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To cite this article: In-Ho Stephen Kim (2017): Dynamic management view: logic of profit seeking based on adaptation to technological change and needs evolution through needs-focused innovation, Technology Analysis & Strategic Management, DOI: [10.1080/09537325.2016.1278072](https://doi.org/10.1080/09537325.2016.1278072)

To link to this article: <http://dx.doi.org/10.1080/09537325.2016.1278072>



Published online: 13 Jan 2017.



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# Dynamic management view: logic of profit seeking based on adaptation to technological change and needs evolution through needs-focused innovation

In-Ho Stephen Kim

Hanyang University ERICA Campus, Sangnok-gu, Ansan Gyeonggi-do, South Korea

## ABSTRACT

Scrutinising well-known models/theories in strategic management, this paper proposes dynamic management view (DMV) on the premise profit comes from adaptation to technological change and needs evolution through needs-focused innovation in a dynamic world. It firstly sets up the theoretical framework of DMV by taking business model to embrace explicit needs (the ultimate source of profit) and needs-focused innovation (the ultimate driver of profit seeking) as the very causal mechanism at the micro-foundations level, and technological change and needs evolution as the direct causal mechanisms of profit at the macro-foundations level from which it draws the universal and contingency rules of needs-focused innovation, derives the propositions about the adaptive goodness between explicit needs and needs-focused innovation, shows it works as the determinant of profit with the industrial experiences, and concludes DMV provides the rationale for a firm's sustainability, the strategic decision rules for business model innovation and the theoretical foundation to build dynamic theory of profit seeking.

## ARTICLE HISTORY

Received 30 September 2015  
Revised 6 November 2016  
Accepted 22 December 2016

## KEYWORDS

Dynamic management view; technological change and needs evolution; needs-focused innovation; adaptive goodness

## Introduction

No one can deny that every firm wants to be sustainable. Yet a powerful renowned firm/business becomes waned abruptly in a flash, and an unknown firm suddenly appears and waxes so rapidly. We know that the rise and fall of the firm as phenomena are closely related to technological change that influences performance (Bierly and Chakrabarti 1996; Christensen and Bower 1996; Zaheer and Bell 2005; Hauser, Tellis, and Griffin 2006; Teece 2010; Evanschitzky et al. 2012).

Nowadays the domain of strategic management since its inception becomes so broad, the boundaries are expanding, and the relationships within and without organisations become more interacting and interdependent. Accordingly, value creation and profit seeking are being used interchangeably as the purpose of the firm without distinction, preferring value creation to profit seeking. And firm performance becomes an inclusive construct to embrace various indicators of outcome, including that of value creation and profit seeking. Yet almost all the theories in strategic management still rest on the standpoint of reductionism to focus on the element itself in a model. That is, well-known theories except evolutionary economics (EE) stay within the realm of *ceteris paribus* model to explain firm performance. Of course EE (Nelson and Winter 1982) deals with the relationship between technological change (i.e. external force) and routines (i.e. internal factor). Despite its

**CONTACT** In-Ho Stephen Kim ✉ [ihkim@hanyang.ac.kr](mailto:ihkim@hanyang.ac.kr) 📍 Hanyang University ERICA Campus, # 55 Hanyangdaehak-ro, Sangnok-gu, Ansan Gyeonggi-do 426-791, South Korea  
This article was originally published with errors. This version has been corrected. Please see Corrigendum (<http://dx.doi.org/10.1080/09537325.2017.1290098>).

strong and convincing aspects as holism-based theory, it never pays any attention to customer needs in the market, assuming implicitly that a customer is a passive responder and/or customer needs are homogeneous. In short, the well-known theories focus on value creation rather than on profit seeking, treating the mechanism of profit seeking as black box (Figure 1).

Recently there raise voices to emphasise the relationship between technology and firm performance via business model (Baden-Fuller and Stefan 2013). Yet there is no theory to explain profit seeking via any forms, including business model as the mode/way/method/framework of making profit/money.

In dealing with profit as outcome, there might be so many causes of profit, which can be divided into two large groups in terms of 'How do they affect profit, directly or indirectly?': (1) the causes directly to affect profit are *the very cause of profit* as independent variable of the causal relationship at the micro-foundations level and *the causes as moderating variables* to alter the causal relationship at the macro-foundations level and (2) the causes indirectly to affect profit are the causes as independent, mediating or moderating variable at the macro-foundations level to explain the very cause of profit (Figure 2).

In short, to explain profit directly as outcome it should take *the very cause of profit* as independent variable of the causal relationship at the micro-foundations level and also *the causes as moderating variables* to alter the causal relationship at the macro-foundations level, for they directly affect profit in some circumstances whenever such moderating variables happen. On the other hand, the other causes indirectly to affect profit might be taken as independent, mediating or moderating variables when the very cause of profit is needed to be identified or specified in more detail in some circumstances.

Now almost all the researches in strategic management take the causes in an egalitarian manner without distinction among the very cause, the moderators and the other indirect factors. And they also do not take into account 'What affects profit, directly or indirectly?' This might be due to the influence of reductionism to focus on individual element itself and/or egalitarianism to treat the elements equal.

With these recognitions, scrutinising the theories about firm performance, this paper proposes dynamic management view (DMV) as logic of profit seeking on the premise that profit comes

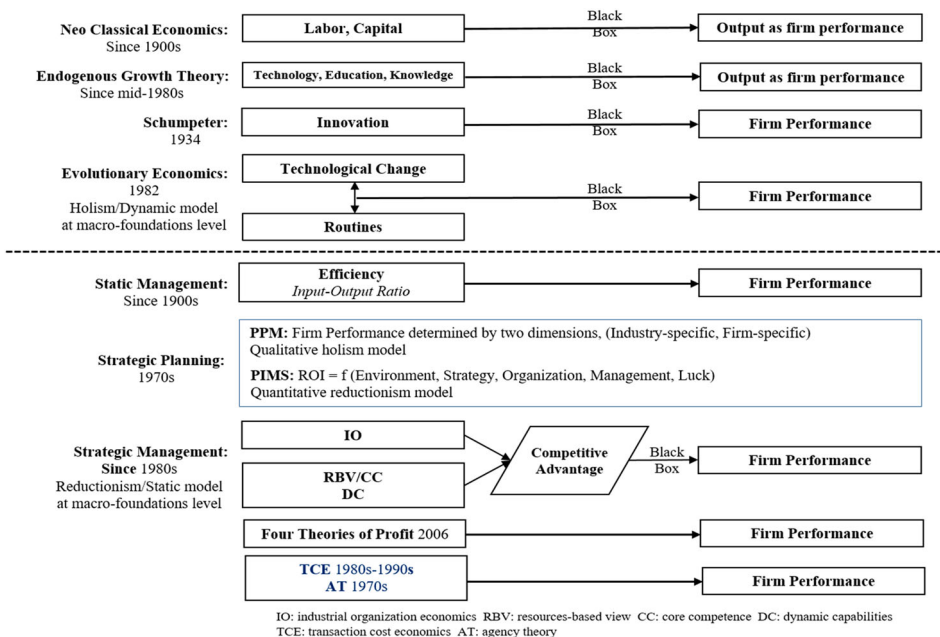
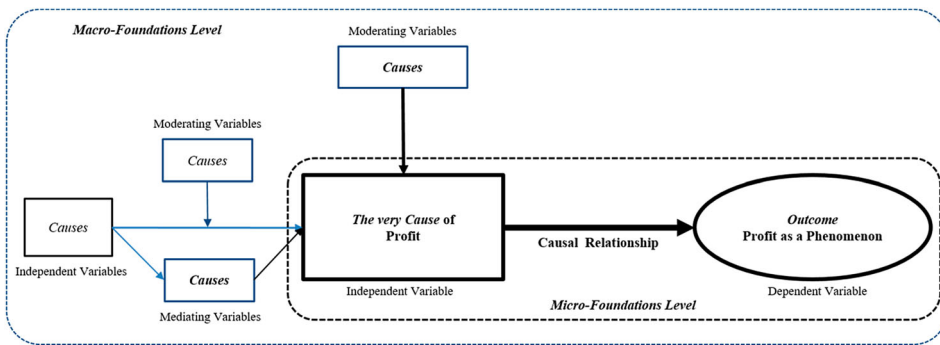


Figure 1. Overview of well-known theories about firm performance.



**Figure 2.** Causes of profit as outcome and a phenomenon.

from the adaptation to technological change and needs evolution through need-focused innovation at the micro-foundations and macro-foundations levels simultaneously. And this paper firstly builds a theoretical framework of DMV from which it draws the universal rules of innovation at the micro-foundations level and contingency rules of innovation at the macro-foundations level. It also derives a grand proposition from the universal and contingency rules of innovation, sets up the propositions about needs-focused innovation, shows some examples about them in information and communications technology (ICT) industries and success/failure businesses including the ones that abruptly wane and the ones that suddenly rise, and concludes how effectively DMV works as a logic of profit seeking, as a rationale for explaining the rise and fall of the firm, and as a theoretical foundation for business model design and innovation.

## Literature review

This paper scrutinises well-known theories/models in terms of the nature of firm, individual in an organisation, market, industry, industry evolution, profit seeking mechanism, decision-making mode, the philosophical standpoint, applicability and level of analysis, and it also characterises them briefly based on holism/reductionism, static/dynamism, coverage of firm and/or industry level, the rationale, focal points and level of theorising (Table 1).

### Characteristics of well-known theories/models

Holism and reductionism are two opposing approaches in the theory of systems that are used also in the theory of management: (1) holism holds a set of elements as a whole, namely the entire system where the relationship between/among elements makes senses rather than the element itself does and (2) reductionism focuses on the element itself and reduces the system exploration to understanding its key parts/elements, assuming the whole is the sum of the parts/elements. Reductionism works effectively only in a linear world, while holism does in a non-linear world. Therefore, in dealing with firm performance in a dynamic environment, holism is superior to reductionism.

Now let's pinpoint the characteristics of well-known models/theories in terms of two dimensions: Reductionism-holism and static-dynamic; reductionism-holism and firm-industry level; reductionism-holism and intuition-based or theory-backed rationale; reductionism-holism and focal points; reductionism-holism and level of theorising.

#### (1) Static-dynamic/reductionism-holism

According to two dimensions, standpoints of holism/reductionism and static/dynamism, almost all the existent models/theories belong to reductionism/static yet dynamic capabilities (Teece,,

**Table 1.** Characteristics of well-known models/theories to explain firm performance.

	NCE	RBV/CC/DC	IO	TCE	AT	EE
What firm is	Black box	Collective agent of resources	Entity of competition	Coordinator of transaction cost	Nexus of contracts	Collective Agent of routines
Firm as an organisation	Homogeneous	Heterogeneous	Implicitly heterogeneous	Implicitly heterogeneous	Implicitly heterogeneous	Heterogeneous
Individual in an organisation	Rational economic-man with hyper-rationality	Implicitly man with bounded rationality	Implicitly man with bounded rationality	Implicitly man with bounded rationality	Implicitly principal and agent with bounded rationality	Implicitly social man with bounded rationality
What industry is	Market/competitive structure	No considering	Competitive structure	No considering	No considering	Bio-ecological system
Market as place for	Exchange between producer and customer	Making sure competitive survival	Obtaining competitive position	Coordinating transaction costs	Corporate governance	Survival of the fittest
Industry evolution depends upon	No considering	No considering	No considering	No considering	No considering	Technological change and routines
Static/dynamic	Static	Static/dynamic	Static	Static	Static	Dynamic
Decision-making mode	Optimisation	Implicitly satisficing	Implicitly satisficing	Implicitly satisficing	Game theory	Adaptive efficiency
Mechanism to explain profit	Profit function (deterministic)	Competitive advantage	Competitive advantage	Corporate governance	None	Competitive selection
Philosophical standpoint	Reductionism	Reductionism	Reductionism	Reductionism	Reductionism	Holism
Applicability	In all circumstances	In some circumstances	In some circumstances	In all circumstances	In all circumstances	In some circumstances
Level of analysis	Macro-foundations	Macro-foundations	Macro-foundations	Macro-foundations	Macro-foundations	Macro-foundations

Note: NCE, neo-classical economics; RBV, resource-based view; CC, core competence; DC, dynamic capabilities; IO, industrial organisation economics; TCE, transaction cost economics; AT, agency theory; EE, evolutionary economics.

Pisano, and Shuen 1997) (DC) belongs to reductionism/dynamic and EE (Nelson and Winter 1982) holism/dynamic. In the sense that profit can be earned through innovation meeting customer needs in a dynamical turbulent environment, DC and EE must be nearer to the reality. Between them EE must be more persuasive than DC yet EE never pays any attention to a customer, implicitly treating him/her as a prey of the successful one in adapting to technological change with routines.

## (2) Firm-industry level/reductionism-holism

In the sense that profit comes from both firm and industry level, EE, profit impact of marketing strategy (PIMS) and four theories of profit (Makadok 2011) are preferable to others. Here four theories of profit intuitively deal with causal mechanisms, *competitive advantage*, *rivalry restraint*, *information asymmetry* and *commitment timing* as sources of profit, yet it belongs to reductionism with a question, 'Are these causal mechanisms real sources of profit?'

And PIMS model (Schoeffler, Buzzell, and Heany 1974) deals with both firm and industry levels yet it belongs to reductionism as a linear mathematical model.

On the other hand, EE must be a stronger one to explain firm performance than others, yet it confines to when a firm has more bargaining power than a customer does, without taking into account customer side.

## (3) Intuition-based or theory-backed rationale/reductionism-holism

In the sense that a model/theory should be based on a rational process, the theory-backed one is superior to the intuition-based one, and holism is more powerful than reductionism. Almost all are from intuition-based one and EE, transaction cost economics (TCE) and agency theory (AT) are theory-backed ones, and yet EE must be the holistic one with a strong explanatory power, while TCE (Williamson 1981) and AT (Eisenhardt 1989) stay in the realm of reductionism.

## (4) focal points/reductionism-holism

In the sense that customer needs is the only source of profit, the existent ones to focus on competition or internal factors are not sufficient to explain profit seeking directly, especially when needs evolution occurs so frequently and/or a customer has stronger bargaining power than a firm does. Yet there are a few among well-known theories to deal with customer needs in depth as a focal point.

## (5) Level of theorising/reductionism-holism

In the sense that the higher level of theorising, the stronger the explanatory and predicting power, neo-classical economics and endogenous growth theory (Farmer 1999) as a functional model has merits respectively. Yet each has also demerits not to reflect the real problems due to rigid and lots of assumptions. From theorising level point of view, EE must be the desirable one yet it has a significant problem not to deal with the market/customer side at all. (Here, level of theorising becomes higher successively from classificatory model to typological to contingency to linear combination to functional one.)

## ***Status of the existent theories in terms of level of analysis and coverage of application***

Most of the existent models/theories in business management and economics, resource-based view (RBV), core competence, DC, industrial organisation (IO), disruptive technology, blue ocean, open innovation dealing with firm performance as an inclusive construct without distinction of value creation and profit seeking belong to reductionism at the macro-foundations level, but EE and Keynes' general theory belong to holism at the macro-foundations level. Only business model canvas

		Coverage of Application	
		Contingency in some circumstances	Universality in all circumstances
Level of Analysis	Directly explain Outcome at Micro-foundations and Macro-foundations levels	Holism <i>Relationship</i>	None
	Directly explain Outcome at Micro-foundations level <i>The very Cause of a Phenomenon</i>	Holism <i>Relationship</i>	BMC, LS
	Indirectly explain Outcome at Macro-foundations level <i>Causes of a Phenomenon</i>	Holism <i>Relationship</i>	EE
		Reductionism <i>Element itself</i>	KGT

RBV: resource-based view CC: core competence DC: dynamic capabilities DT: disruptive Innovation  
 BO: blue ocean OI: open innovation IO: industrial organization economics  
 NCE: neo-classical economics TCE: Transaction Cost Economics AT: agency theory  
 4TP: four theories of profit PIMS: profit impact of management strategies  
 EE: evolutionary economics KGT: Keynes' general theory  
 BMC: business model canvas LS: lean startup

**Figure 3.** Status of the well-known theories in terms of level of analysis and coverage of application.

(Osterwalder and Pigneur, 2010) and lean startup (Ries, 2011) belong to holism at the micro-foundations level. In terms of level of analysis and coverage of application, there is no theory yet to deal with profit seeking that is applicable in all circumstances at the micro-foundations level and in some circumstances at the macro-foundations level simultaneously (Figure 3).

## Theoretical framework of DMV

### Profit seeking rather than value creation

Value creation implicitly focuses on contribution to the society through maximising the value of both the external and internal stakeholders, whereas profit seeking explicitly focuses on maximising the profit for internal stakeholders and especially stockholders among external stakeholders. Value creation and profit seeking usually go together yet even a big value creator might bring about loss or even a big profit seeker might contribute nothing at all or negatively contribute to the society.

Social contribution depends intrinsically upon 'to do business in which industries and how widely/deeply to take internalization'. And industries can be classified into three groups: positive-sum industries such as agriculture, manufacturing, services or other industries in real economy; zero-sum industries such as money derivatives in money economy, futures, options, lottery or gambling; negative-sum industries such as decadence or narcotic (drug).

Therefore, value creation mainly depends on the choice of industry, while profit seeking relies on the innovation to meet customer needs. And value creation depends on its related stakeholder's subjective judgment and profit seeking on an objective evaluation by market customers. Most theories/models in strategic management have so far emphasised value creation rather than profit seeking. However, from 'without profit, no firm can survive' and 'without a firm's survival, no value creation can be expected' point of view, profit seeking must take precedence over value creation.

### Theoretical framework of DMV at the micro and macro-foundations level

There are so many causes to affect profit as outcome. And profit seeking depends on the causal relationship between the very cause of profit (independent variable) and profit (dependent variable) at the micro-foundations level in all circumstances, and also on the moderators among the causes to alter that causal relationship at the macro-foundations level in some circumstances.

What is the very cause of profit? This paper takes the relationship between the source of revenue/profit (customer needs with purchasing power and willingness to pay, so-called explicit needs in this paper) and the driver of profit seeking (needs-focused innovation) as the causal mechanism of profit at the micro-foundations level, for it always works as the determinant of profit and forms the backbone of business model. (Here, business model refers to the mode/way/method/framework of making profit/money.) Therefore the relationship as the backbone of business model should be kept in the best condition through innovation in any circumstances. In fact, this proposition embraces the universal rules of needs-focused innovation on which profit seeking always depends. Accordingly, the universal rules of needs-focused innovation can always be used as strategic guideline for business model design in all circumstances.

On the other hand, at the macro-foundations level there might be the moderators to alter business model as the causal mechanism of profit at the micro-foundations level. When something like technological change and needs evolution and competition happen as the moderators in some circumstances, it might alter the causal mechanism of profit significantly. Therefore when such a thing happens as a moderator at the macro-foundations level, business model should become fit well with that moderator through innovation. This proposition embraces the contingency rules of needs-focused innovation according to which business model innovation should be done when such a moderator happens.

The theoretical framework of DMV should cover the universal rules of innovation at the micro-foundations level and the contingency rules of innovation at the macro-foundations level simultaneously to explain profit seeking directly in a general manner (Figure 4). (In this paper it assumes that generality prevails over when the universal and contingency rules are met together simultaneously.)

### Universal rules of needs-focused innovation at the micro-foundations level

Profit seeking basically depends on 'where revenue/profit comes from (i.e. the source of revenue/profit) and through what a firm extracts profit/revenue from there (i.e. the driver of profit

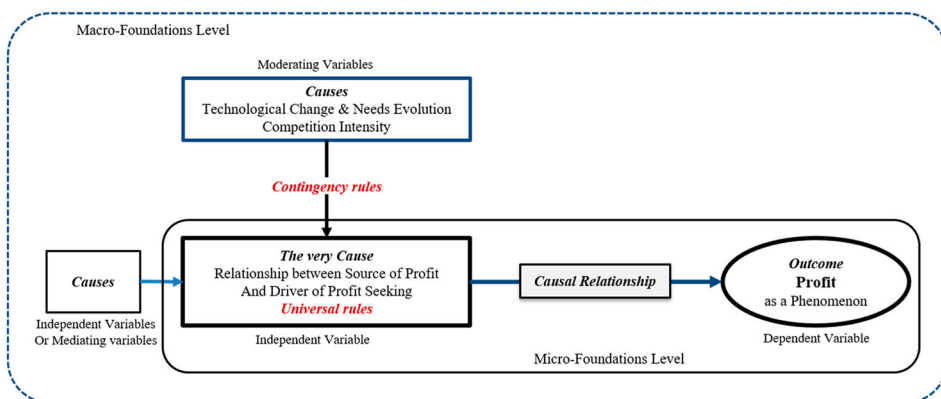


Figure 4. Theoretical framework of DMV at the micro- and macro-foundations levels.



seeking)'. Unless a customer has needs with willingness to pay/purchase (WTP) as well as purchasing power, no firm can earn revenue/profit at all. And even though a customer has WTP, unless a firm has dynamic competence to meet explicit needs, no firm can ever earn revenue/profit. Therefore, in order to explain profit seeking directly there requires two constructs: explicit needs as the ultimate source of profit; dynamic competence through which a firm extracts revenue/profit out of explicit needs (Kim 2011, 2015b).

In short, it can be said that profit is the result (i.e. outcome) of dynamic competence at ending time determined by needs-focused innovation (i.e. cause) to meet explicit needs over time based on firm competence at starting time (i.e. initial condition) (Kim 2010).

### ***Explicit needs as the ultimate source of profit***

"A human's needs originally exists as latent needs." When there is an increase in disposable income, latent needs become waiting needs. Yet waiting needs still cannot be met right away due to lack of technology. When there emerges technological change (Pavitt 1984; Freeman and Soete 1997) to trigger waiting needs to be met technologically, that waiting needs become actual needs. And actual needs consist of various needs attributes, which can be classified into two groups: basic needs attributes (BNAs); appealing needs attributes (ANAs).

BNA is the 'Must-be' needs attributes without which no customer has any interest at all in the solutions/product a firm produces/provides. In fact, unless BNA can be met fully, no customer has WTP, showing indifference to solution/product a firm produces/provides.

New ANA might emerge, when technological change happens. A technological change doesn't always trigger ANA yet ANA never emerges without technological change. ANA brings about customer satisfaction and 'unmet ANA' gives rise to customer dissatisfaction. Even though ANA is very attractive and appealing to customer, unless BNA is fully met 100%, no customer has WTP.

Actual needs become the source of revenue/profit only when a customer has WTP. It does mean that actual needs may become or may not become the source of revenue/profit. Actual needs become the source of revenue/profit especially when a firm has stronger bargaining power than a customer. When a customer has stronger bargaining power than a firm, he/she might have WTP or may not have WTP according to whether BNA is fully met 100% or not.

If BNA is not fully met, it is indifferent needs. If BNA is fully met 100%, and ANA starts to be met, a customer has WTP, forming explicit needs as the ultimate source of revenue/profit. On the other hand, when both ANA and BNA are fully met 100%, a customer has the maximum level of WTP, getting excited.

In terms of ANA and BNA, there can be three axioms as follows:

Axiom 1: ANA brings about customer satisfaction and unmet ANA does customer dissatisfaction.

Axiom 2: Unmet BNA never makes a customer have WTP.

Axiom 3: When both ANA and BNA are 100% fully met, a customer has the maximum level of WTP.

Based on these axioms, WTP model can be set up, which provides strategically very meaningful ideas about profit seeking such as WTP function; WTP curves; transaction conditions; The Best as the maximum WTP; Seek the Best and Get-to-the Best (Figure 5).

WTP function can be recognised as a function of *unmet ANA* within customer satisfaction zone; WTP curve depends on 'how WTP is sensitive to change of "unmet ANA"', like a fine article is sensitive and a daily necessity insensitive, taking a non-linear curve; Transaction conditions within customer satisfaction zone can be expressed as  $Cost < WTS \leq Price \leq WTP$

Where WTS stands for 'willingness to supply'; The maximum WTP refers to the set of (ANA 100%, BNA 100%); The Best stands for the case of *The maximum WTP at lowest or lower cost* from a bounded

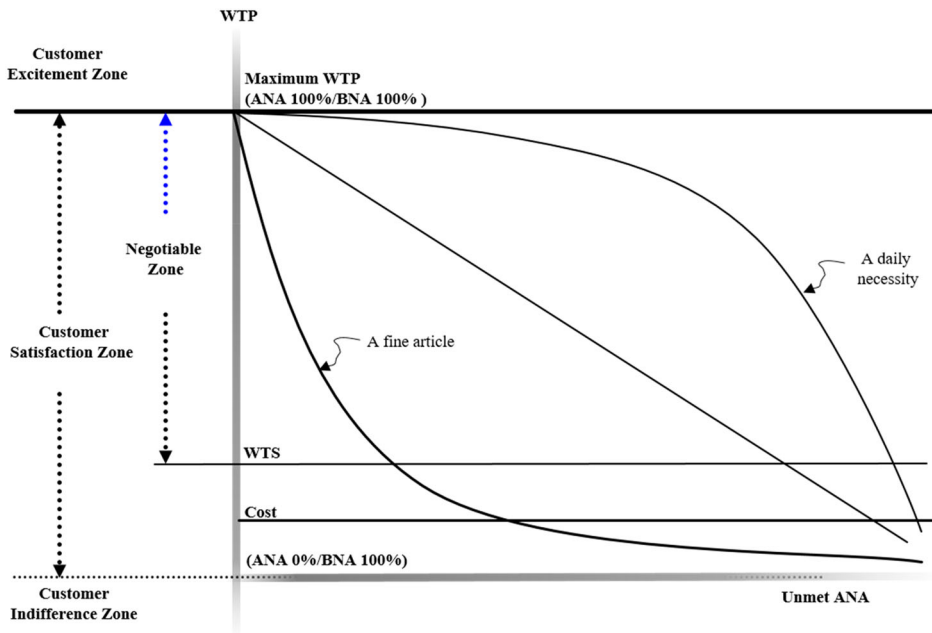


Figure 5. WTP model.

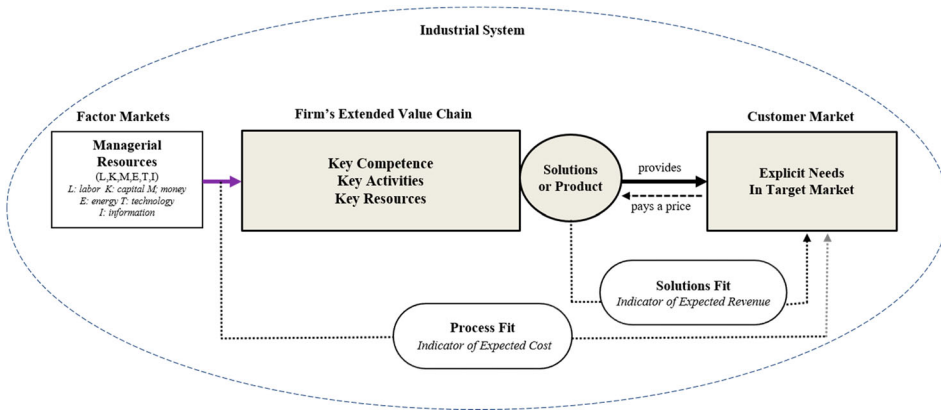
rationality point of view and *Seek the Best and Get-to-the Best* can be used as the strategic guideline of needs-focused innovation.

### ***Needs-focused innovation as the driver of profit seeking***

In regard to innovation, Schumpeter (1934) advocates innovation itself as the very driver of economic growth/development without saying anything about market/competition. There had been few assertions about innovation, before it started to emerge voices about innovation in the 1970s. Since then on, various kinds of innovation models/theories were introduced yet most of them stayed at the level of classificatory or typological model to focus on the nature of innovation itself (Dean 1974; Utterback and Abernathy 1975; Pavitt 1984; Tushman and Anderson 1986; Kline and Rosenberg 1986; Chesbrough 2003) or on the characteristics of innovation mostly by means of two dimensions (Henderson-Clark 1990; Rothwell 1994). Yet they lack explanatory power in explaining firm performance due to reductionism and/or static manner in part and no mechanism to link innovation directly to needs/demand side in some other part. Open innovation (Chesbrough, Vanhaverbeke, and West 2015) is also confined to how to collaborate to obtain the right technologies without directly linking to needs/demand side. Only the disruptive innovation (Christensen 2003) seems to take into account customer needs partially. Among well-known theories, only the EE looks very persuasive in treating technological innovation, thanks to its mechanism to deal with interaction between technological change at industry level (external force) and the routines (internal factor) at firm level.

On the other hand, most innovation theories/models are introduced implicitly on the assumption that a firm has more bargaining power than a customer. What if a customer has more bargaining power than a firm? In that situation, a customer with purchasing power may have or may not have WTP, stressing that a firm has to pay much attention to customers rather than to competitors (Priem 2007).

The success of innovation entirely depends upon whether it triggers explicit needs or not, for unless a firm's innovation triggers new emerging ANA or meets the current unmet ANA or unmet



**Figure 6.** Relationship between explicit needs and extended value chain.

BNA, no firm can earn profit. In fact, innovation must be the driver of profit seeking yet only needs-focused innovation brings about profit as the very driver of profit seeking (Kim 2010, 2015a). This message can be confirmed by some sources (Jaruzelski and Kevin 2007; Accenture study 2013).

### **Adaptive goodness as determinant of profit**

Profit can be estimated in advance based on the formula, *expected profit = expected revenue – expected cost*. What indicators are relevant for expected revenue and expected cost respectively?

Let's take 'extended value chain' (Kim 2010) as the set of activities, resources and output: as for activities, to add the entrepreneurial activities to the Porter's value chain (Porter 1985) covering only the primary and support activities, and solutions/product as for output. Extended value chain covers key resources, key activities, key competence and solution/product. And it embraces the performance of needs-focused innovation.

As for the indicator of expected revenue, solutions fit can be used to show how well solutions/product meets explicit needs in target market, and as for the indicator of expected cost, process fit can be used to show how much lower cost the process produces/provides that solutions/product (Figure 6).

Here let's draw descriptive propositions (DP) about expected profit in terms of solutions fit and process fit.

DP 1: The better the solutions fit is, the higher WTP goes up and the more revenue is expected and vice versa.

DP 2: The better the process fit is, the lower cost accrues and vice versa.

DP 3: The set of the best solutions' fit and the best process fit always brings about the maximum expected profit as the Best.

If a firm produces/provides the very solutions/product a customer really wants to get even by paying the maximum level of WTP as the price, it must be the best set of (solutions fit, process fit), which always guarantees business success.

The fact that there exists the Best as a set of (ANA 100%, BNA 100%) at which a customer always has the maximum WTP provides us with the strategic guideline of needs-focused innovation, *Seek the Best* at market/industry level and *Get-to-the Best* at firm level.

This strategic guideline also provides a strong rationale to explain why the rises and falls of the firms including sudden success and abrupt bankrupt happen, and gives a theoretical foundation

on which business model should be designed and innovated, for business model itself is the mode/way/system/framework of making profit (money).

In sum,

Expected Profit = Expected Revenue – Expected cost

=  $f$  (Solutions fit, Process Fit,  $e$ ) ( $e$ : random variables)

(For solutions fit is the indicator of expected revenue and process fit that of expected cost.)

=  $f$  (Adaptive Goodness,  $e$ ) (it becomes the determinant of profit.)

(For the set of (solutions fit, process fit) is expressed as adaptive goodness.)

=  $f$  (Needs-Focused Innovation,  $e$ )

(For adaptive goodness is determined by needs-focused innovation.)

=  $f$  (Relationship between Extended Value Chain and Explicit Needs,  $e$ )

(For extended value chain comprises the performance of needs-focused innovation.)

Adaptive goodness refers to the empirical indicator (measure) of the relationship between needs-focused innovation and explicit needs. Conceptually, adaptive goodness may be defined as the degree of how well what a firm produces/provides actually meet what a customer ideally wants during a given period of time without needs evolution, and during a given period of time with needs evolution it can be defined as the degree of matching between the modes of technological change/innovation and the patterns of needs evolution (Kim 2015a). Operationally, adaptive goodness may be expressed as the set of (solutions fit, process fit) and measured by the difference between the set of (solutions fit, process fit) a firm can provide actually and the set of (ANA 100%, BNA 100%) a customer wants to meet ideally.

In fact, adaptive goodness works as the determinant of profit. That is, 'the better adaptive goodness, the more profit and vice versa'.

And the relationship between extended value chain and explicit needs works as the causal mechanism of profit becomes the object of the universal rules of needs-focused innovation, and stands for the backbone of business model.

### **Adaptive goodness vs. competitive advantage**

As shown above, adaptive goodness as an absolute measure works as the decisive determinant of profit seeking, and accordingly it can be applicable in all circumstances. On the other hand, competitive advantage as a relative measure of comparison between a firm and its major competitor(s) works as a mediating variable of profit seeking. It does imply when technological change and needs evolution happen, unless a firm obtains adaptive goodness, it cannot even survive, even though it achieves a strong competitive advantage. In other words, competitive advantage makes sense only when adaptive goodness is obtained.

### **Universal rules of needs-focused innovation at the micro-foundations level**

To obtain the best/better adaptive goodness about the relationship between explicit needs (the ultimate source of profit) and needs-focused innovation (the driver of profit seeking), innovation should always be done according to the universal rules of needs-focused innovation as follows.

- (1) Contribution rule: innovation should always be done to bring about positive-sum value contributable to society by doing business in the positive-sum industries and in zero-sum industries in a specific case, absolutely avoiding in negative-sum industries.
- (2) WTP rule: innovation should always be done to trigger WTP by focusing thoroughly on what a customer wants.
- (3) The Best rule: innovation should always be done to get to the Best as set of (the best solutions fit, the best process fit).

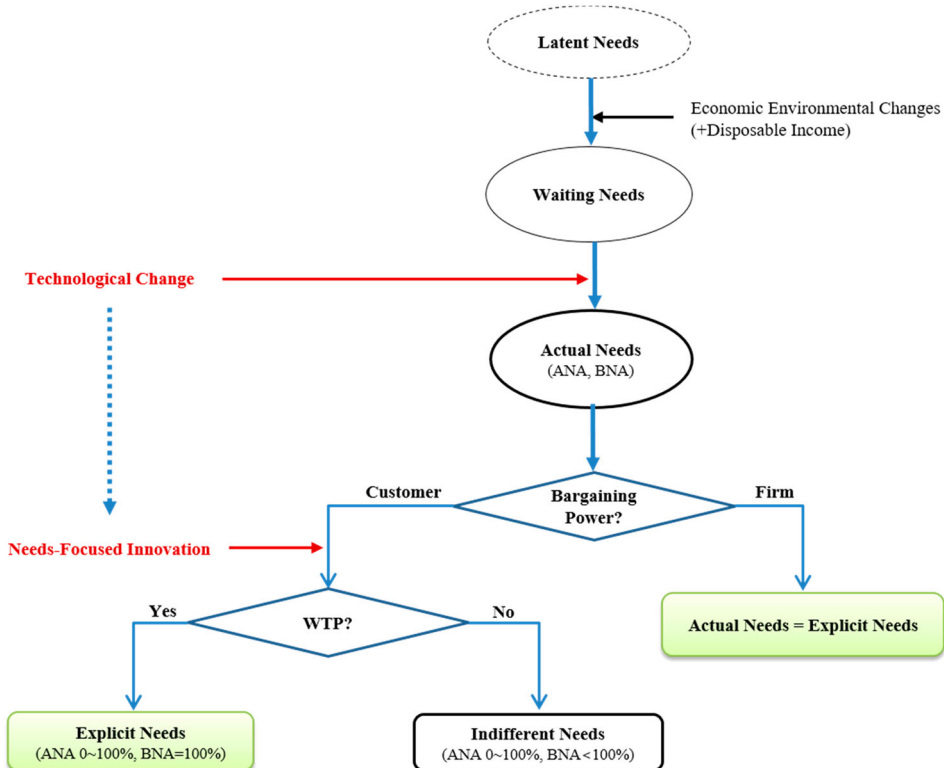
- (4) Priority rule: in case of limitations on managerial resources, innovation should always be done to improve solutions fit (i.e. indicator of expected revenue) first by making a customer have WTP and then process fit (i.e. indicator of expected cost).

## Contingency rules of needs-focused innovation at the macro-foundations level

### *Technological change and needs evolution*

Latent needs turn into explicit needs through technological change and needs-focused innovation. When there is disposable income, latent needs turn into waiting needs that also turn into actual needs as a set of (ANA 0~100%, BNA 0~100%) by technological change, and actual needs turn into explicit needs as a set of (ANA 0~100%, BNA 100%) through needs-focused innovation coherent with technological change. This is the manner how needs evolve (Figure 7).

According to needs evolution process, 'explicit needs' is the only ultimate source of revenue, and 'needs-focused innovation' to meet explicit needs is the very driver of profit seeking (Kim 2010, 2015b). However, with regard to needs and demand, in marketing now there is only one term, demand, which may be defined as wants (a concrete form of needs) with willingness to pay (WTP) as well as purchasing power (Kotler 1967). Yet the term 'demand' seems to presume that whoever has purchasing power implicitly has WTP as well. Actually this meaning of demand may be acceptable only when a firm has more bargaining power than does a customer who behaves as a passive responder. What if, where a customer behaves as an active player, he/she may or may not have WTP even though he/she has purchasing power.



**Figure 7.** Needs evolution process from latent needs to explicit needs.

When unmet needs with purchasing power are met through needs-focused innovation, needs evolution might happen. (With regard to needs evolution, this paper assumes that new needs are never created, but covered latent needs become uncovered through technological change and needs-focused innovation.)

Axiom 4: When unmet needs as a set of (ANA, BNA) evolve upwardly through needs-focused innovation, the existing ANA turns into BNA at the next stage of needs evolution. This is the manner how needs evolve in a normal circumstance.

### Technological change and innovation modes and needs evolution patterns

There are some needs evolution patterns including *minor evolution*, *major evolution*, *quantum evolution*, and *no evolution*, and several innovation modes such as *incremental innovation*, *radical innovation*, *disruptive innovation* and *breakthrough innovation*. This paper specifies needs evolution patterns according to what needs are met through what innovation mode under what circumstance. And it also defines innovation by mode according to under what circumstance it triggers needs evolution, for there are no clear, common definitions of the various terms about innovation yet: incremental and radical innovation as the ones to modify/refine/upgrade the current technological system under the existing techno-economic paradigm (Freeman and Perez 1986); disruptive innovation (Christensen 2003) as the one to replace the existing technological system under the existing techno-economic paradigm; breakthrough innovation (Kuhn 1962) as the one to replace the existing techno-economic paradigm as seen in (Figure 8).

Minor evolution happens when unmet BNA in indifferent needs or unmet ANA in explicit needs is met through incremental or radical innovation in the existing technological system under the existing techno-economic paradigm (current ANA regime). Here, techno-economic paradigm refers to a framework within which technology and economy interact together with.

Major evolution happens when unmet ANA in actual needs is met through disruptive innovation beyond the existing technological system under the existing techno-economic paradigm (current ANA regime).

Quantum evolution happens when emerging unmet (ANA, BNA) in waiting needs are met through breakthrough innovation beyond the existing techno-economic paradigm (emerging ANA regime).

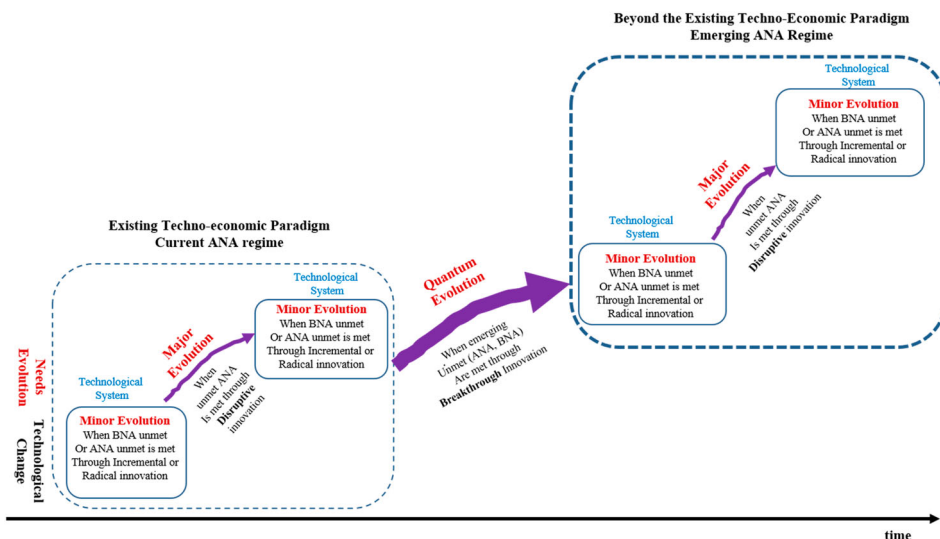
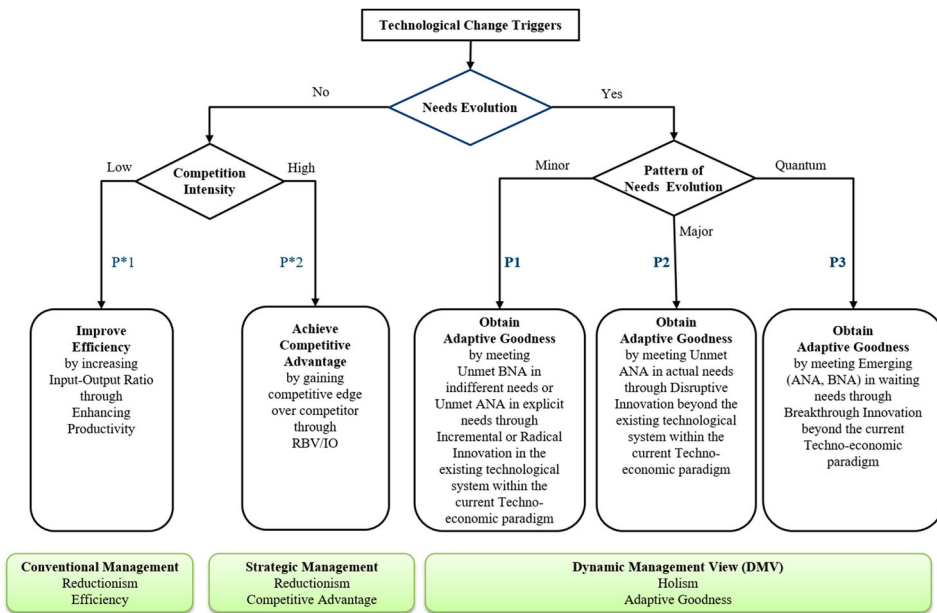


Figure 8. Technological changes and needs evolution through needs-focused innovation.



**Figure 9.** Contingency rules of need-focused innovation.

No evolution refers to the case of that a customer does not want any more for he/she really feels no more, even if there emerges a technological change to trigger new ANA and/or BNA. Or it refers to the case of that a customer cannot want any more due to lack of supply, while there forms a backlog demand.

### Competition intensity

If competition intensity is so low, innovation should be done to improve the input–output ratio, so-called efficiency, and if competition intensity is so high, innovation should be done to achieve competitive advantage.

### Contingency rules of needs-focused innovation at the macro-foundations level

From needs-focused innovation point of view, contingency rules of innovation can be drawn in terms of ‘technological change and needs evolution, and competition intensity as moderators’ (Figure 9).

### Propositions about needs-focused innovation

A grand proposition is derived from universal and contingency rules of needs-focused innovation as follows.

Whoever obtains the best/better adaptive goodness in adapting to technological change and needs evolution through needs-focused innovation becomes winner and vice versa.

And the propositions about needs-focused innovation P1, P2 and P3 are set up according to the matching between needs evolution patterns and innovation modes as seen in Figure 9.

Proposition 1: When there is unmet BNA in indifferent needs or unmet ANA in explicit needs in the existing technological system within the current techno-economic paradigm, incremental or radical innovation should be



done to obtain adaptive goodness, triggering minor needs evolution and giving rise to a slight change in market leadership among competitors.

Proposition 2: When there is unmet ANA in actual needs beyond the existing technological system within the current techno-economic paradigm, disruptive innovation should be done to obtain adaptive goodness, triggering major needs evolution and giving rise to a significant change in market leadership among competitors.

Proposition 3: When there comes emerging (ANA, BNA) in waiting needs beyond the current techno-economic paradigm, breakthrough innovation should be done to obtain adaptive goodness, triggering quantum needs evolution and giving rise to an abrupt failure or a sudden success.

When there is no needs evolution, innovation depends on competition intensity. That is,

Proposition\*1: If there is no competition or low intensity of competition, innovation should be done to improve efficiency by increasing the input–output ratio. It is just the case of conventional management to focus on improving efficiency within a corporate system in the mass production regime since Taylor's scientific management.

Proposition\*2: If there is high intensity of competition, innovation should be done to achieve competitive advantage by focusing on competitors based on RBV/IO without paying any attention to customers' needs evolution. It is the very case of strategic management to focus on achieving competitive advantage in a hyper competition since oil shocks in 1970s until now.

## Examples of the propositions about needs-focused innovation

The propositions can briefly be shown with the examples of industrial hegemony shifts in ICT industries (Figure 10).

Since the invention of the telephone in the late nineteenth century, there have been techno-economic paradigm shifts three times by breakthrough innovations triggering quantum needs evolution.

- (1) Around 1885, invention of the telephone bringing about the telephony wire-line paradigm;
- (2) Around 1985, cellular revolutions bringing about telephony mobile paradigm;
- (3) Around 2007, Internet/smart/Internet of things revolution resulting in smart ICT paradigm.

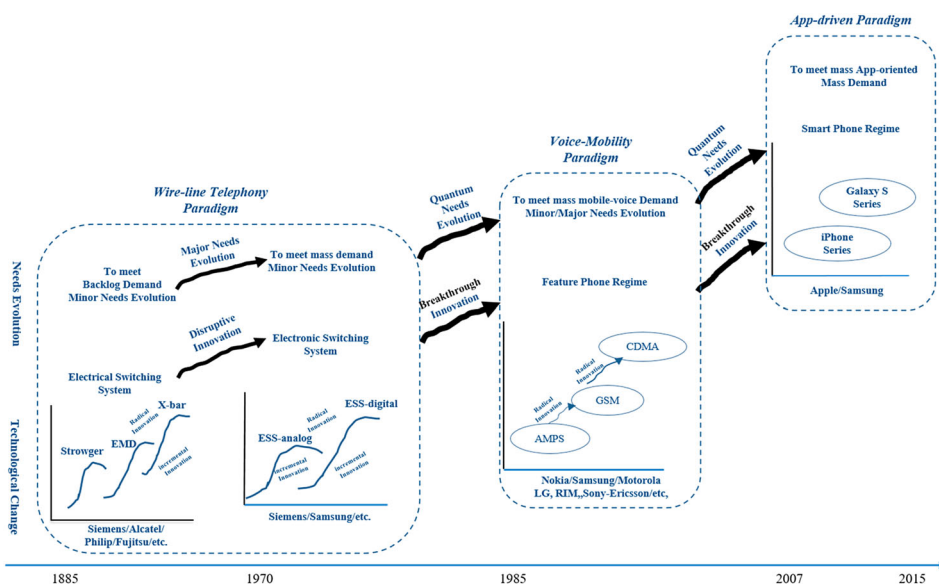


Figure 10. Industry evolution in terms of technological change and needs evolution through needs-focused innovation.



The propositions P1, P2 and P3 can be shown in such a manner as the followings.

- P1: Within the telephony wire-line paradigm, in the 1970s as the backlog demand had been met, there formed mass explicit needs (*major needs evolution*) for telephone services due to the blossoming of the world mass economy. To meet them in/on time, there had been innovation to replace electrical switching system by electronic switching system (*disruptive innovation*). On the other hand, there had been Strowger step by step switching system by British, Edelmetall-Motor-Drehwähler by German Siemens, X-bar by Japanese makers (*incremental/radical innovation*) to meet the needs within electrical switching system (*minor needs evolution*), and electronic switching system (ESS) analog by Siemens, ESS digital by Samsung (*incremental/radical innovation*) within electronic switching system (*minor needs evolution*).
- P2: Since the breakup of the Soviet Union in the late 1980s, massive explicit needs/demand for mobile telecom services (*major needs evolution*) had been forming. To meet them there were innovations such as advanced mobile phone system by Motorola, GSM by Nokia, and CDMA by Qualcomm-Samsung (*disruptive innovation*). Among them, Nokia was able to meet the market segment of average quality feature phones at lower price, while Samsung was able to meet the market segment of high quality ones at higher price.
- P3: When massive explicit needs for application-based services formed in the late 2000s (*quantum needs evolution*) beyond voice-based ones, Steve Jobs initiated the smart phone regime through Apple's iPhone revolution (*breakthrough innovation*). On the other hand, Samsung as a fast follower has been able to be successful through its Galaxy revolution (*breakthrough innovation*), whereas Nokia failed due to lack of *breakthrough innovation* capability to meet even BNA, even though he was the first smart phone developer.

P1, P2 and P3 can also be shown with the experience of the ones that wax suddenly and wane abruptly in a flash mentioned in the introduction of this paper.

### ***Kodak's almost bankruptcy (2005) and Fuji Film's quantum jump (2000s)***

Digital cameras had largely replaced film cameras by the mid-2000s, and higher-end cell phones had an integrated digital camera and almost all smartphones had an integrated digital camera by the beginning of the 2010s, forming actual needs for imaging online (*quantum needs evolution*) thanks to digital camera revolution (*breakthrough innovation*).

Kodak as the first digital camera developer, stayed so long in analog system focusing on brand and marketing without any attempts to do needs-focused innovation to meet digital online imaging services, and so it became virtually bankrupted in 2005. On the other hand, Fuji Film has been able to revitalise by adapting to techno-economic paradigm shifts from analog to digital and from off-line to online services (*quantum needs evolution*) through innovative digital imaging on-line technologies (*breakthrough innovation*).

### ***Sony's Walkman boom and sudden downfall (1979–1999), iRiver's upheaval and bankruptcy (1999–2006), and Apple's iPod sweeping (2006–2011)***

When compactness, wider capacity, convenient hand carry and design as new ANA (major needs evolution) were triggered by analog-based Walkman (disruptive innovation) in 1979, Sony had been able to enjoy her dominance for about 20 years. However, when iRiver emerged equipped with the digital-based MP3 (disruptive innovation), Walkman disappeared in a blink in 1999. iRiver was waxing for 5–6 years by focusing on 'design' as new ANA. Of course, iRiver also abruptly disappeared when Apple initiated iPod (disruptive innovation) to meet customers' needs for 'easy to use and easy access to music source' as new ANA (major needs evolution).

## Apple's iPhone series myth (2011-now) and Samsung's galaxy revolution (2009-now)

When massive explicit needs for applications-based techno-economic paradigm was forming beyond voice-based one in the late 2000s (*quantum needs evolution*), Apple as first mover initiated the smart phone regime through iPhone series revolution (*breakthrough innovation*) by Steve Jobs. And Samsung as an early follower has been able to be successful through its Galaxy revolution (*breakthrough innovation*). On the other hand, Nokia as the first smart phone developer abruptly failed due to lack of technological competence to meet even BNA for app-based mobile services, and LG could not take advantage of smartphone boom because of a world's top-class consulting company's misguidance over 10 years to make LG to transfer technological scientists/engineers into technical marketers.

## Conclusions

This paper proposes DMV as logic of profit seeking in a dynamic environment by dealing with the adaptation to technological change and needs evolution through needs-focused innovation to explain directly profit seeking. The specialties of DMV are as follows.

- (1) DMV as logic of profit seeking provides *adaptive goodness* as the determinant of profit.
- (2) DMV as logic of profit seeking provides a strong *rationale* for the rise and fall of the firm including abrupt failures or sudden successes.
- (3) DMV as logic of profit seeking provides the *universal and contingency rules of needs-focused innovation* for business model design and innovation respectively.
- (4) DMV as logic of profit seeking serves as a *steppingstone* for building a theory of profit seeking in a general manner.

## Disclosure statement

No potential conflict of interest was reported by the authors.

## Funding

This paper was supported under the Supporting Business for University Entrepreneurship Center 2014 supervised by Small and Medium Business Administration (SMBA) and Korea Institute of Startup and Entrepreneurship Development.

## Notes on contributor

**In-Ho Stephen Kim** is Emeritus professor of Hanyang University who has set up Firm Power Theory and Explicit Needs Theory, and written books (*Why Industrial Hegemony Shifts*, *Dynamic Management Theory*, *Dynamic Enterprise Strategy*) and papers (such as Chaebol Structure, Wiley Encyclopedia of Management and Strategic Management (2015)).

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