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UNDERSTANDING SYNERGY: A CONCEPTUAL
AND EMPIRICAL RESEARCH PROPOSAL

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by

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UNDERSTANDING SYNERGY: A CONCEPTUAL AND EMPIRICAL
RESEARCH PROPOSAL

The term synergy and the various ideas that it connotes can be found in many diverse business literatures. It is one of those tantalizing constructs like strategy that everyone can ascribe to yet they may not really know what they mean by it. This lack of conceptual rigor can damage subsequent empirical attempts to either explain synergy or use it to explain other constructs. The purpose of this paper is to 1) briefly review what we think synergy is -- the way it has been used, 2) briefly review how current empirical research has treated the construct of synergy and, 3) offer a conceptual and empirical agenda for thinking about and measuring the term synergy. The writer hopes that the paper will help to generate renewed interest in delving directly into the construct of synergy.

LITERATURE REVIEW

If one broadly construes the term synergy, an argument could be made that its roots are to be found in almost every social science literature extant. For our purpose, however, we will stay constrained to literature in the management proper. While we could begin our review with the works of Barnard (1938) and Drucker (1974), their notions of synergy could be classified as behavioral synergy. While these are important concerns, strategists have thought about synergy in terms of diversification strategy (Rumelt, 1974) and divisionalization (structure) in terms of contingency organization design. While the term synergy certainly has been used in conjunction with these literatures, it is interesting how little conceptual rigor has been applied directly to the construct of synergy. As such, our review will begin with the work of Rumelt (1974) and the work of Lawrence and Lorsch (1967) as it relates

to our understanding of synergy. It will then progress to some newer excursions into the notion of synergy.

Pre-1979 Notions of Synergy

The management landmark works prior to 1979 that have relevance to the notion of synergy are those of Lawrence and Lorsch (1967) and Rumelt (1974). Since these works dealt directly with organization design and diversification strategy, they only dealt with the notion of synergy indirectly. For Rumelt (1974) the term synergy meant relatedness in market or technological senses and for Lawrence and Lorsch (1967) it also meant extent and kind of integration. Both of these construals indirectly presented synergy as the glue which held a salient part of the organization or strategy together. Since synergy was not the direct focus of each of these studies, the construct was not operationally defined and substantively developed. For these studies, synergy is the outcome or attribute of a properly diversified strategy or a properly differentiated and integrated structure. Synergy then is a hindsight or after the fact characterization of other properly aligned or developed constructs.

All the while Rumelt and Lawrence and Lorsch were developing their notions of synergy (although indirectly), there was developing in finance concern for the value of and in mergers and acquisitions. As with the above studies, it is with only hindsight that we can now look at this work from a synergy perspective. Early construals of the value in acquisitions stated that as long as the combined earnings per share of the proposed merger were greater than the earnings per share of either of the two firms prior to the merger, then the merger would supply some value to both sets of shareholders (Mead, 1969). Presumably synergy would be had by these arrangements. Concerns about not including risk directly in the analysis and using only accounting numbers

lead to attempts to understand the value of a merger in terms of the present value of the combined cash flows. If the so calculated net present value was greater than the current market value (price) of the common stock, then value was created. Also, some measure of synergy was supposedly gained. It is to be highlighted here that this "financial" synergy, even though substantively different than that of the Rumelt and Lawrence and Lorsch studies, is understood in hindsight. This notion was not the intent of the authors at the time of publication.

Post 1979 Notions of Synergy

To a large extent, the newer construals of the notion of synergy were made in reaction to some of the problems of the previous studies mentioned above. The Rumelt and Lawrence and Lorsch studies did not delve directly into synergy. Also, the more finance related work was extended for more substantive reasons. If the prescriptions for creating value were followed without concern for more practical issues of relatedness (Rumelt's notion) in the proposed merger, then one could easily end up with a conglomerate. In an attempt to address these concerns, the works of Salter and Weinhold (1979) and Bradley and Korn (1980) combined notions from Rumelt (the requirement of relatedness) and the finance concern for profitable mergers (Alberts, 1979) with some other softer notions of synergy. The more soft concerns for relatedness were termed "screening criteria." These criteria or attributes were features of the current business level strategy of the acquiring firm which had to be either enhanced or upgraded by the proposed acquired firm. In actuality, these screening criteria were the nuts and bolts fleshing out what it means to be related with the current strategy of the acquiring firm. If the proposed merger meets the dictates of the screening criteria, then one is more assured of a proper fit so that one does not "stray far afield" (Peters and Waterman, 1982). In

the writer's opinion, it is the emergence of the screening criteria that is most akin to what strategists think synergy is. It is the implementation of these screening criteria by people that respects the original meaning of the term synergy -- working together so that the parts together can produce something greater than the parts could alone. If this account has merit, then the more financial construal of synergy is a necessary constraint to a more fundamental or foundational notion of what synergy is.

Recent Conceptual and Empirical Notions of Synergy

The cumulative understanding generated by the above research has, in the writer's opinion, set the stage for some of the most recent attempts to understand synergy. As before though, synergy is usually not the direct aim of a particular research effort and is usually only tangentially mentioned or considered. Synergy then is still mostly construed as a rationalizing construct: it ensues if strategy and structure are done well.

Porter and Salter (1982) have returned to the construct of diversification and dissected it in synergy terms of the degree and appropriateness of "fit." After subscribing to Rumelt's finding that diversified firms who were related performed better than conglomerates, Porter describes the various conditions for good fit across technological, market and managerial fronts. This is the first attempt to delve into the notion of screening criteria from a systematic viewpoint. While Porter's work is comprehensive, it is still primarily descriptive in its orientation. It does not delve into normative concerns of when various types of fit would be appropriate for certain kinds of situations. One of the few purely empirical endeavors that attempts to advance some prescriptive notions is that of Mahajan and Wind (1983). They delved into the relationship between types of synergy and profitability using

the PIMS data base. They distinguished among sales, operating investment and management synergy as defined by the degree of sharing of each source of synergy with its appropriate constituents. They found that sales and management synergy were associated with higher profits, operating synergy had a mixed effect on profits and that investment synergy depresses profitability. Also, these relationships vary somewhat with respect to what industry is being studied. They also issue the caveat that a business unit may have high synergy as measured by one of the PIMS variables but if it is not implemented correctly this could nullify a positive effect on profitability.

To sum up this brief literature review, the writer can present the following as a summary of what the field thinks synergy is:

1. Synergy is a working together of the parts so that something greater than any of the parts alone is produced. Implicit in this notion is that implementation is crucial in producing synergy and that synergy must be couched in practical and more microscopic terms.
2. Synergy so gained must demonstrate a cost-benefit advantage.
3. The implications of 1 and 2 above suggest then that synergy must be designed and managed so that a comparative advantage is gained.

These considerations suggest treating synergy directly as a strategic and structural design variable. The next section will delve into this position.

AN AGENDA FOR CONCEPTUALLY AND EMPIRICALLY UNDERSTANDING SYNERGY

If one subscribes to the argument and summary above, then the question becomes how can we think about synergy so that it can be substantively understood and empirically measured. The writer posits that these are necessary conditions for the design and management of synergy. Of the two issues just mentioned, thinking substantively or theoretically about synergy is the most problematic. The reason why this is so is the observation that almost all of

the previous work done directly or indirectly with synergy has been atheoretical and descriptive. As mentioned above, synergy is most often described in hindsight and is presented as the attribute of other constructs. Only Mahajan and Wind (1983) delve directly into synergy as a design construct in its own right. However, their excursion is really exploratory since they do not posit the conditions around which synergy ought to have a positive correlation with profitability. A proper theory of synergy also would be able to suggest other outcomes that synergy would help produce. So, what is needed really is a theory of synergy that is able to generate empirical referents. This is the subject of the next section.

A Theory of Synergy

A useful way to present a theoretical notion is by the following format:

- a. Premise
- b. Causal Mechanism
- c. Initial Conditions

Therefore:

- d. Outcome(s)

While this classic format of scientific thinking may suggest to some an overly rigid formula, it is to be noted that this template can be placed over even the messiest of problems for added clarity. It forces the researcher to think pristinely about his or her formulation and its key features. For social science research, perhaps the most problematic but interesting part of this schema is stipulating the hypothesized causal mechanism. It is here that a theory will either be confirmed or rejected by subsequent testing. So for the theory of synergy to be presented here, some argument needs to be advanced in support of the central causal mechanism that will be posited.

The writer argues that the term synergy only makes sense in the context of a system. A system is defined as parts (subsystems) and the

interrelationships among the parts (Van Gigch, 1978). In fact, one can easily recognize that the terms synergy and system have the same Greek root of "wholeness." According to systems theory tenets, a properly conceived system, in addition to having parts and interrelationships among them, is able to distinguish a boundary for itself that delineates the system from other systems and its environment. For more complex systems, it is the boundary that enables us to think in terms of an input -- throughput -- output model. If one grants this argument that outputs eventually flow to some outside environment of the focal system, then we have to allow for the occurrence of feedback. Feedback emanates not only from the environment back to the focal system, but also up from the interactions of the sub-systems or parts of the larger system. So, a sensible hypothesis with respect to synergy and feedback is that the occurrence of synergy increases the quality of feedback to the focal system. Quality of feedback means low distortion of information, stronger and clearer communication signals, higher frequency of signals, etc. The presence of synergy brings about these positive attributes in the system because the very relatedness of the parts allows essentially for efficient communication at relatively low costs. Unrelated sub-systems (conglomerates) can only achieve such efficient communication at higher levels of costs and by more expended energy. This proposition is presented in the form of a hypothesis since, to the writer's knowledge, no empirical work can shed light on this proposed relation. It is intuitively appealing, at least, to say that if the parts of the system are working together to produce something greater, then some function has to be optimized or maximized. Since synergy can operate at all levels of the organization (structural, strategic, etc.) we can say generically that it is the maximization of the quality of feedback that synergy supplies. How this rather abstract notion gets operationalized at various

levels of the organization (or with respect to other research aims) remains for further research. To sum up this argument so far, Figure 1 depicts one theory of synergy, according to the above schema. The remaining key features of Figure 1 to be discussed revolve around the concerns listed under Initial Conditions. Here, the writer has hypothesized some conditions for synergy and a definition of the actuality of synergy. One of the conditions that can be hypothesized to allow synergy to happen would be an accommodating infrastructure. Such an infrastructure could be the power and informal communication systems that would allow for a degree of either collegiality or hierarchy to be had. Depending on the dominant culture in the organization, either a clan or a hierarchy can allow an appropriate necessary elan or gestalt to emerge and foment. This elan or gestalt is probably one of the driving forces that allows the synergy to happen. The dominant culture itself can be thought to advance or retard the emergence of synergy. Tightly centralized organizations that have bred mistrust can be thought to retard the emergence of synergy. Finally, but by no means exhaustive, the actual internal structure of the organization can be thought to condition the emergence and development of synergy. The degree of centralization, formalization, standardization and reporting relationships can be thought to influence synergy. Very mechanistic organizations might produce very different forms of synergy than more organic organizations.

Figure 1 also stipulates as another initial condition the actuality of synergy. Its occurrence, as influenced by the conditions for it, actually produces the positive effects that we hypothesize. For the purposes of this argument, synergy can be operationally defined as a fundamental clustering of salient organization parts. The nature of this clustering would depend on the nature of the subject being delved into. For example, the clustering for

FIGURE 1

A THEORY OF SYNERGY

PREMISE: Synergy is a positive and beneficial component of organization and strategy design.

CAUSAL

MECHANISM: Synergy produces positive outcomes because its occurrence increases the quality of feedback from the interactions of the sub-components. The quality feedback means low distortion, stronger signals, etc.

INITIAL

- CONDITIONS: a. The Context for Synergy: Accommodating infrastructure, Culture, reporting patterns, etc.
- b. The Actuality of Synergy: Synergy can be defined as a fundamental clustering of salient organization sub-systems or parts.

THEREFORE:

POSITIVE

OUTCOMES: Profitability

Sense of Closure

Durability through time

Source: Primary

strategic and macrostructural concerns might be different than that for microstructural concerns. Except for the work of Hambrick (1982), no other extant work can help us posit what this fundamental clustering would look like as entities in and of themselves and how these clusters would relate to other constructs and outcomes. The purpose of the next section is to outline one example of a theory of synergy with its consequent empirical referents. While this attempt is exploratory, it is hoped that it can stimulate further work directly on the topic of synergy.

A Theory of Synergy -- Specific

We can proceed to outline one specific theory of synergy using the schema presented in Figure 1 above. A perusal of Figure 2 shows that the key difference between it and Figure 1 is the statement of the major premise. In order for subsequent empirical work to be substantially driven, a first attempt at stipulating a theoretical ground had to be made. For the example here, the organization is said to be isomorphic (similar form) with a living organism. It has specialized parts (the functional areas) that are discreet but are also interacting (Forrester, 1968). These working, living parts (sub-systems) are described in terms of their key strategic function vis-a-vis the next higher order system which would be the organization. Like any animate or inanimate object, we can generate attributes for each part or sub-system that describe its central function vis-a-vis the organization (here, the next higher order system). The remainder of Figure 2 is identical to Figure 1 and need not be elaborated again.

Before we progress to methodological concerns on how to construe the fundamental clustering of organizational parts, perhaps a review of the key aspects of this framework would be in order. We have said that synergy can only have meaning in the context of a system, that synergy can be defined as a

FIGURE 2

A THEORY OF SYNERGY - SPECIFIC

PREMISE: The organization can be construed as a living system that has parts (sub-systems) which serve certain organismic functions for the organization.

CAUSAL MECHANISM: Synergy produces positive outcomes because its occurrence increases the quality of feedback from the interactions of the sub-components. The quality of feedback means low distortion, stronger signals, etc.

INITIAL CONDITIONS:

- a. The Context for Synergy: Accomodating infrastructure, culture, reporting patterns, etc.
- b. The Actuality of Synergy: Synergy can be defined as a fundamental clustering of salient organization sub-systems or parts.

THEREFORE:

POSITIVE OUTCOMES:

- Profitability
- Sense of Closure
- Durability Through Time

Source: Primary

fundamental clustering of salient organization sub-systems and that the causal mechanism that produces positive outcomes is the fact that the presence of synergy increases the quality of feedback. What is left to consider is how we can construe synergy. Since we have very few previous attempts that can provide help, we will have to rely on method to extract some first indications of what this fundamental clustering would look like and mean.

Measuring Synergy

Figure 3 depicts the functional areas (sub-systems) and the function they serve vis-a-vis the next higher system, according to the theory posited. As one can see, this is a naturalist account -- the functions displayed are organismic and each function serves to maintain the goal or purpose of the next higher system. If the organization is construed as a living organism, then the parts or sub-systems could exhibit the following organic functions. Marketing is that part which provides for probing and interface with relevant environments. Production could supply the "techne" which is the art (and science) of efficiently and effectively transforming inputs into outputs. Research and Development, by this account, could supply the needed organizational renewal which could allow for new innovation and growth. From this organic perspective, Finance, Accounting and Legal can function to supply the necessary internal lubrication for the system. This lubrication could consist of the requisite information flows and the necessary critical decision points that act as valves or gates for the information flows. Finally, where the previous four functional areas could be viewed as the skeleton of the system, the Personnel functional area could supply the elan or life force to the system (the organization). While this function would be difficult to operationalize given our state of knowledge about human resources and strategy, perhaps the process (succession lines, power) of and conditions (culture, power) for

FIGURE 3

A DEPICTION FOR SYNERGY

<u>FUNCTIONAL AREA</u>	<u>MARKETING</u>	<u>PRODUCTION</u>	<u>FINANCE/ACCTG/ LEGAL</u>	<u>R & D</u>	<u>PERSONNEL</u>
<u>FUNCTION</u>	Interface &	Techne, "Art",	"Lubrication"	Renewal	Substance =
<u>SERVED</u>	Probing	Efficiency			"Flesh & Blood"
	Attributes	Attributes	Attributes	Attributes	Attributes
	1	1	1	1	1

placing human resources in the system could describe knowledge about the life force itself. Presumably, we could be able to generate attributes which could describe this process and these conditions, as we will for all of the functional areas. Concern for these attributes will be taken up below.

In order to gain knowledge of each of these functional areas and the functions they serve, attributes of each function would need to be generated. These attributes would have to be operationalized to flesh out the particular function that that functional area (part) performs. Field research would need to be done to generate a list of each function's attributes. These attributes, measured at least ordinal level, could give a multi-item composite picture of each function.

In order to gain some first indications of what synergy could look like given the thrust presented here, a clustering algorithm (Hambrick, 1982) could be employed to discern patterns that form across functions. For a given firm, these fundamental clusters could represent a form of synergy. Figure 4 shows a hypothetical clustering pattern for Firm A. An extension of this analysis could be used to ascertain synergy in proposed mergers. Figure 5 shows a hypothetical clustering pattern for Firm B. Now, suppose that Firm A wanted to acquire Firm B. If the two figures were to be overlaid, the clustering that Firm B supplies to Firm A which Firm A lacks could represent the fundamental, strategic synergy in the proposed merger. While these ruminations are really conjectures, the writer feels that what is presented is a theory driven, more rigorous treatment of what strategists mean by synergy. It can also help to extend the earlier notions of screening criteria.

FIGURE 4

A DEPICTION FOR SYNERGY

<u>FUNCTIONAL AREA</u>	<u>MARKETING</u>	<u>PRODUCTION</u>	<u>FINANCE/ACCTG/ LEGAL</u>	<u>R & D</u>	<u>PERSONNEL</u>
<u>FUNCTION</u>	Interface &	Techne, "Art",	"Lubrication"	Renewal	Substance =
<u>SERVED</u>	Probing	Efficiency			"Flesh & Blood"
	Attributes	Attributes	Attributes	Attributes	Attributes
	1	1	1	1	1

FIGURE 5

A DEPICTION FOR SYNERGY

<u>FUNCTIONAL AREA</u>	<u>MARKETING</u>	<u>PRODUCTION</u>	<u>FINANCE/ACCTG/ LEGAL</u>	<u>R & D</u>	<u>PERSONNEL</u>
<u>FUNCTION</u>	Interface &	Techno, "Art",	"Lubrication"	Renewal	Substance =
<u>SERVED</u>	Probing	Efficiency			"Flesh & Blood"
	Attributes	Attributes	Attributes	Attributes	Attributes
	1	1	1	1	1

CONCLUSION

This paper has presented one theory and framework with which to view the notion of synergy directly. One of the problems with past attempts to understand synergy (with the exception of Mahajan and Wind, 1983) was that synergy was only indirectly referenced. Implicit in these works was the view that synergy resulted from other properly aligned variables (strategy and structure). The writer feels that the construct of synergy warrants direct attention as a strategic and structural design variable.

The theory and argument above moved to posit the notion that the organization as a system has certain sub-systems or parts (here the functional areas of production, marketing, etc.) and that these parts serve certain organismic functions. We can describe these functions in terms of attributes which can then be attempted to be clustered. These fundamental clusterings could represent some first attempts to describe synergy and understand certain structural features of it. All of this awaits empirical development and testing.

What may be problematic to some readers at this stage of development is the theory above that was posited to generate the functions and their attributes. These constructs were presented to offer one example of how we might be able to understand synergy directly. Other theories will need to be generated in the course of development. But, if the thrust of what has been presented here is valid, then the question becomes what theories can be presented that can illuminate discrete but interacting parts or sub-systems. This requisite feature would seem to be a first premise to understanding synergy in organizations that have degrees of differentiation and integration. The development of rather fundamental clusters of these discrete and interacting sub-systems, under different theories and conditions, might give us some promising first glimpses of what we mean by the term synergy.

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