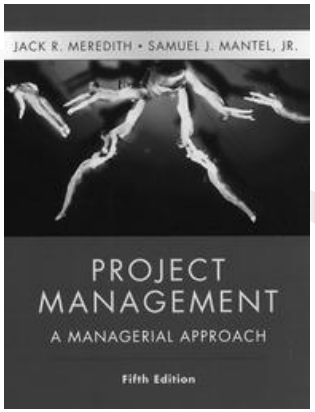
Module: Running a Project from A to Z
Hungary 2005

Further Reading

Project management. A managerial approach

Jack R. MEREDITH, Samuel J. MANTEL

Wiley Text Books, 2002 (5th Edition)



The book is primarily intended for use as a college textbook for teaching project management at the advanced undergraduate or master's level.In contrast to the books that are about project management, this book teaches students how to do project management.

The book addresses project management from a management perspective rather than a cookbook, special area treatise, or collection of loosely associated articles. It addresses the basic nature of managing all types of projects. It deals with the problems of selecting projects, initiating them, and operating and controlling them. It discusses the demands made on the project manager and the nature of the manager's interaction with the rest of the parent organization. It covers the difficult problems associated with conducting a project using people and organizations that represent different cultures and may be separated by considerable distances. It even covers the issues arising when the decision is made to terminate a project.

ISBN: 0471073237

The Project Management Memory Jogger

Paula MARTIN & Karen TATE

GOAL/QPC, Methuen, 1997

The Project Management Memory Jogger(TM) is the most cost-effective way to ensure that your project teams achieve high-quality results. It provides every member of your organization with an easy-to-use roadmap for managing all types of projects. Whether your team is planning the construction of a new facility or implementing a customer feedback system, this pocket guide helps you avoid typical problems and pitfalls and create successful project outcomes every time. It is packed with useful information on everything from project concept to completion

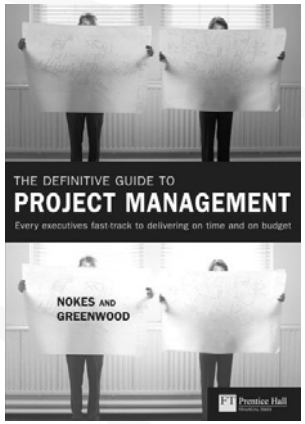
ISBN: 1-57681-001-1

The Definitive Guide to Project Management

NOKES, S. & GREENWOOD, Alan

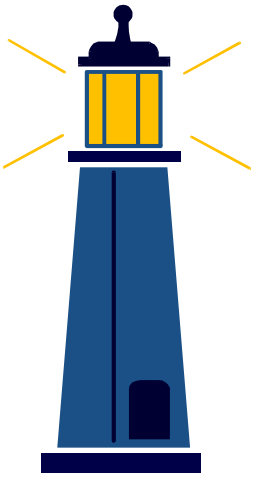
FT Prentice Hall, London, 2003

This book is designed to put you on a fast-track to managing projects of every shape and size with speed and accuracy. The Definitive Guide to Project Management will show you, step by step, how to deliver the right projects in the right way at the right time, while keeping your life in balance. Using the principles critical chain management, the authors help you master the essentials of good project management and then explore the situations where good projects and good business meet. It is practical, to the point, and can be used immediately. An essential companion if you want projects to be a source of inspiration not perspiration.



ISBN: 0 273 66397 6

LIGHTHOUSE



"Lighthouse" will be a regular section of *On Target*. It's goal is to allow local members to share experiences in project management, and in the process make us all just a little more aware that what we encounter in our jobs is not necessarily unique. Lighthouse will also provide the opportunity for you to obtain points toward PMP certification each time one of your articles is published. We look forward to receiving your article for use in this section. Please see the last page of this newsletter for forwarding information. When local member project experiences are not available, national articles will be used for education.

Managing Projects across Multi-National Cultures, A Unique Experience

Dr. Alaa A. Zeitoun, Ph.D., PMP, International Institute for Learning, Inc.

What Is a Global Project?

A "Global Project" could be defined as a project that crosses the boundaries of more than one nation. This is the kind of project that deals with a variety of cultural differences, backgrounds, political systems, and languages or at least dialects. One very key aspect of Global Projects is continuous change. The "Tides of Change" are stirred by several human and regional characteristics that are so numerous to be able to uncover every one of them. An example of a Global Project is the design, manufacturing, shipping, installation, and operating of a material handling system plant for an Australian company done by a United States-based company.

What Is Global Project Management?

Based on the definition of a Global Project, "Global Project Management" is the management of those Global Projects considering the unique constraints faced by those projects. An example of Global Project Management is the managing of the above-stated project in Australia. The project complexity was doubled due to the difference in understanding of the Statement of Work, although both the Australian customer and the United States (U.S.) contractor spoke English!

The customer anticipated higher and different performance in several of the key devices. To make things worse as pertaining to the scope, after initial designs were made, the customer visited the U.S., and several major changes were made that could have affected the project even further. There were also the various logistic challenges from specific issues to consider in shipment such as packing methods and rollers greasing to handle the weeks on the boats. There is also the challenge of having two project managers, one on-site and the other in the U.S. This made the decision-making process and the smooth directing of the project a bit challenging.

Why Is Managing across the Globe Unique?

The managing of global projects is a unique experience that does not compare to managing any of the projects within one culture. There are typical elements of various grouping of countries. These countries differ in their sophistication in formal project management, their readiness for project work, and their methods for approaching the implementation of projects under the variables of these various cultures.

Challenges in Managing Global Projects

According to studying a group of forty project managers representing many industries such as Telecommunication, construction, Information Technology, software development, and product development, the following was noted as the key challenges facing this group.

- difference in laws
- geography/location/time
- language/localization
- work customs "siesta"
- gender stereotypes
- holidays/calendars
- customs (bribes)/exports/logistics
- infrastructure (no reliable phone service)/AC/DC
- ownership without presence
- meetings/teleconferences
- gaining trust of natives
- non-verbal/verbal differences between cultures
- currency exchange
- class/structure position
- confidentiality/trade laws
- interaction/integration of operations
- support infrastructure
- safety/terrorism
- software/hardware compatibility
- E-mail delays
- data security.

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Tools to Deal with These Global Challenges

The group addressed potential methods to allow us to deal with these global challenges in the managing of various projects.

- use lessons learned
- knowledge and acceptance of differences
- hire locally
- cultural awareness
- attitude adjustment
- communication protocol
- standardization
- insurance
- training
- partnerships/joint ventures
- cash fund
- cultural exchange
- overcommunicate
- selective skills
- advanced technology
- situational awareness
- translators/interpreters
- shared communication responsibility
- "set the stage"
- don't make assumptions.

Looking at the key lessons learned from organizations that have excelled in project management across the globe will enable companies to draw some trends for the global organizations of the future. A company such as Bechtel or Hochtief could be used as a benchmark for what the proper culture to support global projects could look like.

What Is Affecting Global Projects Market?

Among some of the key parameters affecting the managing of global projects is the key question regarding how to identify major political and economic issues and events that influence global competitiveness and marketing. Foreign exchange, international credit, trade finance, and letters of credit are unique aspects of financing global projects. Those involved in international business must know how to recognize and capitalize on differences in people and cultures. Key elements are communication, motivation, and flexibility. To create a common culture, there needs to be a focus on raising cultural issues as discussion points, developing common language and procedures, handling body language and unspoken cues, and becoming more flexible without compromising strategic goals.

Joint ventures enable organizations to take advantage of opportunities beyond their individual capabilities and can rapidly push companies into untapped markets. Trust is the key foundation to a successful joint venture. Checklists could be used to insure that the needs of the venture parties have been explored and met. Working in the "global village" forces us to explore the economic, political, and cultural differences. Recent events such as the collapse of communism and the creation of the European Union (EU) help shape the boundaries of change that we face.

The emergence of new markets presents enormous opportunities for global expansion. For any organization involved in international business, managing the mechanics of immigration procedures is essential if foreign nationals are to legally enter the country and be allowed to stay in any capacity. By the year 2000, Internet commerce revenues are projected to be close to $60 billion.

Global efforts require a project leader who is sensitive to the values of other cultures and technologically savvy, with excellent negotiation skills. Project leaders need to understand the cultural bases of their team members, the areas of intersection with other cultures represented on

the team, and the areas in which values are widely divergent. The project leader needs to factor the varied work styles of the team into his equation for project success. The diverging perceptions are further complicated by a culture's sense of time. Some Latin Americans tend to be more luxurious in how they meet appointments—a 1 P.M. meeting can really mean it will start at 1:30 or perhaps not at all, whereas it could be an insult to a Japanese host to be even a few minutes late to a meeting. In general, North Americans and Europeans tend to attack problems head-on. Asians and Indians tend to approach problems more indirectly. Accountability means so many different things across the multi-cultures. There is a need to develop a personal rapport with the individuals with whom one will be doing business.

Global Project Manager's Skills

Cultural Sensitivity Skills are crucial for the Global Project Manager. There needs to be an understanding of the large and small issues that could cause offense to individuals on the team with different backgrounds.

Listening Skills are also fundamental. If the project managers listen, they have the advantage; if they speak, others have it. Two types of listening are affecting international projects. Reflective listening is the simple act of rephrasing or even parroting what one's counterpart has said. Active listening involves a more proactive approach to assuring the speaker and the listener that one has not only heard what has been said but wants to know more about a subject in a way that is not invasive. This is especially valuable in global interactions. The need for Negotiation Skills is no surprise in the global context. Project management is ultimately expectation management. Negotiation ultimately involves the art of stepping into the shoes of another, of understanding the what's-in-it-for-me factor of the other side, and then making decisions based on that alternate perspective. Relationship comes above all else.

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Technology

There is continuously a changing set of needs for the organizations working across different parts of the globe and some newly generated challenges with this process. Looking at the technologies available and the move toward the knowledge era could be a major driving factor for the success of the globalization of the future. Some of the key tools that stand out are:

- The Conference call—Conference calls transmit voice and emotion, so the individuals on the project team could develop the habit of communicating with their counterparts.
- Videoconferencing—It adds the picture piece, but it is still not a cost-effective medium presently.
- Electronic Bulletin Board—It is an excellent tool for documenting and using lessons learned.

Technology is only an enabler so we still need to have a project kick-off meeting that is face to face. Trust is developed and is crucial to providing the commitment to present one's best self to another.

Global project team members who are stationed in several countries and in several time zones come from different cultures and may have never met. Tools to improve the communication are intranet sites, Internet, E-mail, and teleconferencing. With an intranet site, team members could collectively review and exchange ideas. The intranet thus acts as a great brainstorming medium. The internet is one of the least expensive tools, costing less than a beverage monthly bill. A strong, yet flexible project management is required. Doing things right the first time is even more crucial on global projects.

Mexico and Latin America

Culture

Mexicans and Latin Americans are concerned about their families, friends, and hobbies. So in order to communicate on a project to Latinos, we need to relate to them in those terms. Because of the instability in many Latin American economies, business people are not as interested in stable industry growth as in the U.S. People could easily change from poor to rich and vice versa overnight. Most Latinos blame outside forces for the changes that happen to them. They seem to be okay with taking what comes there way regardless.

Mexicans and Latinos are formal and elaborate. Shaking hands is common in meeting and departing. The region societies are still stratified. Workers don't have the proper industrial skills, and there is also a shortage of managers and managing skills. Several of these issues are changing, and there is a growing middle class. People are generally warm, friendly, and hospitable. They are personable and like to know about their visitor's family, hobbies, and other interests.

The Mañana Concept means some time in the future. There is a different sense of urgency and a different pace to when things have to take place. This makes the discipline of scheduling, tracking, and control possibly difficult. Also, authoritarianism does not allow for questioning. Decision-making is difficult. Decisions have to be made by the ones in authority positions. This has an impact on trying to reach consensus in various project situations.

Project Management Practice

The macroeconomic stability and greater foreign competition are promoting the intensification of the use of project management in Latin America. There is a big need for raising the bar in the skills and preparation of project managers in Latin countries. This makes it a great growing global market for various industries.

Among the industries using modern project management in the region today are the construction, infrastructure, oil refining, and chemical companies. Strong global partners are driving the use of project management practices and are emphasizing the importance of the discipline.

The Project Management Certification has little value at this time but should grow steadily in value in the near future. Several chapters of the Project Management Institute are starting in Latin America, which should facilitate the wheels of change in these countries.

United States and Canada

Culture

Generally the project managers and project teams are task oriented. There is a great sense of urgency. There is no room for schedule slippage and missed appointments. This could create some form of rigidity, especially when it comes to dealing with other cultures in other parts of the globe. Americans are so friendly and tend to like people to agree with them. Both countries are driven by achievements, with Canadians giving more emphasis to the personality aspects. Americans tend to respect individuals based on their professional accomplishments more than on their character. There is a good amount of emphasis on competition, especially in the U.S.

Canadians are an example of people trying to search for a common culture. They are trying to join the English and French majorities in a single political enterprise. Each of those majorities has its power, language, culture, customs, and perspectives.

Most people in this region are pragmatic and do not like interpersonal conflicts that make them feel uncomfortable. There is a belief that conflict and the views of others could hinder one's ability for achieving various life and career goals.

Project Management Practice

The discipline of managing by projects and the managing of entire organizations on the basis of projects is growing steadily in the region. The heavy users of project management discipline in the region are engineering and construction, defense and

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aerospace, capital projects, pharmaceuticals, and a growing trend in telecommunication, especially in Canada due to its geography that lends itself to satellite and telecommunications installations.

There is a clear value for certification that is continuously growing in the U.S. and Canada. United States and Canadian practitioners and several other global practitioners have led the efforts for the development and maintenance of the *PMBOK Guide*. The PMP Certification is now repositioned to be the doorway to many other certifications in order to meet industry and global needs.

The Middle East

Culture

Not all people in the Middle East are Arabs, which creates a challenge in dealing with a variety of cultures in that part of the world. Arabic is considered a divine language since it is the language of the Koran, and the Koran is the word of God as revealed by the last and the greatest of his prophets, Muhammad.

Some of the characteristics to consider when working with project people in the Middle East include their love to ramble and not getting to the point quickly. They love compliments and are great in flattery. It is probably unwise to accept "yes" or "no" without repeating to emphasize the answer. Arabs especially find bluntness disrespectful, which is why they usually respond in an agreeable manner. It is highly appreciated when there is an attempt to use the local language. The Middle Eastern people are very emotional.

As we work on projects in the Middle East, it is recommended to maintain strong eye contact. Crossing legs with the sole of feet pointing to your partner is considered impolite. Although Americans would keep about a thirty-inch distance in various conversations, the distance goes down to about fifteen inches in the Middle East.

Project Management Practice

The profession is growing in the Middle East in varied degrees. The accountability of the project managers and other key stakeholders has to be raised to meet the challenges forced on the projects by the environment of the practice. Several users of modern project management exist in the region. These include construction, high-tech, process petroleum, communication, and manufacturing. In some of the region countries, there is a difference in the practice between the private and public sectors with the public sector lagging behind in most cases.

Certification is becoming very important to the region. The growth of existing chapters and the starting of some new potential chapters could lead the efforts of getting the discipline widely exposed. The area should encounter a major growth in this field.

Africa

Culture

The view of the concept of time has a serious impact on the managing of projects in Africa. Time is viewed as a flexible commodity. There is more emphasis on people first, and if project managers are trying to hurry, this could be viewed with suspicion. Africans want to sit and talk and get to know the person well before discussing project issues. This is changing in the major metropolitan areas due to the encounters with the Westerns on various projects. Being late to project meetings is a common thing and is commonly referred to as "African time."

There is also corruption in some of the African governments on all levels. This makes it hard to know what to expect in terms of setting up the infrastructure for projects in those countries. In addition, the task orientation is different with less emphasis on task and more on relationships.

There is a strong belief in Africa that the older one gets, the wiser one becomes. This may make it difficult to work with the African counterpart and get the same respect if the project manager is not old enough. There is also a differentiation between the home and business life. This means that project work should be discussed either in the office or in a restaurant without reference to the home life. This also means that in an African home, there is no business discussions expected.

Project Management Practice

Some of the countries in the region are mono-product economies. This could be a dangerous economic situation that contributes to the overall stability of the region. This also indicates the need for diversifying to a wide range of industries to facilitate the growth required. Users of project management practice include oil/gas, construction, telecommunication, and mining.

Certification and global standards are becoming extremely important to the region. This is useful to assess people who are sent to the region on contracts and to protect the industry from unqualified, inexperienced people misrepresenting the project management profession.

Asia Pacific

Culture

They are remarkable and unique people. Their subtle, ample culture illustrates the differences and diversity of oriental cultures. This is one part of the world where the training and understanding of the culture is even more important than in other parts of the world. Communication could tend to be indirect with a formal politeness. Eating is ritualistic and time consuming, and there is a lot of alcohol drinking in the facilitation of relationship building prior to various project occasions. Similar to the Africans, there is a lot of respect for the senior people. There is typically a long time needed to make decisions. But once a decision is made, the team is ready to go about meeting the deliverables as agreed on. There is resistance

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to insisting on deadline pressures. Although agreement on deadlines has been made, this is driven more by the desire to achieve harmony.

Project Management Practice

In most parts of the region, engineering and construction seem to be on the mature scale in the implementation of modern project management. Other industries are getting accustomed to using the discipline, such as information systems, manufacturing, and slowly in the public sector.

Global standards could be very beneficial to the region if they are used as a broad guideline and as a referral vehicle. Japan has taken some steps recently in the certification area, such as the category of project engineering as part of the state qualification of professional engineers.

Western Europe

Culture

Social classes are seen in some parts of Western Europe. These classes typically categorize people according to their professional background. This may create some stereotypes that would have an impact on the functioning of various project teams. On the other hand, several of the European nations are friendly. They are likely to be interested in a person who disagrees with them. There is an emphasis on the person and personality and being more inner-oriented. This also is reflected in the respect, based on character, for team members. Boasting project accomplishments is considered a weakness and a sign of immaturity. Humor is also used to give flavor to project situations. Europeans typically add a touch of cynicism to their humor and will not hesitate to make fun of organizations and people.

There is a lower level of accountability in the project sponsor's level than is typically found in the U.S. There is an autocratic managerial style evident in senior executives' styles. Also, executives tend to use their personal life examples in their business life.

As when it comes to team motivation, there is a big emphasis on the quality of life. Europeans have a great value for free time and vacations. There is a very small chance that they will be willing to sacrifice the enjoyment of life for dedication to work. Teams are also accustomed to conflict and are not much concerned about the negative reactions from those with whom they are in conflict.

Project Management Practice

The profession is maturing across most parts of Western Europe. Most industries are using modern project management principles.

Agreeing on Global Standards for the practice of man-aging projects could be useful, especially if there is a focus on separating the "must have" from the "nice to have" aspects. This allows for accommodating the various needs of the different cultures existing in this region. The International Project Management Association (IPMA) is working closely now with the global village to move ahead toward common guidelines for the practice of global projects.

Eastern and Central Europe

Culture

Several changes are taking place in the way things used to be after the changing situation with the former Soviet Union. There are, however, some things that will be slow to change. The selection of project managers and other managers still has a primary focus on engineering

degrees. There is a limited amount of flexibility in organization structures. In cases of career path promotions, there is much more emphasis on the previous experience than on the future potential.

There is a great focus on bonuses, a percentage of their total salary, since there are not many other options to motivate project team members. There are some issues that make it difficult for project managers to work with their counterparts in Eastern and Central Europe. Among these issues is the need for involving more people in making project decisions; negotiation for project deliverables is formal, project risk is avoided, and government regulations have a potential big impact on the project.

Project Management Practice

The need for project management discipline is generally growing. All industries are using some part of the project management discipline. Several newly privatized companies are in big need of the concepts and the approach. The educational opportunities are scarce, and the market is in need of several steps in that growth direction.

Global standards could act as a catalyst to speed up the process of spreading the knowledge and the value of the practice. Certification will not solve the immediate need for proper implementation but could be a step toward the professionalism that is required in the field.

Australia

Culture

The culture surrounding the implementation of project management in this region has several of the features of Western Europe, Canada, and the U.S. combined. Australia has a vast amount of resources that is being tapped to make the culture shift required to strengthen the support for project management.

Project Management Practice

There is major growth and a move toward maturity in project management in Australia. Among the industries that are using project management heavily are civil and building construction and information technology.

Global standards to the profession are likely to gain wide acceptance in Australia. Certification is very important but

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should be competency based, related to knowledge, skill, and attribute. AIPM has managed to achieve the endorsement of the National Competency Standards for assessing project management operations to various levels of competency.

The Global Project Manager's Checklist for Working across Cultures

In conclusion, the following checklist is thought of as a useful tool in aiding the Project Manager to approach global projects. The project manager could use it to systematically prepare for the unique challenges faced with these projects.

- Make no assumptions.
- Clearly identify the purpose of your trip.
- Know the background and responsibilities of the people you'll be meeting.
- Understand the politics of the country you are visiting and if politics is a proper topic for discussion.
- Know the basic history and the main cities.
- Verify what is the proper speaking distance between people.
- Understand the greeting habits.
- Know what days of the week people work and the times of the day.
- Get a feel for how people spend their free time.
- Find out if alcohol is permitted.
- Understand the religious key practices.
- Understand if there is more emphasis on groups rather than on the individual.
- Understand the social classes that may be existing.
- Understand if men and women are treated equally.
- Find out what kind of humor is accepted.
- Investigate the preventive measures necessary to maintain good health.
- Anticipate possible miscommunication problems.
- Get a pulse of your attitude toward the people.

The Project Manager skills and knowledge required to handle multinational projects are unique. A great deal of cultural sensitivity, flexibility in approach, strong project management knowledge, and the making of no fatal assumptions is crucial for maintaining the critical success factors for global projects.

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Managing Cross-Cultural Differences in International Projects

by Lionel Laroche, Ph.D., P.Eng.
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Differences in approaches, values and expectations between customers, suppliers and team members with different cultural backgrounds have lead to many project failures. By understanding the impact of cross-cultural differences, engineers can increase the probability of an international venture's success—from setting up a new plant abroad to selling advanced equipment, products or services to non-Canadian clients.

The rapid globalization of the world's economy has had a significant impact on the way Canadian engineers work, bringing them more frequently in contact with non-Canadian clients, suppliers and peers. While offering opportunities, globalization also poses significant challenges for Canadian engineers.

Engineers are trained to focus on technical data, scientific evidence and hard facts. Because the laws of physics are universal, they tend to expect that nationality and cultural differences will not play a significant role in the practice of engineering. After all, a car is a car and it performs the same transportation function the world over.

Yet car designs differ significantly from country to country. For example, the models sold by General Motors and Ford in Europe are quite different from their North American counterparts. Few people mistake cars designed by such Italian manufacturers as Ferrari and Lamborghini with cars designed by such Swedish manufacturers as Volvo and Saab. The unique characteristics of these car models are the result of differences in the approaches, values and preferences of both engineers and consumers. In fact, cross-cultural differences have a significant impact on the engineering profession as a whole, which goes well beyond the design, development and manufacturing of products.

Communication

Miscommunication across cultural lines is usually the most important cause of cross-cultural problems in multinational projects. Miscommunication can have several sources, including:

- ***differences in body language or gestures***. The same gesture can have different meanings in different parts of the world. For example, Bulgarians shake their heads up and down to mean no. In addition, the way people count on their fingers is not universal: The Chinese count from one to ten on one hand, and eight is displayed by extending the thumb and the finger next to it. The same gesture is interpreted as meaning two in France and as pointing a gun in North America.

- ***different meanings for the same word***. Like gestures, words can have different meanings or connotations in different parts of the world. The French word "char" means Army tank in France and car in Quebec. The word "exciting" has different connotations in British English and in North American English. While North American executives talk about "exciting challenges" repeatedly, British executives use this word to describe only children's activities (children do exciting things in England, not executives).

- ***different assumptions made in the same situation***. The same event can be interpreted many different ways depending on where one comes from. For example, although the sight of a black cat is considered a lucky event in Britain, it is considered unlucky in many other countries. Dragons are viewed positively in China, but negatively in Europe and North America.

These examples illustrate dissimilarities between cultures that are both large and simple in the sense that they focus on a single cultural aspect that keeps the same meaning regardless of context. As a result, such variations in communication will often be identified on the spot. By contrast, subtle or complex differences are often identified much later in the communication

process, when corrective action requires considerable effort and money. Sometimes, this realization takes place so late that there is not enough time to address it, resulting in a missed deadline.

In extreme cases, miscommunication can lead to casualties. For example, a few years ago, a plane crash in the northeastern United States was caused--at least in part--by miscommunication between the pilot and air traffic controller. The plane was running short on fuel. But somehow the pilot did not manage to communicate the urgency of the situation to the air traffic controller, who put the plane on a holding pattern because of airport congestion. The plane then crashed when it ran out of fuel.

Standards

Different countries use different standards and measurement systems. These differences are well known in the case of measurements for temperature (Fahrenheit versus Celsius degrees) and pressure (pound per square inch versus Pascal). Other variations in the use of standards are not as well known and can result in significant difficulties. For example, differences in power frequency have led European users of high-tech American equipment to purchase dedicated power generators that deliver the right voltage frequency for the equipment, i.e. 60 Hz versus 50 Hz.

In another case, a British pulp and paper mill sent back to a United States manufacturer a set of right-handed motors, even though they were the correct ones for the intended use. The British engineers were expecting a set of left-handed motors, and therefore rejected the motors without opening the crates. Eventually, the British and American engineers working on this project realized that the reference directions for the motors are the exact opposite in the British and American pulp and paper industries, thereby creating the problem.

Approaches to Problem Solving

The approaches used by engineers of different cultural backgrounds to tackle the same technical problem are likely to differ widely. The type of approach used to solve engineering problems is often a reflection of what is emphasized in educational curricula leading to engineering degrees in various countries. In France and Greece, for example, engineers tend to emphasize theoretical or mathematical approaches over experimental or numerical ones. Other countries, such as Canada and the United States, tend to favor experimental or numerical approaches.

Although there is no absolute "right way" to approach technical problems, issues are likely to arise when engineers with different inclinations work together to solve them. A French engineer is likely to approach a new problem by writing down all of the relevant differential equations and then trying to simplify them to obtain an analytical solution. Meanwhile, a Canadian engineer is likely to start from the simplest expression of the problem and build a model (either physical or numerical) of it. When French and Canadian engineers work together, they are both likely to feel that the other is wasting time by approaching the problem from the wrong angle.

On a practical basis, the approaches used by engineers in different countries can also depend on the types of resources available. For example, high labour costs and the availability of skilled workers make process automation and the use of heavy equipment valuable in developed countries, while using large numbers of unskilled workers may be a preferred approach in some developing countries.

Cross-cultural Differences & Engineering Firms

Cross-cultural issues also arise at the organizational level, because companies in different countries organize their daily business differently. Some of the most noticeable differences include the:

- ***relative hierarchy of departments***. The relative power of the various departments within a corporation is often a function of the country where the corporation has its headquarters. For example, the manufacturing departments of German-based companies have influence over their marketing and sales

counterparts that many Canadian and American manufacturing departments can only dream of. German manufacturing departments are often able to limit the number of products offered to a few options, thereby optimizing production and improving the quality of the products offered. By contrast, Canadian and American manufacturing departments tend to follow the lead of marketing and sales departments, which tend to favour a larger number of product options since this increases the probability of attracting a broader group of customers.

These differences in the way products are manufactured and marketed create the need for different approaches to selling products and services. The same type of argument cannot be used to win customers in North America and Germany – whether through sales presentations or general marketing efforts. While North American customers look for flexibility and response speed in the products and services they purchase, German customers want durability, reliability, and quality.

• ***way information is shared and distributed***. The way information moves within a company varies significantly from country to country. For example, in Germany, the flow of information tends to be fairly compartmentalized. Information flows within departments along hierarchical lines, and does not flow easily within a given hierarchical level or from department to department. In addition, Germans tend to share information with only those people they believe need to know the information. In Canadian companies, information tends to move within departments and to cross departmental boundaries more freely. It also tends to flow along the lines of communication networks used by individual employees.

As a result, when working with German engineers as suppliers, partners or customers, Canadian engineers are likely to receive less information than they would generally expect. A Canadian engineer supplying products or services to a German company may not receive all of the information he or she believes is necessary to fulfill orders or complete projects on time, resulting in either missed deadlines or incomplete orders.

• ***hiring process***. Cross-cultural differences are fairly significant in this area. For example, people interviewed for positions in France will be asked personal questions that are considered illegal in Canada, such as their age, marital status and number of children, while German interviewers routinely ask candidates for the profession of their parents.

More importantly, there are significant differences in the types of skills that companies in different countries look for in candidates. In France, for example, large corporations expect their engineers to work for them throughout much of their careers. They therefore tend to hire graduate engineers who appear to have long-term potential and create jobs for these engineers. As a result, large French companies tend to emphasize specific technical knowledge less and soft skills more than Canadian ones.

For their part, Canadian companies tend to look for engineers who have the technical skills required to fill an existing vacant position. They also do not expect their engineer employees to remain with the company throughout their careers.

These differences in the hiring process for engineers can lead to frustration. When Canadian engineers interact with French engineers who are fresh out of school, they are likely to feel that these engineers do not have the same level of knowledge as Canadian engineers with a similar level of seniority. This impression is often justified. However, it’s best to keep in mind that these engineers were not hired for their specific technical knowledge, and that allowances will have to be made to keep a project running smoothly.

Avoiding cross-cultural pitfalls

Canadian engineers working with foreign clients, suppliers or peers can prevent many cross-cultural issues from turning into problems by paying an unusual amount of attention to proper

communication. Here are a few tips that will help avoid miscommunication:

- **Clarify:** When in doubt, ask; if not, ask anyway. It's important to ensure that your foreign colleagues have understood everything you meant to say and nothing else. Ask them to feed you back what you have told them in their own words. This will help you discover and address any major misunderstandings.

- **Get into the details:** Although it's often tempting to agree on general principles and leave details to further discussions for brevity's sake, this can create major problems at later stages. Indeed, an agreement on general principles may turn out to be empty, if it is not tested through negotiation on the finer details.

- **Summarize:** The time taken to summarize the decisions made during a meeting and to issue minutes to all participants is often a good investment. It helps to prevent future challenges of decisions reached at meetings and to ensure that action items agreed to at meetings are actually implemented.

- **Simplify:** Use simple words that are easily understood and be consistent. Using synonyms can confuse your non-Canadian counterparts unnecessarily, particularly if they are not native English speakers. For similar reasons, technical jargon should be avoided where possible and explained clearly when it must be used.

Breaking into Foreign Markets

Strategies that engineering firms can use to avoid cross-cultural problems while breaking into foreign markets include hiring foreign engineers, which can be very effective when a company has decided that a given country or countries will play a major role in its future. In this case, hiring engineers with the right technical background who have lived and worked in the targeted country or region, and therefore understand the culture, can be a tremendous asset to a company. Indeed, these people have the knowledge and experience needed to understand how to handle delicate cross-cultural situations and avoid faux pas.

This solution has some possible limitations, however. Important business transactions are often handled at high levels within the company. Although it is relatively easy to locate and hire entry-level engineers from a given country or region, finding engineers with many years of experience in a given field can be quite challenging. In addition, depending on the circumstances, people who have the appropriate cultural experience may not be able to share their knowledge with others in the organization, thereby reducing the speed of organizational learning.

Cross-cultural training organizations can also shorten the learning curve by delivering training to companies in a timely and targeted fashion. The necessary cross-cultural information should be shared with all employees involved in international ventures, rather than being limited to those who have already had experience with them. Cross-cultural training organizations are experts in the area of cross-cultural relationships and can provide training on many topics, including how to:

- do business in a given country or region;
- make presentations in a given country of region;
- select the right people for international assignments;
- prepare employees for expatriate assignments; and
- improve the productivity of multinational teams.

Finding Local Partners

Setting up agreements with local partners, in the form of joint ventures or licenses, or purchasing a local company can be effective ways of combining strengths. This approach can be very effective when your firm is trying to break into a new market quickly, since it will enable your company to benefit from the knowledge and experience of its partners. In many cases, this approach works best when combined with one or more of the strategies mentioned above, since finding and working with the right partners often requires knowledge about the targeted country and its culture.

Patent protection

To achieve the desired level of protection for their intellectual property, engineering firms need to be aware of the differences in patent systems that exist around the world. For example, the United States have a "first-to-invent" policy, while the Japanese and the Europeans have a "first-to-file" policy.

The "first-to-file" patent system does not require the company that files the patent to be the original inventor of the technology for which the patent is being sought. As a result, a company can receive a patent for an invention that was made in another country, but is not protected by patent in the country where the company is located. This situation occurred in the case of the invention of high temperature superconducting materials. Although the initial discovery was made in the United States, the Japanese patent is held by two Japanese researchers who obtained enough information about this invention to file a patent application in Japan.

Taking Advantage of Cultural Diversity

When managed effectively, the diversity of approaches that exist around the world can lead to significant improvements in both work processes and outputs. One way to take advantage of cross-cultural differences was devised by a captain of the French Foreign Legion. When faced with significant problems, he would pair someone from a northern European country (like Germany) with someone from a southern European country (like France or Italy). The south European individual would take the lead during the brainstorming part of the problem-solving process, when potential solutions are generated and compared. The north European person would then take the lead during the implementation phase. This strategy enabled the captain to take advantage of both the "theoretical" bent of French and Italians and the attention to detail and execution typically shown by Germans.

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The Virtual Project Manager

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Increasingly, corporations are becoming virtual in nature; customers, suppliers and employees are no longer in the same city but in different time-zones and continents. "The virtual corporation is a temporary network of independent companies..."[1] Hand-in-hand with the Virtual corporation is the Virtual Project Manager, and her enablers are leadership and technology. With communication tools exploding and maturing exponentially, the project manager of these virtual corporations must learn to not only embrace but fully utilize emerging technologies and adjust her management style.

This paper will explore the project manager's role in a virtual corporation and how technology will support the activities of project management in this new paradigm. It will also discuss how culture can hamper or support the use of new technologies in project management.

The Virtual Project Manager

The Virtual Project Manager (VPM) will need to be more of a leader and technologist in order to successfully manage her projects. In the virtual corporation, gone are the days when a project manager's power/authority was defined absolutely and succinctly. Leadership, not management, is the style of a successful VPM and technology will be her supporting conduit.

Managing the Virtual Project

The virtual project poses a unique management situation to the VPM. The VPM must be more of a leader in her management style rather than the controller or supervisor not only with the team members but also the project's sponsor. Obviously, in the more traditional project, where all the team members are under one roof or in the same metropolitan area, a project manager exercises, in some cases daily, control and direction of the team's activities. This is a luxury the VPM does not have and she must alter her style to lead rather than control.

In order to effectively lead the virtual team, the team members must have the same vision, trust for each other and the VPM, and decision tools to guide them through daily decisions. These issues play a significant part in the VPM's ability to lead and guide the team's activities.

Decision tools provide a mechanism by which remote team members can make the right choices on daily basis. The type of decision tool suggested here can be a group of questions which focus around the projects objectives and goals. They can be very simple such as:

- Which objective does this activity support?
- Is this activity necessary to achieve the projects goal?

However, these questions set down by the VPM must be clear and concise, misinterpretation will lead to misguided effort, financial waste and ambiguity in the projects results.

Trust is the second part of the virtual leadership equation. Trust does not come quickly and in many cultures must be earned over a long period of time. The technology section below discusses some simple techniques which can help develop relationships and trust between team member, however, the trust must start at the top with the VPM. The VPM must do two things to start the trust; bring everyone together at least once and be an idea champion.

As every project manager would agree, a critical success factor to every project is the kick-off meeting, even more so with the virtual project. Albeit expensive, this is the perfect time to bring all the team members together, preferably in a neutral and convenient location for all members. Members need to recognize from the start that there is a real person behind the e-mail and voice on the telephone. The perfect venue to establish this is the kick-off meeting . Here people will put name-to-face and begin to build relationships and trust. This is nothing new to standard project management practices but exponentially important to the success of the virtual project when this may be the only time the virtual team members have face-to-face interaction.

Being an idea champion supports the success of the project and minimizes the "trust trap." If members believe that they can freely discuss their ideas with the VPM without being shut down or ignored, they are more apt to do so not only with the VPM but also with each other. The trust trap is an occurrence of locale. We fall into this trap

when we put more emphasis on those close to us, those team members we see most often. Hence those member more remote, more out of sight - out of mind, tend to contribute less to the project and will become more of an entity than a team member. Each team member regardless of locale must believe that his or her idea will be heard with open ears and developed to the benefit of the project.

Technology

The VPM must be technologist in that technology, especially communication tools, will provide a supporting pillar to the successful completion of the project. For example the VPM must go beyond merely attaching files to an e-mail. Capturing and embedding objects such as voice comments or full motion video into documents such as mail memos, Gantt and Monte Carlo charts will be an everyday occurrence. The benefits of this capability are discussed below. Conversely, the VPM must be able to "play back" such objects. It goes with out saying that the VPM will have technologist (a.k.a. nerds) on the team which will embrace new technology, and others which will resist for a variety of reasons.

Virtual Project Management Tools

Tools such as Lotus Notes, Netscape and Java provide a vehicle for individuals to better communicate and integrate, regardless of geographic location or hardware platform. They provide the seamless transparent integration that the computer industry has been promising us for the last 20 years!!!

Due to the dynamic nature of the of the virtual corporation, more emphasis is placed on real-time communication. The amount of real-time communication possible is limited by time zone differences and geographic distance. Groupware and Internet applications support a group of people working on the same project and can enable them to communicate more effectively.

Virtual Cost

There is no virtual question about it, there is a financial and schedule price to pay for the benefit of virtual communication and it is in hardware and training. The team member's hardware may have to be upgraded to take full advantage of new communication and application software, but it doesn't stop there. Without proper and sufficient training, team members will not use the new tool efficiently if at all.

Embedding pictures, sound or full motion video requires a very sophisticated PC, most 486 and 68000 based PCs are not equipped to do this effectively. Without the proper video environment pictures are fuzzy and video is choppy and distorted. Groupware applications are very resource intensive and without enough memory or processing power these types of applications may not run at all or so slowly that they are useless to the user.

Training the virtual team on new applications or hardware has additional challenges. In addition to standard training issues such as time and quality, it is practically impossible to bring all members together to be trained on the product at the same time. To this point, training will have to be modified and out-sourced to multiple vendors to ensure that all team members are educated in a timely fashion. Some team members such as senior executives or isolated individuals may need one-on-one, while others may have specific language requirements. Training can cost as much as ten times the initial hardware/software investment but is essential to the team's and project's success.

Culture Vs. Technology

Training is only the start at fully embracing new technologies such as groupware. The virtual team's computing paradigm must also mature in order to fully utilize applications such as Lotus's Notes. "..The implementation of such technologies [groupware] is more difficult and yields more unintended consequences than is typically acknowledged. "[2] The Virtual Project Manager needs to understand the issues surrounding the use of new technologies and its ramifications on corporate culture, work practices and social interaction.

People are comfortable using "me" applications such as a wordprocessor or spreadsheet for work they need to accomplish for their specific job. Alien is the thought process of using an application for work that the *team* needs to accomplish. Training can help them use the tool but the culture of how we use computers must to shift from a "me" focus to an "us" model. Corporation policy can support and encourage this shift but total envelopment of the team-application concept is slow. Some corporations have experienced a two year maturation process and this is about the shortest cycle-time experienced! The VPM needs to understand that this paradigm shift does not happen overnight and must be supportive through her own actions and evangelism.

Virtual Project Team (VPT)

The PM of tomorrow will no longer call weekly status meetings where all of the team members meet in the same room but rather the same forum. The Virtual Team will be more geographically dispersed, diverse in culture, and var-

ied in disciplines. With this in mind the Virtual Project Manager will need to understand this diversity and be able to use it to the advantage of the project.

Communications on the team

As every project manager would agree, concise, continuous and timely communication is a critical success factor for every project regardless of its geographic make-up. "Communication of key project information to involved parties is a critical element of successful project management."3 In this case , communication will come in one of three forms; e-mail, face-to-face, and voice mail. How these conduits are used can be a key performance indicator as to the success of your team but they will need guidance.

Policy one, with respect to e-mail, definitions and expectations need to be defined by the project manager on day one. Specifically, what is acceptable response time to information or requests sent by e-mail. However, the projects team will undoubtedly receive numerous electronic memos everyday and without a quick visual key some memos are read too late if at all! Team members need to see a key or symbol, which is used with consistency, and suggests the level of urgency. For example by prefacing the subject header with codes such as A1, A2, or A3, will quickly identify to the recipient expected response time and urgency. In this case, A1 indicates an action item or request for information on the same day. Whereas A2 tells the reader this memo requires a three day turn around, while A3 indicates that the memo is merely FYI and is to be read sometime in the next five business days.

Using a system similar to one described above provides two benefits to the virtual team members. First, it sets clear and concise expectations, A memo marked A1 has an expectation of same day responses and tells the receiver read me before that next meeting. Second, It helps the team members orchestrate their day more effectively. Knowing that a memo is only FYI with just a glance allows the reader to focus on more time sensitive matters.

The other one way conduit of communication most widely used is Voice mail (V-Mail). This tool supports the virtual team in a similar manner but is more timely than e-mail. Teams members can leave messages and action items for other members regardless of time-zone or country. Unfortunately, V-Mail is too often ignored or used to blast another member. The VPM has very difficult time developing trust as it is on a virtual team, using v-mail to rant and rave only diminishes that trust. Without the opportunity to defend or explain the situation in two-way conversation its usefulness is limited if any. This use of V-Mail chips away at the trust built up between team members and is destructive to the team. The bottom line is that this type of negative communication must not be condoned on the virtual project. The second communication policy for every Virtual team must be: Don't use voice mail to blast or rant at another team member.

Virtual Project Management

Since the very nature of the virtual corporation is temporary, more emphasis is put on reducing cycle-time and shortening the time to market. These have significant ramifications on how the project is managed and how scope change is administered.

Scope change

We have all heard the statement, "If it isn't in writing - It didn't happen and won't happen" This is an excellent policy when time is not an issue. In the virtual project, time to market is a critical success factor and in order to meet this criteria documentation becomes less important. This concept may seem unthinkable to many project managers but the VPM must be more flexible to accommodate the dynamics of the virtual corporation and its projects.

Closing the Loop

Another term for closing the loop is prototype and it takes on more importance in virtual project management. With team members being diverse in culture and location, ambiguity can become a critical failure factor. By proto-typing, this ambiguity can be minimized and ensure project objectives are met the first time. Don't simply describe the end results in a scope of work document but provide a vehicle by which team members can provide prototypes to ensure details were understood completely.

Virtual War Room

Almost every project has an area designated as its war room, obviously, this is not possible in the virtual corporation. The war room of the virtual project takes on a different environment. It will become an electronic room or forum rather than a physical space. The virtual war room can be a discussion applet in Notes or an interactive chat room on the net. It will continue to be dynamic, it must be, but will not be face-to-face but keyboard-to-keyboard. The virtual war room's foundation will be dependent on the technology used by the team and will remain an important venue for the project.

Critical Failure Factors (CFF's)

Where managing the virtual project breaks down is at the top and bottom of the resource chain. As with any other project, the sponsor and team members can make or break the success of a project.

With out a single vision or using the decision tool as needed, member's actions will become diluted and energy will be applied toward the wrong activities. Activities which do not support the projects objects or goals. In addition, the communication policies described above may be viewed as another passing fad and not adhered to. The VPM can not allow her communication policies to be ignored and must continuously monitor compliance.

Managing the virtual sponsor can be much more difficult and trying, especially if the sponsor doesn't have the same vision or understanding of virtual project management methodology. Often, for whatever reason, historically stakeholders want the project manager to be located near them (i.e. within strangling distance.) However, in this virtual paradigm the VPM's location is less relevant to a successful project. Using the technology tools highlighted above, the VPM is only a page or phone call away. Requiring the VPM to be in arms reach can negatively impact her ability to manage a virtual project.

This is not to say that the VPM is not as critical to the success (or failure) of the virtual project. If the basics described above are not executed from the beginning of the project, it probably will not be as successful, if at all, to which the VPM is accountable.

With all this said...

Virtual project management is still prepubescent. As technology develops so will our ability to more effectively manage geographically diverse projects. As technology advances so must our skills to manage team members, the concept of resource management will be replaced with guidance and leadership. Leadership, not control and embracing new technology not casual usage will be the successful attributes of the Virtual Project Manager.

Of course you realize that PMI will now have to offer a new certification , the Virtual Project Management Professional (VPMP), well maybe not....

Virtual Project Management Road Map

Technology

Get on the net!
Look into and get educated on tools such as CU/See Me or Lotus Notes
Add pictures to your existing e-mail
Develop a Virtual War room
Upgrade Hardware
Sound
Video
Connectivity
Memory
Processor
Training, Training, Training

CFF's
Casual usage of available technology
Not planning for culture change

The V-Teams

Single vision
Shared Responsibility
Kick-off Meeting
Personal commitment
Decision tools
Defined communication policy
Closed-loop quality program

CFF's
Not using the decision tool
Not authorized or empowered to get the job done
Voice mail ranting

The VPM

Spend time getting to know the team members
Spend more time in field
Build Trust
Less Documentation
Understand Culture Change
Evangelize Technology
Champion Ideas

CFF's
Micro-Management
Un-educated Sponsor
"Trust-trap"

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