

# **The Leadership/Management Growth Model: A Dynamic Framework for Understanding Construction Management and Production in the Homebuilding Industry**

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## **Abstract**

The Leadership/Management Growth Model provides a framework for understanding the process of organic growth (i.e., internal, evolutionary growth) that occurs in homebuilding firms. The model and its associated ten Management Subsystem Growth Models are the result of 20 years of homebuilding industry research, development, and refinement. The original research work was performed between 1983 and 1988 under the supervision of the writer when he served as the Hankin Chaired Professor of Residential Construction in the College of Engineering at The Pennsylvania State University. The writer, in his continuing role at Penn State until 1995, in his role as the President of JHW:C/M Consultants since then, and as a frequent member of the jury for the annual National Housing Quality Award Program, has nurtured the further development and refinement of the original work as part of his extensive network of contacts with the homebuilding industry at the national level.

**Keywords:** Growth model, leadership, management, managerial proficiency, management subsystems

## **Introduction**

The homebuilding industry is one of the primary sectors of the total construction industry in the United States, and is an important contributor to the Gross National Product. It is an industry that is diverse, highly fragmented, and often regionally or locally focused. In addition to homebuilders, the industry includes, among others: (1) land developers; (2) trade contractors; (3) material suppliers; (4) engineering and architectural firms; (5) representatives from the accounting, legal, financial, and realty professions; and (6) various governmental regulatory agencies.

## **Aspects of Understanding**

It is suggested that two important aspects of the industry must be understood in order to effectively interact with homebuilders, whether as one of the external partners indicated above or as a researcher focusing on the broad area of Construction Management and Production. The first relates to the basic composition of the industry, particularly with regard to the extreme diversity of size that exists among homebuilders. This is important because size, in terms of housing units completed per year, annual revenues achieved, etc., is one of the key determinants of the level of Managerial Proficiency (i.e., Leadership/Management capability) that exists in a particular homebuilding firm.

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The second aspect relates to an assessment of the current stage of Leadership/ Management exhibited by the particular homebuilder with whom one is interacting. A proper understanding of the implications of that growth stage requires the adoption of a suitable Leadership/Management Growth Model framework which maps out the various stages of growth typically exhibited by homebuilding firms.

### **Composition of the Industry<sup>2</sup>**

The majority of the houses built in the United States are *Stick-Built* on site with a large percentage of the work performed by trade contractors. It is widely acknowledged that most homebuilders have evolved, over the years, from a *Master Builder* role to one which provides *Construction Management* services to the trade contractors on site, typically through their own field superintendent employees.

An increasing presence is being felt in the homebuilding industry, however, by homebuilders who are providing *Systems-Built* houses as an alternative to conventional stick-built houses. Modular, Panelized, and Log houses are all built in a factory and sent in various stages of assembly to the jobsite for installation. When these types of houses are built, the coordination intensity with regard to trade contractors is reduced and the duration of the field construction phase of the house is shortened considerably. As a result, it is possible for less experienced homebuilders who install system-built houses to compete successfully against more experienced conventional homebuilders.

The *Manufactured Housing* (i.e., HUD Code) sector, which does not rely on homebuilders to install their houses, continues to play a significant role in providing affordable and, more recently, upscale housing in certain sections of the United States. In addition, *remodelers* provide valuable services to homeowners of existing houses. Many small-sized homebuilding firms, in fact, serve as both remodelers and providers of newly constructed housing.

According to the most recently completed 1997 Census of the homebuilding industry, there were approximately 145,000 homebuilding firms in the United States (Ahluwalia & Chapman, 2000). These firms range in size from small-volume homebuilders who might specialize in custom and luxury homes on large suburban lots to large-volume homebuilders who concentrate on entry-level or first move-up single-family or multi-family houses in dedicated subdivisions. They sometimes build on land which they have developed themselves, but they also purchase lots from land developers that specialize in that phase of the process.

The U.S. Bureau of the Census classifies *single-family* homebuilders as: (1) *Small Builders* – 1 to 24 houses/year; (2) *Medium Builders* – 25 to 99 houses/year; and (3) *Large Builders* – 100+ houses/year. According to their statistics, which are substantiated by NAHB member statistics, a majority of homebuilders fit into the *Small Builder* and *Medium Builder* categories. As shown in Table 1, for example, 93% of single-family homebuilders are classified as *Small Builders* who, as a group, were responsible for only 38.8% of the housing starts in 1997. Such firms often are

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<sup>2</sup> Statistical information which supports the statements presented in this section can be found in Chapters 1 and 3 of Willenbrock et al. (1998) or in Chapter 1 of Willenbrock (2001). More current statistical information also can be obtained by contacting either NAHB or the U.S. Bureau of the Census.

led by first- or second-generation homebuilders and developers who, as a result, bring various levels of technical/managerial expertise and educational backgrounds with them to the industry.

In contrast, Table 1 also indicates that the *Large Builders* (i.e., 100+ houses/year), while only representing 1.5% of the total *number of firms* in the industry, built a disproportionately higher percentage (39.9%) of the houses. *Professional Builder* and *Builder* magazines provide additional statistical information for 2002 for the 400 and 100 largest homebuilders, respectively (Lurz, 2003; Rice & Williams, 2003). Table 2 indicates that the spread between the largest homebuilder and the 400<sup>th</sup> largest firm in 2002 ranged from 36,450 houses down to 216 houses. It should be noted that a number of the *Non-Giants* in Table 2 would still be classified as *Large Builders* by the U.S. Bureau of the Census.

### **Growth Options for Homebuilders**

For all homebuilders, large and small, the question of growth (or retrenchment) always should be an important part of the firm's strategic planning process. Pressures related to: (1) land (i.e., availability, price, acquisition problems, etc.), (2) regulations, (3) labor issues, (4) economic uncertainty, (5) operational efficiency, (6) availability of capital, etc., often cause homebuilding firms to look at growth as a means of more adequately buffering their effects.

A survey of the current industry periodicals indicates that some of the growth options that are available to homebuilders include:

1. *Conversion from Privately Held to Publicly Owned.* Lurz (April 2003, p. 2) indicates that 17 of the 20 largest homebuilders (i.e., the "Masters of the Universe" in Table 2) have chosen this growth option. Most of these firms now are recognized to be "National Builders" who have a presence in most major markets in the United States.

2. *Merger with or Acquisition of Regional or Other Homebuilding Firms.* Lurz (April 2003, p. 85) notes that "For most of the past decade, the public Masters of the Universe – especially the big five at the top, all with more than 25,000 completions a year – have grown by acquiring smaller local or regional production builders that offered strong share positions in new markets, often hot markets with impressive housing starts." Paul F. Decain, an analyst for Anderson Corporate Finance LLC, issued a report in 2002 which had, as one of its conclusions, the prediction that by 2011 the top 20 U.S. homebuilders would account for 75% of new home sales (O'Toole, 2002). This prediction sent shock waves through the homebuilding industry.<sup>3</sup>

3. *Geographic Diversification.* This growth strategy has been adopted by many homebuilding firms over the last 10 to 20 years as they have chosen to "duplicate" their operations in the same or other geographical areas. Stromberg (2002) provides an example of such a growth strategy that is being adopted by Ken Neuman, CEO of Neuman Homes, Inc.

4. *Franchising.* As noted by Lurz (November 2003), this growth strategy probably works best for large privately owned firms who want to team up with smaller local builders who see a franchise affiliation as a way to garner some of the attributes of size. Typically there is both an initiation fee, as well as a series of ongoing fees that must be paid by the franchisee to stay in the affiliation. Lurz provides three examples of such an arrangement.

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<sup>3</sup> The interested reader is referred to articles by O'Toole (2002), Lurz (2002), Sedam (April, May and June 2003) for excellent reviews of the key issues involved.

Table 1. 1997 Market Share Comparison for *Single-Family Homebuilders*  
(Ahluwalia & Chapman, 2000)

Range of Number of Starts	Percent of	
	Homebuilders	Starts
Small Builders: 1-24	93.0%	38.8%
Medium Builders: 25-99	5.5%	21.3%
Large Builders: 100+	1.5%	39.9%

Table 2. 2003 Giant's Market Share  
(Professional Builder, 2003; *Professional Builder* Website: [www.HousingZone.com](http://www.HousingZone.com))

Group Title	Rank <sup>1</sup>	2002 Completions	Percentage of 2002 U.S. Housing Completions <sup>2</sup>
“Masters of the Universe”	1	36,450 <sup>3</sup>	15%
	20	3,082	
“Rich and Famous”	21	2,827	10%
	125	588	
“Achievers”	126	935	4.7%
	275	455	
“Strivers”	276	275	2.4%
	400	216	
“Non-Giants”	400+	--	67.8%

<sup>1</sup>Ranking is based upon Annual Revenue from housing production in 2002.

<sup>2</sup>Total 2002 U.S. Housing Completions = 1,649,100 houses.

<sup>3</sup>The #1 Homebuilder completed only 2% of the U.S. Total in 2002.

5. *Organic* (i.e., Internal, Evolutionary Growth). Although this approach typically does not “make the headlines,” it is probably the one which many homebuilders have used in the past to successfully expand their operations and impact. It is a process that is not well understood and only infrequently presented in the literature. It is also the type of growth process which is the focus of the Leadership/Management (L/M) Growth Model that is discussed in the next section of this paper.

### The Leadership/Management (L/M) Growth Model

#### The Homebuilding Industry Model

An introduction to the L/M Growth Model can be provided by considering the static Input-Output model of the Homebuilding Industry shown in Figure 1. *Inputs* which enter the homebuilding industry can be identified, in the most comprehensive fashion, as *Society's Housing Requirements*. The homebuilder/developer (hereinafter called the homebuilder) responds by *transforming* the *Inputs* into *Outputs* (i.e., single or multi-family housing units or housing lots) that are purchased by homebuyers.

**Society's Input Requirements.** Most homebuilders are not completely free to design and build their own version of “ideal” houses and subdivisions; rather, they are constrained by a number of the requirements of society. Three of these are:

1. *The Housing Market* – Important factors which homebuilders must consider are: (1) the *current demand* in a particular market for new housing versus existing housing; (2) the various types of houses (rental vs. owned, entry level, move-up, custom, etc.) that meet local needs; and (3) the design features that are desired in subdivisions. Others are the *demographic configuration* and current *economic condition* of the marketplace. Scarcity of land and unavailability of infrastructure capacity also restrict the options available to homebuilders.

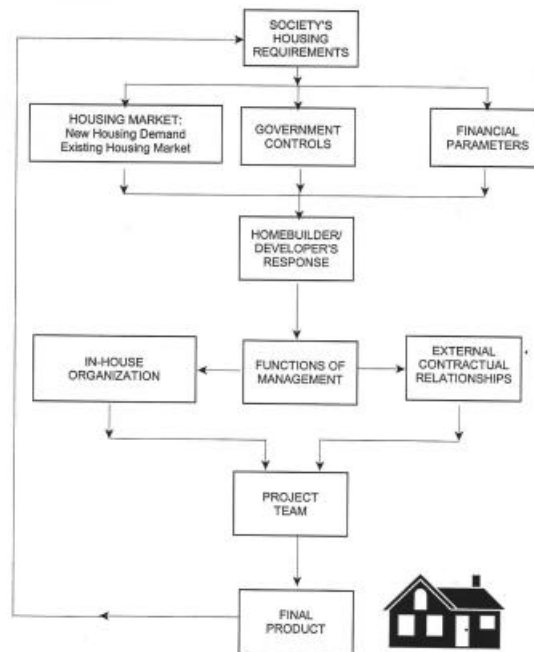


Figure 1. An Input-Output Model of the Homebuilding Industry (Willenbrock, 2004, p. 25)

2. *Government Controls* – Federal, state and local government controls also impose society's requirements on the homebuilder. Agency regulations issued by EPA, HUD, etc., provide influence and control at the federal level. Statewide land use planning regulations and the adoption of a mandated statewide residential building code represent typical state-level influences. The greatest level of influence and control on the homebuilding industry, however, occurs at the local governmental level (in the form of zoning ordinances, localized land use plans, etc.).

3. *Financial Parameters* – The health of the homebuilding industry is closely tied to financial market decisions regarding prevailing interest rates. These affect both home mortgage loans to potential homebuyers and construction loans to homebuilders.

**Homebuilder Output Response.** The homebuilder clearly is at the center of the *transformation response* portion of Figure 1. Among the large cast of players in the process, homebuilders are the ultimate decision makers who determine what will be designed and built. It can be assumed that managerial functions such as: (1) Planning, (2) Organizing, (3) Staffing, (4) Leading, and (5) Controlling play a crucial part in the response effort.

The *Project Team* which carries out these functions consists of two important components. The first is the *In-House Organization* of the homebuilder. Often, particularly in firms of small to medium size, this component is quite small.

The *External Partner* component of the *Project Team* includes firms that provide professional expertise in the areas of: (1) Planning and Design; (2) Accounting, Legal, and Financial Support; and (3) Realty services, etc. that the Homebuilder needs. In addition, the *Project Team* also includes all of the trade contractors and material suppliers that are involved in the process. Many of these “partners” are retained through a set of contractual relationships.

### The Leadership/Management Growth Model (Macro-Level)

The input-output systems model presented in Figure 1 adequately addresses the *static issue* of how a homebuilder mobilizes a Project Team in order to transform the housing requirements of society into the desired final product. It does not, however, address the *dynamic issue* of how the response is influenced by the particular stage of growth of the homebuilder. In order to deal with that *dynamic issue*, it is necessary to have a framework for understanding the process of organic growth (i.e., internal, evolutionary growth) that occurs in homebuilding firms when their Vision Statements place a high priority on *change* (i.e., either through growth or retrenchment). The L/M Growth Model shown in Figure 2 provides such a framework.

**Background.** The original research which led to the current format of the L/M Growth Model and its associated ten Management Subsystem Growth Models was performed by two graduate students, Walter A. Music and Hector A Dasso, who were under the direction of the writer in the residential construction program in the College of Engineering at The Pennsylvania State University from 1983 to 1988. A complete presentation of the current format can be found in Willenbrock (2004).

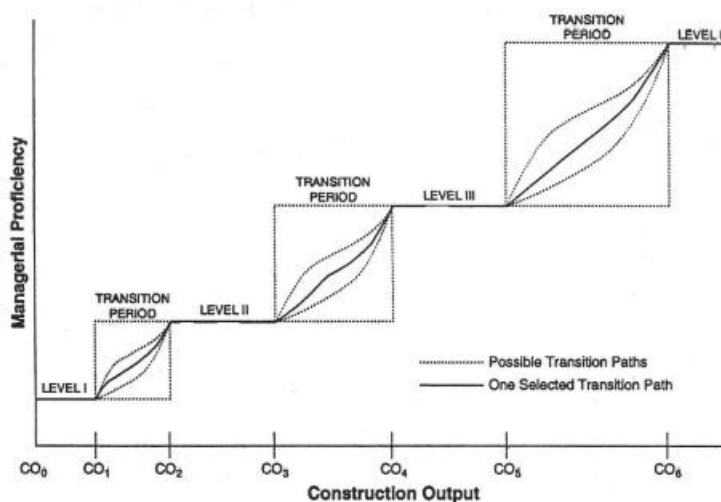


Figure 2. Leadership/Management Growth Model: Macro-Level (Willenbrock, 2004, p. 27)

**Important Features.** In Figure 2, the vertical axis represents the L/M characteristics of the firm in terms of a variable denoted as *Managerial Proficiency*. The horizontal axis identifies various possible levels of *Construction Output*. The model is based upon the premise that the *Managerial Proficiency required* is a function of the *Construction Output desired*. Important features include:

1. *Managerial Proficiency*, which represents a set of Leadership and Management characteristics which must be present for a homebuilding firm to achieve a certain level of *Construction Output*. The primary components of *Managerial Proficiency* are considered to be: (1) Management Systems, (2) Leadership/Management Techniques, (3) Educational Attitude, and (4) Organizational Structure.

2. *Construction Output* can be represented in a number of ways. Descriptors such as the number of housing units started (or completed) per year, the annual sales volume (in \$), the number of building lots sold, etc., all can be used. It is important to realize that these categories are not mutually exclusive; they actually are interdependent. One homebuilder, for instance, could build thirty (\$100,000) entry-level houses per year, and another could build three \$1-million custom homes per year. Each of these homebuilders, in all likelihood, will organize their firms differently in terms of the number of superintendents or construction managers required, etc. They also probably each will have a different trade contractor policy.

A micro-definition of *Construction Output* is not provided because of these interdependencies and complexities. Further research could provide a quantitative substantiation of the growth theory represented, but it is not necessary for a qualitative understanding and acceptance of the concepts involved.

3. *Factors Influencing Construction Output*. It is proposed that an increase in *Construction Output* is a function of two internal variables. The first variable represents the *Effort* that must be expended in order to increase construction output, and the second can be represented by the term *Managerial Proficiency*. *Effort* can be thought of as the amount of work required to increase the *Construction Output* at the same level of *Managerial Proficiency*. Increased *Effort* is achieved by working longer hours, with more workers or trade contractors, using “bigger hammers,” and often results in exponentially increasing frustration.

*Managerial Proficiency*, on the other hand, represents doing the work more efficiently with moderate increases in the energy expended. An increase in *Managerial Proficiency* is assumed to be limited only by the homebuilder’s training, expertise, and willingness to be innovative.

4. *The Managerial Proficiency/Construction Output Relationship*. Figure 2 indicates that the *Managerial Proficiency required* is a function of the desired *Construction Output*. This relationship is represented by a series of *management plateau* levels followed by *transition periods*. Four of these levels are shown; alternative models could show three, five, six, etc. The number of levels is not as important as the significance attached to them.

The four *management plateaus* (MP Level I to MP Level IV) are associated with the ranges of *Construction Output* that can be achieved at each level of *Managerial Proficiency*. These levels are “stability zones,” where the range of *Construction Output* matches the *Effort* exerted and the *Managerial Proficiency* applied. These are also the periods during which the homebuilder must consciously plan the modifications to current management practices if the firm is to successfully experience the subsequent transition period to the next plateau level in the least disruptive way possible and also achieve the next desired increase in construction output.

The *transition periods* occur when a homebuilder makes a conscious decision to increase construction output by increasing the firm's managerial proficiency. This increase is the result of an interactive process of learning through personal experience and also the adoption of the next level of systems technology and the most valuable ideas of other homebuilders in similar situations. The transition period often results in an uncomfortable experience for the individuals within the firm. It generally causes interpersonal conflicts because of new expectations and higher anticipated efficiencies. Employees usually are being asked to step out of their personal "comfort zones" and meet new challenges.

It is important to note that the transition periods probably are the most critical periods for the "survival of the firm." Homebuilders that fail, and perhaps are forced into bankruptcy, probably had not prepared adequately for the transition periods they were experiencing.

**Components of Managerial Proficiency.** The four primary components of Managerial Proficiency that are associated with the L/M Growth Model are briefly described below.<sup>4</sup> They all are easily recognized within any homebuilding firm, regardless of the Construction Output achieved. It is proposed that these components each undergo their own stages of evolution which, when considered collectively, result in the overall level of Managerial Proficiency which the homebuilding firm has achieved.

1. *Management Systems.* This component provides the systems, tools and techniques which are used to properly lead and manage a homebuilding organization. The information which is generated when these systems are applied allow timely and appropriate decisions to be made. It also is the component of Managerial Proficiency that probably goes through the most easily identifiable evolutionary process. The four primary Management Systems, and their ten Management Subsystems, include:

- |                      |  |
|----------------------|--|
| 1. Planning Systems  | 3. Control Systems                     |
| - Business Planning  | - Cost Estimating                      |
| - Office Management  | - Cost Accounting                      |
| 2. Quality Systems   | - Cost Control                         |
| - Quality Management | - Scheduling                           |
|                      | - Safety Management                    |
|                      | 4. Customer Systems                    |
|                      | - Trade Contractor/Supplier Partnering |
|                      | - Customer Care Program                |

2. *Leadership/Management Techniques.* This component focuses on the personal leadership and management style of the homebuilder (i.e., the President or CEO of the homebuilding firm) and his/her core of top-level managers.

3. *Educational Attitude.* There is a wide variation in the attitude of homebuilders toward the importance of specialized and advanced education in the homebuilding industry. Most small- to medium-sized homebuilders, for instance, probably feel that practical "hands-on" experience is more critical to the success of the firm than employing people with specialized educational backgrounds. Larger firms realize that unless they hire and retain people with

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<sup>4</sup> A more detailed explanation of the characteristics of each of these components at MP (i.e., Managerial Proficiency) Level I, MP Level II, MP Level III, and MP Level IV is provided in Willenbrock (2004, pp. 30-33).



advanced specialized education, they will not be able to take advantage of the latest available technology or successfully and efficiently expand into new and more challenging areas.

4. *Organizational Structure.* A homebuilder's organizational structure defines the business relationship that employees have with each other, the responsibilities associated with each position, the amount of authority and accountability associated with the assigned responsibilities, and the specialization of each position within the firm. It can be assumed that a higher level of managerial proficiency can be attained in an organization with specialized functions rather than in an organization in which the homebuilder and the key employees assume the "jack-of-all-trades" approach.

### **The Management Subsystems Growth Models (Micro-Level)**

The L/M Growth Model shown in Figure 2 is designated as the *Macro-Level* (i.e., Strategic Level) representation of growth in homebuilding firms. At the *Micro-Level* (i.e., Operating Level), homebuilders also must be aware of how growth occurs for each of the ten Management Subsystems. Such knowledge will allow a homebuilder, for instance, to *benchmark* each of the Management Subsystems which his/her firm presently has implemented against the characteristics of the same Management Subsystems which a MP (Managerial Proficiency) Level I, MP Level II, etc., homebuilder *should have* and thus collectively identify the present overall MP level of his/her firm.

The relationship between the Macro-Level model and the Micro-Level model for the Management Subsystem entitled "Business Planning" is shown in Figure 3. As indicated, if *Plateau Level II* of the L/M Growth Model is considered, it can be assumed that there is a corresponding Level II for each of the four primary components of *Managerial Proficiency*. When the focus then is placed on Level II of the Management Systems, it is possible to represent a Level II for each of the ten Management Subsystems. A partial representation of Micro-Level II of Business Planning indicates the final breakdown that occurs.

The *Micro-Level* representation of each of the *Management Subsystems* allows homebuilders to more definitively answer questions such as: "*What is my current level of Managerial Proficiency?*" and "*What changes must I make to Managerial Proficiency in order to improve and expand (or conversely, to retrench)?*" in terms of each of their current *Management Subsystems*. Details at each level provide information about the management subsystems of homebuilders who currently are at a higher, or lower, level of *Managerial Proficiency*. For instance, homebuilders who wish to improve their Management Proficiency so they will be prepared to increase Construction Output will understand what is required to achieve the next higher level.

It should be noted that a full presentation of the *Micro-Level* representation of each of the *10 Management Subsystems* is presented in Willenbrock (2004). Also included is a full set of Workshop Exercises which allow homebuilders to perform a full Benchmarking Analysis for their firms.

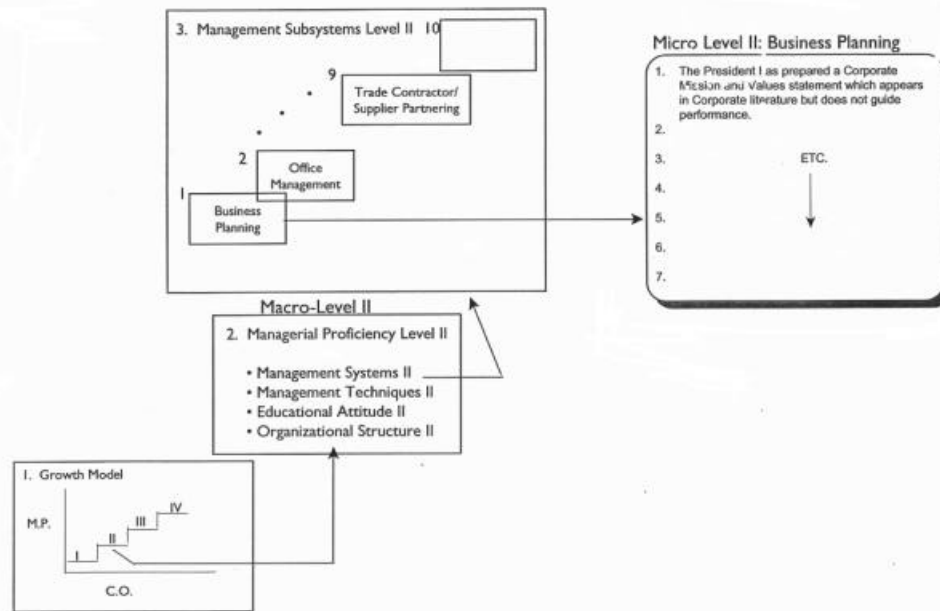


Figure 3. Relationship Between Macro-Level and Micro-Level Representation of Management Proficiency Information (modified from Willenbrock, 1998, p. 55)

## Future Research Directions

There are several opportunities for future research related to the L/M Growth Model. These include:

1. *A Quantification of the Vertical and Horizontal Axes of the L/M Growth Model.* This will require a statistical analysis of the homebuilding industry regarding the *Managerial Proficiency/Construction Output* relationships for existing homebuilding firms of various sizes. Such an analysis could lead to a mathematical relationship between the two variables in Figure 2.
2. *Micro-Level Models for the Remaining Three Components of Managerial Proficiency.* Only the Management Systems component of Managerial Proficiency has been developed at the Micro-Level. Similar research work is required with regard to: Leadership/Management Techniques, Educational Attitude, and Organizational Structure.
3. *Broad Use of the L/M Growth Model as a Research Tool to Study the Homebuilding Industry.* The existing framework provides a "Research Protocol" that can be used to gather data for various groups of homebuilders in order to better understand the whole issue of growth in the homebuilding industry.

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