Development of Alternative Internal Knowledge Sharing Model
—With Consideration of individual motivation orientation—

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Knowledge of individual employees is the most important underlying assets for the company, especially for the large enterprise in service industry. However, most of the company struggles to implement efficient knowledge management system and needs to restructure the strategy for knowledge sharing activity with consideration of individual motivation toward knowledge sharing, in order to sustain growth of the company. This paper reveals motivation orientation toward knowledge sharing by questionnaire analysis, and base on the research output, the alternative knowledge sharing strategy has been implemented.

KeyWords&Phrases : Knowledge sharing, intrinsic motivation, extrinsic motivation, self-determination theory, training

1. Introduction

Knowledge is defined as “fluid mix of framed experience, values, contextual information and expert insights”. In order to gain competitive advantages as a company, it is crucial to share each employee’s experience and knowledge to other employees as combination of knowledge produces another innovative ideas.

From the organization perspective, it’s quite clear about the benefit of knowledge sharing so that it encourages people to share the wisdoms of individuals; however, even though many companies have tried to implement the measures of policies to accelerate share knowledge, they have been faced with disappointing fact that knowledge acquired in one part of the organization never reached other parts.

The organization has to tackle for the question; that for the individual who shares, why should they do it? It’s too optimistic or not fit with practice that all people are social or even altruistic beings who freely share their knowledge. Also, in terms of quality for knowledge shared, preceding research shows that autonomous motivation leads to more positive behavioral outcomes than controlled motivation.

This paper starts with revealing current knowledge management strategy in specific company, NTT Data. Then I turn into motivation theory to search for underlying processes that may explain why people would or would not share their knowledge. Through the research and analysis, this paper aims to propose alternative knowledge sharing model which derives individual intrinsic motivation to share knowledge.

2. Current situation

NTT Data, one of the largest independent IT system integrator in Japan, has been expanding its business and number of employees doubled within last decades. As for large enterprise in IT industry, it is crucial to circulate and utilize knowledge in total optimization point of views.

According to Hansen et al., there are basically two types of approaches to knowledge management; codification and personalization strategy. [1] As its name indicates, codification strategy focuses on codified documents as knowledge, and on the other hand, personalization strategy focuses on direct interaction between people to transfer tacit knowledge. Based on the definition, knowledge management strategy of NTT Data inclined toward codification strategy as it has knowledge database and several supportive codified information resides in intranet. It works well in terms of sharing commoditized knowledge; however, it still needs to work on utilizing circulation of tacit knowledge resides in each project.

3. Preceding study review

If we talk about knowledge sharing we have to take into account the difference between knowledge and information. Information is basically a collection of facts and figures, while knowledge consists of insights and interpretations, is personalized and refers to specific situations. It is also important to differentiate interpersonal sharing of “tacit” knowledge with sharing “explicit” knowledge by
entering it in and retrieving it from a knowledge database system.

3.1. Knowledge creation process

One of the theories proposed by Ikujiro Nonaka is that managing the creation and exchange of tacit knowledge is the creation of a shared workspace. Ikujiro Nonaka writes about the concept of "ba" (a Japanese concept meaning "place"). According to Nonaka, "ba" can be thought of as a shared space for emerging relationships. This space can be physical (an office, dispersed business space), virtual (e-mail, teleconference), mental (shared experiences, ideas, ideals) or any combination of them. What differentiates "ba" from ordinary human interaction is the concept of knowledge creation. According to Nonaka, "ba" provides a platform for advancing individual and collective knowledge. Knowledge is embedded in "ba" where it is then acquired through one's own experience or reflections on the experiences of others. [2]

Nonaka introduces the SECI model, or knowledge spiral, as a way to show how the interactions between explicit and tacit knowledge lead to the creation of new knowledge.

Based on SECI model, it is very important transforming one's tacit knowledge into explicit knowledge to circulate knowledge creation process. However, externalization process greatly depended on one's motivation toward their jobs or knowledge sharing. The relationship between individual motivation and knowledge sharing in organizations remains largely unexplored and poorly understood.

3.2. Self-Determination Theory

Motivation can be categorized into two basic types. One is called "intrinsic motivation" which is driven by an interest or enjoyment in the task itself, and exists within the individual rather than relying on any external pressure. Another one is called "Extrinsic motivation" which comes from outside of the individual, like rewarded as money or threat of punishment.

Deci and Ryan performed many empirical studies concerning the difference between intrinsic and extrinsic motivation. They developed the Self Determination Theory (SDT), which they argue that intrinsic motivation is the strongest type of motivation and that autonomy and self-determination of a person is being intrinsically motivated.[3] In SDT, there are three innate human psychological needs that are the basis for self-motivation and personality integration.

The SECI model describes the dynamic process in which explicit and tacit knowledge are exchanged and transformed. Nonaka argues that this idea can be put into practice, using the concepts of "ba". The four steps of the SECI process are socialization, externalization, combination, and internalization. Socialization involves the sharing of tacit knowledge between individuals. In practice, socialization involves capturing knowledge through physical proximity. Externalization involves the articulation of tacit knowledge; that is, the conversion of tacit knowledge into explicit knowledge. Combination involves the conversion of explicit knowledge into more complex sets of explicit knowledge. Finally, internalization is the conversion of explicit knowledge into the organization's tacit knowledge. [2]

![SECI model](image)

**a) Competence:** Refer to being effective in dealing with the environment a person finds themselves in.

**b) Relatedness:** Is the universal want to interact, be connected to and experience caring for others.

**c) Autonomy:** Is the universal urge to be causal agents of our own life and act in harmony with our integrated self.

In the knowledge sharing literature, many studies found results that are compatible with the notion that competence, relatedness, and autonomy are important. Bock and Kim found that expectations to improve work relationships (relatedness) and to make a significant contribution to organizational performance (competence) were positively related to sharing attitudes, intentions, and behavior. [4]
A culture that encourages teamwork, employee support, and autonomy encourages knowledge sharing, while a culture that is demanding of employees and rule oriented discourages knowledge sharing. They showed that in many cases people who are intrinsically motivated persist longer and demonstrate more accomplishments than those who are extrinsically motivated.

3.3. Motivation in Knowledge sharing

There are many organizations that use tangible rewards for knowledge sharing, or integrate knowledge sharing process into their work process to force employees to share the knowledge. There are arguments about effectiveness of hard rewards as forcing people to share knowledge though the promise of a reward or a threat of punishment may result in the bare minimum required because contribution of knowledge sharing can only be traceable by quantity base, not quality base.

However, some researchers have argued that knowledge sharing is tightly linked to the core cultural values of the company. The choice of hard or soft rewards has to fit the corporate culture. What kind of extrinsic incentives, or intrinsic motivators are attractive for individual is totally depend on the company. Therefore, analyzing employees’ motivation orientation should be conducted and matched with each knowledge management activities to seek the countermeasures with combination of extrinsic motivators to internalize individual motivations.

4. Research Methodology

In this study, a knowledge sharing motivation scale is used based on the Work Preference Inventory (WPI) proposed by Amabile, Hennessey, and Tighe in 1994 [5] with slight revision of adding the questions about the activities involved for knowledge sharing. The WPI was designed as a direct, explicit assessment of individual differences in the degree to which adults perceive themselves to be intrinsically and extrinsically motivated toward what they do.

For intrinsic motivation, the WPI elements include:

a) Self-determination (preference for choice and autonomy)
b) Competence (mastery orientation and preference for challenge)
c) Task involvement (task absorption and flow)
d) Curiosity (preference for complexity)
e) Interest (enjoyment and fun)

For extrinsic motivation the WPI elements include:

a) Evaluation concerns
b) Recognition concerns
c) Competition concerns
d) A focus on money or other tangible incentives
e) A focus on the dictates of others

Respondents are asked to indicate the extent to which each item describes them (on a 4-point scale, from 1 = never or almost never true of me to 4 = always or almost always true of me)

Based on WPI scores derived from questionnaire, the result will be assessed and matched with activity involvement in the company knowledge management system. Through the comparison between motivation types and actual behaviors of knowledge sharing, relationship with motivation orientations and organizational measures should be discovered.

5. Analysis

The survey was spread out 26 employees working variety of positions in the company. Questionnaire was translated into Japanese and consists of 30 questions to identify basic primary factors, whether intrinsic or extrinsic type of motivation, and also to identify more finely differentiated groupings of items within these primary factors which are enjoyment and challenge factors for intrinsic, outward and compensation factors for extrinsic. And addition to the questionnaire, actual knowledge sharing activities involved is asked.

![Figure 2. Motivation orientation by job categories](image-url)

The results of survey are shown in Figure 2 that illustrates the type of motivation for each job category. The graph shows similar trend with any type of jobs, and enjoyment scale has highest scores out of four motivation orientations, while compensation scale has lowest scores, which means that the employees are less concern for compensation they get, and at the
same time, they are interested in how enjoyable or challenging job they are assigned.

In order to identify correlation between motivation orientation and knowledge sharing activities, the second part of the questionnaire asked for quantitatively measurable actual knowledge sharing activities involved within the company.

![Figure 3. Knowledge sharing activities](image)

Lecturer experiences were asked on questionnaire in terms of number of session attended as a teacher. More than 60% of the employees have experienced teaching something to others for less than five times within their career. And only 8% of the employees are the frequent lecturers. From this result, it can be concluded as opportunities for the employees to gain tacit knowledge are not provided adequately.

For explicit knowledge, contribution as posting documents to knowledge database was asked in terms of the number. It shows quite similar trend with lecturer experience that more than 60% of employees have ever posted their know-how to knowledge database less than five documents; moreover, about 30% are never shows contribution to database. Only 4% are major contributors for the knowledge management system.

As a result of the survey, employees are intrinsically motivated, and compensation is not big issue for them, rather motivated by the sense of enjoyment and challenging; however, knowledge sharing activity at the organization level is not appropriately implemented, and there are no correlation between motivation orientation and actual knowledge sharing activities.

So, why knowledge sharing activity is not stimulated? Additional open interview session was conducted to drill down the reason or obstructive factors for knowledge sharing activity, especially about the existing internal knowledge management system. And the major responses about the interview are as follows:

- There are no feedbacks or responses visible even though the documents (knowledge) posted to knowledge database.
- No beneficial facts for contributors
- Documents/knowledge should be provided from R&D, not me.
- Not sure that own knowledge is valuable to others.
- Not owning adequate knowledge to share for others

There are many reasons not to share but one of the major issues is that employee seems to unaware of his/her knowledge value, therefore he/she is not providing knowledge regardless of the willingness.

Knowledge sharing activity could be stimulated if we could give them supportive push to link their intrinsic locus of motivation toward job and knowledge sharing activities.

6. Countermeasure

There are many reasons for not sharing their knowledge, and some may never be solved; however, if people’s psychological needs are satisfied at work, they are more likely to internalize activities align with the organization values; this leads to more autonomous motivation for broader range of job satisfaction; i.e. considering sharing to be important in reaching organizational goals will read to developing positive attitudes toward sharing. The key to success in knowledge sharing is that the personal ambition should match the organizational ambition. The big question of how they relate to these ambitions, how organization may be able to motivate knowledge worker to share.

But what means does an organization have for enhancing intrinsic motivation, a quintessentially personal aspect that cannot be dictated externally? There is no single straight answer, but it can potentially be answered by creating an environment that allows individuals to satisfy their motivational preferences and concords with their needs for self-determination and self-esteem.

Countermeasures I proposed are a combination of codification strategy and personalization strategy. For codification strategy, existing internal knowledge management database will be a base for aggregation of codified knowledge. And in order to increase in number of knowledge documents in database, I will execute personalization strategy, which focuses on direct interaction between knowledge holders and others who starved for precious knowledge. Since
most of employees have intention to share knowledge, interpersonal knowledge circulation would be stimulated if we provide and facilitate “place” for employee to gather and discuss about specific issues or to teach something valuable.

As the company training policy, I proposed “inter-organizational training” program which is internal training session to interchange knowledge and meet people in different division. It was regularly taken place with ordinary employees as instructor and lecture or discuss about specific knowledge they have. Below are three rules for inter-organizational training.

1) Training session should be opened for other divisions, not only own division.
2) Contents should be about the knowledge resides within the company.
3) Discussion, interactive session should be included in the training.

To encourage employees to attend this inter-organizational training session, attending training session three days annually has been set as key performance indicator to evaluate annual performance of the company.

A member of human resource department plays a role of knowledge agent that intermediate knowledge demands and supply. Either request base or proactively, knowledge agent identifies knowledge to be introduced, and requests knowledge holders to be a lecturer at the inter-organizational training session.

Figure 4. Inter-organizational training structure

When the agent asks knowledge holders to disclose their knowledge, the agent will carefully explain the objectives of this measure, and also asking their bosses for approval to corporate the knowledge sharing activity. Not only to the boss, but also to their colleagues, the agent take them public how important and valuable their knowledge is, so that they would be more motivated and easier to work on preparing training session if colleagues and bosses are supportive.

Contents of the training are basically up to them. By doing lecture with their own specialty, the session may lead to actual business opportunity by meeting someone demanded, or they may find another insight from attendee. If they get those kind of successful experience, knowledge sharing activity will be connected to motivation toward their work so that they will be intrinsically motivated toward knowledge sharing as well, and being change agent to transform the company’s culture to be more aggressive for knowledge sharing.

To clarify the relation between three innate needs of self determination theory and this inter-organizational training is that:

- Relatedness: support and appraisal from boss, respect and encourage from colleagues is expected because the agent will make knowledge holder widely known as specialist for specific knowledge by promotion within the company. If people feel support from surroundings, they would try to fulfill the expectation from others.

- Competence: through the discussion and lecture, the knowledge holders will receive direct feedback and if it was positive appraisal, they would feel competence and realize that their knowledge was valuable to others.

- Autonomy: the knowledge holders are not forced to be a lecturer, the agent will tell how valuable your knowledge is and only ask for help to improve knowledge circulation at organization level. The knowledge holders autonomously decide whether corporate or not.

Stimulating three innate needs induces intrinsic motivated people to involve in knowledge sharing activity proactively. And eventually, those who attend training session may feel wanting to exchange the knowledge; change in corporate culture into knowledge sharing company.

By doing inter-organizational training session, the instructor has to transform his tacit knowledge into somewhat explicit in order to convey knowledge to others. And also, he can receive direct feedback from others so that knowledge itself may be improved by adding someone’s thought; “combination” process which is explained in SECI model. Through the session, participants exchange information to those from different divisions, and they may get another insight, new or alternate business opportunity by combination of knowledge or information.
7. Implementation

A part of HR division plays a role as knowledge sharing agent team. They have responsibility to plan and operate inter-organizational training session. Agent team had frequently visited various project sites and tried to find what would be the knowledge need to share for employee.

Variety of contents were introduced in training session, such as introduction and exposition of strategic solutions, knowledge sharing of particular industry business process, introducing success case of productivity improvement, and etc. Such contents of inter-organizational training had drawn attention and every session was packed by employee.

Knowledge sharing agent team has been succeeded to plan and convened 47 times in year 2010, which means that training session held at least once in a week frequency, and overall internal official training session at company viewpoints convened 442 times in year 2010, and it has increased in number of session held comparing with past year 2009 which was 369 times.

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Figure 5. List of training sessions

For each training session, we asked instructors to prepare training materials and after the session, the materials had been uploaded into knowledge database as a part of deliverables for knowledge sharing activities. And Figure 6 shows number of document posted into knowledge database annual base, and increase rate comparing with previous year.

![Figure 6. Annual # of docs posted and increasing rate](image)

8. Conclusion

Ultimate goal of this measure is to let employees autonomously involved in knowledge sharing activity and transform organization culture into autonomous learning organization. For real valuable knowledge resides in people, not a document. Just circulating documents would not create ideal situation of knowledge management; rather codified knowledge should be treated as index to reach tacit knowledge that specific people has. Since effective knowledge sharing activity depends on one's willingness, it is important to create opportunity and place to gather employees for exchanging knowledge each other, develop HR policy, or develop supportive IT tools to stimulate intrinsic motivation toward self-learning and support autonomous knowledge transmitting.

Reference