Lean Project Management – Innovative Strategies in the Automotive Industry

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Abstract- In the past, many experts have made studies on how innovative strategies have been used for effective and efficient execution of new product development (NPD) projects in industries. These strategies aim at effectively leveraging the strength of the organization. Leading manufacturers in the automotive industry periodically develop new products in the existing platform to enhance customer satisfaction and develop new platforms to meet future requirements. It is evident that each project in a firm has linkages with the past projects through shared technology and resources. As a result, technology and resource management is very important for a firm to move towards lean project management. This paper aims at discussing innovative strategies used in Indian automotive industry and their applicability in NPD. This paper also discusses on the importance of innovative project management which every organization is now developing to create a safe and robust products to add value to customer, launch products with reduced time to market, encourage concurrent engineering practices and continuously enhance competitiveness in terms of investment, price and quality. It is also imperative that to achieve these objectives, products have to be developed with a spirit of total quality management with involvement of every employee of the organization by meeting the production requirements through optimized product / process design and also by integrating the suppliers to develop and control the quality of outsourced components and products. In this paper, types of project management governance bodies are discussed. The industry is steering towards excellence in project management for swift delivery of new products. The governance body assesses the quality of product development process at two levels. At first level, the quality manager assesses technical issues in the product and suggests suitable measures to close them. In next level, the divisional manager assesses the actuals against the financial and delivery targets. If the above said parameters are satisfied, the project is allowed to go ahead to the subsequent phase.When a project is opened by the high level management, it is mandatory to employ resources to execute the project and this is called the Project Team. The project team comprises of a project manager, project team members from R&D, supply chain, process planning, purchase, quality, marketing, launch manager and safety manager. The project team is also associated with the contributors or functional experts from each of the functions. In this paper various project organizations in automotive industry are discussed in detail. This paper as a whole discusses on the product development strategies for an organization to be lean in new product development. This paper also focuses on Innovative project management which is a recent development in automotive industry and an aid to product development and design resulting in seamless launch of new products to market. Typology of projects and governance body to assess the product development process, Project management organization and its structure are presented. Finally an experimental design to prove the signficant difference between the conventional and innovative project management process is presented.

Index Terms- NPD, Lean Project Management, New Platform, Governance Bodies

I. INTRODUCTION TO PROJECT MANAGEMENT

Project management is the discipline of planning, organizing, motivating, and controlling resources to achieve specific goals. A project is a temporary endeavor designed to produce a unique product, service or result with a defined beginning and end undertaken to meet unique goals and objectives, typically to bring about beneficial change or added value. The temporary nature of projects stands in contrast with business as usual which are repetitive, permanent, or semi-permanent functional activities to produce products or services. In practice, the management of these two systems is often quite different, and as such requires the development of distinct technical skills and management strategies. The primary challenge of project management is to achieve all of the project goals and objectives while honoring the preconceived constraints. The primary constraints are scope, time, quality and budget. The secondary —and more ambitious— challenge is to optimize the allocation of necessary inputs and integrate them to meet pre-defined objectives.

1.1 Lean Project Management

Lean project management is the comprehensive adoption of other lean concepts like lean construction, lean manufacturing and lean thinking into a project management context. Lean project management has many ideas in common with other lean concepts; however, the main principle of lean project management is delivering more value with less waste in a project context. Lean project management has many techniques that can be applied to projects and one of main methods is standardization. Key techniques adapted for this paper are reduction of rework, overproduction and over processing, which are wastes leading to delay in projects and suboptimal deliverables.

1.1.1 Innovative Principles in Lean Project Management

As innovation is crucially important for business growth in automobile industries, it is essential to establish Innovation in Project Management as a core competency. Principles of innovation management include, Customer requirement and regulations, decision making bodies and rules, organization for project management, development process, functional excellence, protfolio and resource management.

Fig. 1: House of Innovative Project Management

II. LITERATURE REVIEW

Mats and Anna (2003), explores the nature of organizational settings, where a large extent of the operations is organized as simultaneous orsuccessive projects which is a stream of lean project management. Anchored in qualitative case studies, they analyzed why the resource allocation syndrome is the number oneissue for multi-project management and discussed the underlying mechanisms behind this phenomenon.

Dragan and Peerasit (2004), explores the concept of Standardized Project Management in the Companies which frequently opt to implement standardized project management (SPM), which can be defined as a standardized set ofproject management practices. These companies expect that such an approach will carry significant potential for improving projectperformance. To investigate this potential, the authors undertook an exploratory study into the impact of SPM on project performance indevelopment projects in high-velocity industries. They developed hypotheses based on these factors and performed hypothesis testing to identify factors that impact project success.

Lynn et.al (2006)in thier paper undercovers the project management trends over the last 10 years.The field of project management continues to develop in response to changing emphases in the management community and thedemands of new project management application areas. This paper uncovers the trends of emphasis within the project management literatureover the period 1994–2003, by analysing articles in the International Journal of Project Management and the Project ManagementJournal. Trends identified in this study are then compared to trends of emphasis identified in a variety of previous studies of changes tothe field. These results are then synthesised to provide overall impression of how the field is changing.

Liz and Tim (2007), has done qualitative study which examines whether virtual projects present challenges that are different from conventional projects and how theymight be more useful than face-to-face teams in delivering value in certain contexts. It takes a post-implementation and lessons learnedapproach to elicit the experiences of two distributed information technology projects within a global banking corporation. Findings indicatethat time zone and cultural differences in particular, affected communication and team relations. Other barriers included more 'conventional'issues such as management agenda and leadership style, requirements creep, asymmetry in processes and unclear roles andresponsibilities. The study concludes that virtual teams are useful for projects requiring cross-functional or cross-boundary skilled inputsand the key to their value creation is to have a defined strategy to overcome problems associated with at-distance cooperation.

Liviu et.al (2010), discusses that project management has evolved over time, becoming the principal mean ofdealing with change in modern organizations. Best practices have occurred as a resultof business evolution and of practicing project management at a global level. Bestpractices in project management, if followed, increase the chances of success inachieving goals when dealing with projects. The authors present the concept of best practice, the advantages of usingbest practices in project management, which are the best practices used today and alsoa comparison between two of the mostly used best practices methodologies in projectmanagement, Project Management Body of Knowledge and Project Cycle ManagementGuidelines.

Ifeoluwa and Yinshang (2010), discusses that effective management of projects is increasingly becoming important for organisations to remaincompetitive in today's dynamic business environment. The use of benchmarking is widening as atechnique for supporting project management. Benchmarking is the search of best practices that will leadto superior performance in some business activity. Benchmarking has been recognised as one of the mostresponsive evaluation tool for performance improvement within organisations by creating a culture ofcontinuous improvement from learning best management practices. This paper presents howbenchmarking principles can be applied to improve project management process and performance.

Azharul Karim and Saviz Nekoufar (2011), in their paper stated that, Lean project management is the comprehensive adaption of other lean concept like lean construction, lean manufacturing and lean thinking into project management context. Execution of many similar industrial projects creates the idea of lean project management in companies and rapidly growing in industries. The authors offer a standardization method in order to achieve Lean project management in Infrastructure and other large scale industrial project. Standardization refers to all activity which makes two projects most identical and unify to each other. Although standard project may have minor efficiency decrease, compare to custom built project; but great advantage of standard project like cost saving, time reduction and quality improvement justify standardization Methodology

III. INTRODUCTION TO NEW PRODUCT DEVELOPMENT

In business and engineering, new product development (NPD) is the complete process of bringing a new product to market. A product is a set of benefits offered for exchange and can be tangible (that is, something physical you can touch) or intangible (like a service, experience, or belief). There are two parallel paths involved in the NPD process: one involves the idea generation,product design and detail

engineering; the other involves market research and marketing analysis. Companies typically see new product development as the first stage in generating and commercializing new product within the overall strategic process of product life cycle management used to maintain or grow their market share.

IV. HOUSE OF INNOVATIVE PROJECT MANAGEMENT

İn this Section the house of innovative project management is explained in detail.

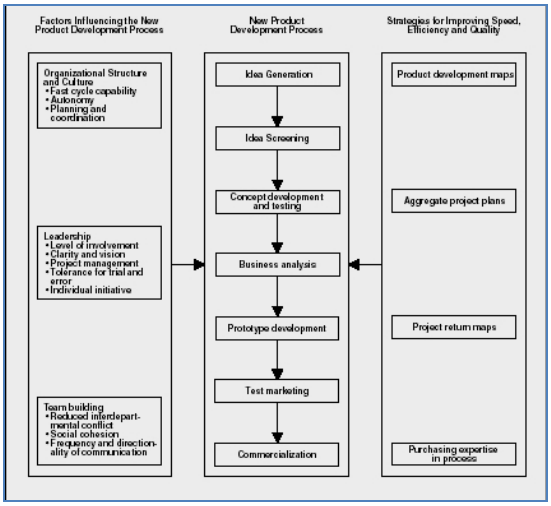

Fig. 2: New Product Development, Factors and Strategies

1.2 Customer Requirements & Regulations

Automotive industry faces strong evolutions such as:

- Automotive equipment is becoming more and more complex to ensure better and differentiating style, performance, cost, more comfort, higher safety and security
- Environment and regulatory norms are getting more stringent.

Innovation in this complex environment is driven largely by transversal thinking, system analysis and value engineering. To secure the coordination of their suppliers, vehicle manufacturers have developed clear standard plan, Milestones and deliverables, but different for each of them, and many norms that are applicable by regions.

1.3 Project Governing bodies and rules

Project objectives in terms of Quality, Cost and Time-to-Market are increasingly challenging; they must be secured through a robust technical analysis and Decision Making process.

This process is defined as follow

- Design Review, a continuous process to secure Product & Process robustness and the application of standards
- Two specific committees
  - Project Quality Committee, to make technical decisions
  - Business Management Committee to make business decisions

Design Reviews must verify design implementation, including product and process feasibility, with the Suppliers. It must be organized by Purchasing member conducted by the R&D member, with Quality member and SQA Contributors and all relevant actors.

1.3.1 Project Quality Committee

The Project quality committee is chaired by the company quality president and provides Business management committee with technical decisions which contribute to:

- Ensure quality of technical deliverables
- Manage critical impacts on customer milestones (and identify critical major impacts on budget)
- Validate and assessrisks involved in project and availability of reaction plan

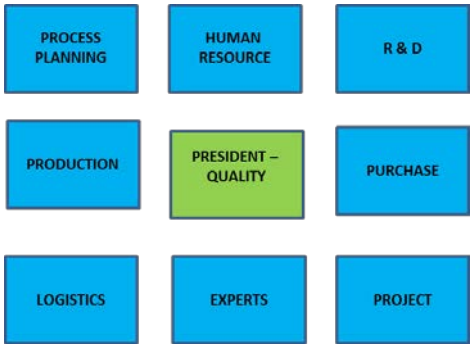

Fig. 3: Project Quality Committee Structure

1.3.2 Business Management Committee

The Business Management Committeis chaired company managing director and makes business decisions in order to ensure:

- Customer satisfaction
- Flawless launch to market
- Project Profitability

Responsibilties of Business Management Committee are,

- Open new projects, analyze and approve new projects, nominate Project Teams and set objectives to the project teams
- Conduct project gatereviews
- Decide and suggest directions on critical issues raised by Project Teams
- Re-work or close a project if required
- Managing project portfolio

- Anticipate, validate and arbitrate resources assignment
- Manage transversal improvement action plans

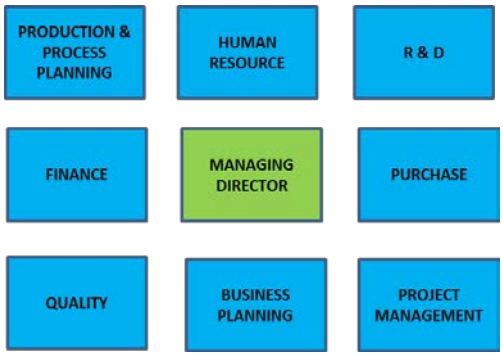

Fig. 4: Business Management Committee Structure

1.4 Project Management Organization

In the past, many organizations adopted functional organization structure for the delivery of the product. This structure was not successfull in the long run as it had complexities in managing the project. The focus towards project activities were impacted and more importance was given to functional activities. This lead to slow down of meeting the timelines and delivery of product in the market.

To overcome this , in the recent past many automotive organizations started to migrate from functional type of organization to pure project management organization structure in order to adhere to the timely delivery of products to the market.In the pure project management structure, the project members wereempowered by their functions to manage their respective contributors assigned by their department manager. They are responsible for the detailed scheduling and budgeting of their work, as well as for performing their activities following function procedures and efficiency plan.

This section further displays the various project management organizational strutures.

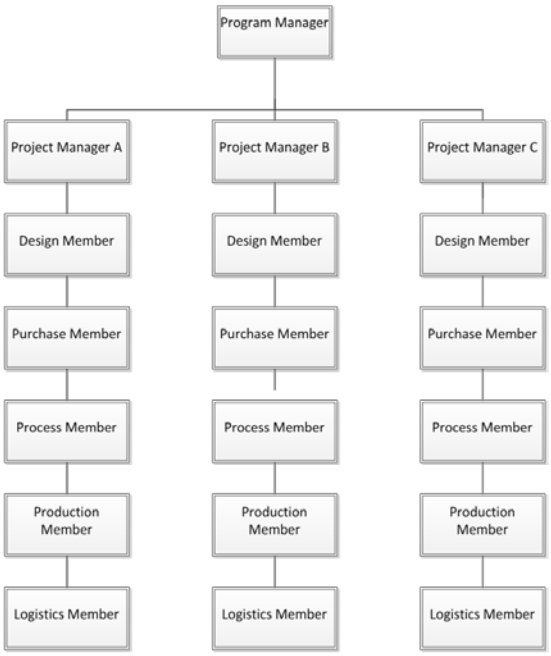

Fig. 5: Project Organization in Tier 1 Automotive Concern

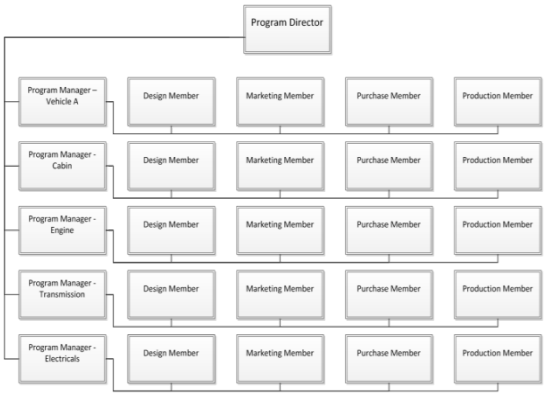

Fig. 6: Project Organization in Farm Trac Concern

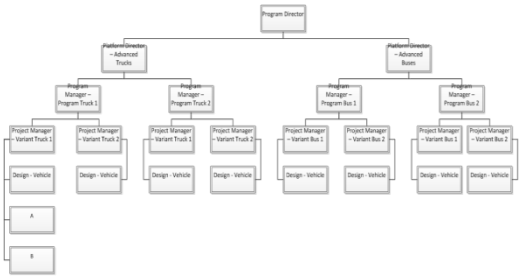

Fig.7: Project Orgranization in Commercial Vehicle Concern

1.4.1 Roles and Responsibilities in Project Organization

The **Program Director** is accountable for the performance of his portfolio of projects, more specifically:

- Manages the project portfolio: list of projects, budget & resource management
- Ensures Projects flawless launches: validates risk in the project
- Escalates critical project issues to business management committee
- Meets the Financial objectives (Gross Margin, Development costs, Investments)
- Is the role model: on project management processes by developing and enforcing the use of standard methodologies, tools, organizations, indicators, performing audits and animating the project efficiency plan
- Develops Project Management functions (competencies, career paths, training...)

The **Project Manager** is accountable for the performance of his project, more specifically:

- Reaches the project QCD objectives as specified in the budget
- Manages his Project Team and processes in compliance with corporate rules:
  - Project risk,
  - Project schedules & deliverables for customer satisfaction
  - Product gross margin (cost and price), investments
  - Budget and follow-up of project cost
  - Project Team appraisals
- Ensures that the activities required to achieve safety objectives are performed and if needed that compliance with safety standard is achieved The Project Manager presents the project at Quality management and business management reviews.

The**Function Manager** is accountable for his deliverables to the project, more specifically:

- Assigns adequate project members and contributors to comply with projects deliverables and milestones
- Follows closely the proper execution of the activities and organizes regularly formal reviews
- Validate all the action plans to solve issues of critical Projects
- Ensures content of functional excellence
- Controls and respects budgets allocated to their function/metier for all projects in his perimeter
- Brings an additional support when needed (it can be with internal resources, pooled resources,…)
- Ensures that project members and contributors have the relevant level of competences

The Function Manager is the hierarchical manager of the Project Team Members and the Contributors.

1.5 Development Process

The core of development process is in the creation and central management of all product data and the technology used to access this information and knowledge. PLM as a discipline emerged from tools such as CAD, CAM and PDM, but can be viewed as the integration of these tools with methods, people and the processes through all stages of a product's life. It is not just about software technology but is also a business strategy

For simplicity the stages described are shown in a traditional sequential engineering workflow. The exact order of event and tasks will vary according to the product and industry in question but the main processes are:

- Conceive
  - Specification
  - Concept design
- Design
  - Detailed design
  - Validation and analysis (simulation)
  - Tool design
- Realize
  - Plan manufacturing
  - Manufacture
  - Build/Assemble
  - Test (quality check)
- Service
  - Sell and deliver
  - Use
  - Maintain and support
  - Dispose

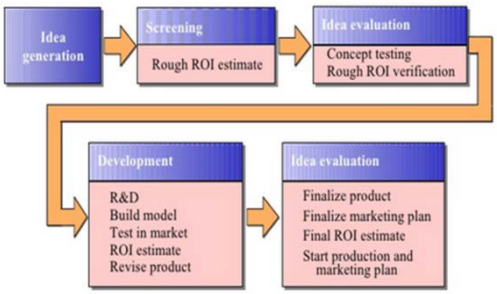

Fig.8: Development Process

1.5.1 Phases of Product Development Process

There are several life-cycle models in industry to consider, but most process are similar. What follows below is one possible life-cycle model; while it emphasizes hardware-oriented products, similar phases would describe any form of product or service, including non-technical or software-based products:

Phase 1: Conceive
Imagine, specify, plan, innovate

The first stage is the definition of the product requirements based on customer, company, market and regulatory bodies' viewpoints. From this specification, the product's major technical parameters can be defined. In parallel, the initial concept design

work is performed defining the aesthetics of the product together with its main functional aspects. Many different media are used for these processes, from pencil and paper to clay models to 3D CAID computer-aided industrial design software.

In some concepts, the investment of resources into research or analysis-of-options may be included in the conception phase – e.g. bringing the technology to a level of maturity sufficient to move to the next phase. However, life-cycle engineering is iterative. It is always possible that something doesn't work well in any phase enough to back up into a prior phase – perhaps all the way back to conception or research. There are many examples to draw from.

Phase 2: Design
Describe, define, develop, test, analyze and validate

This is where the detailed design and development of the product's form starts, progressing to prototype testing, through pilot release to full product launch. It can also involve redesign and ramp for improvement to existing products as well as planned obsolescence. The main tool used for design and development is CAD. This can be simple 2D drawing / drafting or 3D parametric feature based solid/surface modeling. Such software includes technology such as Hybrid Modeling, Reverse Engineering, KBE (knowledge-based engineering), NDT (Nondestructive testing), Assembly construction.

This step covers many engineering disciplines including: mechanical, electrical, electronic, software (embedded), and domain-specific, such as architectural, aerospace, automotive, ... Along with the actual creation of geometry there is the analysis of the components and product assemblies. Simulation, validation and optimization tasks are carried out using CAE (computer-aided engineering) software either integrated in the CAD package or stand-alone. These are used to perform tasks such as:- Stress analysis, FEA (finite element analysis); kinematics; computational fluid dynamics (CFD); and mechanical event simulation (MES). CAQ (computer-aided quality) is used for tasks such as Dimensional tolerance (engineering) analysis. Another task performed at this stage is the sourcing of bought out components, possibly with the aid of procurement systems.

Phase 3: Realize
Manufacture, make, build, procure, produce, sell and deliver

Once the design of the product's components is complete the method of manufacturing is defined. This includes CAD tasks such as tool design; creation of CNC Machining instructions for the product's parts as well as tools to manufacture those parts, using integrated or separateCAM computer-aided manufacturing software. This will also involve analysis tools for process simulation for operations such as casting, molding, and die press forming. Once the manufacturing method has been identified CPM comes into play. This involves CAPE (computer-aided production engineering) or CAP/CAPP – (production planning) tools for carrying out factory, plant and facility layout and production simulation. For example: press-line simulation; and industrial ergonomics; as well as tool selection management. Once components are manufactured their geometrical form and size can be checked against the original CAD data with the use of computer-aided inspection equipment and software. Parallel to the engineering tasks, sales product configuration and marketing documentation work take place. This could include transferring engineering data (geometry and part list data) to a web based sales configurator and other desktop publishing systems.

Phase 4: Service
Use, operate, maintain, support, sustain, phase-out, retire, recycle and disposal

The final phase of the lifecycle involves managing of in service information. Providing customers and service engineers with support information for repair and maintenance, as well as waste management/recycling information. This involves using tools such as Maintenance, Repair and Operations Management (MRO) software.

There is an end-of-life to every product. Whether it be disposal or destruction of material objects or information, this needs to be considered since it may not be free from ramifications.

From the above product development phases, it is evident that the systematic product development phases mapping to project management results in better effciency in terms of project delivery time (reduced development time and availability of product at the right time to the market).

1.6 Functional Excellence

Functional Excellence is the ability of one functional network to perform outstandingly the necessary tasks for projects.

Functional Excellence is based on:

- Excellence in functional skills, competences and methodology
- Excellence in functional tool selection and enhancement
- Excellence in functional organization
- Excellence in standardization of all functional areas of know-how through the deployment and through Transverse Focus Groups

4.5.1 Key Factors to Functional Excellence

Standardization and Capitalization are key factors tofunctional excellence. They formthe procedure to ensure robust Product/process files through the development of Product/process standards.

Functional Excellence enables to -

- Ensure product robustness and safety
- Reduce development costs of new products
- Reduce risks and re-work in new projects
- Reduce Time to Market
- Ensure that lessons from previous issues are gathered, which will benefit to current and future products

1.7 Quality Assurance

In this section, the importance of quality assurance linked with Project Management is discussed. In the historic period, the

quality management process was delinked from the mainstream product development activities. Quality department was always involved after the product development conclusion.

This scenario gradually changed and the induct of quality department has been a part of product development process and linked in the project management process.

The Project Quality is part of the development process that ensures development with discipline and rigor

In many organizations, Total Quality depends on:

- Organization and decision making, development process
- Involvement of Personnel
- Supplier Integration during product deveopment
- Production System

Through project development processes, the target of Project Quality is to provide products/systems/modules that meet customers "explicit and implicit" expectations and applicable regulatory requirements such as:

- Usefulness
- Fit for use
- Fit social requirements
- Competitive strength and reliability
- Ability to be produced with a lean and capable process

Project Quality must also ensure flawless launches and zero issue during production lifetime by controlling strict application of Built-In-Quality

4.7 Portfolio and Resource Management

Portfolio Management is the process for selecting the right projects in order to achieve a strategic mix of technologies, timeframe, risk, markets and business segments. Resource Management is the process for anticipating Development Staff needs, in terms of quantity, skills and timing, with pertinent "granularity".

V. DİFFERENCES İN INNOVATİCE PROJECT MANAGMENT PROCESS AND CONVENTİONAL PROCESS

In the previous sections, the advancements in the project management process were discussed. İn this section, the differences between innovative project management process and conventional process is discussed with help of an experimental analysis.

1.8 Experimental investigation of project delivery times

The objective is to test whether there is significant difference between the companies in terms of project delivery time. Hence, a complete factorial experiment with two factors, viz. Company (A) and Project Management Process (B) is designed with ten replications under each of the experimental combinations.

The data of this experiment are shown in Table 1. The number of levels for the Factor A is 3, viz. Company 1, Company 2 and Company 3. The number of levels for the Factor B is 2, viz. Innovative and Conventional.

The ANOVA model of this experiment is as presented below.

$$Y_{ijk} = \mu + A_i + B_j + AB_{ij} + e_{ijk}$$

where,

- μ is the over all mean of delivery times.
- Y_{ijk} is the kth replication of the ith company and j^{th} project management process in terms of delivery time
- A_i is the effect of the ith company on the response in terms of project delivery time.

		Company		
Project management process	Innovative	1	2	3
		3.5	4	4
		3	4	3
		3	2.5	3
		4	4	3.5
		4	4	5
		3	3	2.5
		4	3	2.7
		4	3	4
		3	3	3
	Conventional	3	4	3
		3.5	8	4
		3	7	3
		3	5	3
		4	6	3.5
		4	6	5
		3	5	2.5
		4	5	2.7
		4	4	4
		3	4	3
		3	4	3

Table 1: Data of delivery times of projects

- B_j is the effect of the jth project management process on the response in terms of project delivery time.
- AB_{ij} is the effect of the ith company and j^{th} project management process on the response in terms of project delivery time.
- e_{ijk} is the error associated with the kth replication under the ith company and j^{th} project management process

The hypotheses relating to this experiment are listed below.

Hypotheses w.r.t. Factor A (Company)

H_0: There is no significant difference between the means of the companies in terms of project delivery time.

H_1: There is significant difference between the means of the companies in terms of project delivery time.

Hypotheses w.r.t. Factor B (Project Management Process)

H_0: There is no significant difference between the means of the project management process in terms of project delivery time.

H_1: There is significant difference between the means of the project management process in terms of project delivery time.

Hypotheses w.r.t. Interaction Terms of Factor A and factor B (Company x Project management process)

H_0: There is no significant difference between the means of the interaction of company and project management process in terms of project delivery time.

H_1: There is no significant difference between the means of the interaction of company and project management process in terms of project delivery time.

The results of ANOVA of the data given in Table 1 are given in Table 2.

Source of Variation	Sum of Squares	Degrees of Freedom	Mean sum of Sqaures	F Ratio	F table (α= 0.05)	Inference
SS_A	13.80033333	2	6.90016667	720.7140398	3.174	Significant
SS_B	6.3375	1	6.3375	661.9441888	4.024	Significant
SS_{AB}	12.675	2	6.3375	661.9441888	3.174	Significant
Error	0.517	54	0.00957407			
Total	33.32983333	59				

Table 2: Results of ANOVA

From Table 2, it is clear that the calculated F Ratio of each of the components of ANOVA (A, B and AB) is more than the respective table F value at a significance level of 0.05. So, all the null hypotheses stated above are rejected and the corresponding inferences are as follows.

Factor A (Company)

There is significant difference between the companies in terms of project delivery time.

Factor B(Project Management Process)

There is significant difference between the project management process in terms of project delivery time.

Factor A *X* Factor B

There is significant difference between the interaction terms of Company and project Management Process.

So in the next stage, the significance of the difference between each pair of mean delivery times of the projects is analyzed using Duncan Multiple range test.

There is significant difference between the treatments of the Factor B (project management process).Further, the mean project delivery time for the innovative project management process (3.42) isless than that (4.02) of conventional project management process. Based on these facts, it is clear that the innovative project management process has the least project delivery time.

5.1.1 Duncan's Multiple Range Test

As per the steps of Duncan's multiple range test the necessary results are presented below,

The Standard Error of each treatment is 0.02188. The significant ranges obtained from the Duncan's table of multiple ranges for j = 3 and error degrees of freedom of 54 are given in Table 3.

Significant Range	Range 1	Range 2
Value	2.908	3.058

Table 3. Significant Ranges from Duncan's Table

The value of least significant range (LSR) for each of the values in Table 3 is obtained by multiplying with the standard error and the corresponding results are shown in Table 4.

Least Significant Range (LSR)	Range 1	Range 2
Value	0.0636	0.0669

Table 4: Least Significant Ranges

The summary of the differences between the means of the project delivery times of the 3 projects and the corresponding values of the least significant ranges are shown in Fig. 9

From Fig 9, it is clear that the actual difference between each pair of projects is more than the respective least significant range.

Hence, the inferences based on this figure are as listed.

The mean delivery time of the company 3 is significantly different from that of the company 2 as well as that of the Company 1. Further, the mean delivery time of the company 1 is significantly different from that of the company 2.

Hence, the company 3 is the best in terms of least project delivery time.

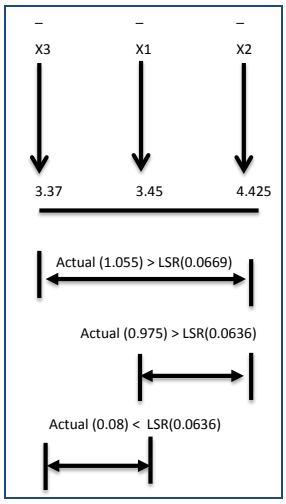

Fig 9. Duncan's multiple ranges (Actual vs LSR)

VI. CONCLUSION

In this paper the efficient and effective way of New Product development process with involvement of lean project management is discussed.Considerable literature review is conducted to have a feel on the lean and agile project management methodologoes. Innovative strategies like house of innovative project management is discussed. Also the modern phases of development process is discussed in detail. In this modern world, product development process goes synchronous with quality assurance from the kick-off the project and thus total quality management is discussed in brief.

The innovative project management processes are comparable with Lean Manufacturing practices. Project quality and Mangement comittee ensures that there are minimun rework. Program Manager plans the work to avoid overprocessing and Design reviews help in reducing overdesign. Finally the project stucture enables everyone to contribute to reach target in time. The Managing Directer acts as a Lean Champion leading all causes.

To make this paper more concrete and to publish that there is differnce between conventional process and innovative project management process, an experimental design is conducted using a complete factorial experiment with two factors, viz. Company (A) and Project Management Process (B) is designed with ten replications under each of the experimental combinations.

It is evident from the results that there is significant difference between the companies in terms of project delivery time w.r.t conventional and innovative process. In order to prove the best company with reduced project delivery time, Duncan's table is used and it is concluded that company 3 is the best interms of project delivery time with innovative project management process.

From the results obtained through the experimental investigation and from the source of literature review it is evident that Lean Project Management plays a vital role in New Product Development for optimized delivery timelines.

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