

CASE STUDY: THE SPIRAL JOURNEY OF DOWNSIZING TO EXPLORE THE PATH OF INNOVATION

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ABSTRACT

BuildHill one of the global leading engineering consultant service provider of project delivery and consulting services to the resources & energy sectors and complex process industries, failure to sustain business and financial performance had resulted to the decision to downsizing with a massive lay-off of employees across the company. Organizations were restructured, and changes are kept and managed with minimum publicity, and employees' communications are reframed for good from company stand point. However, the massive laying-off of employees (Engineers to Project Managers level) which comes into series of waves and up to this date, it is still on-going and no definite precise direction on how and when, it will end. The concealed approach of communication for the company's direction and pragmatic subtle behaviours of the top management to the down line employees to share their perspective common views of concern for the directive plan, objectives and strategy to overcome the current crisis may have strong implications that attributed the causes of employee's low morale thus affected their work related performance, growth, social and cultural development. These issues will eventually affect the business performance. This case study will provide an insight for the evaluation and analysis of the challenges the organization faced by BuildHill. The objective is to mainly focus on assessment and addressing the issues related to the various effects and implications of the downsizing to the employees'(survivor) morale, company assets integrity (stock knowledge, knowledge creation process and leaders) and performance that has been identified as prime factors which seems to have impact BuildHill normal operation and their businesses. Downsizing has been a managerial practice for the past decades. The major reason of any downsizing endeavour is to make organizational entity more

competitive compared to its rival and to achieve bottom line objectives. There are very few studies conducted by scholars to support the effectiveness for the impact of downsizing on innovation.

Keywords: Downsizing, Innovation, Sustainable Competitive Advantage

INTRODUCTION

The downsizing of employees started as a result of project delay completion which brought massive substantial losses encountered by the company. Brief history of the chronological events begins with the Award of contract for the Engineering, Procurement, Construction, Installation and Commissioning (EPCIC) Alliance for the "Project X". BuildHill that its 51% subsidiary, BuildHill Sdn. Bhd. through its associate, Perunding BuildHill Sdn. Bhd. (Ranhill) has on 26 January 2011 been awarded the contract for the Engineering, Procurement, Construction, Installation and Commissioning (EPCIC) Alliance for the "Project X" owned by "Company X".

- Participated through a consortium of Ranhill and "Contractor X" (the Consortium).
- The Consortium is led by Ranhill, and the contract is valued at RM 1,075 billion with a 70:30 split in favour of Ranhill.
- Under this contract, the Consortium will undertake the construction of the "Project X" (the Facilities).
- The construction works is scheduled to commence by the second quarter of 2011 and is expected to be completed by the third quarter of 2012.
- The Facilities to be built, will have a maximum send-out gas capacity of 3.8 million tonnes per annum.
- Central to the whole Facilities is the LNG Regasification Plant which will degasify liquefied natural gas and once degasified the gas will be transmitted into the Peninsular Gas Utilisation (PGU) pipeline.

The technical confidentiality and sensitivity of the issues related to this case study, the contractors name and project will not be disclosed to their actual names. The data collections were mainly based on available secondary data information registered under this "Project X". These data/records are mainly compilations of lessons learned and non-compliant reports submitted during the closed-out report for "Project X" will be used in this case study. The below list are related work complaint issues attributed mainly by:

1. poor performance of sub-contractor employee
2. lack of interface coordination between the sub-contractor and RWP personnel
3. sub-contractor below par and sub-standard completed work
4. non-compliant to engineering codes and standard
5. poor documentation records
6. lack of quality control on documentations
7. low in morale due to massive lay-off
8. resulting to loss of confidence from Clients

The one (1) year delay in terms of construction completion of "Project X" and degraded performance of employees cause substantial loses to the company and lead to the following:

- Downsizing of employees (50% lay-off)
- Loss of confidence from Clients
- Re-structuring of the organization

Downsizing is defined as "purposeful reduction in the size of organization's workforce" (Spreitzers & Mishra). Excerpt extracted from "Brockner" (1988) categorically states that it refers to permanent, involuntary separation of employees. According to Freeman & Cameron (1993) also states that, downsizing is not something that happens to an organization, but is something that some of the organization members (top management per se) undertake purposively. The major key

attributes of downsizing given by Freeman & Cameron (1999) are as follows:

- It is an intentional endeavor
- It is usually involving reduction in personnel
- It is focused on improving the efficiency or the effectiveness of the organization
- It affects work processes

Sometimes also termed as rightsizing (this is how our management paraphrase the statement), reorganization, restructuring, delaying and rationalization. Downsizing is seen as an important techno-structural Organization Development (OD) intervention as defined by (Cummings & Worley, 2001). Downsizing may require one or several methods of the following processes:

- Loss of individual security, owing to layoffs and unemployment
- Emergence of new organizational form
- Re-allocation of resources and power (multi-tasking)
- Increased expectations, responsibilities and workload and need to re-learn and develop new skills among survivors (sustainable competitive advantage)
- Redundancy among those who do not get laid off (survivors)

The ongoing businesses or projects may jeopardize the Company's reputation and its business in general. The Company long term goals to initiate changes to correct, rectify, manages and control to prevent similar occurrence of this issues. The implementation of requirements and needs to improve the development of a comprehensive quality assurance policy to all sub-contractor for the review of documents/drawings, such as:

- a. Mandatory checking (color coding requirements and a back-checked to be sign-off by the checker) will be required for each engineering department, to ensure that comments are

incorporated by the sub-contractors/vendors) to all document's/drawing's prior to submittal to Clients.

- i. All documents/drawings will be subjected for PEER review's (30%, 60% and 90% completion) by a third party not involve with the projects.
 - ii. All Project schedules shall be reviewed bi-weekly/forth nightly as need required basis, any delays will be flagged off and proper recovery plan will be proposing to be approve by Project Manager/Client.
- b. All Sub-contractors/vendor's shall be on the approved list of the Company/Clients

The department managers (Leaders) for each engineering discipline (Process, Mechanical, Electrical, Piping and Instrumentation) will be directly involve for the implementation of this improvements. This approach for long term application will eventually improve the quality of work, efficiency of performance for each employee and in turn, it will lead to bringing back the confidence of the Clients. The human resources is the critical success factor in its business, therefore, elements of human resources management relation to factors such as motivation, attitude, skills and knowledge are the main areas that were accessed prior to forming of solution. Several potential solutions were identified, recommendations were outlined with the weighted benefit to help evaluate value-benefit proposition of each solutions that will alleviate and will help to improve the situation. The solution planning, implementation, evaluation, and continual improvement process will be shared. This paper aims to refine and expand coverage of research by focusing on the association between downsizing and the factors that will create innovation and development of sustainable competitive advantage. This is because organizations vary widely in the ways they implement downsizing (Cameron, 1994; Nienstedt, 1989).

COMPANY BACKGROUND AND INDUSTRY

The history of BuildHill is a woven kit around the vision of now retired Chairman, Build (Chief Executive Officer 1975 - 2012), when in 1971 he joined Smith, Hill & Martin which led to the 1976 establishment of BuildHill, a small Australian engineering consultancy. Throughout the 1990's Worley expanded both its industry sector and geographical footprint. A policy of intensive diversification attributed Worley to expand and grow rapidly from its roots in the hydrocarbons sector into the power, infrastructure and environment, and minerals and metals sectors. At the start of the new millennium, Worley was well poised to continue its industry sector and geographic expansion with 30 offices and 3,000 personnel globally. This success enabled Worley to diversify further through additional partnerships and acquisitions. This provided a significant step up in the organization's ability to support their customers across all industry sectors in the areas of water and environmental services. Companies commitment to entrepreneurial spirit and partnership, started by over 30 years ago, still drives the company towards its vision to be the preferred global provider of technical, project and operational services to our customers, using our distinctive culture to create value for our customers and prosperity for our people.

Consultancy is sub-structured and organized into customer sector groups:



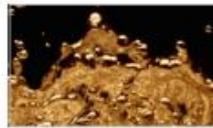
Infrastructure & Environment

Coastal & Marine
Water & Wastewater
Transport
Environment



Power

Advanced Coal
Coal
Gas Turbine Based
Power Plants
Nuclear
Renewable Energy
Transmission Networks



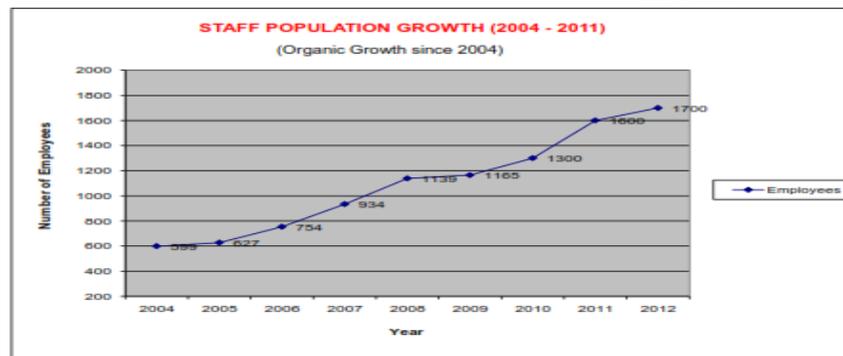
Minerals & Metals

Base Metals
Coal
Chemicals & Fertilizers
Ferrous Metals
Alumina
Aluminium
Iron Ore
Gas Cleaning



Hydrocarbons

Upstream
Fixed Offshore Production Facilities
Floating & Deepwater Solutions
Offshore Pipelines & Subsea Systems
Onshore Pipelines & Receiving Terminals
Onshore Oil & Gas Production Facilities
Heavy Oil & Oil Sands
LNG
Downstream
Refining & Petrochemicals
Sulphur Management
Specialty Chemicals



Prior to the downsizing, approximately total of 1,651 personnel in Malaysia (current approximate workforce- 825 personnel after downsizing)

- Very Stable workforce – 70% Permanent Employees
- 6% expatriate
- 15% regional
- 79% local
- Current man power availability KL approx. 2.0 Million man hours per year (160,000 – 180,000 per month).

Vision and Mission

Our Vision – BuildHill will be the preferred global provider of technical, project and operational support services to our customers, using the

distinctive BuildHill culture to create value for them and prosperity for our people.

Leadership: Committed, empowered and rewarded people
EcoNomics™ – Delivering profitable sustainability

Integrity in all aspects of business

Minimum bureaucracy

Relationship: Rapport with all stakeholders

Open and respectful

Collaborative approach to business

Agility: Smallest assignment to world scale developments

Local capability with global leverage

Responsive to customer preferences

Performance: Zero harm

Results for our customers and other stakeholders

World-class resources, capability and experience

Organization Goal and Objectives



Company Annual Turnover – RM 7,362.6 million (year- 2012)
Aggregate revenue.

PROBLEM FORMULATION

The one (1) year project completion delay and degraded performance of employees for “Project X” lead to the massive lay-off (downsizing) of the company.

The following list of issues has been identified as main contributor of the poor performance and output of employees:

- Numerous subcontractor were involved in the Engineering Procurement and Construction (EPCC Project) and lack of clarity on the ownership or responsibilities of employees
- No listed or recorded focal points or single point of responsibility for each work packaged performed by numerous sub-contractor
- Design flaws on the sub-contractor work
- Documentations, approval and final acceptance of drawings (Poor quality)
- Design work performed by Sub-contractor, following observation/complaints were constantly emerging during weekly meeting with Clients
- Deteriorating quality of the design/construction work performed by employees
- Growing number of frequency of Clients Complaints
- Frequent delays of work schedules

Business and Operational Impact

The poor degraded performance of employees causes substantial losses to the company and lead to the following:

- 1) Downsizing of employees (50% lay-off)
- 2) Loss of confidence from Clients
- 3) Re-structuring of the organization

Downsizing may have influence on Innovation for the organization

Scholars have long suggested that the impact of downsizing can be affected by the severity of downsizing (Burton et al., 1996; Brockner et

al., 1987; Cameron, 1994; Cameron et al., 1993; Lewin, 2001; Love and Nohria, 2005; Sutton and D'Aunno, 1989; Vahtera et al., 1997). In this research, we categorized the company downsizing approach as very high category (total =50% layoff) and implementation of the first batch of layoff is 40% and it is done in a very fast track (2 months period).

Basis of levels of downsizing:

- high; where a firm layoff more than 20 percent of its employees;
- medium; where a firm layoff between 10-19.99 percent of its employees;
- low; where a firm layoff between 5-9.99 percent of its employees

Cameron et al., (1993, p32) noted that when downsizing is implemented to cut costs quickly, "it is cumbersome to predict exactly who will be terminated and who will remain". As a result, the organization may no longer possess the necessary range of skills needed to produce new innovative ideas or processes.

We could simply assume that implementing downsizing reduces the organization's stock of knowledge. As employees leave the organization critical skills may be lost which can damage customer relationships or operations (Drew, 1994).

As part of formulation process development, it would be very important to consider the Obstacles to innovation and downsizing. There are several listed identified obstacles to innovation, the study will consider five major factors which are relevant and highly correlated with downsizing:

i. Risk Aversion

Research on the impact of downsizing consistently reveals that downsizing is associated with a reduction in risk taking and tolerance of mistakes in organizations (Amabile and Conti,

1999; Bommer and Jalajas, 1999; Brockner et al., 1987 and McKinley et al., 1995; Cascio, 1993;)

ii. Lack of Resources

Availability of resources or lack thereof, is an important innovation determinant. Past and present literature research provides evidence to suggest that generally lack of organizational slack is negatively correlated with innovation (Nohria and Gulati, 1996; Singh, 1986)

iii. Lack of Qualified Personnel

Downsizing creates uncertainty and when this occurs the first people to jump ship are those with marketable skills. As a result, downsizing could 'hollow out' the firm's skills capacity and subsequently its ability to innovate (Littler and Inns, 2003, p. 93). This lead to lack of qualified personnel

iv. Low Level of Morale

Study conducted by Cody et al. (1987) found that severe downsizing of 30-50 per- cent impacted negatively on employee's morale and commitment.

v. High workload

A large body of literature suggests that work overload and time pressure stifles innovation (Amabile and Gryskiewicz, 1987, Amabile et al., 2002; Amabile and Conti, 1999). Cheng and Kesner (1997) reported that severe downsizing leads to an increase of work load which may influence the time and efforts employees spend on innovation activities.

Other relevant contributing factor to be considered will be Innovation enhancers. Innovation enhancers which are reported in the innovation and downsizing literatures:

- a) Empowering people through a decentralized structure facilitates innovativeness by encouraging new idea generation (Subramanian and Nilakanta, 1996). Decentralization may develop and facilitate the circulation of knowledge, and expose people throughout the organization to explore a new innovation. Hage and Aiken (1970) found that when people at the lower levels are empowered, they acquire a sense of ownership and responsibility which lead to development of innovative ideas on how to improve their performance.
- b) Past and present research suggests that availability of multi-skilled and multi-tasking workforce is tied to successful innovations. To support the validity of this statement, (Larson and Gobeli 1988) findings that Multi-skilled employees and teams seem to innovate more than single-task employees because the likelihood of new innovative ideas is greater when employees or teams are able to mix skills and tasks than when they are only exposed to single activities. In addition, Hammer (1996) argued that downsizing may result in better teamwork and an empowered multi-skilled workforce which encourage new idea generation, ingredients which are necessary for innovation.

Downsizing influence on Sustaining Competitive Advantage for the organization

Firms engage in downsizing; the prime objective is to boost their profitability. It has obvious advantages as lowers headcount quite effectively and leaves you with lower operating costs. But there are some risky potential factors, such as lower commitment and loyalty among the survivors. Based on academic studies and findings, there is a significant rises in voluntary turnover rates after downsizing, often leaving a company leaner (and lamer) than intended. Tacit knowledge and knowledge management are the prime key factors for sustainable competitive advantage for the company. Competitive advantage is increasingly found in knowing how to do things, rather than in having special access to resources and

markets, knowledge and intellectual capital have become both the primary bases of core competencies and the key to superior performance. The advent of high technology in market place which are easily accessible via internet. Companies tend to develop or acquire new knowledge so rapidly that having special knowledge is no longer a basis for sustainable competitive advantage. To achieve sustainable competitive advantage, one needs knowledge that is difficult for anyone to imitate as well as the ability to formulate and develop new knowledge. For a consulting engineering firm, this is considered a very rare scenario as we need to comply with Clients standards and applicable industry codes and standards. To provide sustainable competitive advantage, the skills and resources to form a basis or foundation of a firm's core competencies must be relatively widely transferable within the firm, but very difficult for other firms to copy or develop. According to Michael Porter (Competitive Strategy: Techniques for Analysing Industries and Competitors) has described a category scheme consisting of three general types of strategies that are commonly used by businesses to achieve and maintain [competitive advantage](#). These three generic strategies are defined along two dimensions: strategic scope and strategic strength. Strategic scope is a demand-side dimension and looks at the size and [composition](#) of the market you intend to target. Strategic strength is a supply-side dimension and looks at the **strength or core** [competency](#) of the company or firm.

Stock Knowledge, Knowledge Creation Process and Leaders their relationship /moderation effect associated with downsizing that may influence over Innovation and Sustainable Competitive Advantage

Workers in order to perform their daily work, developed innovation and to improve work efficiencies, the collection of knowledge must be shared amongst the organization. Responding to this apparent need, Our Company has adapted requirements of collective information for all lead engineers (leaders) to submit a "lesson learnt" for every project completed and it is being shared to

the respective members. However, for such strategist to be effective, it should be carefully thread and managed. Among the most important factors to consider are organizational structure and culture. According to (Tsai 2002; Kilduff & Tsai; 2003) findings, the structure of organizational mechanism and informal networks can significantly affect the pattern of knowledge sharing. Likewise, culture of learning, innovation, trust, collaboration and cooperation facilitate knowledge sharing while culture of distrust and the rewarding of individual knowledge promote the secreting of knowledge by (Gold et al., 2001; Husted & Michailova, 2002). The two dimensions of structure and culture are strongly correlated.

Strategic Intervention

The major problem's that has been identified for downsizing that affects achieving innovation and sustainable competitive advantage which has moderating effect attributed by stock knowledge and knowledge creation process are listed as follows:

- loss of qualified personnel
- low morale of employees (survivor) and lack of commitments
- work overloads for each employee
- loss of confidence and trust from Clients

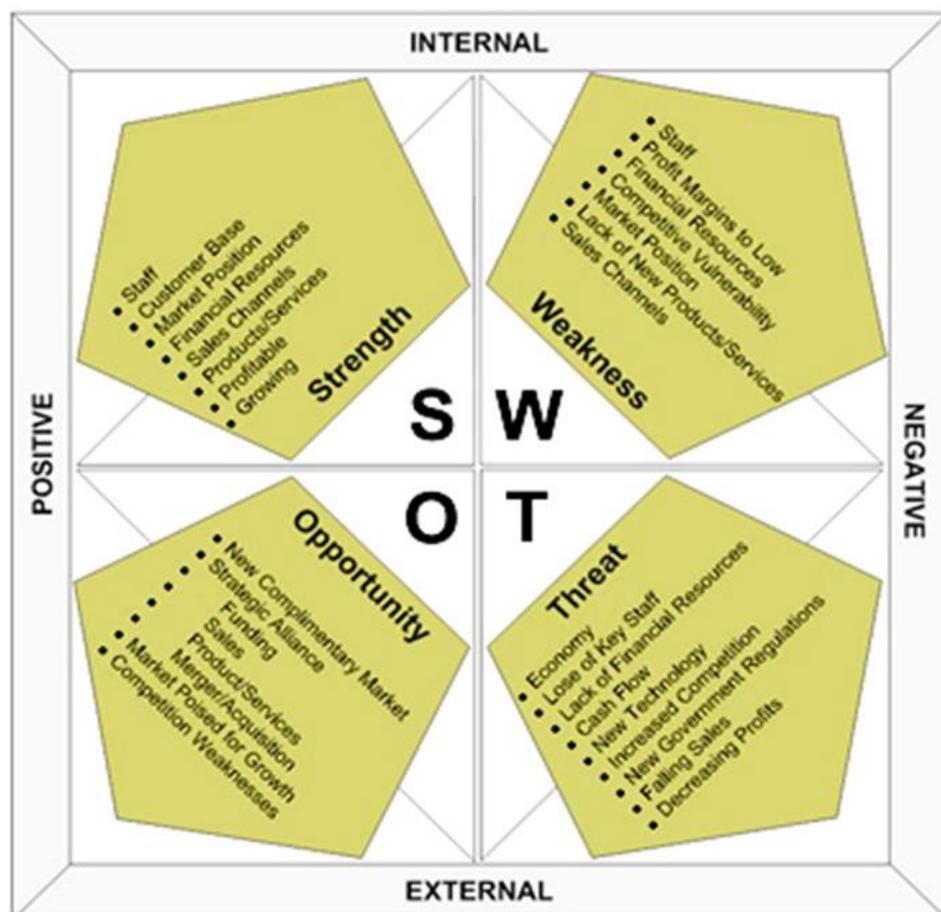
Problem analysis is a process that will helps determine the improvement with due consideration to the root causes of identified problem. Main tools identified for problem analysis are Cause-and-effect and Strength Weaknesses Opportunities and Threats (SWOT). The outcome of this process will help identifies constraints and root cause(s) of the problem. The key steps are shown in below Table 4.1.

Table 4.1 Problem Analysis Process Outline

Step	Activity Description
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1	<p>Develop the problem's cause and effect tree -Ishikawa (fishbone) diagram</p> <ul style="list-style-type: none"> • Identify direct cause/effect of the problems • Construct the cause and effect diagram to show relationship between problems • Review the diagram – verify validity/completeness/applicability and make necessary adjustment. • List down ALL potential root causes of the problem and streamline accordingly.
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Another possible alternative method which can be carried to determine the potential root cause evaluation - SWOT Analysis



FINDINGS

Strength

1. Pool of Talent (experienced engineers)
2. Well establish Company
3. Good communications skills
4. More focus on strategy and design Projects
5. Advance engineering computer software programs

Opportunities

1. Broaden role to be lead (in-charge) in various engineering fields
2. Set-up training
3. Broaden exposure to new field of engineering (multi-tasking)

Weaknesses

1. Unable to cope in management of change
2. Unable to cope with big volumes of interface work activities
3. Lack of proper control/traceability of documentations
4. Planning (unable to anticipate proper forecast for the recovery plan of delayed work activities and impact to other interface activities)
5. No clear cut demarcation of line of responsibilities
6. Plagued with internal issues
7. Vulnerable to competitive pressures
8. Poor proven track of records of Sub-contractor

Threats

1. Outsource of personnel resources
2. Low quality of Sub-contractor rendered design services
3. Growing competitive pressures
4. Loss of qualified personnel
5. Low morale of employee and lack of commitments

6. Burden on work overloads to each employee
7. Loss of confidence and trust (dissatisfied) Clients

OUTCOME OF INTERVENTIONS

Based on the above identified core competencies, strength, weaknesses, opportunities and threats. Loss of qualified personnel and work overload to each employee can be improve by implementing proper control of organizational structure and culture which embodies knowledge sharing, use of lesson learned from the past projects, culture of learning and trust will eventually promote harmony among employees. With this approach, the work rate efficiency of each employee will be expected to improve and gradually offset the burden of each employee. To uplift the low morale and improve the commitments of employees, leaders must have a pro-active approach to listen to the employee and getting their concern. The need to build a share of understanding of company future and plan for business issues including progress being made to kept them abreast of the information. Leaders should acknowledge and express appreciation to employee's accomplishment and contribution. Leaders should learn proper implementation of tacit knowledge and knowledge managements to gain competitive advantage over the other competitors.

The intriguing observation is that consulting engineers are rated at the bottom in terms of service quality among other professionals or professional firms (Beaton, 2007). We identify the key issues on loss of confidence and trust by client due to service quality which mainly relates to the ways engineers interact with their clients, and how this affects perceptions of their service quality. Sheath et al., (1996) described the benefit of an improved design and construction process which facilitates team working and effective communication between participants. Company approach for implementation of team building (which include participation of Clients) during the inception of the Project will assist to bridge the gap to foster closer relationship and interaction between Client and with the engineers. Human resources continuously exploit the effort for the development of human capital and employee

commitment thru awarding incentives and annual pay rise to be received for employee's work accomplishment. Their function plays an important role in firm performance and to provide a source of sustained competitive advantage, the firm must be organized to identify the appropriate manpower resources needed.

CONCLUSION

This research identified and evaluated that survivor's (aftermath of downsizing) is possible to achieve innovation and sustaining competitive advantage thru appropriate implementation of a tacit knowledge of the company into a core competencies and requirement to exploit the usage of a superior knowledge management wherein company needs to develop a variety of organizational leverages, adaptation and implementation of the best ideas held in the company. Sharing and integrating the knowledge held such as lesson learned from previous project brings a number of benefits. Spreading and sharing best practices, and bringing together different pieces of knowledge that together enable the development and improvement thus improve the work efficiency of the company. Although the research has shown that opinion from other literatures and scholars that "innovation" is unlikely to occur as the disgruntle behavior, low morale and overloaded work of employees stifles the process of innovation. Other literatures, also proves that innovation enhancers (empowering personnel thru decentralized culture) and multi-tasking could lead to development of innovations. Using all available studies on the effects of downsizing action, were compiled and use a basis to identify the strength of the relationships among the variables to formulate the conclusion. Appropriate application may vary in terms of their respective organization.

REFERENCES

Beaton, C. (2007). The Annual Professions Study.

- Bommer, M. & Jalajas, D. (1999). The Threat of Organizational Downsizing on the Innovation Propensity of R and D Professionals. *R&D Management*, 29, pp. 27-34.
- Brockner, J., Grover, S.L. & Blonder, M.D. (1988). Predictors of Survivors' Job Involvement following Layoffs: A Field Study. *Journal of Applied Psychology*, 73, 436-442.
- Burton, G., Keels, J. K. & Shook, C. (1996). Downsizing the Firm: Answering Strategic Questions. *Academy of Management Executive*, 10, pp. 38-45.
- Cameron, K.S. (1994a). Guest Editor's Note: Investigating Organizational Downsizing— Fundamental Issues, *Human Resource Management*, 33(2), (pp. 183-188).
- Cameron, K.S., Freeman, S.J., & Mishra, A.K. (1993). Downsizing and Redesigning Organizations, in Huber, G. and Glick, W. (eds.), *Organizational Change and Redesign*, Oxford University Press, New York, pp. 19-63.
- Cody A.M., Hegeman, G.B. & Shanks, D.C. (1987). How to Reduce the Size of the Organization but Increase Effectiveness? *Journal of Business Strategy*, 8: pp. 66-70.
- Drew, S.A.W. (1994). Downsizing to Improve Strategic Position *Management Decision*, 32(1), pp. 4-11.
- Hage, J. and Aiken, M. (1970). *Social Change in Complex Organizations*. Random House, New York.
- Hammer, M. (1996). *Beyond Re-engineering*. Harper Collins, London.
- Kets de Vries, F.R. & Balazs, K. (1997). The Downside of Downsizing, *Human Relations*, 50(1), (pp. 11-50).

- Love, G.E. & Nohria, N. (2005). Reducing Slack: The Performance Consequences of Downsizing by Large Industrial Firms, 1977-93. *Strategic Management Journal*, 26, 1087-1108.
- McKinley, W., Sanchez, C.M., & Schick, A.G. (1995). Organizational Downsizing: Constraining, Cloning and Learning. *Academy of Management Executive*, 9(3), pp. 32-44.
- Mishra, A. K. & Spreitzer, G. M. (1998). Explaining how Survivors Respond to Downsizing: The Roles of Trust, Empowerment, Justice, and Work Redesign. *Academy of Management Review*, 23, pp. 567-588.
- Nienstedt, P.R. (1989). Effectively Downsizing Management Structures. *Human Resource Planning*, 12(2), pp. 155-165.
- Porter, M.E. (1998a). *Competitive Advantage: Creating and Sustaining Superior Performance*, with a New Introduction. New York: Free Press.
- Singh, J. (1986). Performance, Slack and Risk Taking in Organizational Decision Making. *Academy of Management Journal*, 29(3), pp. 562-585.
- Subramanian, A. & Nilakanta, S. (1996). Organizational Innovativeness: Exploring the Relationship between Organizational Determinants of Innovation, Types of Innovations, and Measures of Organizational Performance. *Omega: International Journal of Management Science*, 24, pp. 631-647.
- Sutton, R.I. & D'Aunno, T. (1989). Decreasing Organizational Size: Untangling the Effects of Money and People. *Academy of Management Review*, 14, pp. 194-212.
- Vahtera, J., Kivimäki, M. & Pentti, J. (1997). Effect of Organizational Downsizing on Health of Employees, 350, pp. 1124-1128.