

# Do Business Theories Follow A Life Cycle?

## An Application from Product Life Cycle Theory

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*How do we evolve as disciplines? Kuhn tells us... But is this, in fact, the way social sciences progress? According to Kuhn (1996), "a new scientific truth does not triumph by convincing its opponents and making them see the light, but rather because its opponents eventually die, and a new generation grows up." In social sciences, do our theories die and new ones grow up or do our theories have another evolution cycle? Does evolution of our sciences, especially business disciplines, fit with Kuhn's description of progress by scientific revolutions? In this paper, popularity of some business theories are evaluated to analyze how our disciplines progress. The results of this research demonstrates that our disciplines follow a little different pattern than "old theories die when new ones are born" proposal of Kuhn. Theories that are considered declined may become increasingly popular among social scientists later on.*

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One way of assessing our method of progress is to consider whether business theories follow cycles similar to the product life cycle theory of marketing? Are business ideas and theories similar to products with their introduction to their life, gaining popularity, reaching maturity (facing stiff competition from competitive goods) and declining from the market or in this case from the business literature? To answer these questions, three business disciplines (finance, management and marketing)

are analyzed and disciplines with more historical background are chosen to analyze some of their theories that might have evolved over time. Major, well-known theories in each respective disciplines are chosen and their use in publications are tracked in top tier journals of each discipline. The research is concluded by comparing the life patterns of these theories with product life cycle theory.

### THEORIES AS PRODUCTS

Even though it is an important concept with implications for both academia and industry, there are only a few studies analyzed theories as products. According to Gage (1994) theories are absolutely indispensable products of scientific research and the outcome of scientific effort. Before theory is achieved, we have no science. After theory is produced, we do have science. According to VanFraassen (1994):

"When we focus on the scientific theory, as product of science, we turn this into a question about theories. So, first, what sort of thing is a theory? A scientific theory must be the sort of thing that we can accept or reject, and believe or disbelieve. Accepting a theory implies the opinion that it is successful; science aims to give us acceptable theories."

Some researchers propose that it is time to ask if theories themselves are types of products and brands in our new information age (Fraim 2000; VanFraassen 1994). According to VanFraassen (1994), the implications of theories as products have great impact in the industry. Fraim (2000) states that:

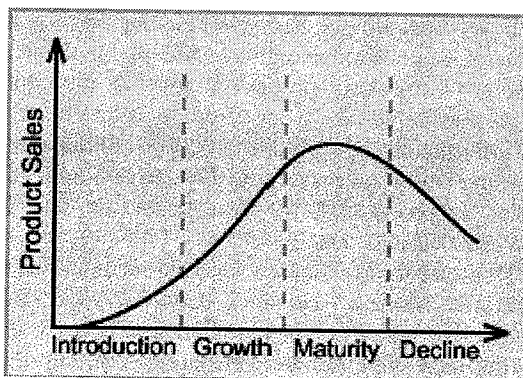
"It is one thing when consumers become confused by the various brands of cereal in the local supermarket but quite another when our business leaders become confused from the increasing number of theories coming and going with the fashion of the season somewhat like the ups and downs of skirt length."

Peter & Olson (1983) propose that a successful theory is-one that has been adopted by a substantial market segment, just as is the case of a successful consumer good. Regardless of the type of idea or theory, it should not be forgotten that the entire theory product is invented or constructed by one or more scientists, just as ideas for consumer products are invented or constructed. Like ideas for consumer products and the products themselves,

substantive and/or methodological theory products must also be marketed. The promotion stage of theories usually follows first introducing a theory to peers of scientist's in his or her academic environment, and then possibly conferences and/or publications related to its discipline. Promoting a theory may cause other scientists to be interested in theory and may give them a chance to work on it. This would increase popularity of theory in academia. Over its life cycle, a theory may undergo a number of modifications in response to a variety of potential marketing problems (Peter and Olson 1983). Finally, (Kuhn 1996) argues that a scientific revolution cannot take place unless the traditional view is recognized as failing and an alternative theory is available.

### Product Life Cycle Theory

As a commonly known theory in marketing discipline, product life cycle (PLC) theory claims that a product has a certain life and follows distinct stages. Generally, the PLC proposes that after a period of development a product is introduced (introductory stage) or launched into the market; it gains more and more customers and competitors as it grows (growth stage); eventually the market stabilizes and the product becomes mature (mature stage). After a period of time, the product is overtaken by development and the introduction of superior competitors (decline stage), and goes into decline. At this stage the product may eventually be withdrawn from the market. However, most products fail in the introduction phase. Others have very cyclical maturity phases where declines in sales result in changes in marketing strategies to regain customers. Figure 1 (Gorchels 2000) demonstrates the conventional PLC graph in terms of sales.



**FIGURE 1**  
**PRODUCT LIFE CYCLE GRAPH**

There have been some criticisms against PLC theory from the beginning of its introduction. Some of the scholars pointed that it leads us to mistakenly believe that product sales naturally follow an inevitable pattern (Hart, Casserly, and Lawless 1984). Many products, in fact, do not follow the usual shape of the PLC (Cox 1967). Another

criticism is that the PLC not only depends on time, but it also depends on other parameters such as management policy, company strategic decisions and market trends. These parameters are difficult to pinpoint (Komninos 2002). Even though some of these criticisms correctly identified the major problems of PLC, the theory has been very useful for analyzing sales trends and indicating appropriate product strategies. While it has been a very popular theory in terms of publication in marketing journals, PLC theory has also been analyzed and cited in many other business journals. For example, some authors analyzed the correlation of PLC stages and business strategy and performance (Anderson and Zeithaml 1984). A lot of scholars analyzed the applicability of PLC theory to concepts of technology and innovation (Easingwood 1988; Ellis 1984; Kay 1984; Souder 1983; vanDuijn 1981). PLC theory has been argued in international business studies (Ayal 1981; Lutz and Green 1983; Mullor-Sebastian 1983). PLC theory has also been analyzed in financial concepts (Ross 1989; Shefrin and Statman 1993). Overall, PLC theory has been heavily cited and adopted at business literature.

While marketers must be cautious when applying PLC, the PLC provides an initial framework for examining theories as products as suggested by Fraim (2000) and VanFraassen (1994). What follows is a research study that examines published business research in the context of the PLC to ascertain how theories actually progress within three business disciplines.

### THE STUDY

First, some of the major business disciplines that have deep historical background are chosen to evaluate the trends of their theories. These business disciplines are: (1) Management; (2) Marketing; and (3) Finance. Second, some theories, which are well-known and disseminated thoroughly in their respective disciplines, are chosen. These theories are determined based on their deep historical background of demonstrating possible life-cycle and the popularity in their respective disciplines. These theories are (1) Systems theory in management discipline; (2) Product life-cycle (PLC) theory in marketing discipline and (3) Arbitrage pricing theory (APT) in finance discipline.

According to Peter and Olson (1983), most successful theories are disseminated through highly prestigious journals in their respective disciplines for legitimization and widespread exposure. Therefore, popularity of these theories in their respective top-tier journals is the means by which the Theories Life Cycle (TLC) is assessed. Following Peter and Olson (1983), three prestigious journals are selected to analyze the degree to which these theories are disseminated in each field.

The following journals are selected based on the literature review on management journal rankings (Fried 2003; Johnson and Padsakoff 1994; Katz and Boal 2003; Parnell 1997; Siggelkow 2001; Tahai and Meyer 1999);

Academy of Management Journal (AMJ), Academy of Management Review (AMR), and Strategic Management Journal (SMJ). The literature review on marketing journal rankings (Baumgartner, Hans, and Pieters 2000; Baumgartner and Pieters 2003; Helm, Hunt, and Houston 2003; Hult, Neese, and Bashaw 1997; Theoharakis, Vasilis, and Hirst 2002) indicates the following marketing journals as highly prestigious journals: Journal of Marketing (JM), Journal of Marketing Research (JMR), and Journal of Consumer Research (JCR). Finally, the following journals are selected based on the literature review on finance journal rankings (Arnold, Butler, Crack, and Altintig 2003; Chan 2002; Cheney and Madura 1999; Chung, Cox, and Mitchell 2001; McNulty and Boekeloo 1999): Journal of Finance (JF), Journal of Financial Economics (JFE), Review of Financial Studies (RFS).

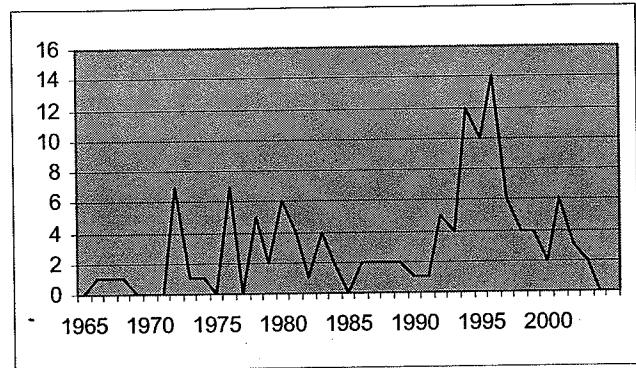
**Methodology**

The number of articles about these theories was counted by using ABI/INFORM Global academic search engine for business publications. Abstracts, article titles, article texts and citations in prestigious journals were perused using key terms such as "Product life cycle theory" or "arbitrage pricing theory". The articles that were found on the search were reviewed to understand their relevancy between their respective theories. The numbers of publications of these theories is determined by citation or application of (analysis, subject of investigation or conceptualization) the theories in a study in these journal articles.

For each journal, the total number of publications of each year is placed in a spreadsheet to obtain a graph that may demonstrate the similarity between TLC and PLC. After obtaining the yearly results, the total number of articles is summed and graphed for 5-year periods to better evaluate TLC in a longer term period.

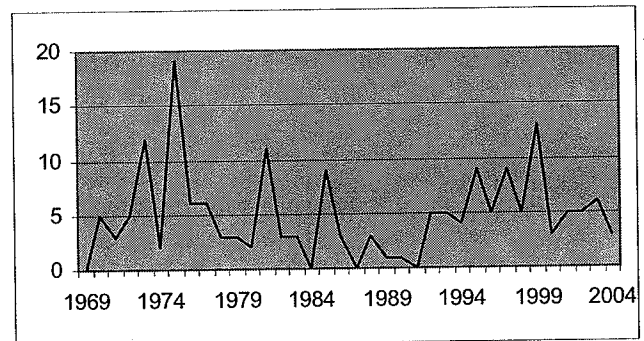
**The Results and Discussion**

In management discipline, systems theory is selected to investigate its TLC. Systems theory, which defines an organization as a system, concepts and language was in place in the 1960s and dominated management thinking in the 1970s (McNamara 1999). Figure 2 demonstrates the number of systems theory publications in prestigious management journals.



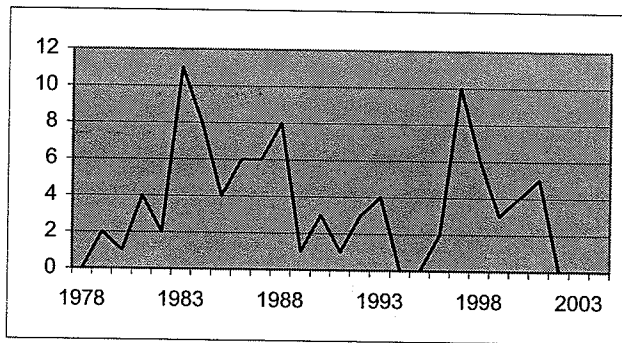
**FIGURE 2  
THE NUMBER OF SYSTEMS THEORY PUBLICATIONS**

In marketing discipline, the product life cycle (PLC) theory is selected to investigate its TLC. PLC theory is discussed above. PLC theory was introduced in 1970s as a marketing theory and gained a lot of popularity in academia and industry. Figure 3 demonstrates the number of PLC theory publication hits in prestigious marketing journals.



**FIGURE 3  
THE NUMBER OF PRODUCT LIFE CYCLE THEORY PUBLICATIONS**

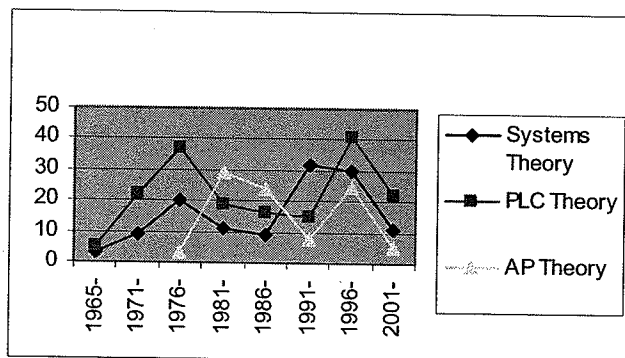
Arbitrage pricing theory (APT) is selected to investigate its TLC. APT was introduced in 1976 by Stephen Ross (Fonseca and Ussher 2004). Figure 4 demonstrates the number of APT publication hits in prestigious marketing journals.



**FIGURE 4**  
**NUMBER OF ARBITRAGE PRICING THEORY PUBLICATIONS**

As it can be relatively understood from Figures 2, 3, and 4, the TLC does not necessarily follow the traditional PLC (Figure 1). The PLC graph demonstrates that the sales of a product gradually increases until maturity, and then gradually declines. However, the increases and decreases of the TLC are not gradual; rather there are sudden peaks and sudden drops. For example, in Figure 3, a couple years after its introduction, the number of PLC theory publications increases significantly until 1976. Subsequently references to the PLC drops until 1981 when it increases and then drops until 1985 when references increase again. The increasing and decreasing pattern continues from the introduction of these theories. For the other TLC figures, the same downs and ups are observable in yearly basis. We can conclude that TLC and PLC do not have similar patterns if we look at them in this way.

When we look at the cumulative publications of each TLC for 5 year periods, however, we see similar trends among theories and similarity to PLC graph. Figure 5 demonstrates this comparison.



**FIGURE 5**  
**THEORIES' LIFE CYCLE (5-YEAR COMPOUND PERIODS)**

As we can see from Figure 5, the TLC follows a somewhat similar pattern for each theory. After theories are introduced, the publications about them increase significantly for the next decade or so, and then a gradual

drop is observed for one or two periods. The interest in the theories then increases again for another period or so, and finally another drop of publications follows. For all theories examined, the TLC patterns are similar.

This pattern is also somewhat similar to the product sales patterns at PLC theory. As discussed above, according to PLC theory, if the product is successful, its sales increase significantly during its introduction and growth periods. Based on the results of this study, the similar patterns can be mentioned for TLC too. PLC theory also proposes that after reaching its maturity level, the sales decline as a part of its PLC. The very same patterns are observable for TLC (Figure 5).

The pattern of the TLC actually suggests that the popularity of successful theories is somewhat like an alternative PLC pattern which fashion trends follow. Similar to consumers who change their appearances based on fashion trends, academicians are increasingly interested in one theory during a particular period, which is usually after its introduction, and then lose their interest significantly after that theory becomes too popular and "used" a lot. Some time later, which is usually around one or two decades, some academicians start to be interested in the same theory again, and then use of that theory in studies again increases.

The actual topics of articles that are reviewed in this paper suggest that the authors are usually very interested in a theory when it is introduced. Not surprisingly, the authors initially investigate the main applications and concepts of the theory in their respective field. The second growth period of the theories, however, demonstrates that there is an increasing interest in using that theory in combination with newer and "trendier" concepts. For example, during its introduction, PLC theory was mainly used for consumer goods and examples were usually from the U.S. In its second reincarnation, of the same theory, the interests of authors are towards applications of the PLC to other concepts such as the Internet and technology products applications, and international studies with an increasing emphasis on globalism.

## CONCLUSION

This study analyzed the similarity of business theories' life cycle to life cycle of consumer products as it is proposed in the Product Life Cycle theory. While yearly analysis of TLCs did not result in a pattern similar to the traditional PLC, 5-year periods of the TLCs gave us similar patterns between theories themselves and product sales patterns of PLC theory as applied to fashion cycles. It is concluded that business theories follow lifecycles somewhat similar to this special case of the PLC.

This study may suggest that the popularity of a theory may affect its publication chance in a prestigious journal. According to this result, academicians should be aware of the popularity of a particular theory when they are using it for their research. If the theory is in its decline phase, using

that theory may not create an interest in academia, thus, the study may not be published in a prestigious journal. However, TLC cycle may change with a new finding where a theory may change its life cycle stages with the excitement of that new finding. Social sciences should carefully review historical and current trends of theories that they work on.

Another and most important implication of this study is that following patterns of theories' life cycle gives opportunity to academicians to better understand how social sciences progress. The results of this study suggest that, in social sciences, scientific revolutions may not occur by introduction of an alternative theory as Kuhn proposed; rather, theories that are considered declined may become increasingly popular among social scientists later on. As Kuhn proposed, social sciences progress in paradigms where theories were introduced, grown, matured and declined but Kuhn's proposal of "paradigm shift" may not always occur as it does in hard sciences where a new concept is actually discovered, such as discovery of gravity or relativity. Social sciences are dealing with humans and our researches cannot be exact like hard sciences where a new discovery literally eliminates the previous thought. Because of this major difference between two sciences, this research demonstrates a theory life cycle that is similar to fashion concept.

In order to increase the quality of our researches, we should understand the background of our theories in depth. As social scientists, we should carefully consider and review previous literature in-depth, 15-20 years minimum, because our research already might have been done and published when that theory was more popular in its previous TLC cycle. This study demonstrates necessity and importance of historical perspective for social sciences.

### Limitations and Recommendations for Further Research

This research used the ABI/Inform Global electronic search engine to search for publication numbers in the academic journals, because of its wide range of available articles, historical depth and convenience. This method is strictly followed to assure objectivity. Using only ABI/Inform Global may have its own limitations, such as limited availability of full-text articles, and somewhat limited coverage of all publications. However, in this study, majority of the reviewed articles are reviewed in full-text format. Hence, the results are interpretable and appropriate for the purpose of this study.

Analyzing the TLC in only prestigious journals may give somewhat limited results. These theories are used widely in academia and industry. Thus, investigating other academic and non-academic journals, conferences, and textbooks may give more comprehensive analysis. In addition, interviews with senior academic people who published articles about these theories, and executives who used these

theories applications in their work may also supply a depth analysis of TLC.

For further research, scholars may be interested in using additional methods to investigate the TLC as discussed above. Also, more variety of theories would be analyzed to see their life cycle patterns similar to these results. Additionally, it would be interesting to see if there are different patterns between prestigious and less prestigious journals for the publication of same theory. In addition, investigating TLC at other business disciplines and even other sciences may give some interesting results.

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