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Future of Manufacturing Execution Systems: The Brave New Modular World of Manufacturing Intelligence

Frederick K Johnson *

Abstract

As the world of manufacturing continues to evolve on its race to zero defects through the use of tools like Manufacturing Execution Systems or MES, the concepts and principles used within the current MES model and how MES Solution providers develop, market and sell their MES products are changing as well. This paper discusses how the changing landscape of business, increased market competition and the effects of stricter governmental regulations, specifically within pharmaceuticals and advancements in medicines, are driving forces behind modular MES solutions and the reclassification of MES as the engine behind the concept of Manufacturing Intelligence.

Keywords: Manufacturing Execution Systems, Zero Defects, Manufacturing Intelligence

Introduction

Looking back to the initial introduction of Computer Integrated Manufacturing and Factory Information Systems, it is pretty difficult to not notice the impact that Manufacturing Execution Systems have made on the world. Recently, some questions have arisen about whether there is a future for Manufacturing Execution Systems (MES) as Enterprise Resources Planning (ERP) solution providers enter the realm of the shop floor environment (Bond, 2008).

In my opinion, there is no question that MES is here to stay. *"The future of MES"* definitely presents more opportunities, not fewer, because businesses want to continue or even enhance their revenue streams. The rationales for more MES can be broken down into these five reasons:

- Current economic & market conditions
- Globalization
- Demand for Manufacturing Intelligence
- Advancements in medicine
- Stricter governmental regulations

Furthermore, I believe that change through evolution is a part of life, even for the concept of MES. In the near future, the evolution of MES will be centered on but not limited to the reclassification of MES and the re-marketing of MES.

* Principal MES, B|Braun Medical, Inc., Irvine, California
E-mail: frederick.johnson@bbraun.com

Current Economic & Market Conditions

Years ago, while reading a publication concerning early American history, I came across a very famous quote which simply stated, *“These are the times that try men’s souls”*

Even though I was not a member of the generation that faced the British taxation levies which made Thomas Paine’s statement applicable, there is no question about this statement being truly provocative; its cadence helped lead this country into the American Revolution. Unfortunately for some, Thomas Paine was indeed correct.

If Mr. Gerald Celente, from the Trends Journal Research Institute, is also correct, historians will remember us as the generation that witnessed what he calls the *“Greatest of Depressions”* (2010). In terms of capital, in fact, we are living in similar, if not worse, economic conditions than those faced by the Toyota Corporation after Japan conceded the Second World War. During that time, Toyota and its home country had to answer some very tough questions. Essentially, for Toyota, it all came down to one simple question revolving around basic economics:

How could the Toyota Corporation function as a company despite the lack of capital and the scarce availability of resources?

Taichii Ohno and his managers at Toyota were ultimately tasked with the idea of developing an innovative system that would guarantee the profitability of the Toyota Corporation given the current economic times (Lean Enterprise Institute). In addition, the answers to Toyota’s fundamental question about how it planned to survive led to the development of a completely new science known as Lean Manufacturing. Many of the principles Ohno’s team engineered had their roots in best practices used at manufacturing plants run by Henry H. Ford (Lean Enterprise Institute). Most of the methods were manual processes that employed technology as simple as a pencil and a piece of paper, but it was Ohno’s innovative principles reinforced by discipline that pushed the concept of *“zero defects”* (Lean Enterprise Institute) and made the difference. Ohno and many others who helped author the Toyota Production System designed the system to withstand hard economic and competitive market conditions despite the lack of capital and availability of resources (Lean Enterprise Institute). For what Ohno and the people at Toyota were truly engineering was the survival of the company that would subsequently ensure the survival of the country.

Taking the history of the Toyota Corporation and the state of the current US economy into consideration, I can honestly conclude that the future of MES will be nothing short of brilliant. Conducting business in the *“Greatest of Depressions”* (Celente, 2010) will force American manufacturing to answer the same questions Ohno faced decades ago. The only true saving grace for manufacturing these days is that technology like Manufacturing Execution Systems has advanced to levels where smart manufacturing organizations have many more viable, cost-effective, and proven methods to choose from than Ohno and his team of engineers ever did.

Globalization

Although the collapse of the global financial markets may bring forth a more fragmented and convoluted version of globalization, the concept, as a whole, is still intact even as countries become squeamish about the American free markets (*Newsweek*, 2010). For the

United States, the next few years will most likely offer nothing more than high unemployment, slow levels of economic growth and high public debt (*Newsweek*, 2010). Operating under these kinds of conditions will certainly influence more collaboration and require each manufacturing business unit to perform at higher levels of efficiencies.

Staying consistent with the idea of having the entire supply chain working together for mutual gain can only be solidified if each group—*suppliers, customers, and partners* (Ashmore et al., 2004)—has access to information that provides meaningful knowledge which they then share. To achieve any sort of effective collaboration requires specific information about the business, or what is known as *Manufacturing Intelligence*, as a major input. Since gathering accurate real-time manufacturing information is a primary function of an MES, this places any MES at the very heart of any collaboration effort.

Demand for Manufacturing Intelligence

No matter how we look at it, MES lies at the center of any good Manufacturing Intelligence. Despite these two being very close in definition, there are some categorical differences between them:

MES provides manufacturing data required to generate Manufacturing Intelligence and is executed at the manufacturing level. Manufacturing Intelligence, in contrast, is executed at the ERP level. Without MES collecting and sending production data to the ERP level, there would be no manufacturing data to produce any meaningful knowledge. To simply write both of these systems off as just software, especially MES, would be a major understatement of their importance and function.

The data that the MES collects does hold a significant amount of value once it has been processed and analyzed by a Manufacturing Intelligence system. And as Collaborative Manufacturing efforts increase, organizations tend to become much more efficient and will demand more Manufacturing Intelligence collected through innovative tools, like Manufacturing Execution Systems, to run their organizations.

Advancements in Medicine

Companies that manufacture products that provide value to customers will be the winners in tomorrow's business world. And one thing that any customer values the most is their life and having more time to live it. With the advancements in the biomedical and pharmaceuticals industries, the next generation of medical innovation will include *personalized medicine* (Bogoslaw, 2010), *predictive & preventative medicine through*

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genomic testing (Singer, 2008), and the possibility of growing of human organs through *whole organ decellularization* (Kardaleva, 2008). By themselves, these efforts seem like something straight out of science fiction.

The truth is, all of this is happening right now and the products that are created out of these areas will provide the type of value any one of us would consume. Eventually, figuring out how to mass-produce and market these advancements in personalized biomedical products for the general public will be the next logical step. Within the United States, this inevitably means clinical trials, Food & Drug Administration (FDA) approval, and periodic FDA inspections. Having the ability to mass-produce human organs is one thing; proving to the FDA that a biomedical organization is in complete control of the manufacturing process is something entirely different. And if an organization plans to use traditional documenting and testing methods, the entire effort becomes seriously inconceivable.

The use of traditional documenting and testing methods becomes the center point of my argument. Using manual and paper methods for the documentation and testing alone certainly ensures that errors will be made. This can't happen when quality is fixed at 99.99%. To even think about undertaking a process like this means that the entire manufacturing process will consist of automatic in-line process controls for all critical parameters, monitoring everything from conception to transplant, and a data collection system recording the entire process. A specialized MES to handle the kind of manufacturing process in any of the endeavors mentioned above is not just an option, it is a must.

Stricter Governmental Regulations

In addition to the above, increased governmental regulations around the world are forcing pharmaceuticals companies to adopt technology such as MES. Both ePedigree and Global Track & Trace of pharmaceuticals products are soon to be not an option within the United States (Smith, 2009). What this means to most pharmaceuticals manufacturing companies is that any product sold on a unit basis will be required to have a barcode that contains specific information about the product and manufacturer and also includes a unique serial number.

With the amount of information that is to be encoded into a single barcode, manufacturers have been forced to transfer from an ANSI format over to a 2D barcode format. Considering the entire scope of work to be done, that was the easy part. The challenging part of all of this is retrofitting the current manufacturing process to serialize and print this additional information on the product with unique serial numbers. If your manufacturing process ships multiple units in a single case, then each case must be married to any unit that is packed into it. In addition, barcode information must be printed on the case.

Finally, at some point during the manufacturing process, the entire serialized product, including its relationship to each case and so on, will have to be uploaded or transferred to a regulatory global tracking & tracing database. The purpose of this regulatory global tracking & tracing database is to ensure patient safety by preventing counterfeiting (Smith, 2009). Distributors and wholesalers would subscribe to the regulatory database and use it to verify a product's authenticity once they receive a shipment. When the 2D barcode is scanned, either at the case or at the unit level for point-of-sale purchases, the product can be authenticated. All of this scanning and authenticating activity creates an ePedigree history, which is what the regulators are primarily interested in.

The first question that comes to my mind is how any of this can be achieved without the use of specialized software, automation, and a shop floor infrastructure providing connectivity. And the answer to that question is that it cannot be achieved, or at least not with the efficiency required for the company to stay in business long enough to generate a profit. This is exactly why there will be more demand for MES and the type of functionality that it provides. All of this only adds credence to the argument for the need for and continued use of MES in the future of manufacturing.

The Future Changes of MES

The Reclassification of MES The reclassification of MES was bound to happen over time. Just as Computer Integrated Manufacturing and Factory Information Systems both dissolved into MES, the life cycle for this concept will undergo its share of changes in the near future. I believe the demand for more Manufacturing Intelligence (MI) from increased collaborative efforts will be the driver. I see MES as being the core for MI, only because MES has access and connectivity to all the potential information that MI is interested in concerning the production process. Of course, MI will mix in ERP data and data from other sources, but without shop floor data, none of that would mean very much at all.

Once we consider a reclassification of MES, somewhere within that I do see the Manufacturing Enterprise Solutions Association (MESA) possibly making changes to their current MES model. I believe the world will begin to see the big picture regarding how important MES is to the entire enterprise. The underlying question to ask regarding the remodeling of the current MES would be "What are the true core functions of an MES?" Answering that question gets us to a new model and would be consistent with how I believe MES will be packaged, marketed and sold in the future. Therefore, I can see MES with its core and full functions being reclassified under Manufacturing Intelligence. And Manufacturing Intelligence will, in turn, solidify collaboration activities across the entire enterprise.

The Re-Marketing of MES The biggest change I see MES undergoing is how MES solution providers are racing to re-market and sell their products. Over the past few years, the MES market has witnessed a great deal of repositioning by software developers attempting to maintain or increase their current market shares. We have even seen ERP

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solution providers entering the MES market as well, which has cast some level of doubt on the sovereignty of MES (Bond, 2010). This shift alarmed the market because ERP solution providers are positioned to offer customers a complete range of software solutions.

Even as ERP solution providers enter the MES market, I do not see these organizations raking in all the chips at this point. I believe these organizations have entered the MES market much too late. In addition, not everyone in the market is running an ERP solution. ERP solution providers are better positioned to provide a comprehensive Manufacturing Intelligence *solution and interface* versus an MES solution on its own. Of course, much of the abovementioned repositioning has been done through mergers and acquisitions of

companies with specific technology. The next step for MES solution providers is to retool their product line. It seems as though all the MES solution providers are retooling their core MES products by shifting them to more commonly supported source code languages such as J2EE and the very common .Net Framework. The idea is that this would give customers more environments on which to run their solutions, such as *Windows, UNIX, LINUX and virtual environments*.

As the business world continues to be cost sensitive, virtualization will become extremely popular for a number of reasons. Purchasing fewer servers with expensive service agreements is one major factor for going virtual. Yet what makes this option most attractive is the low maintenance, the quick change-over time, and the ability to restore an exact replica of a mission-critical system in the event of catastrophic failure. Despite having smaller budgets to work with, customers will demand these advantages and more functionality across the board.

MES solution providers are responding to these demands by reorganizing their product lines and offering more functionality, but delivering their solution as a Manufacturing Intelligence suite. The concept will have the updated MES solution, with its core functions, as the **MES Engine**.



Any additional functionality will include the eleven full functions of MES and other functions such as:

- ERP/MI quick connect interfaces
- Process analytical technology tools
- Serialization for global track & trace
- Visualization and dashboard
- SCADA/OPC server
- Process engineering tools
- Lean manufacturing tools
- Database spanning for third-party systems

The Possibility of a Modules Market

Functionality like this will most likely be offered as *“plug, configure & play”* modules. Since many manufacturing organizations tend to implement one MES, the smart solution provider will begin to develop and market their modules as MES Engine independent. This means that their modules will work with just about any MES application on the market. If this idea takes off, there is a good possibility that a whole new *“Module Market”* will be created. As idealistic as this may sound, I believe it is conceivable. What is not conceivable is that a manufacturing organization will implement a new MES solution after it already committed to one MES application years ago. This is why I say modules and/or add-ons will become big money in the future as companies that have already implemented an MES solution have little or no option to change their core application.

New governmental regulations and market conditions will require additional MES functionality not part of the Core MES Engine. Therefore, the only real way to address these kinds of unforeseeable changes is through *functional modularization*. This will become a key selling point in the future.

Cost Savings through a Pre-validated Virtual Environment

Finally, any solution provider that can offer functionality and the flexibility of modularization, plus significant validation cost savings for the customer will win more bids than those who cannot. My point here is that providing value to customers will be the center point of any sale discussion as we move forward. Validation cost can easily range from 8% to 15% of the total project cost. When solution providers start offering customers pre-validated software solutions where the customer can leverage the solution provider’s documentation, that’s when things get interesting.

For those customers who are planning to run their solutions in virtualized environments, I believe this will become a reality very soon. The solution provider establishes a validated utopia environment which best suits its solution. All configuration and testing is done within that utopia environment. Once everything is completed, the solution provider delivers to the customer a virtual machine encapsulating the MES Engine with

all the selected modules and custom specifications along with a complete set of validation documentation. Essentially, all the customer will have to do is conduct or witness a factory acceptance test and an audit of the solution provider's validation methodology. If the customer is satisfied, they simply sign off on the process and load the virtual machine onto a virtualized environment on their production server and only commission the software within their manufacturing infrastructure. Validation then occurs on everything but the software because it's running in a virtual environment that has not and will not change.

Making major system changes or adding functionality to your solution is done at the solution provider's office, and the process is repeated basically the same way as before. The great part about this is, if the new solution does not work, you can always roll back to your old environment within moments. The idea is that the customer can see significant savings by moving to a commissioning practice. The savings begin to add up even faster if the software is installed on a system and a manufacturing infrastructure that has already been validated. Still, validated infrastructures create no major obstacle as well, because cloud computing can establish a virtual infrastructure, reducing the need for expensive networking hardware and appliances. The possibilities of virtualization and cloud computing are truly remarkable. In the days to come, functionality and flexibility will be required, but value will truly be king.

Conclusion

MES, in its ideal form, has changed how the manufacturing world does business. From its earliest conception within the auto industry to its mainstream debut, it is safe to say that Manufacturing Execution Systems are here to stay. On the other hand, how MES is implemented or deployed is an entirely different conversation. Still, *Globalization*, even if it has been fragmented by the collapse of the global financial market, has changed the landscape of business altogether (*Newsweek*, 2010). Globalization is the vehicle behind enterprise collaboration. And it is very difficult to have effective collaboration without good solid information about the business. These kinds of activities will certainly place pressure on the business to provide more *Manufacturing Intelligence*, not less, which further secures the future of MES.

Dismal economic and market conditions are additional reasons the future of MES is secure. As times get harder, market factors will force all levels of business to examine cost-saving measures that not only increase quality but also promote profitability through manufacturing products that provide value to the customer. And with innovations seen in the biomedical and pharmaceuticals industries, products developed from *advancement in medicine* will bring the kind of value never before seen.

In addition, nearly all of these types of personalized medicines and products of the future will have to guarantee extremely high levels of quality. Taking into consideration that *governmental regulations* are becoming stricter, manufacturing anything to that degree of accuracy cannot be accomplished through traditional methods. Without the

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aid of highly specialized manufacturing systems, production monitoring, data collection and data storing systems, it would very difficult if not impossible to prove complete control over this kind of manufacturing process to any governmental regulator. Software developers

have already begun to respond to these types of customer needs by *retooling*, *reorganizing* and *re-marketing* their MES solutions. These changes will reflect much more functionality that is modular and will be marketed as a Manufacturing Intelligence suite with an MES engine at the center. Finally, providing customers value or cost savings is the universal concept in these times. This includes everyone, even software developers. And as x86 machines enter the age of *Virtualization* and eventually into

Cloud Computing, this single fact alone is a major game changer for the savvy solution provider. These two concepts are on the verge of totally transforming the way applications and services are seamlessly delivered to end-users in both the private and public arenas. Virtualization and Cloud Computing may just be the answer to that old paradigm which begged the question of, "How do customers get it all – low cost, and high-quality products delivered in a short period of time?" Solution providers who can offer significant cost savings by leveraging virtual environments and delivering pre-validated solutions that run as virtual machines within a virtual infrastructure environment may see increased market share and huge windfalls. And at the end of the day, is that not what this is all about?

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Impact of Stock Split Announcement on Stock Price

Sujith Kumar S H* & Sadanand Halageri**

Abstract

Stock market efficiency has been of considerable importance in financial literature. The form of efficient market hypothesis (EMH) has been examined by researchers. This paper examines the stock price reactions to stock split announcement which is one of the publicly available pieces of information to test the semi-strong form of EMH. An efficient market is a market in which price fully reflect all information. This means that no possibility exists of making sustainable excess returns and the prices follow a random walk. An efficient and integrated capital market is an important infrastructure that facilitates capital formation. The efficiency with which the capital formation is carried out depends on the efficiency of the capital markets and financial institutions. A capital market is said to be efficient with respect to corporate event announcement (stock split, buyback, right issue, bonus announcement, merger & acquisition, dividend etc) contained information and its dissemination. How quickly and correctly the security prices reflect these event contained information shows the efficiency of stock markets. Present study is an attempt to test the efficiency of Indian stock market with respect to stock split announcement by Nifty constituent companies. The results indicate significant abnormal stock returns are associated with announcements of stock split.

Keywords: Efficient market hypothesis, Stock split announcement, Cumulative average abnormal return

Introduction

About a generation ago, the efficient market hypothesis (EMH) was widely accepted by financial economists. This has been vouched by the comprehensive positive observations placed on record by Eugene Fama with regard to there being sufficient evidence to prove all the three forms of EMH (Fama, 1970). It was fairly well accepted, at least among the finance theorists, that securities markets were efficient in reflecting information about individual stocks as well as about the stock market as a whole. The obvious explanation was that any new price sensitive information would immediately spread across all market participants instantaneously, resulting in the equilibrating price adjustments. This caused the prices to fully reflect the expected adjustments.

Thus, neither technical analysis, which is the study of past stock prices in an attempt to predict future prices, nor the fundamental analysis, which is the analysis of economic

* Lecturer, BIET, Davangere, Karnataka (India)

E-mail: shsujith@yahoo.com

** Professor, KLE Society's G H College, Haveri, Karnataka (India)

E-mail: sadahalageri@yahoo.co.in

information such as company earnings, asset values, etc., to help investors select “undervalued” stocks, would enable an investor to achieve returns greater than those that could be obtained by holding a randomly selected portfolio of individual stocks with comparable risk. Several studies have empirically tested the reaction of security prices to the release of different information. Beaver (1968), Foster (1981), Ball and Brown (1968), Beaver, Clarke, Wright (1979) are some of the studies which find significant reaction in the studies is that during the announcement period, there are abnormal returns. On the Indian stock market, M. Obaidullah (1992), S.Srinivasan, and Kakati (2001), Jijo Lukose and Narayan Rao (2002) are some of the studies which have tested the efficiency of the Indian stock market with respect to corporate events announcement information like accounting information, dividend announcement, bonus announcement, right issue, mergers & acquisition and stock split etc. A few Indian studies have tested the efficiency of the Indian stock market with respect to information content of stock split announcement. Further, these studies could not find out the exact period during which the market reacts to a piece of information.

Capital Market Efficiency

The capital market plays a pivotal role in the allocation of economic resources into productive activities of the economy, which are possible only if the securities traded in the markets are priced appropriately. A capital market in which stock prices fully reflect all available information can be termed as efficient. Eugene Fama (1960) classified the market efficiency into the following three categories depending on the information set that is fully reflected in the security prices.

Forms of market efficiency

Fama (1970) divides the efficient market hypothesis into three categories; the weak-, semi and strong-form.

Weak form

On a weak form efficient market the current stock price reflects all historical information regarding the company. Hence, an analysis of historical data will not be of any assistance when it comes to deciding on the future development of the stock price (De Ridder, 2002). Even at the weak form efficient market, technical analysis is abolished since the stock price development does not follow any particular pattern. Instead the profits follow a random walk pattern. Thus, profits occur randomly over time (De Ridder, 2002).

Semi-strong form

In the semi-strong form of the efficient market hypothesis not only the historical stock price information is discounted into the current stock price. Rather all information, regarding the company and anything that could have an impact on the company, known to outsider of the firm is discounted in to the current price (De Ridder, 2002). By defining them outsiders of the firm as all who does not have access to inside information, investors without inside information has no possibility to reach abnormal

returns. Furthermore the semi-strong form is the most commonly tested (De Ridder, 2002).

Strong form

Above the information included in the semi-strong form, the strong form of market efficiency includes information known only to insiders. Hence, all information, both insider and outsider, is fully reflected in the current stock price. No anomalies occur in the strong form since all information is already discounted into the stock price by the market (De Ridder, 2002). Fama (1970) argues that the strong-form EMH could be used as a benchmark when deciding in the importance of anomalies. While as it has been argued that this form of market efficiency regards more to market of information rather than the pricing of derivatives (De Ridder, 2002). Further, the strong form of the EMH is not likely to occur in reality since it assumes that all investors have access to inside information.

Review of Literature

In the developed markets, especially in the United States, many studies have been conducted to test the efficiency of stock markets with respect to corporate event announcements. In India, very few studies have been conducted. Some of the select studies relevant to the present study are reviewed in this paper.

Beaver (1968) examined the reaction of the Trading Volume Activity (TVA) and Security Returns Variability (SRV) to annual earnings announcement with a sample of 143 New York Stock Exchange (NYSE) firms. The result indicated 33 percentage increases in TVA and 61 percent increase in SRV in earnings announcement week over the non-announcement weeks. A study titled “The Random Walk Hypothesis and Technical Analysis” by Pinches (1970) found that the random walk hypothesis implies that the price movements are virtually independent of past price movement. The study reveals that the random – walk hypothesis may be incorrect or at least incomplete.

Obaidullah (1990), in his paper entitled, “The adjustment of stock price to half-yearly earnings announcement in India”, studied 33 securities which performed well. The author has reported that earnings showed an increasing trend much before the announcement week. The study titled “Random Walks in Stock Market Prices” by Fama (1995) found that random walks in stock market prices present important challenges to both the chartist and proponent of fundamental analysis. Srinivasan (1997), in his study titled “Security Prices Behaviour Associated with Rights Issue – Related Events”, examines security price behavior associated with rights issues related events and provides evidence on corporate capital structure, capital market efficiency and event study methodology. The author concludes that a rights issue of equity is seen as ‘bad’ news by investors and a rights issue of fully convertible debenture (FCD) is seen as ‘neutral’ news.

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Pilotte (1997) in the study titled “Earnings and Stock Splits in the Eighties”, presents evidence on the nature of the earnings information conveyed by stock splits. This paper presents evidence on the nature of the earnings information conveyed by splits during 1982-1989, a period of lower inflation and higher real economic growth. Results for 1982-1989 indicate that the market interprets stock splits as signals of subsequent earnings increase. Dimson and Mussavian (1998), in their study titled “A brief history of market efficiency”, narrated that the efficient markets hypothesis is simple in principle but remains elusive. It is hard to profit from even the most extreme violations of market efficiency. The efficient markets model continues to provide a framework that is widely used by financial economists.

An attempt was made by Shin Im, Dow and Grover (2001) in their study titled “Research Report: A Re-examination of IT Investment and the Market Value of the Firm – An event study methodology” to evaluate the effectiveness of information technology investments. In this study, the researcher examined the changes in the market value of the firm as reflected in the stock price in response to IT investment announcements. Reactions of price and volume were negatively related to firm size and became more positive over time.

Jijo and Narayanan (2002) in their study “Market Reaction to Stock Splits – An Empirical Study”, have examined the reaction of stock prices around the date of announcement of stock splits and ex-split date. It was found out that on the date of announcement, there was an abnormal return of 5.27 percent and on day +1, 2.42 percent. The result of abnormal returns around the ex-split day shows that much of the abnormal returns take place on day 0 (3.68%) and day +1 (2.04%). A study by Dennis (2003) investigated the stock splits and liquidity in the case of the Nastaq -100 Index Tracking Stock and found that the average daily turnover before the split was 23.95 percent and after the split was 22.81 percent. A “t” test for difference in mean failed to reject the hypothesis that the turnover before the split (the t-statistic is 0.8) comparing the number of traders before and after the split. It is apparent that there was a little less than twice as many traders after the split than before.

A study entitled “Market Reaction to Stock Market Splits: Evidence from India” by Gupta and Gupta (2007) maintains that stock splits are associated with positive abnormal returns around the announcement. By and large splits are found to improve the trading volume of shares and there was increase in the daily number of traders. But they do not increase the daily turnover and consequently the liquidity of stocks in India. At the end, the author concluded that the majority of shares which underwent split were trading at low market prices. It appears that reasons for a stock split by low priced companies could be explained by neglected firm hypothesis, which appears to be valid for the Indian stock market.

Raja, Sudhahar and Selvam (2007), observe an efficient market as a market in which price fully reflect all information. This means that no possibility exists of making

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sustainable excess returns and the prices follow a random walk. This paper explores the impact of stock splits on stock price and various aspects of liquidity using daily and intra-day data from the Stock Exchange of Thailand between 2002-2004. We provide evidence that reductions in trade frictions and increases in split-adjusted price levels are associated with the size of split factors and post-split trading range. Stocks with high split factors have better post-split adjusted price performance and lower trade bid-ask spreads and price impact. The empirical findings lend support to the trading range hypothesis of stock splits.

Yen & Lee (2008) analyze the empirical findings from 1960s through 1990s bearing on the EMH under the headings "supporting empirical findings as documented in 1960s", "mixed empirical findings as merged in the late 1970s through 1980s" and "challenging empirical findings as appeared in 1990s" and move on to sketch the ongoing debate in the 21st century based on empirical evidence available and then present an overall assessment of the EMH. Once necessary reservations and precautionary interpretations are taken into consideration, the authors contend at the end of the article that the EMH is here to stay and will continue to play an important role in modern finance for years to come.

Kondu (2009) has empirically verified the widely held notion that major events (economic and non-economic) cause substantial changes in returns. Total of 126 events, grouped into six types, have been studied over a fourteen-year period. The 630 (126 x 5) F-tests report only thirty-eight (38) statistically significant cases of volatility. In fact, these cases are evenly distributed both before and after the events, indicating that the selected events cannot be held responsible for causing such volatility. In the light of the triple objectives outlined at the outset, the study conclusively proves the absence of significant volatility caused by major events. Even in instances where such volatility occurs, they do not linger beyond the third trading day post event. Out of the six major types of events, only budgets and macro-economic announcements cause a few cases of volatility more than others.

Andoain and Bacon (2009) examine whether the investor can make an above normal return by relying on public information impounded in a stock split announcement. Using risk adjusted event study methodology, this study tests "how" and "when" public announcements of forward and reverse stock splits affect stock price. Stock split announcement samples include 38 two for one, 39 three for two, and 10 reverse splits. A total of 36,714 observations for the announcement samples and the corresponding S&P 500 stock index were analysed using standard risk adjusted event study methodology. Results suggest that the firms' public stock split announcements did not affect stock price on the announcement day. Rather, for the two for one and three for two forward split samples, stock price exhibited a significant positive reaction up to 27 days prior to the announcement. For the reverse split sample, stock price exhibited a significant negative reaction up to 30 days prior to the announcement. Results support the semi- strong form efficient market hypothesis since stock prices adjust so fast to

public information that no investor can earn an above normal return by trading on the announcement day.

Ikenberry, Rankine and Stice (2009) observe significant post-split excess returns of 7.93 percent in the first year and 12.15 percent in the first three years for a sample of 1,275 two-for-one stock splits. These excess returns follow an announcement return of 3.38 percent, indicating that the market underreacts to split announcements. The evidence suggests that splits realign prices to a lower trading range, but managers self-select by conditioning the decision to split on expected future performance. Presplit runup and post-split excess returns are inversely related, indicating that our results are not caused by momentum.

Mehndiratta and Gupta (2010) observe that despite investors' insignificant gain in the period preceding as well as on the dividend announcement day, they can gain value in the post announcement period. Investors do shift their security positions at the time of dividend announcement, which indicate that in post announcement period there is a possibility of information content in dividend announcement in NSE. The evidence nevertheless shows that dividend increases lead more positive abnormal returns, supporting the Efficient Market Hypothesis.

In India, studies on testing the semi-strong efficiency of stock market are few. These studies use CAR (Cumulative Abnormal Returns) Model. Only very few studies have used the SRV (Security Returns Variability) model. Most of the studies observed that the reaction by security prices took place prior to announcement of events. In some cases, reaction took place after announcement of events. An attempt is made in this study to test efficiency of Indian stock market with respect to stock split announcement taking the models already used in the above studies.

Scope of the Study

The study is a test of market efficiency in its semi-strong form of Efficient Market Hypothesis (EMH). The study is restricted to stock split announcement made the nifty constituent companies. The study covers sixteen years ranging from 1994 to 2009. Some of the sample companies stock split information or the dates of announcement were not available.

Need for the study

Corporate event announcement information and stock market efficiency are of greater interest to the investors, fund managers, analysts, planners, policy makers, and market regulators, accounting standard setters, researchers, the government, and the public in general. Some study says that, the major influencing factor for the movement of price is the external information based on that one can make abnormal return. There are some other studies which say through the external information one cannot make abnormal return. So many research works has done in favour and against the Efficient Capital market Hypothesis (EMH) in America as well as in other advanced countries. In India a

very few research work has done in these area. The present study is an attempt to test the efficiency of the Indian Stock Market with respect to information content of stock split announced by the Nifty constituent companies in the Semi-Strong Form of EMH.

Objectives of the study

The study aims to examine the information content of stock split announcement made by the nifty constituent companies and to test the speed with which the stock split announcement information are impounded in the share prices of nifty constituent companies.

Hypotheses

1. Stock split announcement contained information's are not relevant for the valuation of stocks.
2. Stock split announcement has no significantly influence in the stock prices of nifty constituent companies.
3. Semi-strong form of EMH holds in the Indian Stock market

Methodology

Sample Selection

The study intends to cover the all the nifty constituent companies. Out of all the companies brought under nifty constituent companies listed as on 31 March 2009 (as per the Capitaline database), only 19 companies (splits) which satisfy the following criteria were selected.

Sources of Data

The information regarding adjusted share price, Stock split information, dates of stock split announcements, and values of Nifty constituent companies were obtained from Capital line. Other relevant information's are also obtained from the NSE website, Money control.com books, and journals.

Tools used for the Analysis

Daily returns

The daily returns were calculated for both individual securities as well as Market Index using the following equation

Where,
 $R_{i,t} = \text{Returns on Security } i \text{ at time } t = \frac{P_t - P_{t-1}}{P_{t-1}} \times 100$
 $P_t = \text{Price of the security at time } t$
 $P_{t-1} = \text{Price of the security at time } t-1$

Security Returns Variability

$$SRV_{i,t} = \frac{AR^2_{i,t}}{V(AR)} \times 100$$

Where,

SRVi, t = Security Returns Variability of security i in time t

AR_{i,t} = Abnormal returns on security i on day t

V (AR) = Variance of Abnormal Returns during the announcement period

$$AR_{i,t} = R_{i,t} - R_{m,t}$$

Where,

AR_{i,t} = Abnormal returns on security i at time t

R_{i,t} = Actual returns on security i at time t

R_m = Actual returns on market index, which is proxied by nifty, a weighted average index of 50 companies published by NSE, at time t.

Thus daily actual returns over the announcement period (31days) were adjusted against their corresponding market returns.

Average Security Returns Variability (ASRV)

The SRVi,t so calculated for all the stock split announcement are averaged to find the Average Security Returns Variability (ASRV_t) by using the following equation.

Where,

$$ASRV_t = SRV_{i,t} \times (1/n)$$

SRVi,t = Security Returns Variability i security at time t

n = Number of stock split in the sample

Average Abnormal Returns:

The Average Abnormal Returns is calculated by the equation given below

$$ASRV_t = SRV_{i,t} \times (1/n) \quad \sum_{t=1}^n AR_{i,t}$$

Where,

AAR_t = Average Abnormal Returns on day t

AR_{i,t} = Abnormal Returns on security i at time t

Cumulative Abnormal Returns (CAR)

The CAR is calculated as

$$CAAR_k = \sum_{t=1}^n AR_{i,t}$$

Where,

- CAAR_k = Cumulative Average Abnormal Returns for the kth period.

- AAR t = Average Abnormal Returns of sample stock split at time t

T-Test

t- Test is calculated by using SPSS.

Results and Discussions

The analysis has been done in the following way to empirically test the informational efficiency of the Indian capital market with special reference to the shares of Nifty constituent companies

- a. Analysis of Average Security Returns Variability (ASRV or SRV)
- b. Analysis of Abnormal Returns (AAR)
- c. Analysis of Cumulative Abnormal Returns (CAR)

Table 1 explains the value of ASRV and t-value to stock split announcement. ASRV has been studied in three different parts, pre-announcement period, announcement day and post announcement period. In pre-announcement period, ASRV is highest on day -3 (2.4620) further, in Pre-announcement period ASRV is greater than one during -13, -10, -

6, -5, -4, -3, -2, and -1 with a value of 1.289, 1.01, 1.77, 1.09, 1.53, 2.46, 1.17 and 1.04 respectively. From the table it is clear that market received stock split information positively during the pre-announcement period. During the post announcement period, ASRV has been more than one for 8 days According to the present study, stock split announcement has immediate reactions in the security prices of Nifty constituent companies. Hence investors are advised to take immediate decision (whether to buy or sell) at the time of companies' coming up with stock split announcement. The above analysis reveals the fact that the market has absorbed the stock split announcement information around the announcement days. Hence the hypothesis -1 entitled "Stock split announcement contained information's are not relevant for the valuation of stocks" is rejected.

Figure1 shows the ASRV of stock split announcement. It is clearly understood from the above figure that there was sharp variation in the ASRV on day -7, -5, -3 and day 14, followed by minor variation in the post announcement period. It is evident from the above result that market was using the stock split information for valuation of Nifty constituent companies' stocks.

Analysis of AAR for Stock Split Announcement

Table 2 depicts the analysis of average abnormal returns along with t-test for stock split announcement of nifty constituent companies. The values of AAR presented in Table 2 and Figure 2 shows that they are fluctuating yielding both positive and negative return around the event day During the 31 days selected for the study, the AAR are positive for 26 days and negative for 5 days. This indicates that that they are positive for more number of days than negative both before and after the event day. Therefore trend

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indicates that it is possible to earn positive on majority of the days surrounding the event day.

It is clearly understood from the above table that there was no significant abnormal returns almost all the days (from day -15 to day +15) surrounding the stock split announcement i.e., the value of abnormal returns was below one almost all the days. It is clear from the t-test analysis that stock split announcement did not generate any significant reaction in the security prices of Nifty constituent companies. The value of AAR during pre-stock split announcement ranged from -0.1226 to 2.2069. The highest AAR during pre-announcement period was on day -3, followed by days -1, -14 and -5 with ARR value of 1.5008, 1.0750 and 1.0238. The lowest abnormal returns during pre-announcement period was on day -7 with ASRV value of -0.1226.

During the post announcement period, the value of AAR ranged from -0.8697 to 2.0385. The highest AAR was on day 1, followed by days 14 with AAR value of 2.0385 to 1.455. The lowest AAR was on day 12, followed by 8, 4 and 2 with AAR value of -0.8697, -0.378, -0.3538 and -0.2481 respectively. It is clearly understood from the above analysis that the value of AAR during pre and post announcement period was less than 1. It reveals the fact that the announcement of stock split did not meet with significant reactions in the security prices of sample nifty constituent companies. Hence the hypothesis -2 entitled, "Stock split announcement has no significant reaction in the security prices of Nifty constituent companies" is accepted.

Figure 2 graphically represents the AAR of stock split announcement. It is clearly understood from the above figure that there has been no significant reaction in the security prices of sample Nifty constituent companies for stock split announcement because the AAR curve for stock split announcement falls below one throughout the study period except on 5 days. The result reveals the fact that the market not using the stock split announcement information for valuation of Nifty constituent companies' stocks.

Cumulative Average Abnormal Return

Table 3 depicts the cumulative average abnormal return for stock split announcement for Nifty constituent companies' stocks. The CAAR analysed separately as pre announcement period (-15 to -1) and post announcement period (0 to 15). In the post announcement period, the AARs are cumulated continuously from day -15 to -1. Both in pre and post announcement period the value are 100% positive during the event day. Some of the stocks might have influenced the overall result of the study. Individual stocks might have some external information. These external information are outside the scope of the present study. On the day of announcement the value of CAAR is 13.7881. The value of CAAR ranged from 0.2241 to 19.7073 and no negative CAAR during the study period.

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From the above analysis, it is inferred that stock split announcement might have had favourable information (Positive), and hence investors reacted positively to the stock split announcement. This shows the fact that the Indian stock market was able to analyse the stock split announcement information and use it for revision of security prices.

Figure 3 shows the curve of cumulative average abnormal returns of share price for stock split announcement. The curve of CAAR for stock split announcement continuously increased with some corrections during the announcement period of 31 days. The result of t test combined with that of the analysis of the movement of ARR and CAAR presented above gives the enough evidence to show that stock split announcement is not incorporated into security prices as fast as EMH envisages. As stock split announcement is publicly available information, the analysis in this study has shown that the Indian stock market is slow in reflecting this in the security prices. As the Indian stock market exhibits learning lags in incorporating value –changing information contained in stock split announcement. Hence the hypothesis “semi-strong form of EMH holds in the Indian Stock market” is rejected

Summary and Conclusion

The financial market has received well deserved attention in western economies but not in India. While number of researcher studies proved that financial market are efficient in reflecting and incorporating value changing information swiftly, but the real activity in the market cast doubt on the existence of efficient market. This has created interest among the analyst and researcher to understand the market mechanism and degree to which this market exhibits efficiency.

This paper examined the semi-strong form of market efficiency by taking stock price response to the stock split announcement. The companies which part of the Nifty were considered for the research. Out of the fifty constituent companies, totally 19 stock split announcement had been studied by using event study methodology. The result of the study showed the fact that the security prices reacted to the announcement of stock splits. The reaction took place for a very few days surrounding day 0, remaining days it was extended up to +15.

Thus, one can conclude from the forgoing discussion that the Indian stock markets in respect of Nifty constituent companies' stocks are not perfectly efficient to the announcement of stock split. However, the behaviour of the CAAR before the event day exhibits some of the features of efficient market which are not sustained after the event day. The investor can use stock split announcement to make the abnormal return by using the buy and hold strategy. This study can be used by the investors and analyst to make the abnormal profit at any point during the announcement period by acting quickly in the market.

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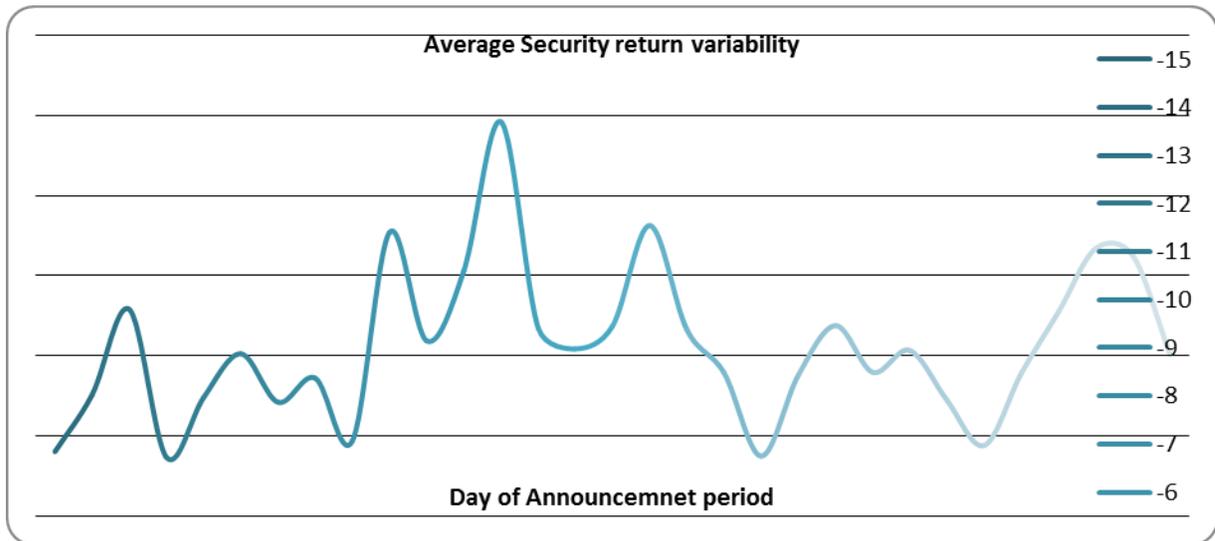


Figure 1: Average Security Return Variability

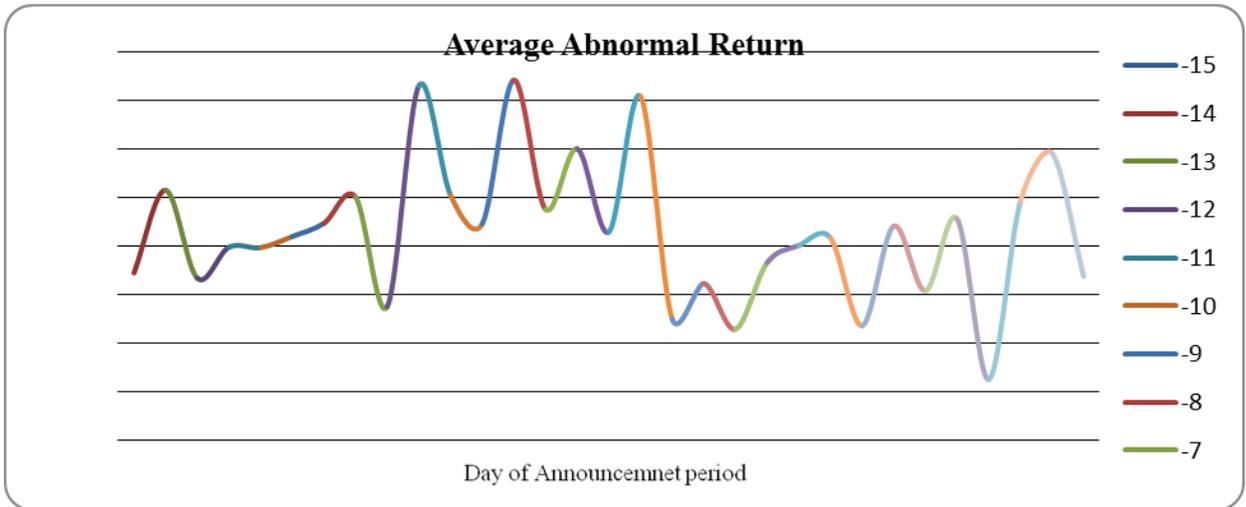


Figure 2: AVERAGE ABNORMAL RETURN:

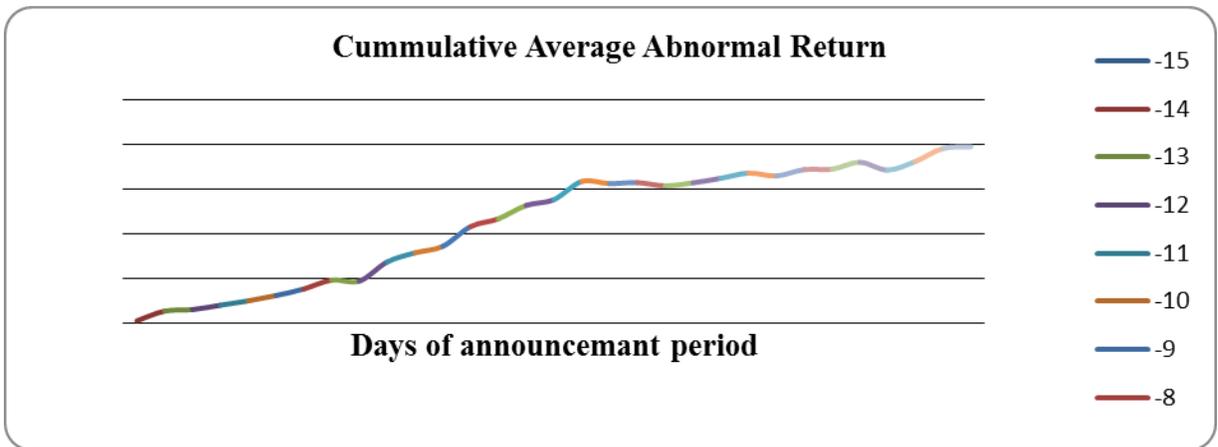


FIGURE 3: CUMULATIVE AVERAGE ABNORMAL RETURN

Table 1: ASRV and t-value

Days	ASRV	T Value
-15	0.400804	2.763
-14	0.756888	3.119
-13	1.289843	3.584
-12	0.364758	3.233
-11	0.739612	2.349
-10	1.012623	2.688
-9	0.709368	3.947
-8	0.860723	3.947
-7	0.468045	3.495
-6	1.771357	2.738
-5	1.092689	2.658
-4	1.531752	1.577
-3	2.46201	3.657
-2	1.17406	4.124
-1	1.043104	2.272
0	1.185329	4.983
1	1.814741	2.528
2	1.163096	2.542
3	0.893828	3.115
4	0.372386	2.804
5	0.879361	1.986
6	1.188461	4.413
7	0.896999	3.432
8	1.033463	3.318
9	0.721757	1.953
10	0.439286	5.084
11	0.89145	2.535
12	1.274873	2.658
13	1.671014	3.063
14	1.625604	2.954
15	1.008847	2.818

Table 2: Average Abnormal Returns

Days	AAR	t-Value
-15	-0.7895	.442
-14	-0.7368	1.898
-13	-0.6842	.263
-12	-0.6316	1.059
-11	-0.5789	.979
-10	-0.5263	.851
-9	-0.4737	.851
-8	-0.4211	1.791
-7	-0.3684	-.244
-6	-0.3158	2.229
-5	-0.2632	1.789
-4	-0.2105	1.789
-3	-0.1579	2.321
-2	-0.1053	1.276
-1	-0.0526	1.888
0	0.0000	.882
1	0.0526	2.353
2	0.1053	-.299
3	0.1579	.155
4	0.2105	-.712
5	0.2632	.418
6	0.3158	.589
7	0.3684	1.110
8	0.4211	-.435
9	0.4737	1.093
10	0.5263	.070
11	0.5789	1.191
12	0.6316	-1.307
13	0.6842	1.120
14	0.7368	2.036
15	0.7895	.240

Table 3: Cumulative Average Abnormal Return

Day	CAAR
-15	0.2241
-14	1.2990
-13	1.4695
-12	1.9586
-11	2.4434
-10	3.0422
-9	3.7761
-8	4.7805
-7	4.6579
-6	6.8051
-5	7.8289
-4	8.5553
-3	10.7623
-2	11.6417
-1	13.1424
0	13.7881
1	15.8266
2	15.5785
3	15.6948
4	15.3410
5	15.6704
6	16.1765
7	16.7615
8	16.4438
9	17.1500
10	17.1899
11	17.9709
12	17.1012
13	18.0630
14	19.5183
15	19.7073

Complaints Form Design: Application of Laddering and Hierarchical Value Techniques

Rajesh Kumar Sinha *

Abstract

This paper builds a veritable case for applying laddering and hierarchical value techniques in complaints form design. It is assumed that by giving compensation for product attribute failure it cannot be guaranteed that total cost of attribute failure has been taken into account. The issue may be resolved if the firms use more detailed complaints form with incorporated features of laddering method and hierarchical value mapping. Complaints form designed by the proposed method will result in maps that can help in better satisfaction and effective complaints redressal. Laddering maps can also help in product design innovations as customers priorities can be explored by this method.

Keywords: Complaints Form, Laddering, Hierarchical Value Techniques

Introduction

Complaints are one of the types of feedback a marketer gets from their customers. According to the Webster's Dictionary, a complaint is: (a) something that is the cause or subject of protest or outcry, and (b) an expression of grief, pain or resentment or a formal allegation against a party. In marketing, a complaint would imply an action taken against the seller or the manufacturer, signifying protest, by a consumer who feels aggrieved or dissatisfied in some way with the product or the service he has purchased or consumed. In other words, complaints are the outcomes of grievances and dissatisfaction. A grievance becomes complaint when it is expressed

Complaints forms are normally designed in a way that asks single question regarding the problem faced. Such problems would be described in terms of product attribute failures and not in terms of actual loss to the customer. Logically, just by focusing on the product aspects for providing the solution may not guarantee a satisfied customer. But by having the actual understanding of customer cost arising because of product failures, marketers can attempt to solve the consumer problem in a better way.

The issue can be resolved by a judicious use of Laddering technique and Hierarchical Value Mapping technique while designing complaints form. Laddering is highly recommended in research that elicits hierarchical constructs and can become especially popular in investigating personal values according to the models of the Means-End

* Lecturer, Apeejay School of Management, New Delhi
E-mail: rajeshsinha55@rediffmail.com

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Chain (MEC) theory (Botschen, Thelen, & Pieters, 1999; Dibley & Baker, 2001; Gengler, Mulvey, & Oglethorpe, 1999; Gengler & Reynolds, 1995; Lastovicka, 1995; Lin, 2002;

Reynolds & Gutman, 1988; Reynolds & Whitlark, 1995; Valette-Florence & Rapacchi, 1991; Vriens & Hofstede, 2000; Wansink, 2000; Woodruff & Gardial, 1996).

The laddering technique indicates a series of guidelines for primary data collection, highlighting some procedures to be followed during the interview. Wansink (2000) draws a parallel between a laddering probe and a psychologist work because the technique leads to uncover insights. He states, a laddering interview is similar to the classical picture of a psychologist interviewing a patient on a couch and uncovering insights into their lives that aren't apparent to even the patient.

What is laddering?

The laddering technique emerged in the clinical psychology area introduced by Dennis Hinkle (1965) in order to model the concepts and beliefs of people as part of his doctoral research. Hinkle's work was treated extensively by Bannister and Mair (1968) who coined the term "laddering". "Laddering refers to an in-depth, one-on-one interviewing technique used to develop an understanding of how consumers translate the attributes of products into meaningful associations with respect to self, following means-end theory" (Reynolds & Gutman, 1988, p. 12). Some popular ideas related to laddering are as follows:

- Laddering is an interview technique used in semi-structured interviews.
- Laddering is a method that helps you elicit the higher or lower level abstractions of the concepts that people use to organize their world.
- The method is performed by using probes. Probing means to "*peel back the layers*" of the informant's experience.
- Laddering and probing is used to: "*understand the way in which the informant sees the world*" (Reynolds & Gutman, 1988).

Hinkle (1965; as cited in Bannister & Mair, 1968) developed the laddering technique as a means of modeling people's belief structures in a simple, systematic way, establishing individual's super-ordinate personal constructs. The technique is well established in the field of psychology, but has spread out from there to other areas like marketing, advertising, architecture, information technology, and organizational management to name a few (Rugg, Eva, Mahmood, Rehman, Andrews, & Davies, 2002). Its application, however, is still timid in others areas such as medical and nursing.

Laddering has its roots in George Kelly's personal construct theory (Kelly, 1955), which was one of the early cognitive approaches. A comprehensive explanation on this facet of laddering is given by Bourne and Jenkins (2005). According to them, Kelly argued that individuals create templates of their world by means of finite numbers of dichotomous or bipolar constructs that are organized hierarchically, and that provide a basis for choice according to their preferences for one pole over the other.

The tool used to explore people's personalities in terms of this theory is called "repertory grid," which is an interviewing technique suited to elicit information about a given element, which might be a situation, a person, an object, an event, and so forth. As a student of Kelly, Hinkle (1965) developed the laddering technique to bring out constructs at higher levels of abstraction by analyzing the implications of a change in one construct on the rest of the hierarchical system.

Hierarchical Value Mapping (HVM)

Later on, Means End Chain (MEC) model was conceived in order to supply a theoretical structure capable of linking consumers' values to their behavior. It is an adaptation of Hinkle's laddering method (1965), especially designed for use in consumer and organization researches, but due to its versatility it is also becoming popular in other areas.

Gutman (1982) defines MEC as, "Means are objects (products) or activities in which people engage (running, reading). Ends are valued states of being such as happiness, security, and accomplishment. A means-end chain is a model that seeks to explain how a product or service selection facilitates the achievement of desired end states".

MEC links sequentially product attributes (A) to consequences of product use (C), and to individuals' personal values (V). An 'A-C-V' sequence forms, what Gutman (1982) called, the means-end chain or ladder. The set formed by various ladders is represented on the Hierarchical Value Map (HVM), which indicates the relationship between all the attributes, consequences, and personal values relative to a product. A HVM is a tree-like graph that illustrates the major means-end connections people perceive between attributes, consequences, and values. These attributes typically are perceived as a means to achieve a set of specific consequences, which in turn aid the individual in achieving a smaller set of specific personal values. Hence, the graph illustrates how the large number of attributes essentially funnels into a small set of personal values through the consequences of product usage.

The MEC model emphasizes why and how products are important in individual's life, going beyond the understanding of their functional properties. There are four assumptions that support this idea. First, that, personal values defined as final desired states of existence play a dominant role in directing individual's choice. Second, that people group in sets or classes, the diversity of products that present themselves as potential means of satisfying needs and values. Third, that all people actions have consequences; and fourth, that people learn to associate a particular consequence with particular actions (Gutman, 1982). Botschen et al. (1999) argue that attributes do not explain the reasons that lead a person to buy or use a goods or a service, or to engage in some activity. Therefore, from the people's point of view, it is not the product's attributes that in fact matter, but the problem solution coming from consequences or subsequent personal values.

Chain Levels

Olson and Reynolds (1983) proposed some modifications on Gutman's (1982) model, broadening the chain levels. The broadened model recommends that the attributes be subdivided into concrete and abstract, consequences into functional and psychological, and personal values into instrumental and terminal (Botschen et al., 1999; Valette-

Florence & Rapacchi, 1991). Each of the six hierarchical labels is discussed in more details.

1. Concrete and abstract attributes: Attributes are at the lowest level in the chain and are subdivided, varying within a continuum that goes from the concrete to the abstract (Lin, 2002). Concrete attributes are defined as the directly perceptible physical characteristics of a product. Examples are price color, and weight (Vriens & Hofstede, 2000), while abstract attributes refer to relatively intangible characteristics, such as style and brand (Lin) or perceived value (Botschen et al.).

2. Functional and psychological consequences: Consequences are at the intermediary level in the chain and have a more abstract meaning that reflects perceived benefits (or costs) associated with specific attributes (Gengler et al., 1999). Functional consequences act directly on the consumer from the time the product is consumed (Valette-Florence & Rapacchi). "Examples are ease-of-use, comfort, and convenience" (Vriens & Hofstede, p. 6). Psychological consequences, on the other hand, are produced by functional consequences, such as when the product use produces a sophisticated image or status (Valette-Florence & Rapacchi).

3. Instrumental and terminal values: Personal values provide general guidance (Valette-Florence & Rapacchi, 1991) and are part of our lives. They determine, regulate, and modify relationships between individuals, organizations, institutions, and societies (Dibley & Baker, 2001). Personal values are generally defined as beliefs and relatively stable cognitions that have a strong emotional impact. Examples are security, happiness, fun, and enjoyment (Vriens & Hofstede, 2000). Values are at the most abstract level in the chain, and as originally suggested by Rokeach (1973), are subdivided into instrumental and terminal values. Terminal values represent the final states of existence, that is, they are the goals we seek in life, such as peace, self-achievement, and prosperity. Instrumental values are ways of behaving that lead to terminal values, such as ambition and resourcefulness that might be necessary for achieving prosperity.

Process of Hierarchical Value Mapping (HVM)

It is performed on the basis of a one-to-one interviewing technique. In consumer research it is started out by focusing on a certain product or service and its attributes. Probes are oriented towards 'why'-questions, i.e.: "Why is that (attribute/aspect) important to you?" On the basis of the reply, one can further start probing: "Why is that important to you?" Based on the initial answer of the respondents that refers to

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attributes, the value hierarchy begins to be built, where the researcher discusses the reasons of preferences pointed out by the respondent, and with this, manages to move the answers to an abstraction level corresponding to consequences and personal values. In the laddering interview,

respondents are encouraged by means of repetitive and interactive questions, to dig deeply into the discussion about attributes, gradually indicating consequences and personal values. The interviewer leads the respondent to abstraction, by asking him/her why that attribute (or consequence) is important. In this sense, questions such as “why is this important to you,” “what does it mean to you,” and “what is the meaning of this product having (or not) this attribute” are repeatedly asked with the objective of making the respondents express consequences that are derived from attributes and personal

values that arise from consequences. The same questions are used to discover consequences and personal values. Wansink (2000) states that questions are continually asked until a personal value is revealed. As such, the laddering interview is quite personalized because it depends essentially on the respondent’s answers to keep going, having as basic question, “Why is it important?” Questioning continues till no further answering is possible for the interviewee. Then we draw a map (HVM) that shows the different concepts and relations (ladders). The basic analysis steps upon interviews can be summarized as follows:

Step 1: Reducing the raw interview data into the A, C, or Vs ladders. This process involves a thorough review of the verbatim notes of video/audio tapes of the interview.

Step 2: Content analysis of the element selected in step 1.

Step 3: Summation of relations in content codes, resulting in an implication matrix of all paired relationships. Implication Matrix is formed by counting of the direct and indirect relationships. On the left hand side of a fraction point, count of direct relationship from one attribute to another attribute is mentioned. On the left hand side indirect relationship counts are mentioned. This plots the pattern and count of direct and indirect relationships.

Step 4: Construction of a diagram to meaningfully represent the main implications of the study, the hierarchical value map (HVM). In these step, facts from Implication Matrix is drawn. Some cutoff value is decided for both kinds of relationships. Based on that it is decided that if the relationships are to be shown or not. The focus during this step is to plot the dominant relationships diagrammatically, where direct relationships are shown in direct way and indirect relationships are shown in indirect way.

Wansink (2003) sums up the main points that should be prioritized in a laddering interview: (a) ask questions that can reveal personal reasons, (b) ask questions that lead the person to think and answer with a sentence, not just responding with a “yes” or

“no,” (c) keep asking “why,” (d) question people’s reasons for their answers, (e) allow the questioning to flow, (f) ask questions that give the respondents’ free reign to answer the question as they feel is more appropriate, and (g) watch the people’s facial expressions as they answer the question and listen to the tone of their voices.

Hypothetical Use of Hierarchical Value Mapping on Retail Consumer Complaints

For the purpose of the study, a hypothetical sample of 27 retail shoppers was considered. Here the idea is to make shoppers fill complaints form that will be having more details to be filled. A shopper would be filling entries for (i) ‘problem statement’, (ii) ‘immediate consequences’, (iii) ‘emotional consequences’, (iv) ‘end consequences’ and finally (v) ‘affected aspect’ of one’s end state.

Since complainant cannot reply unlimited chain of questions, therefore it is necessary that limited number of questions should be asked. In this paper it is proposed that five aspects are to be filled by the complainants though this requirement can be changed for better insights. The focus should be to get the most with limited number of questions for complainants.

Problem or product failure can have tangible or psychological fallouts, resulting in some other consequences. Such tangible and intangible fallouts can be explored by the questions on ‘immediate consequences’ and ‘emotional consequences’. The third term (end consequences) will seek responses for immediate major impact of the product failure. The final question (affected aspect) would give response about terminal values of consumers affected by the product failure. Such detailed complaints feedback can result in better solutions to customer problems. A products chance failure can have many types of fallout. This technique can plot all possible important fallouts.

In this study, there was no need to perform content analysis as no detailed complaint form filling has been done. Table 1, provides the details of descriptors along with their numerical codes. Table 2, contains the details of hypothetical responses of 27 complaints form. Individual responses are displayed row wise. In columns codes of the responses are given as per the hypothetical entries. Table 3 is for Implication Matrix, which shows the pattern of direct and indirect linkages in the hierarchical map. A cutoff value is supposed to be picked. But in the case since the number of units of complaints considered was quite small, no cutoff value has been decided. Any value on the right hand side except zero has been considered for the purpose of drawing of hierarchical map.

On the basis of Implication Matrix Hierarchal Value Map (HVM) is plotted as shown in the figure 1. It shows dominant direct and indirect linkages among problems and their consequences. On the basis of diagram it can be figured that the terminal end state values for the complainants are focused towards family, successful professional life and personal wellbeing. Such revelations can help in eliminating the dissatisfaction from complaints redressals to a great extent, which cannot be taken care of just by taking the

problem at the superficial level. Plotting of such maps can give overall idea of possible 'terminal end states'. This can help in having advanced plan and resources for the intended comprehensive complaints solution for better satisfaction level.

Conclusion

The paper focuses on the aspect of total consumer cost and impact on the terminal end state. The paper provides an interesting solution by recommending more detailed complaints form with incorporated features of laddering method and hierarchal value mapping. The paper successfully demonstrates the possibility of implementing the ideas mentioned in the paper. Complaints form designed by the proposed method will result in maps. Such maps can help in better satisfaction and pre-planning of complaints redressal.

Complaints redressal involves cost with certain objectives. Most important of them is customer retention. For that, it needs to ensure that customers are satisfied with the complaints solution. But, sadly most of the complaints forms are not designed for that. Use of laddering technique can prove to be a cost effective way to achieve this end. If because of product failure a customer has lost his time then it should be compensated if it is really very important for the customer.

Laddering maps can also help in product design innovations as customers priorities can be explored by this method. Rationally better understanding of consumers' problems can result in better solution from the marketers for customers resulting in better retention rates for the marketer. So, the adoption of the proposed method would result in gain for both the marketer and consumers.

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Table 1: Summary of Content Codes for Hypothetical Retail Complaints Study

Problem	Immediate Consequences	Emotional consequences	End consequences	Effected Aspect
Assortment-1	Fight with the salesperson-6	Anger-12	Loss of money-16	Family-19
Billing time-2	Had to pay more than normal-7	Frustration-13	Lost Time-17	Self-20
Crowd-3	Had to visit another outlet-8	Revenge-14	Psychological Well-being-18	Profession-21
Discounts-4	Purchased wrong product-9	Stress-15		
Salesperson's behavior-5	Took more time-10			
	Unable to know about the products-11			

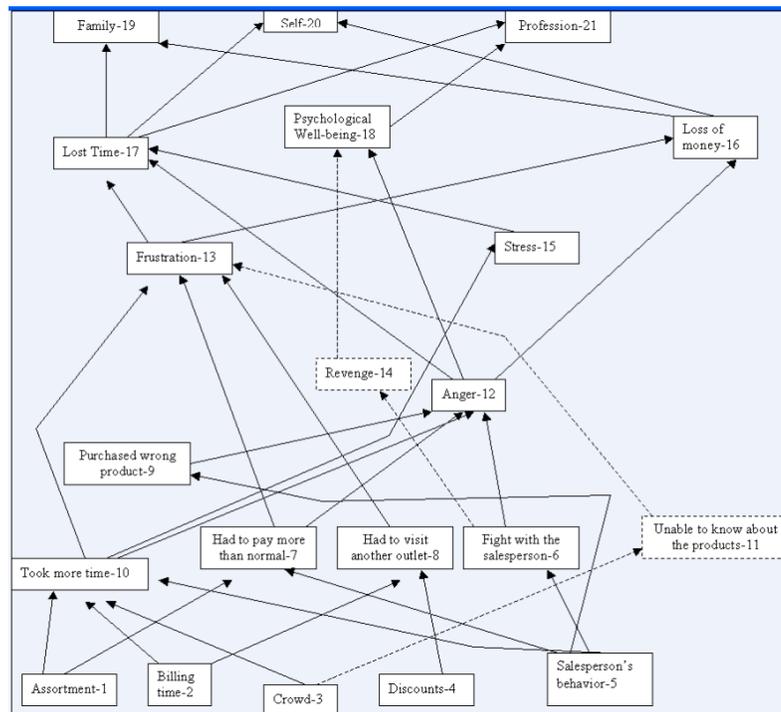
Table 2: Raw Data from Hypothetical Retail Complaints Study

Problem	Immediate Consequences	Emotional consequences	End consequences	Effected Aspect
5	9	12	16	19
1	7	13	16	19
5	7	13	16	19
5	9	13	16	19
1	10	12	17	19
5	10	12	17	19
1	8		17	19
2	8	13	17	19
3	10		17	19
2	6	14	18	19
3	11	13		19
2	8	15	16	20
3	10	13	17	20
5	10	13	17	20
2	10	15	17	20
1	7	12	16	20
5	7	12	16	20
5	9	12	16	20
1	8	12	17	21
4	8	13	17	21
1	10	15	17	21
1	10	15	17	21
2	10	15	17	21
5	6	12	18	21
5	6	12	18	21
4	6	12		21
4	8	13		21

Table 3: Implication Matrix for Hypothetical Retail Complaints

	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1		2.00	2.00		3.00		0.03	0.01		0.02	0.02	0.05		0.03		0.04
2	1.00		2.00		2.00			0.01	0.01	0.03	0.01	0.03	0.01	0.02	0.02	0.01
3					2.00	1.00		0.02				0.02		0.02	0.01	
4	1.00		2.00				0.01	0.02				0.01				0.03
5	2.00	2.00		3.00	2.00		0.06	0.03			0.05	0.02	0.02	0.04	0.01	0.04
6							3.00		1.00				0.03	0.01		0.03
7							2.00	2.00			0.04			0.02		0.02
8							1.00	3.00		1.00	0.01	1.04		0.02	0.01	0.03
9							2.00	1.00			0.03			0.02		0.01
10							2.00	3.00		4.00		1.09		0.03	0.03	0.03
11								1.00						0.01		
12											4.00	3.00	2.00	0.03		1.07
13											3.00	4.00		1.05	0.02	1.02
14													1.00	0.01		
15											1.00	4.00			0.02	0.03
16														4.00	4.00	
17														5.00	3.00	5.00
18														1.00		2.00
19																
20																
21																

Figure 1: Hierarchical Value map of Hypothetical Retail Complaints Study



Micro Health Insurance in India: Issues & Challenges

Nasiha Munib*

Abstract

Majority of people in India are outside the ambit of affordable healthcare facilities. Combined spending by governments, multilateral aid agencies, international organizations, foundations, NGOs, and the private sector makes up less than one third of the total amount spent on healthcare in the country. Thus, the poor have no option but to spend on healthcare out of their own pockets (OOP) and end-up in the vicious circle of indebtedness-impoverishment-morbidity. Unfortunately, the poor generally do not have health insurance coverage to combat the vulnerability caused by diseases and related risks. For long, the insurance companies did not reach out to the poor on the assumption that they cannot pay the premium for the coverage. However, research findings now prove that even the poor are capable and willing to insure themselves against the risks faced by them. Insurance is fast emerging as a prepaid financing option for the poor (Ahuja, 2005). This paper examines the issues and challenges in converting micro health insurance as an effective risk mitigation mechanism for the poor so far as healthcare is concerned.

Keywords: Poverty, Healthcare, Out of Pocket Expense, Micro Health Insurance

Introduction

The concept of micro health insurance can be traced back to the 'Sickness Funds' of some European countries that were formed by workers way back in the 19th century during the industrial revolution. The main purpose of the 'Sickness Funds' was to protect the workers against risks of illness and premature death. Over the period, the Sickness Funds evolved slowly into protective healthcare system in Europe such as 'German Social Health Insurance', 'The Netherlands Social Health Insurance', etc. Thus, Sickness Funds may be construed as precursor to the modern health insurance. Besides Europe, similar patterns have also been observed in Asia such as the Jyorei scheme in Japan and the Chinese Rural Cooperative Medical System (Devadasan, 2007).

In India, first such scheme can be traced back to the setting up of the Students Health Home in West Bengal in 1955 covering 2 million students in the state (Bhat, 2006). Need for such initiatives has increased in recent times mainly because market-driven healthcare facilities are not at all affordable for many. Interestingly, IRDA regulations in recent years for rural and social sector, has provided much needed impetus to micro

* Associated with Centre for Management Studies, Jamia Millia Islamia, New Delhi
E-mail: nasiha_munib@yahoo.co.uk

health insurance products of a number of private players which hitherto cared only for the urban and rich clientele.

While health insurance is gaining popularity in India, the variety and availability of products is severely limited even for the rich. The situation is worse for the poor who have only partial access to a limited set of healthcare services. Scenario is alarming in terms of overall coverage of health insurance. Merely 3.3% of GDP is spent on all kinds of insurance in India, out of which a very low percentage is spent on non-life insurance and only marginally on health insurance. Broadly speaking, health insurance is grossly under-penetrated: as around 70% Indians live in villages and less than 2% are insured. In a country where a major share of the total spending on health (over 98 %) is OOP, there must be an appropriate pooling mechanism to mobilize this huge sum.

Existing health insurance schemes can be categorized into five broad groups: mandatory, voluntary, employer-based, government-run schemes for families below the poverty line (BPL), and community/NGO based insurance programmes. The first three categories of insurance schemes mainly serve the Indian elite, and those belonging to the organized sector while the last two types of insurance schemes fall under micro insurance or micro health insurance. In this paper, we shall focus on the issues and challenges of micro health insurance.

Health Insurance Schemes for BPL Families

Of late, the government has taken plausible steps to provide quality healthcare to 300 million poor in the country. Most of these people are working in the unorganised sector and are devoid of any formal health and social security policy. For example, the government has launched the *Rashtriya Swasthya Bima Yojana* (RSBY) for those living below the poverty line. The scheme provides an insurance coverage to the tune of Rs. 30,000 per annum. There is a provision of cashless healthcare facility with the provision of smart card and coverage of pre-existing diseases. The centre and the states contribute towards payment of the premium in the ratio of 75:25.

The Universal Health Insurance Scheme (UHS) was launched by the Government of India in 2003. The scheme provides for reimbursement of medical expenses in case of hospitalisation up to Rs.30,000, coverage for accidental death of the earning head of the family for Rs.25,000 and compensation due to his loss of earning at the rate of Rs. 50 per day up to a maximum of 15 days. In 2004 the scheme was redesigned and made exclusively for persons and families below the poverty line (BPL). The revised annual premium was set at Rs. 365 with a subsidy of Rs. 200 for individuals, Rs. 548 with a subsidy of Rs. 300 for a family of five and Rs. 730 with a subsidy of Rs. 400 for a family of seven. This alteration did undermine any of the benefits given in the original scheme.

Another group health insurance is in place for the members of Self-Help Groups and other Credit-Linked Groups (CLGs) who avail of loans from banks or cooperative institutions. Under this scheme, the premium is Rs 120 per person for an insurance

cover of Rs. 10,000. The public sector insurance companies have not met the desired success to market these schemes, and are reportedly seeking more subsidy support. Some state governments like Karnataka, Tamil Nadu, Madhya Pradesh among others are also actively promoting health insurance for low income groups as well as for people below the poverty line.

Community-based Health Insurance (CBHI) Models

Community-based Health Insurance (CBHI) programmes represent a new way for the poor to obtain affordable yet high-value health insurance products. Most of these CBHI schemes are also known as micro health insurance schemes.

There are three basic patterns of scheme ownership and management in a CBHI programme. (Devdasan, 2004). In many schemes, the NGO running the insurance scheme is also the healthcare provider –the provider mode wherein a provider usually an NGO hospital provides health insurance for the community around its area of operation. For example, under the Voluntary Health Services, Chennai, and the Students' Health Home, Kolkata, households pay an annual premium and in return they are provided with a free annual health check-up, and discounted rates on outpatient and inpatient services.

The second model –the insurer model –is where the NGO is the insurer, but does not provide healthcare itself (e.g., KKV, RAHA and Tribhuvandas Foundation). In this model, the NGO takes the role of the insurer collects money from the community and purchases healthcare for its members. In the third instance, several schemes involve an organisation acting as an intermediary between the target population and one of the insurance companies. This is also referred to as the linked model as where the NGO acts as the intermediary between the target population and an insurance company. SEWA in Gujarat is an example of such a scheme.

The Jan Arogya Policy is a kind of micro insurance designed to offer affordable health insurance to the poor. It provides for hospitalisation to the tune of Rs. 5,000 per person per annum to persons in the age group of 5-70 years. The premium under the policy is in the range of Rs. 70 and Rs.140 with an extra Rs.50 for each dependent not exceeding 25 years of age. However the policy has a number of exclusions. There are several key players in the micro health insurance space in the CBHI segment such as Healing Fields Foundation, Yeshaswini, Dr Shetty's Narayan Hrudalaya, Accord, Association for Sarv Seva Farms, Society for Promotion of Area Resource Centres, Karuna Trust, Self-Help Promotion for Health & Rural Development & the Empowerment of Rural Women, Basix, etc.

Pressing Issues

Affordability and Willingness to Pay: When insuring the poor, affordability is a real issue. While it may be difficult for the poorest of the poor, to afford insurance, it may not be so for those living close to the poverty line. As is rightly pointed out by Desai in

his paper their apparent inability to join micro insurance scheme may not be the result of affordability per-se, but it may be the result of institutional rigidity such as credit constraints that prevent their demand from effective demand for micro insurance. In a recent experience at ASHWINI—as the premium was reduced by 2.5%, the enrolment rate jumped from 35% to 50% of the target population. [Devadasan,2007] However, this calls for better cost control, better negotiations with providers.

In the particular case of SEWA, health insurance tops the list of risks for which the poor need insurance. In the inventory of 51 micro health insurance schemes operational in India prepared by ILO in 2004, life and health are the two most popular risks for which insurance is demanded.{59% of schemes provide life and 57% of them provide health insurance.} [Ahuja, R, 2005]. An important reason as to why the poor people despite the premium being affordable, may not be willing to pay the amount because they are not simply convinced about the necessity of such a pay-out or does not find it useful. In a situation of competing demands on scarce resources, there may be other priorities.

Hence belief in insurance and trust in the institution are two other very important factors that have to be taken care of while initiating MI. It is important to note that a few studies have tried to estimate the demand for micro insurance based on willingness and ability and have come out with positive findings. However these studies suggest varying amounts. Dror et. al. suggests that the poor are willing to pay more than Rs 600/- p.a. per family for health insurance, Devadasan et al 2007 found that willingness to pay lies in the range of Rs150 to Rs250 per family p.a. A survey based study on willingness to pay in case of Ethiopia, one of the poor countries in Africa shows that the poor are willing to pay up to 5% of their monthly income for a scheme of health insurance. [Asfaw at al 2002]. One related point observed in the case of the already existing schemes is that the premium are usually collected during the period of high economic activity in the community which of course is an important strategy for the success & sustainability of a micro insurance scheme.

Viability: Micro insurance can be viable. However, for this, the outreach has to be large; transactional costs have to be under control; renewal rate of insured has to be around 75%; costs of medical care have to be contained; and adverse selection has to be reduced. Transactional costs—especially if one is to reach the poorest and in the most remote of villages—are high. But as mentioned above, these can be offset by increases in outreach and balancing out by obtaining “chunks” of insurance from groups in other areas. A large group can manage the risk well and Yeshasvini is an appropriate example of this.

For the viability of health insurance, containing costs of medical care is also essential. This can be done through developing tie-ups with providers (public, charitable trust and private hospitals) with a careful watch on quality. The recent experiences with hospital tie-ups so that insured members obtain timely and good care and without paying out

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(cashless system) themselves, is providing some indications as to how health insurance can be organized in a manner that is workable and useful to the insured members.

For instance under the system of health insurance provided by SEWA: Vimo SEWA members call up when they are hospitalized at a facility with which it has a “tie-up”. The SEWA Insurance organizer (staff person) then visits the patient in the hospital, ascertains her expected costs with the help of the doctors, and makes a part payment (80%) on the spot. The rest of the charges are paid out at the time of discharge and submission of all relevant documents.

For lowering costs the focus needs to be on the family coverage instead of individual coverage. In this connection, it may be mentioned that the number of family packages at Vimo SEWA trebled, from 2000 to 6000—perhaps some indication of its popularity.

Pricing: Pricing of MI products is certainly very important as demand for these products is highly price sensitive because of low income of the poor people. If price is set towards a higher side, it will fail to attract and invite people for whom affordability is a major concern. The price should be very carefully chosen neither too high nor too low so that it may work against the solvency of the insurers. It is important to keep in mind that government subsidies and donor support could be utilized to meet some portion of the price of the product to make it feasible and affordable to the poor. In fact this is quite evident in case of a few already existing MISs as mentioned in the foregoing section.

Another related issue is regarding the flexibility in premium collection. The literature on micro-insurance illustrates the importance of the timings of premium collection. For instance collecting premium at harvest, insisting on convenient but regular installments, collecting premium in kind etc. are some of the useful ways of bringing in the required flexibility in the collection of premium in a micro insurance scheme. It is important to mention here the case of Yeshaswani health insurance scheme in rural Karnataka wherein there is a provision of paying premium in the installments of “milk” by the members of the cooperative.

Major Challenges

The state has a positive role to play by ensuring and carrying out the effective implementations of the necessary regulations. In this context, the role of IRDA needs to be appreciated. The State also has responsibility to safeguard the interest of insurance clients by assessing the quality of the services offered. It can build management and administrative competence of micro-insurers by training of insurance personnel and educating the public in the concept of insurance. The micro-insurer must enjoy sufficient autonomy within the existing legislative framework to decide on the premium amount, and how to collect, the scope of insurance coverage, the choice of service providers, and the design of contract.

Micro insurance schemes are themselves exposed to risks of insolvency due to small group size, under-funding, limited managerial and actuarial skills, and lack of access to risk management infrastructure. One way to guarantee solvency is to enable micro schemes to transfer risks to reinsurance. In case of linked model, CBHI's are able to pass on the risks to the insurance company, who in turn arranges for reinsurance. For community schemes, which follow the provider model or the insurer model approach, there is a need for introducing reinsurance and exploring how reinsurance at reasonable terms can be obtained to improve solvency of community schemes, and more importantly, protect the interest of their clients.

However, it has been unfortunate that community schemes working on their own have no access to reinsurance. So far, no government or international development agency has ever put together a plan to reinsure community health schemes. There is tremendous potential of health insurance in India as out of 1 billion, nearly 1/3 is insurable. As is also rightly pointed out by Krishnamurthi [2008], the task of financing and covering the poor is not just the fulfillment of social sector obligations but a great business opportunity as well.

Conclusion

From the foregoing discussion it is clearly evident that MHIUs are a promising option in so far as extending health insurance in India is concerned. Given the huge population base and a vast informal sector in India, the potential market size for micro health insurance at the bottom comprises of millions of people who are already spending fairly large amount which if pooled through insurance will make a win win situation for the insured as well as the insurers.

In the absence of well-developed national social protection systems, micro insurance schemes can reinforce the insurance culture and build management and administrative capacities. This in turn can act as the precursor to setting up more comprehensive systems of social security. Micro insurance can be a very powerful tool /instrument of empowerment. Here, it would be appropriate to remember what the noble laureate Prof Amartya Sen said once: *"Poor should not be viewed as an object of pity but as a disempowered lot needing empowerment. Health and education are the tools to empower the poor;"*

In a country where ill health has been one of the major cause for poverty and tragedy for the majority of population, social security is not developed and the Public Health Care System is grossly underfunded, the value of these MHIUs cannot rather should not be ignored and underestimated. The fact that many MHIUs have indeed been in existence for a long and are growing, justifies the feasibility and sustainability of these schemes. There seems to be consensus among all those involved, on the significance of micro health insurance in reaching out to the poor and it seems to be the next development revolution in India after the micro finance.

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Spirituality in Education for Holistic Development

Vandana Malviya*

Abstract

There is growing number of problems among youth like violence, behavioural changes, pressure of performance, drug addiction, depression, etc. Assisting students to grow spiritually will help to create a new generation who are more caring, more globally aware, and more committed to social justice, while also enabling students to respond to the many stresses and tensions of the rapidly changing technological society. This paper is an effort to raise public awareness about the important role that spirituality plays in student learning and holistic development.

Keywords: Spirituality, Education, Holistic Development

Work is love made visible. And if you cannot work with love but only with distaste, it is better that you should leave your work and sit at the gate of the temple and take alms of those who work with joy. (Kahlil Gibran, 1965, p. 28)

Introduction

According to World Health Organization, India has become one of the highest suicide rates countries worldwide. The country's health ministry estimates that up to 120,000 people commit suicide each year and almost 40% of them are below the age of 30. Students are having relationship problems with parents, teachers and friends. They are arguing and fighting with parents and getting in trouble in school or with the law. Furnham, Badmin and Sneade (2002) found that female adolescents linked body image dissatisfaction with self; those who were more dissatisfied with their bodies had lower self-esteem. Now it is widely believed that the erratic behavior of youth as well as their incompetence to maintain good relationship with family, friends and the environment can be attributed to lack of spirituality in their education.

Dohrenwend and Dohrenwend (1981) suggested that spiritual support may be very beneficial to those experiencing high levels of stress because their psychological well-being is vulnerable. Maton (1989) found that spirituality was positively related to adjustment for high-stress students. Young et al., "a greater orientation to spirituality weakens the impact of negative life experiences on depression and on the onset of anxiety" (p. 54-55). There are evidences that spirituality and religiosity are positively related to physical and psychological well-being (Payne, Bergin, Bielema, & Jenkins, 1991; Perderson, 1998). Ingersoll (1998) produces 10 dimensions of spiritual wellness that can be summarized as

* Research Scholar, Bhagwant University, Ajmer.

E-mail: vbenjaminin@yahoo.com

“experience of divinity, meaning, connectedness with God and others, mystery or dealing with the unexplained, a sense of freedom, experience of spiritual rituals and practices, forgiveness, hope interests in increasing knowledge of self and other things, and being aware of the present moment”.

Through spirituality students become empowered and realize that even though they have issues, stressors, and challenges, but they are not defined by these circumstances. This realization provides a pathway to greater peace, freedom of self-expression, increased manageability over the healing process and self-esteem. Each person’s spirituality is greatly impacted by the community they are a part of and the relationships they are in.

The old adage that goes like “you can’t teach old dog new tricks” applies to the teaching of spirituality and ethics. There is a belief that one gets his or her values and spiritual training or connection primarily from childhood experiences.

What is Spirituality?

The topic of spirituality in the work place is gaining importance among academicians as well as business professionals currently. Spirituality is extensively incorporated either tacitly or explicitly in public, private, for profit and not-for-profit organizations across the world. An awareness of the important role of spirituality is growing within the education system also as students are seeking for personal identity to give meaning to their lives in the fast paced world of the 21st century.

The word “spirituality” originated from a Latin word for breath, “spiritus,” with the concept of enthusiasm, from the Greek “enthousiasmos,” meaning “the God within”. Myers and Sweeney (2005) define spirituality as “an awareness of a being or force that transcends the material aspects of life and gives a deep sense of wholeness or connectedness to the universe” (p. 20).

According to Myers (1990) spirituality is “a continuous search for purpose and meaning in life; an appreciation for depth of life, the expanse of the universe, and natural forces which operate; a personal belief system” (p. 11). Dehler and Welsh (2003) define spirituality at work as “a search of meaning, deeper self-knowledge or transcendence to a higher level” (p. 114). Tepper (2003) asserts spirituality as “the extent to which an individual is motivated to find sacred meaning and purpose to his or her existence”. Thus spirituality enables an individual’s expression of an inner life by performing meaningful work in the context of a community. Spirituality is an inner consciousness, which is the state of ‘wakefulness as its essential nature, unmixed with images, thoughts, feelings or any other objects of perception (Heaton, Schmidt-Wilk, & Travis, 2004).

Howard (2002) asserted that, “writings in the spirituality at work area suggest that work should contribute to people’s spiritual lives; and their spiritual lives should contribute to their work”. Just as plucking out the eye from body would render the individual blind, rejecting spirituality per se will render humanity devoid of the precious eyes of divine wisdom resulting in disharmony and chaos. The spiralling rates of criminality and violence all over the globe give us a tiny glimpse of the anarchy that is in store if humanity continues to neglect spirituality.

Religiosity

The task of establishing appropriate level of spirituality among students is particularly difficult in a pluralistic society like ours in which there is no shared consensus about ultimate beliefs and values. Although spirituality is not necessarily religiously driven, the basic concepts of the spiritual mind set: acceptance, understanding, consciousness and peace are embedded in the majority of world religions. Spirituality does not necessarily mean to follow a certain religious doctrine or a belief; rather it is a belief in a purpose higher than one self. One may be spiritual without attending services or belonging to a particular religion. Similarly, one may be religious, yet do not have connection with their spirituality.

As is true of spirituality, religiosity is a difficult term to define (Fetzer Institute, 1999; Hackney & Sanders, 2003). Religion is characterized by “group activity that involves specific behavioural, social, doctrinal, and denominational characteristics”, spirituality point to our interiors, by which we mean our subjective life, as opposed to the objective domain of material objects that one can point to and measure. Spiritual domain has to do with human consciousness- what we experience privately in our subjective awareness.

In recent years there has been increasing interest in issues of meaning, purpose, authenticity, and spirituality in higher education. The spiritual component of human beings gives rise to questions about why we do what we do, pushes us to seek fundamentally better ways of doing it, and propels us to make a difference in the world (Zohar & Marshall, 2004).

Relevance of Spirituality for Faculty

There has been a growing interest in what had traditionally been the most neglected aspect i.e. spirituality (Adams and Csiernik, 2002; Ambrose, 1997; Conger et al., 1994; Hawley, 1993; Lee and Zemke, 1993; Neal, 1997). “Most of us spend so much time working, it would be a shame if we couldn’t find God there” (Gunther, 2001, p. 1). If teachers are more in touch with their own spirituality then they will be able to, directly or indirectly help their students grow spiritually and as a result these students will be better prepared to enter the corporate world.

Parker J. Palmer began the current movement of spirituality in academia. His *The Courage to Teach* and conferences that were by the same title were built on the same

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idea: “good teaching cannot be reduced to teaching; [but] comes from the identity and integrity of the teacher” (Palmer, 1998, p.10). According to Harris (1997) “spirituality influences play an important role in how many people see themselves and how they behave”. The actions of faculty both within and outside the classrooms impact the learning and development of future teachers, lawyers, physicians, and policymakers, not to mention their very own academic successors and the thousands of others whose work affects our daily lives.

Researches show that informal interaction between students and faculty increases faculty influence on undergraduate student’s values, beliefs, and behaviours and positively affects student’s intellectual curiosity, interpersonal skills and maturational development. Faculty who are high on spiritual inclination feel that they have better integration of their personal and professional lives and better alignment between their academic work and personal values (Lindholm, 2006). Also spiritual inclined faculty view the importance of student’s personal development to be equal to that of intellectual and career development (Lindholm & Astin, 2006).

Kazanjian and Laurence maintain that through examining issues of purpose and meaning within the context of the campus environment; acknowledging the multiple aspects of self that operate simultaneously within individuals; and celebrating the diverse experiences that people bring to their encounters with one another, colleges and universities have tremendous potential to shape society positively. Carter (2003) states that, “spirituality can be seen basically as displaying and applying a heightening level of awareness towards others in a selfless way” (p. 1). According to Ashar and Lane-Maher (2004) “do not define success in materialistic- money, positional power, and status symbols- terms” but use terms “such as being connected, balance, and wholeness to define and describe success” (p. 249). Teachers need to be courageous and deeply engaged in teaching students, bringing their entire selves, including their spirituality, to their teaching.

Teachers should read a good deal of literature on spirituality, participate in seminars on spirituality, and take part in brain storming sessions on spirituality. Students want to develop their spirituality, which suggests that they want to go on some kind of journey into hidden depths and self-knowledge.

The concept of education comes from the Latin *educare*, meaning ‘to lead out’, in the sense of drawing out what is within. If students are reporting that what is ‘within’ is a spiritual reality that needs to be ‘led out’ this poses problems for secular institution. If spirit is present in students, our institutions are not fulfilling the promise that is inherent in the word ‘education’ itself. There is more human reality to be ‘led out’ than the institutions are comfortable with. Education is not able to deliver what it promises, much less it is able to claim that it is satisfying the need of its clientele.

Relevance of Spirituality in Education

One's spirituality is really dependent on one's upbringing (Earley, & Kelly, 2004; Giacalone, 2004; Predmore, 2005; Samuelson, 2004). Michael Perino, a law professor at St. John's University School of Law, that ethic courses have impact on student's life. He avers that "students are at the formative stages of their careers, the lessons learned now will carry them through life" (Petrecca, 2002). For many students transition during major life events can lead to physical and psychological distress (Schafer, 1996) and decreased self-esteem (Abel, 1996; Abouserie, 1994; Brown & Dutton, 1995). And this episodic stress and low self-esteem is significantly related to suicidal ideation in students (Wilburn & Smith, 2005).

Studies reveal that spirituality have been identified as helpful in coping with major life challenges (Holt, Clark, Kreuter, & Rubio, 2003; Mendelson, 2002). Mohamed, Wisnieski, Askar, and Syed (2004) present four interesting advantages in their review of persons who maintain the spiritual mindset. They claim that, "the stronger the spiritual factor of personality the more tolerant the person is of work failure and less susceptible to stress" (p. 102). Secondly, "the stronger the spiritual factor of personality the more the person favours the democratic style of leadership, more trusting, and the higher his/her tolerance of human diversity" (p. 102). Thirdly, "the stronger the spiritual factor of personality the more the person exhibits altruistic and citizenship behaviour" (p. 102). And lastly, "the stronger the spiritual factor of personality the more the person's commitment to the organization and work group increases" (p. 102).

James Gararino (1999) in his book on boys and violence, cites a review of the practical impact of spirituality on young people. He concludes that "spirituality exerts an anchoring effect on kids". The effects he lists are reduced suicide, less depression, less casual sex, better response to trauma and less substance abuse. Donahue and Benson (1995) also report similar findings. The degree and quality of people's engagement in the realm of "inwardness" is a critical determinant of overall developmental coherence and resilience.

Ashar and Lane-Maher's (2004) study "linked the concept of success of spirituality and stated that to be successful one needs to embrace spirituality as well" (p. 249). Research studies reveal that people with higher levels of purpose and meaning tend to be healthier in general (Holt, Clark, Kreuter, & Rubio, 2003; Konig, 2002). Spiritual well-being also positively influences depression (Nelson, Rosenfeld, Breitbart, & Galietta, 2002) as well as helps in recovery from addiction (Doweiko, 2002), and cardiovascular diseases (Contrada, 2003).

When people realize and appreciate their spiritual depth, their capacity to become leaders is more profound, they become more productive, and they have a more positive impact on other- overall they create better working environments (Wolf, 2004). Spirituality is positively related to self-esteem (intellectual self-confidence, social self-

confidence, self-rated courage) and feelings of equanimity (feeling good about the direction in which life is headed, feeling at peace and seeing each day as a gift).

According to Trott (1996) spirituality increases individuals self-efficacy, and a greater willingness to cooperate, grow, learn, and adapt to challenges. People who have mastered their emotions are able to roll with the changes, they don't panic when a new program or any kind of change is announced. Rather they are able to suspend judgement, seek out information, and they easily move forward (Goleman, 1998).

Inculcating Spirituality among Students

Eminent thinkers throughout the world including leading scientists like Nobles Laureates Charles and Richard R Ernst, peace workers like Noble Laureates Oscar Arias and Betty Williams and spiritualists like Dalai Lama firmly believe that only a synthesis of science and spirituality can lead the world out of the present troubled times. Spirituality can be enhanced by reading spiritual books, sharing spiritual belief with other friends, discussing meaning and purpose of life with other students, giving testimonies to other students; teachers also need to encourage such students who want to share their spiritual experience with other students; provided that sharing leads to edification of others. These programs may also include opportunities to share spiritual values, spiritual leadership training, and structured activities related to spiritual experiences like yoga and meditation classes, prayer groups, guest speakers, and community involvement.

Movie shows can be organized in the campus for students and faculty where such movies are shown which leaves deep impact on the lives of the viewers. Representatives from different spiritual organizations should be invited to share their live experiences with students and encourage the students to have a broader vision of their lives and educate them on how can they be a blessing to the society. Students can visit NGO's, orphanage, old homes, and other organizations and can work voluntarily there to get inner peace and joy and get a feeling of contributing for the good of the society. Parents should also be encouraged to donate money, provide food or clothing for runaway street children, battered and abused women, children with disabilities and with visually challenged adults, children will learn by watching their parents also.

Students should be encouraged to choose their own spiritual mentor in the campus. Studies conclude that the mentors whom students choose for themselves were more valued than those allotted by a third party (DuBois et al, 2002; Grosman & Rhodes, 2002; Cannister, 1999, & Collins, 1999). Students can design and conduct an after-school mentoring program and working with local children with art, music, drama and circulating the value of education for all. The students of AMITY conducted a street play (Nukkad Natak) in Amity University and various prominent places of Delhi to create awareness about various psychosocial issues like rape, alcoholism, dowry and other social issues. Also students of AMITY were part of film "Peace and Spirituality" which was selected in the competitive category of Global Film festival in youth category.

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Senior students can also be encouraged to mentor younger students in their school/institute. Morning assembly should be conducted daily and it should not become a ritual rather this time should be utilized appropriately. Chaplains should be invited to preach on spirituality and encouraging students to maintain a good life. Debates and quizzes can be organized on the life of great men and women of the world like mother Teresa, Mahatma Gandhi, Nelson Mandela, Abraham Lincoln, etc. Students should be encouraged to read bibliographies of great men and women.

Conclusion

Researches reveal that students with high level of spirituality report better emotional and mental health as compared to those with little or no spiritual involvement. Students high on spirituality are less likely to feel depressed or experience psychological distress or poor emotional health; they also are more likely to have high levels of self-esteem. Spirituality provides strength in times of distress, support and guidance, and gives meaning and purpose in life. Educators need to be aware of and sensitive to the spiritual needs of the students. Without spirituality one only gets partial experience, constantly longing for something more, but not really knowing what actually they are seeking for.

Today's students seem bored, disengaged or underwhelmed; they know deep down that there is something more, something that they are missing, because their spirituality is not being fed. Assisting student's spiritual growth will help to create a new generation who are more caring, more globally aware, and more committed to social justice than previous generations, while also enabling students to respond to the many stresses and tension of our rapidly changing technological society. Providing students with more opportunities to connect with their "inner selves" facilitates growth in academic and leadership skills, contributes to their intellectual self-confidence and psychological well-being, and enhances their satisfaction with the school/college. But experts insist that counseling in schools needs to move beyond merely "fixing a problem child" and become an integral part of the system. This calls for joint efforts on the part of parents, schools and the authorities.

To sum up, Scott (2001) rightly observes: "By refusing to develop ourselves spiritually we are restricting our human potential and our capacity to transform the world. If we could focus more on spiritual realities, greed would no longer control us. Without greed, I think we could achieve greater happiness and peace of mind. Spiritual awakening could have a powerful effect on stopping the downfall of society".

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