

Flow Experience of Knowledge Workers: A Case Study of a Taiwanese Consultancy

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ABSTRACT

This study examines whether job characteristics and the personality traits influence knowledge worker generation of the flow experiences, and how these flow experiences go on to influence overall organizational performance. This work focuses on a case study of a Taiwanese consulting company, and adopts in-depth interviews to gather information from the knowledge workers and the supervisors, with the aim of understanding the personal feelings of knowledge workers and further analyzing whether job characteristics and personality traits influence knowledge workers generation of flow experience. Based on supervisor observation of subordinates, this study analyzes the flow experience how to influence a team or an organization, resulting from the flow experience of knowledge workers, and also seeks to understand opinions and attitudes of supervisors toward his/her subordinates regarding subordinates frequently flow experiences. An analysis of worker interviews suggests that an environment in which employees can produce flow experience boosts overall work quality; nevertheless, supervisors should intervene when employees enjoy excessive flow experiences, resulting in poor work efficiency. Several theoretical propositions for advanced research on the flow experience are also included in this study.

Keywords: Flow experience; knowledge worker; job characteristics; personality traits

INTRODUCTION

Flow is the process of optimal experience (Csikszentmihalyi, 1975). In 1970's, Csikszentmihalyi studied artists, athletes, musicians, high-graded chess players and surgeons, all of whom focused deeply on their careers due to personal preferences and also spent considerable time and energy on deriving joy from their works over the long-term. Csikszentmihalyi came to develop flow theory, based on optimal experience provided by the statement of the above professional workers. Csikszentmihalyi believed that individuals entered a flow state when they fully devoted themselves to a situation, concentrated their attentions on this activity and sifted through irrelevant senses to achieve the optimal flow experience. (Csikszentmihalyi, 1975)

Subsequently, scholars have used flow theory to study flow experience within travel and leisure activities (Csikszentmihalyi and LeFevre, 1989; Ellis et al., 1994). Some scholars have applied flow theory to the mental status of individuals addicted to the online games (Ghani and Deshpande, 1994; Ghani, 1995; Griffiths and Dancaster, 1995). Furthermore, some scholars studied flow theory in relation to Internet marketing; investigating how such state of design more strongly attracts visitors via webpage design and layout (Hoffman and Novak, 1996; Koufaris, 2002; Skadberg and Kimmel, 2004).

Despite Csikszentmihalyi(1975) focused on professional specialists and the enjoyment derived from their daily works, he did not conduct further study of whether employees who performed different tasks and jobs within an organization or enterprise produced varying flow experiences; thus, opportunity for further application of flow experience to human resource management still exists. In this study, the subjects included are management consultants, art designer, HR manager and CEO within a Taiwanese consulting company. Through the personal experiences of these knowledge workers and the observations of their supervisors, this study examines whether the job characteristics and personality traits influence whether knowledge workers produce flow experiences and whether these experiences further influence organizational performance. This study further examines how best to motivate employees to produce high quality flow experiences, while avoiding poor enterprise performance resulting from excessive employee flow experiences.

LITERATURE REVIEW

Flow describes the situation when an individual is completely absorbed in a task and primarily motivated by the enjoyment and satisfaction provided by the task itself (Csikszentmihalyi, 1990). Assuming that this leads to optimal work output, it would be natural for some employers to seek such qualities in candidates during reviews and interviews. However, during recruitment, enterprises typically evaluate a candidate's ability within a certain function (based on previous work experience) and test candidate personality traits. This is the standard practice for business employment screening. While many employers believe that an employee's basic ability and skill level are the key influences of performance, this is one of the key questions of this study. Whether an employee can frequently produce the optimal flow experience in his/her work depends on ability itself, but more so on employee willingness to assume appropriate challenges. Thus, personality traits are a greater factor in this regard.

Job characteristics may influence the ability of an employee to regularly produce flow experience during his/her work routine. Employees who deal with tasks involving creative thinking and research and development (R&D), can seem more easily to enter a flow state than those who perform routine jobs. Therefore, this investigation includes job characteristics in the research scope to examine their influence. Employees with different personality traits have varying frequencies of flow experiences when facing the same task or job.

Csikszentmihalyi (1996) described nine main elements of flow experience characteristics:

1. Clear goals are defined for each step.
2. Actions produce immediate feedback.
3. Balance exists between challenges and skills.
4. Action and awareness are merged.
5. No consciousness exists regarding distractions.
6. Failure is not a concern.
7. Self-consciousness disappears.
8. Sense of time becomes distorted.
9. Activity becomes auto-telic.

Given clear goals, relevant feedback and a balance between skills and challenges, attention becomes ordered and fully invested. Because of the total demand on psychic energy, a person in flow is fully focused, and their consciousness contains no space for distractions. Self-consciousness regarding time is distorted for such people, with hours seeming to pass by in minutes (Csikszentmihalyi, 1997).

Behavior must be evaluated in term of some standard or expected performance level before being accessed. Behavior will typically be considered good if it meets or exceeds the standard. Conversely, behavior that fails to meet the standard will be considered poor. Solving a performance problem depends on identifying and dealing with its causes (Werner and DeSimone, 2006).

Causal attribution theory describes the process via which people assign causes to their own behavior and that of others. Attribution theory also suggests that supervisors may use both rational information and biases to determine the cause of employee performance. Weiner et al. (1972) suggests that the performance can be explained using four categories, two within employee (effort and ability) and two in the situation (task difficulty and luck). Regarding the classification of causes of performance provided by Weiner, most supervisors consider employees as not making their best efforts or lacking ability when they obtain poor grades in employee performance. The concept of performance management maintains that supervisors will discuss with employees to understand problems, and help them via training courses. However, employees are likely to attribute their failures to factors beyond their control, such as task difficulty, environmental obstacles and bad luck. According to flow theory, employees who see a task as too difficult, namely as exceeding their skills are anxious and unable to concentrate.

Self-efficacy theory, proposed by Bandura, centers on whether a person actively does their best depends on the result of self-evaluation in the face of a challenge. Self-efficacy is defined as "people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performance. It is concerned not with the skills one has but with judgments of what one can do with whatever skills one possesses." (Bandura, 1986) Self-efficacy

beliefs are malleable and can be influenced by individual accomplishments, observations of others, verbal persuasion, and physiological states (Bandura, 1977).

Self-efficacy denotes individual belief in his/her ability to successfully perform a given behavior (Werner & DeSimone, 2006). That is, when facing a particular task or job, an individual actively gathers and checks work related information, including task difficulty. Based on personal experience and the observation of the experiences of others, verbal persuasion from others, and the measurement of personal physiological and emotional states, individuals facing a challenge can confirm whether they possess the ability to overcome that challenge. Self-efficacy theory also explains the influence of job characteristics on individual willingness to accept a challenge. Consequently, this theory can explain individual involvement in and enjoyment of their jobs.

Job characteristics represent job related factors and attributes. Seashore and Taber (1975) see job characteristics as spanning a wide range; for example, the essence of a job, job environment, wage and welfare, job security, feedback on job performance, job autonomy, job challenge, job related learning, job opportunities and promotion prospects, workplace relationships, sense of accomplishment, and self-actualization. Those job characteristics have different influences on satisfying individual physical/psychological needs.

Job characteristics include everything related to job-related factors and attributes. The concept was generated to enhance working efficiency and productivity. Hackman and Oldham (1975) conducted numerous related investigations and proposed the Job Characteristic Model theory, JCM, based on job characteristics. JCM is based around three mental statuses, namely the meaning of the work, sense of responsibility associated with work and work-related result. Furthermore, the three mental statuses, which comprise five core dimensions of internal work motivation, job satisfaction, job performance, absence and labor turnover rate, influence on influence individual employee and work outcomes.

Robbins (1992) defined the five core dimensions of JCM as following:

1. Skill Variety: the different skills required to deal with different work activities.
2. Task Identity: the degree to which a job should be completed, and the degree to which a job can be divided.
3. Task Significance: the degree to which a job can influence others.
4. Autonomy: the degree of freedom, independence and judgments regarding task scheduling and prioritization.
5. Job Feedback: the degree to which an employee can clearly and directly understand his/ her work performance.

Three core mental statuses influence individual work results under the Hackman and Oldham (1975) model of job characteristics.

1. Feeling of job meaning: this feeling refers to the situation where an employee feels the meaning and value of a job. The recognition of job meaning results from the three core dimensions, including skill variety, task identity and task significance.
2. Feeling of job responsibility: this feeling indicates the degree to which an employee should be responsible for a job or task, and is related to autonomy.
3. Feeling of acquiring work results: this feeling denotes the degree to which an employee understands the job or task, which is related to job feedback.

Currently, the most acceptable job characteristics model considered by Hackman and Oldham (1975) combines the needs of personal growth and the static and dynamic analysis of mental status. The model adopted in this study is used to analyze which job characteristics will influence the flow experience of knowledge workers.

The long-term manifestation of all organizational members, including supervisors, can be influenced by self-consideration, self-awareness and behavior, which are personality traits (Hill and Jones, 2007). Of course, one's personality comprised of numerous traits. McCrae et al. (1986) divided personality traits into five different types, including: Agreeableness, Conscientiousness, Extraversion, Emotional Stability and Openness to Experience.

An adjective check list can be used to measure creativity personality (Domino, 1970; Gough, 1979; Smith and Schaefer, 1969). Creativity Personality Scale (CPS), which was developed by professor Gough of University California Berkeley in 1979, is widely used. CPS of Gough creativity personality in numerous researches has been widely cited in various studies as an optimal method of measuring one's level of innate creativity. Domino (1994) saw the CPS of Gough as an effective tool for measuring creative tendencies after he compared and contrasted numerous similar measuring tools.

This study used interviews to gather information; adopting the Creative Personality Scale (CPS) developed by Gough (1979). The scale, according to expert judgment, faculty, evaluation and interview, constitutes the complete ACL, Adjective Check List. The scale includes 12 groups from different fields. The Creativity Personality Scale comprises 30 typical question items; 18 of which, used to describe individuals with high creativity, are assigned a score of +1. The remaining 12 question items, used to describe an individual with low creativity, are assigned a score of -1. The CPS index is calculated by summing all scores.

Csikszentmihalyi (1990) observed that flow experience provides individuals with a feeling that the activity at hand is under control and that, they are in control of their own fate; this helps individuals to further derive enjoyment from the flow experience. After entering the flow state, an individual might become completely involved in an activity, and start seeing everything else as unimportant. However, flow experiences could produce some negative effects. For example, when a job takes longer to complete the associated cost increases, or alternatively a person can become excessively involved in a particular task and consequently neglect other matters (Sandelands, 1988). Through supervisors' observations, this investigation analyzes the negative effects that result for enterprises when employees have flow experiences, and conducts further research on how enterprises deal with negative influences.

METHOD

This investigation adopted a case study approach to conducting research. To understand whether different job and personality characteristics influence knowledge workers production of flow experience, the interviewees included management consultants, art designer, HR manager and CEO within a specific Taiwanese consulting company, with backgrounds as listed in Table 1. Before the start of the interview processing, the concept of flow experience was introduced to help interviewees understand the nature of the flow experience. Every interviewee then completed a questionnaire. Throughout the process, interviewees recalled their feelings regarding flow experiences and assessed the degree of those experiences. The questionnaire utilized a measurement system to assess flow experiences based on the Flow State Scale (FSS), which was developed by Jackson and Marsh (1996). They derived the nine dimensions from the flow model first proposed by Csikszentmihalyi (1975, 1990). The FSS contains 36 questions. After completing the questionnaire, interviews were conducted to delve deeper into various flow experiences, and understand the personality traits and job characteristics of the employees who experienced them.

Table 1: The Interviewees' Background

Name	Current Job Title	Age	Working Experience
Mr. A	Consultant	30+	5-10 years
Mrs. B	Consultant	35+	10-15 years
Mr. C	Art Designer	30+	5-10 years
Mrs. Y	HR manager	35+	Over 15 years
Mr. Z	CEO	40+	Over 15 years

The consulting company examined in the present case study is a leader in developing educational training materials for complex enterprises and organizations. Most educational training material is customized to meet the demands of enterprise clients. In accordance with the needs and issues of each client, consultants design material in graphics, flow, instructions, so that programs can be administered by the clients themselves, after training sessions and tutorial conducted by the consultants who designed the program. Typically in a given training session, there are four or five participants per table in a large room including all employees of a specific level and/or function. Given the customized nature of the material, the consultant team conducts a substantial amount of due diligence in early phases of each project. At beginning of training material development, consultants must interview the client (different levels of staff teams) to clarify the knowledge and specific objectives that the client wishes to deliver, discuss, and share with trainees. After reviewing and absorbing massive quantities of data and information, consultants then organize the respective knowledge structure, deliver the concept in pictorial or image form and within the limited space of pages, and guide trainees to consider and explore the specific topics at hand. To provide trainees with interesting and

stimulating ideas, graphic design is used to increase the attractiveness and effectiveness of the training material; thus the art designer plays an important role in materials development.

This study recruited two groups of interviewees. The first group included consultants and art designers. The interviews with first group focused on self-observations of the interviewees to clarify whether knowledge workers frequently produced flow experiences in their daily work, and whether job characteristics influenced flow experiences generation. The other group of interviewees included the HR manager and CEO, and focused on supervisor feelings regarding whether employee flow experience influences organizational performance.

The interview questions should be designed before the meeting to enable the discussion topics to be fully related to this study. Table 2 lists the interview questions when knowledge works, namely consultants and art designer, were the interview subjects. Table 3 lists the interview questions for HR manager and CEO.

Table 2: Questions for Knowledge Workers

Question	Description
1	Please specify under the conditions required for you to become completely involved in your work to the point where you neglect your surroundings or the time.
2	Do you mind any disturbance or interruption to your thinking by somebody or something when you are immersed in flow state? Why or Why not?
3	How frequently do you experience a flow state during your work? Always, frequently, sometimes, occasionally or never? Indicate how numerous times weekly or daily?
4	Does your work involve specialized skills or complex technology? Does your job require high concentration and is it easy to enter flow state? Please specify.
5	Can you stop your work at any time, or you stop your work only when it reaches a certain level? Is that the reason to make you easily enter the flow state? Please specify.
6	What kind of job characteristics do you believe can easily cause an individual to generate flow experiences? Please specify with reference to your experiences.

Table 3: Questions for Supervisors

Question	Description
1	Based on your observations, what kind of employee personality traits make it easy for an employee to enter a flow state?
2	Based on your observations, what position within a company makes it easy for an employee to enter the flow state? Please specify the job content of that position.
3	Do you think employee flow experiences benefit their performance, or do you think they exert a negative influence?
4	Is it acceptable for a supervisor or a company if employee flow experiences cause increased costs?
5	In terms of the above flow state evaluation, do you think flow experience generation positively or negatively influences company performance? If answer is positive, please go to question 6. Otherwise go to question 7.
6	From the perspective of an enterprise or a supervisor, please specify how to manage the atmosphere during work to help employees achieve good flow experiences.
7	From the perspective of an enterprise or a supervisor, what is your opinion on how to reduce employee generation of flow experiences?

RESULTS

The analysis of the interview results was divided into two phases to more deeply probe knowledge workers and their self-observations regarding flow experience and the supervisor observations of the influence of enterprises on employee production of flow experiences. Moreover, this study also proposes a comparative theoretical flow experience propositions to provide further research directions.

Analysis of Knowledge Worker Interviews

The following detail comprises the analysis and hypothesis related to the interviews of each consultants and art designer based on the questions listed in table 2. Within all situations described, interviewees were become fully

involved in their work and ignore both the time and surroundings. The interviewees share a common viewpoint, and easily entered a flow state when concentrating on their respective works, particularly when considering the relationship between information and structure.

Consultant A: When I become entirely involved in executing a task, it seems that I stop hearing my surroundings for a period despite even when they are quite noisy. After regaining my composure, I return back to a state of normalcy.

Consultant B: At the beginning of most project, I have to read and search a large body of information; I am not easily distracted by my environment and surroundings at that time because I need to concentrate on the construction and information, and repeatedly consider its reorganization. Moreover, I needed to consider and concentrate the likely influence of various activities on the results of the project and my end product.

Art Designer: My job deals with art design and production. After modeling the initial concept, I devote great time and attention on the phases of drawing, image derivation, precise line drawing, and color coordination follows. During this process, I have found it helps me concentrate my thought; when I devote fully to these design phases, greater output results.

Proposition One: Knowledge Workers Easily Enter the Flow State During the Thinking Construction Phase.

Did any interviewee mind disturbing and interrupting their thinking when entering the flow state? Interviewees reported that they do mind interruption and disturbance, especially at key points when thinking construction. Once their thoughts were interrupted and disturbed, interviewees required more time to return to the flow state. If the interruption caused memory loss, they would be very upset.

Does the interviewee always produce flow experience while working, and how frequently? And if not how often do they produce such flow experience? Consultants reported producing flow experience several times daily because of creative nature of their jobs. Art designer indicated that the weekly certainty of flow experiences was variables, with such experiences being more prevalent when more flow experiences on hand.

Consultant B: the content of my job is creative. Not all flow experiences were produced during our official work hours within the office or at my desk. Sometimes, my hands was doing the housework or taking a shower, but my brain was still thinking about how to plan or design the project. Sometimes, I would suddenly see something new, and consequently a flash of thought would enter my mind and I entered the flow state while walking on the street. Furthermore, similar situations frequently occurred. When the project experienced bottleneck I would try to find a solution, and continued considering the questions until the problem was solved. It is different to measure how many times this happened each week, but on occasion it could happen several times in a day.

Did your work require specialized skills or complex technology? Were these needs the reason that it was difficult to become distracted from your work, and thus why it was easy to produce flow experiences? Interviewees indicated their jobs were simple, but their works required continuous thinking. Every customized teaching material thus was a challenge, and it was easy to enter the flow state. Some interviewees noted that they worried about the mistakes and having to repeat of the work, and forced themselves to concentrate more on their work, making it easier for them to enter the flow state.

Did you find yourself unable to stop your work before reaching certain goals? Did this inability to stop working until certain tasks were complete make it easier for you to enter the flow state? All interviewees indicated that they were unable to stop the project at any time despite time pressures existing for all projects, because of wishing to smoothly continue with the project.

What kind of job characteristics easily generates flow state? All the interviewees assumed the role of the art designer is naturally a job where one more easily to enters a flow state. This perception existed because the job was static and an art designer mostly of works alone. Moreover, art designers required consideration concentration while working, particularly in art layout and drawing. Issues of line and color coordination can influence the success of their work. Some interviewees mentioned workers, such as maintenance engineers, who faced continuous challenges, and thus easily entered the flow state. Such workers had to learn what was going on as soon as possible, and constantly

consider how to solve problems. Consequently, such workers could easily enter the flow state. Interviewees also mentioned that they felt workers such as IT staff or programmers who had to do the programming, testing and debugging are likely to enter flow mode. Typically, IT workers remained at their desks until their work reaching a certain point, and would then take brief rests when encountering fresh difficulties that could not quickly be resolved.

Proposition Two: knowledge workers who concentrate on static work for long periods tend to have flow experiences.

Interviewees were asked what personality traits they possessed, and what personality traits made it easy for them to enter the flow state. Informality, broad interests, cautious and honesty were the traits most commonly identified as being possessed. Regarding the personality traits that made it easy for them to enter flow state, some interviewees thought informality, broad interests and cautious made it easy for them to enter the flow state. Meanwhile, others thought insightfulness and persistence made it easy for them to enjoy flow experiences. Interviewees thus agreed that there was no common trait helping people enter the flow state.

Analysis of Supervisor Interviews

Besides the personal feeling and experiences of knowledge workers, based on perspectives of the HR Manager and Chief Executive Officer (CEO) and through observation of employee performance, this study also noted whether the flow experiences further influence organizational performance.

Regarding to the occurrence frequency of flow experiences resulting from personality traits, the HR manager thought individuals with greater insight into problem solving, and be used that concentrated more on every problems and affairs, and that were more used to self-centralization were more likely to produce flow experiences; meanwhile, no explicit figures existed for frequency. However, the opinion of the CEO differed from those of the others. The CEO thought that employees with different personalities might produce flow experiences when they shared common values and were willing to strive to achieve a common goal. Regarding the occurrence frequency, it was uncertain and depended on the missions or tasks.

CEO: Each company member should understand the core values of the company. Individuals working with others who share a common goal will more easily produce the flow experiences. When members with different personality traits work in a single environment; it is difficult for an individual to enter the flow state if their values are inconsistent with achieving the goals of the team. Supervisors had to lead the team towards understanding the core values of the company. Despite being intercultural and international, the team members worked in the same environment and formed the same value recognition. Therefore, it was still possible for employees with different personality traits to produce flow experiences.

Regarding the frequency of occurrence, it was uncertain and depended on the missions or tasks.

Proposition Three: Common Values Can Stimulate Flow Experiences in Knowledge Workers.

Because the main business of the consulting company examined in this study was providing customized design of educational training material, the most important positions in the company were those of management consultant and art designer. The initial phase of providing customized service focused on understanding the business of the client, proposing analysis of current condition and providing the proposal designed to best meet a specific corporation's needs, namely the requirements for enhancing or developing educational training courses. The HR manager considered that employees needed to collect enormous quantities of data and information and identified the related logics before starting to plan the associated requirements. Therefore, they remained involved in thought for a long time, and at the moment frequently ignored the surroundings as the time passes by. After the client and consulting company reached agreement regarding a proposal, the project entered the design phase. Based on observation of the HR manager, multiple individuals produced flow experiences, and sometimes two individuals or a group entered the flow state simultaneously. This phenomenon occurred because the consultant and art designer frequently repeatedly discussed the design concept, and became highly involved in this aspect of their work. The art designer not only integrated the concepts and ideas discussed, but also added the creative elements and coordinated color collocation and matching to

complete the presentation of training materials. Thus it is understandable that art designers might need total concentration on their work during the design process.

The CEO believed that job attributes, namely that people spend more time thinking, make it easier for people to facilitate the production of flow experiences. Regarding entry to the flow state, activity should be challengeable and sensually exciting. Accordingly, people were constantly willing to understand challenges. Compared with those who worked on the production line or simply performed standardized and repetitive actions, those people do not easily enter the flow state. Because of the repetitive nature of workflow on the production line, conflict would occur if excessive thinking was involved.

Proposition Four: If the job characteristics are simple, routine and unchallengeable, employees find it difficult to produce flow experiences.

The HR manager thought flow experiences positively influenced working performance, but she was not sure whether frequent flow experiences positively influenced performance. However, other objective and subjective factors affected working performance. Regarding the characteristics of flow experiences, employees became highly involved in their work when entering the flow state. Based on the previous statement, the HR manager believed that output of processes in which employees were fully involved was better than the processes in which they were not fully involved. Regarding the two dimensions of work quality and work efficiency, the influence of flow experiences was more positive in the case of the former than the latter.

Regarding the viewpoint of the CEO, flow experiences influencing working performance should be determined from the final results. From planning, through to execution and completion, a team working on a large-scale project requires considerable coordination and communication, and also must face numerous constant and brutal challenges, including failure, review and revision. Team members had to face numerous uncomfortable situations, exposing the weakness of the team. Therefore, team members entered the flow state, or became completely involved in the project too early, not only did the team not grow, but the entire project was delayed. Of course, not all employee flow experiences were negative. Employees were fully involved when in the flow state, but too many flow experiences caused the whole project team to behave abnormally.

Proposition Five: Flow experiences benefit team or organizational work quality.

Proposition Six: Flow experiences negatively impact team or organizational work efficiency.

Regarding the problem of increased costs arising from flow experiences, and whether these increased costs are acceptable to supervisors or enterprises, owing to flow experiences improving product quality, the HR manager thought she would support employee flow experiences if the efficiency is under control; increased costs are acceptable provided they remain within budget. However, if the project falls behind schedule, causing schedule delays, the flow experiences should be reviewed. Finally, all projects should be finished by a particular time acknowledged by clients. Employees should be retrained, and the plan should be reset so that the project can be resumed on schedule.

The CEO believed that an effective organization should have a complete plan and clear goal, which members should strive to achieve organizational goal. Employee flow experiences should be appropriate, not excessive. Stated in a different way, if the organization or team had unclear goals or if resources existed only for employee flow experiences, employees might forget project time pressures and limitations. Leaders or supervisors would thus have to deal with the negative ramifications if no one reviewed or checked excessive member flow experiences. Within such scenario, output is typically not valuable, and efficiency becomes a problem. Simon (2005) noted that the activity of creative project managers include framing and animating the team with clear goals and visions, crafting empowering rules, and focusing on developing a subtle balance between constraints and freedom. The observations of this investigation seem identical to the conclusions of Simon (2005).

Overall, it becomes clear that the flow experience can lead to both positive and negative influence on operational performance. The HR manager may assume that flow experiences will naturally benefit their company. From the perspective of the supervisor, the flow experience does not necessarily increase costs or expenditure and increases efficiency and potentially employee satisfaction. If the generation of flow experiences could increase employee

willingness to become more involved in their work, and contribute their professional skills, work stability was increased, and the resources and training of new recruits could be reduced. The CEO believed the influence which was generated from the flow experiences affected business operations, should be finally determined by the result. If the performance was entirely consistent with company goals, the flow experience had a positive meaning; otherwise, trouble within the company was unavoidable.

How to build workplace climate to make employee have a good balance flow experience --and not excessive, was the prime task of enterprises or supervisors. The HR manager considered that the introduction of stability and respect factors could create harmony and concordance within the company; thus helping the workplace climate. A stable working environment could help employees produce organizational commitment; paying respects on employees' professional knowledge meant providing opportunities to allow employees to be solely responsible for their work performance and provide guidance when necessary; thus employees could constantly grow. Both stability and respect factors could make employees obtain good flow experiences. The CEO still stressed that good organization should focus on how to cultivate common goals for directing common efforts. If quarrels arising from different opinions could be solved reasonably, then the flow experience was good, and the results were predictable. Importantly, in the workplace context, the ability of workers to achieve flow is also significantly facilitated by the leader/manager in that workplace (Matin, 2005).

An important question involves the adjustments necessary to reduce flow experience frequency when frequent flow experiences negatively affect working efficiency or team work. The CEO believed blind employee involvement in the project owing to satisfaction with excessive flow experiences provided under uncertain planning could be a main cause of project failure. At that point, managers should adequately remind and ask the members to adjust the implementation direction. Managers should establish limitations or checkpoints during the initial stage of the project, and should not review the implementation situation during subsequent stages. For a project executive, the main thing was how to improve project efficiency and performance and to control the project schedule under time pressures and resource limitations.

Proposition Seven: Employee flow experiences positively influence team performance when schedule and cost are controlled.

CONCLUSION AND RECOMMENDATIONS

After interviewing the knowledge workers, further information on the flow experiences of knowledge workers was presented, and thus a clearer idea was obtained regarding whether an employee flow experiences influenced their personal performance, or even the performance of their team or organization.

Conclusion

Using the model of job characteristics developed by Hackman and Oldham (1975), to analyze the relationship between job characteristics and flow experiences for knowledge workers revealed no close relationship between the dimension of skill variety and the flow experience. However, if the job was monotonous, simple and routine, and it was difficult to motivate employee flow experiences. The job characteristics of knowledge workers were neither rudimentary nor overly complicated. However, every project was a new challenge for the employee involved. Although the task was simple, people loved to take new challenge, and looked forward to new challenge of the new project. Moreover, knowledge workers needed to pay considerable concentration to thinking, with solving the problem being the only objective. The characteristic of job completeness was related to knowledge worker flow experiences. Because the work of knowledge workers was goal oriented, the outcomes of former tasks influenced workers' motivation. Consequently, the importance of the work was related to knowledge worker flow experiences. Most knowledge worker tasks were mission oriented. Knowledge workers could have freer and more independent space to arrange their priorities and schedule, and their creativity could be stimulated to make jobs more challenging, and also to meet the characteristics of flow experience. Therefore, the autonomous dimensions of job characteristics and knowledge worker

flow experience were related. Finally, problem solving resulted from the work, and thus associated with their work performance. Therefore, knowledge workers enjoyed their flow experiences from work. Consequently, work feedback was related to the flow experiences of knowledge workers. Based on the above inference, this investigation proposed three theoretical propositions. First, the phase of thinking construction was the easiest phase for knowledge workers to enter into the flow experiences. Second, simple and routine work of a type that was unchallengeable was made it difficult for employees to produce flow experiences. Third, knowledge workers who focused on static work for a long time had ease entering flow state.

Based on the CPS developed by Gough for measuring interviewee personality traits, this study analyzed which knowledge worker personality traits made it easy for knowledge workers to produce flow experiences. Knowledge workers had the common personality traits, namely informal, broad interests, cautious and honest. However, when asked which personality trait made it easy for knowledge workers to produce flow experiences, subjects failed to express any common perspectives. Therefore, interviewees thought some personality traits made it easier for knowledge workers to produce flow experiences, but had no idea which personality trait make it easier for knowledge workers to enter the flow state, or which personality traits could produce differences in knowledge worker flow experience.

The influence on enterprise performance, caused by the flow experiences of knowledge workers, could be assessed based on work efficiency and work quality. This study concluded that flow experiences can benefit organizational or team work quality, while negatively influencing organizational or team work efficiency. Therefore, this investigation presented a theoretical proposition regarding which employee flow experiences could benefit organizational or team work quality, and which could negatively influence organizational or team work efficiency.

The interviews identified work factors as one of the factors with potential to make knowledge workers produce flow experiences, and furthermore job characteristics motivated knowledge workers to enter the flow state. Particularly, when members of a team or an organization shared common values, the flow experiences of knowledge workers could be motivated. This study thus proposed the theoretical proposition, namely that common values could produce flow experiences in knowledge workers.

The knowledge workers involved in the project should prioritize the goals of the entire team. Supervisors should establish a check point to provide an appropriate reminding in advance, and ask employees to adjust their method of working and the directions while enjoying the pleasure associate with flow experiences, neglect the direction of the project and deviate from their normal operating procedures. On the contrary, the supervisor is glad to see that their employees enjoy flow experiences provided the project has a clear direction and is proceeding on schedule. Because flow experiences help increase work quality, this study infers that flow experiences positively influence team performance. This study thus proposes that flow experiences positively influence on the team performance when project schedule and cost are controlled.

Recommendations

Enterprise operators look forward to constantly increasing employee performance, satisfaction, as well as enhancing team and organizational performance. Employees look forward to working in a workplace or environment that will cater to their working interests, and stimulate them to become involved in enjoying work. From the point of view of the flow experiences, the perception of job performance between enterprise operator and employee is not conflict through the job observation. However, further thinking should focus on how enterprises provide a benefit environment that lets employees produce flow experiences that increase their quality of work. On the other hand, under the circumstance while employees enjoy the flow experiences too much and their working efficiency and performance suffer as a result, supervisors should try to stop or adjust the employee attitude toward the flow experiences.

In terms of the theoretical proposition presented in this investigation, future works could adopt quantitative countermeasures for testing and verification, thus improving the realization and understanding of personality traits, whether job characteristics and work value affect knowledge worker flow experiences, and the influence of knowledge worker flow experiences.

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