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DO ONLINE STOCK RECOMMENDATIONS ADD VALUE TO MALAYSIAN STOCK BROKERAGE CUSTOMERS?

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This paper examines online buy, sell, and hold recommendations provided by brokerage analysts in post dot-com bubble burst in Malaysia which has created the Multimedia Super Corridor. The results reveal significant value-added factor of the online recommendations on stocks' abnormal returns particularly on the release day. However, the very short-lived returns did not continue through the incorporation period. Quarterly results of the firms appear to be the most frequent rationale attributed for a recommendation made by the analysts. We suggest that brokerage customers capitalise on the advancement of information and communication technologies in their financial decisions making. For the financial services firms, the online services would be better integrated as part of the marketing strategies in enhancing customer satisfaction.

Keywords : *Internet, online stock recommendations, stock returns, Malaysia, brokerage firms, analysts*

Introduction

The Internet has significantly changed the investment environment. To remain competitive and efficient in the e-business environment, brokerage firms have to provide quality and timely online services. Online information services which are borderless, quick, and able to reach the targeted and potential customers within a few seconds, are all the advantages to be gained. Greater customer satisfaction and value-added factor offered by technology-based services have become important in marketing relationship management of financial services firms as indicated by Srijumpa, Speech, and Paul (2002) and Roth (1998).

The ceasing of operations of two licensed online financial portals, namely Surf88.com in April 2004 and MalaysiaStreet.com in year 2001 have sent worrying signals of the challenges and survival of the online financial services in the Malaysian financial markets (Jeffooi, 2004). What has gone wrong? The financial portals were managed by CFAs holders and the customers have to pay only about RM20 or USD$6.00 monthly subscription fees to access the online services via internet. The services offered include real-time stock quotations and online stock recommendations. Malaysia launched its own 'Silicon-Valley' project – known as the Multimedia Super Corridor (MSC) in Cyberjaya on 1st November 1995 by the former Prime Minister Tun Dr. Mahathir. The inspired project has a 20-year time-frame for the full implementation and execution. "Malaysia has created the Multimedia Super Corridor – a world's first, world-class act – to help companies of the world test the limits of technology and prepare themselves for the future. The MSC will also accelerate Malaysia's entry into the information age, and through it, help actualise Vision 2020" (Multimedia Super Corridor, 2003a).

The effectiveness of online stock recommendation by using the Internet as a tool for communicating and sharing information lies in the value added to the investors to gain superior returns. Very little is known about the revolution of online Internet services to stock returns and investment value. Do online stock recommendations add value? What are the rationales behind recommendations made by the analysts? Hence, this paper examines the investment value of 380 buy, 32 sell and 143 hold online stock recommendations and its associated issues of revised recommendations and analysts' rationales in the context of Malaysia. This paper contributes empirical evidence to financial services industry in which brokerage analysts have better and instant access to the latest private information with the information and communication technologies (ICT). The findings may also advance our understanding of the impact of ICT on stock returns.

Literature Review

Seven innovation flagship applications have been identified to spearhead the creation of multimedia utopia, including electronic government, multipurpose card, smart school, telehealth, R & D clusters, e-business, and technopreneur development. This is to achieve the objective of Vision 2020 in which transforming Malaysia from an industrial economy into a fully-developed nation and knowledge-rich based economy (Multimedia Super Corridor, 2003b). The success of MSC is not only in the traditional economics sectors but "the multimedia cluster continues to gain prominence and has the potential to be a major contributor to MSC's success" and "since inception of the MSC, key ICT indicators have improved, thus demonstrating that the MSC has helped in enabling ICT adoption nationwide". Moreover, MSC manages to influence and stimulate the mindset of Malaysian young generation to use ICT as their future way and become a dynamic ICT hub in the region (WorldSources, 2003).

In line with the development of e-business in the MSC context, Malaysian capital market has recognised and realised the growing importance of e-business by expanding its commercial and business activities to Internet. The continuous innovation of information

technology has also created challenges and opportunities for the market to be conducted online. Hence, online and Internet trading was introduced by brokerage firms in order to compete in the fast changing environment and to capture the tremendous potential in the stock market (Securities Commission, 2001).

Jegadeesh, Kim, Krische, and Lee (2004) examined the stocks recommendation in the Zacks Investment Research database from 1985 to 1998. They coded the recommendation from 5 (strong buy) to 1 (strong sell). They found that recommendations added value only to stocks with favourable quantitative characteristics such as value stocks and positive momentum stocks. Stocks with unfavourable quantitative characteristics are underperformed than the stocks they recommend less favourably.

Ho and Harris (2000) studied the rationales of analysts' recommendations and revised recommendations. The findings documented significant price increased for buy recommendations and price decreased for sell recommendations which continued in the subsequent weeks for the recommendation based on business fundamental rationale, and downgrade recommendation added more value than upgrade. Womack (1996) evaluated investment value of the recommended stocks in hardcopy form in United States. The results revealed that the mean of the post-recommendation of buy recommendations is 2.4 percent and was however short-lived. The drift was somewhat larger for sell recommendations with a mean of -9.1 percent and was prolonged for the next six months.

Data and Method

Despite the downturn in the dot-com economy in 2000, the expansion of Internet-based electronic transaction has moved forward. Hence, we examine the online stock recommendations from January 2002 to December 2002 and they were obtained through the online membership subscription in one brokerage firm in Malaysia. We used the raw stock prices taken from the Thomson Financial Datastream database.

The standard market model is employed to compute abnormal returns. The abnormal returns for stock j on event day, t, AR_{jt} is as follows:

$$AR_{jt} = R_{jt} - (\alpha_j + \beta_j R_{mt})$$

where

R_{jt} = The return on security j for day t;
R_{mt} = The return on the market index for day t; and
α_j and β_j = The ordinary least squares estimated for firm j's market model parameters

The market model is estimated over 256 days (excluding Saturday and Sunday) beginning t = –250 through t = –6 where t = 0 is the release day of the online stock recommendation. The market index used is the Kuala Lumpur Stock Exchange Composite Index. Day t = –5 to t = –1 are considered as pre-publication period, event day t = 0 to t = +1 are classified as release period, and post event period is from day t = +2 to t = +6 are known as

incorporation period in this study. This allows investigation of stock returns before and after the online recommendation release to be done.

For a sample of N stocks, the average abnormal returns (AR) and t-statistic for the abnormal returns for day t are computed as follows:

$$AR_t = \frac{1}{N} \sum_{j=1}^{N} AR_{jt} \quad t = -5,...,+6$$

$$\text{AR (t-statistic)} = AR_t * \sqrt{n_t} / Sd_t$$

where

AR_t = the average daily abnormal return
n_t = number of observation in day t
Sd_t = the cross-sectional standard deviation of the adjusted returns for day t.

The t-statistic for the cumulative average adjusted returns (CARs) in day t is:

$$CARs\,(t\text{-statistic}) = CARs_{j,t} * \sqrt{n_t} / CSd_t$$

where

n_t = number of observation in day t

CSd_t $= \sqrt{t \,.\, var + 2\,(t-1)\,COV}$

var = average (over 12 days) cross section variance

COV = The first order auto covariance of the AR_t series

We then classified the rationale of the analysts' recommendations into six categories which were adapted from Ho and Harris (2000). The categories are:

1. The recommendations that were attributed to the company quarterly results announcement.
2. The recommendations made based on the final financial results of the company.
3. An analysis of business fundamentals.
4. The recommendations that relied on the recent stock price movement with no changes in its underlying business.
5. Recommendations based on the company visit and briefing.
6. Recommendations based on other factors such as mergers, acquisitions, restructuring, joint venture, disposal of equity, rating, proposed bonus and right issue, and etc.

We further extended the investigation around the 92 recommendation changes in which the recommendation changes were broken down into new recommendation, upgraded recommendation, and downgraded recommendation. The new recommendation refers to any new buy, new sell, and new hold recommendations. For upgrade recommendations, it means any upgrade recommendation from its previous recommendation, namely from

hold to buy, sell to hold, and sell to buy. In a similar concept, downgrade recommendation refers to any downgrade recommendation from its previous recommendations, for example, from buy to hold, hold to sell, and buy to sell.

Analyses and Discussion

A total of 380 buy recommendations, 143 hold recommendations, and only 32 sell recommendations were made during the studied period of January 2002 to December 2002. Investment analysts seemed less likely to issue sell recommendations.

The results of the online buy recommendations as shown in Panel A of the Table 1 are statistically significant with the average abnormal returns (AR) and cumulative abnormal returns (CARs) of 0.4 percent and 0.61 percent on the online recommendation day, respectively. The positive abnormal returns were short-lived as they were gone after the release period. This finding is consistent with studies by Groth et al. (1979) and Bjerring, Lakonishok and Vermaelen (1983) who found no statistically significant returns in the subsequent periods after the recommendation. It is noted that the CARs before online release were positive, hence, implying the possibilities of information leakage before the stocks were recommended. Panel B of the Table 1 reports the AR and CARs of the sell recommendation. The results exhibited abnormal returns of –0.99 percent significantly on the online release day. The negative AR was also short-lived. The abnormal returns suggest that the brokerage analysts are perceived to exhibit good sell recommendation abilities. At the same time, the Panel C shows the patterns of AR and CARs for hold recommendations, however, there are no significant results obtained. The overall results indicated negative AR and CARs except the online release day.

Table 2 reports the rationales analysts used to explain the online stock recommendations. As shown in first row in Table 2, 37.9 percent of buy recommendations are accompanied by a release of company's quarter results. The AR and CARs of the buy recommendations gained 0.60 percent and 0.76 percent while the sell recommendations reported –1.56 percent and –2.56 percent significantly. Business fundamentals represent 25 percent of the rationales provided by the analysts. Past price movement seems to be less important in convey information to investors in both buy and sell recommendations. Overall, the rationales used for recommendations generate positive (negative) abnormal returns on the release day for online buy (sell) recommendations. Nonetheless, the abnormal returns are very short-lived. There are, however, instances of conflicting recommendations (e.g., categories of business fundamentals, others, and price basis) made where the buy recommendations produced negative CARs after the incorporation period.

It is also interesting to note that there were 19 buy recommendations made attributed after the company visit and briefing in which positive abnormal returns were shown after the incorporation period. No sell recommendations made were attributed to this rationale, however. In terms of sell recommendations, the rationale of the quarter results and other factors like acquisitions, new management, and corporate restructuring attributed 31.25 percent and 34.38 percent, respectively.

Table 1: Abnormal Returns (AR) and Cumulative Abnormal Returns (CARs) on Buy, Sell and Holl Recommendations from January 2002 to December 2002

Panel A: Buy Recommendations

Event Day	AR	AR (t-statistic)	CARs (-5,6)	CARs (t-statistic)	CARs (0,1)	CARs (t-statistic)	CARs (2,6)	CARs (t-statistic)
-5	-0.11	-1.22	-0.11	-1.22				
-4	0.13	1.38	0.01	0.12				
-3	0.17	1.47	0.18	1.26				
-2	0.05	0.50	0.23	1.26				
-1	-0.02	-0.22	0.20	1.06				
0	0.40	3.28**	0.61	2.95**	0.40	3.28**		
1	0.06	0.60	0.66	2.94**	0.46	4.13**		
2	-0.01	-0.15	0.65	2.66**			-0.01	-0.16
3	-0.08	-0.88	0.57	2.03			-0.09	-0.74
4	-0.06	-0.67	0.52	2.02*			-0.15	-1.14
5	0.02	0.26	0.54	1.88			-0.13	-0.80
6	-0.10	-1.20	0.44	1.56			-0.22	-1.39

Panel B: Sell Recommendations

Event Day	AR	AR (t-statistic)	CARs (-5,6)	CARs (t-statistic)	CARs (0,1)	CARs (t-statistic)	CARs (2,6)	CARs (t-statistic)
-5	-0.28	-0.67	-0.28	-0.67				
-4	-0.58	-1.10	-0.86	-1.78				
-3	0.40	1.08	-0.46	-0.70				
-2	0.29	0.59	-0.17	-0.20				
-1	-0.14	-0.35	-0.31	-0.33				
0	-0.99	-2.62*	-1.30	-1.01	-0.99	-2.62*		
1	0.01	0.01	-1.29	-0.96	-0.99	-1.60		
2	-0.16	-0.23	-1.45	-2.84**			-0.16	-0.35
3	0.00	-0.01	-1.45	n.a.			-0.16	-0.42
4	0.17	0.48	-1.29	-0.95			0.01	0.01
5	0.19	0.45	-1.10	-0.73			0.20	0.22
6	-0.01	-0.02	-1.11	-0.58			0.19	0.15

Panel C: Hold Recommendations

Event Day	AR	AR (t-statistic)	CARs (-5,6)	CARs (t-statistic)	CARs (0,1)	CARs (t-statistic)	CARs (2,6)	CARs (t-statistic)
-5	0.13	-0.82	-0.13	-0.82				
-4	-0.19	-1.45	-0.31	-2.15*				
-3	-0.26	-1.79	-0.57	-2.77**				
-2	-0.07	-0.49	-0.65	-2.44*				
-1	0.26	1.62	-0.39	-1.47				
0	0.04	0.19	-0.35	-1.45	0.04	0.19		
1	-0.22	-1.29	-0.57	-1.34	-0.18	-0.98		
2	-0.01	-0.07	-0.58	-1.80			-0.01	-0.07
3	-0.02	-0.15	-0.60	-1.59			-0.03	-0.16
4	0.01	0.06	-0.59	-1.34			-0.02	-0.08
5	-0.02	-0.17	-0.61	-1.57			-0.04	-0.20
6	-0.01	-0.10	-0.62	-1.34			-0.05	-0.20

Notes:
** denotes p < 0.05, ** denotes p < 0.01*
n.a. denotes not applicable

Table 2: Abnormal Returns (AR) and Cumulative Abnormal Returns (CARs) with the Control of Analysts' Rationales for Online Buy and Sell Recommendations from January 2002 to December 2002

Rationales Based on Quarter Results							Rationales Based on Final Results					
	Buy Recommendations			Sell Recommendations			Buy Recommendations			Sell Recomendations		
Day	AR	CARs (-5,6)	CARs (0,1),(2,6)	AR	CARs (-5,6)	CARs (0,1),(2,6)	AR	CARs (-5,6)	CARs (0,1),(2,6)	AR	CARs (-5,6)	CARs (0,1),(2,6)
	144[n]			10[n]			33[n]			5[n]		
-5	0.00	0.00		0.03	0.03		-0.10	-0.10		0.58	0.58	
-4	0.04	0.04		0.58	0.61		0.10	0.00		-0.11	0.48	
-3	0.00	0.04		-0.82	-0.21		0.13	0.13		0.19	0.67	
-2	0.22	0.26		-0.23	-0.44		-0.21	-0.09		0.30	0.97	
-1	-0.10	0.16		-0.56	-1.00		-0.10	-0.19		0.00	0.96	
0	0.60**	0.76*	0.60**	-1.56*	-2.56	-1.56*	0.47	0.28	0.47	-1.53*	-0.57	-1.53*
1	0.04	0.80*	0.64**	-0.67	-3.23	-2.23**	-0.08	0.19	0.38	2.70	2.13	1.17
2	0.00	0.81**	0.00	1.28	-1.95	1.28	0.06	0.25	0.06	-2.98	-0.85	-2.98
3	-0.01	0.79*	-0.01	-0.03	-1.98	1.25**	-0.41	-0.16	-0.35	0.29	-0.56	-2.69
4	-0.10	0.69*	-0.11	0.05	-1.93	1.30	-0.24	-0.40	-0.59	-0.02	-0.58	-2.71
5	0.17	0.86*	0.06	-0.24	-2.16	1.07	-0.01	-0.41	-0.60	1.40	0.82	-1.31
6	-0.02	0.84*	0.04	0.72	-1.45	1.78	-0.07	-0.49	-0.68	-0.28	0.54	-1.59

Rationales Based on Business Fundamentals							Rationales Based on Others					
	Buy Recommendations			Sell Recommendations			Buy Recommendations			Sell Recomendations		
Day	AR	CARs (-5,6)	CARs (0,1),(2,6)	AR	CARs (-5,6)	CARs (0,1),(2,6)	AR	CARs (-5,6)	CARs (0,1),(2,6)	AR	CARs (-5,6)	CARs (0,1),(2,6)
	99[n]			4[n]			81[n]			11[n]		
-5	-0.34	-0.34		-1.23	-1.23		-0.19	-0.19		-0.44	-0.44	
-4	0.34	0.00		-1.69	-2.92*		0.20	0.02		-1.97*	-2.41*	
-3	0.04	0.04		-0.39	-3.31**		0.64	0.66		1.51	-0.90	
-2	0.03	0.08		-1.59	-4.90		-0.09	0.57		1.07	0.17	
-1	-0.04	0.04		0.79	-4.12		0.31	0.88		-0.12	0.05	
0	0.29	0.33	0.29	0.45	-3.66	0.45	0.14	1.02	0.14	-0.42	-0.37	-0.42
1	0.06	0.39	0.35	1.75	-1.91	2.20	0.11	1.13	0.25	-1.32	-1.69	-1.74
2	-0.13	0.26	-0.13	0.77	-1.14	0.77	-0.21	0.92	-0.21	-0.20	-1.89	-0.20
3	-0.18	0.08	-0.31	0.13	-1.02	0.90	-0.09	0.84	-0.29	-0.14	-2.02	-0.33
4	-0.06	0.02	-0.37	-1.66	-2.68	-0.77	0.10	0.94	-0.19	0.81	-1.22	0.48
5	0.14	0.15	-0.23	0.64	-2.04	-0.12	-0.33	0.61	-0.51	0.10	-1.12	0.57
6	-0.21	-0.05	-0.44	-0.07	-2.11	-0.19	-0.08	0.54	-0.59	-0.50	-1.62	0.07

Rationales Based on Business Fundamentals							Rationales Based on Company Visit and Briefing					
	Buy Recommendations			Sell Recommendations			Buy Recommendations			Sell Recomendations		
Day	AR	CARs (-5,6)	CARs (0,1),(2,6)	AR	CARs (-5,6)	CARs (0,1),(2,6)	AR	CARs (-5,6)	CARs (0,1),(2,6)	AR	CARs (-5,6)	CARs (0,1),(2,6)
	4[n]			2[n]			19[n]			Nil		
-5	0.31	0.31		-1.24	-1.24		0.36	0.36				
-4	-1.40	-1.09		2.29	1.05		-0.28	0.07				
-3	0.64*	-0.46		2.57	3.62*		0.09	0.16				
-2	0.81	0.35		2.37	5.98*		-0.31	-0.14				
-1	-0.10	0.26		-0.38	5.60		-0.66	-0.81				
0	2.78	3.04**	2.78	-2.86	2.75	-2.86	-0.01	-0.82**	-0.01			
1	-1.12	1.91	1.66	0.50	3.25	-2.36	0.49	-0.33	0.48			
2	-0.18	1.74	-0.18	-1.95**	1.30	-1.95*	1.18	0.84	1.18*			
3	0.37	2.10	0.19	-0.12	1.18	-2.07*	0.51	1.35	1.68*			
4	0.98	3.08	1.17	1.35*	2.53	-0.72	-0.30	1.05	1.38			
5	0.38	3.46	1.54	-1.10**	1.43	-1.82	-0.22	0.83	1.16			
6	-1.86	1.60	-0.32	-0.13	1.30	-1.94	0.12	0.95	1.28			

Notes:
** denotes p < 0.05, ** denotes p < 0.01*
n denotes number of online stocks recommendation
Nil denotes none of online stocks recommendation

Table 3 shows the patterns of the AR and CARs of the new, downgrade and upgrade recommendations made. Overall, the pre-publication returns suggest there are significant price movements before the analysts release a recommendation. The significant patterns of positive (negative) price reactions before the analysts released the upgrade (downgrade) recommendations indicated a lag in digesting and adjusting arrival of new information. For new and upgrade recommendations, they achieved positive abnormal returns significantly through the release periods. However, there was no price continuation through the incorporation period. The short-lived of the positive (negative) abnormal returns of the new and upgrade (downgrade) recommendations can be observed from the negative (positive) returns produced in the incorporation periods.

Table 4 reports the rationales attributed to make 143 hold recommendations by the analysts. The quarter result is again the most frequent rationale used by the analysts, followed by others. The others include the rationales of acquisition, proposed bonus and right issue, rating, and others. Similar to its results in the panel C of Table 1, the hold recommendations produced negative AR and CARs in the incorporation period except the rationale of company visit and briefing.

We further explored the possibility of employing the reverse rule of investing (Hovanesian, 2001) of these online stock recommendations in view of the short-lived abnormal returns found. We examined the stocks quarterly returns which are 3, 6, 9 and 12 months subsequent to the buy and sell recommendations dates. What we found were somewhat different from the reverse rule of investing. Stock returns showed negative returns in 3 to 12 months after the recommendations except for the first quarter of the sell recommendations (see Table 5). Given these returns, we can infer that the stock returns are very much influenced by the overall stock market direction and performances. The negative returns were consistent with the downward trend of the Malaysian stock market from January to December 2002. Stocks performed poorly despite being carefully analyzed and recommended by brokerage analysts and the recommendations were released online.

This study has important implications to online financial services business in which the very short-lived abnormal returns offered are not only difficult to attract new customers but also keep the customers for a medium and long-term basis. In addition, substantial cost of technologies involved of online financial portal are difficult to cover with a small number of paid customers and nominal monthly subscription fees. Therefore, the results suggest that online-based services would be better being integrated as additional marketing service to the existing and new customers of the brokerage firms in the era of e-business rather than setting up an independent online financial and advisory portal. It should be pointed out that the value-added of the online stock recommendations are after all very much dependent on the overall stock market direction and performance. It is more than just what the technology and online services can offer. Hence, investors should use the online financial services wisely and not to be too reliant on them.

Table 3: Abnormal Returns (AR) and Cumulative Abnormal Returns (CARs) with the Control of Analysts' Rationale for Online Hold Recommendations from January 2002 to December 2002

Panel A: Changes of Recommendations

	All Changes			New Recommendations			Downgrade Recommendations			Upgrade Recommendations		
Day	AR	CARs (-5,6)	CARs (0,1),(2,6)	AR	CARs (-5,6)	CARs (0,1),(2,6)	AR	CARs (-5,6)	CARs (0,1),(2,6)	AR	CARs (-5,6)	CARs (0,1),(2,6)
	92[n]			27[n]			30[n]			35[n]		
-5	0.10	0.10		-0.01	-0.01		-0.33	-0.33		0.55	0.55	
-4	-0.01	0.09		0.68	0.67		-0.53	-0.86*		-0.09	0.47	
-3	0.59	0.68		1.72	2.39*		0.16	-0.69		0.08	0.54	
-2	0.15	0.83		0.04	2.43*		0.69	-0.01		-0.22	0.32	
-1	0.26	1.10**		0.04	2.46**		0.42	0.42		0.30	0.62	
0	0.14	1.24*	0.14	0.39	2.85**	0.39	-0.63	-0.22	-0.63	0.61	1.24	0.61
1	-0.16	1.07	-0.02	1.01	3.86**	1.39**	-1.18	-1.40	-1.82*	-0.19	1.04	0.42
2	-0.24	0.83	-0.24	-0.71	3.14*	-0.71	0.13	-1.27	0.13	-0.20	0.85	-0.20
3	-0.15	0.68	-0.39	-0.52	2.62	-1.23*	-0.09	-1.35	0.05	0.08	0.92	-0.12
4	0.02	0.70	-0.38	0.07	2.69*	-1.17*	0.15	-1.20	0.20	-0.14	0.78	-0.26
5	-0.17	0.52	-0.55	-0.41	2.28	-1.58*	-0.22	-1.42	-0.02	0.05	0.84	-0.21
6	0.23	0.75	-0.32	0.23	2.51	-1.35*	0.91*	-0.51	0.89	-0.36	0.48	-0.56

Panel B: Breakdown of Recommendations Changes

	New Recommendations						Downgrade Recommendations					
	New Buy			New Hold			From Buy to Hold			From Hold to Sell		
Day	AR	CARs (-5,6)	CARs (0,1),(2,6)	AR	CARs (-5,6)	CARs (0,1),(2,6)	AR	CARs (-5,6)	CARs (0,1),(2,6)	AR	CARs (-5,6)	CARs (0,1),(2,6)
	25[n]			2[n]			24[n]			6[n]		
-5	-0.10	-0.10		1.16	1.16		-0.25	-0.25		-0.62	-0.62	
-4	0.60	0.50		1.67	2.83		-0.47	-0.72		-0.77	-1.39	
-3	1.82	2.32*		0.50	3.34		0.09	-0.63		0.44	-0.95	
-2	0.07	2.39*		-0.42	2.92		0.36	-0.27		2.01	1.06	
-1	-0.02	2.37**		0.68	3.60		0.44	0.17		0.35	1.41	
0	0.57	2.95**	0.57	-1.96**	1.64	-1.96**	-0.88	-0.71	-0.88	0.35	1.76	0.35
1	1.04	3.98**	1.61**	0.64	2.28	-1.32	-0.80	-1.51	-1.68*	-2.72	-0.95	-2.36
2	-0.56	3.42*	-0.56	-2.57	-0.29	-2.57	0.34	-1.17	0.34	-0.68	-1.63	-0.68
3	-0.49	2.93	-1.06	-0.88	-1.18	-3.45	-0.10	-1.28	0.23	-0.03	-1.66	-0.71
4	0.00	2.92*	-1.06*	0.95	-0.22	-2.50	0.02	-1.26	0.25	0.69	-0.97	-0.01
5	-0.50	2.42	-1.57*	0.77**	0.55	-1.73	-0.21	-1.47	0.04	-0.27	-1.24	-0.29
6	0.22	2.64	-1.34	0.28	0.83	-1.45	0.80	-0.67	0.84	1.37	0.12	0.08

	Upgrade Recommendations								
	From Hold to Buy			From Sell to Hold			From Sell to Buy[a]		
Day	AR	CARs (-5,6)	CARs (0,1),(2,6)	AR	CARs (-5,6)	CARs (0,1),(2,6)	AR	CARs (-5,6)	CARs (0,1),(2,6)
	28[n]			6[n]			1[n]		
-5	0.50	0.50		0.85	0.85		0.14	0.14	
-4	0.03	0.53		-0.65	0.20		0.10	0.24	
-3	0.20	0.73		-0.67*	-0.47		1.15	1.39	
-2	0.00	0.73		-0.93	-1.40		-2.02	-0.63	
-1	0.30	1.02		0.47	-0.92		-0.59	-1.22	
0	0.81	1.83*	0.81	-0.51	-1.43	-0.51	1.76	0.54	1.76
1	-0.02	1.82*	0.80*	-0.51	-1.94*	-1.02	-3.27	-2.73	-1.50
2	-0.27	1.54	-0.27	-0.20	-2.15*	-0.20	1.95	-0.78	1.95
3	0.09	1.63	-0.18	0.23	-1.92	0.02	-1.14	-1.92	0.81
4	0.06	1.70*	-0.12	-0.54	-2.46*	-0.51	-3.49	-5.41	-2.68
5	0.21	1.91*	0.09	-0.39	-2.85*	-0.90	-1.56	-6.97	-4.24
6	-0.30	1.60*	-0.21	-0.50	-3.34**	-1.40	-1.12	-8.09	-5.36

Notes:
** denotes p < 0.05, ** denotes p < 0.01*
n denotes number of online stocks recommendations
a denotes t-statistic not available due to only 1 online stock is recommended

Table 4: Abnormal Returns (AR) and Cumulative Abnormal Returns (CARs) with the Control of Analysts' Rationale for Online Hold Recommendations from January 2002 to December 2002

	Rationales Based on Quarter Results						Rationales Based on Final Results					
Day	AR	AR (t-statistic)	CARs (-5,6)	CARs (t-statistic)	CARs (0,1),(2,6)	CARs (t-statistic)	AR	AR (t-statistic)	CARs (-5,6)	CARs (t-statistic)	CARs (0,1),(2,6)	CARs (t-statistic)
	58[n]						17[n]					
-5	0.03	0.12	0.03	0.12			-0.40	-0.97	-0.40	-0.97		
-4	-0.31	-1.78	-0.29	-1.51			-0.22	-0.68	-0.61	-1.38		
-3	-0.35	-1.97	-0.63	-2.36*			-0.59	-1.73	-1.20	-1.85		
-2	-0.02	-0.11	-0.66	-1.82			0.60	1.04	-0.60	-0.71		
-1	0.26	1.47	-0.39	-1.05			0.56	0.94	-0.04	-0.10		
0	0.07	0.31	-0.33	-0.73	0.07	0.31	0.15	0.29	0.11	na	0.15	0.29
1	-0.61	-2.78**	-0.94	-1.59	-0.55	-2.47*	0.70	1.32	0.81	0.71	0.85	1.63
2	-0.13	-0.78	-1.07	-2.71**	-0.13	-0.78	-0.21	-0.46	0.60	0.42	-0.21	-0.55
3	-0.03	-0.21	-1.10	-2.27*	-0.16	-0.74	0.20	0.64	0.79	0.53	-0.02	-0.03
4	0.13	0.79	-0.97	-1.96	-0.04	-0.14	0.53	1.24	1.32	0.98	0.51	0.75
5	-0.13	-0.80	-1.11	-2.01*	-0.17	-0.55	-0.99	-2.77*	0.33	0.35	-0.48	-0.96
6	-0.07	-0.37	-1.18	-1.72	-0.24	-0.57	0.57	1.44	0.90	0.93	0.09	0.16

	Rationales Based on Quarter Results						Rationales Based on Others					
Day	AR	AR (t-statistic)	CARs (-5,6)	CARs (t-statistic)	CARs (0,1),(2,6)	CARs (t-statistic)	AR	AR (t-statistic)	CARs (-5,6)	CARs (t-statistic)	CARs (0,1),(2,6)	CARs (t-statistic)
	23[n]						39[n]					
-5	0.19	0.66	0.19	0.66			-0.43	-1.17	-0.43	-1.17		
-4	0.21	0.85	0.40	1.21			-0.22	-0.65	-0.64	-1.91		
-3	-0.67	-2.13*	-0.28	-0.60			0.15	0.39	-0.49	-1.01		
-2	-0.64	-1.89	-0.92	-1.44			-0.12	-0.36	-0.61	-1.08		
-1	-0.35	-0.78	-1.26	-2.33*			0.58	1.66	-0.03	-0.04		
0	0.07	0.21	-1.19	na	0.07	0.21	-0.47	-0.96	-0.50	-0.78	-0.47	-0.96
1	0.76	2.39*	-0.43	-0.78	0.83	0.51*	-0.62	-1.64	-1.12	-1.07	-1.09	-2.48*
2	-0.15	-0.40	-0.58	-1.05	-0.15	-0.46	0.08	0.39	-1.03	-1.46	0.08	0.32
3	0.26	0.70	-0.32	na	0.11	0.39	-0.26	-1.17	-1.30	-1.48	-0.18	-0.52
4	-0.12	-0.37	-0.43	-0.39	0.00	0.00	-0.27	-1.03	-1.57	-1.53	-0.45	-0.96
5	0.08	0.26	-0.36	-0.31	0.07	0.11	0.56	1.83	-1.01	-1.17	0.10	0.26
6	-0.45	-1.72	-0.80	-0.78	-0.37	-0.54	0.05	0.17	-0.96	-0.88	0.15	0.27

	Rationales Based on Quarter Results											
Day	AR	AR (t-statistic)	CARs (-5,6)	CARs (t-statistic)	CARs (0,1),(2,6)	CARs (t-statistic)	AR	AR (t-statistic)	CARs (-5,6)	CARs (t-statistic)	CARs (0,1),(2,6)	CARs (t-statistic)
	6[n]											
-5	0.12	-0.32	-0.12	-0.32								
-4	0.20	-0.33	-0.32	-0.41								
-3	0.50	0.71	0.18	0.22								
-2	-0.04	-0.27	0.14	0.10								
-1	-0.48	-0.99	-0.35	-0.23								
0	2.62	1.44	2.28	1.16	2.62	1.44						
1	-0.18	-0.17	2.10	0.91	2.45	1.64						
2	1.70	2.23	3.80	2.47*	1.70	2.99*						
3	0.04	0.05	3.84	1.47	1.73	1.82						
4	-0.32	-0.74	3.52	1.45	1.42	1.38						
5	-0.36	-1.11	3.15	1.36	1.05	1.03						
6	0.14	0.37	3.30	1.18	1.20	0.83						

Notes:
** denotes p < 0.05, ** denotes p < 0.01*
na denotes not applicable
n denotes number of online stocks recommendations

Table 5: Average Returns of Online Buy and Sell Recommendations After 3, 6, 9, and 12 Months From the Recommendation Dates

	3 Months	6 Months	9 Months	12 Months
Buy Recommendations:				
Average Returns (in percentage)	-2.25	-7.33	-7.23	-1.87
Standard Deviation (in percentage)	15.91	18.43	23.01	23.67
Number of Returns < 0% (in percentage)	55.00	65.00	56.05	44.47
Number of Returns > 10% (in percentage)	16.84	15.26	22.11	30.79
Number of Returns > 20% (in percentage)	9.21	7.11	8.16	14.74
Number of Returns > 30% (in percentage)	3.16	1.84	3.16	6.32
Sell Recommendations:				
Average Returns (in percentage)	1.74	-8.67	-21.38	-22.41
Standard Deviation (in percentage)	17.51	23.80	26.23	29.44
Number of Returns < 0% (in percentage)	53.13	71.88	81.25	75.00
Number of Returns > 10% (in percentage)	25.00	28.13	9.38	12.50
Number of Returns > 20% (in percentage)	15.63	12.50	6.25	3.13
Number of Returns > 30% (in percentage)	6.25	3.13	3.13	3.13
KLSECI (at the End of Each Quarter 2002)	756.1	725.44	638.01	646.32

Conclusion

The overall results reveal the investment value of the online buy and sell recommendations. The communication and dissemination of online investment information brings forth superior returns, implying the success and advancement of ICT applications in financial markets. The abnormal returns found were very short-lived and this was consistent with Womack (1996). In spite of this, profits opportunities are appealing as advances in technology bring in benefits in which it enables investors to access to online financial services and take profit within a short period of time if needed whenever and wherever they are.

It would be of interest that future research may categorise the brokerage analysts based on their research experiences, expertise, and performances. Moreover, the research could also be expanded to various extreme market stress environment including bullish and bearish contexts.

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