., 2000. From learning organisation to knowledge entrepreneur. *Journal of Knowledge Management*, 4(1): 7-15.

Salisbury, M.W., 2003. Putting theory into practice to build knowledge management system. *Journal of Knowledge Management*, 7(2): 128-141.

Schuler, R.S., 1989. Strategic human resource management and industrial relations. *Human Relations*, 42(2): 157-184.

Schuler, R.S., P.J. Dowling and H. De Cieri, 1993. An integrative framework of strategic international human resource management. *The International Journal of Human Resource Management*, 4(4): 717-64.

Sheridan, A. and L. Conway, 2001. Workplace felxibility: Reconciling the needs of employees. *Women in Management Review*, 16(1): 5-11.

Sleezer, C.M., T.L. Wentling and R.L. Cude, 2002. *Human resource development and information technology: Making global connections.* Kluwer Academic Publisher: Massachusetts.

Soliman, F. and K. Spooner, 2000. Strategies for implementing knowledge management: Role of human resource management. *Journal of Knowledge Management*, 4(4): 337-345.

Sook Hwang, A., 2003. Training strategies in the management of knowledge. *Journal of Knowledge Management*, 7(3): 92-104.

Sveiby, K., 1997. *The new organisational wealth.* Berret – Koehler: San Francisco.

Tampoe, M., 1992. *Motivating knowledge workers: A research study into the motivational needs of qualified scientific and technical staff in organisations in the United Kingdom.* Unpublished PhD Dissertation, Brunel University.

Thite, M., 2004. Strategic positioning of HRM in knowledge-based organizations. *The Learning Organization: An International Journal*, 11(1): 28-44.

Tymon, W.G. and S.A. Stumpf, 2003. Social capital in the success of knowledge workers. *Career Development International*, 8(1): 12-20.

Tyndall, P.S., 2002. Multimedia Super Corridor: Introducing a new economy in Malaysia: 177-194. In Siow Yue, C. and Jerome Lim, J. (Eds.), *Information Technology in Asia: New Development Paradigms.* Institute of Southeast Asian Studies: Singapore.

Ulrich, D., 1998. Intellectual capital = competence x commitment. *Sloan Management Review,* 39(2): 15-26.

Vision 2020 at [WWW]URL: http://www.epu.jpm.my/Bi/Speech/Vision

Yahya, S. and W.K. Goh, 2002. Managing human resources towards achieving knowledge management. *Journal of Knowledge Management*, 6(5): 457-468.