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New Approach to Interpret the Firm Evolution

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Abstract

This article is a preliminary step to introduce a new approach for interpreting how a firm evolves. The core idea of this approach is to verify the firms as the dynamic organization which can change and gain different trait upon time. The change and adaption mechanism can be explained through evolutionary theory. This approach could be used as a good tool to interpret reaction of firms to future environmental and internal changes. To achieve this goal, the firm has been defined as a set of Resource, Ideas and capabilities (RIC). As evolutionary theory has been adopted, a winning rule needs to be determined for selection and struggle process. This winning rule has been developed using the transaction cost theory to verify the effect of this so called RIC mechanism, over 200 hours' interview has been set up to identify and trace a changing capability in Iranian Construction industry. Applying this view to gathered information shows the power of this method for analyzing the firm's capabilities.

Keywords: Firm characteristics, Firm evolution, Adaptation mechanism, Transaction cost, Iranian industry, Evolutionary Theory.

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Introduction

To analyze the coordination of modern economic activities, defining the nature of firms as a part of this coordination is necessary (Nelson & Winter, 2002). By the article “The nature of the firm”, Ronald Coase (Coase, 1937) was the first person who clearly tried to explain this mechanism. Many Research and studies has been conducted and different approaches had been employed to describe different aspect of firm’s nature. These vast range of firm’s characteristics from the social interaction within the firm to its effect on global economy, make it hard to interpret and forecast the firm’s reaction to the different environmental changes and even its future.

To answer the firm’s behavior in the changing environment there are different approaches. The main stream studies focused on the behavior of the firm itself, so they start to analyze how an especial firm chooses the strategy; as a result, the main question for them is the strategy selection mechanism. In other words, how the best possible strategy could be chosen in the controlled environment. Considering the competition among the firms and emerge question of strategy selection lead to developing many theories like core competence view (Prahalad & Hamel, 1990).

Beside the complexity of firm characteristics and the relation between the firms, the change in environment raises the need to search about the dynamic strategy selection approach. The question of dynamic strategy selection was first specified and added up in the Porter article (Porter, 1991). Many tools and techniques like Balance score card has been developed, thinking about the importance of strategy selection and its measurement (Kaplan & Norton, 1992).

By the means of these theories, a new approach could be applied to select the best strategy for optimizing the firm’s activities. But tools and techniques, which have been developed through the lens of these theories, did not help to interpret the path of success (Chandler, 1992). In our view to find the firms nature and its reaction mechanism, the research must be focused on more fundamental aspect, as the survival of firms, the key to such baffling and Interdisciplinary question may lay in the Evolutionary view (Nelson & Winter, 2002).

In this Article main stream theories of firms had been utilized, and make a new evolutionary approach to consider the relative competition position of firm and its effect on selecting the firm strategy.

Evolutionary View

Answering to the question of survival of different type of species always has been attracted the attention of many researchers in different branch of science. For describing the change in firm two different view are the most used, Lamarckian view and Darwinian view. As many researchers (Coliens, 2005), (Breslin, 2008) addressed that between Lamarckian and Darwinian Evolutionary views the second is more likely to best map the firm's level of activities.

Our approach is based on the well-known Darwinian evolutionary theory which try to describe the evolution and, even more important, the continuum of life of living organization. The first attempt in the life of any living entity is to live, so that it is obvious that they try to eliminate any phenomena which are threatening their life. Many of these phenomena could not handled or was not revocable, in this condition the last solution is adaptation. In other words, the organization is so powerful to withstand the change or it can adapt to the environment before death by using some especial methods

The firm lifecycle is considered as the living organization in many studies such as (Cameron & Whetten, 1983); the analogy with nature could be a good tool to interpret the firm reaction to change. The living organization could be affected by environmental changes, like temperature, or internal change, aging for example. If the main trait of any living organization is its genes, it could model with the Idea's within the firms. These ideas could result in the creation of useful capabilities in the organization to handle and guarantee their life. The very basic assumption of this article is tendency of firm to live and analogy of genes with ideas.

To form an evolutionary view, the different element of evolutionary process must be analyzed. This process starts from a point of change (internal or environmental) the cycle could be described in processes as below (Aldrich & Ruef, 2006): 1) **Variation:** Change from current routines and competencies; change in organizational forms 2) **Selection:** Differential elimination of certain types of variations 3) **Retention:** Selected variations are preserved, duplicated, or otherwise reproduced 4) **Struggle:** Contest to obtain scarce resources because their supply is limited.

Resources, Ideas and Capabilities: Determining units of Change

As result of strategic thinking, many scholars realized the importance of resource and resource planning and its effect on the firms (Wernerfelt, 1984). Resource base view (RBV) provides an explanation of competitive heterogeneity based on the premise that close

competitors differ in their resources and capabilities in important ways. So if a firm has a reliable resource could remain in the market. Many brilliant studies and theories have been developed on the basis of the RBV to describe how certain firms make competitive advantage (Prahalad & Hamel, 1990).

The mechanism of making different capacities by using the firm resource to obtaining a better competition position is the topic of many studies (Sirmon, Hitt, & Ireland, 2007). The best way of identifying the creation mechanism is to monitor the environment in which the capabilities are created. Because of that researches which investigate the effect of change in the firm had been more successful.

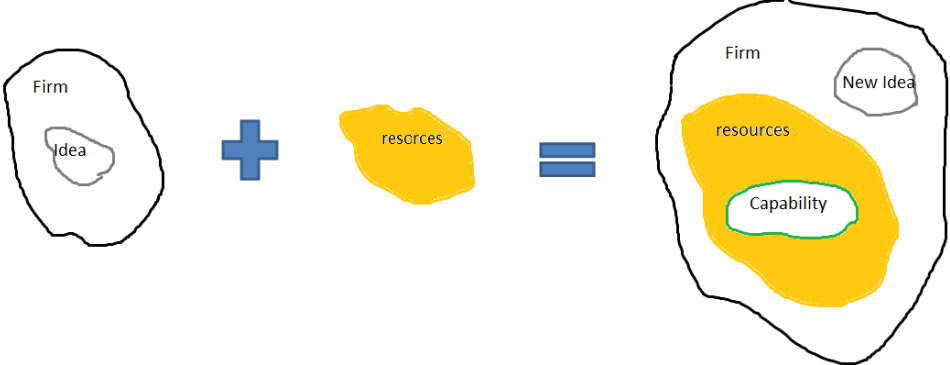
One of theories that describe the effect of these changes is dynamic capability theory. Dynamic capability addressed as firm's ability to integrate, build, and reconfigure internal and external competences to rapidly changing environments (Teece, PISANO, & SHUEN, 1997); in other words, If the ordinary capabilities of firm defined as those that permits a firm to make a living, then the dynamic capabilities were those which operate to an extent, modify or create ordinary capabilities (Winter, 2003). These capabilities will help the organization to answer the environmental changes properly by creating a new possible capability and as a result, a competitive advantage for struggling with other firms over scarce resources.

Beside the dynamic capability view, the capability life cycle must be analyzed as the separate view in the frame of dynamic resource base view (RBV). Capabilities have their own life cycle within the firm. Foundation, development, maturity and transformation are the stage of lifecycle. According to this approach creation of new capability accrues in two possible ways. 1) leadership and capable of joint action 2) a central objective and change of capability happens because of opportunity or threat of capability (Helfat & Peteraf, 2003). In this view even the dynamic capabilities are following the same path of evolution and the capabilities may evolve in time. A firm could be a set of resources and capabilities, in which the capabilities could create, evolve and die.

The key point of foundation of new capability is accumulated knowledge within the firm (Grant, 1996). Even when you are seeking the root for dynamic capability the knowledge plays an important role (Eriksson, 2014). An Idea, which could be considered a potential capability itself, will create a firm capability when all required resources, knowledge-based or property-based, are available. Moreover, it is possible that a new capability is created from transformation of an old capability.

The below diagram illustrate a simple firm as the RIC view point: an idea raised form knowledge as a preliminary Resource, will form a basic capability to obtain the resources from environment and then, the capabilities were found on the basis of this preliminary resource by new idea. So the cycle will continue its life and create new capabilities, with a base of a new idea or transformation of old capabilities.

Figure 1.



In an analogy of living organization, ideas could act like genes which determine the organization trait; but there must be a required element to turn this potential trait to useful capability. The current state of firm could be defined as a set of resources and capabilities. Firm resources and the maturity level of capabilities are so important to determination of firm competitive position in market, but there is an important element, Idea; which must add up to describe the firm’s entity well. By addition of ideas to firm’s composition, the firm’s acts in the changing environment or even internal change could be interpreted.

As described hereinafter, each changing stage of a capability will be described. As firms identified by three different elements, the firm’s change will be the sum of these three elements together.

The role of Resource

As suggested in earlier section the way each firm choose to provide its resources, is a capability itself. The struggle stage may lead to empower this group of capabilities so in the next cycle the composition of resource may differ. But composition of firm available resource in the same cycle is the capability maturity limit. So there is an interaction between firm available resources and capabilities. This effect, forces the firm to correct its resource pattern.

By this view, the firm resource could be useful for the firm in three possible ways. First it is required to form for creating capabilities. The capabilities need resources to build a new product. And finally this new product could assume as a new resource to use for next cycle of firm life.

The first role of Resources as it acts as an activator to an idea. For creating a new capability, firms need proper resource in the sufficient amount so the capability could find its path to maturity level. If firm face the scarcity of resource, the capability may not even be built. So it's like a living organization which have the proper gens but there is no supply to turn it on.

To product firm need the resources as well as the capabilities. As the resource level will increase the rate of production and as a result the amount of profit is increased. This effect the amount of new resource could be obtained in the next cycle or even the product itself could be the new resource. The production of firm is not only the physical asset but the knowledge which gained through the process is also a product. This product needs an element to make new capabilities as mentioned.

Variation or creation of new capability

As dealing with change, each firm characterized with the three different elements: resources, capabilities and ideas. If one of these three elements changes, the firm will change and a new firm may be formed with a new composition of RIC. Variation in the firm characteristic, always happen; even in a static environment and a new idea, raised from accumulated knowledge within the firm or even a simple personal issue, may lead to creation of new capability.

A new idea meaningfully has effect on evolution of firm. But it may not affect the final product directly. If we seek a thorough model for strategy selection it may extend to analyzing the ideas which may create new capabilities. In this stage a new set of capabilities is created from a new idea. We are not arguing about the source of this idea, but we assume that this new idea exists within the firm. Many studies had been conducted through knowledge-based theory of firm and entrepreneurship theories to determine the source of new idea and innovations.

The below equation shows the relationship between the resource, Idea and capability in a simple form:

Formula 1:
$$Capability\ existence\ level = Idea * \sum Resource_c$$

On the other hand, each capability produces some kind of resources, for internal use or for use in market as a final product, so the production of resources can be simplified as below formula:

Formula 2:

$$Resource_p = Capability\ production\ function(Resource_f, CEL)$$

Producing resource, knowledge based or cost based, from a new capability allow firm to create new value within the firm. So two basic characteristics for a capability has been defined, the capability existence level (CEL) and the capability production function (CPF).

As defined, the capability depends on Idea and Resource; so several source of probability exists: the first is an idea; the second is distribution of resources. How much resource needed to create a capability and how much resource needed to make the new resource in the next cycle is a vital question.

In the first cycle, as firm is in the developing phase, the production of CPF could not be precisely estimated by the firm managers, so it could be assumed that distribution of resources will be totally randomized; a rational manager would assign a portion of resource for variation within the firm, so a firm divides its resources into three different main categories; First for creating new capabilities, second for creating the old capabilities, and third for creating resource in the next cycle. In this step the firm possibly could not produce all the capabilities it may potentially can. the division of this resource in the retention and struggle process thoroughly discuss in the next section.

Selection or determining the winning rule

Transaction cost theory is developed on the basis of Transactions within and out of firm's structure, briefly if one activity could be completed either in the firm with the cost of X or out of firm with the cost of Y, and $X < Y$ then the rational decision, is to complete the activity with the cost of X within the firm. In the market this lower cost with respect to all of its elements, rules the market (Williamson O. E., 2010).

This approach will show how the manager, if they are rational and have complete and reliable information, would consider the future strategies in their firms. There are many issues that make this decision so hard. As a result, the main purpose of Transaction cost economy is adaptation and why in some condition the manager cannot make the proper decision (Williamson O. E., 2008). Considering the range of management misunderstanding and some probable wrong decisions, the answer to how a capability selected is lay on the cost of

transaction within the firm. By this approach the selection rule is not only act for choosing the right capability within the firm and outdoor but also it is the wining rule among the firm capabilities too.

When transaction accomplished by bargaining on the resource price as a result of capability, that its produced resource has a better price relatively. Therefore, two relative transaction cost for each *Resource_p* could be defined, if T_p represent the transaction cost for a *Resource_p* within the firm and T'_p stand for the transaction cost to provide that resource from market. By using the transaction cost approach, the possibility of outsourcing the resource from market could be determined. This concept allows managers to choose between capabilities, inside or outside of firms. This simple rule could apply within the firm to choose the best idea.

For instance, if there is no rival in the market and firms have the available resources CEL is increased, as formula 1 shows, and as a result the resource production will increase. The firms which lived longer obviously have capabilities with greater CPF value. This higher rate of resource production allows them to provide the needful resource for next cycle. When resource have the biggest level of T'_p the system could obtain the higher production rate by using the resource out of firm so the resource within the firm could allocate to other CPF for production of more useful resource. In other word a lasting firm has two constrain to choose the best possible capability:

- 1- Selecting between the firm's capabilities
- 2- Selecting to produce the resource in the firm, by firm's capability, or by outsourcing, using the similar capability out of firm

The first idea is very close to the core competence view; the firms will utilize their resource to obtain the higher level of production. And the second rule is showing how the supply chain may evolve thorough history. This process of selecting different capability is not fully rational, as assumed in the above lines, also when a manager did not have enough information he's selection may inaccurate. In the market with a large number of firms, possibly think of randomizing this process could be a good answer to some extent, not only because of this inaccurate managerial level selection but because this different firms have effect in the production level by choosing the capabilities with similar resource production. The manager, whom randomly chooses the correct capabilities in the next cycle, as our definition of firms we can say the correct type of firm, will build the most successful firm in the market. This selection may not guarantee the firm's success in the next cycle so in each cycle the process will be varied.

The selected capabilities will receive more resource for CPF and will create the resource for next step of evolutionary process as the RIC theory, choosing the wrong set of capability with lead not just to extinction of capabilities because the higher transaction cost, but also will cause extinction of firm.

Retention

In our view the retention process is about CEL in the firm which shows firm existence. If the produced resource is valuable in the market, it can supply the firm, and as a result, its capabilities. After CPF produced the resource, a firm need to resupply itself; and in this step the market plays an important role, the process of provision of this resource could simply be shown as below:

Formula 3:
$$P(\text{Resource}_p) = F(\text{Resource}_f) + C(\text{Resource}_c)$$

If P, F, C are the price function of each resource then this formula is always must be in equilibrium. The mechanism of pricing in market will result in developing firms with the same capability through the process of benchmarking (Goh & Richards, 1997) or other learning process.

In this study we are not deeply analyzing the type of capability within the firm but the process of marketing and bargaining which is also a capability itself and the pricing functions (P, F, C) each could be a CPF as producing the equivalent market price. In our view even the capabilities which related with the marketing process could reproduce through this processes. In the Retention process, the CEL of each capability will change to the level of existence of *Resource_c* for the capability which using the same resource it becomes a struggle.

Struggle

At the beginning of this stage firms will start to struggle on the scarcity of resources. As the firm's resources are limited in this stage and there are capabilities which needs resources so the struggles happen even between the capabilities within the firm. The interaction between these capabilities will lead to balance of using the resources and variations in other capabilities or the extinction of firm. This struggle on the resources could be shown by below formula:

Formula 4:
$$\text{Resource}_c = \sum \text{Resource}_{c_i}$$

The terms "i" here serves as the counter of different capability with the same resource need. The use of resource and the need of firm/market to the product will lead to change in the

amount of transaction cost and as a result a new set of needful and best capability in the next cycle.

One more time the view of transaction cost will help to understand the process of struggle within the firm. In an ideal firm, capabilities with more productivity will gain an advantage; but this time struggle happen within the production costs of capabilities, *Resource_f*. The decision of management to assign the portion of *Resource_c* with respect to these criteria will result in CEL of each capability. As discussed earlier misleading information or failure of management to choosing the best capabilities will cause the extinction of firm.

Proposed Model

Strategy selections using the evolutionary theory follow the same four steps for modeling.

The proposed process had been illustrated in the below:

- 1- Possible variation identification in all related capabilities
- 2- Possible Selection due to resource limitation of each firm and market
- 3- Retention or supplement with the needed resource to produce
- 4- Struggle over resource within the firm

As these quadruple processes always exist within the firm the model step will be calculated for all of four processes in the same time.

Finding evidence in Iranian Construction Industry

More than 200 hours Interview had been conducted in the field of Construction Industry with the 20 project manager who has been working more than 25 years in this field. As Iran has an experience very versatile condition in this period it would be a good example of changing environment, which can follow up changing capability within the firms easily.

As the first step we try to gather some information about different capabilities of firm. But there are two major issues. The first one is how to gather the information about the capability within the firms; these kinds of information are mainly informal and did not record as public information or even centralized in the firm itself. So the persons who aware of such method and routines, must be selected. The second problem is finding these persons itself. To do so, we use the information from 8 different associations of engineers to find the firms in this field, and the information of the person who works mainly in the same firm for more than 15 years had been gathered.

After finding the proper persons, the interviews conducted in several different steps; In the first step the information about the construction environment in the different period of time

has been gathered. Three main different periods were identified through the information and specification describe by interviewees:

War: The period of 1983 to 1988, affected heavily by the Iran revolution and post-revolutionary war. The main attribute of war is the scarcity of material and multiracial project. As many interviewees had been mentioned, this period is mainly dominated by governmental financed and short duration project.

Stability period: The period of 1994 to 2003, known as the stability period and Investment of financial supplies on the infrastructures. Many projects started in this period officially or restarted after termination in the post-revolutionary period.

Sanction: The period of 2008 to 2014, affected mainly by the scarcity of financial supplements and long delivery time for ongoing project. As the interviews shows the main concern in this period is meeting the contractual obligation and quality margins initially has been approved by clients.

Transition periods: to lower the complication of analysis we dismiss the chaotic transitional periods. The interviewees have different memories from these periods. Mainly each transitional period has a partial attribute of both starting and ending periods.

As the second step search on the attribute of firm's activities on the specified period has been start. Our findings show how different firm mainly reaction to the different environmental changes. As the final step we focus on the changing mechanism of capabilities,

For better comparison the example of capabilities with the same *Resource_p* had been used.

- **Engineering Design:**

War period: Generally, the designing process in this period could be divided in two different types. The special urgent construction project with no budgeting limitations was the first category, this kind of design was usually made by try and error and minimum design and control practice. This process mainly adopted by young engineers who have been participated in revolutionary activity.

The second practice used mainly for residential and public sector building, was using the revision of standardize calculation which has been approved and constructed in the pre-revolution period.

Stability Period: To construct new infrastructures many international contractors has been adopted, this co-working beside the public sector investments allow the engineers to practice more complicated and budget limited project by copying the process of these firms. But as a result of war period there is always a tendency to change this practices.

Sanction period: International contractor, as result of sanctions, they have been reluctant to start new project in Iran, even many of them withdraw to continue the ongoing project. So many of conceptual design and FEED documents has been used and customized to feed the new project design needs

Table 1 briefly summarized the interviews result; information gathered clearly shows the change of capabilities and resource through time.

Table 1 Engineering Design Capabilities Comparison

	Capability hired	Main Resource needed for existence <i>Resource_e</i>	Main Resource needed for Production <i>Resource_f</i>	Quality of Product <i>Resource_p</i>
War period	Innovating Try and error	Trusted Eng.	Cost / material	Low
Stability Period	Copying and developing	Initiative Eng. / examined process / best practices	Lower amount of Cost / material compare to war period	Above Medium
Sanction period	Innovating method with respect to process	Skilled Eng.	customized method leads to efficient use of material / need of tools lead to production (with higher cost initially)	Medium

- **Compensation of services:**

War period: as the main project are the governmental project, the compensation was paid by client approval, as the client representative mostly chosen with respect to his revolutionary back ground, not by technical back ground, the approval pace directly related to trust level between contractor and client representative. The more effective way to catch the client attention was to hire some of his trusted person so the process of approval and the speed of payment would increase.

Stability Period: International contracting need the level of technical competency so the government and process of approval differ thoroughly from the war period. Although the first mechanism of client-person employment was still existing between the Iranian contractors, but the technical document and process gain weight as the independent factor. Using documents and technical approach of client shows some mistrusted action and raised some dispute between the two parties, on the other hand the documents shows the actual work which could be compensated as a result some claims raised from the side of contractor.

Sanction period: the experience of working with documents shows the accuracy and possible cost benefit for both contractor and clients. But as the mistrust between the contractor and client, the client tries more severely to force contractor to hire trusted person or using more evidence to prove the quality of work. The moderate way chosen by many interviewees, hiring a skilled person who previously worked with the same client and meanwhile working as the contractual procedures.

Different type of capabilities and resource with the related time period has been illustrated in the below table:

Table 2 Compensation method Capabilities Comparison

	Capability hired	Main Resource needed for existence <i>Resource_e</i>	Main Resource needed for Production <i>Resource_f</i>	Quality of Product <i>Resource_p</i>
War period	Hiring trusted person	Trusted person	Amount of work has been reported	Speed / inaccurate Low level of dispute
Stability Period	Processing Documents. / Hiring trusted person /	Technical man / process / Documents / Trusted person	Amount of work has been done	Accuracy but not so speedy / More technical dispute
Sanction period	Hiring trusted person / processing Documents.	Trusted-Technical person / Documents / process	Amount of work has been done	Medium accuracy and speed (in the condition of availability of financial source) Medium level of dispute

Discussion

In this section the above mentioned capabilities evolution has been discussed using the proposed model:

- Engineering Design: as showed in the table 1 different capability developed through the time.

War to Stability:

Variation: The Idea of changing method was raised from the observation of cost reduction in the activities accomplished by the international construction contractors. As the best practices have been learnt by the initiative engineers the new routine start to implement in the Construction firms.

Selection: Many of design work out sourced to foreign companies as the lower construction cost imply to clients, so the domestic firms start to shift to new design methods. As described in the selecting chapter, many managers stick to old method but the first gain the advantage over, because of vast use in the construction industry.

Retention: As the effectiveness of new method, more personnel trained to practice this method, therefore not even in the huge project but also in the ordinary residential project the project engineer start to copy and design document with the minor change.

Struggle: As this coping method speared thought the engineering community the payment of hiring a full time engineer reduced. Anyone with the better document archive has a better chance for employment. In this period Construction industry firms start to improve their engineering archive documental asset, and the engineer’s skills tended to change the original documents.

Struggle over documents has two major benefits. Improving the document asset, and implementing the new construction method in the site. But it causes one problem, lake of skilled designer, it is not important issue as the international contractors are still in the Industry.

Stability to Sanction:

Variation: withdraw of many international contractor and experience of war period make the engineers to develop new methods, using the new design element. This new method need a totally new resource, as we named skilled engineer how knows the best practices and simultaneously understand the engineering concepts.

Selection: As the production of this method leads to higher revenue in the market, especially in the firms which thier activities largely related to construction of special building, the number of firms that eager to hire a skilled engineers increase as many of interviewees confuse.

Retention: Our survey in this section showed that the number of training center in this period largely increased. As a result of hiring the skilled personal and inefficiency of old designed documents number of skilled personnel increased, beside other social reasons, number of certified engineer increased astoundingly.

Struggle: Currently the problem of over qualification leads to lower wage and unemployment of even skilled engineers.

- Compensation of services: table 2 shows the change of capabilities the different resource has been used in the different periods:

War to Stability:

Variation: because of appropriate arrangement of payment in the stability period, the issue of speed lost its importance to some extent. The main issue in this period changed to how much money could be made by accomplishing the same amount of work. By learning the process of Invoicing and documentation, the new idea has been developed: Combining the trusted person and technical person. Technical person, as many interviewees addressed, use his skills to document all the events in the construction site. And the trusted person, as he did not have any technical back ground just plays spectator role.

Selection: as more money produces with the new method the market rule chose the new method as the winner capability. More company start to adopt such a person for invoicing issues.

Retention: As the effective routine, this capability benchmarked by other companies and use widely in the construction firms, especially construction contractors.

Struggle: The production increases not just make other firms to benchmark this capability but also make the documentation process as the more important part of Invoicing.

Stability to Sanction:

Variation: beside disputes which raised from this kind of invoicing, one more time the speed of payment gains weight and becomes an important issue. To solve this issue the war period experience is so helpful, hiring trusted person to minimize the invoice verification duration and getting approval in the fastest possible time. In this period, there are some technical men become famous in the

market and gain the trust of client's personnel because of their previous work. One good idea is to let them handle the invoicing process.

Selection: By lowering the time duration needed; the transaction cost will reduce. So the selection rule dictates to choose the new method. Although the interviewee memorized several other methods in this case, such as bribing, using the trusted person as war time and etc., but as a lower cost capability this method approved by majority of them.

Retention: As money flow gain faster pace the use of this kind of person increase. The pervious technical man mainly substitutes by these trusted-technical persons even with higher wage.

Struggle: Currently the construction firm more eager to employ these technical-trusted persons. This easy solution was lead to involvement of this kind of persons in nearly all of project closing phase.

These analyses show the power of this kind of interpretation. As different capabilities born and die within the firms, using evolutionary concept could help us, understanding the trends of growth of different capabilities and time of extinction of them. The information gained through this method is the way to forecast future changes in market and as a result the likelihood of changing of related capabilities.

Beside the interpretation of changing capabilities, the result of our interviews shows the relationship between two different capabilities in the different periods. As the change happens in the environment, the firm reaction not only is a function of its current environment, but also it depends on the past status of the firm itself. Even the new innovative capabilities need to bond with other capabilities within the firms. This evidence shows the essential need of historical review of firm's capabilities.

Conclusion

As discussed, two basic capabilities of firm have been analyzed using the proposed model and it clearly showed that not only the condition and environment is important for selecting the capability in the firms but the historical background of a firm play an important role on the future of firm.

This model could interpret many issues and different effect of changes in the simple mathematical form. As a result of this model, we could find out, some kind of equilibrium exist within the firm between resource, capability and maximum benefit, but this equilibrium is outcome of adaptation of capabilities with firm environment,

In the real firm we have many capabilities and resources which allows firm to evolve in different ways. The variety of possible and unknown ideas, make it impossible to forecast market future precisely but this model helps to understand the capability and firm evolution

process and provide good tools to determine the best capability, Idea, among the known capabilities.

The further research needed to find a way for using these simple formulas as the practical tools. Although these formulas clearly show the mechanisms of capability life cycle, but by gathering the information and making the quantitative analysis, the power of this kind of interpretation will be more distinguished.

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