HAND-TO-MOUTH BUYING: A PREDECESSOR OF JUST-IN-TIME[1]

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ABSTRACT

The widely accepted belief that just-in-time is a Japanese innovation is inaccurate. The author shows that hand-to-mouth buying was the predecessor of the just-in-time system, and that it developed in the United States over a century ago. This paper explores the birth of hand-to-mouth buying in the mid-19th century and the developments that intensified interest in this practice in the 1920s and early 1930s.

INTRODUCTION

Numerous articles have been published on just-in-time (JIT) and most credit Japan for "inventing" JIT operating methods. JIT attempts to organize the flow of materials through the production process and the distribution channels so that they arrive at the next step in the process exactly when they are needed. Inventory slack (float) is therefore eliminated in the system. JIT centers on the "purchase of small lot sizes in frequent deliveries" (Ansari 1986, p. 8). Inventory reductions, quality improvements, channel-wide cost reductions, and closer relationships between buyer and sellers are the main benefits that JIT provides.

In the 1950s, Japan examined its developing postwar industrial base and focused on the purchasing and inventory management functions to build a competitive advantage (Celley et al. 1986). By the end of 1970s, Japan had arisen as an economic superpower. This remarkable shift from a nation producing inexpensive, low quality goods, to one producing high-technology and high quality, expensive goods can be credited, in part, to JIT. These methods significantly impacted business operations around the world. U.S. firms have reexamined their methods of operation, vigorously pursuing JIT to remain competitive.

However, JIT is <u>not</u> a novel idea that originated in Japan in the 1950s. A U.S. business practice, called 'hand-to-mouth' (HTM) buying, developed a century before JIT and is conceptually analogous to JIT. Following World War I, the adoption of HTM increased to such a level that during the 1920s and early 1930s, HTM buying was discussed widely by both practitioners and academicians. At the time, it was considered one of the major issues facing U.S. businesses (Sammons 1927b). In 1927, 150 firms were surveyed and 90% viewed HTM as a permanent business practice, and nearly as many had taken steps to adjust their operations to HTM ("What Shall We Do..." 1927).

However, around the mid 1930s, the term 'hand-to-mouth' lost prominence in relation to the buying or the purchasing function. After numerous articles had been written about HTM buying over two decades, the articles on HTM buying disappeared. The last article centering on HTM that the author was able to locate appeared in 1933 (Tosdal 1933).

This paper is organized as follows. After first defining HTM buying, the various factors influencing the development of this pervasive business practice will be explored. During the 1920s, HTM was a popular issue, and advocates saw many advantages to adopting the HTM system. Conversely, critics believed HTM buying caused serious business problems. Both views will be

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[1]This paper grew from a manuscript which I had originally done in a doctoral seminar taught by Stanley C. Hollander. I am grateful to Dr. Hollander for originally giving me the idea for this research.

considered by examining the advantages and disadvantages of HTM buying. Next, reasons will be proposed as to why articles about HTM diminished from the business literature. Lastly, it will be shown that JIT is not a new idea, but rather an extension of an idea that originally began in the U.S. in the mid-19th century.

THE CONCEPT OF HAND-TO-MOUTH BUYING

HTM buying is a method of purchasing limited quantities of raw materials, semi-finished goods, or finished goods by the manufacturer or the retailer to encourage more rapid turnover and to reduce inventories (McGill 1927). Similarly, HTM means buying in small quantities only for immediate needs (Lyon 1929). Copeland (1927) viewed HTM buying as consisting of two important components; small orders and prompt delivery to the customer. Whereas dictionaries from the early 1900s through today define HTM as being "without any planned foresight" (Sammons 1927, p. 101), advocates claimed that the opposite was true of the HTM process. HTM meant controlled buying, or buying according to need. For example, retailers were encouraged to order daily by postcard or as often as needed (Nunn 1931).

Although most writers discussed HTM in relation to the purchasing function, the implications for other channel members were understood (Summerfield 1930). Lyon (1930) noted that manufacturers could also benefit from keeping inventories low and increasing turnover. This was a systems approach concerned with coordinating purchasing and inventory with production (Lewis 1939). Therefore, although the HTM term was normally associated with the buying process, hand-to-mouth manufacturing, distribution, and so on existed. The author refers to HTM buying since this was the prevalent term, but it is implied that HTM referred to the coordination of multiple business functions.

The term "hand-to-mouth" itself was widely disliked ("What Shall We Do..." 1927; Carroll 1927; Gormley 1927; Nicklis 1927; Wieboldt 1927; Leffingwell 1928). A variety of other names were proposed for use in place of HTM. Some of the names proposed included, but were not limited to: "current buying" (Perkins 1927, p. 445), "scientific buying", "conservative buying", "frequent buying" (McGill 1927, p. 344), "quick turnover buying" ("The Distributor's Profit..." 1927, p. 766), "demand-requirement buying", "necessity buying", "synchronized buying" ("The Profits and Losses..." 1927, p. 160), "provident buying" (Sammons 1927a, p. 101), "more turnover" (Sammons 1914, p. 230), "close buying" (Disque 1924, p. 416), and "bone-headed buying" (Dickinson 1930a, p. 3). However, the HTM name was by far the most prominent.

THE BUYING CONTINUUM

Forward Buying

Prior to around the mid-1800s, it was customary for industrial buyers and sellers to go to market only once or twice per year (Galloway 1930; Tosdal 1933). These trips were made at stated periods of the year that varied by industry (Freschl 1927; McGill 1927; Nunn 1931). This practice of purchasing far beyond immediate requirements by anticipating future needs became known as "forward buying" (Gushee and Boffey 1928, p.102; Harriman 1928 p. 240; Leenders, Fearon et al. 1989, p. 322). Infrequent purchasing necessitated holding large inventories. This practice is still used today, especially when prices are expected to rise substantially in the near future.

Forward buying conceptually occupies one end position of what may be called "the buying continuum" (Exhibit 1). The industrial sellers, in contrast to the industrial buyers, have most of the power at this end of the continuum. HTM buying, the opposite of forward buying, occupies the other end of the continuum. Here the balance of power shifts to the industrial buyers.

EXHIBIT 1 **The Buying Continuum**

FORWARD BUYING <------------------------------> HTM BUYING

Power advantage: Sellers	Power advantage: Buyers

Hand-to-Mouth Buying

Firms recognized long ago that inventories "are at best a necessary evil" (Lyon 1929, p. 224). Holding inventories is risky for every firm in the channel since firms must finance the inventories, and fire, spoilage, declining prices, and style changes pose a constant threat of loss.

During business downturns, firms were often caught with large inventories and suffered financial losses. Between 1865 and 1920 there were several economic depressions. To insulate themselves from these downturns, firms began to change the manner in which they purchased goods. Purchasing more frequently and in smaller quantities resulted in lower inventory levels and reduced risk.

Over the twenty year period that extends from around 1914 through 1933, both university professors and business practitioners had much interest in HTM buying. There were many articles published on this subject in a variety of journals, Harvard Business Review cases, and conference proceedings. Many of these writers believed that HTM was a new development that resulted from the post-World War I depression (Disque 1924; Freschl 1927). Prior to World War I, prices were rising. Buyers, fearing future shortages, speculated by building inventories. The high inventory levels and weak consumer demand drove prices down, and firms were burdened with the associated losses (Carroll 1927; Gormley 1927). It was claimed that as a result, firms changed their buying habits and became more conservative.

Whereas many believed that HTM buying was directly attributable to overbuying and the Post-War depression, some managers and academicians correctly recognized that HTM buying was being practiced by many firms well before the 1920s (Sammons 1927b). For example, Jesse Straus, President of R. H. Macy & Co. stated that, "For many years prior to the War, progressive retailers were carefully studying the problem of securing more rapid turnover of stocks and reduction of losses caused by depreciation on inventories" (Perkins 1927, p. 445).

Even before World War I there was an increasing tendency towards "more conservative" buying (McGill 1927). Indeed, in 1929, it was claimed that "Hand-to-mouth buying is old" ("Recent Economic Changes..." 1929, p. IX). The term "hand-to-mouth" buying first appeared in 1868 and referred to cotton orders in the dry goods trade, while the characteristics of HTM buying were recorded as early as 1850 (Lyon 1929). Similarly, Copeland (1929) cited dry goods trade reports from 1872, 1874, and 1896 that discussed HTM practices. Lyon claimed that during the period from 1865 to 1897, HTM buying was used almost universally in the dry goods industry (Lyon 1929), but Copeland found that other industries (i.e., grocery, paint, shoes, hardware) practiced HTM buying (Copeland 1929).

It should be noted that the extent to which HTM buying practices were adopted varied widely by industry. For example, by 1913, HTM buying was commonplace in the silk trade (Copeland 1929), whereas other industries adopted HTM buying at later or earlier dates.

The Relationship of Business Cycles and Buying Philosophies

The numerous business downturns between the Civil War and World War I prompted businesses to search for ways to insulate themselves from these periods. After every business downturn, when the danger of carrying large inventories was still fresh in the minds of business people, HTM buying gained popularity (Gushee and Boffey 1928; Harriman 1928). As the business cycle turned upward, prices again rose. Buyers often abandoned HTM practices and, fearing shortages, bought in large quantities ("Is Hand-to-Mouth Buying..." 1924; McGill 1927). When prices stabilized, there was often a return to more conservative buying since buyers felt that the market may be nearing a decline (Harriman 1928). This vacillation along the buying continuum has occurred in several inflationary times since the Civil War (Lyon 1929). The popularity of HTM methods fluctuated inversely with the peaks and troughs in the business cycles (Larrabee 1931).

PURCHASING VERSUS ORDERING

Several early purchasing and inventory management textbooks were explored to ascertain whether a distinction was made between the purchasing and the ordering functions. It appears that most firms did not differentiate purchasing from ordering, although some firms separated these responsibilities to better control the inventory levels. For example, the task of determining the amount of materials needed was often charged to a inventory or materials control department while the purchasing department actually selected the sellers and placed the orders or contracts (Lewis 1939).

In many instances, the terms "purchasing" and "ordering" meant the same thing. In the 1920s and 1930s, standard purchase order forms included prices, quantities, terms, F.O.B. points, and shipping instructions (Gushee and Boffey 1928; "N.A.P.A. Handbook..." 1942), which essentially meant that every order was a contract (Moeser 1930). Operating on a HTM policy, firms often placed orders daily for materials, which essentially meant that new contracts were issued for each order.

However, there is a recorded instance of a firm placing a blanket order in 1929 (Lewis 1939). The blanket order was a conservative estimate of a period's requirement based on predicted future sales. The main purpose of the blanket order was to aid the manufacturer in scheduling and planning production. As the period progressed, the buying firm submitted revised sales estimates, based on near-time retail sales, to the manufacturer. This type of close, ongoing exchange of information between the buyer and seller is essential in just-in-time environments.

ADVANTAGES OF HAND-TO-MOUTH BUYING

In the 1920s, many people eagerly adopted the HTM practice. Some believed that the increasing use of better purchasing methods was a logical outgrowth of the transition from a predominantly agricultural economy to a predominantly industrial economy (McGill 1927; Sammons 1927b). Seasonal buying (i.e., forward buying) characterized the agricultural economy. The production and distribution of goods were synchronized to agricultural periodicity which resulted in large inventories and slow turnover (Sammons 1927a). As manufacturing became more and more important in the U.S. economy, there was less need to purchase annually or semi-annually.

Advocates saw many significant advantages of adopting HTM practices. Some of these findings were diametrically opposed to the conclusions of HTM critics. For example, although some believed that small orders increased costs, research showed that cautious buying actually reduced the manufacturers' costs and reduced his inventories (Disque 1924; Lyon 1930).

The most significant advantage of HTM buying was that it supposedly stabilized the economy (Perkins 1927; Clark 1928). Whereas critics claimed that these practices destabilized the economy, proponents believed that HTM made production more steady (Disque 1924; Heywood 1927; McGill 1927). Marketing professor Fred E. Clark stated that, "Hand-to-mouth tends to keep stocks along the line in closer accord with the consumer" (1928, p. 399). Similarly, buyers speculated less (Masters 1927), especially with the Post-War depression still fresh in their minds. Whereas in the past, buyers would procure large amounts of material when anticipating rising prices, demand was more stable under HTM buying. During a business downturn, manufacturers were less inclined to have large quantities of raw materials and work in process (Perkins 1927). Purchasing smaller amounts of goods more frequently kept inventory levels lower and increased stock turnover. This freed up capital since firms were financing and insuring smaller inventories (Duncan 1925; Davidson 1927; Dowley 1927; Masters 1927; Perkins 1927; Sammons 1927a). The reduction in inventories was not insignificant. For example, retail stocks were reduced by $1 billion (nominal dollars) between 1912 and 1927 (Sammons 1927a).

Numerous other benefits were derived from adopting better buying methods. The recurrent and frequent ordering of material brought the seller and buyer into closer relationships (Dowley 1927; Masters 1927; McGill, 1927; Perkins, 1927). Retailers operating HTM claimed that price markdowns were used considerably less (Dowley 1927; Wieboldt 1927) as they became more responsive to the customers demands (Dowley 1927). Some firms began to use salesmen only to secure new accounts; ordering became automatic for established accounts (Disque 1924). Lastly, smaller inventories required smaller warehouses which resulted in less investment and depreciation (Dowley 1927).

CRITICISMS OF HAND-TO-MOUTH BUYING

Critics viewed the increasingly popularity of HTM practices with great skepticism. There were two main points of objection to this method of operation. First, HTM buying was accused of destabilizing the economy. The declining number of long-term contracts made many people uneasy. When buying was on an annual or semi-annual basis, as it historically had been, demand for firms' products was known with relatively certainty. Consequently, production schedules were generated well in advance of actual production. The uncertainty of demand was experienced not only by the manufacturer, but by the wholesalers and suppliers of raw materials as well. Under HTM, demand was known only a short period in advance. This uncertainty throughout the channel made forward planning more difficult and was thought to lesson the steadiness of business (Duncan 1925; Carroll 1927).

Second, on a more micro level, opponents believed that HTM adversely impacted the firms' profit levels. In 1927, a survey by the Bureau of Business Standards concluded that production and distribution costs were higher under HTM methods ("What Shall We Do..." 1927). This practice was new to many firms, and manufacturing efficiency was difficult to maintain in many situations (Mazur 1925). Besides increasing operating costs, sales were lost due to out-of-stock conditions (Disque 1924). Since large quantities of goods were not held in inventories, some feared that a labor strike might injure many industries (McGill 1927). HTM buying required an increase in the number of salesmen and more frequent visits to customers (Copeland 1929). In sum, it was argued that the costs of manufacturing in small lots with short notice, the costs of receiving orders and materials more often, and the costs of more frequent deliveries all reduced firms' profits. (Knauth 1928).

1920s - INCREASED INTEREST IN HAND-TO-MOUTH BUYING

In 1927, Harvard marketing professor Melvin T. Copeland wrote that "Small orders may be more numerous nowadays, but they were not wholly an invention" (p. 610). If the practice of HTM buying, as well as the term itself, developed over one-half century before the majority of writings appeared, it is reasonable to question why interest in HTM increased in the 1920s. Numerous authors propose reasons. The biggest, single factor for the increasing interest in HTM buying was the debacle of 1920. Around the end of the War, buyers speculated and built large inventories anticipating large demand and rising prices. Instead, demand was weak and prices plunged (Carroll 1927; Clark 1927; Davidson 1927; Dowley 1927; Freschl 1927; McGill 1927; Clark 1928). The depression of 1920 created a buyers' market which shifted the balance of power towards HTM buying end of the buying continuum (See exhibit 2).

EXHIBIT 2 **Positions on the Buying Continuum (1920s and 1930s)**

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                              1920s      1930s
FORWARD BUYING  <--------------------|--------|->  HTM BUYING
 Power advantage:                                    Power advantage:
 Sellers                                             Buyers
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In addition, management emerged as a separate discipline in the early twentieth century with the publication of Frederick Taylor's The Principles of Scientific Management. Taylor theorized that management must "develop a science for each element of a [job] which replaces the old rule of thumb" and then train and motivate employees (Taylor 1911, p. 36). The increased interest in HTM buying may have been driven, in part, by companies applying scientific management to the purchasing and inventory control functions. The conservative business climate after World War I along with the growing popularity of Taylor's "scientific management" provided a climate that was conducive for HTM buying to gain popularity.

The improvements to the transportation systems in the 1920s were the biggest factor that made possible the widespread adoption of HTM ("Is Hand-to-Mouth Buying..." 1924; Duncan 1925; Perkins 1927; Sammons 1927a). The railroads spent over $5 billion (nominal dollars) between 1920 to 1927, substantially improving their efficiency (Gormley, 1927; Lyon 1929). Exhibit 3 illustrates the extent to which the railroads improved their utilization and performance over this period.

Exhibit 3 **Railroad Performance Improvements (1920-1927)**

	1920	1927	% change
Car-miles per car-day	25.1	30.3	21
Ton-miles per car-day	498	518	4
Gross load per train	1,443	1,780	23
Avg. speed between stops	10.3	12.3	19
Gross ton-miles/train hr.	14,876	21,945	48

Source: Copeland, 1929, pp. 306-7

Paved roads were also expanded which resulted in improved transportation by truck. For example, around 1875, a merchant in Kansas could expect to wait 6 weeks to 2 months for shipments from the Atlantic seaboard. About 1895, expected delivery took one month, and in 1927 delivery time was 10 days (McGill 1927, p. 344). By 1931, overnight delivery was possible for distances less than 300 miles (Walsh 1931, p. 18).

Numerous other developments were cited for increasing the adoption of HTM buying. More efficient and convenient communication methods (i.e., telephone) were frequently credited with facilitating the increased use of HTM (Clark 1928). Consumer preferences changed and style became increasingly important (Freschl 1927); retailers were hurt by the obsolescence of slow-moving inventories. There was also a surplus of manufacturing facilities in the 1920s. Manufacturing system flexibility was also cited (Lyon 1929).

1930s - GOING TO EXTREMES

While Hand-to-mouth buying, a conservative practice, was used in the prosperous 1920s, the stock market crash and ensuing Great Depression further shifted buyers towards the end of the buying continuum, as shown in Exhibit 2.

Retailers tried to shift all of the risk back through the channel to manufacturers and wholesalers by ordering several times per day. One manufacturer complained that in one day, nine separate orders were placed for the exact same item by the same retailer (Gault 1930). Another complained that one of the largest department stores in New York ordered 2/12ths dozen of a makeup compact (Gridley 1932, p. 47). Ridiculously small orders were placed for as little as 1/144ths of a gross (Haring 1931, p. 18).

Retailers began operating on "less than a hand-to-mouth basis" (Dickinson 1930b, p. 105). Writers claimed that turnover ran wild, and that the pendulum had swung too far (Larrabee 1931). Articles on HTM in the early 1930s called for a shift to a more balanced point on the buying continuum; "Long-term forward buying is bad- but there must be some middle ground where all parties could benefit" (Gault 1930, p. 42). The administrative costs of processing numerous small orders, as well as the cost of breaking down master packages and shipping small orders, cut the profits of manufacturers and wholesalers. Additionally, the retailers kept the stock levels so low in the stores that it was difficult to find the desired items or the proper sizes (Dickinson 1930c).

With the balance of power favoring the buyers, the sellers had difficulty earning profits. However, the market conditions during the Depression were so poor that sellers were at the mercy of the buyers' demands. Numerous solutions were proposed to move towards a more central position on the buying continuum so that both parties could gain (Tosdal 1933).

SHIFTING RESPONSIBILITIES?

Both advocates and critics of HTM buying fully agreed that this ubiquitous business practice required changes in the operating procedures throughout the channel from production through distribution. However, there were two opposing views as to which party received the benefits of the HTM practice. These merit consideration since they relate to the subsequent analysis of the similarities of HTM and JIT.

One Party Loses

One view held that the industrial buyers (wholesalers and retailers) had more power than did the manufacturers (Masters 1927). With the distribution of power supposedly favoring the buyers, manufacturers were harmed by the growing popularity of HTM. (Recall that the adoption of HTM buying varied by industry, and that the position on the buying continuum changed with the business cycle).

Specifically, it was claimed that HTM encouraged manufacturers to take over functions that the wholesaler previously performed (Copeland 1928). For example, in some industries, the burden or risks of the storage function (i.e., depreciation, obsolescence, spoilage, financing) were passed back through the channels to the manufacturers (Harriman 1928; Baker 1939). It was felt that HTM forced manufacturers to carry larger inventories than before HTM and to develop facilities for making rapid deliveries (Clark 1927; Lyon 1929). Manufacturers were required to operate more warehouses in order to be closer to the markets for faster delivery (Clark, 1928). The risks of style changes (i.e., product obsolescence) and of financing the higher inventory levels were shifted from the retailer and wholesaler to the manufacturer. The manufacturer was forced to forecast demand and predict style changes (Clark 1927). It was claimed that, "The burden has simply shifted from one pair of shoulders to another..."

(Masters 1927, p. 69). Stated another way, the inventory levels, in many cases, were not reduced <u>throughout</u> the channel. Instead, the float was shifted backwards through the channel until it reached the first link in the process; i.e., the manufacturer. "Someone must carry stock" (Clark 1927, p. 179).

<u>All Parties Benefit</u>

The second view regarding which of the parties benefitted under HTM operating methods held that <u>all</u> firms in the channel could benefit if HTM was implemented properly. "Part of the trouble is that distribution and production seldom are organized to cooperate with each other or with the buying public" (Disque 1924, p. 415). Manufacturers could share in the gains of small-lot buying if closer cooperation between producers and distributors existed (Sammons 1914; Larrabee 1931). "Production should be harmoniously linked to the level of consumption" (Davidson 1927, p. 123).

By 1927, economists concluded that the ideal state could be conceptualized as a pipeline of materials flowing from the raw materials stage through the system to the ultimate consumer. "This is the trend of modern business" (Disque 1924, p. 458). Advocates felt that manufacturers should also operate hand-to-mouth. Carrying inventory is expensive regardless of which channel member carries the slack. Therefore, no party should carry extra inventory (Disque 1924).

HAND-TO-MOUTH: THE ORIGINAL JUST-IT-TIME SYSTEM

The goal of JIT is the elimination of all inventory with 100 percent quality (Bingham and Raffield 1990, p. 45). Before Japan "invented" the JIT system, American business conceived the idea of scheduling incoming parts and materials so that they could be moved directly from the shipping platform to wherever needed in the premises (Lewis 1939). Manufacturers eliminated double handling of materials by having materials enter into production immediately upon arrival (Copeland 1929). Some manufacturers and retailers tried to align production with consumption (Hill 1927).

In his 1929 book, "Hand-to-Mouth Buying", Lyon (p. 223) describes, in great detail, the ideal HTM situation:

> One may even dream of production so organized that no business concern or other economic unit would be obliged to carry stocks of raw materials or of finished goods. Fancy may picture supplies of every sort flowing into factories just as machines are ready to use them; goods flowing out to freight cars and trucks just pulling up to shipping platforms; merchandise arriving at the dealers' shelves just when space was made available by housewives carrying off goods to supply their husbands and children, who were just ready to consume them upon arrival. Under such conditions the burden of expense and risk borne by society because of the stocks necessary to the production process would be at a minimum.

Lyon's vision is essentially a JIT system. HTM advocates lacked the foresight to understand the implications how channel wide inventory reductions could improve quality. However, the other benefits of zero inventory were recognized by HTM proponents. These benefits, mentioned previously, are the very same benefits provided by JIT.

THE DISAPPEARANCE OF HAND-TO-MOUTH BUYING

It has been shown that both the hand-to-mouth phrase and the buying practice came into existence shortly after the Civil War, and further that HTM buying gained significant popularity in the 1920s. Consequently, many written works were produced focusing on HTM buying. However, the articles on HTM buying stopped by 1933 and the phrase nearly disappeared from the vocabulary of businesspeople.

Although the articles vanished from the journals in the early 1930s, HTM buying is still given sparse attention in some textbooks. For example, Duncan et al. (1983) mention HTM buying in their retailing textbook. This topic is also tersely mentioned in fairly recent purchasing textbooks (cf. Zarnowitz 1973; Zenz 1981; Leenders, Fearon, et al. 1989)

Why did U.S. business fail to refine "HTM buying" to the extent that it became "JIT"? Tentatively, it appears that the timing was wrong. Although the Great Depression provided a favorable business climate for HTM buying, the 1940s (after World War II), 1950s, and 1960s were periods of economic expansion with paltry foreign competition. There was little impetus for American businesses to be conservative since the market was generally expanding during this period. The 1970s and 1980s provided a climate that was better suited to conservative buying and inventory management; foreign competition increased, and microcomputers became popular.

JIT, which has been shown to be very similar to HTM buying, is difficult to implement even today with the widespread use of microcomputers. Information exchange between industrial customers and manufacturers is essential for synchronizing production and distribution requirements. Computers facilitate this exchange of information.

The catalyst for Japan to develop JIT methods was the nation's compact geography (Celley et al. 1986); space is at a premium in Japan. In addition, the rise of information systems provided a favorable environment in which to make better forecasts and to exchange information.[2]

By contrast, the great distances between suppliers and manufacturers or manufacturers and retailers in the U.S. contributed to the difficulty in implementing a JIT-type system. In the 1920s and 30s, it is possible that suppliers were situated geographically closer to the buyer and thus, it was possible to engage in HTM buying. This was a distinct possibility as shown by R.H. Macy placing orders for the same product several times in one day. However, over time, these distances may be increased significantly.

In conclusion, the demise of hand-to-mouth buying can tentatively be attributed to four causes:

1. Geographic distances between suppliers and buyers grew. Where the distances were great, the fear of out-of-stock lead to building inventory levels.

2. The hand-to-mouth buying went to excess as illustrated by the retailer who placed multiple orders per day. The transactional costs of these multiple orders may have eroded all profits.

3. The term "hand-to-mouth" was widely disliked ("What Shall We Do..." 1927; Carroll 1927; Gormley 1927; Leffingwell 1928). This phrase conjures up images of operating on a shoestring and being unstable. By contrast, JIT sounds efficient.

4. The timing was wrong. After World War II, the U.S. experienced a generally expanding, strong economy relative to the rest of the world. It was not until the 1970s that foreign competition became formidable along and the U.S. economy slowing in growth.

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[2]The author wishes to thank an anonymous reviewer for his/her comments. The remainder of the body of this paper was largely written by this reviewer.

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