



Strategic Organizational Development, Infrastructure, and Financial Performance: An Empirical Investigation

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Abstract. This paper builds upon previous research to develop and empirically test a model of organizational development at different stages of growth from an entrepreneurial start up to a large established business enterprise (Flamholtz , 1986, 1995); Flamholtz and Aksehirli, 2000), and Flamholtz and Hua, 2002A). It has four related objectives: 1) to replicate previous research designed to empirically test the hypothesized link between the organizational development model and financial performance, 2) to assess the relative importance of an organization's "infrastructure" as a determinant of financial performance, 3) to assess the extent to which the development of an organization's infrastructure is related to (causes) "organizational growing pains," and 4) to assess the extent to which organizational growing pains are related to financial performance. These questions are of particular concern to entrepreneurial companies which typically lack well developed infrastructure and, as a consequence, typically experience a variety of "growing pains" (Flamholtz and Randle, 2000; Flamholtz and Hua, 2002 B).

Keywords: organizational development, infrastructure, financial performance, organizational growing pains, critical success factors.

1. Introduction

The current research was conducted in a diversified financial institution based in the United States. Seven of the companies divisions, which employed several thousand people, were used as the research site for this study.

Each division was evaluated in terms of the six key strategic building blocks. Scores were assigned to indicate the degree of each division's "strategic organizational development". This score and measures of financial performance

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(.Profit Margin.) were used in a regression analysis to test the predictive validity of the framework. We also used regression analysis to assess the extent to which each division's infrastructure (measured in terms of a subset of the overall model) was a determinant of the financial performance of the division measured in terms of gross margin. In addition, we used regression analysis to assess the extent to which the development of an organization's infrastructure is related to (causes) "organizational growing pains", and to assess the extent to which organizational growing pains are related to financial performance.

The results of the regression analysis suggest that there is a statistically significant relationship between the development of the six critical success factors and overall financial success of organizations. Accordingly, this research provides a replication of prior research (Flamholtz and Hua, 2002 A), which found empirical support for the hypothesized relationship between the Pyramid of Organizational Development model and the financial performance of organizations. The results of the regression analysis also suggest that there is a statistically significant relationship between an organization's infrastructure and financial performance.

The results of the regression analyses concerning the relationship between infrastructure and growing pains and growing pains and profit margin were statistically significant, but not at less than the 0.05 level. This suggests a *possible* relationship, but is not definitive.

2. Purpose

This paper builds upon previous research to develop and empirically test a model of organizational development at different stages of growth from an entrepreneurial start up to a large established business enterprise (Flamholtz ,1995); Flamholtz and Aksehirli, 2000; Flamholtz and Hua, 2002A; Flamholtz and Hua, 2002B).

The current research has four related objectives:

1. to replicate previous research designed to empirically test the hypothesized link between the organizational development model and financial performance,
2. to assess the relative importance of an organization's "infrastructure" as a determinant of financial performance,
3. to assess the extent to which the development of an organization's infrastructure is related to (causes) "organizational growing pains", and

4. to assess the extent to which organizational growing pains are related to financial performance.

The first objective is important not only for the development of successful entrepreneurial companies from startups to established businesses, but to organizations at all stages of growth. This latter three questions are of particular concern to entrepreneurial companies which typically lack well developed infrastructure and, as a consequence, typically experience a variety of “growing pains” (Flamholtz and Randle, 2000; Flamholtz and Hua, 2002 B).

This paper builds upon the previous research and provides additional empirical evidence of the hypothesized link between the organizational development model and financial performance. The current study involved a replication and extension of prior research by Flamholtz and Hua, 2002A and Flamholtz and Hua, 2002 B. The earlier research (Flamholtz and Hua 2002A; Flamholtz and Hua, 2002B) was conducted at a manufacturing company (foundries); *the current research was conducted in a large diversified financial institution based in the United States.*

3. Background

Flamholtz (1995) proposed a framework to understand and plan the successful growth of firms at different stages of growth as well as to explain organizational success and failure. The framework includes three related models: 1) an organizational development (success) model, 2) a life cycle model, and 3) a model of the consequences when there is a disequilibrium between the development of an organization in terms of its “infrastructure” and its size at a given stage of growth.

The framework has subsequently been elaborated further and used to discuss case histories of success and failure of a wide variety of organizations (Flamholtz and Randle, 1998). A growing body of research has provided some preliminary empirical evidence to support the validity of some of the hypothesized relationships in the theoretical framework (See Randle, 1990; Flamholtz and Aksehirli, 2000; Flamholtz and Hua, 2002A; Flamholtz and Hua, 2002B).

The current paper aims to build upon the previous theoretical and empirical work and provides additional empirical evidence on four related aspects of the framework, as described above. The next section provides a review of the key aspects of the framework relevant to this research. The following section will explain the research hypothesis and research design used in the empirical assessment of the framework. That section also includes a description of the company used to test the framework. Results of the test are presented in the next section. Finally, the conclusions of the analysis and the implications of these

conclusions for management and researchers will be considered in the final section.

4. The Theoretical Framework

The theoretical framework underlying this article that was previously presented (Flamholtz 1995) is reviewed briefly below. A more extensive discussion can be found in Flamholtz (1995) or Flamholtz and Randle (1998). It should be noted that while this material has been described previously elsewhere, the current statement contains some refinements and changes.

4.1. The Model for Organizational Development (Success)

The initial premise or hypothesis underlying this framework is that organizations must perform certain tasks to be successful at each stage of their growth. The six key tasks or dimensions, all of which have been supported by previous research, are:

- Identification and definition of a viable market niche (Aldrich, 1979; Brittain and Freeman, 1980; Freeman and Hannan, 1983),
- Development of products or services for the chosen market niche (Burns & Stalker, 1961; Midgley, 1981),
- Acquisition and development of resources required to operate the firm (Pfeffer & Salancik, 1978; Brittain & Freeman, 1980; Carroll & Yangchung, 1986),
- Development of day-to-day operational systems (Starbuck, 1965),
- Development of the management systems necessary for the long-term functioning of the organization (Child & Keiser, 1981; Tushman et al., 1985),
- Development of the organizational culture that management feels necessary to guide the firm (Peters & Waterman, 1982; Walton, 1986).

A second premise or hypotheses is that each of these tasks must be performed in a stepwise fashion in order to build a successful organization, and, taken together; they comprise six “key strategic building blocks” of successful

organizations. Each of these key tasks or strategic building blocks will be discussed in detail below.

Identification of Market Segment and Niche. The first challenge for a new venture in organizational survival or success is to identify a market need for a marketable service or product. The chances of organizational success are enhanced to the extent that the firm is successful in this step (Flamholtz, 1995).

The challenge is not merely in identifying the market but also, if possible, to capture a “market niche”, a relatively protected place that would give the company sustainable competitive advantages. Failing to define a niche or mistakenly abandoning the historical niche can cause an organization to experience difficulties and even failure. The process of identifying the market involves the development of a strategic market plan to identify potential customers and their needs and the creation of a competitive strategy (Flamholtz, 1995).

Development of Products and Services. The second challenge or strategic building block involves the development of products and/or services. This process can also be called “productization”, which refers to the process of analyzing the needs of customers in the target market, designing the product and developing the ability to produce it (Flamholtz, & Randle 2000). For a production firm this stage involves the design and manufacturing phases, whereas for a service firm, this stage involves forming a system for providing services to the customers (Flamholtz & Randle, 2000).

The success at this stage is highly related to the previous critical task, proper definition of the market niche (Flamholtz, 1995). Unless a firm fully understands the needs of the market, it can not satisfy those needs in “productization”, which can be defined as the process of creating products to satisfy market needs. Once the market has been identified and the product or service developed, the next challenge is to develop the organization’s “infrastructure”. This includes the resources and day to day operational systems as well as the management systems and culture required.

Acquiring & Managing Resources. Success in identifying a market niche and productization will create increased demand for a firm’s products or services. Consequently, the resources of the firm will be spread very thin (Flamholtz, 1995). The organization will require additional physical, financial and human resources. This is the point at which the entrepreneurs should start thinking about the long-term vitality of the firm and procure all the necessary resources to survive the pressure of current and future increase in demands (Flamholtz & Randle, 2000).

Development of Operational Systems. The fourth critical task is the development of basic day-to-day operational systems, which include accounting, billing,

collection, advertising, personnel recruiting and training, sales, production, delivery and related systems (Flamholtz, 1995). Entrepreneurial companies tend to quickly outgrow the administrative systems available to operate them. Therefore, it is necessary to develop sufficient operational systems, on time, to have developed overly complicated operational systems. In this case, the success of the organization depends on the reengineering of operational systems (Flamholtz, 1995).

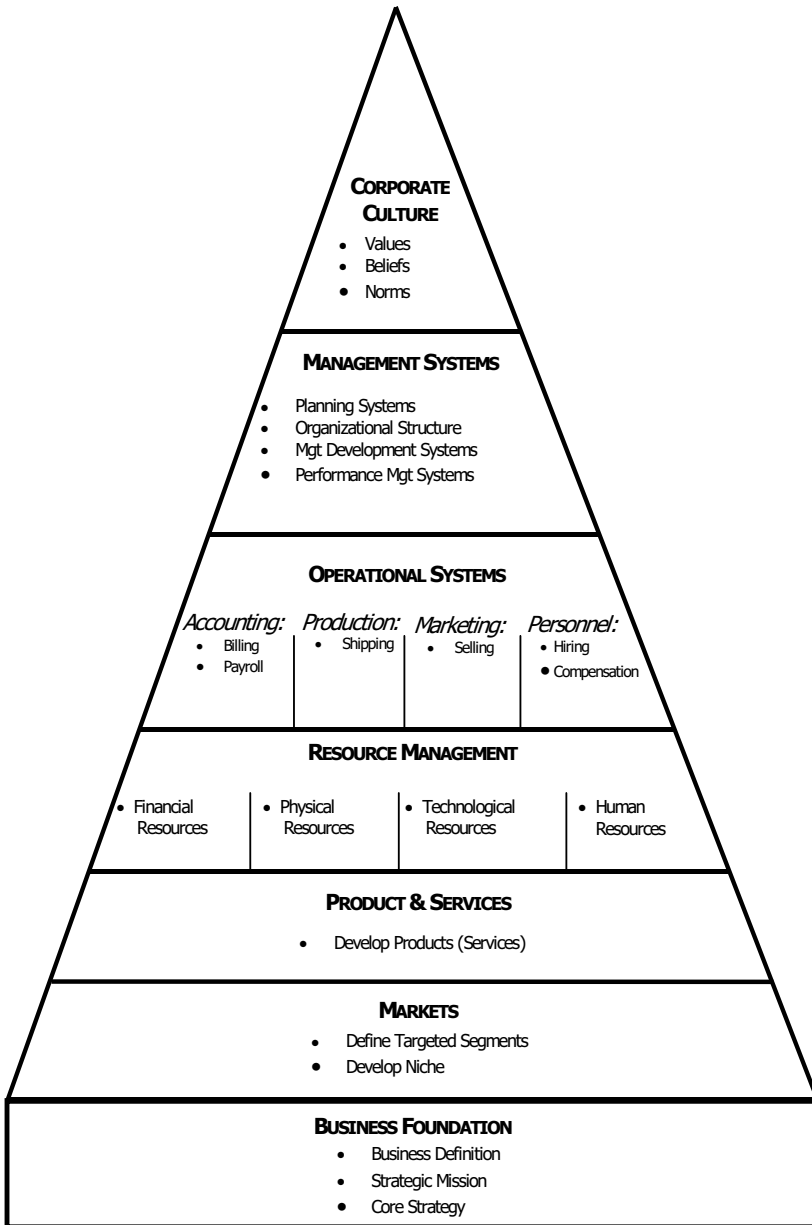
Development of Management Systems. The fifth step is to develop the management systems, which is essential for the long-term viability of the firm (Flamholtz & Randle, 2000). Management systems include systems for planning, organization, management development and control. Planning systems involve planning for the overall development of the organization and the development of scheduling and budgeting operations. It includes strategic planning, operational planning and contingency planning (Flamholtz, 1995). The mere existence of planning activities does not indicate that the firm has a planning system. A planning system ensures that planning activities are strategic and ongoing. Organizational structure involves the ways in which people are organized and activities are coordinated. As with the planning activities success depends, not on the mere existence of a structure but on the match between the structure and business strategy (Flamholtz, 1995).

The process of planned development of the current and future managers is a Management Development System. Control systems are the set of processes (budgeting, goal setting) and mechanisms (performance appraisal) that would encourage behavior that would help achieving organizational objectives (Flamholtz, 1996).

Developing Corporate Culture. Just as people have personalities, organizations have cultures, which are composed of shared values, beliefs and norms. Shared values refer to the importance the organization attaches to the aspects of product quality, customer service, and treatment of employees. Beliefs are the ideas that the people in the organization hold about themselves and the firm. Lastly, the norms are the unwritten rules that guide interactions and behavior (Flamholtz, 1995). Previous research has shown that corporate culture can have a significant impact upon the financial performance of an organization (Flamholtz, 2001).

The Model as a Whole. Taken together, these six tasks or strategic building blocks lead to a hierarchical model of organizational development, as seen in Figure 1 below. Similar hierarchical views are present in the previous literature. Woodward discussed a similar relation between market niche and product, and structure and culture. In addition, Chandler's (1962) book, "Strategy and Structure", suggests that a firm's structure follows from its long-term strategy.

Exhibit 1: Pyramid of Organizational Development: The Six Key Building Blocks of Successful Organizations



It should be noted that the pyramid shape does not imply that the key tasks are carried out independently. All six tasks are vital for the health of the firm, and

must occur simultaneously. However, the relative emphasis on each task or level of the Pyramid will vary according to the organization's stage of growth (Flamholtz, 1995).

Another key point is that the top four levels of the pyramid, which form the infrastructure of the firm, are less susceptible to imitation (Flamholtz, 1995), and, accordingly, provide the basis for long term sustainable competitive advantage (Flamholtz and Hua, 2003). Thus, although competition between firms takes place at all levels, we believe (hypothesize) that long-term sustainable advantage is primarily found at the top three levels.

4.2. Life Cycle Model

The second component of the framework is a "life cycle model", which identifies the key stages of growth of organizations from a new entrepreneurial venture through maturity and decline. This model is shown in Exhibit 2.

This model prescribes the emphasis that should be given to each task differs depending on the size of the firm.

Exhibit 2: Stages of Growth

Stage	Description	Critical Development Area	Size of Organization (Sales)	
			Manufacturing	Service
I	New Venture	Markets and "Products"	Less than \$1 million	Less than \$300,000
II	Expansion	Resources and Operational Systems	\$1 to \$10 million	\$300,000 to \$3.3 million
III	Professionalization	Management Systems	\$10 to \$100 million	\$3.3 to \$33 million
IV	Consolidation	Corporate Culture	\$100 to \$500 million	\$33 to \$167 million
V	Diversification	Replication of the Cycle	\$500 million to \$1 billion	\$167 to \$333 million
VI	Institutionalization	Integration	\$1 billion +	\$333 million +
VII	Decline	Revitalization	Any Size	Any Size

As seen in Exhibit 2, each stage of growth is viewed as having a set of critical developmental tasks. For example, the critical tasks at Stage I are markets and products, while at Stage III the critical task is the development of management systems. The function or overarching challenge of Stage I is “proof of concept”. Specifically, does the proposed business have a viable market and product that can be offered profitably? To a great extent, this step or task was missed by many of the “Dot.coms”, which, of course, ultimately failed. The overall function of Stage II is the development of the “operational infrastructure” (resources and operational systems) required for the expansion of the business. The overall function of Stage III is the development of managerial capabilities and management systems required to deal with the larger, more complex business that has emerged. The overall function of task of Stage IV is to deal with the cultural transformation that must accompany the transition (which begins at Stage III) from a “pure” entrepreneurship to an entrepreneurially-oriented professionally managed firm (Flamholtz and Randle, 2000). This involves the transformation from an organization with few systems and procedures and little planning to a more formal, disciplined organization.

4.3. Equilibrium and Disequilibrium at Different Stages of Growth

When an organization’s infrastructure fits or matches its size or stage of growth it achieves organizational development equilibrium. However, organizations experience developmental problems (disequilibrium) if their “infrastructure” (defined operationally as the top four variables in the Pyramid) is not consistent with their size. When this disequilibrium occurs, the organization will experience a variety of classic “growing pains”.

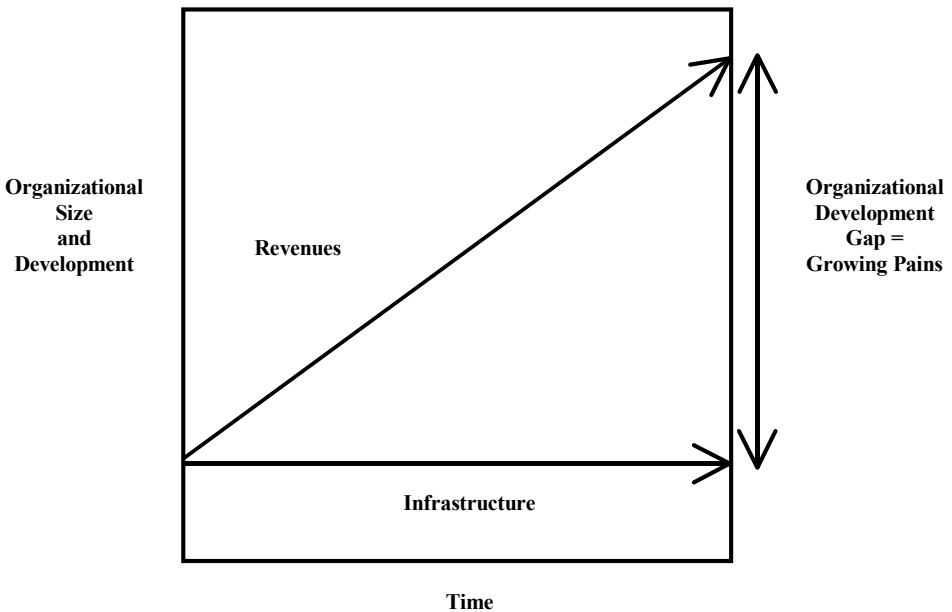
These growing pains (shown in Exhibit 3) are problems in themselves, but they are symptoms of the failure of infrastructure to be sufficient to support an organization’s size. They occur because of an “organizational development gap”, as shown schematically in Exhibit 4.

Exhibit 3: Growing Pains

GROWING PAINS

- People feel that there are not enough hours in the day.
- People are spending too much time “putting out fires.”
- Many people are not aware of what others are doing.
- People lack understanding of where the firm is heading.
- There are too few good managers.
- Everybody feels “I have to do it myself if I want to get it done correctly.”
- Most people feel our meetings are a waste of time.
- When plans are made, there is very little follow-up and things just don’t get done.
- Some people feel insecure about their place in the firm.
- The firm has continued to grow in sales, but not in profits.

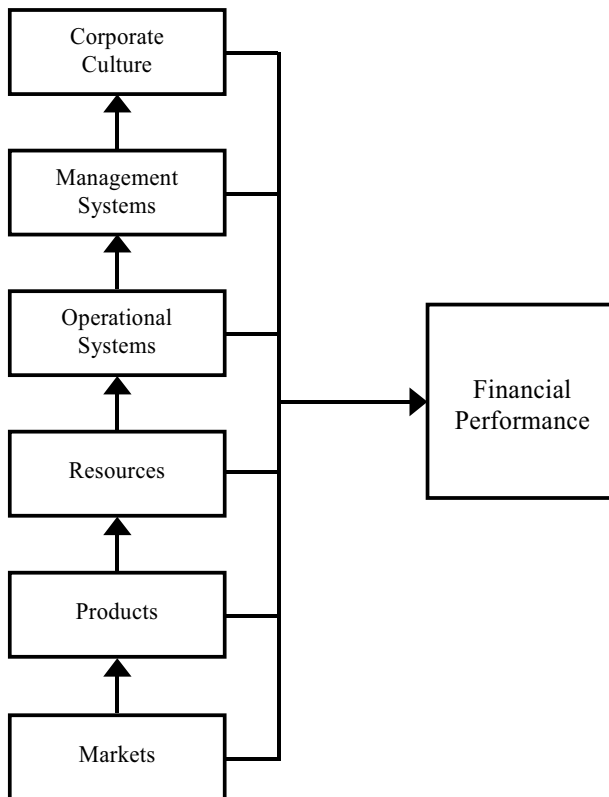
Exhibit 4: Organizational Development Gap



5. The Model's Variables as Drivers of Financial Performance

Another way to look at this model is that the six key Variables are drivers of determinants of financial performance, as shown in Exhibit 5 below. The set of six variables are hypothesized to account for as much as 90 percent of financial performance, with the remaining 10 percent attributable to exogenous factors. As discussed below, previous empirical research has indicated that as much as 55 % of financial performance is explained by the variables in the model (Flamholtz and Hua, 2002A). However, the current study (see below) indicates that as much as 73% of profit margin can be explained by these variables.

Exhibit 5: Six Key Drivers of Financial Results



5.1. Implications and Hypotheses of the Theoretical Framework

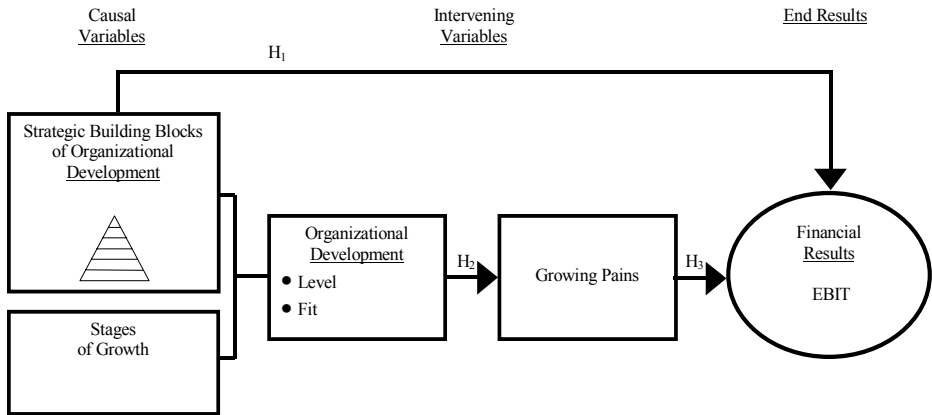
The theoretical framework presented above has a number of potential implications for management and implicit hypotheses for research. These are presented below:

1. The six key strategic building blocks or tasks of organizational development are hypothesized to influence or explain overall organizational success. This means that the six key variables are expected to have an impact on the financial performance or “so-called bottom line” of organizations. This has been supported by previous research, as described below (Flamholtz and Aksehirili, 2000; Flamholtz and Hua, 2002A).
2. The six key variables are expected to “work together” to explain overall organizational success. Although the six variables have all been identified in the research literature as significant factors in organizational success, the holistic pyramid model is based upon the notion that, to achieve optimal performance, they all must be designed as a whole. This means that they are hypothesized to have more impact as a whole than individually. This has not yet been tested empirically.
3. Each of the six key variables are thought to be more important at different stages of growth: markets and products at Stage I, resources and operational systems at Stage II, management systems at Stage III, and culture at Stage IV. This has not yet been tested empirically.
4. Although organizations are hypothesized to compete on all components of the pyramid, we believe that the sources of long term sustainable competitive advantage are found at the top four levels of the pyramid, which comprise an organization’s “infrastructure”. These components of the pyramid are less susceptible to imitation and, accordingly, provide the basis for long term sustainable competitive advantage. This has been supported by previous research, as described below (Flamholtz, and Hua, 2003).
5. When there is insufficient development of the infrastructure of the organization in relation to its size or stage of growth, the result will be an organizational development gap, which, in turn, creates “growing pains”. This has not been tested empirically.
6. Growing pains are believed to be inversely related to financial performance. Specifically, high growing pains are hypothesized to be correlated with lower financial performance and lower growing pains with higher financial performance. This has been supported by previous research, as described below (Flamholtz and Hua, 2002B).

In brief, there are a number of implications or hypotheses implied by the organizational success model previously developed. Some of these hypotheses

have already been tested empirically; others have not. The hypotheses implied by the framework are shown graphically in Exhibit 6.

Exhibit 6: Graphic Summary of Hypotheses from Research Framework



- H₁: Relation between the Strategic Building Blocks and EBIT
- H₂: Relation between the Organizational Development and Organization Size (stage)
- H₃: Relation between Growing Pains and EBIT

6. Previous Empirical Research to Test the Framework

There is a growing body of empirical evidence which provides support for the proposed theoretical framework. This research is summarized below.

6.1. Organizational Development and Financial Performance

Flamholtz and Aksehirli (2000) empirically tested the proposed link between the organizational development model and the financial success of organizations. They analyzed financial and non-financial information relevant to the hypothesized model for eight pairs of companies in different industries, and found a statistically significant relationship.

Flamholtz and Hua (2002A) provided additional empirical evidence of the hypothesized link between the organizational development model and financial performance. They reported the results of a test within a single firm, using a set of fifteen relatively comparable divisions, and found a statistically significant relationship. They also identified thresholds of strategic organizational development for profitability of individual companies or operating units.

Flamholtz (2001) provided empirical evidence of the hypothesized link between corporate culture and financial performance. He reported a test of this

relationship within a single firm, using a set of 18 comparable divisions. He found a statistically significant relationship between culture and financial performance.

6.2. Stages of Growth

Randle (1990) provided empirical evidence that the stages of growth occur when predicted in terms of organizational size or revenues. She studied the evolution of the entire personal computer industry from the formation of new ventures until the industry “shakeout”, and confirmed that the stages occurred when predicted.

Randle (1990) also provided evidence that firms with “organizational forms” that are adapted to the requirements of their size have a higher probability of success, and vice versa.

6.3. Growing Pains and Financial Performance

Flamholtz and Hua (2002B) presented an empirical test of the hypothesized relationship between organizational growing pains and financial performance. They found a statistically significant relationship. In addition, they identified evidence that there appear to be threshold levels of growing pains which might be used to predict which organizations are likely to be profitable and versus those that are unlikely to be profitable.

6.4. Additional Research Required

Taken together, this empirical research is supportive of the proposed theoretical framework. However, as noted in each of the prior studies (Flamholtz and Aksehirili, 2000; Flamholtz, 2001; Flamholtz and Hua, 2002A; and Flamholtz and Hua, 2002B) there is a need for additional research to replicate and confirm these findings. In addition, as noted above certain hypotheses remain untested.

7. The Current Research

This current paper builds upon the previous research and provides additional empirical evidence of the hypothesized link between the organizational development model and financial performance. The current research has four related objectives: 1) to replicate previous research designed to empirically test the hypothesized link between the organizational development model and financial performance; 2) to assess the relative importance of an organization’s “infrastructure” as a determinant of financial performance; 3) to assess the extent

to which the development of an organization's infrastructure is related to (causes) "organizational growing pains"; and 4) to assess the extent to which organizational growing pains are related to financial performance. Each of these objectives are expressed as hypotheses as explained below.

7.1. Research Hypotheses

One objective of the present study was a replication and extension of prior research by Flamholtz and Hua (2002A) which found a statistically significant relationship between the organizational development model and financial performance. However, the earlier research (Flamholtz and Hua 2002A) was conducted at a manufacturing company (foundries), while *the current research* was conducted in a large diversified financial institution based in the United States.

The following hypothesis is used to assess this:

H1: The success of a company in managing the six key tasks of the organizational development pyramid framework positively affects the financial performance of the enterprise.

This hypothesis involves an independent replication for confirmation of the earlier findings.

A second research question concerns the key factors within the pyramid which influence the financial success of organizations. Specifically, we wanted to test the hypothesis that "infrastructure" is the key factor in the pyramid which has the greatest influence upon the financial success of organizations. In this context, infrastructure is operationally defined as resources, operational systems, management systems, and culture (or the top four variables comprising the pyramid). Accordingly, the hypothesis used to assess this was:

H2: The success of a company in managing the top four key tasks of the organizational development pyramid framework (infrastructure) positively affects the financial performance of the enterprise to a greater extent than other factors.

This question has not explicitly addressed in prior research.

A third key question was to assess the extent to which the development of an organization's infrastructure is related to (causes) "organizational growing pains".

Accordingly, the hypothesis used to assess this was:

H3: The degree of success of a company in managing the top four key tasks of the organizational development pyramid framework (infrastructure) positively affects the "growing pains" of the enterprise.

This question has not explicitly addressed in prior research.

A fourth key question concerned the extent to which organizational growing pains are related to financial performance. Accordingly, the hypothesis used to assess this was:

H4: The degree to which a company is experiencing “growing pains” inversely affects the financial performance of an enterprise.

This hypothesis is an independent replication of the earlier study by Flamholtz and Hua (2002 B).

8. Research Design

This section describes the overall research design, outlines the research hypotheses, explains the data collection procedure, and discusses the measurement or operationalization of the variables. A description of the research site and a discussion of statistical methods are also included in this section.

8.1. Research Strategy

This study was conducted as part of a program of action research on a large diversified financial institution operating primarily in the United States but with a division in Great Britain. The company was engaged in an organizational development program designed to enhance overall organizational effectiveness, and, consequently, financial performance. As a result, it was possible to assess the impact of a company’s strategic organizational development on its financial performance as a byproduct of the ongoing organizational development program.

8.2. Research Site Description: Countrywide Financial Corporation

Countrywide Financial Corporation (Formerly Countrywide Credit Industries) a large, U.S.-based, financial institution. Although not as large as giant companies like Citicorp or Wells Fargo, Countrywide Financial Corporation (“Countrywide”), it is a consumer financial service business with more than \$3.5 billion in revenues. (turnover) and more than \$ 37 billion assets. It consists of 18 major business units, including mortgage banking. One of its business units is the largest independent U.S. residential mortgage lender and “mortgage servicer”. It is currently one of the four largest mortgage originators in the U.S. However, for many years until industry consolidation began, Countrywide was the largest mortgage lender and servicer in the U.S.

The 18 divisions are comprised of three groups: 1) mortgage related businesses, 2) other financial businesses, and 3) administrative (non-revenue) divisions. There are seven financial business units in the second group, and these comprised the sites for the present study. The similarities between the divisions present a relatively unique opportunity for comparison. Each of the 6 individual companies, or “divisions”, as they were termed, operated in various parts of the United States. They include businesses in insurance (two divisions), mortgage title, loan administration processing, capital markets, and global home loans.

8.3. Methodology

This section describes the method for the research. First, we shall describe the action project at the company. Then we will discuss how the research was conducted as part of that project.

The first step in this phase was to train the senior management team in the organizational success model (Flamholtz, 1995; Flamholtz and Aksehirli, 2000). The model was shown in Exhibit 1. This model was being used by the company as part of its strategic planning process.

The next step was to have the members of the senior management team of each division assess the degree of strategic organizational development for the six key variables for each division, using an organizational effectiveness questionnaire designed for this purpose. To assess this, these variables were assessed on a Likert Scale. Specifically, the senior executives of each division of the company were asked to rate each division on each of the six key strategic building blocks (markets, products, etc.) using a five-point Likert scale. The results of this assessment were used to construct an “average pyramid development score”. The possible scores range from 1.0 to 5.0, where 1.0 is the lowest possible score and 5.0 is the highest possible score.

To measure growing pains we used a previously developed survey of organizational growing pains (Flamholtz and Hua, 2002 B).

To measure financial performance or the bottom line for each division we used a measure of divisional performance (i.e. Divisional “Profit Margin”, a measure of gross margin) that was reported throughout the company on a quarterly basis, one that Countrywide Financial uses to assess divisional performance, for these divisions.

8.4. Sample

Six divisions of the company participated in the study. The total sample size was 124 for the organizational effectiveness measurements and 130 for the growing

pains measurements, with difference due to different response rates on the two surveys.

8.5. Hypothesis Testing.

Hyp 1: The success of a company in managing the six key tasks of the organizational development pyramid framework positively affects the financial performance of the enterprise. The data on the average degree of organizational development was used as an input to the research to address the question concerning the impact of the degree of organizational development on the financial performance, or “bottom line”, of organizations as described below. To assess this issue, we compared divisional strategic organizational development scores (as explained below) with divisional “Profit Margin”. Specifically, we ran a regression between: 1) the degree to which each division was perceived as being developed in terms of the six key strategic building blocks as a whole (i.e., the average pyramid development score.) and 2) Profit Margin. Stated differently, the hypothesis is that the highest performing divisions are those that are the most developed in terms of the pyramid, whereas the lowest performing divisions (financially) are those that are least developed in terms of the six key strategic building blocks.

Hyp 2: The success of a company in managing the top four key tasks of the organizational development pyramid framework (infrastructure) positively affects the financial performance of the enterprise to a greater extent than other factors. The data on the average degree of organizational development of *the top four levels of the pyramid* (infrastructure) was used as an input to the research to address the question concerning the impact of the degree of organizational development on the financial performance, as described below. To assess this issue, we compared an “organizational infrastructure development scores” (a sub set of the overall Pyramid score as explained below) with divisional “Profit Margin”. Specifically, we ran a regression between: 1) the degree to which each division was perceived as being developed in terms of the four key strategic building blocks comprising infrastructure (i.e., “the average pyramid development score”) and 2) Profit Margin. Stated differently, the hypothesis is that the highest performing divisions are those that are the most developed in terms of their infrastructure, whereas the lowest performing divisions (financially) are those that are least developed in terms of their infrastructure.

Hyp 3: The degree of success of a company in managing the top four key tasks of the organizational development pyramid framework (infrastructure) positively affects the .growing pains. of the enterprise. To test this hypothesis, the organizational development infrastructure score

(described above) along with a measure of organizational growing pains were used to test the hypothesis that infrastructure development in inversely related to the growing pains of the enterprise.

Specifically, we ran a regression between: 1) the degree to which each division was perceived as being developed in terms of the four key strategic building blocks comprising infrastructure (i.e., “the average pyramid development score”) and 2) organizational growing pains.

Hyp 4: The degree to which a company is experiencing “growing pains” inversely affects the financial performance of an enterprise. To test this hypothesis, the organizational growing pains score (described above) along with a measure of profit margin were used to test the hypothesis that profit margin is inversely related to the growing pains of the enterprise. Specifically, we ran a regression between: 1) organizational growing pains and 2) Profit Margin.

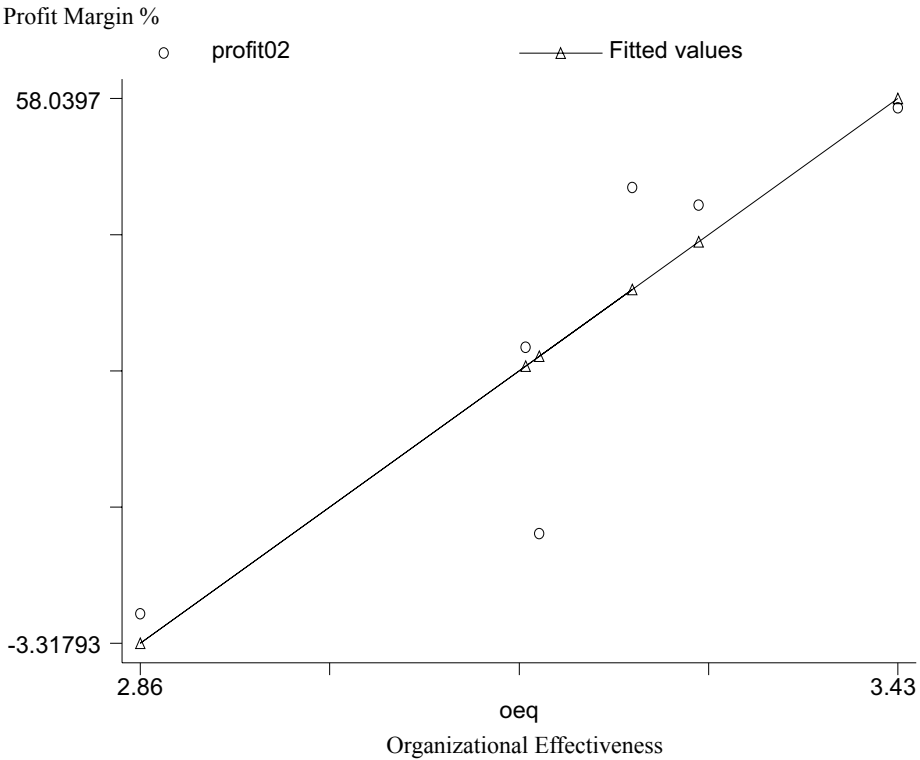
9. Results

The results for each of the four hypotheses are presented below.

Hyp 1: Organizational Development and Financial Performance. The data derived and used in this comparison is shown in graphs in Exhibit 7 and Exhibit 8. In Exhibit 7, the x-axis shows the “average divisional strategic organizational development”. This is a measure of the degree of strategic development of each of the divisions in terms of the six key strategic building blocks of successful organizations, as measured by a five point Likert scale. It is an average of the scores for each of the six components of the pyramid of organizational development. The y-axis presents profit margins for the various divisions. Accordingly, Figure 2 shows the relation between the degree of organizational development of the divisions and the profit margins for all divisions.

The regression equation describing the relationship among variables in Figure 4 is: $y(\text{Profit}) = -369.032 + 125.852 * \text{Pyramid Score}$. Adjusted R^2 is 0.735, and is statistically significant at 0.018 (0.02) level ($F=14.866$). This means that approximately 73.5% of PROFIT is explained by the six variables comprising the Pyramid of Organizational Development. This result provides strong support for the hypothesis of a relationship between the degree of strategic organizational development and the financial performance of organizations.

Exhibit 7: Regression Results between Pyramid Score & Financial Performance



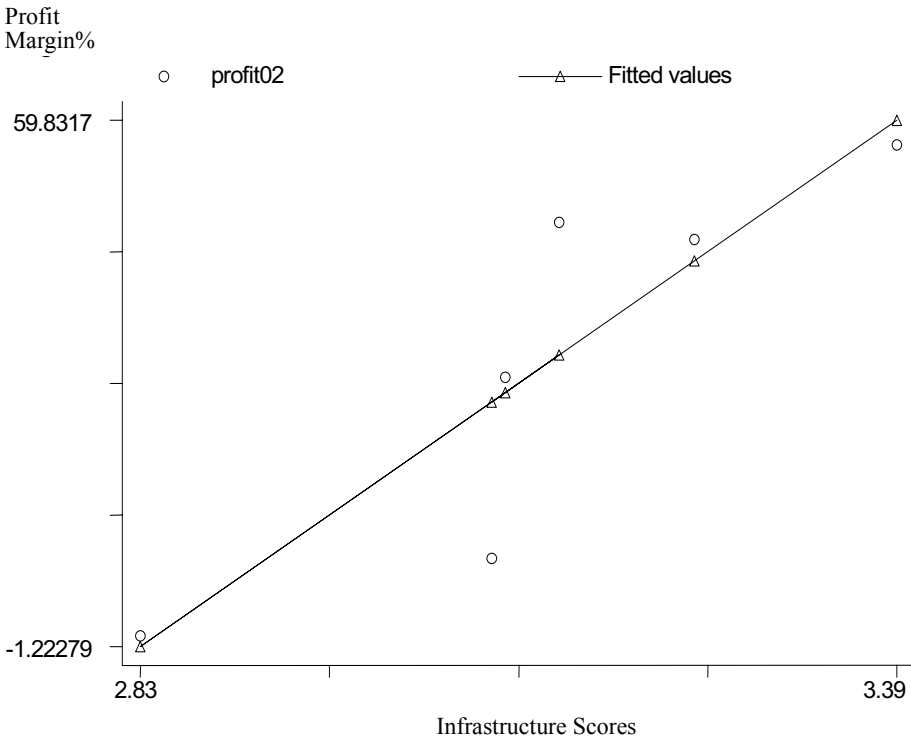
$y (\text{Profit}) = -369.032 + 125.852 * \text{Pyramid Score}$
 $p=0.02$
 $F=14.866$
 $\text{Adj. R Squared}=0.735$

Hyp 2: Infrastructure Development and Financial Performance. In addition to the overall results of this research concerning the relationship between the strategic organizational development of companies, as measured in terms of their development of the Pyramid of Organizational Development, there are some other potentially significant findings. We also performed an analysis of the data on the relation between the development of infrastructure and profit. The results are reported in Exhibit 8.

The regression equation describing the relationship among variables in Exhibit 8 is: $y (\text{Profit}) = -308.7015 + 108.438 * \text{Infrastructure}$. Adjusted R^2 is 0.886, and is statistically significant at 0.003 (less than 0.01) level ($F=39.918$). This means that approximately 88.6% of PROFIT is explained by the top four of the six variables (i.e., culture, management system, operational system and resource) comprising the Pyramid of Organizational Development, which comprise of the infrastructure of an organization. This result provides strong

support for the hypothesis of a relationship between the degree of strategic organizational development in infrastructure and the financial performance of organizations.

Exhibit 8: Regression Results between Bottom Line and Infrastructure Score



$y (\text{Profit}) = -308.7015 + 108.438 * \text{Infrastructure}$
 $p = 0.003$
 $F = 39.918$
 $\text{Adj. R Squared} = 0.886$

Given this finding, we also conducted an additional analysis which differentiated between the two elements comprising the organizational pyramid (the four infrastructure variables of resources, operational systems, management systems, and culture and the non-infrastructure variables of markets and products). We found that the variable infrastructure had a strong and significant correlation with profit margin ($r = .953, p = .003$), while the non-infrastructure elements had a non-significant and comparatively low correlation with the profit margin. This indicates that what matters for this set of companies is infrastructure, as we have hypothesized.

Hyp 3: Organizational Infrastructure Development and Growing Pains. We also performed an analysis of the data on the relation between the development of infrastructure and growing pains. Adjusted R^2 is 0.45, and is statistically

significant at 0.08 level but not at the 0.05 level. While this result does not provide strong support for the hypothesis of a relationship between the degree of strategic organizational development in infrastructure and the growing pains of organizations, it does indicate a *possible* relationship. It should be noted that the sample size of *divisions* used in these calculations is relatively small ($n=6$), and therefore the relationship ought to be investigated further.

However, we also ran regressions on all of the individual infrastructure variables, and found that the variable *.resources.* (one of the four components of infrastructure) was significantly related to growing pains. Adjusted R^2 is 0.71, and is statistically significant at 0.02 level ($F=13.22$).

All of the divisions were experiencing rapid growth. This finding suggests that those with the greatest amount of resources (including people, financial, and other resources) are able to handle the growth better than those with fewer resources. This has face validity but is also an indication that this component of infrastructure matters (is statistically significant) in dealing with growth and avoiding growing pains.

Hyp 4 Growing Pains and Financial Performance. We also performed an analysis of the data on the relation between the extent to which growing pains are related to financial performance. Adjusted R^2 is 0.49, and is statistically significant at 0.07 level but not at the 0.05 level. While this result does not provide strong support for the hypothesis of a relationship between the degree of growing pains of organizations and their financial performance, it does indicate a *possible* relationship. As with hypothesis 3, it should be noted that the sample size of divisions used in these calculations is relatively small ($n=6$), and therefore the relationship ought to be investigated further.

It should also be noted that there is data from another prior study data from another independent study has confirmed the relationship between these variables (Flamholtz and Hua 200B). Specifically, data on the relationship between and growing pains and EBIT (“Earnings Before Interest and Taxes”) for Banner Corporation (Flamholtz and Hua, 2003 B) indicated that Adjusted R-square for this data is 0.54 and is statistically significant at less than 0.01 (0.0035). This provided strong support for the predicted relationship between growing pains and financial performance, measured by EBIT. Accordingly, while the current study did not confirm the hypothesized relationship, the result of the previous research suggests the need for further investigation in this area.

10. Conclusions, Implications, and Future Research

These findings presented above are intended as exploratory indications of possible significant relationships. The data derived from this study provides further empirical support for the proposed model of strategic organizational

development. The data suggests that: 1) the degree of strategic organizational development does have a statistically significant an impact on financial performance, and 2) that infrastructure does have an impact upon financial performance. The data also suggest the *possibility* of a relationship between infrastructure and growing pains, and between growing pains and financial performance.

These findings have potentially important implications for management theory and practice. It is one thing to assert that organizational development is a significant factor of organizational success and quite another to be able to demonstrate that the effective management of these variables can enhance profitability. They also point the way to further research.

10.1. Implications for Theory and Research

From an academic perspective, the results reported here are preliminary but quite promising. We have now replicated the findings of the earlier study by Flamholtz and Hua (2002) on the relationship between the Pyramid and financial performance and infrastructure and financial performance in an independent setting. This provides further support for the model's validity.

10.2. Implications for Management

We believe that managers ought to be using the Pyramid of Organizational Development framework as a "lens" for planning the strategic development of organizations. This means that it should be used in strategic planning as a focus for organizational development. This is supported by the principal research findings from this study as well as from prior research (Flamholtz and Aksehirli, 2000; Flamholtz and Hua, 2002).

In addition, our findings concerning infrastructure in relation to divisional or operating company profitability are, at a minimum, suggestive of the important role that infrastructure plays in financial performance. Specifically, the data suggests that the greater the development of organizational infrastructure, the greater the profitability of the enterprise.

10.3. Future Research Requirements.

The type of research presented in this paper is complex and difficult to execute for many reasons. First, it requires a willing research site, which in itself is not a trivial issue. It also requires the collection of a great deal of data, and unlike other area there are no existing data based for research access. The data base must be

created. Nevertheless, research of this type is necessary if the development of the field of entrepreneurship scale up is going to make progress at both the theoretical and practical levels.

One of the possible limitations of the present study concerns the sample size and type of companies used. There were six divisions used in this study. Although the results for hypotheses 1 & 2 were statistically significant at the “magic” 0.05 level or less, this was not true for hypotheses 3 & 4. A future study with a larger sample size might find a different result.

Another issue concerns the types of companies used in this study. Although all of them were financial companies, they were not in identical businesses. It will be recalled that we found that the variable if infrastructure had a strong and significant correlation with profit margin ($r = .953$, $p = .003$), while the noninfrastructure elements had a non-significant and comparatively low correlation with the profit margin. One possible explanation for this might be that the divisions are in different markets with different products. A future study with business units in identical businesses (such as the prior study by Flamholtz and Hua, 2002 A) would be desirable if possible.

Further research is requires to investigate the possibility of a relationship between: 1) infrastructure and growing pains, and 2) between growing pains and financial performance. There are also other possible tests of the proposed theoretical framework, including the hypothesized emphasis required by different components of the pyramid at different stages of growth. Another area for future research is the holistic nature of the pyramid and the interaction effects among the variables.

10.4. Conclusion

This study has provided a relatively rare opportunity to assess the impact of organizational development on financial performance in the context of a single company. The results provide additional empirical support for previous theoretical and empirical work on the six-factor model of organizational success. In addition, the results also suggest that infrastructure is the key determinant of strategic organizational development required to achieve profitability and superior financial performance.

While the results are not completely definitive, they do provide statistically significant evidence of the impact of organizational development and infrastructure on financial performance. It also points the way to future research issues. It is the foundation of a potentially different paradigm for managing the growth of entrepreneurial organizations.

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