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# Kantian Inquiring Systems: An Illustration of a Retail Organization

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## Abstract

The Kantian inquiring system can be used as a model for learning organizations. Based on Churchman's work (1971) and Courtney, Croasdell, and Paradice's work (1998), this paper discusses the Kantian inquiring system and applies it to a retail organization. Kantian systems take inputs in the context of a space-time framework and theories, process the inputs using multiple models, and interpret the data in terms of the best fitting model. Accepted outputs from the system are integrated into the system's fact net. The guarantor of the system is the fit between the data and the model. Recommendations are made regarding the retail organization, using guidelines from the Kantian inquiring system, to improve its operations.

## Introduction

"An Inquiring System...is a system of interrelated components for producing knowledge on a problem or issue of importance" (Mitroff and Linstone, 1993, p. 29). Churchman (1971) described five inquiring systems, based on the work of five major Western philosophers: Leibniz, Locke, Kant, Hegel, and Singer. This paper explores the Kantian inquiring system and illustrates its principles in the context of a retail organization. The five parts of the model: a priori theory, input, process, output, and guarantor draw from the works of Churchman (1971) and Courtney, Croasdell, and Paradice (1998). Each part will be illustrated in the context of the world's largest retail organization, Wal-Mart. Recommendations in light of the philosophical basis are also considered. Table 1 shows a summary of the Kantian inquiring system.

Table 1. Summary of the Kantian Inquiring System  
(Courtney, Croasdell, and Paradice, 1998)

<b>Given</b>	Space-time framework Theories
<b>Input</b>	Internal/External
<b>Process</b>	Build models Create theories Interpret data Select best model
<b>Guarantor</b>	Fit between data and model
<b>Output</b>	Fact nets

Wal-Mart is suitable to explore as an example of an inquiring system, and specifically a Kantian one, for two reasons. First, Wal-Mart is a rich organization to study due to the fact that it is the largest retailer in the world and the largest employer in the United States, after the federal government. With 2,522 stores, 463 Sam's Clubs, and 1,011 international units, and sales of \$165 billion in fiscal year ending January 31, 2000, Wal-Mart hires more than 885,000 employees in the United States and more than 1,140,000 worldwide, serving over 100 million customers weekly worldwide. Such a large organization provides complex interactions among employees, consumers, and suppliers that are very appropriate to examine in the context of an inquiring system and learning organization. Second, several characteristics of the Kantian inquiring system are exemplified in the management and operations of Wal-Mart, as detailed in the paper below. Since the purpose of this paper is to examine Wal-Mart as a Kantian inquiring organization, only examples of a Kantian system are discussed, excluding examples that may pertain to other inquiring systems, that could be employed by Wal-Mart in certain aspects of its managerial and operational levels.

## Kantian Inquiring System

### *What is Given?*

The Kantian inquiring system has both theoretical and empirical parts, which allow it to generate hypotheses. It requires a space-time framework (i.e., an a priori space and an a priori clock) in order to examine the input and create those hypotheses. However, knowledge and hypotheses change over time. As a result, the system must continuously look into the environment for new knowledge and check it against existing knowledge. For example, Wal-Mart utilizes a process called traiking. Traiking indexes product movement in the store to over a thousand stores and market traits. The traiking data are analyzed to see if any relationships or causality explains the reasons customers tend to buy specific products at certain locations and times. Location is significant since Wal-Mart has determined as part of its strategy that the best location for setting up stores is small to medium size towns. Time is important since retail sales are seasonal,

and having a full stock of merchandise during peak times, such as Christmas, is vital.

A Kantian inquiring system has a theoretical component, and one economic theory that Wal-Mart operates on is the principle of cost minimization. This principle involves reducing costs by using the least amount of inputs, such as labor and capital, to achieve a given level of output or result. Wal-Mart tries to cut its costs, such as overhead, in operations. For example, it hires 30% of its staff on a part-time basis. It runs 12-13 advertising circulars per year while competitors run 50-100 circulars per year. Also, executives share hotel rooms during their weekly visits to stores. Moreover, the demand of Wal-Mart customers is price elastic. Demand is price elastic when customers buy only on the basis of price. In other words, Wal-Mart customers are price-sensitive. Wal-Mart lowers its prices to attract and keep those customers. These are all aspects of the environment assumed, or "given."

### ***Input***

The Kantian inquiring system receives input. According to Churchman (1971), the system's input mechanism draws on characteristics from both the Leibnizian and Lockean systems. Even though it may seem contradictory, the system reflects both closed (Leibnizian) and open (Lockean) systems characteristics regarding its environment. In the case of a retail organization like Wal-Mart, the closed aspects are reflected in reliance on internal input from employees and local store managers. In many internal transaction processing situations, events or activities in the organization's environment are largely ignored. However, open systems aspects are also evident in a reliance on external input from the environment from customers and competitors.

Using internal and external inputs, an organization scans its environment, compares the inputs to existing knowledge, and creates new knowledge. For example, to receive internal input, Wal-Mart listens to employees and local store managers and incorporates their suggestions into its strategic planning. This focus starts at the top, from senior management, and is interpreted at many levels at lower management. This way management finds new and better ways to reduce costs and run the stores and operations more efficiently.

The internal input from employees and local store managers and the resulting implementation of those suggestions create double loop learning. Argyris and Schon (1996) defined double loop learning as learning that modifies or changes values, assumptions, theories, and strategies in an organization. For example, one of programs used to involve employees is "Yes We Can Sam" program. This program allows employees to suggest ways to simplify, improve, or eliminate work. In

1994, over 650 suggestions were implemented, resulting in estimated savings of over \$85 million.

For external input from customers, Wal-Mart listens to their preferences and suggestions. Over the past few years, it realized that customers prefer one-stop shopping, whereby consumers can do all their shopping in one place. As a result, Wal-Mart has expanded and added new services and products. Wal-Marts may now include shopping opportunities such as a pharmacy, a grocery department, the Tire and Lube Express, a vision center, etc. Moreover, Wal-Mart listens to customers through trainging. Using inventory and sales data and regional customer preferences, local store managers can have some latitude in choosing which products to display. Managers are also given latitude to set prices to meet local market conditions. In remote areas where Wal-Mart has no direct competitors, prices tend to be slightly higher than Wal-Mart stores next to K-mart and other competitors.

External input could also be received from competitors. Wal-Mart observes its competitors closely and examines their business practices. This practice stems from the guiding principles that Sam Walton, Wal-Mart's founder, left as a legacy. He was known to visit competitors to observe their operations and their customers. Walton would incorporate any new ideas and improvements he found into his own strategic planning.

### ***Process***

The Kantian inquiring system self-examines to validate the axioms of the a priori. Then the system, through its sensuous intuition, individuates sensations (inputs). Upon recognizing an input the system places it in context, allowing for multiple interpretations or views of the input. This ability is very important since the system draws upon several models and looks at causality. For example, a major competitor of Wal-Mart, K-mart, saw a decline in its sales in the mid-nineties and was on the verge of declaring bankruptcy. K-mart determined at least two interpretations of its situation. First, competitors like Wal-Mart were being especially successful in adopting technology earlier and faster throughout its operations. Second, K-mart's own inefficient way of running its operations contributed to the decline of sales.

As input is interpreted and theories are created, the Kantian inquiring system builds its own models. It also searches for the best fitting model that works. For example, Wal-Mart uses a low cost leadership strategy. It sells at a lower price in comparison to competitors and controls cost in operations. If Wal-Mart wanted to launch an advertising campaign that builds on this strategy and on its motto, "Always Low Prices," it would need to select a campaign that best fits its image and low cost theme. If an ad campaign shows product selection and benefits (utility) and emphasizes low cost, then that campaign would be selected over an alternative advertising campaign that stresses hedonistic

characteristics of expensive products. The latter campaign would be more suitable for a company that targets consumers with high levels of discretionary income. In Kantian terms, an Executor oversees this process of determining model fit. If a part of a model, or the entire model, is not working, then it can be set aside until it works properly again or until a better fitting model is found. For example, if Wal-Mart implements an advertising campaign that does not seem to increase sales, the campaign must be replaced with a more suitable one.

Wal-Mart executives have looked at several ways (or models) to improve its distribution operations. In the terms of a Kantian inquiring system, it chooses the best fitting model for its needs: an internal distribution system that takes care of its inventory. It builds its own warehouses so it can buy in large volumes. It builds stores close to these distribution centers. As a result, merchandise is delivered "just-in-time" to the stores.

### ***Guarantor***

The guarantor of the Kantian inquiring system is the degree of data / model fit. If the guarantor of the system fails to have a fit between the data and the model, failure could occur. In the case of Wal-Mart, part of the success is attributed to the fact that current management implements the original model based on success factors that Walton preached for years, such as low cost, good use of technology, etc. The knowledge he left as a legacy became part of the organizational learning and memory of Wal-Mart. However, the business environment continuously changes, especially since the days when Walton founded the company. Fortunately, current top managers continue Walton's policy of "management by walking and flying around," whereby they visit stores to get input from employees and regional managers. This way, top managers not only follow old traditions set by Walton, but they also avoid falling victim to old traditions that may no longer work.

The models of the system are updated as necessary and in order to make better sense of the data and arrive at improved decisions. Wal-Mart managers actually update these models with new information. For example, local store managers can submit their input via a computer communications technology called Retail Link. An important part of this platform is a decision support system (DSS) that helps managers in making decisions by allowing them to share data, store by store, item by item, etc. Also, part of the DSS is a question-based program that is tailored to provide all the details needed to make accurate decisions, regarding profits, sales, market share, etc.

### ***Output***

Output for the Kantian inquiring system for Wal-Mart in the form of fact nets results from data collected from multiple sources, such as Retail Link, "traiting," and

Walton's legacy. The fact net becomes a foundation that Wal-Mart draws on in its strategic planning and decisions. Here, the Kantian system is similar to the Leibnizian system, since both generate fact nets as output. Adding new information to existing fact nets, creating new fact nets, and abandoning false fact nets are important tasks of the inquiring organization. This is analogous to a process of continuous improvement, development, and growth in the life cycle of a retail organization, like Wal-Mart.

### **Recommendations**

Applying the Kantian inquiring system philosophy, Wal-Mart should continue to scan its environment for input and use this knowledge to create new knowledge in running its operations so that it becomes more profitable. An external input, census data indicate two interesting demographic trends. First, the number of births in the US in the nineties averages 4.1 million a year, up from an average of 3.7 million annually in the preceding decade. This creates an opportunity to extend more lines into infants' and children's clothing. Second, it is estimated that senior citizens will constitute the bulk of the US population by the year 2030. Home delivery is expected to grow as the population of senior citizens continues to grow, which creates an opportunity for Wal-Mart. In order to cater to these demographic trends and expand into them further, new merchandise and a home delivery service, backed up by an appropriate advertising campaign, would need to be created. The inquiring system would select the best fitting model and create separate ad campaigns for infants and elderly. In addition, the retailing environment is increasingly becoming more on-line, which portends a change in the buying habits of customers. Even though Wal-Mart has a web presence, another recommendation would be to expand further in electronic commerce and establish a bigger presence on the Internet, to match its status as the world's largest retailer.

Furthermore, external input indicates the global nature of business today. A recommendation would be to open more stores overseas, besides the ones Wal-Mart has in Brazil, Canada, China, Indonesia, Mexico, etc. Also, more expenditures on intranets would be needed so that managers can share information (internal input) worldwide. In addition, an extranet could be established so that Wal-Mart can better communicate with suppliers globally. This way the fact nets of the inquiring system's output would be updated with new information, and better models would be built and selected, such as those models used to set prices and determine product offerings in the stores.

### **Conclusions**

Given a space-time framework and theories, the Kantian inquiring system scans the environment for input,

both internally and externally. It builds models, interprets the data, and then selects the best fitting model to achieve its goal. It must continue to scan for new information to be added and compared to existing knowledge. The system produces output in the form of fact nets. The system may fail if there is no fit between the data and the model. Wal-Mart was used an example of a retail organization to demonstrate several key aspects of the Kantian inquiring system. Wal-Mart is the world's largest retailer and continues to be very successful, implementing and illustrating several characteristics of the Kantian inquiring system.

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