



PROJECT AND TECHNOLOGY MANAGEMENT FOUNDATION

(A non-profit Organization)

Member of Asia Pacific Federation of Project Management

E-NEWSLETTER

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Volume 7, Issue 2 (May – July'19)

Editorial

We are happy to release the newsletter for the period covering May-July 2019. In this issue we have reported the important activities of the PTMF which includes signing of a strategic partnership with CC Roboflex, an European partner and part of EU funded research initiatives for Robotics applications for improving the competitive advantage of the SME sector under Industry 4.0 environment. This partnership will allow PTMF to initiate academic and research activities in India in collaboration with Indian educational institutions and bring in the knowledge developed on the subject for the benefit of the Indian industry. There is a global conference being organized by the Competence Centre Roboflex on ‘Enabling Technologies, New Business Model and Competence’ under Knowledge Management initiatives to be held during 23rd to 25th September 2019 at Celje , Slovenia focusing on the implication of Industry and Society 4.0. PTMF is participating and is a co-sponsor of this conference. Industry 4.0 is now assuming a significant attention of the researchers and practitioners all over the world to understand the implications of new generation technologies including AI and Robotics on management practices and more particularly on Project management. People will be same as of now working in new environment which itself is a big challenge as to how existing people will be trained and developed to work and deliver results in new business environment. We are happy to inform you that PTMF is very actively collaborating with global organizations to bring in the latest body of the knowledge to our local industry

Your journal ‘International Journal of Project & Technology Management’ has now received the ISSN for both online as well as hard copy. We are shortly releasing the journal volume II, Issue 1. PTMF is planning to hold a national conference in the month of December 2019 on the theme “Application of Robotics to Improve the Productivity of Manufacturing Industry” to be held in New Delhi, India. A first announcement to this effect is included in this newsletter. All of you are requested to participate. Further circulars will be sent shortly on this.

I wish everyone all success.

Rajat K Baisya

Editor

PROJECT MANAGEMENT PROGRAM AT NIT SILCHAR , ASSAM

Prof(Dr) Rajat K Baisya is delivering a lecture and facilitating a discussion on Solid Waste Management of Silchar (Assam) at Silchar Municipal Board on 22.03.2019. Others sitting on his left are Mr Niharendra Narayan Tagore, Chairman Silchar Municipality and Dr Tapas Dutta, President Nagarik Suraksha Sangrash Samity(NSSS), Silchar. Members of NSSS and also distinguished citizens of Silchar have also attended the lettere and participated in the discussion that followed.



Prof Rajat K Baisya has delivered a lecture at National Institute of Technology Silchar on 26th March 2019 on 'Future of Management Education in India' to a group of students and faculty members under institute lecture series . He has also taken a full course on Project Management for the 4th semester students of management at the same institute.



Strategic Partnership with CC Roboflex

PTMF - Project & Technology Management Foundation, signed the strategic partnership agreement with the **CC ROBOFLEX**, an EU funded technology and innovation competency center for helping SME sectors to develop competitive advantage.

Under this agreement **ROBOFLEX** and **PTMF** will be collaborating in the frontier areas including Robotics, AI, Smart Factories etc. in industry 4.0 environment.

Interested organizations and consultants may contact: info@ptmfonline.com

PROJECT MANAGEMENT IN INDUSTRY 4.0 ENVIRONMENT

RAJAT K. BAISYA*

**Founder President- Project & Technology Management Foundation, India
Email: info@ptmfonline.com, Mobile:+91-9810266758**

ABSTRACT

Project management in last two decades has laid significant emphasis on people management and also on the areas related to people performance to achieve the project result. Voluminous research work and case studies are available in literature covering these areas and more particularly on competency, training, team management, leadership, people skills and quality etc. and their impact as well as influence on project performance and results. In industry 4.0 or industrial revolution 4.0 environment, we will be witnessing a significant departure from earlier environment and there will be development which will redefine the way we will do business in this environment. Industry 4.0 will be influenced by technology in all sphere of human activities and there is going to be changes in the society as well as in all forms of human interfaces during next five to ten years, so significantly that we have not witnessed such changes in last several decades or even in last century. Globally, it has already been recognised and also feared that lower as well as middle level jobs will be mechanised and will disappear which is a matter of great concern to economists, policy makers, social scientists as well as politicians. The new technologies like artificial intelligence, robotics, block chain technology, biotechnology, nanotechnology, human genetics etc. will significantly impact the business all over the world. And these will also have remarkable influence the way we will be managing projects of the future. Already EU countries have set up competency centres to face those challenges by SME sectors and there are lot of collaborative work and research are happening for managing these anticipated changes. Project management which hitherto was largely dictated by the quality of people and project manager, are now going to be influenced by latest generation technology like artificial intelligence and robotics.

This paper will discuss the impacts of technology on project performance and also what will be the key drivers of project management in industry 4.0 environment. The existing PM certification process and scope may not remain relevant in industry 4.0 environment and this aspect has been also critically discussed in the paper.

Introduction:

Globally PMI as well as IPMA, the two leading professional Associations representing the PM profession are very active in offering PM certification program and in terms of setting the standards of performance. PMI is more deep rooted and have more acceptance in Industry all over the world. There are many regional certification agencies trying and expanding their reach and Association of Project Managers(APM) of UK can be mentioned in this respect which has a global acceptance. Also American Academy of Certified Project Managers(AAPM) is quite active and TUV of Austria, a reputed training institute is associated with them. Besides, we also have PRINCE from UK. In fact the think tank of IPMA was largely drawn from senior project management professionals from UK and also from other parts of Europe. Broadly, PMI has in their offering a bouquet of certification program, a very wide range of certificates covering various issues and activities of project management. These include Project Management Professional (PMP) given to those who have the ability of leading and directing projects, Program Management Professional(PgMP) for those who manages multiple complex projects, Portfolio Management Consultant(PfMP) designed for those who have advanced experience and skill to have a demonstrated and proven ability to coordinate and manage one or more portfolios to achieve organisational objective and then a basic level certification-Certified Associate in PM(CAPM). PMI also covers through its certification program many skill and functional expertise who are qualified to work in specific areas of project management such as PMI-PBA for professional in business analytics who can help in ensuring business outcome, PMI-ACP for agile certified practitioners, PMI-RMP for risk management professional and PM-SP for project scheduling professional.

As opposed to PMI their counterpart and competitor from Europe IPMA has much simplified offering with four level certification including Certified Project Director(Level A), Certified Senior Project Manager(Level B), Certified Project Manager (Level C), Certified Project Management Associate(Level D). It can be seen that IPMA certification is related to position whereas PMI certification relates to responsibilities. Although responsibilities increase with the position but necessarily so. In that sense, PMI is more versatile and industry oriented.

Every business starts with the execution of a successful project and all businesses can be viewed as a portfolio to be managed to deliver organizational performance. The objectives of all certification is to improve the standards of professional practices for implementing projects.

In industry 4.0 environment the technology has great impact on implementation process requiring different skill set of project managers. The objective of this article is to examine if existing standards and processes would be enough in the new environment.

Traditional PM Approach Project Failure Rate was High:

Earlier in every project focus was only on Triple Constraints Theory- Cost, Quality and Time. Public and private projects have been managed differently- public projects were given higher resources than necessary whereas private projects were invariably allocated lesser resources and tight budgets. The performance of private projects were invariably better than public projects for reasons that can be attributed to better PM practices. Large public projects were executed spending three times the budgeted cost and time. Hardly any public project experienced the project performance criteria. There is always time and cost overrun and the reasons for that are also traced to one or combination of many factors.

Project Management –A Preferred Discipline:

The focus of everyone now on effective PM practices and more so by the technology companies who even need capabilities to implement virtual projects. Business starts with a successful project and therefore, emphasis is now on PM. A Recent survey by Simplilearn concluded that PM is the most sought after program now in India. Over 30% of the respondents favoured PM over AI and Machine Learning which are also the favourite programs in Industry 4.0 environment.

China Delivered Better Performance:

China has always exceeded the project performance criteria and used earlier learning in next project to improve further. Some of their demonstrated Excellence in PM is unprecedented. Europe has helped in creating knowledge base on PM practices to be implemented elsewhere. They are beholder and disseminator of knowledge. However, focus was always on people and their soft skill. Less focus on hard skill. Certified project managers are much higher in numbers in China than in Europe.

ICB 4.0 of IPMA:

Individual competency Baseline(ICB 4.0), the latest certification program of IPMA has three pillars namely Ability, Knowledge and Skill. These basic competency elements are required to perform in projects, program and portfolio management. The competences are divided again into three fundamental domains- People, Practice and Perspective. Together they are expected to make a balanced individual. ICB 4.0 is not a major departure from say ICB 3.0, its earlier version. As per the structure of ICB 4.0 the competence in the project environment has been broken down into twenty nine competence elements. There are five elements for Perspective, ten elements for People and fourteen elements for Practice. Again emphasis on People. In each competence area there are generic competence elements (CE) but Key Competence Indicators (KCI) will provide definitive indicators for successful project, program and portfolio management.

The document also attempts to define and distinguish between Skill, Ability and Knowledge. The document further attempts to discuss the Individual competency under the same criteria and sub-criteria for Project, Program and Portfolio Management. ICB 4.0 defines:

Knowledge: As collection of information and experience that an individual possess

Skill: Specific technical capabilities that enable an individual to perform a task

Ability: Is the effective delivery of knowledge and skill in a given context.

ICB 4.0 provides Generic Competence(CE) and Key Competence(KCI) under Perspective(5), People(10) and Practice(14) for Project, Program and Portfolio. ICB 4.0 although an improved document over the earlier version but approaches are still the traditional method of Project Management. The project management responsibilities are usually ,planning, managing the projects, organizing, preparing estimates and schedules, monitoring, and report on activities and progress through the projects.

Technology has been always underplayed in ICB series which is a major constraint. Focus was always on skill and People and process.

Implications of Industry 4.0 on PM:

New emerging high-technology has changed project management. The future of project management will be heavily influenced by technological breakthroughs, and there is no doubt that AI will change the course of how project management tasks are delivered and controlled in the future. Practitioners are convinced that AI will evolve from simple task automation to predictive project analytics, advice and actions as described by M Lahmann, et al. (2018).

New high- technology has not only made a lot of things in life easier, but it has also affected management of organizations.

Changed PM Practices:

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Soft Skill:

In Industry 4.0, the soft skills of project managers will undergo a significant transformation mainly related to the new ways of interacting with project stakeholders. Their leadership will be expressed as more authoritative and less as a simple position in the organizational chart. An authoritative PM should have rights to create project agreements, resource management, his or her team position in the processes, be available to get involved and demonstrate skills in valuing resources.

Hard Skill:

In Industry 4.0, the hard skills of project managers will undergo a significant transformation which will be technology driven. Knowledge of technology will be a key imperative to be successful Project Manager in new environment. Successful project mangers in new

environment will thus emerge from professionals of Technical background. More so with latest generation technologies.

Team Management:

The PM's fundamental task should be to encourage the team's spirit of initiative without losing sight of the strategic objectives of the project. From both technical or cognitive view and relational point of view, the project manager should be able to choose the right people for the composition of the team with the delocalization of the different project teams. Moreover, the Industry 4.0 PM should have the efficient interaction among project stakeholders and team members which will have to function like a symphony orchestra.

Speed of Action:

An integrated flow of data and communications which allows stakeholders to have a picture of the situation in real time will be essential in the high speed of decision making and the diligence in reacting to unexpected events in a system governed environment. Project managers should have consistent problem-solving capacity and act quickly, maintaining the right balance at the same time. Traditional hierarchical relationships will gradually change into flat structure in Industry 4.0. Project team members will become independent professional figures, able to develop their creativity with greater freedom than in the past.

Challenges of Industry 4.0 in PM:

At the company level, the impact of the fourth industry revolution on production processes will not only be limited to technological but also infrastructural aspects. This revolution will endorse the development of new professions, new structures of organizations and the growth of a new management style. Project managers will be the main leaders of those developments, facing a new situation with different elements of Industry 4.0. Some significant elements are Internet of Things, Addictive Manufacturing, System Integration, Autonomous Systems, Augmented Reality, Simulation, Big Data, Cyber Security and Cloud Computing.

Role Similarity in Both in traditional PM and PM 4.0:

There are some traditional skills which will still have relevance in current context as given in Table 1 below:

Table1: Roles still to be seen relevant

Sr. No	Roles and Responsibilities	Traditional PM	Industry 4.0 PM
1	Provide to ensure adherence to budget, schedule, and scope	V	V
2	Work with the Project Sponsor to develop the agreed Project Management Plan through interactions with stakeholders.	V	V
3	Execute and maintain project document management for the project cycle in compliance with the Authorities Quality Assurance requirements.	V	V
4	Provide a timely and accurate report to the management team and team members.	V	V
5	Assist business development team with negotiating and definitive agreements with external suppliers, vendors, and customers.	V	V
6	Develop best practices and tools for project execution in an agile development environment.	V	V
7	Ensure all project activities are undertaken in a systematic manner with a Systems Engineering approach at the core of the technical solution to project objectives.		V

Roles & Responsibilities Needed in PM 4.0 :

There are some roles which have to be learnt or acquired new by PM in current environment as given in Table2:

Table2: New Roles of PM in current context:

Sr.No	Roles and Responsibilities	Traditional PM	Industry 4.0 PM
8	Identify and execute strategic initiatives to enable growth strategy.	X	V
9	Motivate cross-functional, multi-location team members and manage deliverables to meet project milestones.	X	V
10	Provide deep dive analysis, proposal, and help implement improvements to a wide variety of cross organizational challenges.	X	V
11	Manage project execution, risks; identify, resolve issues in a real time.	X	V

12	Ability to manage highly complex, technical projects	X	V
13	Support the tracking and managing of a complex autonomous fleet.	X	V
14	Ensure prototype development and vehicle conversion and replication is executed flawlessly.	X	V
15	Drive the testing and technical assessment of next generation hardware and software technology with partners	X	V
16	Familiar with technical process improvement and development in start-up and complex settings.	X	
17	Complex systems execution strategy formation and delivery	X	V

Key Differentiator

PM 4.0 need different hard and soft Skill set. This means they will have to go through the learning phase. PM 4.0 environment decisions are based on technology and scientific analysis and therefore, PM will be authoritarian to manage a team also authorised and learned. Hence project team will be functioning like symphonic orchestra. Individual focus or leadership centric focus will be replaced by team, machine and automatic environment to work collectively.

Conclusions:

Complexity and uncertainty, two main theoretical traditions in project management play a big part in Industry 4.0 projects, shaping and defining necessary features to handle the workload and they are related with the increasing complexity of the projects. There will be the need and emergence of specialised project managers in Industry 4.0. Although there are specialized project manager related with each element of Industry 4.0, it is sure that project manager must have enhanced soft skills and hard skills to accomplish the complex and autonomous Industry 4.0 projects.

- In Industry 4.0, the hard skills of project managers will undergo a significant transformation which will be technology driven.
- Knowledge of technology will be a key imperative to be successful Project Manager in new environment. Successful project managers in new environment will thus emerge from professionals of Technical background. More so with latest generation technologies.



18th KM FEST Global Festival of Knowledge Management
4th SFK- Slovenian Festival of Knowledge
1st Strategic Development Conference of the Competence Center ROBOFLEX
Celje, 23-25.9.2019, EU-Slovenia

Industry & Society 4.0

“ENABLING TECHNOLOGIES, NEW BUSINESS MODELS and COMPETENCES”



Industry 4.0 organizations are increasingly becoming integral parts of regional and global value chains. It is imperative for modern organizations to have competitive technologies, products, services, and processes embedded and supported by the authentic and efficient regional innovation ecosystems services. An organization can act as integrator, organizer, or partner of a value chain engaged in new technology development and improvement.

Innovation communities of knowledge workers and their global and regional professional ties are the critical components of such emerging innovation ecosystems. Our innovation potentials need to be empowered, amplified by involvement and exploitation of available local, regional, and international business ecosystem innovation potential.

This year KM FEST is a compilation of three events with the primary goal to gather, exchange information between involved industry innovation communities, and presentation of their Industry 4.0's robotization and digitalization technologies, business models, with required competencies with an illustration of practical cases. Besides this, the goals are to review and facilitate the local, regional, and global collaboration of associated innovation communities in the network of EU competence centers. The event is co-organized by the Competence center ROBOFLEX, TCS – Toolmakers Cluster of Slovenia, and global virtual living laboratory LENS Living Lab in collaboration with the innovation community of regional and international partners. This event is sponsored by the regional partnering innovation project ROBOTool-1 and partnering EU innovation project HORSE

Prof.Dr.Brane Semolic, KM FEST Program Coordinator

LENS Living Lab /Competence Center ROBOFLEX

Venues of the KM FEST Slovenia'19

23th September
2019

ETRA Ltd – CC ROBOFLEX DEMO Center,
Celje

24th and 25th September
2019

Faculty of Logistics Celje, University of
Maribor

More information on the event website: <http://kmfest.com/>

----- KM FEST Slovenia'19 Organizers & Co-organizers -----



Media Sponsor: [PM World Library](#)

Rajat Baisya's new Book Being Released shortly:

New Book of Prof (Dr) Rajat K Baisya

Business performance cannot be improved without delivering supply chain performance objective in competitive environment. To achieve that, an integrated view of supply chain and logistics management is an imperative. This latest book of mine has attempted to help industry to manage these functions as an integrated discipline. The book is designed to help in supply chain performance management including logistics. Undergraduate and post graduate students as well as researchers and faculty of management and engineering and practicing managers and consultants in these areas will find the contents covered in this book very useful. The Book covers many real life cases to give insight into the subject. The book has nine chapters covering all areas of Supply Chain Management including the chapters on 'Supply Chain Performance Management and Benchmarking' and 'Global Logistics Value Chain Management and logistics Cost Management'. Book is forwarded and recommended by Charles Wilson, CEO Booker Tesco Plc. UK and Prof S.G. Deshmukh, Director IITM Gwalior and foreword written by Prof Bojan Rosi, Dean Faculty of Logistics, University of Maribor, Slovenia.



**Integrated Supply
Chain and Logistics
Management**

Rajat K Baisya

SAGE | TEXTS



NATIONAL CONFERENCE

Application of Robotics to Improve the Productivity of Manufacturing Industry

In collaboration with CC Roboflex

Venue: India International Centre (Multi Purpose Hall), Max Mueller Marg, New Delhi

20-21 December, 2019

Application of Robotics is now widely practiced in the industry. Particularly under the Industry 4.0 environment robots and co-bots (collaborative robots) are now widely used in manufacturing and engineering industry. Robots are seen gradually replacing human in assembly operations as well as in manufacturing operation for competitive advantage.

In operations where high precision is necessary as well as where bulk repetitive operations are to be carried out application of robots can be very cost effective, productive ensuring high quality output. Even in agriculture as well as in mining operations where human elements are seen to face very unfriendly and even sometime hazardous environment, robots can carry out those functions and work very easily. Already it has been argued that why we are not using robots for hazardous work in mines , oil drilling refineries and construction industries as well as waste and sewer water drain cleaning where many incidences of death of innocent workers have been reported.

In India, application of robots are already reported in a few category of industries. Auto sector has already inducted robots in the manufacturing of two and four wheelers. Indian pharmaceutical industry has started using robots in the high precision operations and even FMCG industries are also using robots to improve the efficiency of the operation as well as for reduction of cost. Some global robots manufacturers like Universal Robotics are now active in India and have set up their operations to supply and maintain the robots that they have sold to Indian industry.

Although robots are likely to take away the jobs typically hitherto trained human beings were doing but robotics applications will open up other associated functions and ultimately will become useful for all categories of industries as well as for the economy. People will have to trained to perform higher level skilled functions in industry under 4.0 environment. In industry and society 4.0 environment it is inevitable that application of AI and Robotics as well as IoT will greatly penetrate in future.

To discuss all concerned and issues related to how Indian industry can embrace Robotics in their manufacturing operations PTMF will be organizing two day national seminars in New Delhi where all stakeholders and policy makers can participate and present their views and

can have deliberations. It is proposed that some case studies will be discussed to show the real life applications of Robotics to improve the productivity of the industries.

PTMF has collaboration with the European Robotics research funded by EU (Competence Centre Roboflex) for supporting industry initiatives. The detail program is being developed in collaboration with them. We also expect participation robots manufacturers.

This seminar will be specifically beneficial to oil & Gas industry, Construction Industry, Mining and Heavy Chemical industry. Senior executives and head of operations , consultants researchers and policy makers will find the deliberations extremely informative and useful.

Registration:

Send nominations along with cheque/DD in favour of -Project & Technology Management Foundation” payable at New Delhi /Gurgaon at following address -

Project & Technology Management Foundation, T- 28/15, DLF City, Phase III, Gurgaon – 122002, Haryana , India ,Tel: 0124-4049831

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

Web: www.ptmfonline.com



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Obituary



With deep regret we inform our members about the sad demise of our Gujarat Chapter Chairman Gajender Jain who breathed his last on 2nd October 2018 after a brief illness. He has created the Gujarat Chapter of PTMF single handedly and served as its chairman since inception. We gratefully acknowledge his signal contribution. Mr. Jain was chemical engineer by profession and had a long distinguished career in Project management profession. In his death PTMF lost a very active and constructive member. We pray for his departed soul to rest in peace. May God grant the strength to his family members to bear this irreparable loss. We send sincere condolences to the bereaved family.

President

PTMF

Call for Newsletter Articles and Research Articles PTMF Journal

Newsletter is intended to inform the members regarding what is happening in the profession and practices of Project Management elsewhere in the world. We would like to include cases, experience of the members in their own work which would be of interest to our members. If members have got any recognition and rewards we would like to share that with others. Any news, short articles or subjects of topical interests will be welcome.

We also would like to encourage young researchers to contribute their original research work to be considered in our peer reviewed journal of Project & Technology Management. For guidelines to the author kindly refer to our current issue: <http://www.ptmfonline.com/International-Journal.html>

The newsletter articles should preferably should not exceed 500-1500 word and news items should be within 500 word.. Also send you recent passport size color photograph for inclusion..

We are looking forward to receiving your submissions. Don't hesitate to contact the PTMF Communications sub-group (ptmfoffice@gmail.com) should you have questions or need additional information.

Many thanks!

Project & Technology Management Foundation

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.

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 8906891298

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

Website : www.ptmfonline.com