EFFECTS OF TECHNOLOGY ON RETAIL SALES, COMMERCIAL PROPERTY VALUES AND PERCENTAGE RENTS

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Overview

This study examines the impact of e-commerce and the effect of technology on traditional retail sales, commercial property values and percentage rents. This study analyzes standard retail leases and seeks evidence of retailers shifting on-site sales to off-site e-commerce and catalog operations. The results indicate that of those surveyed, most shopping center owners, managers and leases contain no provisions for these sales, which have value implications to owners. In addition, this study presents both theoretical concepts and empirical results that suggest commercial leases need to be altered to account for online and catalog sales. Alternative uses for vacant bank buildings and retail spaces are suggested as well as specific recommendations to owners / tenants to reduce the threat of e-commerce to retail centers.

■ Introduction

E-commerce is causing a leakage of retail sales at traditional retail locations. That is, many e-commerce sales are occurring at traditional retail locations and are recorded as catalog sales or computer sales for next day pickup or delivery directly to customers' homes. The sales information is often logged off-site at the tenant's national data center, although the physical retail center was the procuring cause or point of contact for the sale. The results are loss of on-site sales information, reduced tabulation of gross sales per square foot reported to the property management company/owners and potential loss of percentage rents.

The potential effects of e-commerce on traditional retail property values could eventually be profound. Two primary aspects could be responsible: (1) more off-site retail sales resulting in less foot traffic, lower impulse sales by non-anchor tenants, lower profit margins due to comparative Web shopping, greater competition, lower profit margins for tenants and eventually higher vacancies; and (2) more on-site retail sales that are accounted for as off-site or catalog sales or computer orders.

It can be assumed that every Internet sale equates to a loss of gross sales revenue reported to or attributed to traditional retail property and/or a reduction of catalog sales. This assumes that at any given time, there is only a finite amount of retail sales or catalog sales and disposable income per household and that traditional retail sales can only be maintained if the economy expands at an increasing rate, faster than the growth of e-commerce.

■ Literature Review

The implications of technology and the predicted downsizing of the various commercial and residential real estate professions (Baen and Guttery, 1997) have not noticeably occurred except in the lending/banking and title insurance areas (Power, 1998). Mergers and technological efficiencies have contributed greatly to increasing vacant branch bank facilities either within malls or on pad sites within the immediate area of major retail properties. Alternative uses of vacant retail centers and bank buildings have become common topics in the mainstream press (Brown, 1998) and have become a priority topic for funded research (ICSC Priority Research Topic, 1999).

Major national retailers are either closing stores and moving to the Internet (Halkias, 1999) or making major moves to begin or expand online sales within existing retail operations (J. C. Penney, Wal-Mart, Radio Shack, etc.).

While the trend is occurring faster than the traditional academic journal articles can be published, the main stream press is full of references that are causing real concern to shopping center owners, retail leasing agents and property managers. Examples are:

1. "REIT Interest—Will the Internet Kill All the Shopping Centers?" (Martinez, 1999).
2. "Rural Residents Find Internet Closer Than Malls" (Associated Press, 1998).
3. "Price War! Dozens of New Web Sites Want to Help Online Shoppers Compare Prices—Much to the Irritation of Retailers" (Woolley, 1998).
4. "Why Real Estate Industry Should Fear the Future" (Reifenberg, 1997).

The countless similar main stream press references have added significant anxiety to traditional retailers and property owners. Prestigious real estate and e-commerce consultants however are monitoring profits and cost savings for clients and finding major changes in the perception of the traditional sticks and bricks approach to retailing/marketing. "There's oodles and oodles of business-to-business success stories, however," says Steven Johnson, director of e-commerce at Anderson Consulting in Chicago. "Our studies show that companies such as Dell Computer, Charles Schwab and Cisco Systems, companies that have moved aggressively toward e-commerce models, are enhancing revenues (generally by 10 to 20%), cutting costs (20% to 45%) and reducing working capital and physical infrastructure requirements (20% to 60%)," (*Calgary Herald*, 1998).

The e-commerce battle is not just between retailers and landlords. Major manufacturers are also going online and bypassing distributors, wholesalers and retailers. *The Wall Street Journal* (1998) reported, "If various merchants can't separate themselves from the pack, they are likely to transform most online markets into low-margin commodity businesses. Price cuts will become the main weapon in a chaotic battle for market share."

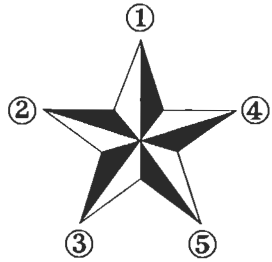
■ Historical and Contemporary Overview

The traditional retail center or mall is made up of five major components, of which the physical real estate itself (the sticks and bricks) is but one (Exhibit 1). The sword of technology and the cost of retail property (Exhibit 2) has clouded the real estate analyst's vision to project future rents, percentage rents and, therefore, property values. Percentage rents have traditionally been a hedge against inflation and often form the upside potential for negotiating higher base rents at the end of a lease term.

In the past, retail center planners, investors and financing firms have concerned themselves with buildings that would:

EXHIBIT 1. THE RETAIL CENTER/MALL CONCEPT UNDER FIRE BY TECHNOLOGY

1. Physical Retail Center



2. Center Anchor Tenants
- Shift to e-commerce and catalog onsite sales in stores.
- Target for other new e-commerce firms and virtual discount malls.

3. Property Managers and Leasing Agents
- At risk to competition of on-line leasing marketing/ brokerage websites.
- Increasing total square footage managed per manager due to technological efficiencies.
- At risk to lower leasing commission, brokerage fees and performance-based management fees due to potential decrease in retail center annual revenues and percentages rents

4. Center/Major Profit Sources: Smaller Tenants
- At risk to less foot traffic.
- Customer shift to competing off-site e-commerce.
- Declining quality of customer service and sales clerks due to low unemployment rates and low pay.
- Fewer clerks on commission.

5. Shoppers–Consumers
- Targeted for e-commerce sales and catalog sales at their homes and offices.
- Computer-based comparative shopping for major items will divert mall foot traffic to other locations with lower rents, operating costs, etc.
- The drive to lower prices and home delivery convenience.
- Large improvements and efficiencies in off-site deliveries (FedEx, USPS, UPS, etc.).

1. Lease to tenants with the value-added upside and inflation hedge of percentage rents based on gross sales at the point of purchase.
2. Offer a tenant mix and design that enhance both destination and impulse buying.
3. Offer visitors pleasant and entertaining activities to create the atmosphere of a visit to the retail center as an event rather than an errand or occurrence.

4. Offer easy and safe access, parking and pleasant shopping experiences.
5. Cash flow and appreciation of the sticks and bricks through property management, facilities maintenance, marketing of the retail center and upside prospects of rents (contract and percentage).

EXHIBIT 2. TECHNOLOGY AND RETAIL PROPERTY: THE GOOD, THE BAD AND THE UGLY

Rents
% Rents
Property
Value

The Good

Efficiency in transactions and manufacturing

More informed shoppers on quality and price

E-commerce has lower overhead and requires less and less expensive real estate

Exploding computer literacy in the U.S.

More online shopping

More home-based businesses and employment

No salesperson pressure for consumer

The Bad

Layoffs, fewer employees, fewer foottraffic shoppers

Lower profit margins and profits to tenants

Gross sales will be reduced; demand may drop for traditional space

Decrease in traditional marketing at retail centers

Faceless buyers/sellers; no customer service

Further displacement of urban concept and locational factors

No chance for add-on sales

The Ugly

Retail, catalog and e-commerce are merging
Downward spiral of prices
Increasing competition
Enhancement of distribution
Robotic order filling

These basic objectives of retailing evolved from central city locations and migrated to the suburbs of most metropolitan areas in the United States over the last 60 years (Exhibit 3). The blossoming of the suburban retail centers has most often been at the expense of inter-city retail tenants, property owners and loss of tax base for the central cities.

More recently, suburban regional malls have overbuilt with multiple

EXHIBIT 3. CHANGING RETAIL PERSPECTIVES

1880–1980s	Historical Retail Perspectives Location: Central Cities—Superior Market Location: Central Cities—Suburban Mix Location: Suburban—Superior Market
1990–1999	Contemporary Retail Perspectives Battle of the bigger, better, greater number of tenants largest regional malls vs. Wal-Mart, Sam's Discount Stores, etc., for: Demographics/Location vs. Price—Dominate Regional Mall Demographics/Location vs. Price—Multiple Malls in One Region Demographics/Location vs. Price—Super Malls and Freeway Outlet Malls
2000 + Beyond	Future Retail Perspectives Product viewing locations with product website ordering address on every product. Website location & one global price, FedEx, UPS, etc. ■ Malls ■ Airports ■ Consumers/Users (walking ads) ■ Media (TV, radio, print, etc.) ■ Traditional retail locations become places to pick up, return and receive repair service for products ordered on Internet. ■ More traditional retail space dedicated to storage, warehouse, repair areas and customer service.

malls within one region competing for a finite amount of disposable income dollars within that region. The battle of the bigger, better, newer, greater-number-of-tenants mega malls has also been met with a discount malls and discount retailers' war with Wal-Mart, Sam's Discount Stores, etc. The American shopper and mall developers have been confronted with high dollar demographics/location/prices versus discount warehouse retailing.

The evolution of retail sales to e-commerce has added a third dimension to competitive product viewing and retailing that goes far beyond the physical and locational factors of the traditional retail location (Exhibits 3 and 4) combined with a downward movement of prices to a single world price for many items, accompanied by smaller profit margins. There are new threats to retail property values as a result of technology (Exhibit 4).

Early indications are that the following tenant profiles have been most affected by e-commerce giving them technological efficiencies that will change the potential tenant mix and profitability from traditional spaces leased to this type of retailer. Tenants, retailers and service providers that have been seriously affected to date by technology and therefore their profitability and ability or willingness to pay rents are:

EXHIBIT 4. THREATS TO RETAIL VALUES

Traditional Threats

- Recession
- High interest rates/credit cards
- Unemployment
- Competing centers
- Reduction in consumer spending
- Changing neighborhoods/demographics/crime/etc.
- Building obsolete/refurbishment
- Lack of available financing
- Major vacancies in a center (bank, branches, anchors, etc.)

Technology

- Telemarketing/call centers in other states
- E-commerce
- Consumer auctions
- Efficient delivery systems of products
- Absolute lowest price information

1. Bookstores—Amazon.com
2. Travel agencies—Sabor/American Airlines/Southwest Airlines
3. Record, tape and CD stores
4. Automobile dealerships
5. Banks—Non-Banks (branch closings due to mergers, ATM machines, etc.)
6. Stock brokerage and investment firms (e-trades)
7. Computer stores (Dell Computer)
8. lower shops
9. Up and Comers
   a. Grocery stores
   b. Drug stores and pharmacies
   c. Electronic stores/Radio Shack, etc.

Retail real estate owners must be on guard not to underestimate the effects of e-commerce on traditional retailing. Potential short-term value and commercial real estate professionals' employment implications using conservative e-commerce gross sales figures appear to be significant (Exhibit 5). Typical deadly retail owner perceptions collected from recent interviews with members of the International Council of Shopping Centers (ICSC, 1998):

1. "Technology is no threat to my portfolio. It's my tenant's problem."
2. "The Web will never replace the need for human contact."
3. "Excellent customer service and property management will protect my centers from the 'threat' of technology."

EXHIBIT 5. SHORT-TERM VALUE AND EMPLOYMENT IMPLICATIONS
IMPLICATIONS OF E-COMMERCE ON RETAIL CENTER VALUES, RENTS, PROFESSIONALS FOR 1998 AND 2003

(000) Omitted in Dollar Figures							1999 Estimate[g]	2003 Estimate[g]
Estimated E-Commerce Sales 1998 (2% percentage rents lost or loss of increased rents due to reduced demand for traditional sticks & bricks)	6,600,000[a] × .02	13,000,000[b]	11,000,000[c]	7,900,000[d]	12,400,000[e]	11,500,000[f]	31,200,000	380,000,000 Billionb0000000000
Lost Rents (NOI)	132,000	260,000	220,000	158,000	248,000	230,000	624,000	7,600,000
PV of Lost Value CAP @ 8% NOI/CAP = Value	<1,650,000>	<3,250,000>	<2,750,000>	<1,975,000>	<3,100,000>	<2,875>	<7,800>	9,500,000

EXHIBIT 5. (CONTINUED)

(000) Omitted in Dollar Figures							1999 Estimate[g]	2003 Estimate[g]
NOI Loss = Prevailing CAP = Lost Rents Due to E-Commerce in 2000 Lost Property Managers Fees and/or Leasing Commission @ 5%	132,000 / .08 132,000 × .05							
Lost in Fees	6,600	13,000	11,000	7,900	12,400	11,500	31,200	19,000,000
Lost Fees/Avg. Property Manager Salary Per Year	6,600/ 60	13,000/ 60	11,000/ 60	7,900/ 60	12,400/ 60	11,500/ 60	31,200/ 60	19,000,000/ 60
Fewer Professional Managers and/or Leasing Agents	= <110>	<217>	<183>	<132>	<200>	<192>	<520>	<316,000>

EXHIBIT 5. (CONTINUED)

(000) Omitted in Dollar Figures							1999 Estimate[g]	2003 Estimate[g]
Lost Values of Shopping Center Sales (from #2)	<1,650,000>							
Lost Real Estate Sales Commissions @ 3%	× .03							
Lost in Commissions	<49,500>	<97,500 Million>	<82,500>	<59,200>	1,033	93,000	234,000	2,850,000
Lost in Commission/ Estimated	49,500/							
Average Annual Income of Commerical Brokers per year	100							
Reduction in Commerical Real Estate Agents in the U.S.	= <495>	<975>	<825>	<592>	<1,033>	<930>	<2,340>	<28,500>

Notes: Values are in $U.S. dollars.
[a]Forrester Research Projections 1995 Estimates
[b]Boston Consulting Group–REEF
[c]Cyber Dialogue–REEF
[d]Forrester Research–REEF
[e]International Data Corp.–REEF
[f]Yankee Group–REEF
[g]Goldstein, A. "E-Commerce may soar to $380 billion—1999's holiday shopping expected to triple from '98." Source: Dataquest, Inc., Lake Buena Vista, FL) *Dallas Morning News*, October 13, 1999, worldwide estimates.

4. "My retail center's Web page will maintain a fresh flow of visitors to our mall and our retail tenants."
5. "My retail tenants would never make electronic purchases for customers that would register sales 'off the books' to avoid percentage rents."

Approximately 111 commercial retail professionals and owners attending an International Council of Shopping Centers (ICSC) meeting in November 1998 on the subject of "The Future of Retailing" completed a questionnaire (see Appendix A). The results (see Appendix B) were both interesting and important in terms of the attitudes of those persons perhaps closest to ground zero of the implications of e-commerce on retail property. Respondents' perceptions and retail center technology levels are apparent. Their conclusions as to the future of shopping centers as investments at prevailing CAP rates are startling. It should be noted that 58% of the respondents were retail property managers and leasing agents (24% and 34%, respectively) with 24% being developers and only 3% being investors/owners.

■ Long-term Value Implications: A Theoretical Illustration

The Appendix presents excerpted work by Cruickshank and Baen (1998) that involves simple assumptions but drives home the point that the present value of a theoretical retail center losing either percentage rents and/or retail rental increases due to e-commerce, technologies, etc., is substantial.

Observations/Areas of Concern and Recommendations

1. Online sales and ordering are occurring at physical retail centers that are the procuring cause of the sale. Owners must restructure leases to capture some portion of these sales and at the least, the gross sales information. Online sales are also occurring in shoppers' homes after being viewed in retail centers. It would be difficult if not impossible to capture income from these home e-commerce sales that were showcased in malls unless entrance fees were charged or leases were also based on the number of shoppers entering the facilities.

2. The convenience, selection of goods, downward movement of prices and faster home delivery systems available through online sales will increasingly compete with traditional retail sales.
3. Customer service at traditional malls has been dwindling. The quality, vitality and enthusiasm of sales clerks have been declining due to low pay, high U.S. employment rates and lack of training. Many sales clerks are order takers at best and many actually offend shoppers with poor manners and service. Landlords and retailers need to form alliances to improve customer service throughout the retail center through new training and incentive-based sales programs. However, with falling profit margins (due to e-commerce comparative shopping services) this may prove uneconomical.
4. Malls need to become more family oriented with free computer rooms for games and/or homework rooms for children of shopping parents. Perhaps the computers might not be connected to the Internet to eliminate comparative shopping or ordering online.
5. Improvements in customer service and information desks need to be accomplished through better, faster, more efficient information such as sales (actual sales), community information, community demographics and special services for mall visitors.
6. Posted prices in traditional retail stores are becoming negotiable by shoppers carrying online comparative price lists by competitive store or e-site by name and location. Store managers often match the lowest price on the list (McIntyre, 1999). At least one major retailer (Barnes & Noble) is practicing this e-commerce leakage technique. This may turn American retail centers into oversized Mexican markets or Middle Eastern bazaars where everything is negotiable. Gross sales figures and percentage rents may increase while tenants go bankrupt due to super competitive e-commerce pricing and crashing merchant profit margin. Wireless, customer hand-held comparative price shoppers are currently being tested on the East Coast. McIntyre (1999) reports the story of one woman. AWhen she's in the market for a bestseller, she searches online book sites like Amazon.com, prints up the best price and then marches into Barnes & Noble to get them to match it. If a salesperson balks, not to worry. She asks to see the store manager, who invariably okays the deal. The cashiers are often amazed. They'll say, 'I had no idea we did that!' "

■ Conclusion

Traditional malls and retailing are being challenged by e-commerce. Their continued viability, profitability and values as investment-grade real estate will require careful research, monitoring and innovations. Retail tenant leases should include or capture some percentage of catalog and/or e-commerce sales.

Additional research is needed in the areas of monitoring gross sales, on-site e-commerce sales, profit margins of retail tenants and improvements in mall activities/customer service. If efforts of retail center owners and their tenants are not successful in countering Internet sales, while maintaining profitability and rents, major research in the area of alternative uses of retail shopping centers will be the hot research topic of the future.

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■ Acknowledgment

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■ Appendix

A Theoretical Illustration

Based on the projections of future Internet commerce previously mentioned, this example provides a fairly conservative estimate on how retail real estate values could be affected by a changing retail industry. Using the underwriting assumptions for each prospective case, a dramatic change in value is calculated. In Case 1, normal underwriting standards of today are used to calculate the value of the shopping center. Using these general policies, a value of $10,373,634 is calculated. In Case 2, the potential effects of online shopping are introduced: larger vacancy rates and reduced rent growth, indicating a value of $7,799,103. Therefore, under these general assumptions, the current value of the shopping center is reduced by 25%.

Are these projections and calculations on the effect of online shopping a real threat to the retail real estate industry? In observing what has already happened to the stock brokerage, travel and banking industries due to Internet communications, the answer is yes, and it is only a matter of time. The primary holdback to online shopping today is consumers' fears about transmitting credit card information between computer terminals. Industry participants are attempting to reduce these fears by emphasizing the safety of online transfers in comparison to the accepted method of verbally furnishing credit card information over the telephone. It is assumed that new technology and security devices will help ease these fears; however, it will take some time before the majority of the Internet population feels comfortable giving credit card information online.

This example (Table 1) is for presentation purposes to estimate the potential effects online shopping could have on the underlying value of a general shopping center. It assumes a fully occupied 100,000 sq. ft. shopping center with current lease rates of $10 per sq. ft. net. Expenses are assumed to be $3 per sq. ft. growing at a projected inflation rate of 3% annually. No capital expenses or tenant turnover are assumed. The analysis estimates the value of the center by discounting back the estimated future cash flows at a discount rate of 11%. The property is assumed to sell at the end of the tenth year at a 9% cap rate on year 11s net operating income.

Case 1: Traditional underwriting assumptions.
Rental Rate: $10.00 per sq. ft. increasing at 3% annually.
Vacancy Rate: 7% of gross potential revenue.

Case 2: Potential underwriting assumptions with effect of online shopping.
Rental Rate: $10.00 per sq. ft. remaining flat throughout the term due to loss of rental increases and/or percentage rents due to growth of e-commerce.
Vacancy Rate: 15% of gross potential revenue. Vacancies increase due to a theoretical 8% loss of tenants due to e-commerce, travel agencies, bookstores, music stores, etc.

TABLE 1. LONG-TERM VALUE IMPLICATIONS: A THEORETICAL ILLUSTRATION

	Year 1 ($)	Year 2 ($)	Year 3 ($)	Year 4 ($)	Year 5 ($)	Year 6 ($)	Year 7 ($)	Year 8 ($)	Year 9 ($)	Year 10 ($)	Year 11 ($)
Case 1											
Rental income	1,000,000	1,030,000	1,060,900	1,092,727	1,125,509	1,159,274	1,194,052	1,229,874	1,266,770	1,304,773	1,343,916
Expense reimbursement	300,000	309,000	318,270	327,818	337,653	347,782	358,216	368,962	380,031	391,432	403,175
Potential gross rental revenue	1,300,000	1,339,000	1,379,170	1,420,545	1,463,162	1,507,056	1,552,268	1,598,836	1,646,801	1,696,205	1,747,091
Vacancy	91,000	93,730	96,542	99,438	102,421	105,494	108,659	1,119,119	115,276	118,734	122,296
Effective gross rental revenue	1,209,000	1,245,270	1,282,628	1,321,107	1,360,741	1,401,562	1,443,609	1,486,917	1,531,525	1,577,471	1,624,795
Expenses	300,000	309,000	318,270	327,818	337,653	347,782	358,216	368,962	380,031	391,432	403,175
Net operating income	909,000	936,270	964,358	993,289	1,023,088	1,053,780	1,085,393	1,117,955	1,151,494	1,186,039	1,121,620
Sale price in yr. 10 @ 9.0% cap.										12,462,444	
Present value of cash flow @ 11%	818,919	759,898	705,130	654,310	607,153	563,394	522,789	485,110	450,148	4,806,784	

TABLE 1. (CONTINUED)

	Year 1 ($)	Year 2 ($)	Year 3 ($)	Year 4 ($)	Year 5 ($)	Year 6 ($)	Year 7 ($)	Year 8 ($)	Year 9 ($)	Year 10 ($)	Year 11 ($)
Case 2											
Rental income	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Expense reimburse-ment	300,000	309,000	318,270	327,818	337,653	347,782	358,216	368,962	380,031	391,432	403,175
Potential gross rental revenue	1,300,000	1,309,000	1,318,270	1,327,818	1,337,653	1,347,782	1,358,216	1,368,962	1,380,031	1,391,432	1,403,175
Vacancy	195,000	196,350	197,740	199,173	200,648	202,167	203,732	205,344	207,005	208,715	210,476
Effective gross rental revenue	1,105,000	1,112,650	1,120,530	1,128,645	1,137,005	1,145,615	1,154,484	1,163,618	1,173,026	1,182,717	1,192,699
Expenses	300,000	309,000	318,270	327,818	337,653	347,782	358,216	368,962	380,031	391,432	403,175
Net operating income	805,000	803,650	802,260	800,827	799,352	797,833	796,268	794,656	792,995	791,285	789,524
Sale price in yr. 10 @ 9.0% cap.										8,772,449	
Present value of cash flow @ 11%	725,225	652,260	586,606	527,530	474,377	426,554	383,529	344,822	310,001	3,368,198	

Note: The indicated value of Case 1 is $10,373,634 and for Case 2 is $7,799,103.