
Formulation of a Systemic PEST Analysis for Strategic Analysis

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Abstract:

While generally considered as a simple analytical exercise to review the external environment facing a company, Political-Economic-Social-Technological (PEST) analysis is more challenging to conduct in order to be useful in practice. Meanwhile, when students in business studies learn and apply PEST analysis, more often than not, they ignore the systemic aspect of the technique as propounded in strategic management textbooks. As a result, the analytical value of their PEST analysis is heavily discounted. This paper attempts to redress this deficiency in the prevailing PEST analysis practice by proposing the construction of a systemic PEST analysis diagram. It also argues strengthening business students' and managers' managerial intellectual learning capability based on systems thinking in order to improve PEST analysis practice.

Key words: Environmental scanning, PEST analysis, Strategic planning, Systems thinking, Managerial intellectual learning.

Introduction

In business studies, all students have learned the concept of PEST analysis, which stands for Political (P), Economic (E), Social (S) and Technological (T) analysis on the external

business environment¹; it is carried out by businesses to support their strategic analysis activity. Most business students learn this analysis technique at the Diploma level, which is subsequently revisited by them at the Degree level. Regrettably, none of the students this writer has taught has done it in a way that delivers much analytical value. This prompts the writer to review the literature of PEST analysis so as to uncover its neglected intellectual rationale. The writer would then make some recommendations on how to improve PEST analysis and how PEST users can master its usage via effective managerial intellectual learning.

An overview of PEST analysis

PEST analysis examines four categories of external environmental factors, namely:

Political factors (P): these cover various forms of government interventions and political lobbying activities in an economy.

Economic factors (E): these mainly cover the macro-economic conditions of the external environment, but can include seasonal/ weather considerations.

Social factors (S): these cover social, cultural and demographic factors of the external environment.

Technological factors (T): they include technology-related activities, technological infrastructures, technology incentives, and technological changes that affect the external environment.

There are few serious academic works on PEST analysis per se, as it is generally considered to be a simple analytical tool for students new to business studies. Some of them include Cui *et*

¹ Some references, e.g. Johnson *et al.* (2009), prefer to use a more refined framework called *PESTEL analysis* with 6 categories, i.e. political, economic, social, technological, environmental and legal. To simplify matters, this paper adopts the popular term of *PEST analysis* in the discussion.

al. (2007) and Ha and Coghill (2006). In contrast, related concepts such as environmental scanning, macro-environmental forces review (but not using PEST analysis explicitly) and business scenario analysis have been more seriously studied by the academic community in the business studies field, see, for examples, Auster and Choo (1993), Choo (2001), Nwankwo (2000), Clemens (2009), Fahey and Randall (1998) and Nicolau (2005). There are also academic works that address only one category of external environment, e.g. Keim and Hillman (2008). Nevertheless, all textbooks on strategic management explain PEST analysis and there are quite some notes and videos on how to conduct PEST analysis found on the Internet, such as Wikipedia (2014), Businessballs.com (2014), Mind Tools Club (2014), Pestleanalysis.com (2014), Morris (2013), Mindtools.com (2012) and O'Loughlin (2010). In general, these accessible resources on PEST analysis highlight the following ideas, grouped under three headings here, namely: (a) related to its nature, (b) related to its contribution to other planning activities and (c) related to its practice:

(a) Related to its nature

- i. It is a framework that categorizes environmental factors as political, economic, social and technological forces (Thompson and Martin, 2006).
- ii. Examples of these factors are:
 - a. *Political factors*: tax policy, government stability and trading agreements, environmental regulations, security controls, merger restrictions.
 - b. *Economic factors*: interest rates, exchange rates, inflation rate, GDP.
 - c. *Social factors*: language, demographic trends, consumer tastes, education standards, living standards, gender roles.

- d. *Technological factors*: technological trends, innovations and breakthroughs, infrastructure, technology legislation.
- iii. It acknowledges that the various environmental factors can affect each other (Thompson and Martin, 2006).
- iv. The PEST factors are generally “beyond the direct influence of an individual organization” (Fleisher and Bensoussan, 2003). These factors are located in the general environment of an organization (Fleisher and Bensoussan, 2003).²
- v. It depicts the ‘big picture’ of the environment facing a company (CIPD, 2014).
- vi. It identifies significant environmental trends, both long-term and short-term ones (Fleisher and Bensoussan, 2003).

(b) Related to its contribution to other planning activities

- i. It is a company’s environmental factors audit to inform strategic decision-making, marketing planning, organizational change, and product development, etc. (CIPD, 2014).
- ii. It identifies key drivers of change³, which can be used in scenario-building exercises by a company (Johnson *et al.*, 2009).
- iii. It provides vital informational support to a company’s SWOT (i.e. strengths, weaknesses, opportunities, and threats) analysis (Fleisher and Bensoussan, 2003).

² For Fleisher and Bensoussan (2003), there are three levels, i.e. (i) *the general environment*, which is broad in scope and beyond the company’s direct influence, (ii) *the operating environment*, which has specific implications for managing the company, and (iii) *the internal environment*, which covers the various functional areas of the company as well as its management at various levels of the organizational hierarchy. Similar classifications of a company’s environment are popular in the business management literature.

³ The *key drivers for change* are environmental factors likely to make a high impact on a company’s strategy performance (Johnson *et al.*, 2009).

- iv. It attempts to keep a company strategically aware (Thompson and Martin, 2006) and market-risk aware (CIPD, 2014).
- v. It provides valid assumptions for a company’s strategy development (Fleisher and Bensoussan, 2003).

(c) Related to its practice

- i. It needs to be conducted regularly (CIPD, 2014).
- ii. It can be employed with SWOT analysis in a combined way (Ho and Coghill, 2005).
- iii. It relies on managers at various levels of a company, even including outside board members, to collect and analyze the relevant data in order to enable the analysis to be conducted (Fleisher and Bensoussan, 2003).

Table 1 is an example of a PEST analysis carried out by the writer based on Gluckman (2014), which reported on the external environment facing the private jet market in China.

Table 1: Specific examples of the PEST factors taken from Gluckman (2014) on the private jet market in China

<i>The 4 categories of PEST factors</i>	<i>Specific examples of the PEST factors found in Gluckman (2014)</i>
<i>Category 1: Political factors (P)</i>	<ul style="list-style-type: none"> • P1: “...the country allows only one school – a state-run institution near Chengdu- to train pilots...” • P2: “..Many expect sales to grow even more swiftly as Beijing slowly unwraps an industry it had long stifled... there are trial schemes to speed up flight permitting in several mainland cities...” • P3: “... Beijing is also freeing up air space but at a propeller plane’s pace...”
<i>Category 2: Economic factors (E)</i>	<ul style="list-style-type: none"> • E1: “... with its huge size, new affluence and booming economy, China could become fertile ground for the business-aviation industry...” • E2: “... many of the world’s top private-jet makers are raising their profile on the mainland, with some linking up with Chinese manufacturers and starting to build planes there...”
<i>Category 3: Social factors (S)</i>	<ul style="list-style-type: none"> • S1: “China is an especially high-end market, adding to the allure for jet-makers. “Hong Kong customers are more practical, they go for needs. But the Chinese

	<p>generally want the best planes with the longest range.”....</p> <ul style="list-style-type: none"> • S2: ... “We need more airports and more investment, but the government can’t do this alone,”... “We need more entrepreneurs.”
<p><i>Category</i> <i>4:</i> <i>Technological factors</i> <i>(T)</i></p>	<ul style="list-style-type: none"> • T1: “.. the country endures the world’s worst flight delays... No other international airport in the world came close to performing so poorly...” • T2: “Rural areas have few if any airports outside of military control, and Shanghai, Beijing and other hubs suffer from a severe shortage of slots...” • T3: “... China’s private-jet market got a major boost in 2010 with the opening and later expansion of the country’s first FBO, or fixed-base operator, in Shanghai...” • T4: “...One main reason Chinese park their planes abroad is for the easier servicing and maintenance of their jets...”

Table 1 is a typical output from PEST analysis, which lists and categorizes all the major external environmental factors from the perspective of a specific industry or a specific company. This **table-form output** of PEST analysis is also the one produced by students in business studies in almost all cases. In this form, it is indeed “merely a framework that categorizes environmental factors as political, economic, social and technological forces” (Thompson and Martin, 2006). In actual business world practice, there are three main challenges involved in PEST analysis, based on the writer’s literature review:

Challenge 1: Managers need to strengthen their managerial intellectual capability, as they often have “difficulty in conceptualizing or defining what their environment is”, “hold narrow, limited, or invalid perceptions about the environment” and have difficulty to “grasp the implications of numerous environmental and organizational interactive dynamics” for a diversified business (Fleisher and Bensoussan, 2003).

Challenge 2: PEST analysis practitioners need to be aware of the existence of a number of perspectives on environment itself, such the Industry Structural Model

perspective, the Cognitive Model perspective, the Organizational Field Model perspective, the Ecological and Resource Dependence Model perspective and the Era Model perspective (Fleisher and Bensoussan, 2003). Unawareness of these perspectives easily leads to confusion in PEST analysis when different practitioners hold dissimilar perspectives on the environment.

Challenge 3: The environmental scanning system of a company, which supports the PEST analysis process, more often than not, fails to detect strategic inflection points⁴ and asymmetric attacks⁵ from competitors (Huffman, 2004). This also implies PEST analysis blind spots.

These three PEST analysis challenges are related to managerial intellectual capability (for Challenges 1 and 2) and to the PEST process and its decision support system (for Challenge 3). For the writer, the immediate dissatisfaction with the typical PEST analysis as illustrated in Table 1 is that it ignores a key idea underlying PEST analysis as elucidated in the Strategic Management textbooks, such as Thompson and Martin (2006), which is the inter-relatedness of the various PEST factors. This concern with systemic complexity arising from the inter-relatedness of PEST factors is examined further in the next section.

A proposed PEST analysis that respects the systemic nature of the external environment facing a company

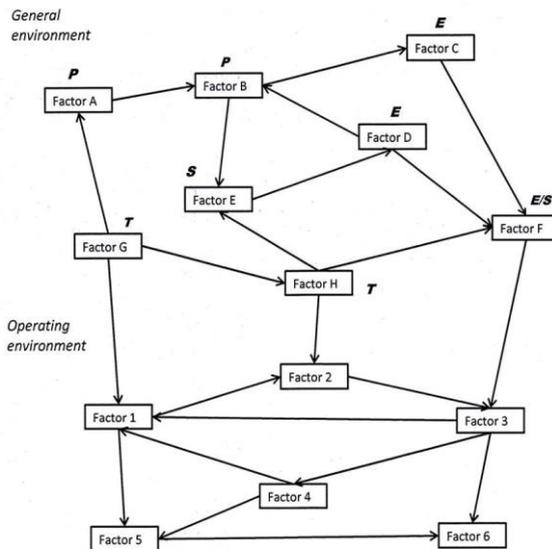
It is argued here that the prevailing **table-form** of PEST analysis, as illustrated by Table 1, exhibits two major conceptual weaknesses: (a) it does not recognize the inter-

⁴ A *strategic inflection point* is the point in time when there is a shift in the balance of forces (in terms of Porter (1980)'s 5-Force Model) from the old ways of conducting business to the new way (Huffman, 2004).

⁵ An *asymmetric attack* involves acting and thinking differently than opponents so as to maximize one's own advantage and exploit an opponent's weaknesses as well as to enjoy more freedom of action (Huffman, 2004).

relatedness of some of the PEST factors, and (b) it does not recognize the possibilities that some PEST factors can be considered as belonging to more than one PEST category. [These conceptual weaknesses remain even when PEST analysis is combined with SWOT analysis, as Ha and Coghill (2005) did.] Due to that, the analytical value of the analysis is substantially discounted. Thus, the writer recommends PEST analysts to make an effort to develop a systemic PEST analysis diagram based on PEST analysis output in table form, such as that of Table 1. This recommendation is not to replace the prevailing **table-form** PEST output with a **systemic diagrammatic form**. Rather the **systemic diagrammatic form** is treated as a stage-2 PEST output while the **table-form** PEST output is a stage-1 PEST output. The format of a systemic PEST analysis diagram is presented in Figure 2.

Figure 2: The format of a systemic PEST analysis diagram



In Figure 2, the main PEST analysis output is covered in the area of *general environment*. Factors A to H are the PEST

factors identified from PEST analysis. They are explicitly labeled as belonging to a specific (or more than one) PEST category, namely, P (for political), E (for economic), S (for social) and T (for technological). For Factor F, the label is E/S, signifying that this factor can be considered as both a E and an S factor. The arrows linking the various PEST factors indicate direction of influence. For instance, Factor A -> Factor B means that Factor A influences Factor B. Considering Table 1 then, it can be argued that E1 (booming economy) influences P2 (Beijing slowly unwraps the industry); S1 (China as a high-end market) influences E2 (the world's top private-jet makers are raising their profile in China). In turn, E2 stimulates higher demand for the best planes (S1). Some PEST users might consider S2 as also a T factor, thus an S/T factor. Meanwhile, PEST users studying the private jet market in China will surely introduce additional PEST factors, e.g. strengthening of RMB and advancement of private-jet production technology, etc., and incorporate them in the systemic PEST diagram as a brainstorming exercise on environmental audit. When applied in a global business setting, one can make use of the comprehensive list of internationalization drivers from Yip (2003) to identify more specific internationalization-related PEST factors for a specific multinational corporation and then explore how these PEST factors can be related to each other.

Figure 2 also acknowledges that certain PEST factors in the *general environment* can influence some of the industry-specific factors in the *operating environment*. Examples in Figure 2 are (a) Factor G to Factor 1, (b) Factor F to Factor 3 and (c) Factor H to Factor 2. [The topic of operating environment audit is outside the scope of discussion of this paper.] Such a systemic PEST analysis diagram output essentially adopts the influence diagramming technique in Systems Thinking as explained in Open University (2014). [It is also quite feasible to employ the cognitive mapping technique of Eden *et al.* (1983) to produce such a diagram.] Indeed, a

systemic PEST analysis diagram endorses more faithfully PEST analysis thinking as espoused in Strategic Management textbooks. It is just that this systemic aspect of PEST analysis has not been taken seriously in prevailing PEST analysis exercises by business studies students. This is despite the fact that, in the strategic management literature on environmental analysis, the systemic nature of the external environment has been well recognized. For examples, Ackoff (1981) depicts such an environment as a mess, which is explained as “a set of two or more interdependent problems” (Ackoff, 1981), and Ward and Schriefer (1998) describe the real world as an evolving system with dynamism and systemic complexity.

Implications on managerial intellectual learning

PEST analysis is a popular management concept among many business studies students who mistakenly believe that what is required for its application is to remember the four letters of P, E, S and T. When the idea of a systemic PEST analysis was floated to one the writer’s part-time business studies class, they all agreed that it offers a superior way to examine the general environment facing a company. Hence, in principle, these students endorse the value of conducting a stage-2 PEST analysis to produce a systemic PEST diagram. However, almost all of them felt that such a stage-2 PEST exercise is intellectually very challenging to conduct and that they are too busy to learn it properly. This writer’s perception is that most of the students are, to start with, not used to thinking systemically. Moreover, based on the writer’s teaching experience, many of the students are not good at nor keen on managerial intellectual learning (Ho, 2013). Therefore, in order to promote the systemic PEST analysis as expounded on here, we need to first of all strengthen business students’ and practicing managers’ managerial intellectual learning capability based on systems thinking (Ho, 2014) as well as

convince them the value of managerial intellectual learning to their career development. By doing so, the three main challenges encountered in the PEST analysis practices as described in this paper, especially challenges 1 and 2, can also be addressed to a large extent. [Readers are referred to Ho (2013; 2014) for further elaboration on the topic of managerial intellectual learning based on systems thinking.] Finally, Conduct an effective PEST analysis requires a properly formulated PEST analysis process and an effective environmental scanning system; these two topics, which are closely associated to PEST Challenge 3, are not addressed in this paper. Readers are referred to works such as Auster and Choo (1993), Choo (2001), Clemens (2009) and Nicolau (2005) in this regard.

Concluding remarks

PEST analysis, as an exercise that employs a simple framework to categorize environmental factors, is not controversial per se, but has very limited analytical value to contribute to learning about the strategic position⁶ of a company. In this respect, the strategic management literature is rich in ideas on the broader topic of external environmental analysis, such as environmental scanning, scenario analysis and business ecosystem analysis. This paper argues for some refinement on PEST analysis by paying explicit attention to the systemic nature of the external environment so as to improve its analytical value. While its aim is thus not ambitious at all, the discussion reminds us the value of systems thinking and managerial intellectual learning in coping with the complex and systemic external environment facing both companies and individuals.

⁶ The *strategic position* of a company is concerned with the impact on its strategy of (i) the external environment, (ii) a company's strategic capability and (iii) its stakeholders' influence and expectations (Johnson *et al.*, 2009).

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