PROJECT AND TECHNOLOGY MANAGEMENT FOUNDATION

(A non-profit Organization)

Member of Asia Pacific Federation of Project Management

E-NEWSLETTER

Volume 5, Issue 2 (Oct –Dec ’17)

Editorial

Dear Project Management Practitioners,

We wish you a very Happy Diwali and hope you have had a good beginning to the festive season. As the markets continue to scale new heights and the economy is still trying to respond to the demands of demonetization and GST; we sincerely hope the consumer and market sentiments continue to show positive trends in the months to come. With this note, I am happy to place before you our recent issue of the newsletter.

While we hope the market would be buzzing with activities for the next few months, we at PTMF have lined up a series of exciting activities and engagements across the country.

First of all, we are pleased to announce signing of an MOU with Indian Institute of Entrepreneurship (IIE), an Institute under the Ministry of Skill Development and Entrepreneurship, Government of India to conduct various management development programs

We are also pleased to share that we would be soon launching the first International Journal on Project Management and are seeking articles for the same. The following pages contain detailed guidelines for paper submission.

We are also glad to cover two important articles in this issue. One written by Prof Pieter Steyn along with his colleague Ms Elzabe Zovitsky of Cranefield College of Management, Johannesburg, South Africa on the Evolution of Project Management as a discipline. The authors tried to trace the historical facts of the evolution of the project management education and practices that are currently being followed.

Our Founder President Prof Rajat K Baisya has contributed one article on Industrial revolution 4.0 and its impact on business and the changed role of management consultants. This article was already published in the June issue of Consultants Forum and has been reprinted with their permission. The article talks about new technological back through that is being reported in many disciplines likes Robotics, Biotechnology, Nanotechnology, IT , human genetic engineering etc which will revolutionize the business in coming months which will have its impact on economy and society at large.

And lastly, we are excited to welcome Debkumar as part of the PTMF family.

Hope to see your active participation in the International Journal and the newsletter.

Best Regards

Shalin Trivedi
Editor

Project & Technology Management Forum

JOINT CERTIFICATE PROGRAMS ON PROJECT MANAGEMENT AND OTHER COURSES: COLLABORATION WITH INDIAN INSTITUTE OF ENTREPRENEURSHIP

PTMF actively participates in various knowledge management forums and is keen to share it's know how across various organizations. It has collaborated with various organizations across the country to develop and run courses for entrepreneurs and SMEs. Few recent alliances are as follows:

1. PTMF has signed an agreement with Indian Institute of Entrepreneurship, a national institute under Ministry of Skill Development & Entrepreneurship, Government of India to run a joint certificate program on a series of identified course including Project Management. First two programs on Digital Marketing and Project Management will be launching soon.
2. A similar initiative was also taken and discussed with NIT Silchar, MOU is under process and will be shortly signed and acted upon. Detail course structure and contents are being developed by PTMF, joint announcement has already been made and uploaded on the web site.
3. A conference on 'Technology Management for Project Excellence' will be organized soon and KPMG has confirmed to get associated as the Knowledge partner. The dates will be announced soon.
4. CDC has expressed interest to work with PTMF as knowledge partner.
5. The governing body of PTMF is being revamped by inducting new members including Dr Banwari Lal, CEO of ONGC-TERI Biotechnology Ltd, new joint secretary of DSIR (give names) and the President of World Women organisation on construction management (give name) and Monoj Das Director IIE.
6. Membership drive to bring in more corporate members has been initiated.

PTMF has signed an MOU with **Indian Institute of Entrepreneurship (IIE), a leading educational Institute offering training and development program in entrepreneurship under Ministry of Skill Development and Entrepreneurship, Government of India having its campus at Lalmati, Guwahati, Assam** for organising certificate courses on various identified program including **project management, digital marketing, strategic cost management, data analytics for business decisions, performance management** to be offered to students , teachers, marketers, small business owners and entrepreneurs. In course of time other relevant courses and skill development programs will also be identified and offered to the target segment.

PTMF will be responsible for course development and delivery and IIE will manage the program as per the MOU. The MOU also provides for working together on socio-economic programs,

joint collaborative research and consulting activities. The certificate will be jointly offered by PTMF and IEE.

The agreement was signed by Mr Manoj K Das, Director IIE and Prof (Dr) Rajat K Baisya, President PTMF in a simple ceremony held at IIE at Guwahation 18th April 2017.

From L to R: Mr A.S.Dewan(member of Faculty IIE), Mr. Manoj K Das(Director IIE), Dr Rajat K Baisya(President PTMF), Dr Sriparna B Baruah(Head , Centre for Industrial Extension, IIE)

PROJECT MANAGEMENT PROGRAM AT NIT SILCHAR, ASSAM

Prof Rajat Baisya has conducted a project management program for final year students of MBA at NIT Silchar, specializing in Project Management. During that period he has also a delivered a special invited lecture at the conference on IPR and funding of Start Ups organized by National Research and Development Corporation (NRDC) Government of India responsible for protecting Intellectual Property developed at CSIR laboratories and other National institutions. He also has delivered a special lecture at the institute.

Lecture at NIT SilchurA special lecture was organized at Department of Management Studies , NIT Silchur on ‘ Managing Business in a competitive marketplace’.

INDUSTRIAL REVOLUTION 4.0-CONSULTING PRACTICES IN MAJOR DISRUPTION- DR. RAJAT K BAISYA

While delivering his inaugural address at a conference organised by World Confederation of Productivity Sciences on 'production productivity for sustainability in coal and power sector'held in New Delhi during 5th and 6th April 2017,Union Minister of state for petroleum and natural gas, Dharmendra Pradhan said if productivity improvement reduces manpower alternative employment opportunity has to be generated otherwise, there will be social tension leading to unrest and turmoil. His concern is very legitimate. Globalisation has not helped in job creation and on the contrary it reduced. In India, while economy is growing at over 6.7 % job creation has increased only 1% during last three years. This is considered as one of the failures of the government which opposition is trying to exploit. In spite of growth where has the job gone? Let us trace the evolution of growth through successive industrial revolutions.

First industrial revolution was triggered by invention of steam engine by James Watt and we came to recognise the power of steam. Second industrial revolution was driven by invention of electricity and internal combustion engine leading to development of automobiles. Coal and electric power were at the root of first two industrial revolutions continued till late fifties. But third industrial revolution began in 1960 based on PC and later on by internet which has revolutionised the businesses and environment across sectors. We are now passing through fourth industrial revolution which will be shaped by series of innovation such as driverless car, smart robotics, smart cities, lighter and tougher material and automation, artificial intelligence, super computing (China has very recently claimed that they have invented much faster memory chips than super computer), nanotechnology, biotechnology and internet of things. Sequencing of human genome and synthetic biology will revolutionize the creative power and performance of human being. Average life expectancy is expected to increase to 90 years by 2030.Fourth industrial revolution is bringing together physical, digital and biological change. Everything will also get integrated into a new eco-system and our own identity will also change.

Prof Klaus Schwab, executive chairman and founder of Global Economic Forum compared performance of three biggest companies in Detroit in 1990 and Silicon Valley in 2014and the results are that market capitalisation increased three times and employee number reduced to one tenth meaning only 10 percent employee population created 3 times the value during this period which would mean that in two decades employee productivity increased 30 times. The result therefore, is to be understood as technology is upgrading productivity and at the same rate also reducing employment and job opportunity.

However, in the said conference presentations were made on productivity increase in coal sector but not a word on what has to be done with the job loss. We should clearly understand that because of market forces productivity will increase in all sectors with or without us. Business will upgrade in terms of productivity and for their own survival they will imbibe new technology. In coal sector huge workforce is working as contract labours. In the conference it is said that their life has not changed over the years. They work in difficult working conditions for

mining coal. In industrial revolution 4.0 coal in all likelihood will be mined by robots throwing these workers out of job and their families into uncertainty. How they will be made useful to the society and what is the transition plan should be the concern of policy makers, economists and consultants.

As predicted, the impact of fourth revolution will lead to polarisation of labour force as low skill and even middle level jobs will be automated. A large portion of the jobs in US is said to be at risk from automation. The changes are going to be so profound that from the perspective of human history there has never been a time of greater promise or even potential peril.

Polarisation of workforce can create social tension and even turmoil. Politicians and economists are worried and some outcome of that we are witnessing. US President Donald Trump got even elected against all predictions because of that fear of the locals of becoming jobless. Trump on assuming office has made several policy announcements to protect jobs for locals including reducing numbers of H1B visas and raising minimum wage of workers in US. The reaction can also be seen here in India. Infosys has announced recruitment of 10000 workers in US. Earlier these work forces would have hired in India to work in US and as opposed to that Infosys will hire workers in US.. Infosys also reduced the pay for their CEO Vishal Sikka who has subsequently resigned from the company under the pressure from promoter shareholders.

These are not isolated incidents but a long term strategy for survival. Economists are also equally concerned about the potential loss of jobs. They are now talking about universal basic income (UBI). Well known economist Pranab Bardhan recently wrote about this and said India can implement UBI. Because of improvement in medical sciences, life expectancy will increase to 90 years by 2030 and that will increase social security cost. And for productivity increase due to technology will result in loss of jobs, pressure on government and society will increase. Hence a section of workforce who will be working have to pay for those who will have no jobs to take care of the cost to the society to implement UBI.

The most valuable companies now are technology companies like Google, Microsoft and Facebook. Google is experimenting now and taking prototype trials of driverless cars. Most valuable assets now considered as data. The Economist carried a lead article in their recent issue saying that data is more valuable than even petroleum oil. WhatsApp, a company having no revenue and reported USD 138 million loss in 2014has been taken over by Facebook for a consideration of 19 billion USD in 2014 just to have access to data and future value. Business models in all sectors are fast changing. Businesses like Amazon, Flipkart etc. having no assets are flourishing. Valuation of technology companies going up in spite of the fact that they are reporting losses in the bottom line as investors are seeing profit in future to recover their cost and heavily supporting these businesses by infusion of additional fund- the case of Snapdeal acquisition by Flipkart which itself is in red but fund was given by Softbank -is a pointer to

make the point. Of course, many technology ventures are closing shops as well particularly those who have crowded with me-too idea but that is the part of the game.

What will be the role of management consultants in industrial revolution 4.0? I am clearly seeing that traditional role of management consultants are gradually disappearing. Consultants in technology era will have to help businesses to the next level of performance and therefore, have to be the game changers. There will be a huge opportunity for trainers for those who are likely victim of productivity improvement. These workforce needs to be trained to support backend services for large players. As economy grows service sectors contribution will also grow and everything has to be seen as the way of providing service to the customers. With technology changes product life cycle will also reduce drastically. Consultants must be visionary to guide businesses to the next level of development faster than their competitive set otherwise, with businesses closing down, consultants will also gradually lose their relevance. Industry revolution 4.0 will bring about a major disruption in businesses. All disruptions are also a big growth opportunity provided disruption is managed well. Consultants should visualize those forces of change and provide crucial consulting and advisory services to the businesses and hand hold the transition. As we are going to face a major disruption and to perform in that disruptive environment best solution is as said by Mahatma Gandhi- ' *Be the part of the disruption that you want to address'*.

DR. RAJAT BAISYA RECEIVING FELLOWSHIP OF WCPS

Prof(Dr) Rajat K Baisya, President of PTMF was felicitated as Fellow of World Confederation of Productivity Science (WCPS) during a conference organized by WCPS on 'Production Productivity for Sustainability in Coal and Power sector' held in New Delhi during 5th and 6th April, 2017.

THE EVOLUTION OF PROJECT MANAGEMENT

Prof Pieter Steyn and Elzabe Zovitsky, Cranefield College,

South Africa

ABSTRACT:

Project management as a basic management tool has not made substantial advances over the past decades. However, it moved from a traditional technical environment to also include the organizational environment where different portfolios of project work have been identified. Moreover, the application of its principles and techniques has evolved into the organizational strategic environment of program and portfolio management.

1. INTRODUCTION

From the multiple of articles on project, programme and portfolio management published over time it is clear that programme and portfolio management are not nearly as well defined as project management. Moreover, there are differing views of what programme and portfolio management actually entail. The majority of practitioners and authors agree that project management describes the tools, techniques, processes and structures to accomplish the objective of a project. Many opine that programme management describes the integrated and coordinated management of a number of related projects to achieve a specific strategic outcome, while portfolio management focuses on creating the right programmes to best meet an organisation's strategic objectives. Some see programme management as a loose collection of projects, while others see it as a specified group of projects. The contents of this article stems largely from the master's degree dissertation of Zovitsky (2014).

Projects and project management are concepts that are more clearly understood. A project generally concentrates on a single predetermined result. Wiljner and Kor (2000) contend: "the actual work necessary to achieve this is of secondary importance". Hence, the following questions emerge:

- How do organisations understand project, programme and portfolio management, and why is there confusion about the definition and application of these approaches?
- What is the difference between these approaches, and is it properly understood in practice?

To answer the abovementioned questions it is necessary to investigate the origin and history of project management, and how and why it evolved into programme and portfolio management over time.

2. MATRIX MANAGEMENT

The earliest management models were described as 'mechanistic', or efficiency of process through managerial control. That was in the late 1800s and early 1900s. During the 1920s and 1930s, a more theoretical organisational structure recognising the importance of human behaviour emerged. These models were described as 'organic and often lacked efficiency and personal accountability.

From 1965 matrix management started being recognised as a formal model, with the National Aeronautics and Space Administration (NASA) being the first organisation to design and implement a matrix structure. It realised that traditional management structures were too bureaucratic, hierarchical, slow-moving and inflexible to be effective and efficient. In the same way, basic organic structures were too departmentalised (i.e. myopic), thus failing to use the far-reaching expertise NASA had at its disposal productively. NASA's matrix solution overcame those problems by synthesizing projects, such as designing a rocket booster, with organizational functions that included human talent and finance.
Despite doubts about its effectiveness in many applications, matrix management gained broad acceptance in the corporate world during the 1970s, eventually achieving 'fad' status. Its popularity continued during the 1980s as a result of economic changes in the United States, which included slowing domestic market growth and increasing foreign competition. Those changes forced many companies to seek the benefits offered by the matrix model (Encyclopedia of Business, 2nd edition, Online).

The matrix organisation emerged during the 1950s, and it challenged traditional and bureaucratic structures. Gartner (2004) notes that for more than a century management tried to achieve stability and control through vertical integration of the supply chain. According to Cleland and Ireland (2010:6), Professor John F Mee from Indiana University was the first person to describe the 'matrix' organisation in an article written in 1964. In this article he describes the nature of a matrix organisation to include a 'web of relationships' that replace the line and staff relationships of work performance.

According to Cassidy (2012), "old matrix management" is described as the focus on the vertical dimension in an organisation and the beliefs that senior management needs to get things done in an *ad hoc* way. This "old matrix management" concept fell into disfavour in the 1980s. Since the 1970s, however, organisations identified the important need to handle cross-functional work in a vertically aligned organisation, especially those utilising a project-driven business model where projects are done for external customers. Despite some doubts about its effectiveness in many applications, matrix management gained acceptance during the 1970s, and this continued during the 1980s. People started to realise that to get the work done and be successful, they needed alignment and not only authority. They also converted to the notion that business processes and projects that serve the customer need to be aligned horisontally (Matrix Management Overview: 2012).

In a strategic analysis report done by Gartner (2004), the emergence of virtual matrix organisations was emphasised. The report stressed that the traditional hierarchical structures were becoming obsolete in the prevailing unpredictable business environment, and the virtual matrix structure had emerged as the predominant means to "harness diverse talent, knowledge and skills across boundaries of time and space. The biggest challenge though is good management" (Gartner, 2004:5).
Gartner mentions three different matrix structures (Gartner, 2004:7):

- The Weak Matrix is functionally dominant, coordinated, and mostly co-located;

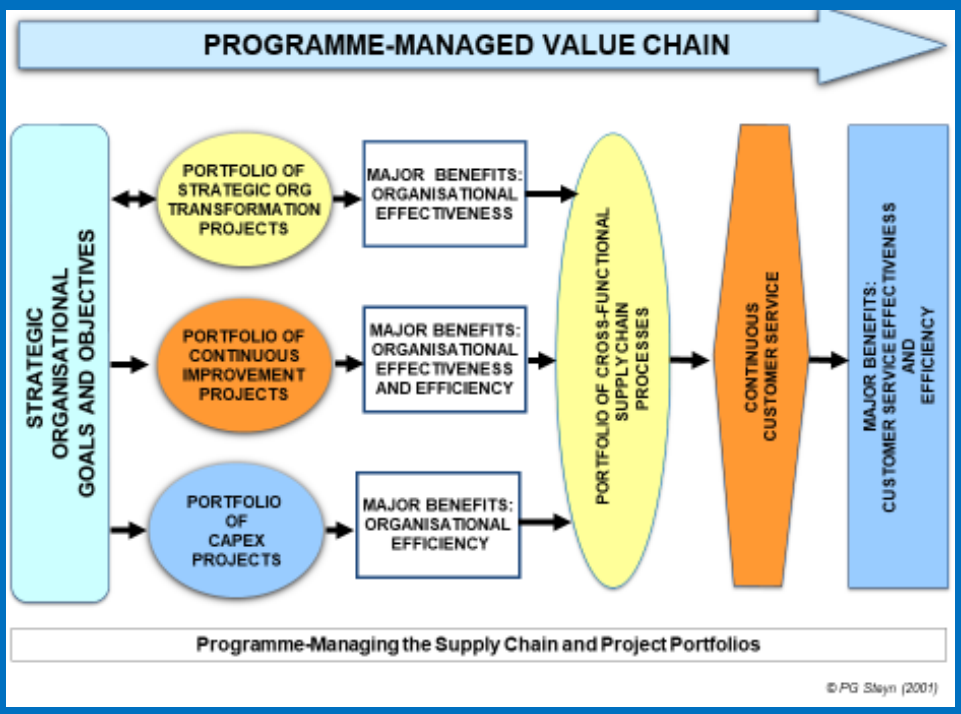
- The Strong Matrix is project/process dominant, made up of interdependent workgroups and semi-virtual. In such an organisation supply chain management is a core business process with control and management over entities like inventory, shipping, receiving, and replenishment;

- The Balanced Matrix is event-driven, consists of autonomous teams and mostly virtual. Within this matrix application product development and sales or marketing management are addressed. Process/project and functional management have co-equal authority and accountability.

Many organisations abandoned the matrix structure as being "too complex and risky". Gartner ascribe this to poor leadership or the failure thereof, misalignment of goals, a dysfunctional organisational culture, power plays and management grandstanding. Gartner points out that, to become a "highly adaptive, agile and customer-centric, real-time organization", the matrix must be mastered through "extreme leadership". The other key success factors (KSFs) are process design, people dimension and infrastructure enablement.

Michael Hammer (2002) shares this view and opines as follows: "without a doubt, the most important prerequisite for making this structureless organization work is a dynamic and strong leader…who supplies through force of personality and vision the cohesion that would otherwise be provided by formal structure." People development is important in a successful virtual matrix organisation where collaboration links people to one another and information knowledge and skills**.** Without strong collaboration, a matrix structure will fall back into "political bickering and conflict" (Gartner, 2004: 14). The current authors believe that the latter statement is profoundly significant for the current Industry 4.0 situation with its emerging virtual networks of partners organisations.

A landmark occurrence in matrix management awareness was the Global Supply Chain Forum's redefinition of supply chain management in 1997. They opine as follows: "Supply Chain Management is the integration of key business processes from end user through original suppliers that provides products, services and information that add value for customers and other stakeholders". Moreover, Cooper *et al.* (1997) identified a need for the development of normative tools and methods for successful supply chain management (SCM) practices. They



argued that for more than 30 years the focus was on marketing activities and flows, while the need to integrate and manage multiple key processes within and across the organisation had been ignored. This resulted in a strong emphasis being placed on the importance of management's ability to integrate the organisation's intricate network of business relationships and to deal with "total business process excellence and represents a new way of managing the business and relationships with other members of the supply chain". The current authors believe that the above is another profoundly significant statement when the current Industry 4.0 situation with respect to the increasing utilisation of programme-managed virtual networks of partners in organisational value chains is observed.

Eight key processes that encompass the core of supply chain management were identified:

- Customer relationship management (CRM);
- Customer service management (CSM);
- Demand management;
- Order fulfilment;
- Manufacturing flow management;
- Procurement;
- Product development and commercialisation;
- Returns

Lambert *et al.* (1998) identified a lack of inter-company consistency as the cause of significant friction and inefficiencies in supply chains. Moreover, they aver that the abovementioned supply chain processes be structured cross-functionally and managed in an *ad hoc* way in accordance with what was earlier defined as "old matrix management". Steyn (2001) agrees with the matrix structuring but argues that the cross-functional supply chain processes shown

in Figure 1, with its focus on customer-service initiatives, be formally programme-managed instead of applying the *ad hoc* way of "old matrix management". Steyn (2013) avers that where organisations utilise a project driven business model, its supply chain portfolio includes another key process, i.e., a cross-functional project-managed process serving external customers.

Figure 1: Programme-managing the Supply Chain and Project Portfolios (Steyn 2001).

Steyn (2001, 2010, and 2013) opines that the 1980s and 1990s shift away from the "old matrix management" approach was the beginning of the demise of bureaucratic organisational structures and paradigms. Semolic (2010) supports this view and mentions that modern organisations realise the advantage of focusing on their core competencies and are now creating networks of partner clusters. In today's modern business environment it is often necessary and wise to utilise the resources of other organisations and to "interconnect them into an overall process of creating new value".

3. THE PROJECT MANAGEMENT DISCIPLINE

3.1 Introduction

It is interesting to observe how the history of project and programme management unfolded. The history of project management dates back hundreds of years. In his book, "The History of Project Management", Mark Kozak-Holland (2011) opines as
follows: "Project management has existed in some form for thousands of years.

After all anything that requires an approach where humans organize effectively to a plan and achieve specific objectives, can be loosely defined as a project. How else would humans have achieved some of stunning wonders and achievements?" (Kozak-Holland, 2011). The Latin word *projectum* means, "to throw something forwards" and the word "project" originally meant "something that comes before anything else is done". Initially it referred to a plan of something, and not to the act of carrying out the specific plan. An object was something performed in accordance with a project.

Morris (2011) notes that projects have been in existence since the coming of man and emerged over time into a fully blown discipline, i.e., project management. In one way or another projects played a central role in delivering the innovation that drives our society today. He avers that the research problem is to create clarity on the different perceptions regarding project, programme and portfolio management, arguing that many organisations still do not understand how to structure themselves to assert synergy between strategy, project, programme and portfolio management. This begs the question whether organisations can re-engineer their systems and business processes to transform. To cope with transformation and change requires high levels of coordination and integration of strategy implementation that can best be achieved through programme management. It requires exploring to what extent bureaucratic approaches influence the effective and efficient application of project, programme and portfolio management.

3.2 Project Management as a Technical Discipline

Since the beginning of the 1900s project management has been viewed predominantly in terms of technology. The period prior to 1958 was characterised by the evolution of technologies such as telecommunication and automobiles. Tools like the bar chart emerged. Moreover, project organisational structures such as project coordinators emerged in the 1920s and project management around 1950. The purpose of project management in the 1950s was to integrate engineering and the production of technically complex and urgent missile development programmes of the US Air Force (Morris, 2011). Since then the growth of project management has been impressive.

For many years project management was seen as a subset of general management (operations and production), one which "reflects [a] highly technocratic and rationalistic perspective" (Morris, 2011). He avers that this tradition still dominates many textbooks, whose "positivist, normative character arguably underlines the dominant professional model of the discipline—it's so called body of knowledge". That resulted in a narrow view of the core of project management in the 1970s and 1980s. Studies of the apparently poor track record of projects and project management, however, resulted in people thinking more widely about projects and what managing them successfully really entails (Morris and Hough, 1987). This resulted in the development of a broader view of the approach to project management and more ambitious paradigms began to emerge, *inter alia*, how to develop, deliver and manage a project successfully (Morris, 2011).

Until the mid-1980s most projects were viewed as technical endeavours. All projects, such as engineering projects, building projects, product development projects, andeven information technology projects were viewed as technical endeavours. All of this started to change from the mid-1980s onwards. According to Heerkens (2006), the term 'technical' did not refer to the technology embedded within a project, but to the technology of managing the project. It included the development of a detailed task list and project schedule. The emphasis was on the control and execution of an excellent schedule, one that resulted in an excellent outcome. According to Weaver (2007), the terms 'project' and 'project management' only became common in the past 50 years. Before the 1950s, no one talked about 'project management'.

The very first project managers were normally resourceful people who were willing to undertake projects. They were usually technicians or engineers, multi-skilled people who could deal with virtually any situation. With the scientific and industrial revolution came the urge to expand man's knowledge and capacity to produce finished products. The foundation of modern management was laid and it led to the need for structured project management. The benefits of organising work around projects began to take root. Organisations started to understand the need for good communication and the integration of work across multiple departments and professions. This project-centric view made them realise the critical need for their employees to communicate and collaborate while integrating their work across the different departments and professions. This approach towards project management began to take root in its modern

form only around 1969 with the advent the “iron triangle of time, cost and output” as described by Dr Martin Barnes (Weaver, April 2007).

With the emergence of modern project management in the 20th century various tools and techniques were developed. At the turn of the century Frederick Taylor (1856-1915), considered to be “the father of scientific management”, applied scientific reasoning to work and introduced the concept of working more efficiently, rather than working harder and longer (Kozak-Holland, 2011). The purpose of these tools and techniques was to assist in identifying and controlling business functions. Those directly related to project management are the following (Weaver, August 2007):

- • The Bar Chart;
- • Flow-line Scheduling in the 1930s;
- • Line of Balance technique that was developed in the early 1940s by the Goodyear Company; and
- • Milestone Chart in the 1940s

According to Morris (2011), the intellectual underpinnings of the subject have generally been at best “variable and fairly thin”. He ascribes this to the tools and techniques bias of the early years of the discipline (critical path network scheduling, work breakdown structures, earned value, configuration management, etc.).

The Bar Chart’s origin can be traced back to 1765, but it was popularised by Henry L. Gantt. Henry Gantt’s (1861-1919) studies of management, focussed on navy ship construction during World War 1, led to the well-known Gantt Chart that outlines the sequence and duration of all tasks in a process. It was invented around 1910 and is still in use today. The originator of the bar chart appears to be Englishman Joseph Priestley (1733-1804), but the concept was popularised by Gantt 150 years later (Weaver, April 2007). New organisational structures became inevitable during WorldWar II due to complex government and military projects and a shrinking war-time labour supply. Kelley and Walker of Du Pont de Numours (USA) were the first to undertake a “project” that added science to the process of time control, resulting in the 1957 development of critical path scheduling, entitled the critical path method (CPM). This period of mega-projects was the catalyst in the evolution of project management.

The CPM was closely followed by the Program Evaluation and Review Technique (PERT) chart system in 1958. Willard Fazar was the father of the PERT system. The purpose of the PERT method was to analyse all the tasks and the time involved in completing a project. Eventually the techniques spread to all kinds of industries. Where CPM ‘fixed’ time and cost of achieving the target, PERT focussed on time as the key variable. The cost variable of CPM quickly faded from use, while the time variable of the PERT approach lasted longer and was later replaced by the Monte Carlo analysis (Weaver, April 2007).

The Work Breakdown Structure (WBS) concept was created around 1962 by the US Department of Defence. The WBS is still one of the most effective project management tools needed to complete a project. Between 1958 and 1979 technological advancement took place, such as the

development of computer technology. Revolutionary development in the information management sector occurred between 1980 and 1994 with the introduction of the personal computer and communications networking facilities. Since 1995 the developments related to the Internet had a dramatic influence on organisations and its business practices.

The 1970s and 1980s were characterised by an increase in integration and the acceptance of all the tools and techniques into practice methodologies. As the 1980s progressed the attention turned to a more careful consideration of the 'front end' of projects with the opportunity of adding value to project deliverables. With the advent of the new millennium, project management increasingly became part of organisations and its techniques were deployed across all facets of business (Stevens, 2002). A model for managing software development projects was initiated in 1986. 'Scrum' was developed as an agile software model based on multiple small teams that work in an intensive and interdependent manner (Haughey, 2010). Haughey (2010) mentions EVM (Earned Value Management) as an important link in project management development. In 1989 EVM became an essential part of programme management and procurement.

In 1989, the PRINCE (Projects in Controlled Environments) method became the standard for government information systems projects in the UK. With time it was found that these method are too rigid and unwieldy and are basically applicable only to larger projects. This resulted in a revision and upgrade in 1996. The PRINCE2 was more generic and applicable to any project type and not only to information systems and information technology projects. That was followed by a further major revision in 2009 aimed at giving project managers a set of tools to deliver quality projects on time and within budget (Haughey, 2010:5).
Morris (2004) avers that during the last decade the technical project management model was enlarged by a growing awareness of the need to incorporate a consideration of business issues into the systems project management model.
PRINCE2, the highly influential methodology promoted by the government sector in the UK, emphasises the following:

The role of the project sponsor and the project board as means of anchoring the evolving project definition to the sponsoring organisations' business needs; and

- The development of the project by phases, with gate reviews at the end of each phase, and approval to proceed being required at each gate.

Heerkens (2006) argues that project management has long been viewed as a technical function only, and technical specialists fill the role of project manager. In many organisations this is still the case. Since the 1980s and throughout the 1990s the emphasis shifted to the behavioural aspects of project management. Apart from the technical aspects it dawned on people that soft skills had a major influence on project success and failure. He averred that organisations need to focus on the larger picture since projects are part of the architecture of business. In reality, many projects are launched without any analysis of whether they represent a sound business investment, as long as the project is finished on time and within budget.

According to Heerkens (2006) organisations started to realize that "projects are critical agents in nearly every company's quest to achieve positive business results". In this regard many organisations realised that it does not matter how good the communication and personal skills of the team are, or how good the project schedule is, if those values are being applied to poor business ventures. Increasingly organisations realized the importance of the connection between the world of project management and the world of business. This will inspire change in the management of projects from a technical and behavioral focus to one of business, and automatically have an influence on project expectations.

Anderson, Grude and Tor (2009) concluded that much of the project literature focused only on technical aspects of projects, and noted the need for a "broader 'PSO' (People, System, and Organisation) perspective". They aver that project professionals develop a 'PSO way of thinking", which means that such projects simultaneously develop a product, the people involved and the organisation. This concept was originally used in the IT field where the successful implementation of IT project systems required more than just the technical development of the system itself. It also required the development of the people involved and the organisation to enable the system to function effectively and efficiently. The reward is a broader view of what the project involves in addition to the technical development. It brings a balance between the concepts and is profoundly important for achieving success (Anderson et al, 2009).

4. PROJECT MANAGEMENT PROGRESS

For years project management was "derided as a low-tech, low value, questionable activity" (Morris 1994). In spite of this, it became a way to integrate organisational functions to achieve better performance and productivity. Many project management and related practices were available by the early 1960s, *inter alia*, construction projects, continuous improvement projects, capital expenditure projects, value
management and quality management. Risk management practices also existed by the 1960s, while the most basic network scheduling techniques and practices had been developed by then (Morris, 2004). An increase of projects in industries followed utilising current project management techniques of the time. Traditional tools and techniques (networks, critical path method, costing, work breakdown structure, schedule tracking) largely drawn from operations research, were augmented by topics such as stakeholder management, project leadership, team development and procurement.

The earliest writings on project management started in the 1960s, notably the work of Russell D Archibald. Dr Russell Archibald is one of the world's top project and programme management *gurus*. His ground-breaking 1967 book is entitled, "Network-based Management Systems (Pert/CPM)". Archibald (1976) is also the original book published on programme management. This best seller entitled: "Managing High Technology Programs and Projects" was translated into Japanese, Italian, Russian and Chinese. In the early edition a project was the sole responsibility of the Project Manager who was seen as "the single-minded and single-handed

orchestrator of resources". In the Archibald (2003) edition there was a distinct shift towards the integration of responsibility among leaders on several levels. The importance of a project team was highlighted and that of designing and documenting the project life-cycle processes.
The following questions are posed in the first edition (Archibald 1976: 79):

- "How will the project manager responsibilities be assigned?
- To whom should the project manager report? At what level, and within which part of the organisation?
- Who should be assigned as full-time project office members reporting only to the project manager, and who should contribute as project participants while remaining in their functional departments?
- How are specialist staff skills in project planning and control, contract administration, finance, legal, and so on, best provided to project managers?
- Who is responsible for development and operation of multi-project, integrated project planning and control systems?
- Who should hold specific responsibility for multi-project management?"

Archibald noted that no organisational pattern had emerged to answer any of the abovementioned questions. The same questions appear in his 2003 edition. In a 2008 interview with David Pells, managing editor of PM World Today (now PM World Journal), Dr Archibald recalls that in 1969 there were two relatively new basic categories of skills, i.e., skills in managing projects and skills to operate and develop the project management systems supporting the project manager and team. He opines that these skills should be developed concurrently with the organisational systems, and that there is a considerable difference in the management of a dynamic project as opposed to the management of a stable organisation. Archibald argues that project management requires special concepts, tools, procedures and systems (PM World Today Featured Interview – October, 2008, Part 2: 2). In a subsequent interview Archibald noted that after 27 years (since the 1st edition of his 1976 book) there was nothing new regarding project management practices and principles. However, he argues that much more had been learned about what project management really is and always had been (PM World Today, Featured Interview – January, 2009, Part 4:7).

Martinelli & Waddell (2003) aver that organisations that solely follow a project management approach in developing products and infrastructure will always struggle. Projects may be on target but fail to achieve the business results, and "resources seldom report directly to the person managing the development effort". Morris (2004) found that little or no research had been done in the project discipline as a whole. There had been little change in understanding of the central core of project management during the past 20 years. Strategic, technical and commercial matters were at the time still not part of the framework of the discipline of managing projects. Moreover, many accepted project management as a management practice, while some industries saw it as a cognate discipline covering the definition and development of

projects central to business performance. He argues that project management is too often seen only as project execution or planning and scheduling.

Morris (2004) avers that the real challenge was that the technical environment and the commercial conditions had all changed. He points out that a broader and more holistic view of project management was needed and argues that project management will only be seen as important and central to business performance once all professionals have made it their task to rectify perceptions. Despite the perceptions that execution is the responsibility of the project manager only, and programme management is concerned with strategy and business benefits, work may still be effective in some organisations. What is needed is a more holistic approach to managing projects and programmes from the earliest stages to last in order to deliver strategic organisational benefits.

According to Waddell (2005), project management was still not a widely acknowledged concept despite the fact that literature on project management was plentiful. He argues that the project management concept was well entrenched in an academic and practical sense, and that project management was generally a well-defined approach not necessarily requiring broader management skills and knowledge. Moreover, the focus was normally on a predefined outcome/result with a finite timeline and organisations had to adopt methods to cope with changes in environmental factors.

5. CONCLUSION

In a survey of organisations from 26 countries, Price Waterhouse Coopers (2006) aimed to identify current trends in project management. The results involving various types of organisations indicated that some delivered projects better than others. Relevant to this research is PWC's finding that 60% of project failure was related to internal issues like scope changes and insufficient resources, while successful projects were linked to stakeholder satisfaction. They found that the success of a project relied on "whether it achieves benefits that are in line with strategic objectives, and establish mechanisms to track progress along the way", as well as good leadership and management skills (Price Waterhouse Coopers, 2006:10). They detected an increase in the establishment of project management offices (PMOs) and organisations were increasingly becoming aware of project management as a method to achieve business objectives, and the project manager playing a progressively bigger role.

The PWC survey concluded as follows: "As organisations increasingly leverage project management as a method to achieve critical business objectives, effective project management practices are — more than ever — vital to a company's success. Realising the role that project management plays in the successful execution of business strategies, senior management continues to support key initiatives, such as project management certification, development programmes and portfolio management capabilities." The portfolio performance levels of respondents whose Portfolio Management Software programmes were managed by a PMO were consistently twice as high as those whose portfolios were managed by other groups or individuals. This held true for all indicators of performance (Price Waterhouse Coopers, 2006).

Winter, Andersen, Elvin and Levene (2006) aver that a new class of projects emerged in recent years, specifically in areas such as organisational change, information technology, integrated business solutions and long-term service delivery. Winter *et al*, (2006: 700) refer to these projects as 'business projects' and perceive them as representing a shift away from the traditional engineering types to a more business-orientated view. This means a shift to a more value-centric approach where the primary concern is no longer capital assets, but rather the challenge of creating value and benefits for the different stakeholders. The primary emphasis thus shifts from product creation to value creation with a need to extend the traditional view of projects towards new concepts and perspectives.

Ainsworth (2009: 1 - 2) doubts the ability of project management to deliver business value without considering the broader context of its application. He believes that project management should be elevated to a strategic discipline. Moreover, he opines that without considering the broader context of project selection, alignment to strategy and managing changes to achieve benefits, projects cannot add value. Hence, organisations in general need to comply with the following:

- Select the right projects to deliver the intended outcomes;
- Projects need to align with and deliver effective strategy;
- Coordinate and integrate the various project outputs to deliver the end outcomes.

Ainsworth opines that the above steps are more the roles and responsibilities of programme and portfolio management.

It is concluded that projects and project management still play a major role in modern organisations despite the profession on its own not having seen or experienced serious advances over the past decades. However, the application of projects and project management evolved from the techno-engineering environment to the organisational environment. Moreover, the same project management techniques are now applied to a wide scope of portfolios and programmes ranging from business process reengineering, product development, strategic organisational transformationand the supply chain. It was earlier alluded to that real value can only be added by considering the broader context of the application of project management and elevating it to a strategic discipline. This is the all-encompassing level and environment of programme and portfolio management.

About the Author:

Prof. P.G. Steyn is the Founder and Principal of Cranefield College of Project and Programme Management, South African. He retired from the University of Pretoria and was appointed Emeritus Professor (1998). He is also the Director of De Doornkraal Wine Estate, Riversdale, Western Cape; producer of Aan't Vette wines.

Bibliography

Ainsworth, H. August 2009 (1). "Can project management create organization value? Necessary, but not sufficient!" Available from: http://www.programvalue.com.au.

Ainsworth, Harold, August 2009 (2). "Has the time come yet for us to adopt a Program Management approach that delivers real business value?" Available from: http://www.programvalue.com.au.

Ainsworth, H. September 2009 (3). "Has the time come yet for us to adopt a Program Management approach that delivers real business value?" Available from: http://www.programvalue.com.au.

Ainsworth, H. October 2009 (4). "Why Programs need to manage change to gain benefits". Available from: http://www.programvalue.com.au.

Archibald, Russell D. May 2010. "The interfaces Between Strategic Management of an Enterprise and Project Portfolio Management Within the Enterprise". PM World Today – Featured Paper, (Vol XII, Issue V). Available from: http://www.pmworldtoday.net

Archibald, D., Filippo, I. and Filippo, D. July 2012. "The Six-Phase Comprehensive Project Life Cycle Model Including the Project Incubation/Feasibility Phase and the Post-Project Evaluation Phase".PM World Journal. Available from: http://www.iil.com/downloads/Archibald_Di_Filippo_ComprehensivePLCModel_FINAL.pdf.

Archibald, Russell D. August 2010. "Feedback on Steyn's 2010 Paper", The Steyn (July, 2010) article "The Need for a Chief Portfolio Officer (CPO) in Organisations", PM World Today, USA.

Archibald, Russel. D, Reviewer of "Program Management" by Michel Thiry, PM World Today – November 2010 (Vol XII, Issue XI), September 2010 (Online). Available from: http://www.pmworldtoday.net.

Anderson, Erling S. Grude, Kristoffer V. & Hang, T. 2009. "Goal Directed Project Management", 4th edition, ISBN 9780749453343.

Cassidy,C. 2012. "The New Matrix Management", (Matrix Management Overview). Director of MM 2.0™ Services, International Matrix Management Institute. Available from: http://matrixmanagementinstitute.com/resources/articles/new-matrixmanagement.

Cleland, David L. and Ireland, Lewis R. 2010. "Project Management Portable Handbook". Paperback, Revised. ISBN-10:0071741054/ISBN- 13:9780071741057.

Cooper, Martha C. Lambert, Douglas M. and Pagh, Janus D. 1997. "Supply Chain Management: More than a New Name for Logistics," The International Journal of Logistics Management, Vol. 8, No. 1 pp. 1-14.

Encyclopedia of Business, 2nd ed. Reference for Business» Encyclopedia of Business, 2nd ed.» Man-Mix» Matrix Management and Structure. Available from: www.referenceforbusiness.com/encyclopedia/Man-Mix/Matrix-Management-and-Structure.html.

Gartner Inc, March, 2004. "Strategic Analysis Report, Leading and Managing in the Virtual Matrix Organisation".

Haughey, D. 2010. "A Brief History of Project Management" Project Smart. Available from: http://www.projectsmart.co.uk?brief-history-of-project-management.html.

Hammer, M, 2002. "Process Management and the Future of Six Sigma". Sloan Management Review, 43, (2), 26-32.

Heerkens, Gary R. 2006. "The Business-Savvy Project Manager. Indispensable knowledge and skills for success". McGraw-Hill Companies, Inc. Printed and bound by RR Donnelley.

Kozak-Holland, M. 2011. "The History of Project Management", published by Multi- Media Publications, Inc. 2011, ISBN 13-978-155489-096-5; 640 pages, hard cover. Available from: http://www.lessons-from-history.com/history-projectmanagement/history-project-management-page-.

Lambert, D. Cooper, M. and Pagh, J. 1998. "Supply Chain Management Implementation Issues and Research Opportunities", The International Journal of Logistics Management, Vol. 9, No. 2.

Martinelli, R. and Waddell, J. 2003. "Program Management: Linking Business Strategy to Product and IT Development", Available from: http://www.pmforum.org/library/papers/2003/prgmgmt.pdf .

Morris, P. 2004. "The irrelevance of project management as a professional discipline", INDECO Management Solutions.

Morris, P.W.G. and Hough, G.H. 1987. "The Anatomy of Major Projects – A Study of the Reality of Project Management". John Willey & Sons Ltd., Chichester. Morris, P. Pinto, J. and Soderlund, J. 2011. "Introduction towards the Third Wave of Project Management".

PM World Today, Featured Interview – October 2008 (Vol X, Issue X) Interview with Russ Archibald, Project Management Pioneer, Part II. "The Formation & Early Years of PMI". Available from: http://www.pmworldtoday.net.

PM World Today, Featured Interview – January 2009. (Vol XI, Issue X) Interview with Russ Archibald, Project Management Pioneer, Part IV. "The Later Years: Consulting, Research and Thoughts on the Current State and Future of Project Management". Available from: http://www.pmworldtoday.net.

PricewaterhouseCoopers, 2006. "Insights and Trends: Current Programme and Project Management Practices. The second global survey on the current state of project management maturity in organisations across the world". Available: Online Semolic, B. March 2010. "Virtual Networks of Partners", Proceedings of the IPMA Research Expert Seminar, Cape Town, South Africa.

Steyn, Pieter. June 2010. "Programme Managing the Supply Chain Portfolio", PM World Today, June Vol XII, Issue VI, Dallas, USA.

Steyn, Pieter. July 2010. "The need for a Chief Portfolio Officer (CPO) in Organisations", PM World Today, July Vol XII, Issue VII, Dallas, USA.

Steyn, Pieter. 2012. "Sustainable Strategic Supply Chain Leadership and Management", PM World Journal, December Vol I, Issue V, Dallas, USA.
Steyn, Pieter. 2013. "Business Model for Programme Managing the Supply Chain Portfolio". PM World Journal *A Business Model for Programme Managing,* March Vol. II, Issue III, Dallas, USA.

Waddell, D. March 2005. "Program Management: The Next Step in the Evolution of Project Management? Problems and Perspectives in Management". Available from:
http://businessperspectives.org/journals free/ppm/2005/PPM_En_2005_03_Waddell.pdf.

Weaver, P. April 2007. "The Origins of Modern Project Management", Fourth Annual PMI College of Scheduling Conference, 15 - 18 April 2007, Marriott Pinnacle Downtown, Vancouver, Available from:
www.mosaicprojects.com.au/Resources_Papers_050.html.

Weaver, P. August 2007. "Trends in Modern Project Management, Past, Present & Future", Presented at 28-31 August, 2007, Gold coast, Queensland. Director, Mosaic Project Services Pty ltd. Available from: www.mosaicprojects.com.au/Resources_Papers_061.html.

Winter, M. Andersen, E. S. Elvin, R. and Levene, R. 2006. "Focusing on business projects as an area for further research: An exploratory discussion of four different perspectives". International Journal of Project Management, Vol 24, Issue 8, pp 699-709. Wijnen, G & Kor, R, 2000. "Managing Unique Assignments", Gower Publishing, England.

Zovitsky, E. 2014. *The Progression of Project, Programme and Portfolio Management*. A dissertation submitted in partial fulfilment of the requirements for the degree Master of Commerce at Cranefield College.

INVITING ARTICLES FOR INTERNATIONAL JOURNAL OF PROJECT & TECHNOLOGY MANAGEMENT

PTMF would very soon be launching the first international Journal of Project and Technology management. The journal is intended for a comprehensive coverage of all aspects of project and technology management from concepts to commissioning of all types of projects including large complex projects and technology intervention to improve the project performance and delivery. The journal covers all areas of the subject from systems to human aspects of project management, links theory with practice by publishing case studies and covering latest body of the knowledge on the subject for the benefit of the project management professionals, researchers, academicians, consultants and policy makers. We invite articles/ case studies from such individuals to be included in the journal.

Guidelines for the Authors:

Coverage:

The journal will be organised into various sections to include research papers, short notes/ correspondence, case studies, book reviews, information related to seminars and conferences, educational and academic information and any other relevant information related to the theme of the journal.

Copy right: The submission of a paper to PTMF will imply that the paper is original and not submitted elsewhere for publication. Copyright for published papers will be vested in the publisher i.e. PTMF and authors should complete a standard publishing agreement, which will be supplied with the final proof. It is the author's responsibility to obtain written permission to reproduce copyright material.

Language: All papers will be published in English language and manuscripts must be submitted in English only.

Reviewing Process: Each paper is reviewed by the editor and if it is found relevant for publication then it is sent for double blind peer review. The reviewing time normally takes about 10-12 weeks.

Manuscript Requirement:

Length: No maximum length for a paper is prescribed, however, authors should write concisely. Normally it should be not more than 10,000 word inclusive of figures and tables. Papers must be written in double space with wide margin.

Title: Should be concise and informative. Titles are often used in information-retrieval systems. Avoid abbreviations and title should be typed on a separate sheet.

Format: The paper should have a cover page giving title, author's name, complete address including telephone number, fax number of the author and co-authors. Second page should contain the title and an abstract of 100-150 words. It should also include upto eight key words about the paper. The paper should begin from the third page.The main conclusions of the study may be presented in a short conclusions section, which may standalone or form a subsection of a Discussion or Results and Discussion section.

Headings: Should be short, clearly defined and numbered

Footnotes: Should be used only when necessary and must be identified in the text by consecutive numbers placed as superscript.

Text: Main text should be written in a font size of 12 and should be readable. Mathematical models etc should be provided in Appendix.

Tables and Figures: Submit tables as editable text and not as images. Tables can be placed either next to the relevant text in the article, or on separate page(s) at the end. Number tables consecutively in accordance with their appearance in the text and place any table notes below the table body. Each table should have a brief title written on the top of the table, and each figure should have a brief caption written on the bottom of the figure and they should be numbered using Arabic numerals

Photos and Illustrations: Must be supplied as good quality black and white original with captions and their position should be shown in the text.

References: Should follow a standard style. This is shown within the text author's name followed by a comma and the year of publication, all in round brackets e.g.(Klaus,1996). At the end of the paper a reference list in alphabetical order must be given as follows:

For books: Surname, initials,(year), title, publisher, place of publication

For Journal: surname, initials,(year), title, journal volume (number), pages.

All authors whose papers will be published in the PTMF journal will be offered one year complimentary membership of the Foundation

CALL FOR RESEARCH AND ORIGINAL PAPERS, ARTCILES AND CASE STUDIES

Project & Technology Management Foundation(info@ptmfline.com) a professional registered society and a member of Asia Pacific Federation of Project Management(APFPM) and also part of KM Fest dedicated to the growth of project management profession by contributing to the body of knowledge of project management and technology management by conducting and supporting research, publishing books, journals and newsletters, organising conference and seminars, surveys as well workshops and training programs etc. We are intending to publish the first inaugural issue soon for which we are soliciting articles, research papers, case studies, book review etc. We propose to publish two biannual issues in a year to start with. We have already formed an international editorial board for the journal consisting of leading researchers and academicians from across the globe.

Editorial Board of the International journal of Project & Technology Management consists of:

Prof Rajat K Baisya- Chief Editor –India :rkbaisya@hotmail.com/info@ptmfonline.com – President Project & Technology Management Foundation.

Editorial Advisory Board Members:

1. Dr Thomas Bauman- USA: baumannthom@aol.com –President Orbitat International LLC, USA
2. Prof Jan Betta, Poland : jan.betta@pwr.wroc.pl –Profesor University of Krakow, Poland
3. Prof Christophe N.Bradillet, France: cbredillet@compuserve.com –Professor Queensland University of Technology, Editor of a Journal on Project Management

4. Prof Leif Henricksen, Denmark : lh@ib.sdu.dk : Professor, University of South Denmark, Odense
5. Mr Klaus Panennbaecker, Germany : mail@klaus-pannenbaecker.de, Former President IPMA, President German Project Management Association and a Consultant on PM
6. Prof Sebestian Dworatschek, Germany : dworatschek@ipma.de- Professor University of Bremen
7. Prof KahkonenKalle, Finland : kale.e.kahkonen@tut.fi – Professor , Tempere University of Technology
8. Prof PetarJovanovic, Serbia : info@yupma.org.rs –Professor University of Belgrade, President YUPMA
9. MattiMr.Ahvenharju, Finland: matti.ahvenharju@projeckti-instituuttti.fi –Management Consultant, Director, Project Institute Finland Ltd
10. Prof BojanRosi, Slovenia: bojan.rosi@um.si,Dean Faculty of logostics, University of Maribor
11. Prof Erik Schmikl, South Africa : ErikS@cranefield.ac.za- Professor, Cranefield college of Project Management
12. Prof Pieter Steyn South Africa : pieters@cranefield.ac.za Director, Cranefield college of Project Management
13. Prof Amaro dos Santos, Brazil : amaro.ufpr@gmail.com , President Project Management Association, Brazil
14. Prof Vladimir Voropajev, Russia : voropaev@sovnet.ru, President Project Management Association Russia
15. Prof Darren Dalcher, UK : D.Dalcher@mdx.ac.uk- Professor of Project Management at Hertfordshire University and Director of National Centre of Project Management UK
16. Mr. Miles Shepherd , UK : miles.shepherd@msp-ltd.co.uk –Former President of International Project Management Association, Advisor and Correspondent of Journal of PM World, Chairman, Program & Portfolio Management at ISO.
17. Prof OU Lixiong, China : lixiong@nwpu.edu.cn – Professor, National Polytechnical University, Xiang, China
18. Prof Lynn Crawford, Australia : lcrawford@bond.edu.au – Professor, Bond Univeristy
19. Prof Hiroshi Tanaka, Japan : hirojpmf@wta.att.ne.jp – Founder PMA Japan, Project Management Consultant
20. Prof BraneSemolic, Slovenia : brane.semolic@3-lab.eu – Director Lens-Living Lab
21. Prof Martina Heumann, Austria : martina.huemann@wu.ac.at- Professor Vienna University of Economics & Business
22. Dr. Sunil Abrol, President, Institute for Consultancy & Productivity Research.
23. Mr. Ramesh Tyagi, Former CMD, NIDC

On behalf of the editorial board we are soliciting the support from all researchers, academic and professional community. It is our intention to have a very high standard for the journal. It will be only possible with your help and support.

ORGANIZATIONAL ANNOUNCEMENT

I am happy introduce Debkumar Maity who has recently joined us as full time Office Assistant to look after office administration as well as membership service and also as editorial assistant to ensure release of our newsletter and journal in time. All of you are requested to extend support and cooperation to him. He can be contacted at : Mobile 8906891298 email : info@ptmfonline.com. I wish him a long and fruitful association with PTMF

Dr. Rajat K Baisya
President

PTMF MEMBERSHIP

The Project and Technology Management Foundation (PTMF) was constituted as a non - government, non-profit registered society in the year 2010 with a view to contribute to development and promotion of the latest concepts and practices in the profession of project management and technology management.

PTMF

PROJECT AND TECHNOLOGY MANAGEMENT FOUNDATION
(A non-profit Organization)
Member of Asia Pacific Federation of Project Management

Limited memberships are currently under following categories:

- Fellow Member - Eminent Professionals in the field of project & technology management
- Corporate Member - Public and private sector organizations
- Institutional Member -Business schools, NGOs, institutions dealing with development programs
- Individual Member – Individuals engaged in project management practice
- Associate Member- Research associate of colleges recognized by the AICTE.
- Student Member- Students of colleges recognized by the AICTE.
  For details visit:
- http://www.ptmfonline.com/membership.html
- http://www.ptmfonline.com/doc/form.pdf

Registered Office

Address: T – 28 / 15, DLF City, Phase – III, Gurgaon – 122002, India.

Phone : +91-124-4049831. Mobile: +91 9810266758, +91 9930172180

Email : info@ptmfonline.com, ptmfoffice@gmail.com

Website : www.ptmfonline.com