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Case Study

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International Financial Reporting Standards (IFRS) Adoption in Africa: Does Cultural Affinity to Europe Play a Part?

Francis Kehinde Emeni*

One of the essential ingredients of accounting information is ease in understanding and interpreting financial reports. Globalization and capital flows across borders require uniformity in accounting standards for the purpose of ease in understanding and interpretation of financial reports globally. To achieve this, the International Accounting Standards Board (IASB) in 2005 introduced the International Financial Reporting Standards (IFRS) as an accounting product and expects all countries in the world to adopt it.

Interestingly, some countries are yet to adopt it despite the expected benefits from its adoption. A study by Simon Fraser University (2011) has reported that only 54 per cent of African countries have adopted IFRS. Literature on why countries adopt IFRS focuses on many variables such as the country's cultural affinity to Europe offering the IFRS product (Ramanna and Sletten, 2009; Farooque, Yarram, and Khandaker, 2009; Epstein, 2009; Beneish, Miller, and Yohn, 2010; and Chen, Ding, and Xu, 2011).

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The past decade saw many companies involved in financial scandals (e.g. Enron, Tyco, Cadbury, and Worldcom) that shocked the world. As a result, more attention was placed on the role of IFRS in checking this ugly trend through uniformity and clarity of financial reporting across the globe. Surprisingly, there is paucity of research on the role of variables like culture in IFRS adoption decisions across countries in Africa. To the best of the researcher's knowledge, very few studies have investigated the association between IFRS adoption decisions by countries and cultural affinity to Europe (Salter and Niswander, 1995; Robert and Salter, 1999; Jaggi and Low, 2000; Ramanna and Sletten, 2009). The findings in these studies are mixed which makes the issue inconclusive.

Some of the previous studies have excluded countries which are yet to adopt international accounting standards (Eddie, 1990; Salter and Niswander, 1995; Robert and Salter, 1999; Jaggi and Low, 2000) which poses questions about their sample impartiality. Excluding countries which are yet to adopt IFRS makes the sample size per continent small and therefore their results could not be reliable. The important point here is that the non-adoption decision is still a decision. Therefore, the sample in this study has covered countries in all the five geographical regions of Africa (Eastern Africa, Middle Africa, Northern Africa, Southern Africa, and Western Africa), including those which are yet to adopt IFRS.

Most of the empirical literature on the role of culture in adoption of international accounting standards (Robert and Salter, 1999; Jaggi and Low, 2000) has focused on the firm level. This study complements the firm level studies by looking at the role of culture in IFRS adoption at the country level. In this study 2011 was used as the observation year. This is because data for a country's population is usually at the last census; and data for an African country's year of independence is the date of independence. The study is designed to answer the question: In what way does cultural affinity to Europe (the continent offering the IFRS product) influence an African country's decision to adopt IFRS?

Culture and IFRS Adoption

In a study of a sample of thirteen countries of the Asia-Pacific region, Eddie (1990) tests all four hypotheses in the Hopstede-Gray framework. His empirical study confirmed all predicted signs of association between culture and preference for a single mandatory treatment in accounting. Nevertheless, the results should be viewed with caution because his method of measurement was not rigorous, the index was subjectively determined, and he used two different sets of data twenty years apart. Salter and Niswander (1995) operationalized Gray's hypothesis using data from 29 countries. A variety of cultures in terms

of language, geographical location, colonial antecedents, and economic development was included in the sample. They found significant support for only six out of thirteen of Gray's predicted relationships between cultural value dimensions and accounting values.

According to Salter and Niswander (1995), the preference for a single mandatory treatment in accounting is not significantly influenced by culture. This result is not in consonance with Robert and Salter's findings (1999). This may be because of the differences in cultural dimensions employed in these studies. While Salter and Niswander (1995) relied on only Gray's culture dimensions, Robert and Salter relied on only two hypotheses in arriving at their conclusion. They examine the drivers behind accountants' attitudes towards uniformity in accounting rules. They hypothesized as follows: (1) "the strength of desire for a single mandatory treatment for an accounting issue in a country is related to the culture of a country and (2) the strength of desire for a single mandatory treatment for an accounting issue in a country is positively related to the importance of the stock market in that country" (Robert and Salter, 1999).

Robert and Salter administered a questionnaire comprised of fourteen accounting issues to a sample of auditors employed in Big 6 accounting firms in 23 countries. The countries were selected based on the size of stock markets at the end of 1993. Each respondent was asked to respond with a yes/no on the statement whether they wanted a single mandatory treatment (e.g. IFRS) for fourteen different accounting issues. The dependent variable was the response whether or not a single mandatory method was preferred. The independent variable consisted of the importance of capital market and culture. The results showed that the respondents tended to favour a mandatory single treatment in 66 per cent of the cases analysed. This result is consistent with Gray's (1988) hypothesis that uniformity has a positive relation to culture. Robert and Salter (1999) concluded that the preference of a single mandatory treatment in accounting is influenced significantly by culture.

Ding, Jeanjean, and Stolowy (2005) in their study on the role of culture in the way national accounting systems of 52 sample countries may differ from international accounting standards, claimed that the difference between domestic accounting standards and international accounting standards can be classified into: (1) divergence - if domestic accounting standards prescribe a different method from international accounting standards and (2) absence - if domestic standards do not cover an accounting issue regulated by international accounting standards. Their study focuses on the cultural values of each country as the explanatory variable for the differences between each domestic standard and IAS. With regard to divergence, they hypothesized that a country with a higher level of

individualism and uncertainty avoidance and a lower level of masculinity and power distance is likely to have accounting standards that diverge from international accounting standards. In terms of absence, they hypothesized that a country with a higher level of masculinity and uncertainty avoidance and higher level of individualism that are less extensive than international accounting standards is not likely to have accounting standards that diverge from international accounting standards.

These results show that culture is significant in explaining divergence from international accounting standards, while the level of absence appears to be less related to cultural factors. Ding, Jeanjean, and Stolowy (2005) argued that the level of absence is more likely related to economic development and capital market issues. They concluded that discrepancy from IAS/IFRS is "not exclusively driven by contractual motives or a claimed technical superiority or legal origin, but also by diversity in cultural factors". On the same side of the spectrum, Jaggi and Low (2000) examine the impact of culture on financial disclosures by firms from different countries, and find that the culture of a country is not likely to impact the compliance with international accounting standards if firms choose to follow them. Focusing analysis on a sample of 102 countries, Ramanna and Sletten (2009) examine IFRS adoption in relation to cultural sensitivities. They are of the view that if the IASB is perceived as a European institution, countries that are culturally more distant from Europe are less likely to accept IFRS. They found that countries that are culturally more distant from Europe are less accepting of IFRS. In the light of the above, it is hypothesized in this study that: cultural affinity to Europe has no significant relationship with adoption of IFRS in Africa.

Theoretical Framework

This study sets out to ascertain the relationship between cultural affinity to Europe – the continent offering the IFRS product – and adoption of IFRS by African countries. It relies on the economic theory of networks (Katz and Shapiro, 1985) to build a comprehensive framework able to capture the role of African countries' cultural affinity to Europe and their IFRS adoption. The reason for the choice of the theory of network is because, according to Ramanna and Sletten (2009), "adopting a set of standards like IFRS can be more appealing to a country if other countries have adopted it as well," given their closeness to Europe. In this sense, IFRS can be a product with network effect.

Economic Theory of Networks

In life at times, one finds himself in a situation where choice has to be made between two things that are desirable; for example a country having to choose between its domestic accounting standards and IFRS. When making such choices, one consideration is inevitable, and that is, how our participation will affect others within the same political or geographical block and how the participation of others will affect us. Most of us naturally consider what the people around us are choosing or are likely to choose. Since so many choices seem to have some network dimension, it is not surprising that economists have taken up these ideas and have coined a term to connote these network elements. This term is *network effect* or *network externality* (Liebowitz and Margolis, 1994).

In the case of IFRS adoption decision by a country, Ramanna and Sletten (2009) posit that the direct benefit of network effects may be represented by net cultural benefit of IFRS over local standards. That is, cultural sensitivity, a country's population, and gross domestic product might influence IFRS adoption.

Thus

$$ADP = f(CUL, POP, GDP) \quad (1)$$

where

CUL = cultural affinity to Europe

POP = population of the country

GDP = gross domestic product

POP and GDP are introduced as control variables in this study.

Based on the above, we use the economic theory of networks to develop the hypothesis in this study:

H. Cultural affinity to Europe has significant relationship with adoption of IFRS in Africa.

Methodology

Cross-sectional survey research design was adopted in this study because the researcher wanted to reach to several countries in the African continent. The population comprised 54 countries in Africa. A survey of the sampled countries with respect to the determinants of IFRS adoption was carried out. The sample size is 46 countries. Cluster sampling was complemented with simple random sampling technique was used. The reason for the choice of cluster sampling is that the population of study (54 countries making up Africa) is distributed in five clusters/regions. Cluster sampling will therefore make for proportional selection of samples such that the number of subjects selected from each region will represent its share of the entire population. For each country in a given cluster/region to have equal chance of being selected, random sampling was introduced. The clusters are: West Africa (16 countries), East Africa (16 countries), Middle Africa (9 countries), Southern Africa (6 countries), and North Africa (7 countries).

The next step was to number the countries in each of the clusters in a range. West Africa was numbered 01 to 16; East Africa 01 to 16; Middle Africa 01 to 9; Southern Africa 01 to 06; and North Africa 01 to 07. A computer package (Excel) was programmed to select 46 random numbers within the specified ranges in proportion to the cluster's share of the total population. The numbers thus generated were used to choose the countries included in the study sample.

Secondary sources of data were used in this study. Data for GDP were sourced from the World Bank World Development Indicators (WDI) database; data for a country's population was sourced from the *World Almanac and Book of Facts*; and cultural affinity was taken as the number of years a country has gained independence from its colonial masters (Ramanna and Sletten, 2009) which was sourced from WABF. Ordered logistic regression analysis was used to regress decision to adopt IFRS in relation to its predictors.

In operational terms, IFRS adoption is defined in this study as the decision a country has taken either to adopt IFRS or not (Ramanna and Sletten, 2009). To measure or arrive at the score for decision on IFRS adoption by an African country, the dependent variable (IFRS adoption) is in five categories: category 0 to category 4; where 0 means decision not to adopt IFRS by the country; 1 means efforts to implement IFRS are still being identified by the country; 2 means publicly listed entities and significant public interest entities are to prepare their financial statements using applicable IFRS; 3 means all other public interest entities mandatorily adopt IFRS for statutory purposes; and 4 means small and medium-sized

entities (SMEs) mandatorily adopt IFRS. Cultural affinity is defined as cultural closeness to the culture (Europe) offering the IFRS product. Cultural affinity is taken as years since independence from a European Union country (Ramanna and Sletten, 2009).

Model Specification

Assuming a linear relationship, we can write the above equation (1) in an explicit functional form as:

$$Y = \beta_o + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_n X_n \quad (2)$$

where β_o; β_1; β_2, ..., β_n are parameters to be estimated

Y = dependent variable (IFRS adoption decision)

$X_1, X_2, \ldots\ldots, X_n$ = independent variables

X_1 = cultural affinity

X_2 = population

X_3 = gross domestic product

In this case, our n is 3

Thus equations (1) and (2) become:

$$ADP = \beta_o + \beta_1 CUL + \beta_2 POP + \beta_3 GDP + U \quad (3)$$

where β_o, β_1, β_2 and β_3 are parameters to be estimated. The priori expectation is that

$\beta_1 > 0$, $\beta_2 > 0$, and $\beta_3 > 0$

U is the error term and β_o is the constant term.

Results

The results of data analysed for all the countries in Africa are presented below.

REGRESSION RESULT

Dependent Variable: ADP

Method: ML – Ordered Logit

Included observations: 46

Number of ordered indicator values: 5

Convergence achieved after five iterations

Variable	Coefficient	Std. error	z-statistic	Probability
CUL	%0.052761	0.016382	%0.522160	*0.5207
POP	0.062855	0.011581	0.210481	*0.3971
GDP	0.139160	0.581072	0.471990	*0.5993
LR statistic	12.48269			
Prob(LR statistic)	0.061525			

* not significant at 5% level

The results can be represented in an equation as shown below:

$$ADP = \beta_0 + \beta_1 CUL + \beta_2 POP + \beta_3 1GDP + U$$
$$-0.052761 \quad 0.062855 \quad 0.39160$$

In this study each slope coefficient measures the change in the estimated logit for a unit change in the value of the given regressor (holding other regressors constant). Thus, the cultural affinity to Europe (*CUL*) coefficient of -0.052761 means CUL has a negative effect on the logit, that is, if CUL increases by a unit, the estimated logit has the likelihood of reducing by 0.053 unit, suggesting a negative relationship between the two. If POP increases by a unit, on average the estimated logit has the likelihood of increasing by about 0.063 unit, suggesting a positive relationship between the two. Likewise, if GDP increases by a unit, on average the estimated logit also has the likelihood of increasing by about 0.14 unit, suggesting a positive relationship between the two.

From the ordered logistic regression result above, all the variables appear not to be statistically significant at 5 per cent level. Although statistically the effect of a country's population and gross domestic product is positive, that of cultural affinity is negative. However, together all the regressors have a significant impact on IFRS adoption, as the LR statistic is 12.48269, whose *p* value is about 0.061525, which is very small. The LR statistic measures the joint correlation of the explanatory variables (CUL, POP, GDP) with the dependent variable (ADP). It is used to test the rejection or otherwise of the null hypothesis that none of the explanatory variables is related to the dependent variable. The LR statistic is 12.48 and is significant at 5 per cent level given the *p* value 0.06. This shows that the explanatory variables jointly explain the variation in IFRS adoption. On the whole, the model has an overall good-fit.

Hypothesis Test

The following hypothesis was developed for the study:

H_o: Cultural affinity to Europe has no significant relationship with adoption of IFRS in Africa.

H_1: Cultural affinity has significant relationship with adoption of IFRS in Africa.

From the analysis conducted for the null hypothesis, the relationship between cultural affinity and IFRS adoption decision by African countries did not also pass the significance test at 5 per cent level (p=0.00<0.05). This shows that there is the likelihood that cultural affinity does not significantly affect IFRS adoption decision by African countries. Cultural affinity was also found to impact negatively on IFRS adoption as depicted by the long run slope coefficient (-0.052761). Hence, the null hypothesis (H_o) of no significant relationship between cultural affinity and adoption of IFRS in Africa is accepted while we reject the alternative hypothesis (H_1).

Discussion

We observe that the evaluation of the slope coefficients of the explanatory variables reveals the existence of negative relationship between culture and IFRS adoption (-0.052761) which is also statistically not significant at 5 per cent ($p\leq$0.05). This result is in consonance with the finding of Salter and Niswander (1995) that the preference for a single mandatory treatment in accounting is not significantly influenced by culture. Also in tandem with the finding in

this study is that of Jaggi and Low (2000) who examined the impact of culture on financial disclosures by firms from different countries and found out that the culture of a country is not likely to impact the compliance with international accounting standards, if firms choose to follow them.

However, the result in this study is not in consonance with the finding of Eddie (1990) and Robert and Salter (1999). This may be because of the differences in cultural dimensions employed in these studies. While Salter and Niswander (1995) relied on only Gray's culture dimensions, Eddie (1990) used Hofstede-Gray cultural dimensions, while Robert and Salter (1999) relied on only two hypotheses in arriving at their conclusion. Robert and Salter (1999) concluded that the preference of a single mandatory treatment in accounting is influenced significantly by culture.

Focusing analysis on a sample of 102 countries, Ramanna and Sletten (2009) examine IFRS adoption in relation to cultural sensitivities. They are of the view that if the IASB is perceived as a European institution, countries that are culturally more distant from Europe are likely to be less accepting of IFRS. Thus they test whether cultural differences can explain cross-country variation in IFRS adoption. They found that countries that are culturally more distant from Europe are less accepting of IFRS. This finding by Ramanna and Sletten (2009) is in tandem with the finding in this study.

Conclusion

The finding that cultural affinity does not seriously affect IFRS adoption in Africa has serious implications for level of financial transactions, and disposition to uniformity in accounting practices in Africa. This result is not surprising given the high level of cultural diversity and affinities in Africa. Here, we have not only the Anglophone/Anglo-Saxon African countries but also the Francophone and even those not belonging to any of these two blocs. This also reflects a high level conservatism and poor cultural globalization in Africa. Based on this result of negative and not significant relationship between cultural affinity and IFRS adoption, there should be a policy shift towards cultural globalization, if there is going to be uniformity and comparability in accounting standards in Africa viz-a-viz the rest of the world.

African economies should take steps at improving on cultural globalization. This is necessary to open up their economies for benefits of economic globalization in terms of

competitiveness of human resources and markets from Africa; which, hopefully, will bring about adoption of the IFRS product by more countries in Africa.

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Appendix
SAMPLED COUNTRIES AND THEIR CHARACTERISTICS

List of Countries in Africa	IFRS Adoption Status/ adoption date	GDP in USD	Population as at last census	Date Colonized	Colonizer	YOI[#]	YOI to 2011
West Africa							
Benin	Not Permitted	7,294,865,847	9,099,922	1904	France	1960	51
Burkina Faso	Not Permitted	10,187,211,704	16,967,845	1896	France	1960	51
Cape Verde	Not Permitted	1,901,136,230	500,585	1462	Portugal	1975	36
Cote d'Ivoire (Ivory Coast)	Not Permitted	24,073,812,829	20,152,894	1842	France	1960	51
Gambia (The)	2009	898,282,866	1,776,103	1588	Britain	1965	46
Ghana	2007	39,199,656,051	24,965,816	1844	Britain and Germany	1957	54
Liberia	Not Permitted	1,545,461,660	4,128,572		United States(indirectly)	1847	164
Mali	2010	10,589,925,352	15,839,538	1898	France	1960	51
Nigeria	2012	243,985,812,280	162,470,737	1861	Britain	1960	51
Senegal	Not Permitted	14,291,456,855	12,767,556	1890	France/Portugues	1960	51
Sierra Leone	2006	2,242,960,927	5,997,486	1787	Britian	1961	50
Togo	Not Permitted	3,620,169,609	6,154,813	1960	Germany;France	1990	21

East Africa							
Burundi	2004	2,325,972,144	8,575,172	1916	Belgium	1962	49
Eritrea	Not Permitted	2,608,715,447	5,415,280	1890	Ethiopia	1993	18
Ethiopia	2010	30,247,359,642	84,734,262		Italy	1941	70
Kenya	2005	33,620,684,016	41,609,728	1890	Britain	1963	48
Madagascar	2005	9,911,781,297	21,315,135	1885	France	1960	51
Malawi	2005	5,621,000,678	15,380,888	1891	Britain	1964	47
Mauritius	2005	11,259,856,301	1,286,051	1721	Frane/Britain	1968	43
Rwanda	2008	6,374,877,468	10,942,950		Belgium	1962	49
Seychelles	2009	1,007,186,292	86,000	1794	Britain	1976	35
Tanzania	2004	23,874,165,047	46,218,486	1880	Britain	1963	48
Uganda	2004	16,809,623,489	34,509,205	1894	Britain	1962	49
Mozambique	2008	Non Anglo-Saxon	12,797,754,231	23,929,709	1505	Portugal	1975
Zambia	2005	19,206,044,932	13,474,959	1889	Britain	1964	47
Middle Africa							
Angola	2009	104,331,613,337	19,618,432	1583	Portugal	1975	36
Cameroon	2009	25,235,747,212	20,030,362	1884	Germany;France and Britain	1960	51
Central African Republic	Not Permitted	2,194,720,004	4,486,837		France	1960	51
Chad	2009	9,485,741,541	11,525,496	1900	France	1960	51
Congo (Brazzaville)	Not Permitted	14,425,606,793	4,139,748		France	1960	51

Congo, Democratic Republic	Not Permitted	15,653,634,042	67,757,577	1876	Belgium	1960	51
Equatorial Guinea	Not Permitted	19,789,801,404	720,213	1778	Spain	1968	43
Gabon	2009	17,051,616,749	1,534,262		France	1960	51
Sao Tome and Principe	Not Permitted	248,286,778	168,526	1471	Portugal	1975	36
North Africa							
Algeria	2009	188,681,099,191	35,980,193	1848	France	1962	49
Egypt	2008	229,530,568,260	82,536,770	1882	Britain	1922	89
Libya	2010		6,422,772	1912	Italy	1951	60
Morocco	2008	100,221,001,988	32,272,974	1909	France and Spain	1956	55
Sudan	Not Permitted	64,053,368,930	34,318,385	1820	Britain and Egypt	1955	56
Tunisia	Not Permitted	45,863,804,800	10,673,800	1881	France	1956	55
Southern Africa							
Botswana	2007	17,327,510,032	2,030,738	1886	Britain	1966	45
Lesotho	2007	2,426,200,017	2,193,843	1868	Britain	1966	45
Namibia	2005	12,300,698,895	2,324,004	1890	Germany and Southern Africa	1990	21
South Africa	2005	408,236,752,340	50,586,757	1806	Britain	1931	80
Swaziland	2008	3,977,754,360	1,067,773	1903	Britain	1968	43
Zimbabwe	2005	9,656,199,414	12,754,378	1809	Britain	1965	46

Design Issues in Management Control Systems: A Systems Framework

Deepak Danak*

The importance of implementation of corporate strategy cannot be overemphasized. As a matter of fact, we find many good strategies failing miserably for want of effective implementation.[1]

A system that top management should put in place for ensuring effective implementation of the corporate strategy is popularly called management control system (MCS). Just like any other management initiative, MCS should also show up on the twin criteria of effectiveness and efficiency. The effectiveness of MCS lies in its ability to promote and carry out the intended external and internal interactions. Its external interactions stem from its linkages with other systems within the larger control/management environment of the organization. An effective MCS would be an open system that nicely coordinates itself with its external environment. Its internal interactions basically stem from the requirements of strategy implementation and spread over all those managerial levels that are responsible for contributing to the process of implementation. The efficiency of the system lies in prescribing the right information flows.

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Taking a systems view, the design issues can be broadly classified as falling into two categories: context environment and content environment. The context environment is external to MCS, whereas the content environment is internal to it. The issues relating to the context environment can be called as domain specification issues, whereas the issues relating to the content environment can be called as system specification issues.

Domain Specification Issues

The context environment is formed by the larger control/management system of the organization of which the MCS is a sub-system. The issues of domain specification get manifested in two interrelated aspects of domain of control and domain of management control.

Domain of Control

All organizations come into being for some worthwhile purpose/goal/mission[2]. All the activities of the organization are to be directed towards the achievement of that purpose. It is the management process that plans and controls the organizational activities toward the attainment of the organizational purpose[3].

However, the term control, as it applies to a management function, does not have a universally accepted definition (Merchant, 1998).[4] There is some disagreement about the proper domain for control systems among authors in the field (Maciariello and Kirby, 1994). Three alternatives in domain specifications are quite apparent. On one extreme, some thinkers take a very narrow view of control and regard it as the backend of the management process (Giglioni and Bedeian, 1974). It confines the scope of control to the managerial task of only collecting the information on the progress of the plan, comparing the attainments with the planned ones and initiating corrective actions. On the other extreme, some other thinkers take a very broad view derived from the theory of cybernetics, which looks upon the entire organization as a control system (Katz and Kahn, 1978; Morgan, 1982; Pascale, 1999). It takes the analogy of the human brain which 'controls' not only by comparing the 'ideal level' with the 'actual level', but also develops its standards of ideal level as also revises the same by acting as an adaptive learning system. The middle-of-the-roader view identifies control as the mechanism of making things happen, and thus, as contrasted to the narrowest view, expands the scope of control to include the entire planning and controlling system in the organization. Thus, it essentially equates the control process with the management process. Control in the management process presupposes the implementation of activities

and implementation, in turn, presupposes the planning of the activities. Hence the control process can be stretched to begin with the planning process. Thus, in this context, 'managing' means 'controlling' or in other words, 'managing' means 'managing for controlling'. At the same time, as contrasted to the broadest view, it does not consider the entire organization as a control system, as also does not look upon the control process as that adaptive or automatic.

Obviously, the set of prescriptions made by researchers under these diverse views are also equally divergent. There is a great need for developing a framework for their reconciliation. In our view, the reconciliation can be attempted by relating the domain of control with the degree of complexity of managerial problems. Complex managerial situations would call for taking broader view, whereas simpler situations can be effectively managed by taking narrower view. Fortunately, the task of the control designer becomes easy, as there is association between the level of management and the degree of complexity. Towards that, we can identify three levels in the organizational hierarchy, namely, the 'top level' that consists of board of directors and CEO which is primarily responsible for designing the corporate strategy, the 'middle level' that consists of managers which is primarily responsible for implementing the corporate strategy, and the 'bottom level' that consists of front line supervisors which is primarily responsible for undertaking physical activities towards carrying out the implementation of the corporate strategy. Relatively, the top level is characterized by highest complexity and the bottom level is characterized by lowest complexity. Thus, the three different domain specifications can go very well with the three different levels of management, in a typical large-sized organization as shown below.

Level of Management	**Appropriate Control Domain**
Top Level Focus: Vision and Mission	Broadest View:Entire organization is a control system.
Middle Level Focus: Objectives	Middle-of-the roader view: Controlling comprises the entire management process.
Bottom Level Focus: Targets	Narrowest View: Controlling is the backend of the management process.

The narrowest view would be the best fitted one at the bottom level, since compliance is the key at that level. Fixation of targets of attainments mainly in terms of non-financial measures

becomes an essential requirement at this level for ensuring proper implementation. The middle-of-the roader view would be the best fitted one at the middle level, since motivation of managers for taking proactive approach proves to be the key at that level. Empowerment for designing their own courses of action within the broad limits of fixations made in the corporate strategy becomes an essential requirement at this level for the attainment of objectives. The broadest view would be the best fitted one at the top level, since creating an environment for designing a dynamic or an adaptive organization is the key at that level. Prescriptions for the design of management systems and operating systems for the entire organization have to be made from this level for realizing the vision and mission.

It is necessary to appreciate how the degree of complexity is related to the level of management. As a matter of fact, complexity is a function of the size of the organization. Large-sized organizations, characterized by many layers in their organizational structure, will have higher complexity at a given level as opposed to small organizations. So for small organizations, the broadest view may not prove to be befitting, even at the top level. Thus, one should judiciously use the management level as a proxy of the complexity level.

Domain of Management Control

As shown above, the scope of management control is contingent upon the control domain specification. Here too, three different views are evident. The narrowest view is to focus on targets, where MCS reduces to only budgetary control, because the information on the actual attainments of specific financial targets is collected and compared with the budgeted ones and corrective actions are initiated. It presupposes the existence of corporate strategy, and concerns only with its implementation. Thus, it essentially manifests a reactive approach. The broadest view while focusing on vision and mission covers even the strategic and operational planning and control systems in the scope of MCS. The middle-of-the-roader view focuses on objectives and defines MCS as a management system concerning with creating an environment for the effective and efficient implementation of corporate strategy. It comprises both financial controls as well as non-financial (also called as behavioural controls) and manifests a proactive approach. This view has emerged as the dominant view in the literature and practice[4].

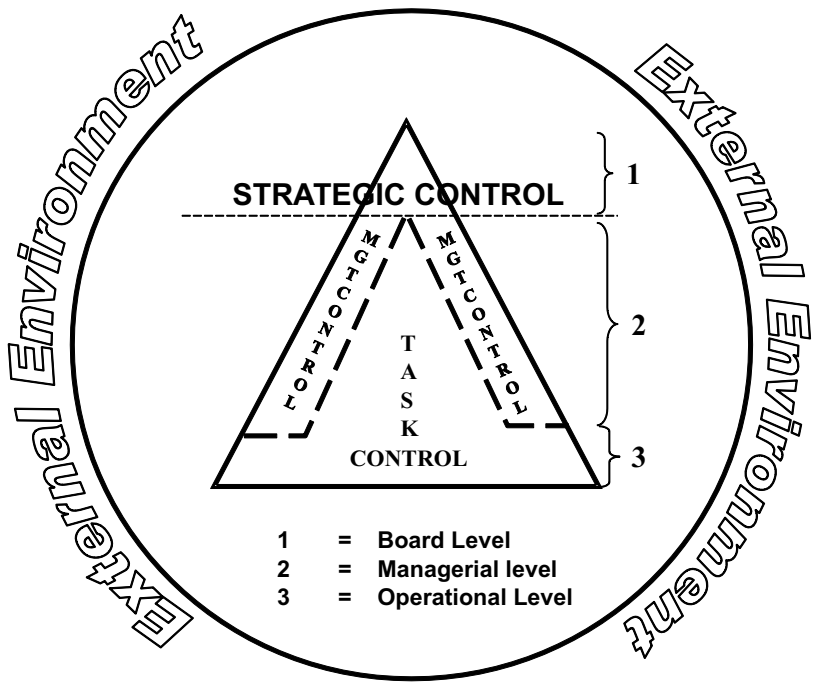
A derivative design issue relates to defining the position and scope of the job of the controller. The narrow view confines the job of a controller to only budgetary control (i.e. accounting control). Traditionally, we have found management accountants being designated as controllers under this view. The broadest view on the scope of the controller's job could be

to hold the controller responsible for strategy implementation. This would require authorizing the controller to design the total MCS made up of the hardware (i.e. control structure, or the organizational structure), the software (i.e. control measures and related communication processes), and the live-ware (i.e. human resource management). Obviously, in that case, the controller would not be the same old management accountant; rather, he would be above the management accountant in the organizational hierarchy. He would interact with the management accountant on the issues relating to accounting controls, which would be only a part of total management controls. However, this is too broad a scope to justify for any manager other than the CEO. So in that case, the CEO would play the role of controller along with his other roles. However, in reality, what we mostly find is the middle-of-the-roader approach under which the controller is mainly authorized to design the software manifesting into a proactive system of management controls, which includes relevant measures of financial and non-financial controls. Under this approach, the CEO is responsible for getting designed the right hardware and live-ware parts of MCS that can facilitate proper interactions among the three components of MCS. However, since there is a lot of interdependence between software and hardware, the controller may be closely involved in designing the hardware. But, over there, mostly the controller plays a secondary role, and not a primary role. Likewise, in so far as the interactions between software and live-ware are concerned, generally we find that management control in divisionalized companies is organized in matrix form, where divisional controllers have solid-line relationship with their divisional general manager and dotted-line relationship with the corporate controller. The divisional controllers get guidance on control policy from the corporate controller. The business head consults the corporate controller while appointing the divisional controller; sometimes, the divisional controllers are first groomed in the corporate control office so that they can effectively carry forward the company's control philosophy and culture.

Further, this particular domain specification identifies MCS as only one component in the total organizational control system which, in turn gives rise to the issues of linkages of MCS with other sub-systems in the organizational control system. This approach believes that, in order to be more effective, the control system should be focus-specific. Since the focus at all three levels of management is different, three different control systems need to be designed to best align with the specific focus. Accordingly, the vision and mission being the focus at the top level, strategic management is the right management orientation, and strategic control would be the right control system at that level. Likewise, implementation of strategy being the focus at the middle level, functional management would be the right management orientation, and (functional) management control would be the right control system.

Physical activities being the focus at the bottom level, task management would be the right management orientation and task control would be the right control system at that level. Thus, the organizational control system is conceived as made up of three sub-systems, viz. the strategic control system, the MCS, and the task control system. Figure 1 depicts those linkages.

Figure 1: Components of Organizational Control and their Interrelationship



Linkages among Strategic Control, Management Control and Task Control

Every organization has to set out a distinct path to be taken to pursue the stated mission. Such a path is termed as strategy. Now given the destination and the path, details of the activities to be undertaken have to be worked out so as to enable the organization to travel on the stated path. However, when an organization is big, and hence the authority to make decisions is to be delegated to many people, it is quite possible that different decision makers may take alternative ways of doing the same thing. If so, there may arise a lot of confusion, and probably may result into chaos. For example, while filling up a higher level vacant post, a manager in one segment of the organization may resort to internal promotion, whereas in the same kind of situation, another manager heading another segment may decide to go for recruiting from outside. To avoid such situations, it is necessary to prepare guidelines on

such important issues to ensure unanimity of action throughout the organization. Such guidelines are designated as policies, which is a package of decisions, and are meant to guide future decisions.

Thus, the mission, strategy, and policy together set out the environment for carrying out the strategy. Here, it needs to be noted that in the modern time, we witness an increasing tendency to designate the sum total of all these three components as only strategy and the action of deciding and reviewing the strategy on the part of the people at the helm of the affairs of the organization is known as strategy formulation or strategic management or strategic control. A corporate strategy can be viewed as a unique value proposition of the corporation that describes its approach towards value creation in terms of either becoming the quality leader through product differentiation or becoming cost leader through process differentiation.

It is obvious that the successful implementation of organizational strategy is a result of the right management processes and the right functional processes. There are two types of inputs going into it: managerial decisions and physical actions. As a result, down the level of strategic control, there are two other levels in the organization. The first one in the line is the management level which mainly concerns with making decisions on what specific things should be done in order to implement the strategy; as also, how, when, where, and by whom those things would be done. The last in the line is the operative level where physical activities (tasks) are actually carried out. Since both - decisions and tasks - have to be controlled for the proper implementation of the strategy, there is a case for management control as well as task control. Management control essentially means the control exercised on the 'management'. Here, the term management stands for all those managers who have the responsibility of reporting to other managers up the line. Thus, one needs to appreciate that management control is exercised by higher-level managers on their subordinate managers. Task control concerns with the regulation of physical activities, which becomes the responsibility of bottom level management.

We want to make few observations regarding the scope of the middle-of-the-roader approach. This approach is broad enough to dismiss all the apprehensions of thinkers like Otley (1999).[5] We find that it is so much broad that it can accommodate all the four levers of Simons (1995).[6] Here, it would be interesting to see as to how the scope of MCS has broadened over years. As noted above, the domain specification depends upon the complexity, which is a function of the size; and it is quite obvious to observe that the average size of organizations is increasing day by day. Probably for that reason we find that gradually

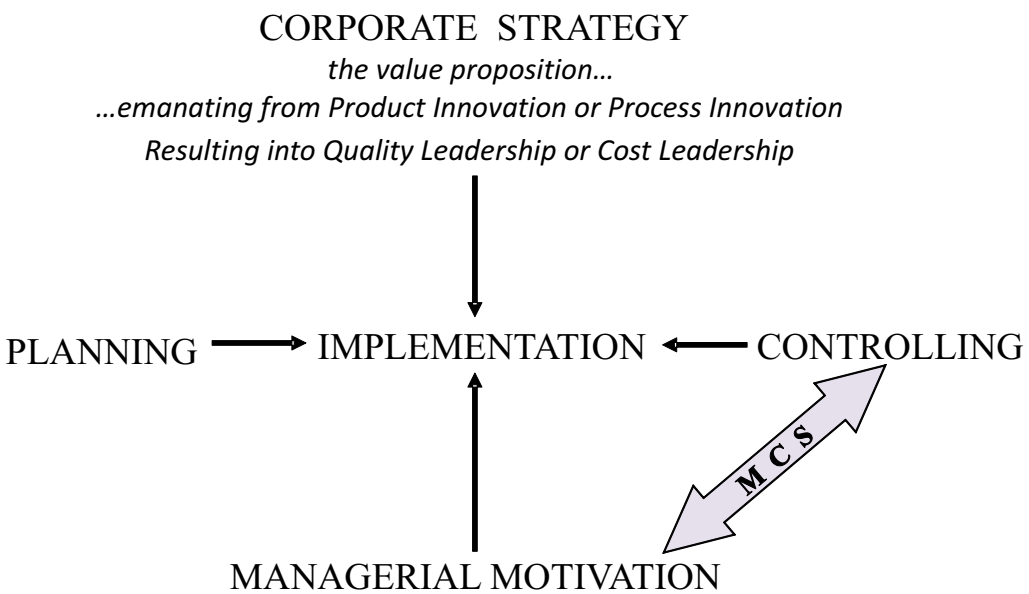
the scope of MCS is getting broadened. Thus, though the prime concern of the MCS continues to be the implementation of the corporate strategy, it is being increasingly recognized that MCS, in turn, also influences corporate strategy[7].

Since this view is more popular in both theory and practice, we adopt it and address the design issues consistent with this domain specification.

System Specification Issues

As noted earlier, MCS basically concerns with the phase of implementation of the corporate strategy. Obviously, at that phase, the crux lies in motivating subordinate managers to carry out the job. The organization has a set of goals, but at the same time, managers who are responsible for proper implementation of the strategy have their own personal goals which, if not aligned with organizational goals, may result into the dysfunctional behaviour of managers described as agency problem in the literature. So the central management control problem in the organizations is to induce the managers to act in such a way that, while seeking their personal goals, they also contribute to the attainment of organizational goals. Thus, ensuring the right managerial motivation is the key to handling the agency problem. Figure 2 shows how, in order to ensure the desired implementation of the corporate strategy, MCS handles the agency problem by way of linking managerial motivation and controlling function with each other.

Figure 2: Role of MCS in Handling the Agency Problem



What to Control?

As a matter of fact, controls can be oriented towards either inputs that go into the process or outputs that come out of the process of strategy implementation. The inputs are in the form of managerial actions and outputs are in the form of two interrelated sets of results, namely, financial results and non-financial results.

Issues in Actions Control: Actions control can be exercised at all three phases in the action process. Accordingly, it can be identified as pre-action control, course-of-action control, and post-action control. Pre-action control imposes the requirements of prior approvals before initiating an action. For example, in all organizations, managers at different levels are delegated powers to spend only up to a specific limit, beyond which they have to obtain permission from their superiors. Course-of-action control is exercised through splitting a particular action into several parts, requiring a particular person to carry out only one part of the task. Such a mechanism ensures that no fraud would be done till all the people assigned the different parts of the work jointly conspire it. Typically, this kind of control can be found in a payment system. Post-action control gets manifested in the accountability of the manager for action taken. As such, a variety of action control measures are available at each of these three phases (Merchant, 1998). Nonetheless, it is not the purpose of this paper to discuss them. The design issue, in this connection, is not one of identifying control measures; rather, it is one of creating the right mix of the measures. Here the systems theory comes to our help. It is quite simple to appreciate that pre-action control and post-action control cannot go together for the same action. By deduction, post-action control needs to be put in place with those and only those actions that are not subjected to pre-action control. Likewise, post-action control in terms of full accountability of the action cannot fully go together with course-of-action control exercised by splitting the action. A control system tends to become dysfunctional when mutually exclusive control measures are imposed simultaneously. So plurality of control measures should be avoided. However, this commonsense is found to be uncommon in practice. On the face of it, several reasons would be assigned by the managers who are responsible for creating such plurality. However, if one goes deep into it, it would not be difficult to find that most of them are only excuses stemming from a lack of understanding of the systems theory.

Issues in Results Control: There are three design issues at the level of results control:

- issue of preparing a right mix of financial and non-financial results
- issue of balancing between short and long-term results
- issue of ensuring goal congruence.

When it comes to designing, these issues prove to be quite interrelated and need to be addressed simultaneously. The design emerging out of that exercise can be called as corporate performance management system (CPMS). CPMS can be conceived as made up of two sub-systems: performance measurement system and reward system.

While developing the performance measurement system, the controller must not forget the axiom that "what is measured is what gets done". Expected results must be unambiguously communicated to subordinate managers. Conventionally, expected attainments used to be stated in terms of financial results. However, it is now being increasingly felt that focusing only financial results proves to be counterproductive because it not only degenerates into the neglect of other non-financial results of interest, but unduly motivates managers to concentrate on short-term results hampering the long term perspective of the organization. Hence the recent thinking is in favour of preparing what is called a balanced scorecard,[8] which recognizes the importance of non-financial results along with financial results, as also the drivers of those results along with the results themselves.

Generally, a top-down approach is taken for developing the performance measurement system. First, at the top level, the whole organization is segmented in terms of different key result areas (KRA); and heads in charge of each KRA are charged with the responsibility for specific financial and non-financial results. Then the heads of each KRA, in turn, charge their assistants with a specific responsibility so as to make them to contribute towards the fulfillment of the overall responsibility of the KRA. This process continues down the line till the bottom level managers are assigned the responsibility to get the task done by the rank and file. This is the point where management control ends and task control begins. In this context, it is important to note the following points:

- The network of KRA provides with what can be called as control structure. Conventionally, a KRA used to be identified for only financial result; which has been popularly known as a responsibility centre in the literature. A centre may be charged with the responsibility for profitability or profit or revenue or cost, depending upon the requirements of control and their feasibility in the given setting. The responsibility

centers are known as investment centre, profit centre, revenue centre, and cost centre according to their responsibility for profitability, profit, revenue, and cost. One of the design issues is that of defining the responsibility of a centre. The same center can be defined as a cost centre or a profit centre or even a profitability centre. This exercise can never be a fool proof exercise, because each centre has its own pros and cons on the motivation of its managers. Further, if the output of a given centre is to be transferred to another centre, and if at least one of the centres is to be identified as either profit centre or investment centre, then the issue of setting the right transfer price would come up. This would have implications on the motivation of managers in both centres. If right transfer prices were not set out, it would result in wrongly crediting one centre and depriving the other centre of its rightful credit for performance. Not only that, but even if the commonly agreed upon transfer prices are not set out on scientific basis, there is a danger that it can result into dysfunctional behaviour on the part of some of the managers. So the precept here is that the network of responsibility centres should be optimized. For each centre, budgets (targets) relating to the responsibility criterion have to be set. As noted earlier, the trend is now in favour of preparing a balanced scorecard to provide the basis for setting financial and non-financial targets for a given responsibility centre (Atkinson, Warehouse, and Wells, 1997).

- In traditional hierarchical organizations, the exercise of designing responsibility centres takes 'top-down approach'. However, since the management control process is influenced, inter alia, by the structure, recent developments in organizational design in terms of formation of interdepartmental teams for accomplishing specific projects would call for a different approach. Obviously, the team would be identified as one of the KRAs. Since teams are formed by cutting across the lines of hierarchies and departments, the functional agenda assigned to the team itself will form the basis for the measurement of its performance.

- The tasks (i.e. physical activities) do not take place always only at the level of so-called rank and file. In fact, at each level in the hierarchy, some tasks always do take place. So it would be more meaningful to conceive the total role of each manager as made up of managerial role and operative personnel's role.

- The whole spirit behind management control is to ensure that managers contribute effectively and efficiently towards the implementation of the corporate strategy and thereby towards the achievement of overall organizational goals. Hence, the scope of management control is not restricted only to measuring performance, and for that

matter, comparing actual performance with required level of performance and then finding faults for non-achievement either with the managers or with the environment. Rather, it is a positive approach of creating an environment that would induce the managers to contribute their level best in ensuring a better and meaningful implementation of the strategy. It needs to be noted that when it comes to the implementation of strategy, as contrasted to carrying out of tasks, purposeful deviation from the planned actions should be looked upon as better compliance rather than deviation. This calls for giving the managers autonomy, which they may exercise within a broad frame of controls, rather than subjecting them to detailed strict controls. Thus, the key lies in balancing empowerment and control (Simmons, 1995). In other words, the managerial function of leading is a crucial component of management control.

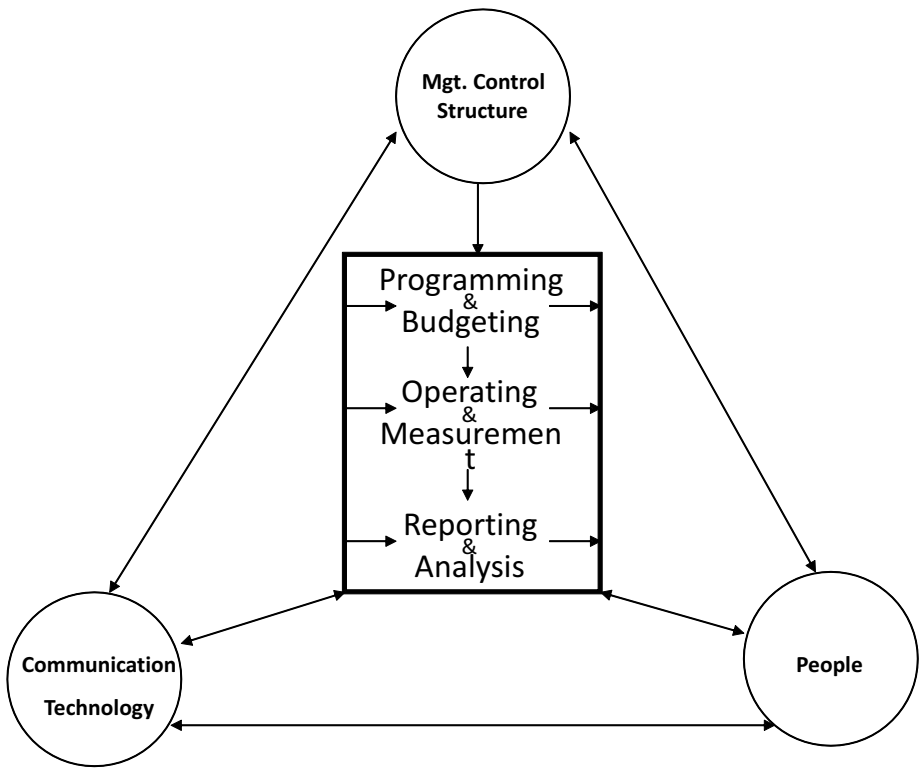
- Last but not the least, it is important to note that in a multibusiness company, the management control system should be expected to contribute to what Burgelman and Doz (2001) call building a complex-strategic-integration capability.

Reward system is another important sub-system in CPMS. While everybody agrees that rewards should be fully linked with performance, the evidence seems to be just opposite. Lack of professional approach of management, lack of integration between management controls and the human resource department, and the culture of casual approach are found to be the major causes, which ultimately drag the managers towards dysfunctional behaviour (Argyris, 1998; Kohn, 1993; Schein, 1999). Thus, the solution lies in ensuring full integration between the two sub-systems in the CPMS. At this juncture, it is important to realize that, for obvious reasons, a complete integration would be utopian. Hence the problem of goal congruence would not be solved till the 'rewarder' (i.e. the owners of the business) and the 'rewardee' (i.e. employees including professional managers) continue to be two distinct parties. So the real question is: Can a system be designed where managerial motivation and, for that matter, goal congruence may be automatic? Probably, yes. If, instead of the superior deciding the reward, the subordinate manager himself is allowed to decide his reward (of course, within the boundaries of the playground), motivation can be automatic. The new movement of value based management (VBM) is exactly focusing at that.[9] Particularly, the Economic Value Added (EVA)[10] measure of VBM is nicely designed to do that job. It basically links the rewards with the value created by a manager or a group of managers, and thereby ensures a full and automatic motivation on the part of the subordinate manager resulting in complete goal congruence.[11]

How to Control

Management control process encompasses three *interactive phases* that ensure the attainment of the desired results and operates within the management control structure by employing proper technology of communication. Figure 3 presents the systems view of the management control process.

Figure 3: A Conceptual Presentation of Management Control Process



Programming and Budgeting: Programming relates to the long range planning of activities within the broad ambit of the grand strategy of the organization. Budgeting is essentially a short-term plan of actions mainly expressed in measurable terms. It is nothing but the detailing of that part of programme that is supposed to be carried out in the ensuing period. Budgets are usually prepared for one year; but are broken down into quarterly or monthly or fortnightly or daily budgets depending on the required intensity of monitoring.

Operating and Measurement: This phase relates to implementation of activities as budgeted in the first phase. It concerns with measurement, i.e. keeping records of the outcomes arising out of the activities being carried out.

Reporting and Analysis: This last phase concerns with reporting the required information on the performance of activities up the line. Superiors compare actual achievements with budgeted expectations, and analyse the deviations, if any, so as to identify persons or other elements responsible for them.

Here, it should be appreciated that a typical management control process is not merely that kind of exercise, which simply extends from the first to the third step sequentially. Rather, as stated earlier, a continuous interaction goes on throughout the process. In fact, as contrasted to the traditional approach of controlling which strived for creating a world of conformists that would be free from the 'curse of deviations' and full of the 'bless of conformation', modern management control philosophy seeks to create through this interactive process a world of reformists that would be free from the 'curse of status quo' and full of the 'bless of creativity'. It is so because, in a given situation, possibly, conforming to the plan may result in ineffective implementation of the strategy, and that deviation from a plan may result in a more effective implementation of the strategy. Further, it should not be forgotten that the management control process takes place as a part of the broader management control system. The process is to be so managed that the dysfunctional behavior, if any, on the part of people may be checked and that they can be made to contribute positively at their fullest capacity to the cause of the organization.

What Type of Controls

This question is nothing but an extension of the question raised in previous section. The communication referred to there may be formal or informal depending on the requirements giving rise to formal controls and informal controls. Informal controls are those that take place outside the formal control structure. Any organization at any point of time will have both; however, the proportion would differ. Generally, a new organization as also an organization that is passing through a phase of significant changes will have more of informal control. The share of formal controls would increase with increase in the stability of the structure and predictability of the environment. However, some amount of informal control will always be present. As a matter of fact, informal controls can create synergy if they are blended properly with formal controls. There is also a risk associated with them: informal controls, if not handled properly can result in confusion and chaos.

How Much to Control

Is any prescription required on this issue? Everybody knows that government, which rules the least, is the best! As such, the more a society civilizes, the more it moves towards self-regulation. So, direct controls should be replaced with indirect controls as far as possible. Practically, the indirect controls mean creating the right environment for self-regulation as contrasted to directly exercising the control. As noted earlier, EVA system has a great potential on this count.

This issue has been examined by many researchers from the perspective of the relationship between strategy and degree of control. Towards that, strategies are categorized into different groups and control prescriptions are made in terms of whether a given group would require tight control or loose control.[12]

While concluding the discussion on system specification issues, it is necessary to point out that the design choices relating to what and how aspects cannot be independent of each other; the design package on the content environment has to be internally consistent.

Conclusion

Alike any other organizational system, MCS would also have the three interacting components: hardware, software, and live-ware. So it has to be designed to provide for purposeful interactions among the organizational structure, or say, control structure, the communication technology, and the people. A good MCS employs both informal and formal control processes. MCS, being one of the three sub-systems in the organizational control system, influences as also gets influenced by the two sub-systems of strategic control and task control.

Designing of an effective and efficient MCS would call for resolving the issues of balancing between alternative approaches: input control versus output control, formal control versus informal control, financial control versus non-financial control, control versus empowerment, etc. Great care is required in resolving them because that will directly affect the initiative and motivation of the managers. The control process should ensure a proactive behaviour on the part of managers. There is every chance that, if not handled properly, the control process may degenerate into reactive and dysfunctional behaviour. Further, it is important to understand that a choice at one front cannot be independent of the choices to be made at other fronts.

Several reasons for the ineffectiveness and inefficiency of the MCS would be assigned by managers responsible for designing the system. However, if one goes deep into it, it would not be difficult to find that, in the ultimate analysis, most of them are only the design issues stemming from either a lack of understanding of systems theory or the neglect of reconciliation of MCS with changes in the control environment of the organization.

Notes

1. This is a common observation across sectors and nations. However, several research-based evidences can be found for it. For example, see R. Kaplan and D. Norton, *The Strategy Focused Organization*, (Boston: Harvard Business School Press, 2001) where three researches are quoted:

   Walter found out from a survey of management consultants that only less than 10 per cent of effectively formulated strategies were successfully implemented. See K. Walter, "Corporate Strategies Under Fire," *Fortune*, December 27, 1982, 38.

   Ernst & Young in a survey of 275 portfolio managers concluded that the ability to execute strategy was more important than the quality of the strategy itself. See Ernst & Young, *Measures That Matter*, (Boston: Ernst and Young, 1998).

   Charan and Colvin asserted that 70 to 90 per cent of strategies fail not because they were badly formulated, but because they were badly executed. For details, see R. Charan and G. Colvin, "Why CEOs Fail," *Fortune*, June 21, 1999, 69.

2. The terms purpose, goal, and mission are used interchangeably in this paper. At the same time, the terms–mission, objectives and targets–are identified to denote the relevant concerns of management, respectively at the three levels of management, namely, top level, middle level, and bottom level.

3. Conventionally, starting with Henry Fayol, the management process has been described by different thinkers in many similar ways that include three major steps of Planning, Implementation and Controlling. However, it needs to be appreciated that controlling is an integral part of 'implementation'. As a matter of fact, the control function has to be performed simultaneously while the implementation is being carried out. Only that can ensure the attainment of the organizational purpose by ensuring that the plan is being implemented in the right way.

4. This statement is based on a survey of literature done by the author. However, Robert Anthony *et al.* championed this view in 1965 which has found widespread acceptance. The title and coauthors have changed over time. Presently, the book is titled as *Management Control Systems*, and is jointly authored with Vijay Govindarajan.

5. Otley argues that though originally developed to broaden the scope of MCS from accounting controls to include behavioural controls, too, for all practical purposes, it would confine to the erstwhile accounting controls only. Fortunately, over a period, this apprehension has not come true. The subsequent write-up makes it clear that the middle-of-the roader framework is truly broad enough to accommodate any developments (like balanced scorecard and EVA) in corporate performance management.

6. As Simons puts it, originated as diagnostic control system focusing only on accounting control, the present day MCS also includes other three levers of control: belief systems that empowers subordinate managers, boundary systems that set boundary for empowered managers, and interactive systems that provides the interface of MCS with strategy by focusing on what he calls strategic uncertainties.

7. An empirical research conducted by Henri (2006) makes interesting observations on how the use of MCS by top management can act as an antecedent to organizational capabilities leading to strategic choices.

8. Readers might find *Harvard Business Review on Measuring Corporate Performance* (Boston: Harvard Business School Press, 1998) as a good collection on Balanced Scorecard and other related topics.

9. As contrasted to what can be called as "Profit Based Management' system that seeks to arbitrarily share profit as bonus with employees, VBM tries to make the employees think and behave like the owner by proportionately relating their reward with shareholder value created. Towards that, many approaches have been developed; however, Economic Value Added (EVA), Cash Flow Return on Investment (CFROI), and Free Cash Flow (FCF) are three prominent ones. Good insights can be developed into the design issues in VBM from two contemporary research-based publications: (i) J. D. Martin and J. W. Petty, *Value-Based Management: The Corporate Response to the Shareholder Revolution* (Boston: Harvard Business School Press, 2000), and F. Boulos,

P. Haspeslagh, and T. Noda, *Getting the Value Out of Value-Based Management: Findings from Global Survey on Best Practices* (Boston: Harvard Business School Press, 2001).

10. EVA is a registered trademark of Stern Stewart & Co.

11. That is why Peter Drucker calls EVA as a factor of total productivity. See P. Drucker, "The Information Executives Truly Need," *Harvard Business Review*, 73, January-February 1995, 54-62. However, the theoretical soundness of EVA would not guarantee an automatic success in its implementation. For example, in J. D. Martin and J. W. Petty, "Value-Based Management," the story of AT&T that adopted EVA in 1992 subsequently discontinued in 1997 is discussed.

12. Three different schemes of categorizing the strategies have attracted the researchers. They are: Miles and Snow's classification on the basis of strategic pattern giving rise to the categories of Defender, Prospector, Analyzer, and Reactor. Porter's classification on the basis of strategic position giving rise to the categories of Cost Leadership and Quality Leadership and Gupta and Govindarajan's classification on the basis of strategic mission giving rise to the categories of Build, Hold, and Harvest. A summary of various studies as also their excellent integration resulting into the prescriptions for tight vs. loose control can be found in M. Kald, F. Nilsson, and B. Rapp, "On Strategy and Management Control: The Importance of Classifying the Strategy of the Business," *British Journal of Management*, 2000, 197-212.

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Testing Cointegration between US and BRICS Stock Markets

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The first evidence of integration of seventeen equity markets with the US market came from a study by Wheatley (1988) and is one of the extensive studies made in this field. He considered a time frame of 25 years (1960-1985). Several studies conducted afterwards also indicate increased evidence of stock market cointegration around the world. The difference in the development and growth stage of various equity markets has increased new investment avenues for investors. While the risk has also increased, a lot due to more globalized financial markets, the possibility of higher returns in emerging stock markets has well compensated the risk in international investment avenues. All this has made it mandatory for investors to find out whether international stock exchanges are cointegrated or not. The risk an investor wants to reduce through the strategy of global diversification may not work if the markets in which the investor has diversified his portfolio are strongly cointegrated with each other. Moreover, how strongly these cointegrated markets will affect the overall performance of a stock market in future crisis is also a matter of concern for policy makers and international investors. In addition

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to evidence of cointegrated international stock markets, there are regional organizations in the world economy which may have meticulous characteristics in their regional stock exchanges. For example, the cointegration of ASEAN, SAARC, BRICS, and Euro Zone stock exchanges can be relatively stronger because regional associations may have more close relations in terms of trade policies, investment policy, and regional cooperation. The correlation in international financial markets is important for international individual investors and international institutional investors. International diversification of portfolio is also used as an investment strategy to reduce even systematic risk.

The benefits of diversification are more fruitful in the long-term and a study of long-term relationship in stock market movement can help in taking better investment decisions. Past studies have documented a strong impact of the US stock market on the movement of other stock markets of the world. A comprehensive study on stock market integration carries a lot of importance. Various Asian economies are among the fastest growing economies in the world and international investors need to understand the trends in stock indices in these stock exchanges. In an urge to multiply the returns, the risk can be many times more than the returns expected if cointegration exists among these stock markets. Therefore, the present study focuses on cointegration in BRIC stock markets.

Literature Review

A good number of studies on financial market integration is related to developed markets. These studies have examined the spillover effects of prevailing cointegration in the developing stock markets. Few studies have examined the co-movement of the Indian stock market with international markets in general and specifically with Asian markets. Some studies have concluded that the association of the Indian stock market with international markets was poor during the entire 70s, but curved around significantly since the early 1990s. A brief summary of these studies is given below.

Rao and Naik (1990) examined the interrelatedness of US, Japanese, and Indian stock markets and found out that the Japanese market acted as an independent factor in relation to US and Indian stock markets. Chan, Gup, and Pan (1992) examined the relationship among the stock markets in Hong Kong, South Korea, Singapore, Taiwan, Japan, and the United States and found that stock prices in major Asian markets and the United States were weak-form efficient individually and collectively in the long term.

Park and Fatemi (1993) examined the linkages between the equity markets of the Pacific basin countries with the US, UK, and Japan markets and found that the US market is the most prominent in comparison to the UK and Japan markets. Australia was found to be sensitive to the US market. Singapore, Hong Kong, and New Zealand were next which were less sensitive to the US market and had less linkage. Blackman, Holden, and Thomas (1994) have suggested that relationships such as these mentioned here were not there before 1980; markets were in motion together after that period.

Sewell et al. (1996) examined five Pacific Rim countries and the US, documenting evidence of varying degrees of market co-movements during the study period. Markellos and Siriopoulos (1997) studied diversification benefits accessible for U.S. and Japanese investors over the period 1974-94 in seven of the smaller European stock markets. Cointegration analysis found that there was no significant common trend. Sheng and Tu (2000) examined the linkages among the stock markets of twelve Asia Pacific countries, before and during the period of the Asian financial crisis, by using cointegration and variance decomposition analysis. Granger's causality test showed that the US market had a dominant role in the sampled markets.

Kumar (2002) has shown that the Indian stock market is not cointegrated with that of developed markets. Mishra (2002) examined international integration of the Indian stock market and found no cointegrating vector between BSE and NASDAQ indices. Darrat and Zhong (2002) studied the linkages between eleven emerging Asia-Pacific markets with US and Japan. They found that the effect of the movements in the Japan market on the Asia-Pacific region was only transitory. Ng (2002) found that the South East Asian stock markets were not in long term relationship. Correlation analyses also showed that they were becoming more integrated. Nath and Verma (2003) analysed three major stock markets in the Asian region – India, Singapore, and Taiwan – to examine the level of capital market integration by studying the transmission of market movements among the sample countries. Their study suggested that international investors could achieve long term gain by investing in these stock markets since they were independent. Bessler and Yang (2003) studied the stock markets of US, UK, Switzerland, Hong Kong, France, and Germany, and found that the US stock market was influenced by innovations in other sampled stock markets. It was also influenced by its own historical performance.

Narayan, Smyth, and Nandha (2004) examined the vibrant linkages between the stock markets of Bangladesh, India, Pakistan, and Sri Lanka by using Granger causality approach. In the short run there were unidirectional Granger causality running from stock prices in Pakistan to India, stock prices in Sri Lanka to India, and from stock prices in Pakistan to Sri

Lanka. Bangladesh was the most exogenous of the four sampled markets. Click and Plummer (2005) concluded that ASEAN-5 stock markets were integrated in the economic sense, but that integration was far from complete. Maghyereh (2006) studied the interdependence among the daily equity market returns for four major Middle Eastern and North African (MENA) emerging markets – Jordanian, Egyptian, Moroccan, and Turkish – and found that none of the MENA markets was completely isolated and independent. Khoon (2008) studied capital mobility in Malaysia with three main trading countries – US, Japan, and Singapore – by evaluating the consumption pattern in Malaysia. Malaysia's annual data for 1960-2000 on real private final consumption was used as a measure of the consumption variable and annual real GDP was used as a measure of the income variable. The results indicated that Malaysia exhibited a substantial amount of financial openness despite periodic exchange controls.

Menon, Subha, and Sagaran (2009) studied the cointegration of the Indian stock market with other leading stock markets such as China, Singapore, US, and Hong Kong using Granger test of cointegration and found that the Indian stock market was integrated with some of the markets around the world.

Gupta and Francesco (2010) studied links between the Indian stock market and three developed Asian markets – Hong Kong, Japan and Singapore – by using cointegration and correlation in order to find out interdependence. They found that correlations mounted dramatically during periods of crisis but returns came to their original level after the crisis blew over. Dasgupta (2012) examined long-run and short-run relationships between BSE Sensex and four key macroeconomic variables – wholesale price index, index of industrial production, exchange rate, and call money rate of the Indian economy – by using descriptive statistics, ADF tests, Johansen and Juselius's cointegration test, and Granger causality test on monthly data from April 2007 to March 2012 for all the variables. All the variables had contained a unit root and were integrated to order one. Granger causality test found no short-run unilateral or bilateral causal relationships between BSE Sensex and the macroeconomic variables.

The current study is a small addition to the growing body of literature on stock market integration.

Methodology

Majority of studies quoted above have reported cointegration of Asian markets with US and UK stock markets. The BRICS nations – Brazil, Russia, India, China, and South Africa – are

found almost at the same stage of development; therefore, a study on the existence of correlation in these stock markets can provide useful information to international investors and policy makers. A long run study needs to be done to identify the impact of cointegration between international stock markets. Therefore, the present study has considered a time period of approximately twelve years. As South Africa became a part of this group only two years ago, we have included only BRIC nations: Brazil, Russia, India, and China. Equity market indices have been used to examine the correlation between stock return movements on the bourses of these countries. All these countries play a significant role in the world economy because of possibility of high growth.

Daily closing prices from January 1, 2001, to June 30, 2012, have been used for analysis. Table 1 shows the indices included in the study.

Table 1: Selected Stock Market Indices

Country	Index	Source
Brazil	IBOVESPO	http://in.finance.yahoo.com/q/hp?s=%5EBVSP
Russia	RTSI INDEX	http://in.finance.yahoo.com/q/hp?s=RTS.RS
India	SENSEX	http://in.finance.yahoo.com/q/hp?s=%5EBSESN
China	SHANGHAI	http://in.finance.yahoo.com/q/hp?s=000001.SS
USA	NASDAQ	http://finance.yahoo.com/q/hp?s=%5EIXIC+Historical+Prices

Instead of taking raw data based on daily closing values of the market proxy, the study has used daily return series of the market proxy based on log-differenced series as under:

$$R_t = Ln\ (C_t/C_{t-1})$$

where R_t = daily return of market index series, Ln = natural log, C_t = closing value of market proxy at time t, and C_{t-1} = closing value of market proxy at time t-1.

The following tests are used:

- *Descriptive Statistics*: The basic tools of descriptive statistics like mean, median, mode, standard deviation, minimum and maximum values, and Jarque Bera tests are used to define the general characteristics of the stock index return series of BRIC countries and the US stock market.

- *Correlation*: Karl Pearson's co-efficient of correlation has been calculated to study the correlation between various stock market indices.

- *Unit Root Test and Johansen Cointegration Test*: A time series data must be stationary if its mean and variance are constant over time and the covariance between two time periods depends only on the distance or lag between the two time periods and not on the actual time at which covariance is computed. The correlation between a series and its lagged values is assumed to depend only on the length of the lag and not when the series started. A series observing these properties is called a stationary time series. It is also referred to as a series that is integrated of order zero or as 1(0). The unit root test checks whether a series is stationary or not. Stationary condition has been tested using Augmented Dickey-Fuller (ADF) test. The ADF test makes a parametric correction in the Dickey-Fuller (DF) test for higher-order correlation by assuming that the series follows an *AR (p)* process. The ADF approach controls for higher-order correlation by adding lagged differences terms of the dependent variable to the right-hand side of the regression. The ADF test has three alternate specifications:

$$\Delta y = \lambda y_{t-1} + \sum_{i-1}^{p} \gamma_i \Delta y_{t-1} + u_t$$

$$\Delta y = \alpha_0 + \lambda y_{t-1} + \sum_{i-1}^{p} \gamma_i \Delta y_{t-1} + u_t$$

$$\Delta y = \alpha_0 + \beta_0 t + \lambda y_{t-1} + \sum_{i-1}^{p} \gamma_i \Delta y_{t-1} + u_t$$

where λ, α_o and β_o are the parameters to be estimated, u_t is white noise or disturbance term, $\Delta y_{t-1} = (y_{t-1} - y_{t-2})$, $\Delta y_{t-2} = (y_{t-2} - y_{t-3})$, t is the time variable or trend variable, To test for stationary, the null hypothesis is: H_o: $\lambda = 0$, And alternative hypothesis is: H_1 : $\lambda < 0$.)

In the present study, all the ADF equations to test the series for stationary have been used. We found that the results are invariant to model specification except minor differences in ADF values. Therefore, only the results of ADF test based on the first equation is presented.

- *Granger Causality Test:* Granger test identifies whether one series has significant explanatory power for another series. The Granger (1969) approach to the question of whether *x* causes *y* is to see how much of the current *y* can be explained by past values of *y* and then to see whether adding lagged values of *x* can improve the explanation. *y* is said to be Granger-caused by *x* if *x* helps in the prediction of *y*, or equivalently if the coefficients on the lagged *x*s are statistically significant. It is important to note that two-way causation is frequently the case; *x* Granger causes y and y Granger causes *x*. Another important thing to note in the case of the Granger causality test is that the statement "*x* Granger causes y" does not imply that *y* is the effect or the result of *x*. Granger causality measures precedence and information content but does not by itself indicate causality.

$$y_t = \alpha_0 + \alpha_1 y_{t-1} + \ldots\ldots\ldots \alpha_1 y_{t-1} + \beta_1 x_{t-1} + \ldots\ldots\ldots + \beta_1 x_{t-1} + \varepsilon_t$$

$$x_t = \alpha_0 + \alpha_1 x_{t-1} + \ldots\ldots\ldots \alpha_1 x_{t-1} + \beta_1 y_{t-1} + \ldots\ldots\ldots + \beta_1 y_{t-1} + X"_t$$

for all possible pairs of (*x, y*) series in the group. The *f*-statistics tests the joint hypothesis for each equation. The null hypothesis is that *x* does not Granger-cause in the first regression and that *y* does not Granger-cause *x* in the second regression.

Results

Figure 1 shows the trends in the daily closing values of all stock indices.

Figure 1: Trends in Daily Closing Values

Table 2 shows the results of descriptive statistics for all stock market indices. The Russian stock market index, i.e. RTSI, and the Indian stock market index, i.e. BSE Sensex, have shown relatively higher mean returns during the study period followed by the Brazilian stock market index series. The volatility is also higher in the Russian stock market followed by Brazil and US stock markets. Except the US stock market index, indices of BRIC counties have shown negatively skewed returns. The spread of returns from minimum to maximum also seems to be wide. This is further supported by Jarque Bera statistics which supports the non-normally distributed stock index series in the case of all international stock markets.

Table 2: Characteristic of Distributions of the Stock Indices

	NASDAQ	Sensex	RTSI Index	Shanghai	Brazil
Mean	7.54E-05	0.000507	0.000829	4.99E-05	0.000443
Median	0.000813	0.001126	0.001746	0	0
Maximum	0.132546	0.1599	0.202039	0.094008	0.079845
Minimum	-0.095877	-0.118092	-0.211994	-0.092562	-0.587853
Std. Dev.	0.016696	0.016268	0.022259	0.016385	0.019767
Skewness	0.106968	-0.107152	-0.484055	-0.123739	-9.190787
Kurtosis	7.973681	10.13448	13.09902	7.16289	273.9629
Jarque-Bera	2984.318	6134.829	12394.19	2094.154	8881784
Probability	0	0	0	0	0
Sum	0.217776	1.46436	2.395793	0.144147	1.280484
Sum Sq. Dev.	0.805326	0.764529	1.431455	0.775586	1.13E+00
Observations	2890	2890	2890	2890	2890

As all international equity indices have shown less than normally distributed returns we next focused on possible linkage in terms of correlation. The Pearson correlation test reported a very low degree of correlation. The Indian stock market showed the highest level of correlation with the US stock market in comparison with other BRIC countries. There was negative correlation between the US and Russian stock markets. Even the Indian stock market was negatively correlated with the Chinese and Brazilian stock markets. Similar results were reported in the case of correlation between the Chinese and Brazil stock markets. Table 2 shows the results.

Table 3: Correlations of Returns of Stock Indices

	NASDAQ	Sensex	RTSI Index	Shanghai	Brazil
NASDAQ	1.00000				
SENSEX	0.06051	1.00000			
RTSI INDEX	-0.049	0.02327	1.00000		
SHANGHAI	0.00082	-0.0197	0.01394	1.00000	
Brazil	0.05082	-0.002	-0.0065	0.03258	1.00000

A study of correlation needs to be further explored through unit root test to find out whether there is any stochastic trend in the financial time series. The test of stationarity is also necessary to determine the model to be used. Moreover, before the application of a test of co-integration, it is necessary that the variables to be examined are integrated at the same level. Table 3 shows the results of the unit root test. The Augmented Dickey-Fuller (ADF) test has been used to see whether a unit root exists in the daily log return series of stock indices. The findings show that the null hypothesis of unit root is accepted indicating non-stationary time series. Therefore the first order log difference has been taken to study the stationarity in the movement of stock indices. As indicated in Table 3, the first order log difference shows stationarity in all stock indices and hence now it satisfies the necessary conditions of the cointegration test. Hence the stock indices are stationary at I(1) and can be said as integrated at same order.

Table 4: Augmented Dickey-Fuller (ADF) Test

	At Log Level		At First Order Log Difference (Δ)	
	ADF Statistic	**Prob.***	**ADF Statistic**	**Prob.***
NASDAQ	-1.62163	0.4713	-24.897	0
SENSEX	-0.92197	0.7818	-25.5617	0
RTSI INDEX	-1.46998	0.5489	-22.5613	0
SHANGHAI	-1.35913	0.6037	-22.8597	0
Brazil	-1.06586	0.7312	-25.6328	0

Exogenous: Constant, Lag Length: 1 (Automatic - based on SIC, Max lag=27)
*MacKinnon (1996) one-sided p-values. Test critical values: 1% level -3.432424, 5% level -2.862342, 10% level -2.567241

Before checking the robustness of cointegration among the sample stock indices, the Engle-Granger cointegration test is applied. In this test if two variables are found cointegrated these variables will certainly have some long term relationship or equilibrium. As discussed above, the variables taken in the present study are stationary and integrated or order I(1). According to this test, even if an individual series is non-stationary, a combination of two or more series can be stationary. To examine this, the unit root test is applied on the residuals obtained between two series through ordinary least square (OLS) regression. The non stationary series of NASDAQ is regressed on Sensex and residuals are obtained. These residuals are tested for unit root through the Augmented Dickey-Fuller Test. Other combinations are similarly examined. The existence of stationarity in the residuals of various combinations shows integration in the time series. The results summarized in Table 5 show that there is strong evidence of bivariate cointegration between the US and BRIC stock markets.

Table 5: Results of Bivariate Cointegration Test

	Unit Root Test in Regression Residuals ADF		
	t-statistic	**p-value**	**Critical values**
NASDAQ- SENSEX	-41.6402	0	-3.43242 -2.86234 -2.56724
SENSEX- RTSI INDEX	-49.8725	0.0001	-3.43242 -2.86234 -2.56724
RTSI INDEX-SHANGHAI	-48.6912	0.0001	-3.43242 -2.86234 -2.56724
SHANGHAI- Brazil	-53.5611	0.0001	-3.43242 -2.86234 -2.56724
Brazil- NASDAQ	-54.1982	0.0001	-3.43242 -2.86234 -2.56724

Granger-Causality Test

After studying the cointegration among the equity market indices of BRIC and US, the Granger Causality test will help identify the degree and direction of this relationship. Therefore a pair wise test of causality has been conducted. This test identifies whether a significant relationship exists between the two series and states the explanatory power of one variable for the other variable. It studies the null hypothesis that there is no Granger causality. In Table 6, we find several instances of two-way causality. There is strong evidence of two way causality in the US market and Indian markets. This two way causality was also noticed in the case of the Indian stock market and Russia and for the Russian and Chinese stock markets. No other evidence of two way or one way causality was found during the sample period.

Table 6: Pair-wise Granger Causality Tests

Null Hypothesis:	Obs	F-Statistic	Prob.
SENSEX does not Granger Cause NASDAQ	2882	3.42807	0.0006
NASDAQ does not Granger Cause SENSEX		3.3135	0.0009
RTSI INDEX does not Granger Cause NASDAQ	2882	0.98013	0.4494
NASDAQ does not Granger Cause RTSI INDEX		1.7958	0.0732
SHANGHAI does not Granger Cause NASDAQ	2882	1.17266	0.3116
NASDAQ does not Granger Cause SHANGHAI		1.5559	0.1329
NASDAQ does not Granger Cause BRAZIL		0.49618	0.8597
RTSI INDEX does not Granger Cause SENSEX	2882	1.87787	0.0592
SENSEX does not Granger Cause RTSI INDEX		2.34539	0.0164
SHANGHAI does not Granger Cause SENSEX	2882	1.5955	0.1208
SENSEX does not Granger Cause SHANGHAI		0.819	0.5857
BRAZIL does not Granger Cause SENSEX	2882	1.47134	0.1623
SENSEX does not Granger Cause BRAZIL		1.15827	0.3208
SHANGHAI does not Granger Cause RTSI INDEX	2882	2.95929	0.0027
RTSI INDEX does not Granger Cause SHANGHAI		1.9411	0.0501

BRAZIL does not Granger Cause RTSI INDEX	2882	0.82135	0.5836
RTSI INDEX does not Granger Cause BRAZIL		0.40778	0.9167
BRAZIL does not Granger Cause SHANGHAI	2882	1.41443	0.185
SHANGHAI does not Granger Cause BRAZIL		0.76514	0.6337

Johansen Cointegration Test

The tests described above have given evidence in favour of bivariate cointegration. A test needs to be conducted to examine whether all five equity stock indices are cointegrated or not. Johansen's cointegration test is used to study the multivariate cointegration in the time series.

Table 7 has summarized the results of trace statistics. As given in the table, the null hypothesis is rejected when it is hypothesized for no cointegrated equation. As the *p* value is zero, the null hypothesis is rejected. In the case of a test for cointegration the null hypothesis states that there is no cointegration among the variables. Hence trace statistics indicates the presence of multivariate cointegration at five per cent level of significance. The null hypotheses for other hypothesized cointegrated equations are accepted as *p* values are more at five per cent level which further proves the existence of cointegration. Therefore, the trace statistic supports long run association or cointegration in the US and BRIC stock markets.

Table 7: Cointegration Tests

	Eigen value	**Unrestricted Cointegration Rank Test (Trace)**		**Unrestricted Co integration Rank Test (Maximum Eigen value)**	
Hypothesized No. of CE(s)	**Eigen value**	**Trace Statistic**	**Prob.****	**Max-Eigen Statistic**	**Prob.****
None *	0.024507	119.0547	0	71.60875	0
At most 1 *	0.007533	47.44596	0.0546	21.82284	0.2296
At most 2 *	0.005729	25.62313	0.1403	16.58047	0.1927
At most 3 *	0.002619	9.042658	0.3614	7.567576	0.4244
At most 4 *	0.000511	1.475082	0.2245	1.475082	0.2245

Trace test indicates 5 co integrating equations at 0.05 level, Max-eigenvalue test indicates five cointegrating equations at 0.05 level
* denotes rejection of the hypothesis at 0.05 level
**MacKinnon-Haug-Michelis (1999) *p*-values

The Max-Eigen statistics also reports the same results. The null hypothesis is, therefore, rejected at five per cent level indicating existence of long run cointegration in the US and BRIC stock markets.

Conclusion

Major implications arising from the study are:

- It is not the US stock market alone which has an influence on the BRIC stock exchanges but the Indian and Brazilian stock markets also significantly affect the movement in the US stock market.
- Each pair-wise combination of five markets considered in the present study has some common trends and it leads to some predictable trends in all five stock markets.
- An international investor can forecast the trend in one of these five markets to some extent even if he is investing in some other stock market out of these five.
- Because all stock markets are cointegrated with each other, therefore some deviation in the trend of one market will not last in the long term market scenario.
- The difference in the time-zone of all these markets further gives the forecasting capacity to international investors. As there is time gap in the opening and closing of all five markets, international investors can strategize their investment decisions based on upside and downside movements.

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Development Interventions in Food Processing Clusters: Case of Sindhudurg Cluster in Maharashtra

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The food processing industry in India is currently facing numerous problems. Some are lack of paucity of backward and forward linkages, unorganized and small scale units, poor competitiveness, underdeveloped domestic machinery, lack of cold storages, low level of integration in the supply chain, acute shortage of skilled labour, etc. The Ministry of Micro, Small and Medium Enterprises (MSME) has adopted the cluster-based approach for enhancing the competitiveness of small enterprises. In recent years, the ministry has supported area-specific agrofood clusters, establishment of common facility centres, set up quality testing and certification labs on public private partnership (PPP) basis, and provided access to finance through financial institutions. The Sindhudurg Food Processing Cluster has adopted some of these development interventions and provided entrepreneurial support to women entrepreneurs. The Konkan Nisarg Manch (KNM), a local social enterprise, is the implementing agency in the Sindhudurg cluster. Bamboo products, rural business process outsourcing (BPO), fruit processing,

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and homestays are major portfolios of KNM. It also promotes rural tourism, agricultural business, environment, green energy, and rural services.

Sindhudurg Cluster

Sindhudurg district in Maharashtra is famous for fruits such as kokum, mango, cashew, *amla,* and pineapple. The Khadi and Village Industry Commission (KVIC) commissioned SFURTI[1] scheme in the cluster in November 2007 which concluded in March 2012. In a span of five years Rs 87 lakh was spent in the cluster. Nearly 800 micro entrepreneurs, mainly women, were supported in cluster activities. Many facilities were created in the cluster such as common facility centre, processing, packaging and storage, food processing laboratory, skill building of artisans, product diversification, and market promotion. A Cluster Development Executive (CDE) was deputed to facilitate backward and forward linkages and undertake monitoring.

Constraints in the Cluster

Prior to 2007, the cluster had faced problems such as higher duties on packaging material, lower capacity utilization, non-adoption of cost-effective technology, scarce financial support, infrastructural constraints and inadequate farmer-processor linkages. Difficulties were experienced at four stages. Firstly, the processing was a seasonal activity and processors were unskilled and unorganized. Secondly, at *processing* level, problems such as unhygienic practices, poor infrastructure, and deficient technical skills were noticed. Thirdly, inadequate working capital and reluctance of financial institutions to extend credit was marked at *finance and social* level. Lastly, poor product marketing, poor product diversification, tough competition with other similar products, and unattractive packaging were noticed at *marketing* stage.

Operations

Most of the producers in the cluster were engaged in kokum, mango, cashew, and other fruit processing activities. Self-help groups carried out credit and thrift activities and used savings as seed money for processing activities. The self-help groups were strengthened through better technical knowledge, creation of additional work, surplus income through better productivity, and better access to credit from financial institutions. The beneficiaries, termed as micro entrepreneurs, mainly used family members for production work.

Support of Institutions

Various institutions in the district lined up support for promotion of cluster activities. Institutions facilitated capacity building, provided short term credit, lent margin-money assistance, and subsidy, and provided technical guidance. NABARD promoted self-help groups and financed local banks for extending credit to micro enterprises. The Sindhudurg District Central Cooperative Bank provided short-term credit to farmers and promoted 600 SHGs; of which 40 were into fruit processing. Union Bank of India, Bank of Maharashtra, and urban cooperative bank provided working capital loans to the food and fruit processing units. The Ratnagiri Sindhudurg Cooperative bank financed fruit processing units under small business strategy. The employment Guarantee Scheme, the Department of Agriculture (DOA) provided subsidy to farmers for cultivation of mango, kokum, cashew jamun, and amla. The District Rural Development Agency (DRDA) promoted self-help groups comprising members of below poverty line. DRDA supported the training programme for beneficiaries and participation in trade fairs. It also provided loans up to Rs 2.5 lakh with fifty per cent subsidy for processing and trading activities. The District Industries Centre (DIC) encouraged applications from small scale industry units for financing under the Prime Minister Rojgar Yojana (PMRY)[2] scheme.

Product Value Chain

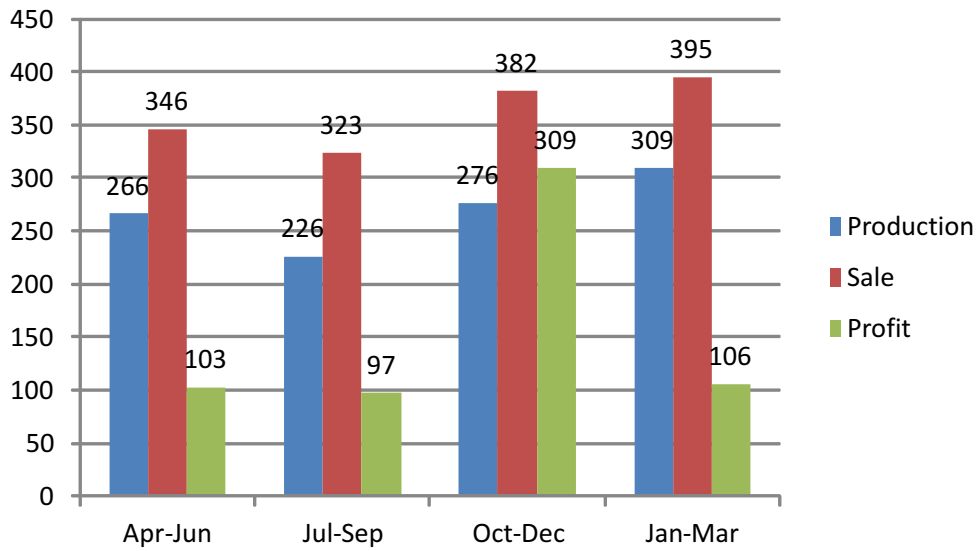
A value chain is a chain of activities to deliver a valuable product for the market. The value chain of the product moved through various stages. The selection and grading of fruits was followed by processing, washing, cutting, peeling, seed separation, soaking, drying, pulping, and filtering. Thereafter, packaging activities took place. In the last stage sale and distribution activities were undertaken.

Production and Sale

We have analysed the production and sale figures to assess how the business units have fared. Figure 1 shows that production in rainy season (July–September) declined but increased in remaining periods. Similarly, sale increased in all quarters barring rainy season. Most important, production increased significantly during festive season (October-December). All three indicators of business – production, sale, and profits – have shown an upward trend throughout the year barring rainy season.

Figure 1: Production, Sale, and Profit of Micro Entrepreneurs (2010-2011)

(Rs in lakh)



Note: The above figures include both the Prime Ministers Employment Guarantee Programme entrepreneurs and self-help group members. The former are business units supported under the PMEGP scheme of KVIC.

Achievements in Cluster

Systematic cluster interventions resulted in various physical and non-physical achievements. Some of these are summarized.

Common Facility Centre (CFC): Infrastructure is one of the critical areas for business development. In the context of food clusters, facilities like processing centre, storage space, training centre, and sales outlets are essential. A large CFC has come up in an area of 800 square metres in the cluster. Sophisticated processing equipments such as kokum cutting machine, mango pulp machine, boiler, water tank, baskets, buckets, dryers, vessels, and kokum percolator have been installed. Processing, packaging, weighing, storage, and testing facilities are offered in the CFC. The Maharashtra Industrial Development Corporation (MIDC) has leased the land for CFC. The users of CFC mostly avail packaging, drying, cutting, and boiling facilities. Barring rainy days, CFC is used 8 to 10 times in a month. Maximum use is reported during summer months.

Improved Productivity: The annual turnover of the enterprises rose to Rs 110 crore in 2011. Working days of women beneficiaries increased from 90 to 170 annually and daily income rose from Rs 30 to Rs 55. The micro entrepreneurs' productivity has also increased through use of machinery. The value of products increased by improved processing, diversifying, and packaging.

Decentralized CFCs: Decentralized CFCs have come up at taluka places in the district. Kankavali, Kudal, Vengrula, and Malvan were selected for setting up decentralized units. A group of twenty self-help groups availed benefits from each unit. Machines such as dryers, weighing machines, jackfruit cutting machines, chilling machines, sealing machines, frying pan, cylinders, and mango cutters were supplied to each unit. The decentralized CFCs have been beneficial in many ways.

Testing Laboratory: Testing laboratories are essential in food processing. They check adulteration of various kinds: chemical, physical, or microbiological. In the cluster food testing laboratory has equipment worth Rs 2 lakh. Testing facilities of pH[3] (power of Hydrogen), brix[4], texture, appearance, moisture, consistency, temperature, viscosity, salt analysis, and toxic shock syndrome (TSS) are offered. Brix and pH tests are popular among users. A food technologist is engaged for all technical purposes.

Product Diversification: The liberalization of the economy and rising consumer prosperity have thrown up opportunities for diversification in the food processing sector. Considering the market demand, the implementing agency has developed eleven major products and 38 sub-products. The major products are kokum (kokum concentrate, kokum syrup, kokum cold drink, kokum amsol, kokum toffee), mango (mango roll, mango toffee, mango pulp, mango papad), cashew (cashew modak, cashew burfi, sweet cashew, cashew kernel), jackfruit (wafers, toffees, papads, ragi (noodles, papads, malts), pineapple (papads), jamul (toffee, papad, syrup, juice), amla (supari, mava, morwala), and rice items (dehusked rice, rice papads). The implementing agency is planning to introduce dehydrated vegetables soon.

Product Marketing: The growth of the economy has positively impacted the food and agriculture market in the country. Market promotion activities of the implementing agency include personal selling, advertisements, sales promotion, direct marketing, and publicity. The promotional plan hosted to enhanced sales, new product acceptance, brand equity, product positioning, and competitive marketing. Propagation of items produced by women entrepreneurs and assurance of quality products formed an important marking strategy.

The implementing agency has opened sales units in Mumbai and taluka headquarters, organized awareness camps, buyer-seller-meets, and exposure visits for micro entrepreneurs. Micro entrepreneurs participate in exhibitions in large numbers. The agency pointed the dearth of working capital as a major impediment to augment the sale. The name of the programme SFURTI, coined by the Government of India, is proposed to be used as product brand. A colourful product catalogue depicting all the products and sub-products is in circulation.

Capacity Building of Micro Entrepreneurs: Constant inputs of training and capacity building are required to make the micro entrepreneurs more competitive in the market. The implementing agency organized three types of training: skill development, hands-on training, and skill upgradation. Special focus was placed on drying, processing, preservation, value addition, preparation of concentrates, packaging, labelling, operation of processing equipment, hygienic productions, good manufacturing practices, compliance to ISO, FAO, and HACCP[5] standards, and basic maintenance of equipment.

Formation of Producer Company: The micro entrepreneurs have moved from self-help groups to consortiums and producer company. The producer company is an organization where the producers form an autonomous association to meet their economic needs. As collectives, the producers manage enterprises related to procuring, processing, and retailing of produces.

The producer company has been incorporated under the Limited Liability Partnership (LLP) Act of 2008 under the banner of Sindhu SFURTI Natural Foods and Beverages. This brings in professional expertise and entrepreneurial initiative to operate efficiently. Moreover, LLPs are preferred vehicles of business for small and medium enterprises, particularly in the service sector. This is not somehow suitable for cluster based producers in India. Most of the producer bodies have been incorporated in India under the Cooperative Societies Act, the Company Act 1956, or the Society Registration Act 1860. These are more suitable acts for the cluster development and larger participation of producers. Moreover, the Income Tax Act does not recognize LLP firms for tax concessions. Thus, the partnership firm will not be entitled for tax benefits. High tax on the firm may be a burden for producers.

Twelfth Plan Strategies for Cluster Development

The working group report (Government of India, 2011) for the twelfth five year plan has spelled out four objectives for food cluster development. They are: poverty alleviation,

productivity improvement, financing of enterprises and innovation infusion. The report emphasizes that clusters should aim at 'inclusive growth' and recommends several interventions for cluster development.

Proper Location of Cluster: Food processing clusters should be located considering raw material availability, labour availability, product utilization, and avenues for domestic and export marketing.

Demand Driven Strategy: Cluster strategies should be demand driven and developed through a bottom up approach. Networks among business membership organizations (BMO) such as industry associations, cooperatives, and special purpose vehicles facilitate cluster growth.

Hand Holding Support for BMO: In many cases, BMOs are too weak to build institutions. Therefore handholding is needed to develop marketing, technical, financial, and managerial aspects of BMO.

Seek Contribution from Cluster Stakeholders: Clusters should secure contributions from beneficiaries, marketing agents, input suppliers, state governments, industries, and local resource persons. The report recommends retaining the present funding pattern of allocating 75 per cent as grants-in-aid and limit the budget to Rs 60 crore and industries contribution at a minimum of 15 per cent. The report emphasizes that grants should be utilized for improving productivity and 25 per cent for basic amenities. The Department of Industrial Policy and Promotion (DIPP) should formulate projects and undertake handholding of SPV through Project Management Consultants (PMC). The PMC should identify potential projects and develop framework for interventions.

Address Working Capital Problems: Financial institutions perceive food processing industries as having long gestations and low returns. Banks lack expertise to assess food processing projects and are reluctant to take risks. Thus, development of local structures to link clusters with banks is imperative.

Enhance Bargaining Power of SHGs: Micro enterprises have poor bargaining capacity with their buyers, suppliers, service providers, and SPVs. A marketing support through self help groups and bringing unity among micro entrepreneurs through cooperatives could be an option. Similarly, marking activities through self help groups can be considered.

Integrate Marginal Players: In many cases, clusters have not integrated the local service players and are largely non-inclusive. Different strategies need to be evolved to include marginalized groups. Their requirements may be different compared to the dominant players. They need a greater hand-holding support in obtaining credit and marketing support. Cluster managers need to ensure participation of SC, ST, minorities, and women in cluster activities, and focus on productivity and wage improvement of artisans.

Enhanced Role of Aggregator: The role of an aggregator, who integrates all stakeholders, has to be clearly defined. Industry associations and NGO can play the role of aggregators. The aggregator should be part of SPV or the implementation team in a cluster.

Alternative Financing Mechanism: The development of clusters of micro enterprises has not taken place because of poor institutional finance. In today's scenario institutional funding is generally unit – specific, comprising artisans or micro units. There is need to develop alternate mechanisms of funding. It could be through SHG credit cooperatives or service provider groups. Cluster based financing and implementation of such models in collaboration with financial institutions can be considered.

Linkage to Institutions: Each cluster should be linked to a financial institution, a training institution, and an accredited institution for testing and product innovation. Clusters should be associated with diagnostic studies and during execution of interventions. Such linkages will ensure financing to clusters, facilitate technology improvement, and facilitate enhanced competitive positions.

Brand Protection through Geographical Identification Act: Brand protection through geographical identification marks ought to be developed for cluster products. Product registration under the act provides protection to registered brands. Chanderi sarees and Bikaner bhujia are all registered to avoid future possibility of copying of products by other agencies.

Conclusion

The Sindhudurg cluster is an example worthy of emulation. Identification and dissemination of best technical practices in the cluster has empowered the economic agents. The cluster has obtained ISO certification 22000 which integrates the principles of the HACCP system and application steps. Implementation of innovative ideas such as product wise decentralized CFC, area development for kokum cultivation, and credit linked assistance will throw up

more livelihood opportunities. The entrepreneurs supported under PMEGP[2] scheme have been successful. On the other hand, SHG units are still struggling to make a mark. All self help groups need constant monitoring and support for production and marketing. Infrastructure has been created in the cluster. However, production and productivity of the micro entrepreneurs are far from satisfactory. More production activities should be created for micro entrepreneurs. Again, the LLP Act is new to India. We are yet to see the benefits of the act for illiterate and unorganized producers.

This cluster has received citation for best SFURTI unit in the western zone and has been declared as Innovative Industrial Cluster (IIC) by the Government of India. Declaring this cluster as "virtual cluster" by the Ministry of MSME is still under consideration.

Some recommendations for the development of cluster are as follows.

Product wise CFC: Creating a separate product-wise decentralized CFC with backup support for standardization, packaging, and branding will be beneficial for the cluster. These additional facilities would cater to the need of new entrepreneurs and help the small and medium industries to upgrade the scale. The Special Purpose Vehicle Sindhu Sfurti Natural Foods and Beverages Limited Liability Partnership (SSNFBLLP) can be roped in for implementation of activities.

Retail Business: Profitability of the company is essential for its sustenance. Profitability will be ensured by creating own retail business. The implementing agency's dependence on existing retail chains is not helping the cluster owing to cornering of profits by the middlemen. Several hurdles for creating a retail chain remain. The implementing agency can mobilize credit from financial institutions and grants from government agencies setting up a retain chain.

Agro Export Zone (AEZ): The Government of India has set up an agro export zone (AEZ) for Alphonso mango in Sindhudurg district. It aims at comprehensive growth of mango in Konkan region by developing new cultivation techniques, packaging, and export. There will be an end-to-end approach of integrating the entire process from cultivation to consumption. The Maharashtra State Agriculture Marketing Board (MSAMB), the nodal agency for Alphonso mango, has proposed to develop the zone on public-private-partnership mode.

Declare Area Development for Kokum: Kokum (*Garcinia Indica*) is a staple item in Konkan region. Kokum syrup, pickle, juice, and pulp are by-products of kokum. Kokum cultivation includes scientific cultivation, post harvest handling, drying of fruits in hygienic manner, and

semi processing. The estimated output of the fruit is 12500 MT and only 30 per cent of the fruits are processed on account of short harvesting span. The state government or KVIC may promote kokum by-products. Standardization and specifications for kokum by-products will enhance product marketability.

Kokum Butter Extraction: Kokum seed butter, a local recipe, has high demand in the market. At present, it is extracted in crude manner using traditional methods. The product needs to be processed using modern technology. Kokum oil is used in many medicines and cosmetic creams.

DRDA Support for Mango and Cashew Processing: DRDA in Sindhudurg district is implementing a special Kokum Development Project (KDP) for BPL families. Besides kokum plantation, processing of kokum fruits in centralized processing units is envisaged. Kokum processors have formed a kokum network to undertake processing and marketing of kokum syrup under a new brand. DRDA is establishing linkages with women groups for semi-processing of kokum fruits. On similar lines, DRDA should extend facilities to groups engaged in mango and cashew processing.

Bigger Role for Government: The role of the Government of India is confined to funding support and monitoring of programmes. It can undertake a much bigger role in the cluster by establishing linkages between producer company and banks, strengthening institutions that offer specialized skills for competitiveness, and removing entry barriers in business. It is widely felt that the implementing agency is not performing these activities.

Working Capital during Harvesting: As per the diagnostic survey report in mango pulp processing raw material constitutes 50 per cent of the total processing cost, while packaging constitutes another 34 per cent. The cash flow requirement of one unit is Rs.8 lakh and the district has thirty processing units (DSR 2008).

Financial institutions should provide working capital to fruit processing units at least during the short harvesting period. Besides micro entrepreneurs, SHG engaged in fruit processing also need working capital. Banks should come forward to extend credit facilities to the entrepreneurs for the short period, relatively especially to commercially viable units.

The cluster needs working capital to scale-up business. Banks are reluctant to provide loans owing to not-for–profit status of the implementing agency. CFC has come up in a leased government land and properties of CFC are hypothecated to KVIC. These factors are preventing the banks from extending loans. The agency can help allay the fears of the banks.

Quality Packaging: Institution such as the Indian Institute of Packaging (IIP) should be roped in for quality packaging. The Export Promotion Council (EPC) can also ensure quality packaging and export marketing.

Tetra Packing of Juice Items: Tetra packing of juice facility will create many micro industries in the cluster. The producer company is trying to develop tetra packing for juice items. Support is being generated from financial institutions.

Mango Ripening Chamber: Mango is a major horticulture crop in the cluster. Mango growers in the cluster ripen of the mangos through use of chemicals. Ripening chambers to ripe mangos at controlled temperature are needed. Setting up of sterilized pulping units and value addition will generate employment opportunities.

Commercial processing of fruits and vegetables is not conducted in large scale. The meagre domestic consumption of processed items is mainly because of economic reasons and existing food habits. Indian consumers usually prefer fresh vegetables. The domestic market is limited to hotels and restaurants. The household sector consumes mainly ready-to-serve beverages. Considering all these factors, the producer company must diversify the products range and target hotels and restaurants for marketing. Moreover, interventions such as demand driven strategies, handholding support for business membership organization, enhanced bargaining power of producers, integration of marginal players, alternative finance mechanism for clusters, and linkage to facilitating institutions will help in strengthening food processing clusters.

Notes

[1]Scheme of Fund for Regeneration of Traditional Industries (SFURTI) is a programme of the Ministry of Micro Small and Medium Enterprises (MSME), Government of India. The objective is to provide employment to rural artisans and improve their economic conditions with the help of SFURTI programme.

[2]Prime Minister's Employment Generation Programme (PMEGP) is a credit linked subsidy programme of the Government of India. It has been introduced by merging the two earlier schemes, namely, Prime Minister's Rojgar Yojana (PMRY) and Rural Employment Generation Programme (REGP). The scheme was launched on August 15, 2008.

[3]pH of a substance is a measure of its acidity or alkalinity expressed in the concentration of hydrogen ions.

[4]Degrees Brix (symbol °Bx) measures is the sugar content of an aqueous solution.

[5]HACCP: Hazard Analysis and Critical Control Point.

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Service and Brand Design: A Case of Shaadi.com

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Sunita Guru**

"To provide a superior matchmaking experience by expanding the opportunities available to meet potential life partners"

Anupam Mittal, Chairman and Managing Director

The success of Shaadi.com as a service brand is based on the path-breaking innovations which recognized cultural and social needs and married (pun intended!) it to the revolution in information technology. Shaadi.com is an Internet-based matrimonial service provider which recognized the ability of the Internet to provide a platform for networking. It established an all-India network where people met, got to know each other with the intention of getting married. It was the first Internet-based service provider to enter the market and had the advantage of first mover. But now the market is getting crowded with various new entrants such as Bharatmatrimony.com, Jeevansathi.com, Simplymarry.com, etc. Changes in the competitive environment has diluted its first mover and innovator's advantage and, to maintain the number one position, it has to move to the second set of innovations based on emerging cultural and social needs from marriage.

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Culturally as well as socially, to marry is of utmost importance in one's life. In India, marriage is believed to be a sacred event and is considered to be a significant activity. Indians consider marriage as a lifelong relationship and intent to stay together all throughout their lives. Divorce is discouraged in Indian culture.

Thus, we get only one chance to marry and we have to be right in the choice of our partner. Therefore for reducing risk and for a successful marriage what is required is a plethora of choice of potential partners.

Marriage: Traditions and Modernity

Once a person reaches 'marriageable age', there is tremendous pressure on him/her to get married. Marriage and birth of a son are possibly the most significant events in the life of an individual in India. Indian culture is family centric and starting of family through marriage has not only familial significance but also communal, social, and religious significance. There are various religious rituals which can not be undertaken unless one is married and is accompanied with the spouse. Even in the liberal metropolis of Mumbai bachelors find it difficult to get a house on rent. This critical significance has made marriages universal in India. Almost all Indians get married, tend to get married early, and remain married for long. Socially and religiously there is no sanction for divorce. Rather marriage is supposed to be "*bandhan saat janmo ka*". According to the Indian census 2001, the average age at marriage is 22.6 years for males and 18.3 years for females. Rural communities have high degree of marriage universalism and sanctity for marriage. As one moves from the village to cities, mini metros and metros of India there is visible decrease in the universality of the marriage and its sanctity. But in spite of this relative decrease in the urban India, the importance of marriage remains high.

Traditionally marriage was not the responsibility of the individual who wanted to get married; rather it was the responsibility of the family, kinship groups, and community. The least involved person in 'fixing the match' is the prospective bride or groom. Because of strict separation of sexes (still strictly observed in rural societies) prospective partners were not allowed to meet before marriage. Marriage used to be largely an affair to be fixed by the family. This strict separation of sexes has eased of late and prospective partners are allowed to meet each other, especially in urban India. But intimacy before marriage remains strictly prohibited. Separation of sexes is a general norm of society and any kind of friendship with the opposite sex is looked down upon. The degree of social sanction of premarital friendship

and courtship differs from place to place. Villages and small towns have strict social norms against any degree of intimacy between members of opposite sexes. Therefore, families play an important role in getting young men and women married. Families start worrying about the marriage of the person the moment he/she attains marriageable age. As the age progresses not only the intensity of worry increases but its spread also increases, more so if the person is a woman. In the patriarchal society of India, having a woman who has crossed the marriageable age and is spinster is considered to be a matter of shame not only for the family but also for the larger kinship group and the caste to which the family belongs.

Universalism of marriage in India is accompanied by the strict, multilayered, and complex rules for getting married. Caste still plays an important role in marriages. Indians tends to obey the rules of caste endogamy and sub-caste and gotra exogamy. They prefer to marry within their own caste but outside of their sub caste and gotra. This makes a large number of otherwise eligible persons for marriage ineligible. Further, castes are spread within a given geography. So if one has to marry within his/ her own caste he/she will have to search within a given geography. Geographical limitation is also because the tendency of people getting married within the same language group. Other than these there are astrological factors (like manglik) which influence selection of bride or groom. Another match-making criterion is the social standing of families and earning capacity of the boy and beauty of the girl. Nowadays occupational status of girls has also emerged as one of the match making criteria although search for 'milky white complexion' has not decreased. These complex rules of marriage makes very difficult to find bride/ grooms.

In this arduous task of finding a mate, assistance was sought from family priest and relatives from the extended family who used to keep a watch for a suitable boy or girl.

This traditional way of finding a suitable spouse for one's offspring became problematic because of industrialization, migration, and urbanization. When people migrated from their traditional settings, they left behind the support structures provided by extended family, kinship groups, and community. It became a challenge to find a partner of the same caste where that caste was not situated. For example, it will be challenge to find a Kaystha match for one's son in Thiruvananthapuram. Match-making is especially difficult for non-resident Indians who find it difficult to obey the caste and gotra rules in an alien land. But these rules are so deeply ingrained that they are part of the collective unconscious which one obeys automatically.

Getting married is essential in India but not so easy.

Shaadi.com

Shaadi.com, the world's oldest and most successful matrimonial service, was founded by Anupam Mittal in October 1997. Mittal was not exactly a novice in the ways of business. His father owned a textile mill and the son had been helping him in the business. Mittal launched his first company for manufacturing and exporting cotton to Germany. He lost a great deal of money in the business. He realized that he still had to learn and went to Boston to do an MBA. When he was on a short visit to Bombay in 1997, he found India in the middle of Internet boom. The telecommunication sector was expanding to all corners of India. The yellow colored STD/ISD booths were almost ubiquitous. Internet was riding on the back of this telecommunication revolution. Everywhere in India, people were discussing the business potential unleashed by the Internet and dotcom was raze. It was obliterating all the boundaries in doing business. Keen to enter a growing business, he started Satyam and Solutions, a technology company which helped other people to get on the net.

During the same visit, Mittal met a marriage broker and got fascinated by what he did and how he got marriage fixed between two persons willing but unknown to each other. The professional match maker was the nodal point of a network of prospective brides and grooms and their families. He realized that this match making pundit could be replaced by the Internet. Not only this, the Internet would be able to free the whole process of getting married from the inefficiencies which were built in the traditional system. He conceived Shaadi.com as a portal which will facilitate match making. At this portal people looking for a spouse will register. Their uploading will be categorized according to key words and will be made available to people who were looking for spouse. In 1997, Mittal hired technical professionals who helped him build the entire portal with his ideas and Shaadi.com was launched in 1997. Revenue model for the portal was simple. One had to become a member by paying a fee (see Exhibit 1).

From 1997 to 2001, the company did grow steadily. There were two reasons for this stagnation. The first was Mittal was trying to run the company through remote (he was still in Boston) and the second was the dotcom bust which introduced a kind of distrust towards all Internet-based companies. The product, too, was still at a stage of innovation and therefore was patronized only by high risk takers.

The real growth story of the company started in 2001 when Mittal started spending more time in India and focusing entirely on Shaadi.com. He realized that, in spite of the dotcom bust, Internet was here to stay. Dotcom bust had made available space in the Internet at a

very cheap rate. Mittal took advantage of this opportunity and went on a shopping spree. During this year, Shaadi.com began working with the MSN network of Internet services and Shaadi.com was present on all MSN sites. At this point, his strategy was very simple to make Shaadi.com visible on as many portals as possible. In 2003 he took another initiative. He wanted to capture as much traffic as possible in the domain of friendship, dating, and marriage. The company started focusing on building multiple verticals which made it to grow much faster. Fropper.com which was originally conceived as a dating website has now evolved into a social networking site. Mauj.com was also launched, which was later spun off into a different company. Mauj.com is the leader in mobile gaming, mobile music and Gprs/Edge/Wap space in India.

Improving Product Quality

Shaadi.com started working on improving the product. The most important benefits that the customers were seeking were safety, spread of database, and ease of search. To increase the safety and assure the customers about it, the company obtained ISO 9001:2000 certification and prominently displayed it on the portal. To increase the spread of database, it advertised heavily. The search engine of the portal is not only quick but is also able to search on the basis of multiple criteria. At present it has features such as Smart search, City Search, Keyword Search, AstroSoulMate search, Profession Search, AstroSoulMate match, Shaadi messenger, Photo Club, Video Club, Shaadi seal, Special Cases, and Matrimonial Sites. (see Exhibits 2 and 3). Professional search allows members to search for a partner based on a preferred profession. Shadi.com is the first and only website to offer this service.

Marriage in India is a complex set of activities. It requires coordinating different sets of activities. In this cultural environment Shaddi.com did not want to remain simply as a platform where different people desiring to get married met. It wanted to help people plan there marriage because it increased the traffic, boosted the time members spent in the portal, strengthened the brand and most importantly staved off a potential threat. For this purpose Shaadi.com started providing wedding directories containing city-wise lists of vendors like astrology, event, music, entertainment, beauty and grooming, fashion and clothing, decorations, food and beverages, travel and tours, and also related services like invitation cards, wedding planners, etc. (for a detailed list of facilities currently provided by Shaadi.com, see Exhibit 4).

Being a web portal Shaadi.com could meet the needs of people only through the Internet. Access to Internet, comfort level, and credibility of Internet were limiting further expansion

of the brand. In 2004 a very interesting development took place in the history of the brand. This innovation was aimed at transcending the Internet and help these non- Internet users to get the advantage of technology in searching the right partner and bridge the gap between the marriage intender and their parents. As Mittal puts it, "We want to reach parents who make the decisions and who don't necessarily go on the net." The innovation was launch of Shaadi.com centres – an offline version which are bricks and mortar offices where the family would meet Shaadi.com match-making executives who assisted them in quick and easy search. The matches thrown up from the database would be seen by the family. A printout of the short-listed persons' bio-data, along with contact details, would be made available to members. These centres placed ads in leading newspapers catering to the Indian community across the world. Taking an internet portal from virtual to brick and mortar world provided tremendous value to the brand. Offline expansion resulted in parent's participation in choosing a spouse. "Over 70 per cent of registrations in the offline centres are posted by parents," said Vibhas Mehta, Business Head, Shaadi.com[3]. Omprakash Hassanandani, Business Head, Shaadi.com Centre says, "Shaadi.com Centre was launched at a time when the Indian consumer was yet to digest the exploding power of Internet matchmaking. Keeping in mind the possibility of a perception complication, Shaadi.com Centre was then launched as Shaadi Point. Today with 154 centers in 87 cities in India, Shaadi.com Centre has established itself as a leading player in the offline match making and franchisee business. This re-branding exercise makes Shaadi.com Centre the human interface for Shaadi.com and will assist in achieving brand saliency in the consumer's mind."[4] Vibhas Mehta points out that "If Shaadi.com talks to individuals, Shaadi Point talks to their parents. Both services have their own advantage". Shadi.com is currently offering franchise partnerships to individuals. Its services are available in 87 cities through a network of 155 centres. Its memberships can be from 3 months to a maximum of 12 months.

Shaadi.com is committed to innovating and enhancing the quality of its services. In May 2008, Matrimony 2 was launched. It has added more features to make the site more user-friendly. Uploading photos has been made more easy. It has also extended privacy options to contact numbers.

Talking about the features on the website, Vibhas Mehta says, "Shaadi.com has been the innovator in online matrimony business and these innovations are driven by what our users want. The Internet is all about freedom, choice and being able to set your own preferences and the latest changes on the site are a step in the same direction."[5]

Using the latest technologies, rich interface applications, improved algorithms, comprehensive privacy options and personal settings, Matrimony 2.0 will has brought more relevance, convenience, and control into users' hands.

Anupam Mittal, CEO and Chairman of People Group says, "We have always put our members at the forefront of our business strategy – we're now thrilled to be able to put them in control."[5]

Market Analysis and Competition

Online matrimony is a growing market. According to JuxtConsult report in 2012[6], over 12 million Indians use online matrimonial services and the organized matrimonial business is worth about Rs. 1, 000 crore. The same study has pointed out that online matrimony is the 13th most popular mainstream online activity. Competition for Shaadi.com comes from only portals: Bharatmatrimony.com and Jeevansathi.com.

Bharatmatrimony.com

Bharatmatrimony.com, an ISO certified matrimonial company, entered the Indian market in 2000. Although it was started in the same year as Shaddi.com viz. 1997, it was available only to non-resident Indians founded by Murugavel Janakiraman. This matrimonial portal is more popular among residents of south India. It provides 15 language-based domains offering online matchmaking services along with other services such as shopping for wedding and placing advertisements in newspapers. It has a strong offline presence: BharatMatrimony Centres. It publishes three magazines centered on the theme of matrimony – *Vazkhai Thunai* (Life Partner), *Match Maker* and *Desi Match*. Interestingly it is the only matrimony portal to provide health profile. It has tied up with Metropolis a leading diagnostic laboratory and research centre, to help its members get a soul-to -soul pre-marital health check-up done at a special rate.

Jeevansathi.com

JeevanSathi comes from the stable of InfoEdge which is a Naukri.com group company. It offers seven search engines, and operates in India, US, Canada, UK, Singapore, UAE, and Pakistan. The website can be viewed in Hindi and offers services like photo profiles, messenger services, and mobile services. It claims to have more than 200,000 photo profiles across 34 communities and 254 castes.

Looking Ahead

Today Shaadi.com has ten million members and has facilitated one million marriages. Its database contains over 8 lakh success stories. Success stories are the testimonials written by married couples who have got married through Shaadi.com. It is most recognizable matrimonial brand on the Internet, and the first business of its kind anywhere in the world. It has got the largest NRI online as compared to Bharatmatrimony.com which is extremely popular among South Indians. Shaadi.com is the market leader in terms of page views and traffic[9] (see exhibit 7). From the information of JuxtConsult it can be concluded that Shaadi.com is the winner and leads currently than its competitors.

Shaadi.com was declared the "most user friendly website" by Juxt Consult in 2007 and "best designed website" by the *PC World*. In September 2007 *Business Today* recognized the company as one of the top 10 marketers in the country. The company was also felicitated at the WEB18 Genius of the Web Awards, as the best E-commerce site (Matrimony). Shaadi.com centres too has got accolades and won the "Franchisor of the Year" for the third consecutive year in 2007. Shaadi.com is also the first Indian portal to be ISO 9001:2000, TRUST-e, and VeriSign certified. In addition it has been ranked "the most visited matrimonial website in India" by Ranking.com. But it is this peak from where a slide may start if it does not come out with the next set of innovations to align the product to changing socio-cultural realities.

Exhibit 1

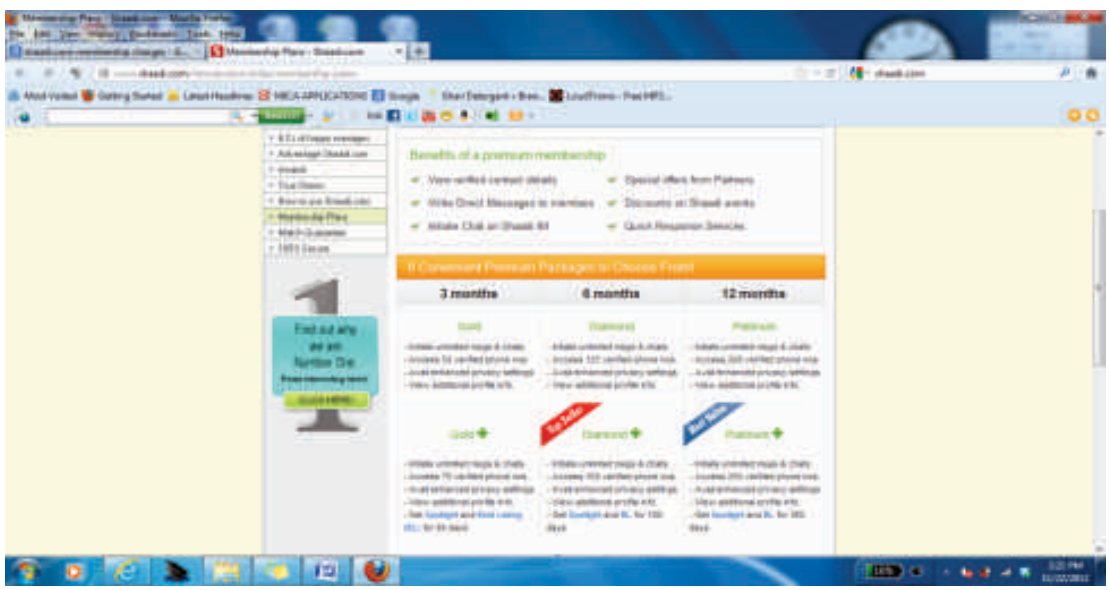


Exhibit 2

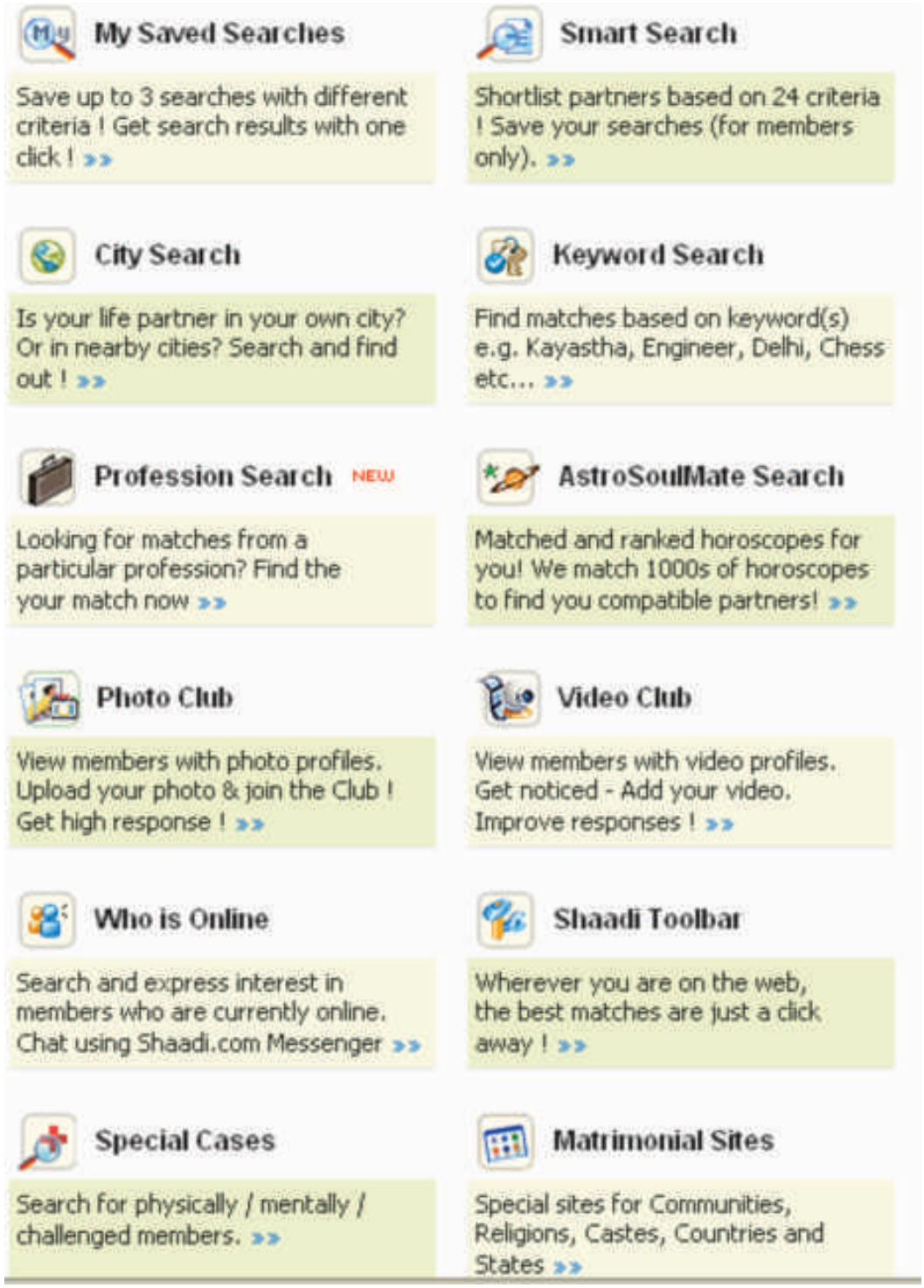
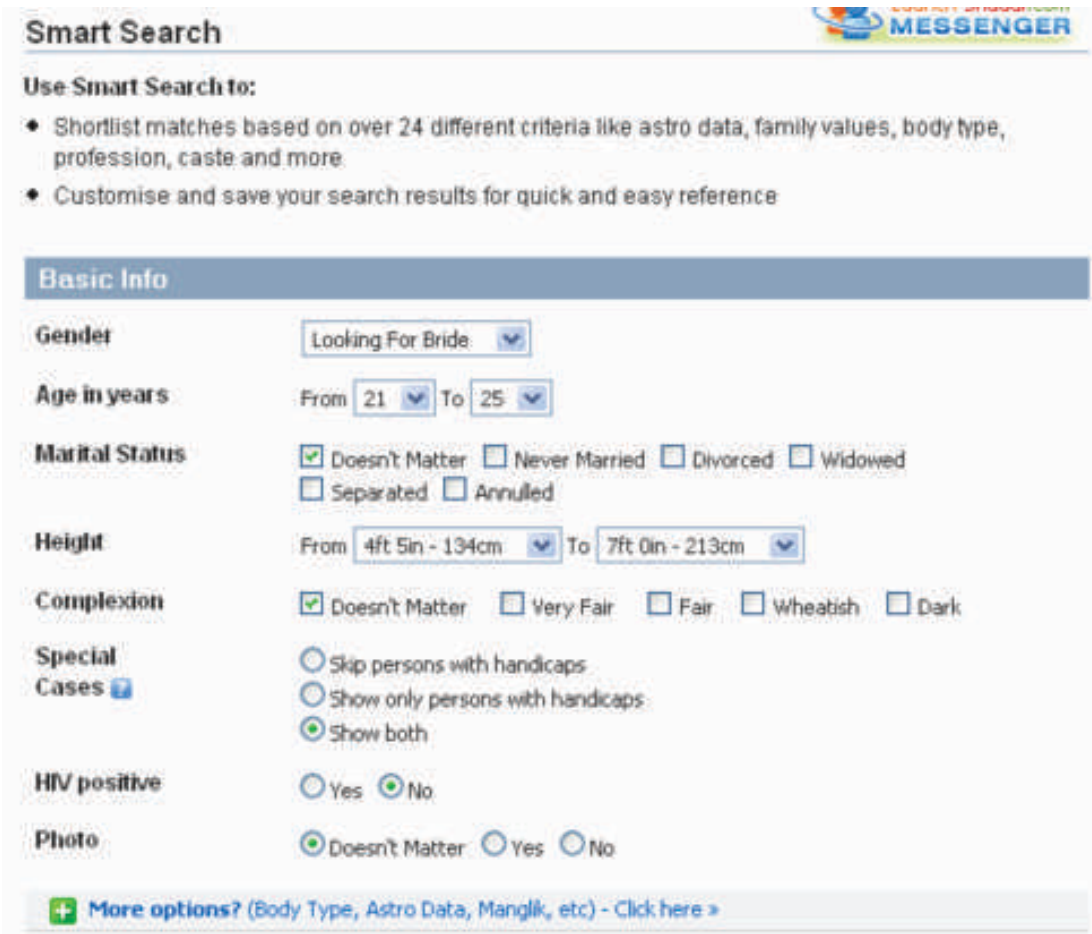

My Saved Searches
Save up to 3 searches with different criteria ! Get search results with one click ! »
Smart Search
Shortlist partners based on 24 criteria ! Save your searches (for members only). »
City Search
Is your life partner in your own city? Or in nearby cities? Search and find out ! »
Keyword Search
Find matches based on keyword(s) e.g. Kayastha, Engineer, Delhi, Chess etc... »
Profession Search NEW
Looking for matches from a particular profession? Find the your match now »
AstroSoulMate Search
Matched and ranked horoscopes for you! We match 1000s of horoscopes to find you compatible partners! »
Photo Club
View members with photo profiles. Upload your photo & join the Club ! Get high response ! »
Video Club
View members with video profiles. Get noticed - Add your video. Improve responses ! »
Who is Online
Search and express interest in members who are currently online. Chat using Shaadi.com Messenger »
Shaadi Toolbar
Wherever you are on the web, the best matches are just a click away ! »
Special Cases
Search for physically / mentally / challenged members. »
Matrimonial Sites
Special sites for Communities, Religions, Castes, Countries and States »

Exhibit 3 (a)


Smart Search
MESSENGER
Use Smart Search to:
• Shortlist matches based on over 24 different criteria like astro data, family values, body type, profession, caste and more
• Customise and save your search results for quick and easy reference
Basic Info
Gender
Looking For Bride
Age in years
From 21 To 25
Marital Status
Doesn't Matter
Never Married
Divorced
Widowed
Separated
Annulled
Height
From 4ft 5in - 134cm To 7ft 0in - 213cm
Complexion
Doesn't Matter
Very Fair
Fair
Wheatish
Dark
Special Cases
Skip persons with handicaps
Show only persons with handicaps
Show both
HIV positive
Yes
No
Photo
Doesn't Matter
Yes
No
More options? (Body Type, Astro Data, Manglik, etc) - Click here »

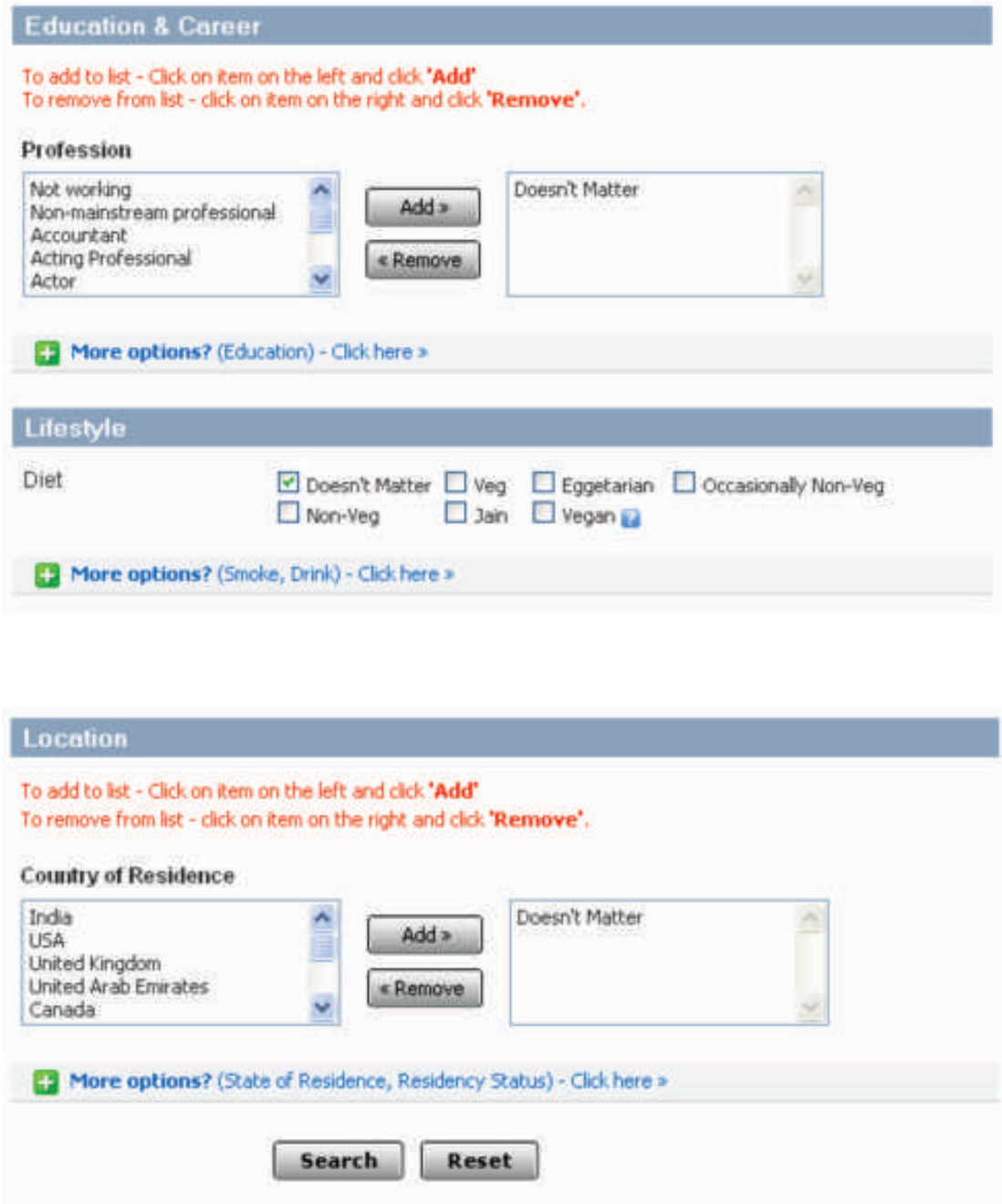

Education & Career
To add to list - Click on item on the left and click 'Add'
To remove from list - click on item on the right and click 'Remove'.
Profession
Not working
Non-mainstream professional
Accountant
Acting Professional
Actor
Add »
« Remove
Doesn't Matter
More options? (Education) - Click here »
Lifestyle
Diet
Doesn't Matter
Veg
Eggetarian
Occasionally Non-Veg
Non-Veg
Jain
Vegan
More options? (Smoke, Drink) - Click here »
Location
To add to list - Click on item on the left and click 'Add'
To remove from list - click on item on the right and click 'Remove'.
Country of Residence
India
USA
United Kingdom
United Arab Emirates
Canada
Add »
« Remove
Doesn't Matter
More options? (State of Residence, Residency Status) - Click here »
Search
Reset

Exhibit 3 (b)

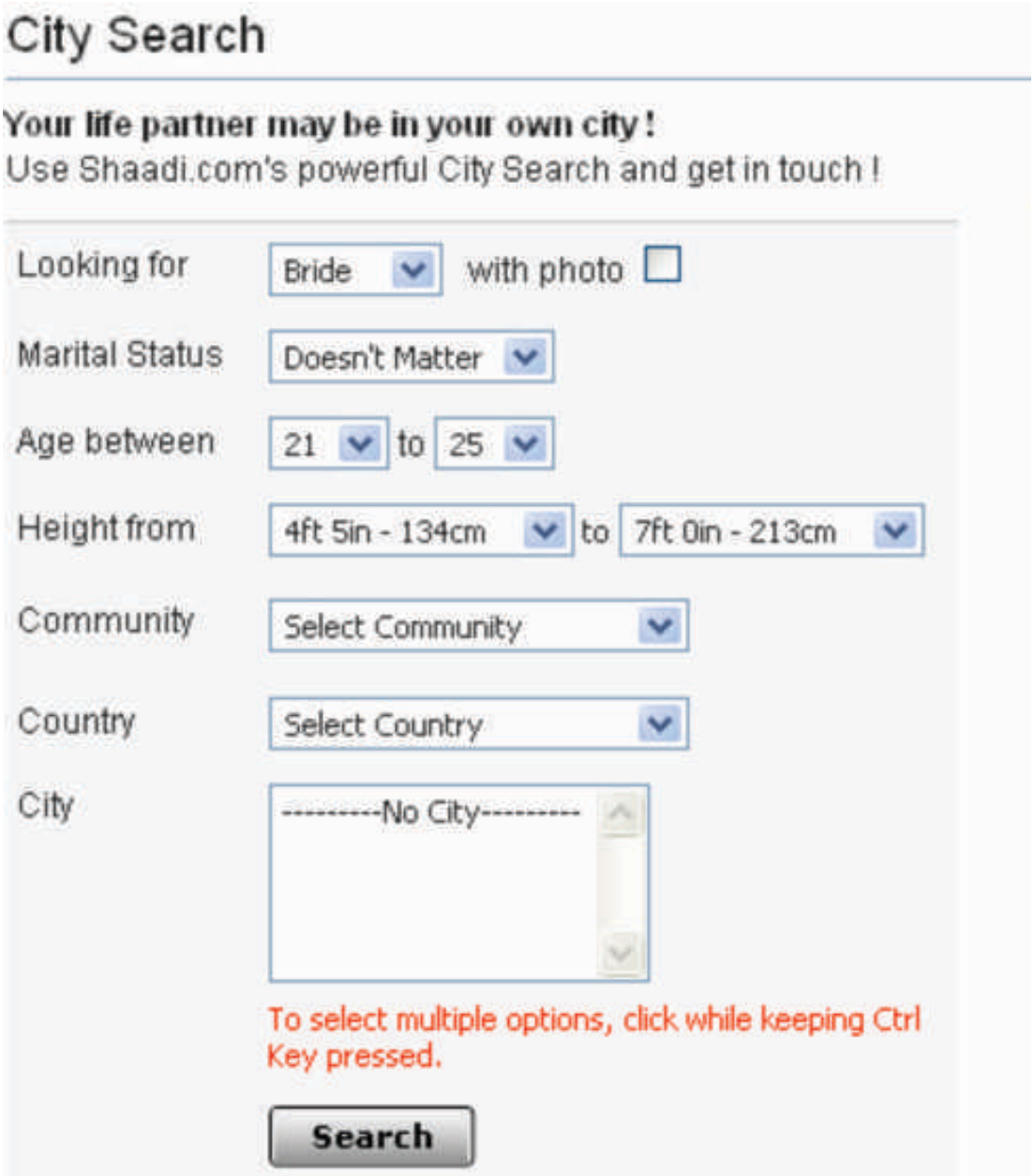

City Search
Your life partner may be in your own city !
Use Shaadi.com's powerful City Search and get in touch !
Looking for
Bride
with photo
Marital Status
Doesn't Matter
Age between
21
to
25
Height from
4ft 5in - 134cm
to
7ft 0in - 213cm
Community
Select Community
Country
Select Country
City
---------No City---------
To select multiple options, click while keeping Ctrl Key pressed.
Search

Exhibit 3 (C)

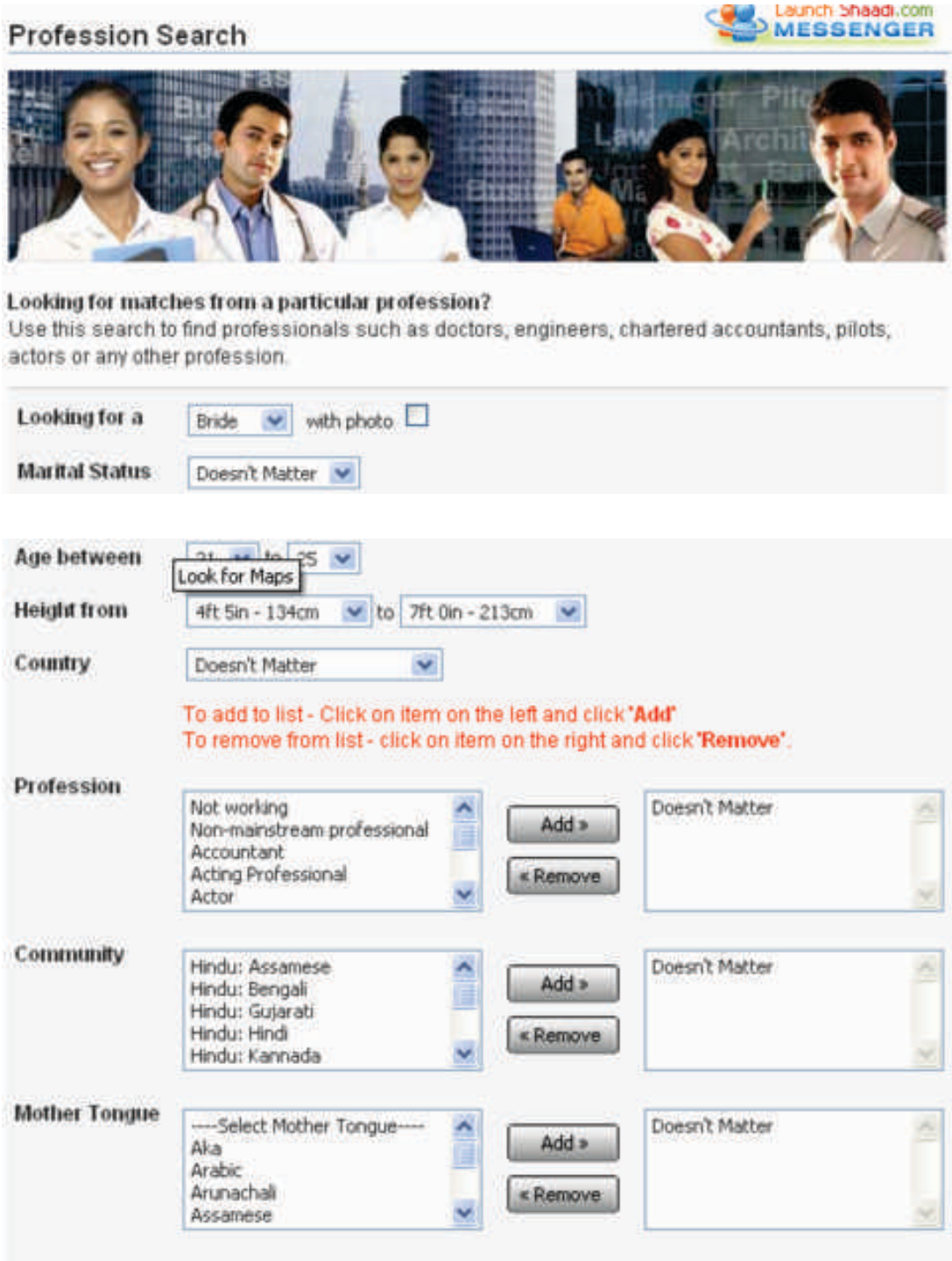

Profession Search
Launch Shaadi.com MESSENGER
Looking for matches from a particular profession?
Use this search to find professionals such as doctors, engineers, chartered accountants, pilots, actors or any other profession
Looking for a
Bride
with photo
Marital Status
Doesn't Matter
Age between
Look for Maps
Height from
4ft 5in - 134cm
to
7ft 0in - 213cm
Country
Doesn't Matter
To add to list - Click on item on the left and click 'Add'
To remove from list - click on item on the right and click 'Remove'.
Profession
Not working
Non-mainstream professional
Accountant
Acting Professional
Actor
Add »
« Remove
Doesn't Matter
Community
Hindu: Assamese
Hindu: Bengali
Hindu: Gujarati
Hindu: Hindi
Hindu: Kannada
Add »
« Remove
Doesn't Matter
Mother Tongue
----Select Mother Tongue----
Aka
Arabic
Arunachali
Assamese
Add »
« Remove
Doesn't Matter

Exhibit 3 (d)

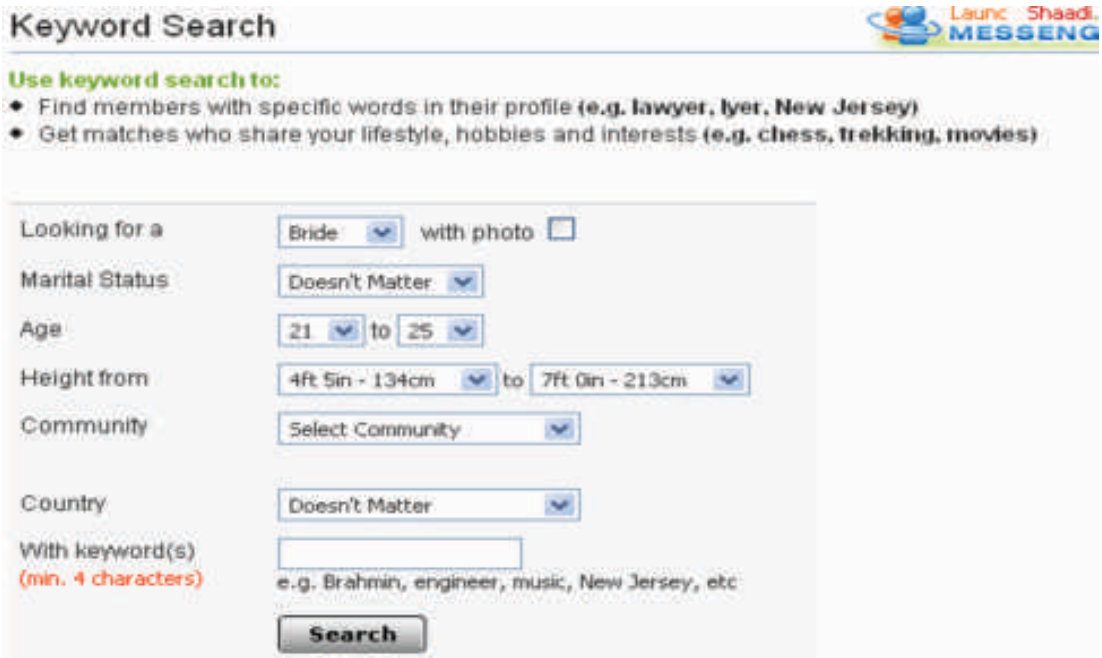


Exhibit 4

Exhibit 5


shaadi centre
Existing Members
Register Free
Largest matrimonial service for Indian communities
What is ShaadiCentre?
Why ShaadiCentre?
Success Story

Notes

1. *Online Matrimony Market Statistics Reveal 12 Million Users*. Retrieved November 22, 2012,from http://www.watblog.com/2008/03/20/online-matrimony-market-statistics-reveal-12-million-users/

2. *Marriage*. Retrieved November 22, 2012,from http://countrystudies.us/india/86.htm

3. *There's money in matchmaking!*. Retrieved November 22, 2012,from http://www.rediff.com/search/2003/jan/06match.htm

4. *Shaadi.com empowers users with Matrimony 2*. Retrieved November 22, 2012,fromhttp://express-press-release.net/49/Shaadicom%20empowers%20users%20with%20Matrimony%202.php

5. *Anupam Mittal MBA '97, wedding planner*. Retrieved November 22, 2012,from http://omc.bc.edu/csom-newsletter/2007-05/mittal.html

6. *Business Today places Shaadi.com amongst top 10 marketers*. Retrieved November 22, 2012,from http://www.moneycontrol.com/india/news/pressnews/business-today-places-shaadicom-amongst-top-10-marketers/16/55/307123

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"Jeevansathi," www.jeevansathi.com, accessed on November 22, 2012.

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