PRINCE2 METHODOLOGY: AN INNOVATIVE WAY FOR IMPROVING PERFORMANCE OF MALAYSIAN AUTOMOTIVE INDUSTRY

*Saima Saad1, Abdullah Ibrahim1, Omme Asma2, Muhammad Saad Khan3, Junaid Akhter4

1Faculty of Technology, University Malaysia Pahang

2Department of Political Science, University of Karachi, Pakistan

3Faculty of Chemical and Natural Resources, University Malaysia Pahang

4Faculty of Chemical and Natural Resources, University Technology Malaysia

Email: hareems@hotmail.com

ABSTRACT

The role of project management is identically essential for organizations and it’s converted into an important issue for implementing modern projects. Operations & Management division is the spine of any corporate organization, and it is the key factor for progress the performance of the industry. International competition in automotive industry compulsory required, well-organized project management in each area, for satisfaction of clients and quality. The novel approach of Project Management is Project Management PRINCE2 (PMP2), which is the generic framework, which design to suit every type of project in industry. Therefore, the aim of this research is to investigate the impact of project management prince2 methodology in Malaysian automotive industry. PRINCE2 is a structured method for effective project management. PRINCE2 has strongly established in UK and spread all over the world fluently; as a generic, process based approach of project management. In view of the fact that its emphasis on, the dividing the project into manageable and controllable stages. This research will encourage the implementation of Prince2 methodology in automotive industry of Malaysia. Additionally, it will encourage the prospect applications of PRINCE2, which ultimately improve the human performance in automotive industry.

Keywords: automotive industry, project management (PM), PRINCE2 methodology.
1.0 INTRODUCTION

Project Management PM is the combination of art and science of planning, designing and managing work all the way through, all the phases of the projects lifespan. PM is a comparatively modern approach that efforts to achieve planned objectives within precise time and cost parameters complete with optimum use of resources by using an integrated planning and control system. All kind of Projects such as organizational, institutional, industrial and others are the physical foundations on which development efforts and improved living standards have established. PM is an essential contributor in the process of development for growth and acceptance of project management is continuing to upsurge as resources become rare. The implementation of PM concepts is an essential tool for planning, managing, organizing, and control of work, which leads to improved performance and increased productivity (Abbasi and Al-mharmah 2000).

Historically, modern PM started in the 1950’s due to the upsurge of projects complexity and the need for manage numerous projects at a number of locations. The Project Management Institute (PMI) was established in the USA in the 1960’s with the goals of promoting the development of PM, and of spreading the technology and PM training methods. Comparable to the development of PM in North America, various European professionals from France, Holland, Sweden, and Germany initiated a dialogue for formation of a debate forum on PM implementation. The international network was formed in Europe to promote PM in 1965. Additionally, in 1979, the International Project Management Association was formally established. After the foundation of International Project Management Association in various countries of Western Europe and the Near East, national associations were initiated (Abbasi and Al-mharmah 2000; Mishra and Tarun 2005).

Organizational project management is the systematic management of projects, programs, and portfolios in alignment with the accomplishment of strategic goals. The concept of organizational Project Management has based on the idea that there is a correlation between an organization’s capabilities in Project Management, Program Management, and Portfolio Management, and the organization’s in implementing effectiveness strategy (Aubry, et.al., 2008).

As businesses change at a faster rate, it is becoming increasingly important to execute on projects (Munns and Bjeirmi, 1996). Additionally, due to the extensive nature of the change, projects are affecting larger parts of the organization. Therefore, just as the need to
perform projects is increasing, the complexity in executing them is also increasing. Organizational Project Management draws from the broad base of project management and organizational design applications to understand the organizational processes that affect the ability to manage the delivery of projects (Cooke-Davis 2002).

Manufacturing is no more concentrated in one country, but rather spread over distant locations across the globe. In such a contentious scenario, companies have to search for new processes, materials, suppliers/vendors, manufacturing facilities’ locations, and delivery channels for their products and services at a competitive price. The advanced/modern manufacturing technologies have harnessed a wide range of benefits, including reduced costs, increased productivity, greater flexibility, and higher quality, enabling companies to improve their competitive position. By adopting an appropriate manufacturing strategy, companies can achieve excellent manufacturing status and compete effectively in global markets (Laosirihongthong and G.S. Dangayach 2005; Laosirihongthong, et.al., 2003).

Operations & Management division is the backbone of any corporate organization, more so in this era ever advancing technology. Management of project or task is very essential in daily routine work. Organizations have to organize and schedule their work by using the project / task management to achieve their task successfully (Laosirihongthong, et.al 2003; Nobeka and Micheal).

The uncertainly associated with the project failure has forced organizations to adopt a structured and process based approach to project management. (Bellis 2003) suggested that the structured project management mean managing the projects in a logical organized way, following defined steps. A structured project management method is the written description of this logical, organized approach.

(Egginton 1996) further argued that an effective process based approach can be defined as ‘the one which brings together the most fundamental principles of project management in a way that overcomes differences and altogether maximizes the operational effectiveness of the organization, measured in terms of delivery to time, within the budget, to specification and within maximum customer satisfaction’.
2.0 AUTOMOTIVE INDUSTRY IN MALAYSIA

The automotive industry in Malaysia has developed since the establishment of Proton in 1985, followed by Perodua in 1993 as a part of the National Car Project. The introduction of the National Car Project has given a boost to the development of components and parts manufacturing in Malaysia. Currently, there are four local vehicle manufacturers, including Proton, Perodua, Naza, and Modenas. In addition, there are nine motor vehicle assemblers and 343 components–parts manufacturers in Malaysia (Saima Saad et.al. 2012). Despite fluctuation in automotive production, the vehicle production in Malaysia tends to increase due to the rapid increase in domestic sales. The complete vehicle production in 2007 is 441,678 vehicles as compared to 360,105 vehicles in 2000. From January to March, 2008, the total number of vehicle’s production is 132,744 (Rosli and Fatimah 2008).

The number of vehicle sold in the domestic market is 487,176 in 2007 as compared to 343,173 vehicles in the year 2000. In 2008, it has forecasted that the number of vehicles sales will grow by more than 5%. The total industry sale has predicted to achieve 580,000 vehicles in 2012. Most of the vehicle sales in Malaysia have dominated by the local manufacturers. Perodua has the highest market share at 33.3% with total sales of 162,152 vehicles in 2007. Proton has the second biggest market share in 2007 with total sales of 118,134 vehicles or 24.2% market share. This is followed by Toyota with 81,993 vehicles (16.8%), Honda 28,478 vehicles (5.8%), Naza 20,286 vehicles (4.2%), Nissan 18,569 vehicles (3.8%), Inokom 9874 vehicles (2.0%), followed by Daihatsu, Mitsubishi, Mercedes, Hyundai, BMW, Kia, Isuzu, Ford, and Suzuki (less than 1% each) (Rosli and Fatimah 2008).

The prince2 methodology

Project management PRINCE2 is a structured method for effective project management. PRINCE2 has established in UK as a generic, process based approach to project management. It is a de facto standard used extensively by UK government, and it has started to be recognized and used in the private sector, in UK. PRINCE2 the method is in the public domain, offering non-proprietarily best practice guidance on project management, and it is started emerging internationally (Bentley 2002).

PRINCE2 provide an easily tailored and scalable method for the management of all types of projects. Uncertainty and change are the important factors that underpin the adoption of PRINCE2 methodology by the organizations. There are always many changes during the life of
the project, people change their mind, and requirements change. These affect what the project is doing. PRINCE2 has a technique of controlling the way changes impact on the project in order to prevent the project going off in the wrong direction.

**History of PRINCE2**

PRINCE2 has derived from an earlier method called PROMPTIII and from PRINCE project management method, which was initially developed in 1989 by the Central Computer and Telecommunications Agency (CCTA) as a UK Government standard for information systems (IT) project management; however, it soon became regularly applied outside the purely IT environment. PRINCE2, a newer version has released in 1996 as a generic project management method. PRINCE2 has become increasingly popular and is now a de facto standard for project management in the UK. Its use has spread beyond the UK, Holland, Denmark, Australia, and other countries (Haughey 2010).

Since 2006, continuous improvements have been made and in 2009, it launched as “PRINCE2:2009 Refresh”. The name “PRINCE2” (instead of “PRINCE3” or similar) is kept indicating that the method remains faithful to its principles. Nevertheless, it is a fundamental revision of the method from 1996 to adapt it to the changed business environment, to make the method simpler and lighter, to address current weaknesses or misunderstandings, and to better integrate it with other methods (Haughey 2010). Tables 1 describe the detailed history of prince 2 with key fractures and applicable sector.
Table 1: Illustrate the history and application of PRINCE2 with time line chart

<table>
<thead>
<tr>
<th>S. No</th>
<th>YEAR</th>
<th>ABBREVIATION</th>
<th>FULL NAME</th>
<th>KEY FEATURES</th>
<th>APPLICABLE SECTOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1975</td>
<td>PROMPT II</td>
<td>Project Resource Organization Management and Planning Techniques</td>
<td>Feasibility study, Initial stage, Specification stage, Design stage, Development stage, Installation stage</td>
<td>UK Government CCTA (Central Computing &amp; telecommunication Agency)</td>
</tr>
<tr>
<td>2</td>
<td>1989</td>
<td>PRINCE</td>
<td>PRoject IN Controlled Environment</td>
<td>Defined management structure, System of Plans for resourcing and technical issues, A set of controlled procedures, Focus on products</td>
<td>UK Standard for all IT projects &amp; CCTA (Central Computing &amp; telecommunication Agency)</td>
</tr>
<tr>
<td>3</td>
<td>1996</td>
<td>PRINCE2</td>
<td>PRoject IN Controlled Environment 2</td>
<td>Upgraded version of PRINCE, Applicable According to commercial needs of organization, Applicable according to organizational flexibility, To reduce cost and time overruns</td>
<td>UK Government standard for information technology (IT) and Information system (IS), UK Office of Government Commerce (OGC), Getronics a leading IT Company, Electricity Supply Board Ireland the national electricity utility in the Republic of Ireland, Ericsson Services Ireland part of Ericsson, a worldwide provider of telecommunications infrastructure, The Fleet Information Management Unit a Royal Naval organization, which provides data to the Fleet to support maritime operations worldwide</td>
</tr>
</tbody>
</table>
Table 1: Illustrate the history and application of PRINCE2 with time line chart

<table>
<thead>
<tr>
<th>Year</th>
<th>PRINCE2 Revision</th>
<th>Major Project In Controlled Environment 2</th>
<th>Business case Organization plans Plan Risk Progress Quality Issues &amp; Changes</th>
</tr>
</thead>
</table>
Implementing PRINCE2 project management methodology

PRINCE2 is an effective process-based method for project management. We will briefly discuss PRINCE2. PRINCE2 is a process-based approach for managing projects. It helps to work out who should be involved in a project, their role, and their responsibilities. PRINCE2 has a set of processes to work through, and it explains what information needs to be gathered. The method is the de-facto standard for project management in the UK and is practiced globally (Bentley 2002).

PRINCE2 has very adjustable system and it can be applied all sorts of projects, no matter how big or small the project is; even projects lasting a few days will benefit from selective application of PRINCE2 guidelines. This can lead to a fervent adherence to unnecessary levels of formality and detail - therefore, giving the impression PRINCE2 is bureaucratic and filled with rules and regulations. Equally, it could lead to inappropriate shortcuts being taken in projects, which can undermine the integrity of the method and the control and management of risk it provides.

PRINCE2 - The Method

There are six variables involved in any project, and therefore, six aspects of project performance have to be managed accordingly:

a) Costs: The project has to be affordable and, though we may start out with a particular budget in mind, there will be many factors which can lead to overspending and, perhaps, some opportunities to cut costs.

b) Timescales: Allied to this, and probably the next most-frequent question asked of a Project Manager, is: ‘When will it be finished?’

c) Quality: Finishing on time and within budget is not much consolation if the result of the project doesn’t work. In PRINCE2 terms, the project’s products must be fit for purpose.

d) Scope: Exactly what will the project deliver? Without knowing it, the various parties involved in a project can very often be talking at cross-purposes about this. The customer may assume that, for instance, a fitted kitchen and/or bathroom is included in the price of the house, whereas the supplier views these as ‘extras’. On large-scale projects, scope definition is much more subtle and complex. There must be agreement on the project’s scope and the Project Manager needs to have a detailed understanding of what is and what is not within the scope. The Project Manager should take care not to deliver beyond the scope as this is a common source of delays, overspends and uncontrolled change.

e) Risk: All projects entail risks but exactly how much risk is we prepared to accept? Should we build the house near the site of a disused mine, which may be prone to subsidence? If we decide to go ahead, is there
something we can do about the risk? Maybe insure against it or have thorough surveys carried out?

f) Benefits: Perhaps most often overlooked is the question, ‘Why are we doing this?’ It’s not enough to build the house successfully on time, within budget and to quality specifications if, in the end, we can’t sell or rent it at a profit or live in it happily. The Project Manager has to have a clear understanding of the purpose of the project as an investment and make sure that what the project delivers is consistent with achieving the desired return.

PRINCE2 is an integrated framework of processes and themes that addresses the planning, delegation, monitoring, and control of all these six aspects of project performance.

**The structure of PRINCE2**

The PRINCE2 method has addresses project management with four integrated elements of principles, themes, processes, and the project environment as shown in figure 1.

1. The Principles - These are the guiding obligations and good practices which determine whether the project is genuinely being managed using PRINCE2. There are seven principles and unless all of them are applied, it is not a PRINCE2 project. PRINCE2 is based on seven principles;

   - Business justification
   - Learning lessons
   - Roles and responsibilities
   - Managing by stages
   - Managing by exception
   - Product focused
   - Tailored

2. The Themes - These describe aspects of project management that must be addressed continually and in parallel throughout the project. The seven themes explain the specific treatment required by PRINCE2 for various project management disciplines, and why they are necessary. The approaches to deliver these principles are outlined in the seven themes of:

   - Business case
   - Organization
   - Quality
   - Plans
   - Risks
   - Changes
   - Progress
3. The Processes - These describe a stepwise progression through the project lifecycle, from getting started to project closure. Each process provides checklists of recommended activities, products, and related responsibilities.

4. Tailoring PRINCE2 to the Project Environment - This addresses the need to tailor PRINCE2 to the specific context of the project. PRINCE2 is not a ‘one size fits all’ solution; it is a flexible framework that readily be tailored to any type or size of the project.

**Figure 1:** Structure of PRINCE2 method with four basic steps: principles, themes, process, and environment. Source (Bentley 2002)

*PRINCE2 process model*

PRINCE2 process model is the complete flow chart of prince 2 project management methodology. It describes every part of project from starting until closing of the project. Figure 2 describe the process model diagram of PRINCE2.

**Figure 2:** Process model diagram of PRINCE2 project management. Source (Bentley 2002)
Description of PRINCE2 process model

Planning

PRINCE2 recommends three levels of the plan to reflect the needs of the different management levels involved in the project, stage and team. Planning is a repeatable process, and its activities are included within the seven main PRINCE2 processes; the activities of planning are

- Design the plan
- Define and analyze the products
- Identify the activities and dependencies
- Prepare estimates
- Prepare the schedule
- Analyze the risks
- Document the plan

PRINCE2 uses a technique known as ‘Product based planning’

Product based planning is a fundamental part of the PRINCE2 approach to project management, and is a method of identifying all of the products (project deliverables) that make up or contribute to delivering the objectives of the project, and the associated work required to deliver them.

Directing a project

Directing a Project stage runs from the start-up of the project until its closure. This process has aimed at the Project Board. The Project Board manages and monitors via reports and controls through a number of decision points.

This process dictates how the Project Board (which comprises such roles as the executive sponsor or project sponsor) should control the overall project. As mentioned above, the project board can authorize an initiation stage and can authorize a project. Directing a Project also dictates how the project board should authorize a stage plan, including any stage plan that replaces an existing stage plan due to slippage or other unforeseen circumstances. Furthermore, covered the way in which the board can give ad hoc direction to a project, and the way in which a project should be closed down. Key activities include authorizing initiation; authorizing a project; authorizing a stage or exception plan; giving ad-hoc direction; and confirming project closure.
Starting up a project

This is the first process in PRINCE2. It is a pre-project process, designed to ensure that the pre-requisites for initiating the project are in place. The process expects the existence of a Project Mandate, which defines in high-level terms the reason for the project and what outcome has sought. Starting up a Project should be very short.

In this process, the project team is appointed and a project brief (describing, in outline, what the project is attempting to achieve and the business justification for doing so) is prepared. In addition, the overall approach has decided and the next stage of the project has planned. Once this work is done, the project board is asked to authorize the next stage, that of initiating the project.

Initiating a project

This process builds on the work of the start up process, and the project has brief augmented to form a Business case. The approach taken to ensure quality on the project has agreed together with the overall approach to controlling the project itself (project controls). Project files have also created as an overall plan for the project. A plan for the next stage of the project also created in this stage. The resultant information can put, before the project board for them to authorize the project it.

Managing stage boundaries

The Controlling Stage processes dictate what should be done within a stage; Managing Stage Boundaries (SB) dictates what should be done towards the end of a stage. Most obviously, the next stage should be plan, and the overall project plan; risk log, and business case amended as necessary. The processes also cover what should have done for a stage that has gone outside its tolerance levels. Finally, the process dictates, how the end of the stage should be report.

Controlling a stage

PRINCE2 suggests that projects should be broken down into stages, and these sub-processes dictate how each individual stage should controlled. Most fundamentally, this includes the way in which work packages have authorized and received. It also specifies the way in which progress should be monitor and how the highlights of the progress should report to the project board. A means for capturing and assessing project issues has suggested together with the way in which corrective action should taken. It also lays down the method by which certain project issues should escalated to the project board.
This process describes the monitoring and control activities of the Project Manager involved in ensuring that a stage stays on course and reacts to unexpected events. The process forms the core of the Project Manager’s effort on the project, being the process, which handles day-to-day management of the project.

Managing product delivery

The Managing product delivery process has the purpose of controlling the link between the Project Manager and the Team Manager(s) by placing formal requirements on accepting, executing and delivering project work.

Closing a project

The closing a project stage covers the things that should have done at the end of a project. The project should be formally de-commissioned (and resource is freed up for allocation to other activities); follow on actions should be identified and the project itself be formally evaluated. The process covers the Project Manager’s work to wrap up the project either at its end or at a premature close. Most of the work is to prepare input to the Project Board to obtain its confirmation that the project may close.

3.0 CASE STUDIES OF IMPLEMENTATION OF PRINCE2 FOR EXCELLENCE IN HUMAN PERFORMANCE

- A project case study different from the other case studies which describe an organization’s use of PRINCE2 in that it is a project manager’s description of the use of PRINCE2 on a specific project. The Registers of Scotland provided it (APM Group 2002).
- The Cheshire Constabulary Case on 2002, senior level commitment to PRINCE2. Strong business focus of IT projects implementing a project mentality Electricity Supply Board Ireland is the national electricity utility in the Republic of Ireland (APM Group 2002).
- In April 2002, Business process re-engineering using PRINCE2 ~ Achieving business goals with PRINCE2 ~ Converting to the euro using PRINCE2.
- The Getronics PRINCE2 - PMI/PMBOK Combination Case Study in 2003
PRINCE2 - PMI/PMBOK Combination Case Study based on material supplied by Getronics. Brief summary of the two approaches, Current perceptions of relative positioning and Getronics view of combining the two approaches and the complementary benefits. Max Wideman’s detailed comparison (APM Group 2003).

4.0 PROBLEM STATEMENT

Automotive companies all over the world are under increasingly diverse and mounting pressure due to markets that are more sophisticated, changing customer choice, and international competition. Global competition of automotive industry required well-organized project management in each area for satisfaction of customer and quality. Effective project management can strongly enhance the human performance of the automotive sector. Prince2 project management methodology has structure based project management approach. Implementation of fresh project management process based approach “Prince2 methodology” for increasing of human performance in automotive industry.

Justification of the problem

The dynamic nature of the business environment has forced the organizations, especially in process industries to experience extraordinary levels of change. Those organizations, which fail to manage the inherent risk, associated with change, innovation and management of projects often end up with high proportion of project failures. Change has become a way of life for organizations that need to remain effective and competitive in order to succeed (Prof and Walsh 2004). Those organizations that fail to manage the inherent risk associated with change, innovation and management of projects eventually end up with high proportion of project’s failures.

The global automotive industry is a significant constituent of industrial and economic advancement, and its development has considered global competitiveness of leading industrialized economies. This industry is a reasonably developed one and involves huge investments in research and development and technology. It is also seen as an indicator of the economic progress of a country (Saima et.al. 2012).

5.0 OBJECTIVES

- To analyze the existing project management problems associate with Malaysian automotive industry.
To analyses the effectiveness of present project management system applicable in Malaysian Automotive industry.

To implement and measure the value of PMP2 in automotive industry for achieving the excellence in human performance.

6.0 METHODOLOGY OF THE RESEARCH

This research will base on an extensive critical literature review of the project management principles, methodology and its practical implications in automotive industry. We will choose Observation, Interview and Questionnaire method for data collection from the any one of the automotive industry in Malaysia. Analysis will be carrying out for finding the problems of existing project management system in automotive industry. Afterthought, practical implementation will be planned to any of automotive industry. At the end comparison of existing project management system and prince2, project management methodology will be analysed.

7.0 EXPECTED RESULTS/ CONCLUSION

The research on PRINCE2 methodology in automotive industry will provide a following expected result of the study.

• The research will investigate and identify the problems associated with the automotive industry in Malaysia.
• Implementation of Prince2 methodology based on dividing the project into manageable and controllable stages, which will help to increase the human performance in automotive industry.
• The research will promote the implementation of Prince2 methodology in the future.

8.0 ACKNOWLEDGMENT

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9.0 REFERENCES


