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The Attitude of Companies Toward e-learning Aimed at New Hires: The Case of Twelve Large Japanese Companies

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Abstract- Large companies are one of the main characteristics of the labor market in Japan. These companies invest a lot in employee training – it is among their employees that the most extensive training is concentrated (Sako, 1998). Although Japan is among the leaders in broadband penetration (Global Broadband Quality Study, 2009), and the Japanese government puts a lot of effort in e-learning dissemination, e-learning is still not commonly utilized in Japan (Sato, 2009).

This paper analyses the results of a July - August 2009 survey (questionnaires and interviews) focusing on understanding the level of adoption and utilization of e-learning and the execution of the organizational socialization process of new hires (referred to as ‘onboarding’) in twelve large Japanese companies (over 1,000 employees), in different sectors.

The companies are divided into two groups, called 'e-learning group' and 'onboarding group', consisting of three segments each; once according to e-learning and once according to onboarding indicators by hierarchical cluster analysis. The segments indicate the level of development of e-learning and onboarding respectively. The segments are tested for statistically significant difference regarding company aptitude toward the implementation and utilization of e-learning in certain elements of the onboarding process. The results for the e-learning group indicate no statistically significant difference among the segments, whereas the onboarding group segments indicate one.

The paper concludes that the decision for e-learning utilization in the onboarding process depends more on the level of development of the onboarding process than on the level of e-learning utilization in the company as a whole. On the other hand, the data presented in the paper supports the statement that e-learning is not commonly utilized in Japan, indicating low level of adoption in the examined companies.

Keywords- e-learning, Japan, onboarding, organizational socialization.

1. INTRODUCTION

The Japanese labor market is known for its uniqueness. In order to enter the labor market, university graduates become a part of the ‘shyushoku katsudo’ system, jointly developed by Japanese companies, universities and the state over the years. The process of hiring begins a year before graduation. In the last twenty years many factors have indicated the need for changes in the labor market. Japanese companies, the government and employees have had to respond and cope with these changes, while trying to preserve the economic stability of the country on the global market. Exploring the social changes taking place in Japanese companies and labor market, the author examines the process of new hires job adaptation, assuming a positive effect of e-learning utilization on it. Measuring the extent of e-learning deployment in Japanese

I. INTRODUCTION

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companies, and the level of execution of the new hires adaptation process (from here onwards the author will refer to this process as ‘onboarding’) development, the author raises the following questions:

1) Is there a significant difference between companies with higher level of e-learning implementation and utilization and those with lower level e-learning implementation and utilization in terms of their attitudes toward utilization of e-learning in the onboarding process?

2) Is there a significant difference between companies depending on the level of execution of the onboarding process in terms of attitude toward utilization of e-learning in the onboarding process?

II. E-LEARNING AND JAPAN

According to the ‘E-learning white paper 2005/2006’ (Asia e-Learning Network 2005), e-learning enter the Japanese corporate market around 2000. In 2001 the Japanese government introduce the first strategy for wider IT development and utilization in Japan called ‘e-Japan’. The objective of this strategy was to turn Japan into ‘the world's most advanced IT nation within five years’, including e-learning deployment as a part of the development of the country’s human resources potential.

While the strategy adopted in 2001 implemented policies on creating basic infrastructure and IT promotion, ‘e-Japan 2004’ emphasized policies and preparation of systems for achieving human resources development goals (Asia e-Learning Network 2005). The ‘E-Learning White Paper 2005/2006’ (Asia e-Learning Network 2005) referred to the 2000 – 2005 period as the ‘birth of e-learning in Japan’, followed by ‘development period of e-learning in Japan’ – both part of the Japanese government strategy. The main users on the market were the corporate and educational sectors; other counterparties were e-learning manufacturers and the government, which carried out policies for e-learning development. According to the Ministry of Education (Asia e-Learning Network 2005) ‘while e-Learning gradually permeates into a variety of educational fields and areas, it is said that the area covered in the largest scale is enterprise education’. According to the same source, investments in e-learning were increasing and the outlook for the e-learning market for the 2003 – 2009 period was that the value of ¥890 million for FY2003 would surpass ¥1.5 billion in FY2009.

III. E-LEARNING IN THE CORPORATE SECTOR

In 2004 the level of e-learning implementation in the corporate sector was over 50% for companies with more than one thousand employees and about 26% for companies with less than one thousand employees2. The ‘E-learning white paper 2005/2006’ (Asia e-Learning Network 2005) defined two basic approaches to the utilization of e-learning in Japanese companies:

1) enterprise education: e-learning utilized in everyday tasks performance related to new corporate policies promotion, new business processes implementation and new technical equipment introduction.

2) strategic utilization: e-learning increasing the quality and speed of communication between the company and its external environment – suppliers and customers.

Successful combination of the above mentioned e-learning approaches supports improvement human resource training, which is the main purpose of e-learning, and provides a variety of effects for corporate activities’ (Asia e-Learning Network 2005).

IV. ONBOARDING AND JAPAN

A. The Japanese workforce

According to Dore and Sako (Dore and Sako 1998) work force distribution in the middle of the 90s in Japan could be described as follows: there were over a 100 million Japanese aged 15 and over in Japan at that time. Something like 65 percent of

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them were gainfully employed or seeking to be so. Over 20 per cent of those were self-employed or family workers and another 17—18 percent were temporary or part-time workers. That left just over 40 million regular full-time workers, of whom a little under a quarter were in private enterprises employing over 1,000 workers. The public sector with similar conventions and conventions of service accounted for another 5 million. So the 15 million or so employed in the large company and public enterprise/public administration sector were by no means a majority of the Japanese workforce. This situation continues today.

Dore and Sako (1998) identified employees who work at large companies as a ‘strategic minority’; these are the employees who contribute the most to the national economy. However, in order to maintain these employees’ high productivity, companies have to invest a lot in training.

B. Training of new graduates

Within-company communication is one element of corporate creativity that large Japanese companies have proved to be especially good at (Robinson and Stern 1998). All major Japanese companies have similar systems for adaptation and training of new hires. They usually conduct intensive induction training which includes both skill transfer and socialization. It is based on a standard training program lasting from several weeks to several months and usually followed by several years of on-the-job training, when new hires can experience different sides of the company environment on a rotational basis. Thus employees get acquainted with the general picture as the company builds not only commitment to the job, but also a solid internal network of employee relations.

Companies also expect that new hires will commit for a long period of time, which automatically leads to the tradition of Japanese companies’ low staff turnover percentage. This, in turn, means companies gain return on their major training investments but, on the other hand, leads to a bigger loss when unable to successfully adapt prospective employees (Rohlen 1998). Rohlen (1998) suggests that traditional Japanese long-term employment leads to company preference for new hires who can be taught work related skills in the course of their work at the company.

V. METHODOLOGY

The survey instrument of this study consists of three main parts. The first part measures key indicators for deployment and utilization of e-learning within the company, whereas the second one measures the level of execution of the company onboarding process. The survey instrument includes scales and measurements adapted from other research in the field of e-learning and onboarding (Bonk 2002). The third part of the survey instrument consists of questions about the respondent companies’ attitude toward e-learning utilization in the execution of certain onboarding actions. After initial selection of measurements drawn from the literature, the author designed a survey instrument which consists of eighteen e-learning and fifteen onboarding measurements. The survey instrument also includes data on the number of employees, primary focus of the company, as well as the position of the respondent in the decision-making process regarding e-learning and onboarding within the company. The author utilized several types of scales for the purpose of this study: 3-point semantic differential scale anchored by low degree of usefulness (1) to high degree of usefulness (3); 5-point Likert scale anchored by strongly disagree (1) to strongly agree (5); binary scale anchored by yes for present and no for absence. The last part of the instrument includes general information on the respondents – age, gender, and education.

The survey instrument was initially written in English and then translated into Japanese by a native speaker. A pilot test was conducted to evaluate the appropriateness of the measuring instruments. Based on the
results, several items were revised to clarify meaning.

VI. DATA COLLECTION

The data presented in this paper was collected through questionnaires and interviews where the respondents were managers of human resources and training departments in several large Japanese companies. The survey was conducted in the July-August 2009 period after prior arrangement with the respondents. The author conducted subsequent one-hour interviews in order to avoid bias and collect information for further analysis. Several companies were excluded from the data analysis because of inability to answer basic questions (missing data). In the end, twelve useable questionnaires were selected for the analysis.

VII. DATA ANALYSIS

First, the respondents answer questions related to their attitude toward and commitment to employee training and training through e-learning in particular. Second, the respondents are asked to rank the usefulness of certain types of e-learning tools and whether they utilize these tools in their company. Following the same pattern, tailored to the specifics of onboarding, the author designs the questions for the second part of the survey instrument, which aims at measuring the attitude of companies toward certain elements of the onboarding process, their utilization and the level of execution of this process in the company at the moment. Data collected from both first and second part of the survey instrument is separately subjected to hierarchical cluster analysis, (between group linkage method, measure Euclidian distance, SPSS 17), in order to be divided for the purpose of formation of groups of companies characterized by different levels of e-learning and onboarding implementation and execution. The companies are divided into two groups, called 'e-learning group' and 'onboarding group', consisting of three clusters each; once according to e-learning and once according to onboarding indicators. The clusters indicate the level of development of e-learning and onboarding respectively. The clusters are tested for statistically significant difference using analysis of variances (One-Way ANOVA) regarding company aptitude toward the implementation and utilization of e-learning in certain elements of the onboarding process (depended variable).

VIII. RESULTS AND DISCUSSION

A. Characteristics of respondent companies and respondent managers:

As shown in the table (Table 1), the companies in the sample belong to different sectors, suggesting differences in e-learning utilization, as well as in onboarding process execution. Companies with 1,000 – 10,000 employees present 58 percent of the total number companies; 42 percent of the companies belong to the ‘over 10,000 employees’ group. The professional status of respondents is evenly distributed in two categories: ‘senior’ (50%) and ‘junior’ (50%) managerial position. According to work experience criterion, the respondents are also evenly distributed. The number of managers with up to ten years of work experience equals the number of managers whose work experience is over ten years.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Number of companies (N=12)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company Focus</td>
<td></td>
</tr>
<tr>
<td>• Finance</td>
<td>8% (1)</td>
</tr>
<tr>
<td>• Heavy Industries</td>
<td>25% (3)</td>
</tr>
<tr>
<td>• Manufacturing</td>
<td>33% (4)</td>
</tr>
<tr>
<td>• Services</td>
<td>17% (2)</td>
</tr>
<tr>
<td>• Mining and Gas</td>
<td>17% (2)</td>
</tr>
<tr>
<td>Number of Employees</td>
<td></td>
</tr>
<tr>
<td>• 1,000 - 10,000</td>
<td>58% (7)</td>
</tr>
<tr>
<td>• 10,000 above</td>
<td>42% (5)</td>
</tr>
<tr>
<td>Respondent Job Rank</td>
<td></td>
</tr>
<tr>
<td>• HR Senior Manager</td>
<td>50% (6)</td>
</tr>
<tr>
<td>• HR Junior Manager</td>
<td>50% (6)</td>
</tr>
</tbody>
</table>

TABLE 1
CHARACTERISTICS OF RESPONDENT COMPANIES AND RESPONDENT MANAGERS
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Respondent Work Experience

<table>
<thead>
<tr>
<th>Experience Level</th>
<th>Percentage</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than one year</td>
<td>17% (2)</td>
<td></td>
</tr>
<tr>
<td>1-2 years</td>
<td>25% (3)</td>
<td></td>
</tr>
<tr>
<td>3-5 years</td>
<td>8% (1)</td>
<td></td>
</tr>
<tr>
<td>6-10 years</td>
<td>0% (0)</td>
<td></td>
</tr>
<tr>
<td>11-20 years</td>
<td>25% (3)</td>
<td></td>
</tr>
<tr>
<td>More than 20 years</td>
<td>25% (3)</td>
<td></td>
</tr>
</tbody>
</table>

Despite the small number of respondents, the sample presents a realistic picture of the Japanese economy, since the type of respondent companies has been selected so as to represent its backbone (Dore and Sako 1998).

B. Cluster analysis

Despite the small number of companies in this study, in order to define more objective differentiation between companies, a quantitative method was chosen to interpret the data. Cluster analysis is an interdependent statistical technique – a set of algorithms for statistical classification of observed objects (companies), distributing them in different subsets (clusters, segments) according to specific criteria. There are several types of cluster analysis but for the purpose of this study, the author has chosen the hierarchical analysis. The final results of the hierarchical analysis are usually presented in the form of a dendogram and segments are graphically defined through vertical icicle (see fig. 1). Cluster analysis does not offer a unique (single) final solution, but a solution which to a lesser or greater degree is the most appropriate and acceptable for the given case. This solution is in the form of an algorithm, in which grouping starts from the lowest point (single company), and by continually lowering the criterion for belonging to the relevant cluster, defines unique segments. Although cluster analysis creates homogeneous groups, it is also important to decide which of these groups are suitable for the analysis. The graphic presentation of the clusters suggests many possible combinations, but the main question is, at which point to pick out a combination (number of clusters). There is no standard objective criterion which determines the optimal number of clusters. According to Aldenderfer and Blashfield (Aldendefrer and Blashfield 1984) there are two major causes of underdevelopment in this issue. The first cause is the lack of a suitable null hypothesis; the second one is the complex nature of multivariate sampling distributions. In this paper, however, the author determined the number of clusters in advance. The choice for this method is determined by the nature of the questions raised at the beginning of this paper (See I. Introduction). Although in K-means cluster analysis it is possible to specify the number of clusters in the conclusion in advance, the author elected to use the hierarchical analysis due to the greater freedom of data types it can run. Preset number of clusters is also a possible option for hierarchical analysis and utilizing this method, the author conducted experiments with two- and three-cluster solutions. The author chose the three-cluster solution as a more objective way to present the segments/clusters of companies.

C. Cluster analysis of the companies - e-learning criteria

The cluster analysis has been conducted according to the following criteria:

1) Strong commitment to learning
2) Strong interest in e-learning
3) Access to e-learning
4) Type of resources offered to employees
5) Evaluation of e-learning
6) Utilization of e-learning tools
Cluster ‘high’: Companies in this cluster defined their interest in learning and e-learning as a major one. They use the largest number of e-learning resources (desktop computers, mobile computers and other mobile devices); their employees have the greatest and diverse access to e-learning (from the office, from home, mobile) as well as the most extensive set of e-learning tools. These companies evaluate the efficiency of e-learning through indicators such as employee satisfaction, work performance, level of knowledge, and return on investment.

Cluster ‘medium’: The companies that belong to this cluster indicate average values of the above mentioned variables. These companies do not measure e-learning efficiency.

Cluster ‘low’: Companies that belong to this cluster claim indicate low level of e-learning deployment and utilization. The fact that most of the companies fall into this cluster supports Sato (2009) in his opinion that e-learning is still not so popular in Japan. However ‘low’ cluster companies show genuine interest in e-learning.

D. Cluster analysis of the companies - onboarding

This part of the analysis is based on the following onboarding criteria:
1) Duration of onboarding process
2) Turnover percentage
3) Attitude of the companies toward:
   - Main onboarding functions
   - Time to proficiency of new hires
   - Period of time for preparation of new hires workplace
   - Efforts expended on the onboarding process versus efforts expended on recruiting
4) Onboarding tools utilization:
   - Learning and development plans
   - Rotational assignments
   - Leadership development conferences
   - Team building activities
   - Tools to automate new hires’ communication
   - Tools that automate document processing in onboarding
   - Reporting tools to track the progress in getting new hires up to speed
   - Portal for new employees
Cluster 'high': There are only two companies which belong to this cluster. One of these companies is also positioned in the 'high' cluster according to e-learning criteria. Companies in this cluster are characterized by longer duration of their onboarding process as well as low turnover percentage. These companies are also characterized by applying a variety of onboarding tools.

Cluster 'medium': This is the cluster with the biggest number of companies. They indicate average values according to onboarding criteria. Typical of them is a shorter duration (3 - 6 months) of the onboarding process, but still low turnover percentage.

Cluster 'low': Companies in this cluster are also characterized by the low turnover percentage typical for large Japanese companies. However, these companies apply less onboarding tools because of the short duration of the process (less than a month).

E. Companies’ aptitude toward conducting certain onboarding activities through e-learning

One-way ANOVA was performed to test the e-learning clusters for statistically significant differences. A new variable which represents companies’ attitude toward performing certain onboarding activities through e-learning has been created and defined as a dependent variable. The author remarked that the value of the mean of cluster ‘low’ (1.6500) is greater than the value of the mean of cluster ‘medium’ (1.5600) suggesting that they (‘low’) are more willing to experiment with e-learning. The one-way ANOVA results do not indicate significant effect of level of e-learning implementation and utilization on the aptitude of companies toward conducting certain onboarding activities through e-learning F(2, 7) = 13.341, p < .05. The results of the post-hoc test (See Table 2) indicate that the difference occurred between clusters ‘Medium’ and ‘High’, leads to the conclusion that companies with better developed onboarding processes are more willing to experiment with e-learning, although once again the value of the mean of cluster ‘low’ (1.350) is greater than the value of the mean of cluster ‘medium’ (1.800).

<table>
<thead>
<tr>
<th>Average linkage between groups (I) (J)</th>
<th>MD (I-J)</th>
<th>St. Error</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medium Low High</td>
<td>-.45</td>
<td>.17995</td>
<td>.092</td>
</tr>
<tr>
<td>Low Medium High</td>
<td>.45</td>
<td>.17995</td>
<td>.092</td>
</tr>
<tr>
<td>High Medium Low</td>
<td>.45</td>
<td>.22093</td>
<td>.172</td>
</tr>
<tr>
<td>Medium Low High</td>
<td>-.45</td>
<td>.17995</td>
<td>.107</td>
</tr>
<tr>
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<td>.17995</td>
<td>.107</td>
</tr>
<tr>
<td>High Medium Low</td>
<td>.45</td>
<td>.22093</td>
<td>.195</td>
</tr>
</tbody>
</table>

* . The mean difference is significant at the 0.05 level.

IX. CONCLUSIONS

The survey provides information on large Japanese companies regarding implementation and utilization of e-learning, and the process of adaptation of new employees - onboarding. This information can be useful to both practitioners and researchers interested in e-learning deployment in Japanese companies.

The aim of the study is to divide companies into groups characterized by different level of performance according to the criteria mentioned above in order to find the relation between level of e-learning utilization, level of onboarding execution and the aptitude of companies to implement e-learning in onboarding.

The limitations of this study are summarized as follows:
1) lack of adequate research on e-learning utilization in company onboarding
2) final solution for clusters chosen by the author
3) small number of companies surveyed

Results of the survey indicate no differences in aptitude of companies with different level of implementation and utilization of e-learning for its implementation in the onboarding process. The analysis indicated statistically significant differences in aptitude of companies with different level of execution of onboarding for the implementation of e-learning in their onboarding process. Although the study is characterized by certain limitations, it is designed to serve as the basis for further research.

The paper concludes that decision for e-learning utilization in onboarding depends more on the level of development of the onboarding process than on the level of e-learning utilization in large Japanese companies observed by the author. Data presented in the paper supports the statement that e-learning is not commonly utilized in Japan, indicating low level of adoption in the examined companies.

REFERENCES

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