Project Management in the Information Technology Industry

MASTER OF SCIENCE IN MANAGEMENT
OF PROJECTS AND PROGRAMS

Rabb School of Continuing Studies
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Abstract

IT project management is complicated by the shifting business needs and demanding stakeholders of traditional organizations. In the modern workplace, it is imperative that technology works both effectively and reliably. The application of project management in the IT field ensures that the right technology is implemented to provide a direct solution to the organization. It also ensures that the management of the implementation is well planned with the appropriate consideration given to schedule, resource, risk and quality management.

The Management of Projects and Programs curriculum at Brandeis University combines traditional project management philosophy with real world expertise to prepare project managers for hands-on work in the IT field.

ABOUT THE AUTHOR

Stephen Gentile, MS, MBA, PMP, has over twenty-five years of Information Technology Project Management experience in the Financial Services Industry. As a director in the IT Project Management Office, he is responsible for IT governance, with a focus on compliance initiatives and the project management framework, standards and the monitoring of audit initiatives. He is responsible for facilitating, coaching and training team members on the compliance standards and has lectured at Elms College on Business Ethics and Management. He has been a Project Management Professional (PMP) since 2002 and has taught at Brandeis since 2005.
Project Management in Information Technology

People tend to use the term Information Technology or IT to refer to an entire industry. More precisely, Information Technology (IT) is the use of computers and software to manage information. Different companies refer to this corporate function as Management Information Services or simply as Information Services. For any large company, the IT department would be responsible for storing information, protecting information, processing the information, transmitting the information as necessary, and later retrieving information as necessary.

The computer systems design and related services industry is among the economy’s largest and fastest sources of employment growth. According to the United States Department of Labor¹, IT employment of computer software engineers and computer programmers is projected to increase by 21 percent from 2008 to 2018, much faster than the average for all occupations. Additionally, employment of Computer and Information Systems Managers is expected to grow faster than the average for all occupations.

The main growth catalyst for the IT industry is expected to be the evolution of technology and the business effort to absorb and integrate this technology to enhance productivity and expand market opportunities. International Data Corporation (IDC) predicted that the IT industry’s next dominant platform, built on mobile computing, cloud services, social networking, and big data analytics technologies, would begin its transition into the mainstream. Today, spending on these technologies is growing at about 18% per year and is expected to account for at least 80% of IT spending growth between now and 2020. With future market revenues at stake, IDC market research group VP Stephen Minton predicts that 2012 global IT spending will hit $1.7 trillion, and will be marked by some of the first high-stakes battles as companies seek to position themselves for leadership in these critical and fast-growing technology areas.²

Information technology (IT) is both a huge industry in itself, and the source of dramatic changes in business practices in all other sectors. The term IT covers a number of related disciplines and areas, from semiconductor design and production, hardware manufacture (mainframes, servers, PCs, and mobile devices), and software, data storage, backup and retrieval, networking, and the internet.

Each of the major sub-areas in IT can be divided into its component parts. Storage breaks down into disk drives, tape drives, and optical drives, and into attached storage and networked storage. PCs break down into utility-business desktop PCs, high-end work stations, and PCs for gaming enthusiasts. Software subdivides into numerous specialist areas, including relational database technologies and enterprise applications.

In addition, the IT arena is characterized by a number of key trends and emerging technologies which have the potential to transform the way businesses currently use IT, and carry out their operations. The outsourcing of IT services, such as desktop PC support, or whole IT-supported functions like accounts processing has had a dramatic effect on the industry. These trends have enabled the IT industry to continue to generate a strong demand for the next generation of servers, PCs, and laptops.
Project Management in the IT Organization

Project Management is the discipline of organizing and managing resources in such a way that these resources deliver all the work required to complete a project within defined scope, time, and cost constraints. As defined by the Project Management Institute (PMI), a project is a temporary endeavor undertaken to create a unique product, service, or result\(^1\). This property of being a temporary undertaking contrasts with processes, or operations, which are permanent or semi-permanent ongoing functional work to create the same product or service over-and-over again.

Project management has been in practice for thousands of years. As a modern management practice, project management evolved out of World War II and U.S. Department of Defense projects. These projects required organizations to break the existing functional boundaries and find new ways to accomplish complex work. Resources from a variety of skill areas had to be drawn together toward a common goal. Objectives were carefully outlined, including performance criteria, schedules, and budgets.

During the past 50 years, more public and private organizations have embraced project management. The construction industry was among the earliest to see the need for modern project management, with network diagrams, work-breakdown structures, and Gantt charts. Major sectors of commerce, including the aerospace and pharmaceuticals industries, also saw the need for more structure in the management of their projects. As the technologies for project management became more refined, other types of business joined in the practice, ranging from technology firms to the telecommunications industry. As project management tools become more available and refined, few business sectors are untouched by project management.

The practice of project management is expanding rapidly as more mid-sized and large companies see the need for professionally managed projects. This has lead many companies to experiment with their IT organizational structures to incorporate a more projectized view of the work it needs to get done. Effective project management requires extensive planning and coordination. According to Harold Kerzner, “Project Management has become a training ground for future general managers who are capable of making total business decisions.”\(^4\)

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A Project Manager is responsible for managing the resources of large projects. For large IT Departments, this usually means managing large Software Development projects, Networking projects, IT installations or conversions, or any other function where business and technology needs have to be managed and resources have to be coordinated.

The Project Manager is responsible for making sure a project is completed within a certain set of restraints. These restraints usually involve time, money, people and materials. The project must also be completed to a certain level of quality.

IT projects are receiving great attention in the computer industry because they touch almost everyone’s lives. Whether IT projects are managed for business, financial, academia, government, military, or nonprofit organizations, accurate computerized information is needed to make good decisions in less time. However, this computerized information is only as good as the design and management of the IT project systems.

Many large IT Organizations also make use of a Program Office to manage their Portfolios of Projects. Different organizations define program management differently, but ultimately the same responsibilities that are inherent in project management exist in program management. The program manager has the major responsibility to ensure that the work effort achieves the outcome specified in the business and IT strategies. This involves setting and reviewing objectives, coordinating activities across projects, and overseeing the integration and reuse of interim work products and results.

Organizations and project teams have always felt that IT projects are different and therefore must have a unique set of project management tools and techniques to accomplish them. However, project management techniques and tools can apply to any project in any industry, regardless of whether it involves software, hardware, construction, engineering, or services. It is not the tools that are different, but rather the projects. What make IT projects different are their unique risks, the rapid development requirements to meet rush-to-market demands, the short life of technology, and multiple dependencies with other projects. The tools are the same, but they must be applied differently depending upon the project type and complexity.
It is unfortunate that those who run projects are referred to as managers because there is so much involved in being a truly excellent project manager. Project management is both art and science. The science of project management requires management skills, but the art of project management requires leadership.

The traditional view of management and leadership is that management is concerned with efficiently and effectively using a company’s resources to accomplish the company’s business, while leadership is more concerned with innovation, challenging the status quo, and broadening the company’s outlook and capabilities. Managers try to get people to agree about the things that need to be done. As Warren Bennis and Burt Nannus from the University of Southern California describe the difference between managers and leaders: “Managers are people who do things right and leaders are people who do the right thing.”

Project managers have three basic responsibilities in managing a project: to be on or under budget, to be on or ahead of schedule, and to meet the customer’s performance criteria. The lack of project and program management skills has long been known to be a major factor in IT project failures. It has become apparent that placing individuals with strong training in the breadth of project management skills significantly improves the likelihood of bringing an IT project in successfully on time, and on budget. This growing awareness is leading to increased demand for skilled IT project and program managers.

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The Master of Science in Management of Projects and Programs (MSMPP) at Brandeis University is for working professionals who wish to advance their careers by filling the growing need for project managers across a number of industries. This program is intended for graduate students who wish to prepare for careers leading and managing project teams. Students in the MSMPP program focus on leveraging project management skills to build leadership practices that enable quality work. Students in this program will gain a broad range of skills including:

- In-depth knowledge of project management skills, including risk management, procurement and contract management, time management, cost estimating, controlling and tracking techniques, consistent with the best practices of the Project Management Institute.

- Understanding the difference between ‘hard’ skills and ‘soft’ skills, both of which are extremely important to effective project management.

- Familiarity with those elements of human resource management that is key to project management success, such as team building, motivating, communicating through traditional and electronic means, negotiating and influencing, coordinating, and managing organizational change.

- Familiarity with program management and the skills to mitigate risk across a portfolio of projects.
There are many facets of effective project management. Two key elements that stand out as most critical are communication and leadership.

Project Management is all about effective communication, from understanding the technical aspects of the discipline and disseminating that information to the team, to the sponsors, and to senior management, through to the knowledge of personality types, and effectively dealing with diverse groups up and down the organization chart. The MSMPP program addresses these issues with in-depth core courses and effective elective choices. While not specific to any one industry, through the courses’ discussions, case studies, and assignments, students with technical IT knowledge can blend in functional project knowledge when realizing the course and program outcomes.

It takes a leader to run a project. One should never confuse being a leader with having a leader’s title. Leadership is a mindset that shows itself in how we set examples for others, maintain a level of professionalism, and understand how to treat the differing groups involved in our projects. While the MSMPP program will not make you a leader, the interactions with teachers and fellow students will be based on the assumption that the knowledge gained and shared will form the foundation for effective project skills, which when coupled with the desire to apply all that you have learned, can help instill the spirit necessary to effectively lead projects.
Master of Science in Management of Projects and Programs

In summary, the MSMPP seeks to advance project and program management professionals in the field by providing a robust curriculum that balances the hard and soft skills essential of project and program managers. The curriculum is aligned but not tied to PMI Standards, allowing the master’s program to retain its applied focus and while recognizing the relevance of the professional standards.

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