

Leader's Role in Fostering Creativity: The Creativity Creation Model at KT AIT^{*}

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Abstract

To achieve innovation, constraints that block the effect of a company's creative culture on innovation and creativity in the organization have to be removed. We propose the creativity creation model that takes account of these constraints and suggest that, to cultivate an innovative climate,

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leaders should receive feedback from innovation performance. To improve creativity and achieve successful innovation, leaders should be involved in every procedure of the model. We explore the three main procedures of the model and present a practical application to the case of a Korean telecommunications company's research and development institute, KT AIT.

Keywords: creativity creation model, leadership, innovation performance

“Creativity is not something that can be ‘turned on’ at will, but rather by the result of long term exposure to an encouraging climate.”

D. Turnipseed

INTRODUCTION

The management of creativity and innovation has attracted the attention of both practitioners and academics (Byrne et al. 2009). According to IBM's 2010 global study on CEOs, CEOs cited creativity as the most important leadership quality and posited that executives should have creative leadership in an uncertain and volatile business world (IBM Institute for Business Value 2010). Although leadership is not directly related to innovation, it plays a role in fostering an innovative climate and facilitates a creative organizational culture, enabling firms to achieve innovation (IBM Institute for Business Value 2010; Vandael 2013). The creativity relationship model emphasized that fostering an innovative climate is a prerequisite for leaders to build a creative organizational culture and has thus become widely accepted (Vandael 2013).

However, efforts in fostering an innovative climate do not always guarantee improvement in employees' creativity and successful innovation. To create an environment of sustainable creativity and successful innovation, the constraints that hamper creativity need to be removed and feedback to leaders through innovation performance measurement. Therefore, the creativity creation model that addresses the limitations of the creativity relationship model is suggested.

KT, one of the largest information and telecommunications companies in Korea, has attempted to implement the creativity creation model to sustainably encourage creativity and achieve successful innovation. In this paper, we aim to explore how the

creativity creation model can be applied to KT's Advanced Institute of Technology (KT AIT), the company's research and development (R&D) institute, analyze the results, and draw strategic implications. By the connection of the creativity relationship model with creativity constraints removals and innovation performance measurement & feedback, we expect this paper helps understanding of innovation from a broad point of view. In addition, by introducing sustainable creativity with a loop structure of innovation into a real case, this paper is expected to suggest a realization possibility of the creativity creation model, and opportunities of developing academic researches about sustainable innovation.

In the following section, we briefly introduce KT AIT. In Section 3, we provide an overview of the creativity creation model. Next, in Section 4, we employ the creativity creation model to analyze KT AIT's performance in detail. Section 5 concludes and discusses managerial implications.

INTRODUCING KT AIT

KT, formerly Korea Telecom, was established in December 1981. It changed its CI (corporate identity) to KT in 2001, and it became a privatized enterprise in 2002. KT has become one of the major information and communication companies in Korea, offering high-tech services such as WiBro, IPTV, VoIP, Wi-Fi, and LTE-A.

A company in a mature industry, such as the information and telecommunications industry, cannot maintain a competitive advantage without innovation. Moreover, the industry's primary focus is high-technology services; hence, innovation in technology and services is highly important. For KT AIT, which plays a leading role in the R&D of future core technology and services, maintaining a competitive advantage through excellent innovation performance is key.

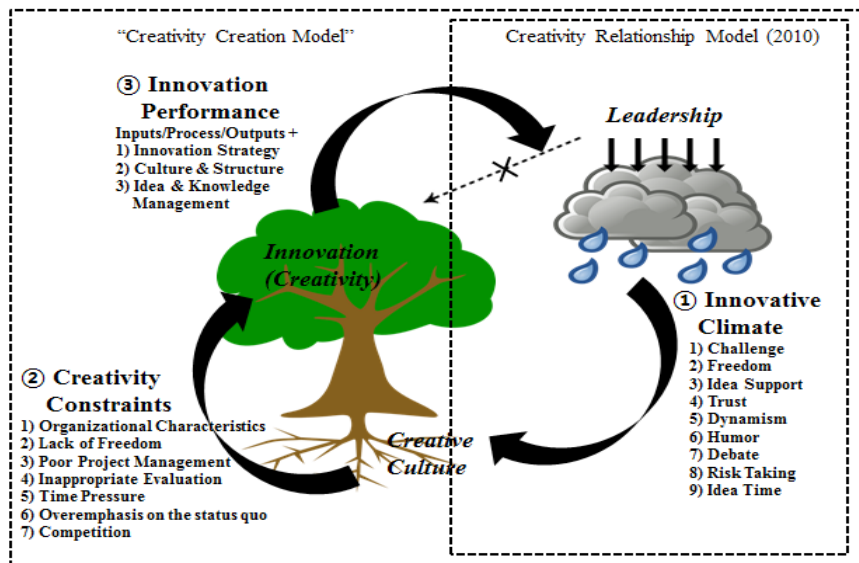
KT is a large corporation with many affiliates. A substantial amount of information is needed to study the innovation processes within the entire corporation, and this information is difficult to analyze. In this paper, we focus on KT AIT because it embodies an active creativity and innovation hub.

AN OVERVIEW OF THE CREATIVITY CREATION MODEL

Academics as well as practitioners in the business world recognize the importance of organizational climate and culture in fostering creativity and innovation (IBM Institute for Business Value 2010; Vandael 2013). Also, organizational climate moderates the relationship between leadership and innovation (Isaken and Akkermans 2011). An organization’s culture represents the deep, solid foundations of an organization, the “root of the tree” (see figure 1). The organization’s climate, which represents the organization’s behavior, attitudes, and feelings, affects the “root”. Analogously, an innovative climate affects the organization’s creative culture and, hence, its innovation performance. The creativity relationship model asserts that leaders should foster an innovative climate to develop a creative organizational culture.

The creative creation model, however, takes the creative relationship model a step further. It takes account of creativity constraints that block the effect of creative culture on innovation

Figure 1. The creativity relationship model and the creativity creation model



Source: M1 Creativity (2013)

and creativity. These constraints have to be removed to achieve innovation. In addition, according to the creative creation model, to cultivate the innovative climate, leaders should receive feedback from innovation performance. A feedback loop structure emerges. To improve creativity and achieve successful innovation, leaders should participate in every procedure of the creativity creation model. The three main procedures of the creativity creation model are fostering an innovative climate, removing creativity constraints, and providing innovation performance measurement and feedback.

Fostering an Innovative Climate

When innovation in organizations becomes difficult, leaders often ascribe it to the corporation's culture. However, they need to offer solutions despite the difficulties. We advance the view that leaders should foster an innovative climate to develop a creative corporation culture.

The nine requirements for fostering an innovative climate (Cheng and Huizingh 2013; Isaksen and Isaksen 2010) can be divided into three broader areas: values, behavior patterns, and communication. We address each requirement in more detail in table 1.

To satisfy the nine requirements for fostering an innovative climate, leaders should play several roles.

- 1) provide an institutional strategy to encourage and reward employees;
- 2) introduce a special program to improve the creativity of individuals, teams, and the organization;
- 3) introduce a system to make the creative environment more transparent;
- 4) employ a continuous diagnosis process and reinforce improvement;
- 5) promote open communication between employees, teams, and organizations.

Removing Creativity Constraints

We distinguish seven constraints that hamper creativity in organizations, and divide them into three groups: organization, process, and members (Isaksen, Dorval, and Treffinger 2010;

Table 1. Requirements for Fostering an Innovative Climate

Climate (areas)	Requirement	Explanation
Values	① Challenge & Involvement	- provide a long-term objective and vision. - induce employees' commitment, responsibility, and honor by expanding their participation
	② Freedom	- guarantee the independence of employees
	③ Risk taking	- admit mistakes (mistakes are ok)
Behavior patterns	④ Idea support	- listen, help, and build new ideas
	⑤ Dynamism & Liveliness	- try and change with novelty (no project, no change)
	⑥ Idea time	- time to demonstrate novel creativity
Communication	⑦ Trust & Openness	- share enough ideas - recover trust with honesty and truthfulness
	⑧ Humor	- spontaneous behavior at the workplace - comfort
	⑨ Discussion & Debate	- think through discussion - share diverse experiences

Onarheim and Biskjaer 2013). We discuss these constraints in more detail in table 2.

Integrated thinking, which organically links the organization, process, and members, allows leaders to remove these constraints. Leaders should spend more time and effort on removing the constraints of members. These constraints are more difficult to remove than constraints of the organization and the process. To remove constraints, leaders must play the following roles:

- 1) create a mechanism of deliberation about new ideas and a climate of mutual cooperation in the organization;
- 2) provide management, evaluation, and reward systems for innovative projects and freedom for problem-solving from diverse perspectives;

Table 2. Creativity Constraints

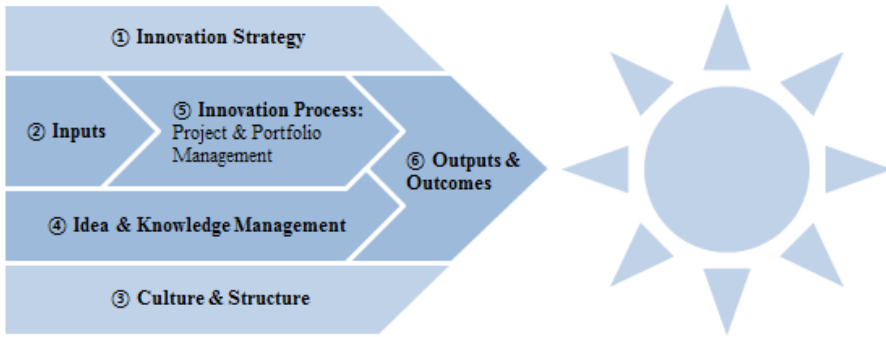
Division	Constraints	Explanation
Organization	① Various organizational characteristics	- lack of cooperation between job levels - lack of classifications for innovation - passivity of innovation
	② Competition	- competition in organization due to a self-defensive attitude
Process	③ Poor project management	- uncertain direction setting - lack of communication technique - excessively tight management
	④ Time pressure	- insufficient time - heavy workload compared to time allowed
	⑤ Inappropriate evaluation	- unfair evaluation procedure - focus on criticism and external evaluation
	⑥ Lack of freedom	- lack of control in work and ideas - lack of freedom regarding what work to do and how
Members	⑦ Overemphasis on the status quo	- adherence to one's own work style - attitude of avoiding risk-taking

3) provide feedback, acknowledgement, and rewards for creative work.

Innovation Performance Measurement and Feedback

For creative innovation to be a sustainable phenomenon, rather than a single occurrence, establishing procedures to measure innovation performance and provide feedback to leaders is necessary. In addition, to measure comprehensive innovation activities, performance measurement should consider leaders' innovativeness and be extended beyond a simple "input-process-output" procedure. Therefore, the measurement should reflect strategic paths and leadership as well as organizational culture and climate. A framework for innovation, Key Performance Indicator (KPI), is shown in figure 2, and we provide a detailed explanation of this innovation-performance measurement framework in table 3(Detecon

Figure 2. A synthesized framework for innovation KPI (Key Performance Indicator) deployment



Source: Detecon Consulting (2013)

Table 3. Innovation-Performance Measurement Framework

Areas of the 6-Dimensional Model	Explanation
① Innovation strategy	- evaluate measurement of strategic pathway and leadership
② Inputs	- budget and manpower involved in innovation activities - measure innovative work behavior
③ Culture & structure	- measure organizational culture and climate perceived by members and the leadership style of the manager
④ Idea & knowledge management	- measure the number of ideas produced and the rate of idea transformation
⑤-1 Portfolio Management	- measure the number of tasks proposed by a business unit and cooperate with an innovation center - measure the balance of portfolios
⑤-2 Project Management	- measure the number of tasks transferred to commercialization and a secured budget
⑥ Outputs & outcomes	- the rate of projects that commercially succeed in sales, profitability, or cost reduction through innovation - measure the number of users of innovative products

Consulting 2013; Schepurek and Dulkeith 2013).

From the leaders' point of view, feedback on the measurement in the six areas listed in table 3 is highly important because it directly affects the leadership and innovative climate in the subsequent period in the creativity creation model. Leaders responsible for fostering an innovative climate should reflect on the feedback; thus, the loop structure of the creativity creation model is activated.

THE CREATIVITY CREATION MODEL IN THE KT AIT CASE

Creating an of Innovative Climate in KT AIT

We compare KT AIT's activities with the requirements for an innovative climate. KT AIT has exerted great effort to satisfy the requirements. As we show in table 4, despite adopting diverse measures and organizing diverse events, some of the requirements are not satisfied. For example, despite adopting several projects, freedom is a criterion that has not been satisfied. Further, KT AIT's activities have not fostered risk-taking. Although the Open Action Day was held, employees' level of satisfaction in terms of humor was average.

As shown in table 4, KT AIT's strengths in fostering an innovative climate are challenge & involvement, idea support, dynamism & liveliness, idea time, trust & openness, and discussion & debate. The weaknesses of KT AIT are freedom, risk-taking, and humor. In sum, although KT AIT has exerted effort to improve its climate in terms of behavior patterns, its effort to improve the climate of communication and values, such as freedom and risk-taking, are somewhat insufficient. Therefore, leaders should put more effort into satisfying the requirements in the areas of communication and values, while maintaining their efforts in the area of behavior patterns.

Removing Creativity Constraints in KT AIT

KT AIT has repeatedly addressed barriers to improving creativity. For example, KT AIT set new guidelines for R&D and better project management, taking advantage of a public hearing to gather opinions. A creative business project helped allotting time

Table 4. Comparison between the requirements of an innovative climate and KT AIT's activities

Climate	Requirement	KT AIT activity examples	Comparison (outcome)
Values	① Challenge & involvement	- Creative Business Project - I-Challenger/mentor system	●
	② Freedom	- Creative Business Project - Inno+ project	▲
	③ Risk taking	- Creative Business Project	X
Behavior patterns	④ Idea support	- Creative Business Project - distinguished seminar	●
	⑤ Dynamism & liveliness	- open lab for cooperation - global R&D cooperation network - R&D manpower pool system	●
	⑥ Idea time	- Creative Business Project - I-Challenger/mentor system	●
Communication	⑦ Trust & openness	- Creative Business Project - knowledge management and sharing system	●
	⑧ Humor	- Open Action Day in the first (second) half of the year	▲
	⑨ Discussion & debate	- Creative Business Project - I-Challenger/mentor system	●

(●: Excellent, ▲: Average, X: Insufficient)

for research to employees. KT AIT also introduced appropriate evaluation systems. In table 5, we present an overview of KT AIT's activities designed to address constraints to creativity.

Most efforts related to process are successful; the ongoing effort of introducing systems and projects also succeeds at removing barriers. However, the lack of freedom still exists as one of the major constraints. Constraints related to the organization and members also remain. Various organizational characteristics and an overemphasis on the status quo are somewhat moderated, however, it was not enough to remove such constraints and is not clear whether there is effort to decrease competition.

In sum, KT AIT strengths lie in addressing poor project management and inappropriate evaluation. Activities aimed at

Table 5. Comparison between constraints of creativity and KT AIT's activities

Division	Constraints	KT AIT activity examples	Comparison (outcome)
Organization	① Various organizational characteristics	- rewards to outstanding organization	▲
	② Competition	-	X
Process	③ Poor project management	- clear Guidelines for Research & Development ('13. 3) - converge opinions through public hearing	●
	④ Time pressure	- offer free time for research with Creative Business Project	▲
	⑤ Inappropriate evaluation	- establishing a fair evaluation system such as PEMS	●
	⑥ Lack of freedom	-	X
Members	⑦ Overemphasis on the status quo	- encourage the sense of being in control of one's work and ideas in the organization	▲

(●: Excellent, ▲: Average, X: Insufficient)

mitigating various organizational characteristics, time pressure, and overemphasis on the status quo must be reinforced and complemented. KT AIT's weaknesses pertain to competition and lack of freedom. To encourage creativity and achieve successful innovation, leaders should urgently introduce improvement programs.

Measuring Innovation Performance and Feedback in KT AIT

According to KT AIT's guidelines for the research and development, KT measures performance by input, process, and output centrically (see table 6).

Although KT AIT retains traditional indicators of the "input-

process-output” procedure, there are no measurement indicators for innovation strategy and culture & structure. For measures of comprehensive innovation activities to reflect leaders’ innovativeness, the model requires performance indicators that measure these dimensions.

With respect to performance indicators, the strengths of KT

Table 6. Comparison between KPI dimensions and whether KT AIT retains them

Areas of the 6-Dimensional Model	KPI (Key Performance Indicator)	Whether KT retains them (outcome)
① Innovation strategy	- innovativeness, risk-taking, trust of leaders, etc.	X
② Inputs	- expenses or ratio of labor invested in R&D	●
③ Culture & structure	- discover novelties - whether vision exists, clarity of vision	X
④ Idea & knowledge management	- the number of high-quality ideas generated from divisions - the number of patents - the final number of selected ideas that bring fund investment - the number of projects that welcome customers’ opinions	▲
⑤-1 Portfolio management	- NPV (net present value) as a result of a project investment cost - balance of portfolios of long-term/short-term, risk, and scale	●
⑤-2 Project management	- schedule - the rate of projects transferred to the business division - the rate of first/early entry in the market	●
⑥ Outputs & outcomes	- sales, profitability, cost reduction through innovation - the rate of new products/new business sales - the rate of projects that succeed in commercialization	●

(●: Excellent, ▲: Average, X: Insufficient)

Table 7. KPI (Key Performance Indicator) related to leadership (a suggestion)

Dimension	KPI	Measurement
① Innovation strategy	Entrepreneurial orientation	- innovativeness, risk taking, scale of progressive spirit. (Examples: reliable marketing of product/service, R&D, technical leadership, innovation activities of executives)
	Transformational leadership	- Do organization members trust the leader? - Does the leader have the ability to present a new vision?
② Culture & structure	Organizational climate	- Does the team always advance to find new answers? - What is the team's vision? Is the vision clear?
	Participative leadership	- Are work decisions made after a discussion? - What is the degree of members' participation in decision making?

Source: Detecon Consulting (2013)

AIT are inputs, portfolio management, project management, and outputs & outcomes. KT AIT demonstrates weaknesses with regard to innovation strategy, and culture & structure; these indicators should be adopted soon.

We suggest KT AIT implements a new innovation-performance measurement related to leadership, specifically, in the areas of strategy and culture. We provide more detail in table 7 (Detecon Consulting, 2013). With measurements of entrepreneurial orientation, transformational leadership, organizational climate, and participative leadership, KT AIT is expected to have appropriate system to evaluate performance of leadership. Feedback of the performance measurement including new items related to leadership would provide opportunities to perform appropriate leaders' role.

CONCLUSIONS AND IMPLICATIONS

In this paper, we present the creativity creation model and analyze KT AIT's performance in each component of the model. We show both the strengths and weaknesses of KT AIT's implementation, and present recommendations to leaders. We identify the strengths, where efforts should be maintained, as well as the weaknesses that should be addressed by adopting new programs.

Although leaders of KT AIT have been committed to improving creativity and innovation performance, the level of creative innovation performance is somewhat low. To improve creativity, we emphasize the role of strong leadership abilities.

First, in fostering an innovative climate,

Leaders should (a) offer autonomy to employees and improve individual decision-making capability;

(b) foster a climate where humor in the workplace is welcome, and members' spontaneous creativity encouraged;

and (c) have a generous attitude toward ambiguity and uncertainty, and encourage and support employees in discovering new ideas.

Second, to remove creativity constraints,

leaders are expected to (a) remove suppression by granting employees freedom of decision regarding what to do and how to work;

(b) offer a proper evaluation and reward system to prevent inappropriate evaluation;

and (c) resolve the excessive emphasis on status quo by encouraging a personal work style and risk-taking.

Third, when providing innovation-performance measurement and feedback,

leaders are encouraged to (a) not only conduct traditional evaluation such as the "input-process-output" procedure, but review the introduction of new performance indicators, including entrepreneurial orientation, transformational leadership, organizational climate, and participative leadership;

and (b) provide feedback concerning innovation-performance results, and align their role according to this feedback.

The creativity creation model offers leaders a transparent way to

improve creativity and innovate successfully. The three main aspects of the model are fostering an innovative climate, removing creativity constraints, and providing innovation performance measurement and feedback. By satisfying the requirements of each of the three aspects, firms can achieve creativity and innovation development. Further, we identify the role of leaders in improving creativity. The process of creative innovation should not end with a single instance of creativity; rather, it should be sustainable and form a loop structure.

The practical application of the creativity creation model helps executives understand the creativity creation model more deeply. In particular, leaders of KT AIT are able to identify which requirements are fulfilled and to what degree. On the path to successful innovation, leaders should exert effort to satisfy a number of requirements. The suggested leadership abilities are a key ingredient of more successful innovation in organizations through high levels of creativity.

The model can be adopted in any company that values creativity and innovation. Comparing the requirements of fostering innovative climate, removing creativity constraints, and measuring innovation performance & feedback with their organizations, managers can find out strengths and weaknesses of them. With such evaluation, managers can identify, revise, and improve their weaknesses. If leaders play the role suggested by the creativity creation model, companies are expected to achieve a sustainable interaction between creativity and innovation.

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