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# The Dynamics of the Firm

- IN SEARCH FOR A GENERAL MODEL

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## **ABSTRACT**

This paper describe a model from system theory that can be used as a base for better understanding of different situations in the firms evolution. This change model is derived from the theory of organic systems and divides the evolution of the system into higher complexity of the system structure in three distinctive phases. These phases are a formative phase, a normative phase and an integrative phase. After a summary of different types of models of the dynamics of the firm the paper makes a theoretical presentation of the model and how this model is adaptable for better understanding of the need for change in strategic orientation, organization form and leadership style over time.

## INTRODUCTION

Since the pioneering work of Schumpeter<sup>1</sup> and Penrose<sup>2</sup> the small business research in general has followed two different research tracks. One focusing on different characteristics of the entrepreneur. The other track is about research of new firms development over time in the form of different growth/development models. In the later research track many different models have been created. There have been attempts to classify existing models of organizational development and growth. Stuckborn<sup>3</sup> classifies these models in four categories: "cell division models, metamorphosis models, will-ó-the-wisp models and decision making process models." Hofer and Charan<sup>4</sup> found the classification of Stuckborn unfashionable and suggested the following types of growth models: life cycle models, stage models, evolutionary models and transition models.

## AIM AND SCOPE

The purpose of this paper is to present a general model, with its origin in system theory, that can lead to a better understanding of the Dynamics of the Firm and be a framework for analysis when using other models of the growth of the firm.

## EARLIER RESEARCH MODELS

The four types of growth models by Hofer and Charan mentioned in the introduction are described and exemplified in the following:

**Life cycle models** include models by for instance Adizes<sup>5</sup>, Kroeger<sup>6</sup> and Steinmetz<sup>7</sup>. These show organizational development and growth that follow a pattern that is in direct analogy with biological life cycles.

Criticism of these models is focusing on the fact that organizations do not show up the consistency in development over time as biological systems do. Another point is that few of these models predict when a phase in the life cycle ends and an other begins. Further criticism is that the development that these models picture is unchangeable in sequences while most empirical studies of organizations development do not indicate such sequences. A third objection is that not all organizations die, at least during the time period that is relevant for the entrepreneur.

**Stage models** includes among others the models reported by Buchele<sup>8</sup>, Collins and Moore<sup>9</sup>, Lippett and Schmidt<sup>10</sup>, Salter<sup>11</sup>, Scott<sup>12</sup>, Straus<sup>13</sup>, and Thain<sup>14</sup>.

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<sup>1</sup> Schumpeter, J.A. The Theory of Economic Development. New York, Oxford Press.

<sup>2</sup> Penrose, Edith. Theory of the Growth of the Firm

<sup>3</sup> Starbuck, W. "Growth and Development." Business Quarterly, Winter 1969, pp. 33-45.

<sup>4</sup> Hofer, Charles W., Charan, Ram. "The Transition to Professional Management: Mission Impossible?": American Journal of Small Business, Vol. IX, No. 1, Summer 1984

<sup>5</sup> Adizes, I., Organisationers livscyklar, Liber, 1987

<sup>6</sup> Kroeger, C.V. "Managerial Development in the Small Firm." Business Horizons, 17(1): 41-47 (Fall, 1974).

<sup>7</sup> Steinmetz, L.L. "Critical Stages of Small Business Growth." Business Horizons, February 1969, pp. 29-36.

<sup>8</sup> Buchele, R.B. Business Policy in Growing Firms. Scranton, Pennsylvania: Chandler Publishing Company, 1967..

<sup>9</sup> Collins, O. , Moore, D.C. The Organization Makers, New York: Appleton-Century-Crofts, 1970.

<sup>10</sup> Lippett, G.L. , Schmidt, W.H. "Crises in a Developing Organization." Harvard Business Review, 45(6): 102-112 (November/December, 1967)

<sup>11</sup> Salter, M.S. "Stages of Corporate Development." Journal of Business Policy, 1(1): 23-27 (Autumn, 1970)

<sup>12</sup> Scott, B.R. "Stages of Corporate Development - Parts I and II." Boston: Harvard Case Services, #9-371-294 and 5.

These models predict a series of phases through which an organization develops over time. In difference to the life cycle models are the organizations movement between these phases depending on a number of other factors than time. This means that it is not necessary for the firm to ever leave the first phase. As important is that the organization does not need to go through every phase and that there are several possible sequences. These models also show several alternatives to the death of organizations.

One clear difficulty with the phase models is that they, with some exceptions, do not indicate any process details or what kind of difficulties that will take place in the transition between the phases. An other difficulty is that there is no correlation between the phases in the different models. Buchele describes seven phases while Straus has only two. Collions and Moore and Buchele present several phases that takes place before phase one in Scott, Salter and Thains models while the later include one or two phases that are located after the last phases of Collins and Moores and Bucheles models.

A five-stage model<sup>15</sup> that is specially oriented on the development of the small firms is divided in the following five phases: Existence, Survival, Success, Take-Off and Resource maturity. The model shows which knowledge/which capacities of the entrepreneur that are important/unimportant in respective phase.

Garnsey<sup>16</sup> describes a model that in seven phases shows possible development trends for firms. The seven phases are: 1. Access resources, 2. Mobilize resources, 3. Generate resources, 4. Growth reinforcement, 5. Growth reversal, 6. Accumulation and 7. Maturity.

**Evolutionary models** over organizations development and growth show up parts from both life cycle models and phase models by including most of the phases that are shown in the phase models at the same time as they prescribe a sequential order between the phases in the same way as the life cycle models. Greiner<sup>17</sup> suggests that every phase both is an effect of the earlier phase and the cause for the next phase. Hofer and Charan mean that empirical studies contradict this statement.

One advantage with these models is according to Hofer and Charan that they clearly point at the existence of, the importance of and the difficulty with the transition between the phases. Anyhow they do not show any advice for how these phase transitions shall take place.

**Transition models** describes the problems and difficulties that take place at the phase transitions. This means that it could be necessary to construct a special model for each of

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<sup>13</sup> Straus, G. "Adolescence in Organizational Growth: Problems, Pains, Possibilities." *Organizational Dynamics*, 2(4): 1-12 (Spring 1974).

<sup>14</sup> Thain, D.H. "Stage of Corporate Development." *Business Quarterly*, Winter 1969, pp. 33-45.

<sup>15</sup> Churchill, C. Neil & Lewis, V. Virginia, The five stages of small business growth, *Harvard Business Review*, May-June 1983. Pp 30-50.

<sup>16</sup> Garnsey, Elizabeth, A New Theory of the Growth of the Firm., Paper for the 41<sup>st</sup> World Conference of ICSB, Stockholm 1996.

<sup>17</sup> Greiner L., 1974, "Evolution and Revolution as Organizations Grow", *Harvard Business Review* July Aug pp. 37-46

the different transitions that are possible between the different phases. An example on transition model is the by Christensen<sup>18</sup> developed model for succession change in entrepreneurial managed firms. Hofer and Charan develop a detailed model for the transition from an entrepreneurial firm to a functional organized and professional managed firm based on their typology.

### **Other attempts to classify the models**

Craymer and Omura<sup>19</sup> showed an other attempt to systematize the different types of growth models. With the start in the typology of Hofer and Charans they try "A Portfolio Approach to Modeling Firm Growth Patterns". They claim that Hofer and Charan do not show when one type of model is to prefer before the others and place the four types of models in a four field matrix with the following change dimensions on the axes:

- Change in organization form is either change in degree or change of type.
- The organizational change is either continuous or discontinuous.

They place: Life cycle models in the field *change in degree/continuous change*. Evolutionary models in the field *change in degree/discontinuous change*. Stage models in the field *change of type/continuous change*. Transition models in the field *change of type/discontinuous change*.

This means that the field *change of type/continuous change* will be empty. In this field they put in opportunism according to the reasoning by Mintzberg<sup>20</sup>.

From a personal point of view I do not understand the meaning with this approach (the portfolio model). According to my opinion they mix different phases in the development of a firm and divide these in strategies that are applicable in a given situation.

### **THE MODEL**

In the following a system model that I started to develop during my spin-off studies<sup>21</sup> is described. The aim is to show how the different types of models can be seen as parts of or the whole of this system theory model depending on perspective.

Before we go on to the model some assumptions from system theory<sup>22</sup> is stated.

- A system is a number of components/elements and their relations.
- The system as a whole is supposed to be more than the sum of the parts.

System structure means the number and form of the relations, that bond together the elements of the system.

There is a difference between open and closed systems. A closed system is assumed not to be influenced by or have any relations to its environment. The opposite is true for an open system.

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<sup>18</sup> Christensen, C.R. Management Succession in Small and Growing Firms. Boston: Harvard University, 1953.

<sup>19</sup> "A Portfolio Approach to Modeling Firm Growth Patterns" Paper for the 41<sup>st</sup> World Conference of ICSB, Stockholm 1996.

<sup>20</sup> Mintzberg, Henry (1973); Strategy making in three modes, California Management Review. v.16(2): 44-53

<sup>21</sup> Scheutz, C., Söderling, R. (1985) Avknoppningar stimulerar innovationer och nyföretagande, Ledarskap nr 12, 1984

<sup>22</sup> Van Gigch, John P., Applied General System Theory, second edition, 1978, Harper & Row

For open systems the following applies:

- Changes in the environment of the system creates a need for change in the system.
- Changes of the system are created within the system by individual elements (molecules, individuals, groups etc.) that pull the rest of the system with them.
- During the change the system structure have to change.
- The old structure will fight the new one during the change phase.

This change model is derived from the theory of organic systems<sup>23</sup> and divides the development of the system into higher complexity of the system structure in three distinctive phases. These phases are: Phase 1 - a formative phase, Phase 2 - a normative phase and Phase 3 - an integrative phase

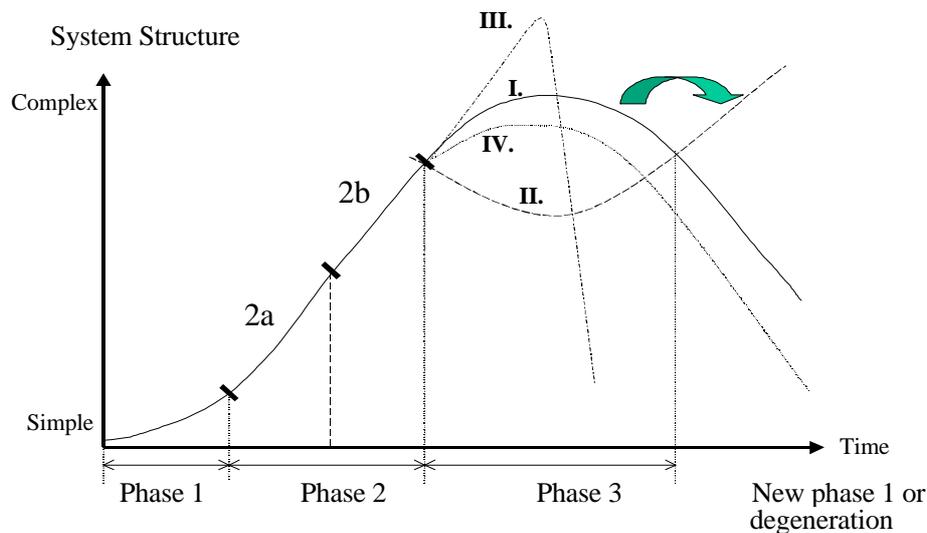


Figure 1. A growth model from living systems

### Phase one - the formative phase

In phase one the system emerges when elements, that are complementary, are establishing need bonds. This happens in order to establish a pattern. In this phase the emerging system is in conflict with its environment and dominated by it. The decision making process is stimuli-response oriented during this phase though the system has no experience on how to survive in this dominating environment. So the decision making is a two stage reactive process, see - act (see figure 2)

### Phase two - the normative phase

In phase two, the normative phase, the system is searching for security by integrating elements and bonds that are similar to the ones that were found in the first phase. It is doing so in order to empower and enforce the patterns established in phase one and to reject differences, thus building up an immune defense system. The system is in competition with its environment during the whole phase. This phase can be divided into two halves since the system is experiencing dependence on its environment during the first half(2a) and independence during the second(2b). In this phase the decision making process is logically oriented though the system now has built up experience on how to survive in

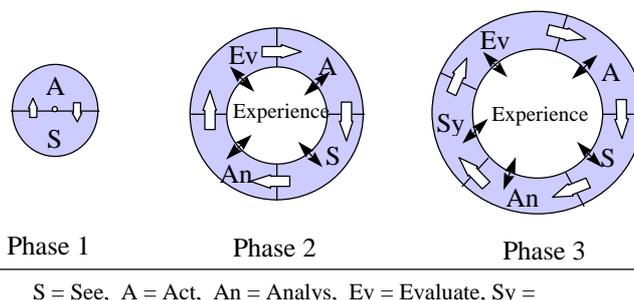
<sup>23</sup> To grow or die. George Land

this environment and compete with other systems in it. So the decision making is a four stage logical process, see - analyze - evaluate - act (see figure 2)

### Phase three - the integrative phase

At the transition to phase three the system has reached a point where it uses more energy to integrate further similarities than the benefit of doing so. The system and the environment are in interdependence with each other and have to cooperate. The right strategy in this phase is to maintain the old structure at its present level (curve I. in figure 1) at the same time as the energy received from the operation of the old structure is used to search for relations with dissimilarities in order to break down parts of the old structural pattern and integrate new elements (curve II. in figure 1). The decision making process is now holistically oriented though the system has now a lot of experience and because of the systems influence on the environment make it necessary to analyze the situation from a holistic point of view. So the decision making is a five stage holistic process, see - analyze - synthesize - evaluate - act (see figure 2).

### The Decision Making Process in the Different Phases



S = See, A = Act, An = Analys, Ev = Evaluate, Sy =

Figure 2 The Decision Making Process in the Different Phases

### Transformation

When the third phase is coming close to its end, the system has to find new elements which can serve as building blocks in a new higher structure and have the courage to transform into a new cycle. If this does not happen the system will slowly degenerate.

A condition for the possibility to transform at the end of the third phase is that the system has not continued to integrate similarities at the beginning of the phase (III. in figure 1). This is possible in the short run but leads to a catastrophe in the long run. A further condition for continued development is that the system understands to maintain its old structure up to the point where sustainable combinations of relations with new kinds of elements has been found.

### The adaptation of the model to the evolution of a firm

Is it possible to find these phases in the development of a firm? Yes, in my opinion it is possible to find a number of cycles, which over-lay each other<sup>24</sup>. Before I exemplify, we will go through a model for positioning with the well-known axes task- and relationship orientation. Regarding the relationship orientation, the meaning in this case is interest for relations with **unknown/new types of elements**. We can find the four phases (1, 2a, 2b and 3) in this matrix where phase 1 is represented by high relations- and task orientation.

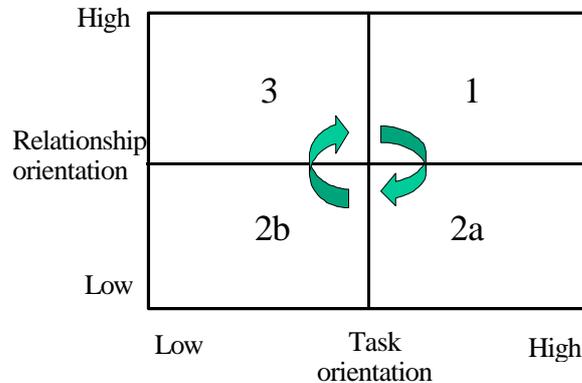


Figure 3. The development phases positioned in a matrix

### **Dominating leadership style and organization form and the model**

In an organization the leadership style in phase 1 is entrepreneurial<sup>25</sup> and the organization form is project oriented. An entrepreneur, who holds a vision, creates the organization. He works with his focus on realizing the vision by establishing relationships, for the length of time that is needed and with the elements of the environment that can contribute to the creation of the vision.

When the entrepreneur succeeds in realizing his vision we are facing the first possible crisis. If he does not change his leadership style from entrepreneurial to a producer behavior (high task orientation and low relationships orientation) the established pattern will not become enforced. To enforce the established pattern, there is a need for more similar elements in the organization and the structure will transform to a hierarchy. The organization is now in phase 2a with high task orientation and low willingness for relations with unknown types of elements. During this phase (2a) there is a drive for production capacity and maximization/optimization through increased standardization, specialization, centralization, concentration and synchronization. The hierarchy organization form brings a number of disadvantages when it grows, i. e. distorted information, distorted decisions, career effects and use and misuse of power. This causes a tendency of inefficiency and the firm is facing the next crisis. The solution is that the organization splits up in smaller hierarchies - for instance profit centers, divisions and so on, under the government of an administrative leadership style.

<sup>24</sup> I find similarities with this model in the works of Greiner(1972) and Garnsey (1996)

<sup>25</sup> There are a lot of different theories and typologies about leadership styles. For instance Blake and Monton (1964)and Reddin (1970). Most of them claim that the leadership style has to change according to the situation. I have chosen to use Adizes (1979) terms on different leadership styles

In this late part of phase two (2b) the focus is more oriented towards inner efficiency than on products or markets (low relations- orientation as well as task-orientation.) This means that the effort to reach maximization/optimization is hard. Special focus is put on quality, logistics and the flow of distribution. The production process problems have often been solved during phase 2a. The administration has, so to speak, the capacity to create new

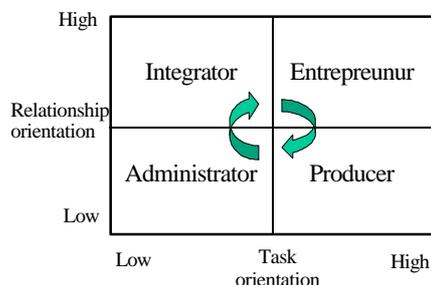


Figure 4. Change in dominating leadership style

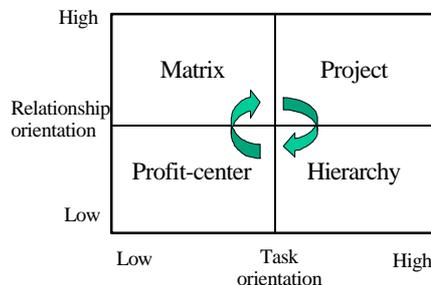


Figure 5. Change in dominating organization form

administrative rules and regulations without breaking up old ones. This, paired with the fact that every profit center (division) creates its own similar resources, leads us to the next critical situation. The solution is a new organizational form and a new dominant leadership style, i. e a matrix organization and an integrator, who is not task oriented but listens to, advises, accepts and empowers his/her subordinate managers. In this organization, which rather soon will look chaotic, there are possibilities for new entrepreneurs to emerge (the control system is seldom functioning in all dimensions.) Although management is accepting and supportive it allows a number of odd projects to start<sup>26</sup>.

One or a few of these newly found combinations of customer needs, products, technologies and so on, are built on some elements of the old structure and its business. Hopefully these combinations are in place when the old business operation has reached maturity and begins to degenerate so that the organization can transform to a new operation. The organization now becomes project oriented again but on a higher organizational structural level. Alternatively, the project, that gives the new direction, has come so far that the complete phase 1 has taken place in parallel with the firm's phase 3, because of which the transformation directly jumps to a new phase 2a. The described process requires a management that is alert, that understands the importance of changing organization form and dominant leadership style at the right time. In an organization, where entrepreneurial behavior is dominating for too long, the innovations will never be exploited; the resources are fully occupied with the task to find solutions to new types of problems. If the organization does not exchange the hierarchy in time, the organization will be helpless when it has to handle change in its environment. The administrative behavior is the one that is most difficult to change. In general, the management at this phase feels powerful and experiences that the organization is independent of its environment. There is a big risk that the organization at the transition into phase 3, continues to enforce the old system and will reach a higher structural complexity in the short run. If this continues the firm after a while will run into an acute crisis that may lead to a disaster (one example of this was the Swedish firm FACIT, another was the Swiss watch industry).

<sup>26</sup> Compare with Champions and Godfathers of Peters and Waterman.

During the whole second phase (producer and administrator) no other entrepreneurial behavior than the one that empowers the established pattern is allowed and many potential entrepreneurs are falling into sleep or are rejected (spin-off) from the firm. If the firm shall be successful during the third phase there is a need for allowance to search for new patterns outside the rules and regulations of the old structure (compare with the intrapreneurs of the Foresight Group<sup>27</sup>). The risk in this phase is partly that the old operation is over-bureaucratized and partly that the new operation is under-bureaucratized. If the management does not dare to or is allowed to make the transformation at the end of the third phase, the firm will degenerate and finally die.

### **Strategic driving force and the model**

Tregoe and Zimmerman<sup>28</sup> found in their research nine strategic areas that can be used as the driving force. They grouped them in three categories: Product/Market, Capabilities and Results and claimed that only one of the nine areas should be the driving force for the total organization. With the general model is it possible to locate which strategic area that will be the best driving force in the different phases. In phase 1 is it possible to chose to start the business in an industry where the strategic areas growth/profit are good. When the firm has entered phase 2a the focus is on the product/service and that should be the dominant strategic driving force. In phase 2b the firm has built up capabilities and the main focus is to use them in a rational way. And finely in phase 3 the market is the strategic driving force since in this phase the possibility to continue the growth of the firm is to create new products for the existing market or introduce existing products to new markets.

### **Earlier Described types of models in the light of the system theory model**

Since it is possible to use the above described model on different system levels the following definitions is made:

Process: a whole cycle (phase 1, 2a, 2b and 3. If transformation not take place a fifth, degeneration will occur.)

Phase: a part of a process, every process is divided into four phases.

Every phase in one process can be seen as a process on a lower level and a process can be seen as a phase on a higher level.

**The general model as a life cycle model:** If we apply the described system theory model as a life cycle model we are looking at the firms total life as one process. To use the whole process of the model can only be used for description and analysis on firms that no longer exist or are winding up.

**The general model as a stage model:** If we apply the described system theory model as a stage model it means that we have to see every phase as a process and that the phase transitions take place as a transition from phase 3 in the earlier process to the beginning of phase 2 in the following process (phase 1 in the new process takes place in parallel with phase 3 in the old). With the help of this view is it possible to find explanations why the firms empirically do not follow the same series of processes but instead comes in different order. Although the firm has to go through all the phases in a process to reach the next one. But which process that will become the next depends on what kind of dissimilarities

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<sup>27</sup> Described by Naisbitt in Megatrends

<sup>28</sup> Tregoe, B. B. & Zimmerman, J. W., Top Management Strategy.

the system found and choose to create new patterns with. The four stages of Kazanjian<sup>29</sup> show clear similarities with the model as a stage model.

**The general model as a evolutionary model:** If we apply the described system theory model as a evolutionary model it means in general the same as with stage models. However it is possible to see that for instance Greiner describes five processes and characterize phase 2 in each of the processes of his model as development and the parallel phase 3/phase 1 situations as revolutionary. If we see the model of Greiner as one process is it possible to identify his phase 1, 2 and 3 as phase 1, 2a and 2b in the general model while his phase 4 and 5 can be seen as different strategies in phase 3 of the general model. Phase 4 of Grainer is describing a strategy to continue empowering the old structure (curve III. In figure 1) while his 5<sup>th</sup> phase is a recovery from the wrong strategy and an attempt to create further growth by cooperation with the system environment.

**The general model as a transition (transformation) model:** If we apply the described system theory model as a transition model the interest is focused on what is happening in phase 3 of the earlier process to the beginning of phase 2 in the following process (phase 1 in the new process takes place in parallel with phase 3 in the old one.)

## CONCLUSIONS

My conclusion is that the problem with many of the models, in all the different types, is that they describes a mix of phases in cycles and whole cycles while the model described in this paper show the evolution as a number of cycles that can be seen as forming a spiral. To reach the next cycle an organization have to go through all the phases in the current cycle. If this happen and what time it takes depends on the specific situation the organization is facing as well as the choices of the dominating actors.

Another conclusion is that it is not obvious what system level the models are trying to describe. This might have to do with the fact that the definition of the lifetime of a firm is unclear. Should for example the Swedish enterprise STORA with a history of more than 700 years be seen as one firm or a series of reincarnations of the same firm spirit or should it be seen as a series of different firms building on elements from its precursors?

## IMPLICATIONS AND FURTHER RESEARCH

An implication of this is that it is essential to clarify what the object under study is when using models to analyze the dynamics of the firm. It could be the whole firm but more often it seems to be, for example, the current market, product, technology or business orientation. After the definition of the object under study it seems essential to be clear over which the key elements and relationships are, so it is possible to define the system level that the model shall cover. From my point of view there is a need for further research on how to apply this model to different situations and how to identify when one phase in a process is coming to its end.

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<sup>29</sup> Kazagian, R. K., Relation of dominant problems to stages of growth.

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