



## **The Mediating Influence of Team Alignment on the Relationship between Plant Turnaround Maintenance Planning and Plant Turnaround Maintenance Performance**

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### **ABSTRACT**

In the plant turnaround, the operating assets and machinery of the organization shut down for overhauling and some capital work. This activity is very expensive and the time allocated is very low. Therefore, a good management system is required for planning all the activities of the plant turnaround maintenance. As the number of people involved in the maintenance, process is high, so teamwork is required to carry the work of plant turnaround maintenance. The alignment of team with the goals and objectives of plant turnaround maintenance has been one of the concerns for the academics and researchers. In spite of the positive impact of the team alignment on the performance of the company, only some of the organizations consider themselves having high performance due to team alignment. The previous research finding suggests that the best turnaround methodology and tools do not guarantee turnaround success as due to many reasons. So therefore, the current study attempts to use mediating approach of alignment in Plant turnaround maintenance. The survey questionnaires distributed among the technological advance and capital-intensive organizations in Malaysia covering oil and gas, petrochemical plants, cement plants, palm oils and power plants with a 31 companies yielding a 31% response rate. The study found that there is a positive influence for team alignment mediating the relationship between plant turnaround maintenance planning and performance.

**Keywords:** Plant Turnaround Maintenance, Team Alignment, Management, Planning, Performance, Mediation

**JEL Classifications:** J52, L25

### **1. INTRODUCTION**

The large process industries, which include refineries, power plants, cement plant, petrochemical plants and palm oil plants, convert a large amount of raw materials to other products by chemical, physical and mechanical process. The process-based industries use a batch process to produce the products in batches and continuous process to convert raw material in a continuous process (Ghazali, 2010). The economical and safe availability of the plant is made sure through the reliability of the process plants which is maintained through plant turnaround maintenance having merits of low risk of unscheduled or catastrophic failures (Ghazali, 2010; McLay and Ltd, 2003; Obiajunwa, 2007). In the processing industry, turnaround maintenance is important to avoid unscheduled breakdowns of the equipment affecting

the revenue of the company (Pokharel and Jiao, 2008). The plant is revitalized, improve, modified and maintained through the turnaround (Ghazali, 2010). The turnaround maintenance is needed to be carried out after a few years in the refineries and other petrochemical companies as they run continuously (Hameed and Khan, 2014; Lawrence, 2012). In the case of the oil and gas industry, the turnaround event is very critical as there is no productivity at all and the revenue is lost to the cost of the event (Hameed and Khan, 2014).

The previous research shows that despite the fact that the organizations have best turnaround methodologies and tools, yet 1 out of 4 of all turnarounds completely failed and 80% of all turnaround do not achieve the planned goals resulting in poor performance. To many reasons, one of the reason is the team

functional deficiency and misalignment with plant turnaround goals (Shirley, 2012).

### 1.1. Objectives

The current study will focus on plant turnaround effectiveness with following objectives:

- To identify the relationship between plant turnaround planning and performance in plant turnaround maintenance.
- To identify the effect of mediation of team alignment on the relationship between plant turnaround planning and performance.

### 1.2. Conceptual Framework

The following are the conceptual frameworks for the current study (Figure 1).

## 2. LITERATURE REVIEW

The technical uncertainties in plant turnaround contain risks to the plant reliability and security, and may result in cost overruns and schedule slippages. The valuable resources and reserves of the organization used in the expensive work of the plant turnaround maintenance so the events of the plant turnaround maintenance are completed within the allocated time limits to avoid time and cost overrun. So it is compulsory to align the turnaround and business objectives of the organization (Halib et al., 2010). The organization must have some sort of mechanism for efficient and effective planning of turnaround to achieve the performance of the event within time and allocated budget by keeping the cost at lowest possible level and defined work process in terms of quality at highest possible level (Tu et al., 2001; Pokharel and Jiao, 2008; Raoufi and Fayek, 2014). The major contributor of the cost overruns and schedule slippages are delays, additional work and emergent work, therefore best planning practices have to be adopted to overcome these issues and to improve and increase the turnaround organizational performance (Raoufi and Fayek, 2014). In general, the ordinary organizations act as a dynamic systems and the high performance is achieved when all of its components work together competently (Kheirandish, 2014).

### 2.1. Performance

Generally, in the organizations, the business, and the technology contribution towards the objectives measured by performance.

The performance between organization technology utilization and competitive edge is related to the effectiveness of the alignment (Croteau et al., 2001).

In the plant turnaround maintenance, the performance indicators of health, safety, environment, cost, quality, and time are check with the objectives and goals set in the preparation and planning phase. The information is collected for the cost duration, man-hours, quality and efficiency of the work and measure against the objectives of the turnaround. As there are a lot of events involved so there may be chances that one or many of the performance indicators might be compromised (Lenahan, 1999). Therefore, the organization has to measure the performance and examine the developments. A balanced criteria for measuring the performance has to be used to guard against misleading factors (Ben-Daya et al., 2009). The firm performance can essentially be enhanced by alignment, with numerous factors of resources, technology, size and environment (Dickson et al., 2006).

The plant turnarounds consist of four basic phases, namely initiation, planning, execution and termination (DeBakey et al., 2007; Gandolfo and Vichich, 2007). The management function of planning, organizing, leading and control (Campling et al., 2008) are utilized all throughout turnaround maintenance at different degrees. For example, the planning and organizing are more required in planning phase than in initiating phase though leading and control are more needed in execution stage than other phases. These four phases are also followed in Malaysian process based industries for plant turnaround maintenance (Ghazali, 2010). As there are four functions of management, however, the current study will only focus on the management function of planning.

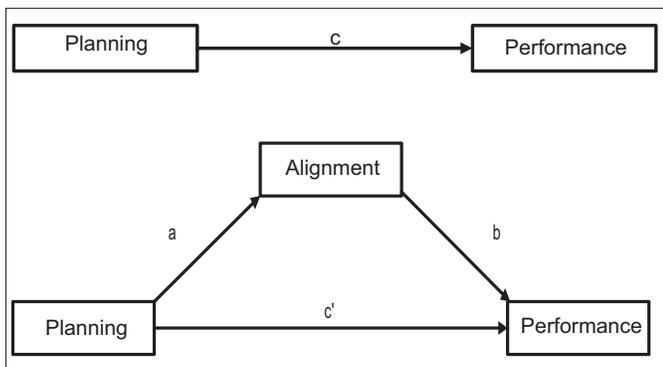
### 2.2. Planning

In plant turnaround projects for the schedule turnaround maintenance of the organizational facilities, most of the companies have a proper set of the planning process for handling the turnaround maintenance and capital work (Voogd, 2014) because the planning process is the important forecast of the successful turnaround maintenance. The organizations use best practices of planning and execution for the turnaround to be successful. The successful turnaround does not only depends on the best planning practices and procedures used, but the integration of the turnaround teams in the whole process of maintenance (Vichich, 2006).

The turnaround maintenance is an asset management, which always portrayed by controllable and some uncontrollable elements that may influence its results. The controllable part dealt wisely by the turnaround team, which predicts the consistency of the turnaround maintenance. The controllable factors contribute to the consistency and high performance of the turnaround maintenance. These factors include the alignment of team and time schedule, control, the level of preparations and ability to carry out the work.

The uncontrolled circumstances include work scope change, unforeseen risks, conflicts, misalignments etc., which may cause hindrance in achieving the performance of the turnaround maintenance. However, the risks of the unsuccessful ending of the

**Figure 1:** The conceptual framework of planning with performance using alignment as mediator



turnaround maintenance into a disastrous situation be minimized if not eradicated by using best planning procedures for time schedule, early identifications and predictions of risks, scope definition and strong team alignment. Among the many factors, team alignment has much more influence on the turnaround maintenance than the other factors usually in complex turnarounds. The turnaround team follows the best plans to follow and execute the turnaround maintenance, which implies that all the plans for the execution of the turnaround are integrated and strategic decisions made for carrying out the process. The success and competitive edge for the turnaround maintenance is achieved through early planning, identifying and mitigating the risks at early stages, managing the work scope and alignment of the teams (Vichich, 2006).

The literature shows that the planning is the most important element for controlling the plant turnaround maintenance resulting in high performance so the following hypothesis formulated.

H1: Planning positively related to performance.

### 2.3. Alignment

In the academic dictionary, alignment is characterized as the state of being in acceptable conformity and modification or having the parts in genuine relative position (Griffith and Gibson Jr, 2001; Morris, 1982). The alignment refers to a common understanding of the course of action of an organization and the procedures and techniques anticipated to achieve results (Chonko and Weeks, 2008; Connors and Smith, 1999). The course of action of alignment relies on the possibility that there are some system and procedure of the business segments and components (Chonko and Weeks, 2008). In the alignment, the specialist or professional working in different business units works together for collaboration, cooperation and value creation (Chonko and Weeks, 2008; Hansotia, 2004). The alignment is the process of bringing altogether the individuals with different priorities to a common objective which has direct links with the business needs and success (Griffith and Gibson Jr, 2001).

The alignment characterized as a state in which employees in an organization have identical practices and attitudes towards teamwork and individual efforts to accomplish the basic targets and the general objectives of the organization that centered or revolved around the business accomplishments and achievements. The organization is concentrating more on expanding utilization of teamwork, collaboration, and teams (Chonko and Weeks, 2008).

The team is the collections of people working as a single social unit in a given environment (business or organization) with common responsibility. The meaning of the teamwork is different across the various cultures (Nyberg et al., 2009). It shows the roles and responsibilities of a group of people (Gibson and Zellmer-Bruhn, 2001; Nyberg et al., 2009). The team members rely upon one another and on one another's skills. The team achievement depends on the member's capacity to communicate and their level of obligation to the work outlines and the attainment of the objectives (Nyberg et al., 2009). The teams is having experts with differing capacities who must integrate and coordinate with the clients and develop associations with others in the organization to make progress (Chonko and Weeks, 2008; Ingram et al., 2005).

The successful organizations utilizes business deals that fit out and have cooperative teamwork through linkages among them (Chonko and Weeks, 2008; Collins and Porras, 1994).

The former studies indicate that the relationship are deteriorated and breakdown due to conflict, strife, disregard and negative perceptions, distinct objectives, different thinking methods and techniques, physical segregation, the differences among business units, cultural and social contrast, and absence of alignment (Chonko and Weeks, 2008; Guenzi and Troilo, 2006; Homburg and Jensen, 2007; Homburg et al., 2008; Kotler et al, 2006; Lorge, 1999; Mattysens et al., 2006; Strahle et al., 1996). The main constraints for the implementation of the plans of an organization come from the employees of the organization. The creation of an inter-departmental team in the organization is very difficult due to differences in incentive plans, their inspiration, priorities and their communication styles. The capital projects mostly faces the problem of misalignment. As the members of the different functional groups are different in their priorities, so it is very important to align the priorities of these different functional groups with good and competent team leadership to keep the team intact. The internal and external environment of an organization helps in the determination of alignment in an organization (Chonko and Weeks, 2008).

In the case of Plant turnaround maintenance, regardless of the best practices and procedures of planning, 80% of turnaround do not meet its goals and objectives. Moreover, in these circumstances the organizations lose their ability for development, improvement as the business is unable to set clear goals and reasonable control for the turnaround and revisit the set targets, and goals time again all through the planning process. The teams cannot achieve alignment without the strong establishment of the scope and its certain accuracy (Voogd, 2014). So the success is achieved through best plans and its alignment with organization goals and objectives as well as with the project development process (Vichich, 2006).

The research shows that the alignment in groups and teams result in positive attitudes (Adkins et al., 1996; Lynn, 2007; Nyberg et al., 2009). The teams is very important for attaining opportunities for the business and the alignment plays an important role in availing these opportunities (Chonko and Weeks, 2008). The integration results in satisfactory work processes which includes informal discussions about the problems and issues arises, ease in communications, dealing with the difficulties of work, high task achievement, easy decision making, work scope certainty, simple ways of communication and development of the friendly environment and reducing conflicts among team members (Nyberg et al., 2009). From the literature, it is evident that for the most part, the alignment plays an important role in the success of any business and organization and especially in plant turnaround maintenance.

### 2.4. The Mediating Role of Team Alignment

There has been much discussion on the perfect way to measure the alignment, and mostly in literature, the focus is on the fit or alignment of business strategy with the IT. The study conducted by Venkatraman (1989) has much focus on the best-suited approach used to measure the alignment. However, Bergeron et al. (2001)

emphasized that it is that specific situation which decides the best method to measure the alignment (Ismail and King, 2014).

The work of Drazin and Van de Ven (1985) and Venkatraman 1989 mostly focused on the concept of fit and alignment and its implication on the performance of the organization on operational and theoretical level. Venkatraman (1989) follows six different viewpoints for defining the alignment i.e. mediation, moderation matching, gestalt, profile deviation and covariation. In mediation, the alignment considers the intervention between the predictor variable and dependent variable. The empirical testing of the mediation perspective was carried out by Bergeron and Raymond in 1995 and Teo and King in 1996 and both studies found the positive relationship between the predictor and dependent variables (Kefi and Kalika, 2005).

In another study, it found that the relationship between rational behavior and performance positively mediated by goal alignment. Which means that the high performance of relational behavior between the parties was achieved through the goal alignment (Stephen and Coote, 2007).

The mediating effect of alignment is also present between flexibility and performance in ERP projects in which alignment was an essential requirement and has strategic importance and priority among the management. The researchers and scholars are now giving priority to alignment for value adding to the businesses and high performance (Chan and Reich, 2007).

Some of the researchers like Chan, 1992, 1997; Sabherwan and Chan, 2001; and Cragg et al., 2002 considers the mediation of alignment and fit more superior to the matching approach in terms of explaining the results and conclusions (Taskin and Verville, 2010). From the literature, it shows that the mediation approach for measuring the alignment yields positive results. So the following hypothesis formulated.

H2: The team alignment mediate the relationship between planning and performance.

### 3. RESEARCH METHODOLOGY

Survey research is the suitable mode of collecting primary data which illustrate measure or analyze individual and societal wisdom, opinions, qualities, choices and attitudes (Fink, 2003; 2008). The surveys help the researchers in knowing the rate or percentage of the characteristics and opinion of a population (Salant et al., 1994). The most suitable methodology focused around the research questions, goals, and expected the investigation, is the quantitative data examination in which data collected through questionnaire survey studies. By measuring the alignment, the researcher has to focus on the employee or subordinate attitudes, beliefs and the abilities to understand these issues (Reich and Benbasat, 1996).

In this study, the questionnaires distributed mainly to oil and gas companies, petrochemical plants, cement plants, palm oils and power plants. The reason for choosing these companies is that these companies have a large number of physical assets and

facilities. In addition, for maintaining these physical assets these companies carries out plant turnaround maintenance on a regular basis according to their plans and schedule.

#### 3.1. Sampling Design

- Target population: TA managers, TA engineers, TA supervisors and ta technical staff.
- Sample size: The data is collected from different sectors related to oil and gas, palm oils, petrochemical plants, cement plants and power plants. The respondents are people working on plant turnaround maintenance and are randomly selected from the company. The data is collected from 31 Malaysian companies from the above listed sectors.
- The sampling design: Simple random sampling (probability sampling).

In the statistics, the simple random sample is the probability sampling technique in which each and every member of the population has a known and equivalent possibility of being chosen as a subject (Sekaran, 2009). This sampling technique has the slightest possibility of biases in the information and the conclusion made out of the testing is more generalizable.

#### 3.2. Sources of Measuring Instruments

In this study, interval scale is used and utilizes five point Likert-scale stating from strongly disagree to strongly agree. The instruments for measuring the variables drawn from different articles and sources. The Planning measured through 17 items, Alignment through 28 items and performance through seven (7) items.

#### 3.3. Data Analysis Techniques

In this research, the SPSS 22 used for data analysis.

## 4. RESULTS AND DISCUSSIONS

#### 4.1. Descriptive Statistics and Correlations

The descriptive statistics and correlation shown in the Table 1. There is a significant correlation of planning with performance ( $r = 0.770$ ) and alignment ( $r = 0.788$ ). The mean values and standard deviation also given in the Table 1 for planning, alignment and performance respectively.

#### 4.2. Regression Analyses

The effect of the hypotheses checked through linear regression. In mediation for the predictor, mediator, and the dependent variable, there are four types of relationship checking. The detail given below:

- The relationship of planning with performance
- The relationship of planning with alignment
- The relationship of alignment on performance

**Table 1: Descriptive statistics and correlation**

Construct	Mean	SD	Planning	Alignment	Performance
Planning	4.44	0.29	1.00		
Alignment	4.29	0.26	0.788**	1.00	
Performance	4.15	0.26	0.770**	0.777**	1.00

\*\*Significant at 95% confidence level. SD: Standard deviation

- The relationship of planning with performance using alignment as mediator.

The hypothesis are developed for the 1<sup>st</sup> and 4<sup>th</sup> relationships based on literature and which are the objective of this study.

**4.2.1. The relationship of planning with performance**

The regression results of the planning with performance reported in Table 2. As shown, the  $\beta$  value of the relationship of planning with performance is  $\beta = 0.705$ ,  $t$  value = 6.506 and  $P < 0.01$  which is significant at 0.01 confidence interval. This proved hypothesis H1 which is “planning is positively related to performance.” The  $R^2 = 0.593$  shows the level of closeness of planning and performance or simply the level of explanation of the performance by planning.

The model for the above Table 2 given below in Figure 2.

**4.2.2. The relationship of planning with alignment**

The regression results of the planning with alignment reported in Table 3. As shown, the  $\beta$  value of the influence of planning on alignment is 0.725, the  $t$  value = 6.506 and  $P < 0.01$  which is significant at 0.01 confidence interval. The  $R^2 = 0.621$  shows the level of closeness of planning and alignment or simply the level of explanation of the alignment by planning.

The model for the above Table 3 given below in Figure 3.

**4.2.3. The relationship of alignment on performance**

The regression results of the alignment with Planning reported in Table 4. As shown, the  $\beta$  value of the influence of alignment on performance is 0.773, the  $t$  value = 6.651 and  $P < 0.01$  which is significant at 0.01 confidence interval. The  $R^2 = 0.604$  shows the level of closeness of alignment and performance or simply the level of explanation of the performance by alignment.

The model for the above Table 4 given below in Figure 4.

In the next stage, we run the mediation analysis using alignment as mediating variable to check the impact of planning on performance.

**4.2.4. The relationship of planning with performance using alignment as mediator**

The mediated regression analysis used to test hypothesis H2. The regression results for the planning on performance reported in Table 5. As shown, the  $\beta$  value planning is  $\beta = 0.381$ ,  $t = 2.361$  and  $P < 0.025$  which is significant at 0.05 confidence interval. The  $\beta$  value for alignment is  $\beta = 0.446$ ,  $t = 2.545$  and  $P < 0.017$ . This shows that alignment has significant and positive impact on performance, which confirms the mediation of alignment. The mediation, in this case, called partial mediation. It also means that with the introduction of the alignment as a mediator the hypothesis H2 is supported which states that “The team alignment mediate the relationship between planning and performance.”

The value of  $R^2 = 0.67$  significantly improved after the alignment mediating the relationship of planning with performance.

The model for the above Table 5 given below in Figure 5.

**5. CONCLUSION**

This paper sheds light on the importance of the planning on the success of the plant turnaround maintenance in the presence of the alignment. It provides a clear understanding of the importance of alignment of the teams and groups working in plant turnaround maintenance by analyzing the mediating impact of team alignment on the relationship between planning and performance in the plant turnaround maintenance. The mediating approach of team

**Table 2: Regression analysis: Planning versus performance**

Construct	Performance			
	$\beta$ value	R <sup>2</sup>	t value	Significant values
Planning	0.705	0.593	6.506	0.000

**Table 3: Regression analysis: Planning versus alignment**

Construct	Alignment			
	$\beta$ value	R <sup>2</sup>	t value	Significant values
Planning	0.725	0.621	6.894	0.000

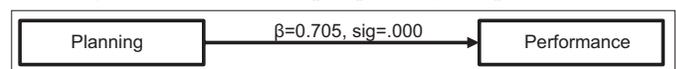
**Table 4: Regression analysis: Alignment versus performance**

Construct	Performance			
	$\beta$ value	R <sup>2</sup>	t value	Significant values
Alignment	0.773	0.604	6.651	0.000

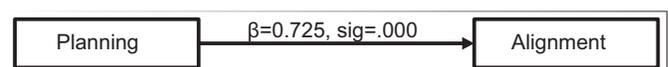
**Table 5: Results of mediation regression analysis**

Construct	Performance			
	$\beta$ value	R <sup>2</sup>	t value	Significance value
Planning	0.381	0.67	2.361	0.025
Alignment	0.446		2.545	0.017

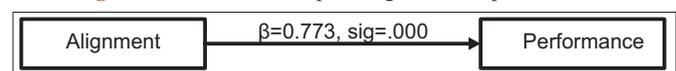
**Figure 2:** The relationship of planning with performance



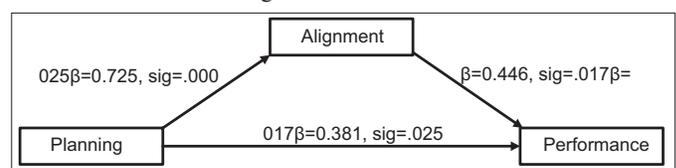
**Figure 3:** The relationship of planning with alignment



**Figure 4:** The relationship of alignment on performance



**Figure 5:** The relationship of planning with performance using alignment as mediator



alignment will specifically support the effectiveness of the plant turnaround maintenance by achieving objectives and goals within the time schedule and allocated budget. It will help in understanding the behavior and attitude of the teams in the plant turnaround maintenance and its environment. The team leaders will use alignment along with planning to control the work of the plant turnaround maintenance.

The main beneficiary of this research would be the people related to the plant turnaround maintenance, like TA engineers, TA technicians, business owners, financiers, stakeholders and research academicians to name a few. The practical implications of the study suggest that along with planning, the alignment of the teams plays an important role towards the successful completion of the plant turnaround maintenance with a high level of performance.

## REFERENCES

- Adkins, C.L., Ravlin, E.C., Meglino, B.M. (1996), Value congruence between co-workers and its relationship to work outcomes. *Group and Organization Management*, 21(4), 439-460.
- Ben-Daya, M., Ait-Kadi, D., Duffuaa, S.O., Knezevic, J., Raouf, A. (2009), *Handbook of Maintenance Management and Engineering*. Vol. 7. London: Springer.
- Bergeron, F., Raymond, L., Rivard, S. (2001), Fit in strategic information technology management research: an empirical comparison of perspectives. *Omega*, 29(2), 125-142.
- Campling, J., Poole, D., Wiesner, R., Schernerhorn, J. (2008), *Management*, 3<sup>rd</sup> Asia-Pacific Edition. Milton, Queensland, Australia: John Wiley & Sons Australia Ltd.
- Chan, J.B. (1997), *Changing police culture: Policing in a multicultural society*. Cambridge: Cambridge University Press.
- Chan, Y.E., Reich, B.H. (2007), IT alignment: what have we learned? *Journal of Information Technology*, 22(4), 297-315.
- Chonko, L.B., Weeks, W.A. (2008), Alignment of front-line personnel: A preliminary attempt at scale development. *Journal of Selling and Major Account Management*, 8(3), 1-26.
- Collins, J.C., Porras, J. (1994), *Built to Last: Successful Habits of Visionary Companies*. New York: FHarper-Business.
- Connors, R., Smith, T. (1999), Align your team get your team aligned around desired results. *Executive Excellence*, 16, 12-12.
- Cragg, P., King, M., Hussin, H. (2002), IT alignment and firm performance in small manufacturing firms. *The Journal of Strategic Information Systems*, 11(2), 109-132.
- Croteau, A.M., Solomon, S., Raymond, L., Bergeron, F. (2001), *Organizational and Technological Infrastructures Alignment*. Paper Presented at the System Sciences, 2001. Proceedings of the 34<sup>th</sup> Annual Hawaii International Conference.
- DeBakey, G., Samman, B., Sulaiman, S.M., Blanchard, K., Edmundson, D. (2007), *Maximising Plant Productivity*. Available from: <http://www.ap-networks.com/view-document/7-maximizing-plant-productivityd44b.pdf?format=raw&tmpl=component>.
- Dickson, D.R., Ford, R.C., Upchurch, R. (2006), A case study in hotel organizational alignment. *International Journal of Hospitality Management*, 25(3), 463-477.
- Drazin, R., Van de Ven, A.H. (1985), Alternative forms of fit in contingency theory. *Administrative Science Quarterly*, 514-539.
- Fink, A. (2003), *The Survey kit: How to Manage, Analyze, and Interpret Survey data*. London: Sage Publications.
- Fink, A. (2008), *Practicing Research: Discovering Evidence that Matters*. Thousand Oaks, CA: Sage.
- Gandolfo, J., Vichich, B. (2007), *Turnaround Performance Excellence: Breaking the Barriers of Traditional Learning*. Available from: <http://www.ap-networks.com/download-document/8-turnaround-performance-excellence-%E2%80%93-break-the-barriers-of-traditional-learning.pdf>.
- Ghazali, Z.B. (2010), *Organizational Context, Structure, and Performance of Plant Turnaround Maintenance in Malaysian Process-Based Industries*.
- Gibson, C.B., Zellmer-Bruhn, M.E. (2001), Metaphors and meaning: An intercultural analysis of the concept of teamwork. *Administrative Science Quarterly*, 46(2), 274-303.
- Griffith, A., Gibson, G, Jr. (2001), Alignment during pre-project planning. *Journal of Management in Engineering*, 17(2), 69-76.
- Guenzi, P., Troilo, G. (2006), Developing marketing capabilities for customer value creation through Marketing - Sales integration. *Industrial Marketing Management*, 35(8), 974-988.
- Halib, M., Ghazali, Z., Nordin, S.M. (2010), Plant turnaround maintenance in Malaysian petrochemical industries: A study on organizational size and structuring processes. *International Handbook of Academic Research and Teaching*. Proceedings of intellect base international consortium. p55. Available from: [http://www.intellectbase.org/e\\_publications/proceedings/IHART\\_Volume\\_9.pdf#page=70](http://www.intellectbase.org/e_publications/proceedings/IHART_Volume_9.pdf#page=70).
- Hameed, A., Khan, F. (2014), A framework to estimate the risk-based shutdown interval for a processing plant. *Journal of Loss Prevention in the Process Industries*, 32, 18-29.
- Hansotia, B. (2004), Customer metrics and organisational alignment for maximizing customer equity. *The Journal of Database Marketing and Customer Strategy Management*, 12(1), 9-20.
- Homburg, C., Jensen, O. (2007), The thought worlds of marketing and sales: Which differences make a difference? *Journal of Marketing*, 71(3), 124-142.
- Homburg, C., Jensen, O., Krohmer, H. (2008), Configurations of marketing and sales: A taxonomy. *Journal of Marketing*, 72(2), 133-154.
- Ingram, T.N., LaForge, R.W., Locander, W.B., MacKenzie, S.B., Podsakoff, P.M. (2005), New directions in sales leadership research. *Journal of Personal Selling and Sales Management*, 25(2), 137-154.
- Ismail, N.A., King, M. (2014), Factors influencing the alignment of accounting information systems in small and medium sized Malaysian manufacturing firms. *Journal of Information Systems and Small Business*, 1(1-2), 1-20.
- Kefi, H., Kalika, M. (2005), Survey of Strategic Alignment Impacts on Organizational Performance in International European Companies. Paper Presented at the System Sciences, 2005. HICSS'05. Proceedings of the 38<sup>th</sup> Annual Hawaii International Conference.
- Kheirandish, M. (2014), Measuring the personal and organizational goals alignment: Developing a practical model. *Research Journal of Recent Sciences*, 3(2), 125-132.
- Kotler, P., Rackham, N., Krishnaswamy, S. (2006), Ending the war between sales and marketing. *Harvard Business Review*, 84(7-8), 68.
- Lawrence, G. (2012), Cost estimating for turnarounds. *Petroleum Technology Quarterly*, 17(1), 33.
- Lenahan, T. (1999), *Turnaround Management*. Boston, Mass: Butterworth-Heinemann.
- Lorge, S. (1999), Marketers are from Mars, salespeople are from Venus. *Sales and Marketing Management*, 151, 26-33.
- Lynn, F.R. (2007), A literature review exploring values alignment as a proactive approach to conflict management. *International Journal of Conflict Management*, 18(3), 280-305.
- Mattysens, P., Dawes, P.L., Massey, G.R. (2006), A study of relationship effectiveness between marketing and sales managers in business markets. *Journal of Business and Industrial Marketing*, 21(6), 346-360.

- McLay, J.A., JMC Consulting Limited. (2003), *Practical Management for Plant Turnarounds*. Edmonton, Alta: JMC Consulting Limited.
- Morris, W. (1982), *The American Heritage Dictionary*. 2<sup>nd</sup> ed. Boston: Houghton Mifflin.
- Nyberg, S., Nilsson, A., Skinstad, E. (2009), The connections between values alignment and teamwork: A case study. Available from: <http://www.diva-portal.org/smash/record.jsf?pid=diva2%3A284961&dsid=6058>.
- Obiajunwa, C. (2007), *Optimization of Turnaround Maintenance Project Implementation*. RCOM A. p21.
- Pokharel, S., Jiao, J. (2008), Turn-around maintenance management in a processing industry: A case study. *Journal of Quality in Maintenance Engineering*, 14(2), 109-122.
- Raoufi, M., Fayek, A.R. (2014), Process improvement for power plant turnaround planning and management. *International Journal of Architecture, Engineering and Construction*, 3(3), 168-181.
- Reich, B.H., Benbasat, I. (1996), Measuring the linkage between business and information technology objectives. *MIS Quarterly*, 20(1), 55-81.
- Sabherwal, R., Chan, Y.E. (2001), Alignment between business and IS strategies: A study of prospectors, analyzers, and defenders. *Information Systems Research*, 12(1), 11-33.
- Salant, P., Dillman, I., Don, A. (1994), *How to Conduct your Own Survey*. New York: John Wiley & Sons.
- Sekaran, U. (2009), *Research Methods for Business*. New York: John Wiley & Sons.
- Shirley, P. (2012). *Turnaround Excellence Through Organizational Transformation*. Available from: <http://www.ap-canada.ca/download-document/22-turnaround-excellence-organizational-transformation.html>.
- Stephen, A.T., Coote, L.V. (2007), Interfirm behavior and goal alignment in relational exchanges. *Journal of Business Research*, 60(4), 285-295.
- Strahle, W.M., Spiro, R.L., Acito, F. (1996), Marketing and sales: Strategic alignment and functional implementation. *Journal of Personal Selling and Sales Management*, 16(1), 1-20.
- Taskin, N., Verville, J. (2010), An Exploratory Study on Strategic Alignment of Enterprise Systems and Business Strategies, Performance, and Flexibility. Paper Presented at the Proceedings of 7<sup>th</sup> International Conference on Enterprise Systems, Accounting and Logistics 7<sup>th</sup> ICESAL 2010.
- Teo, T.S., King, W.R. (1996), Assessing the impact of integrating business planning and IS planning. *Information & Management*, 30(6), 309-321.
- Tu, Q., Vonderembse, M.A., Ragu-Nathan, T.S. (2001), The impact of time-based manufacturing practices on mass customization and value to customer. *Journal of Operations Management*, 19(2), 201-217.
- Venkatraman, N. (1989), The concept of fit in strategy research: Toward verbal and statistical correspondence. *Academy of Management Review*, 14(3), 423-444.
- Vichich, B. (2006), *Leading Indicators of Turnaround Performance Outcomes*. Available from: <http://www.ap-canada.ca/view-document-details/2-leading-indicators-of-turnaround-performance-outcomes.html>.
- Voogd, P. (2014), *Organizational Effectiveness of Turnarounds and Team Staffing*. Available from: <http://www.ipaglobal.com/organizational-effectiveness-of-turnarounds-and-team-staffing>.