

EFFECTIVE PROJECT **MANAGEMENT FOR** **ENGINEERS**

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*“Luck is what happens when
preparation meets opportunity”*

Roman philosopher and writer
Seneca the Younger

CASE STUDY:

FROM ENGINEERING NEWS-RECORD, MAY 11, 1998:

A SHOWPIECE-TURNED-SOUR TRIGGERS CHANGE FOR FUTURE JOBS

By Stephen H. Daniels

“On April 16, nearly a year late and \$20-million over budget, University of Washington officials finally dedicated a still somewhat incomplete \$98-million engineering building—a 260,000-sq. ft. showpiece turned sour.

The original plan was for a five-year, two-phase project. But phase two, renovation and reconstruction of an existing engineering and computer science building was scrapped after four years. Only a termination agreement between the university and its subcontractors saved some from financial ruin, says Earl Dutton, owner of Dutton Electronic Co., Inc., Seattle, one of the job’s subs.

The University of Washington’s building binge embraces more than \$600 million in construction since 1990. “The university has had a very good track record compared to many public owners,” says Connie Miller, assistant vice president for capital projects. “Most of our projects have come in on time and on budget.” However, Miller says this one “was awful”.

The reasons are manifold-and classic. Despite formal partnering, just about everyone involved says the project suffered from a “lack of coordination” between engineers and architects. Walls were built and torn out. Mechanical and electrical subcontractors, working from flag notes on incomplete blueprints, butted up against one another. Lack of detail in working drawings meant that mechanical subs were on their own to figure out configurations. For example, Dutton ran communications wiring outside because it would not fit inside.

The University blames its architect, Boston-based Kallmann McKinnell & Wood, for many of the problems. Kallmann principal, Henry Wood, in turn blames the university. He says that in a rush to get bids out in late 1993, the school went to bid with incomplete design drawings, then ordered more last-minute changes than the design team could accommodate.

CASE STUDY CONTINUED:

Miller admits that as the Seattle construction market began to heat up, there was considerable pressure to get project “to the streets.” She says: “We talked with the design team. We thought we were ready to bid. The bottom line, simply is we were not.”

Wood also fingers the general contractor, Ellis-Don Construction, London, Ontario, saying it low-balled the conventionally bid job, then sought change orders to make a profit.

Bruce Blair, Ellis-Don’s vice president and project executive, says that’s not true. He explains that after seeking owner authorizations for architect-initiated or other changes, “we asked for money to do the assigned work.” Blair adds that the firm had to be diligent toward that end.

Miller says it was clear that trouble was brewing by mid-1994, “six months into the work.” By autumn, subs and the general began falling behind. Field problems were “severe,” she says. “Every major sub struggled.

Taken one by one, the snags, like recognition late in the game that elevator shafts would not handle standard-size cars, “were manageable,” Miller says. “There were just too many of them.”

Blair blames some of the problems on a geographically distant design firm. Also, the building’s systems are highly complex, and there were the sometimes conflicting interests of the computer sciences and electrical engineering department. Even at prebid, he says, “we had seven addenda on this project.”

Thanks to partnering and a disputes review board, there is no pending litigation, says Blair. Everything has been settled, except for a change order request and related insurance claim. But Ellis-Don, partly as a result of this project has virtually pulled out of the Pacific Northwest market.

Results of a university-sponsored independent report to evaluate capital programs are imminent. But the school has already order tighter controls on change orders and will require future projects to be better defined before going to bid.”

QUESTIONS:

1. List five reasons this project turned out poorly?
2. Who do you think is at fault and why?
3. What could have been done to prevent the problems on this project?

THE A/E/C INDUSTRY

*complex process

*fragmented industry

*clients lack resources/expertise

*changing economy

*changing delivery methods

CLIENT/OWNER NEEDS

- *want to be kept informed
- *want good cost control (design and construction)
- *expect technical competence
- *expect quick response to questions and issues
- *desire regular and accurate invoicing with backup
- *want to be respected

PROJECT MANAGER'S CORE RESPONSIBILITIES

*communicate with everyone! (defining the project team)

*meet the project scope/schedule/budget

*project manager don't do-they manage

*mentoring

*help market your firm's services for new and repeat work

INTRODUCTION TO PROJECT MANAGEMENT

1. Management Concepts

- importance of the system/process
- use of technology
- effective communications
- team approach
- cross training
- authority=responsibility
- decision making to the lowest effective level

PROJECT ORGANIZATIONAL SYSTEMS

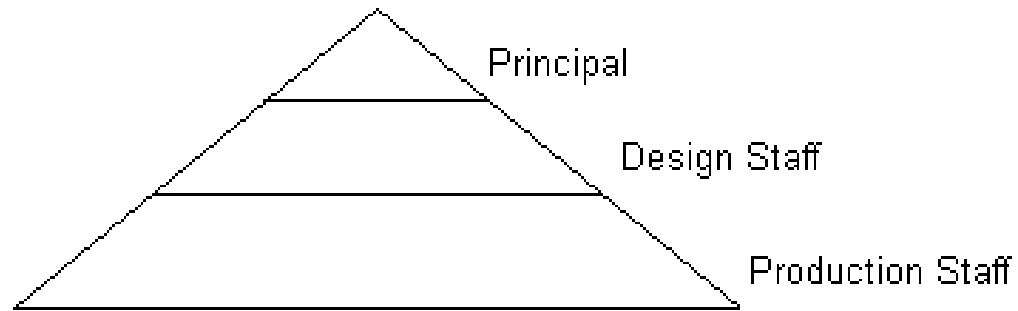
1. **Pyramidal**

2. **Departmental**

3. **Weak Project Management**

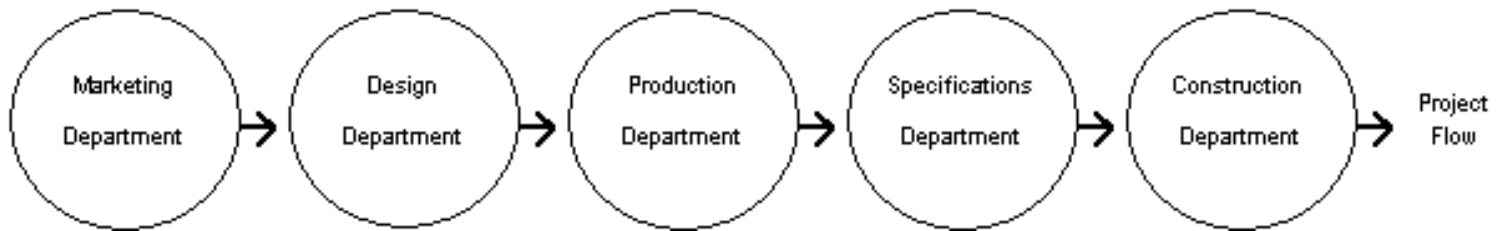
4. **Strong Project Management/Matrix**

PYRAMID APPROACH



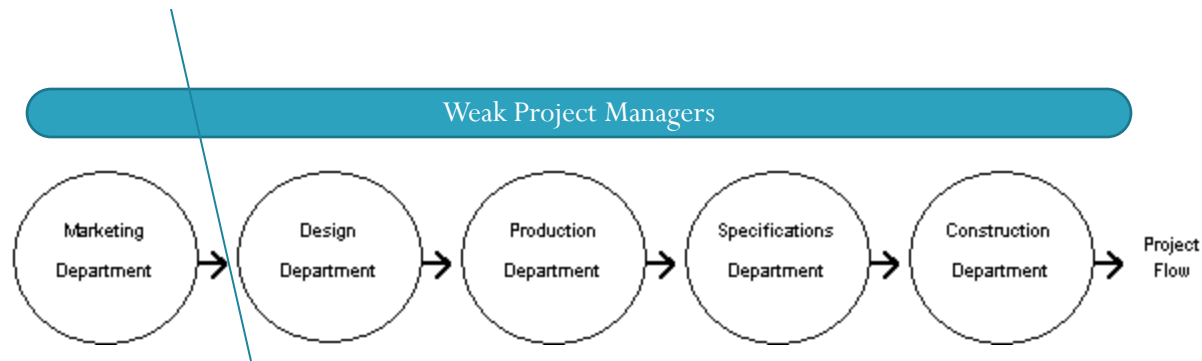
- Crisis management is common
- May exceed span of control
- Work slows/stops if principal or senior manager is absent (increases costs)
- Multiple pyramids may create coordination/cost control problems

DEPARTMENTAL ORGANIZATION



- No one individual monitoring design costs
- No one individual managing the project
- Changing point of contact for clients
- Each department may establish its own priorities/schedules/budgets

DEPARTMENTAL VARIATION: WEAK PROJECT MANAGERS



- Project managers are imposed over a departmental system
- Typically, PM's have responsibility – department heads retain much authority
- PM's have little control over budgets, schedules and resources

STRONG PROJECT MANAGEMENT MATRIX

Function	PM 1	PM 2	PM 3	PM 4	PM 5
Marketing					
Design			scope/schedule/budget		
Production					
Specification		technical issues			
Construction					

- Provides one individual to monitor and manage the project from beginning to end
- Offers a continuous point of contact for clients
- Requires relative equality of authority and responsibility to be effective
- Provides one individual to control project design costs
- Encourages decision making at the lowest effective level
- Is a flexible system that allows for change and growth
- Project manager handles project scope, schedule and budget/functions handle form and function (technical issues)

PROJECT DELIVERY SYSTEMS

Traditional Design/Bid/Build

Fast Track

Design/Build

Project and Program Managers

Construction Managers (at risk/not at risk)

PROJECT DELIVERY SYSTEMS

BASIC ELEMENTS

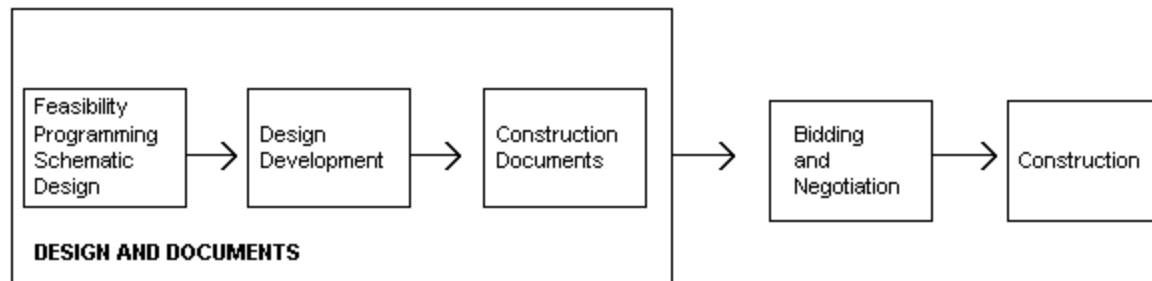
Design
and
Documents

Bidding
and
Negotiation

Construction

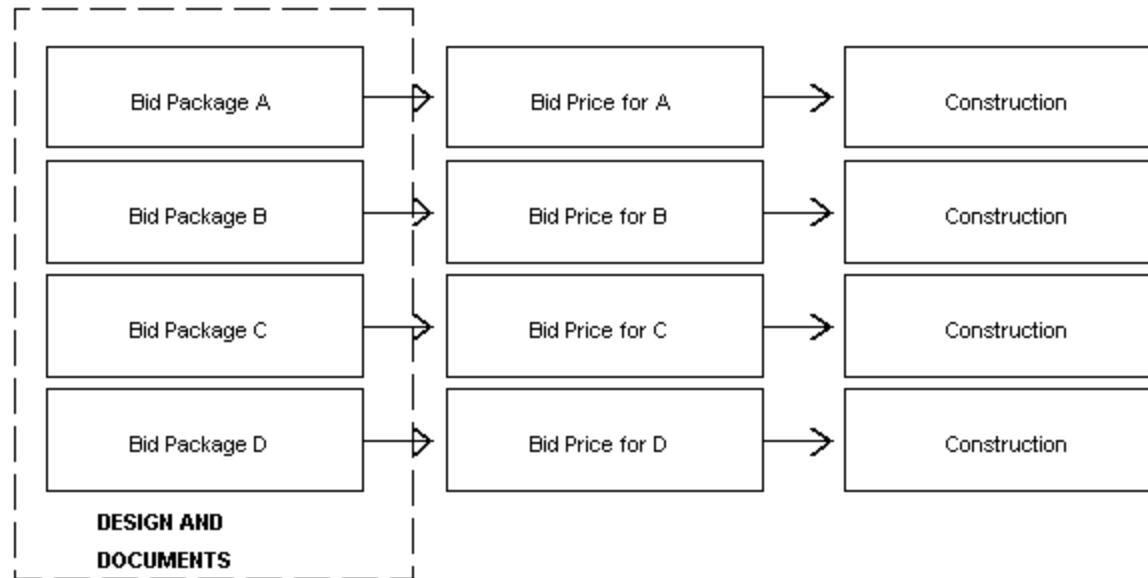
PROJECT DELIVERY SYSTEMS

TRADITIONAL STRAIGHT-LINE



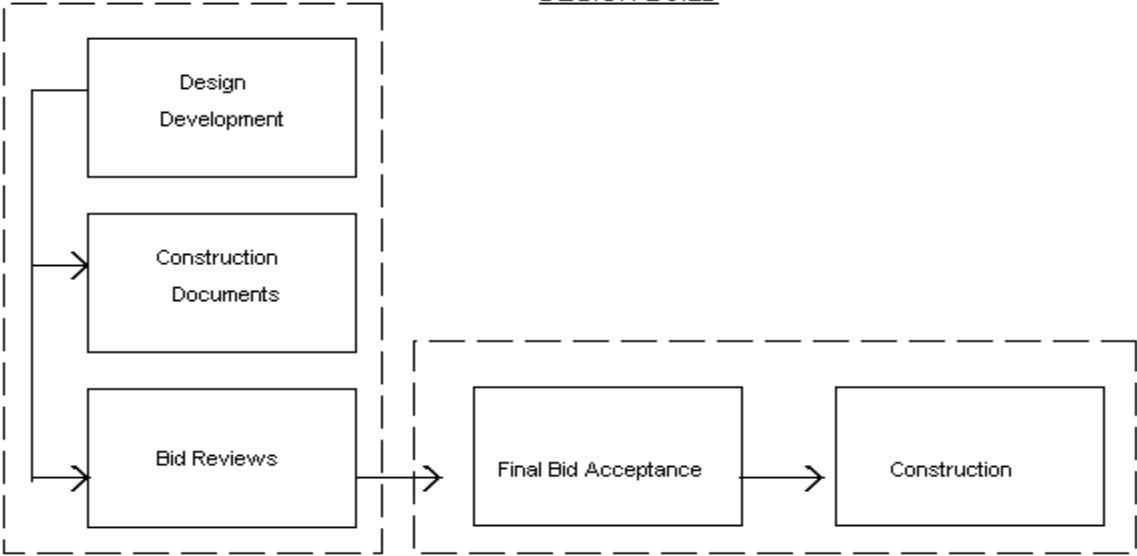
PROJECT DELIVERY SYSTEMS

FAST-TRACK



PROJECT DELIVERY SYSTEMS

DESIGN-BUILD



ROLES OF A PROJECT MANAGER

(scope, schedule and budget)

- 1. Marketing and continued contact**
- 2. Proposal preparation**
- 3. Design fee determination and negotiation**
- 4. Assembly of both internal and external project teams**
- 5. Project team relations/communications both internal and external**
- 6. Project status reporting review/action**
- 7. Billing and collection**
- 8. Project administration**

THE SUCCESSFUL PROJECT MANAGER

1. Characteristics

- strong organizational skill

- generalist

- insight

- ability to monitor costs/status/schedules

- experience

- leadership skill

- people/soft skills

2. Communication skills (writing, public speaking, listening)

SCOPE DEFINITION

1. Defining a project scope of services
2. Determining a design services fee
-methods to determine a fee

SCOPE OF SERVICES PLANNING FORM

SCOPE OF SERVICE PLANNING FORM Working Drawings Phase							
	By Architect	By Architect, as Outside Services	By Owner, Coordinated by Architect	By Owner	By Architect, as Additional Service	Not to be Provided	Method of Compensation
Project Administration							
Disciplines Coordination/Document Checking							
Agency Consulting/Review/Approval							
Owner supplied Data Coordination							
Architectural Design/Documentation							
Structural Design/Documentation							
Mechanical Design/Documentation							
Electrical Design/Documentation							
Civil Design/Documentation							
Landscape Design/Documentation							
Interior Design/Documentation							
Materials Research/Specifications							
Special Bidding Documents/Scheduling							
Statement of Probable Construction Cost							
Presentations							

PROJECT ADMINISTRATIVE ACTIVITIES

1. Managing design change orders
2. Project management manuals
3. Project notebooks
4. Billing checklist

WORK AUTHORIZATION FORM

CLIENT:

PROJECT DESCRIPTION:

LOCATION OF PROJECT:

PROJECT TITLE:

DESCRIPTION OF WORK TO BE PERFORMED: Starting Date: _____

Base Job Number: _____

Charge Time to: _____

Date Issued: _____

Initiated by: Client Firm

Reference: _____

Est. Compl. Date: _____

Phase of Work:

- 0 Design, Prelim & Planning
- 1 Working Drawings
- 2 Const. & Shop Drawings
- _____ Work Order Number
- Special _____

Distribution (as checked):

- Client contact: _____
- Design
- Architectural
- Job Captain
- Cost Consultant
- Specifications
- Structural
- Mechanical
- Field Superintendent
- Consultant
- Managing Principal
- Comptroller
- Accounting
- Main File
- Other

Project Manager:

Authorized

Principal in Charge:

Approved

BILLING INSTRUCTIONS:

- Included in basic fee
- Change and/or Additional Service
- Not determined
- Special
- Maximum Compensation, if any \$ _____.

Project Manager to provide complete information and check applicable boxes, including appropriate distribution of copies.

This project Work Authorization is subject to all terms and conditions of the contract signed (date): _____.

Client Approval: _____ Date: _____

CONSULTANT WORK AUTHORIZATION FORM

CONSULTANT:

CLIENT:

PROJECT TITLE:

JOB NO.

ESTIMATED/REQUIRED COMPLETION DATE: _____

INSTRUCTIONS: This agreement is subject to and governed by all the terms and conditions of our agreement dated _____ entered into by the undersigned unless modified in writing.

SCOPE OF WORK:

SPECIAL PROVISIONS:

FEE (INCLUDING THE TERMS OF PAYMENT):

Date: _____

Date: _____

Prime Design Firm

Consultant

WHY DEVELOP A PROJECT MANAGEMENT MANUAL:

Project management manuals are developed for many reasons, including:

As part of the RFP/RFQ process, a potential client may request a copy of your manual initiating a flurry of last minute activity to assemble this previously unavailable material.

Your firm may be seeking or is required to obtain ISO certification. Preparation of a project management manual is an integral part of this process.

Preparing a project management manual assists you in defining project management in your firm.

The preparation of a project management manual helps you seek out the “Best Practices” of others.

The existence of a project management manual helps to enhance internal and external communications by sharing pertinent parts of your manual with your staff, clients, consultants, contractors, and others.

Your project management manual is a resource useful in training new or aspiring project managers and helps to define a career path for these individuals.

A project management manual helps to standardize the activities of current project managers while allowing freedom for individual style and project needs.

PROJECT MANAGEMENT MANUAL

OUTLINE

I. PROJECT MANAGEMENT APPROACH

- A. Statement of firm's overall goals and objectives
- B. Statement of project management objectives
- C. Overall firm organization
- D. Project management organization
- E. Position description for each project management role

II. PROJECT CHECKLIST : A detailed statement of project management tasks during each phase of professional services. This may be expanded into a complete project checklist. It may allow modification for individual projects.

III. PROJECT MANAGEMENT POLICIES AND PROCEDURES

A. PLANNING

- 1. Evaluation of potential projects and clients
- 2. Interview and preparation of proposals
- 3. Proposal format standards
- 4. Project work plan format standards
- 5. Delineation of owner and firm requirements and standards
- 6. Scheduling and budgeting
- 7. Approval and communication of work plans
- 8. Maintenance and updating of work plans

B. STAFFING AND ORGANIZATION

- 1. Negotiation of owner agreements
- 2. Consultant selection
- 3. Negotiation of consultant agreements
- 4. Assignment of in-house staff to projects
- 5. Project team
- 6. Initial team briefings: participants, agenda

C. CLIENT COMMUNICATIONS

- 1. Owner contacts
- 2. Owner correspondence: requirements, formats, logging, etc.
- 3. Submittals and presentations: attendees, agendas, records, follow-up

D. TEAM COMMUNICATIONS

- 1. Team meetings: frequency, attendees, agendas, minutes
- 2. Team correspondence: format, distribution

E. INFORMATION AND DOCUMENTATION

- 1. Filing system
- 2. Procedures for technical information, product samples, shop drawings, tests, etc.
- 3. Project logs and records

F. QUALITY MANAGEMENT

- 1. Quality assurance process and procedures
- 2. Checking procedures and forms
- 3. Standards for project reports
- 4. Standards for drawings, specifications and other contract documents

G. SCHEDULE, BUDGET AND BILLING CONTROL

- 1. Project authorization: procedure and forms
- 2. Time authorization, reporting and recording
- 3. Employee expenses authorization, reporting and recording
- 4. Consultant expenses authorization, reporting and recording
- 5. Vendor expenses authorization, reporting and recording
- 6. Other expenses authorization, reporting and recording
- 7. Project status reports: frequency, format, distribution, follow-up
- 8. Projections (status against work plan, effort-to-complete against targets): frequency, responsibility, distribution, followup
- 9. Reports to top management
- 10. Procedures for authorizing changes in work plan
- 11. Policy and procedures for client billings and follow-up

H. PROJECT CLOSEOUT AND EVALUATION

- 1. Project records: permanent files, retention
- 2. Project evaluation policy and procedure: responsibility, participants, results
- 3. Project follow-up policy

From: The American Institute of Architects, MANAGING ARCHITECTURAL PROJECTS: THE PROCESS, David Haviland, 1981, page 52.

PROJECT NOTEBOOK OUTLINE

Section One: List of key project contacts (client, consultants, suppliers, contractors, subcontractors, etc.) including name, firm, address, telephone and fax numbers, e-mail address, secretary/administrative assistant name, home telephone numbers, etc. Also include information such as whom to copy on correspondence, etc.

Section Two: Project scope issues, contracts, copies of change order forms, etc.

Section Three: Budget information such as design fee budgets, supporting documentation, etc.

Section Four: Construction cost data, material information, etc.

Section Five: Scheduling information and charts such as personnel plans, Gantt, CPM, etc.

Section Six: Meeting notes, field notes, etc.

Section Seven: Additional reference material

Section Eight: Some project managers maintain a chronological correspondence file as reference.

BILLING CHECKLIST

DATE PREPARED: _____
PROJECT NO.: _____ OR CHANGE ORDER NO.: _____
PROJECT NAME: _____
CLIENT NAME AND ADDRESS: _____
CLIENT CONTACT FOR BILLING QUESTIONS: _____
PROFESSIONALS CONTACT FOR BILLING QUESTIONS: _____
SEND INVOICES TO (INCLUDE NAME AND ADDRESS): _____

OTHERS TO RECEIVE COPIES OF INVOICES (INCLUDE NAME AND ADDRESS):

GENERAL QUESTIONS:

- | | | |
|--|-----|--------------------------|
| 1. Client billing form required? | Yes | No (if yes, attach copy) |
| 2. Backup required | | |
| -all vendor and consultant invoices? | Yes | No |
| -vendors only? | Yes | No |
| -consultants only? | Yes | No |
| -other: _____ | | |
| 3. Timesheet copies required? | Yes | No |
| 4. Audit required? | Yes | No |
| 5. Normal client invoice processing date(s): _____ | | |
| 6. Other: _____ | | |

SPECIFIC QUESTIONS:

1. Fee basis:
-multiple of direct salary expense _____
-multiple of direct personal expense _____
-professional fee plus expenses _____
-percentage of construction cost _____
-percentage of construction cost _____
-fixed amount _____
-hourly billing rates _____
-other (explain): _____
2. Maximum fee: \$ _____
3. Reimbursable maximum (if any): \$ _____
4. Errors and omissions project insurance amount to be invoiced: \$ _____
5. Reimbursable markup percentages: _____ %
All items equal? Yes No
- If different percentages to be used, list them _____
6. Interest on delinquent receivables: percentage per month: _____ % After how many days from the invoice date?: _____ days

CLIENT: _____ DESIGN FIRM: _____
APPROVED: _____ APPROVED: _____
DATE: _____ DATE: _____

COMMUNICATIONS SKILLS

Public speaking

Writing

Listening

PUBLIC SPEAKING TECHNIQUES FOR PROJECT MANAGERS

Howard Birnberg

“As we know, there are known knowns; there are things we know we know. We also know there are known, unknowns; that is to say we know there are some things we do not know. But, there are also unknown unknowns—the ones we don’t know we don’t know.” This quote is from Donald Rumsfeld, speaking at a Pentagon press conference in May 2002, in response to a question regarding a possible link between Iraq and terrorists. While it may be somewhat amusing to hear a politician practice obscurity, the goal of a project manager is to effectively and concisely communicate. Unfortunately, many construction industry professionals fail to follow Mark Twain’s advice of: *“It is better to keep your mouth shut and appear stupid than to open it and remove all doubt.”* Effective public speaking is the art of not only what to say, but also of what not to say. Technique can be learned and practiced; discretion cannot.

PUBLIC SPEAKING TECHNIQUES

1. Join a Toastmasters Club or take a Dale Carnegie course:

Both organizations provide excellent training in public speaking. Toastmasters are an international organization with chapters in nearly every community of size. You pay a fee to belong and to attend training programs, however the charges are modest and the process is very worthwhile. Dale Carnegie is a commercial enterprise of long standing. They run public speaking training programs in many communities on a fee basis. Both organizations are of great value to anyone seeking to improve their public speaking ability.

2. Do your homework:

There is a great deal more to public speaking than simply showing up at a venue. Preparation is vital. Know your subject. Keep your presentation concise and focused. Longer isn’t necessarily better. Lincoln’s Gettysburg Address was less than 300 words and only 5 minutes long. Prepare your presentation as far in advance as feasible. Allow yourself time to rework it if necessary. Winston Churchill was well known for taking

more than an hour to prepare each minute of one of his speeches. Rehearse as much as necessary beforehand to make your speech flow and stay within the allotted time. Don't read your written text or summary index cards. Consider video taping your presentation to provide you with a method to analyze your delivery, gestures, eye contact, etc.

Know your audience. Too many project managers make presentations to non technically oriented audiences that are filled with incomprehensible jargon and technical language. Don't talk down to your audience, but balance your presentation with necessary technical information and explanations as necessary. Consider meeting with some community members in advance in order for you to better understand their concerns, issues, and level of understanding of the subject. Be polite to hecklers even if they are rude. Your behavior will often win you support. You gain nothing by stooping to the level of hecklers.

Visit the presentation room in advance. Never walk into a room cold. Always check out the layout, lighting, acoustics, sightlines, seating, etc. before your presentation. If necessary and possible, rearrange the room to your liking.

3. Interact with your audience:

Even with large groups, try to become connected with your audience by moving out from a podium, table or any other device separating you from them. Interact by moving down a center aisle, going to the edge of the stage or entering their seating area. Learn by watching the Sunday morning preachers on television. They energize and connect with their congregations through this physical involvement. Use active eye contact. In large groups, scan the audience and look toward the rear of the room. In small groups, briefly look at each attendee.

4. Be a good listener:

If you have a question and answer period, listen intently to the questioner. Look directly at them and don't interrupt. Respond to the question clearly and concisely. If you are not sure what they are asking, don't hesitate to ask for clarification. Be honest. If you don't know the answer, say so. If you only know a little, then offer what you know and indicate a willingness to find out more information for the questioner. The best presenters are often able to get their audience talking about their own concerns, needs, problems, desires, etc. In small audiences, try to get the attendees to share with each other. They will learn as much or more from each other than they will from you.

5. Don't overuse technology:

PowerPoint presentations are ubiquitous and often deadly boring. Far too many speakers simply regurgitate what is already found on the screen. Your audience can read. They don't need you to stand up front and review the slide. As impressive as the graphics of many computerized presentations can be, your audience wants substance, knowledge and

answers. If they want fluff, they can watch network television. If you want to stand out and communicate more effectively, go no-tech.

A study at Ohio State University bears this out. Selected undergraduate classes were taught both with and without computer-generated slides. Students exposed to material in a traditional format scored better on exams than did those in classes using PowerPoint extensively. According to the lead researcher, Andrea Huff: *“When a class is taught with the teacher’s notes presented in a computer (format), it seems the students feel that all the authority comes from the computer. Instead of paying attention to what the teacher is saying, they just copy down what they see on the screen. They disassociate themselves from the class and become passive observers rather than actively participating in the learning experience.”*

6. Provide Handouts:

Audiences like handouts. They like to leave a presentation with materials for future reference. Never project anything on a screen where the audience does not have a hardcopy. The projected materials may be hard to read and your audience may wish to take notes on the hardcopy provided. Your name and contact information must be on the handout, making it easy for audience members to contact you in the future.

SUMMARY

There is a great deal more to learn about public speaking than has been covered in this article. I strongly urge you to contact either Toastmasters or Dale Carnegie. In the normal course of their work, project managers will have numerous opportunities to improve on their public speaking skills. With time and practice, everything discussed here will become second nature.

Howard Birnberg is executive director of the Association for Project Managers and a frequent speaker before industry and other groups. He may be reached at 312-664-2300, email: hbirnberg@gmail.com

PREPARING AND EDITING WRITTEN MATERIALS

Howard Birnberg

Project managers regularly prepare a wide variety of written materials. Reports, letters, proposals, change orders, emails, faxes, and memos are only a few of the types of written communication prepared by project managers. Most are hurriedly written, disorganized, filled with poor grammar, lack coherence and fail to effectively communicate the writer's thoughts. Many project managers attribute the failure to write well to a lack of time, little or no training in effective writing, and a disinterest in improving their writing and editing skills. Poor written communication can lead to devastating consequences. Project errors and omissions, disputes, poor client service, legal proceedings and many other undesirable results can flow from poor written materials. Most project managers would greatly benefit from attending effective writing classes and from regular writing and editing practice.

While not a panacea, the following steps will help most project managers and other individuals improve their writing and editing skills.

1. **Organize your thoughts.** Take a few seconds to organize your thoughts. What are you trying to communicate and how can you best do it? For most people, a brief outline of key items is sufficient. Don't worry about proper outlining form. Just get your thoughts down. When finished, take a quick break, come back to your outline and see if you have missed anything important. As you write your first draft, new ideas may come and the outline modified as needed.
2. **Write your first draft.** For most, this is the toughest step. Put your thoughts into words. Nothing else matters. Proper sentence structure, spelling, punctuation, grammar, wordiness, etc. are not the issue. Your first draft will be disorganized, repetitive, and your thoughts unclear. Upon review, the opening paragraph or the opening sentence will be completely unnecessary. Getting your thoughts on the screen (hopefully, you are not using pad and pen) are crucial. Refinement and editing come later. Unfortunately, many project managers stop here and email, fax, mail and/or otherwise distribute this very rough version of their writing.
3. **Review and edit your first draft for content.** Does your first draft say what you intended? Does it cover all of your points? Does it make sense? Put yourself in the shoes of the intended reader—will they be able to understand it? An excellent technique to use at this (and every stage) of the writing and editing process is to read your words out loud. The way your words sound is often how others will read them. If it is cumbersome to speak, it will be cumbersome to read.

Let someone else read your work. Even if they are not expert writers, they will be far more objective in reviewing your work than you.

4. **Revise your draft for flow and clarity of ideas.** Once you have edited your first draft, put it aside (preferably overnight) and reread it. Do the ideas flow? Could you say them more clearly? Could it be reorganized for better coherence? What could be cut that's unnecessary, repetitive, or fails to support your points or arguments? You may need to move sentences or even whole paragraphs around while deleting others.

5. **Examine your writing closely for wordiness.** At this point, you are almost finished with the editing process. Your goal is make your writing as concise as possible. Could one word substitute for a phrase, could a phrase substitute for a sentence? This is a challenging step. For most of us, we are trying to undo years of bad schooling. Remember those 500-word book reports? Most of us were taught quantity, not quality. Abraham Lincoln knew the folly of this approach---his Gettysburg Address is only about 250 words long.

6. **Do a final check.** This is your fine tuning step. Check for spelling, grammar, punctuation, etc. Don't simply rely on the computer's spell check. The word may be spelled write (right), unfortunately, it may be the wrong word. Send out your written words now and it's unlikely you'll be embarrassed.

Take this process seriously. Many project managers don't seem to understand that readers of their words often know bad writing when they see it. A judgment on your skill as a project manager is often formed by reading your written words. Poorly written documents call into question your drawings, calculations, opinions, and professional advice. To prevent this, some firms even have professional editors available to review project manager's writing and to provide written communication training.

With practice this process becomes automatic and can be done quickly. Following these steps will make you a better writer, a more respected communicator and a more successful project manager.

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RED FLAG WORDS

administer

advise

allowable

always

any

appropriate

approve

as required

assure

best

certify/certification

clean, pure

cleanup

complete

control

constant or continuous

critical

define

detailed

determine

direct

eliminate

ensure

equal

essential

estimate

every

exact

examination

expert

extremely

final

full

guarantee

immediately

inevitably

inspect

instantly

insure

investigation

likely

maximize

minimize

most

must

necessary

never

no

non

none

not less than

obvious

optimize

Optimum

or equal

oversee

perfect

periodic

possible

prevent

probable

proper

prove

safe

shall

should

significant

sound

stable

study

sufficient

suitable

supervise

thorough

unsafe

warranty

will

worst-case

zero

TRAINING AND MENTORING PROJECT MANAGERS

PROJECT MANAGER TRAINING TOPICS

Project management concepts/systems

Quality Assurance/Total Quality Management

Computers (hardware and software)

Scheduling

Estimating

Budgeting

Data base systems

project status reports

presentation software

proprietary systems

CADD

Internet/research

Contracts/Risk management

Interpersonal/Communication skills

- writing

- public speaking/presentations

- delegation/motivation

- people skills/managing people

- negotiation

- working with others

Construction inspection

Time management

Financial management

Project budgeting

Scope management

MENTORING PROJECT MANAGERS

Howard Birnberg

One of the most effective devices to train and develop aspiring project managers (or any staff for that matter) is through a Mentoring program. This device will likely achieve the fastest development of key staff and will enhance the performance of all who participate. Younger staff gain the benefit of the experience and wisdom of older hands and the more senior individuals are exposed to new ideas and techniques.

While Mentoring seems to be a "win/win" situation for all involved, it is not always embraced in design and construction firms. Depending on how extensively the program is developed, there can be sizable costs for staff time, administration, training fees, lost billable time and many other items. Older staff may resist Mentoring newcomers for fear of job security. Senior management may ask, "Why pay the higher salary of the older staff when the younger individuals can do almost the same (or the same) job." Personality conflict can also be an issue if the assigned mentor is unable to achieve a good working relationship with the individual to be mentored.

In some situations, firms are strongly in favor of establishing Mentoring programs, however, younger staff fail to appreciate the benefits of the program or the opportunity being presented to them. A number of years ago, as the chair of the Chicago AIA chapter Practice Management Committee, I helped to establish a Mentoring program. A chief goal of the program was to match up architectural practitioners in Chicago with fourth, fifth and sixth year architecture students at the local architectural schools. Practitioners were grouped by their specialty such as design, technical areas, computers, management, etc. and students

could select from their area of interest. Many practicing architects were enthusiastic about the program and readily signed up. Despite heavy promotion at the three architecture schools, very few students applied for mentors. Sadly, this was a lost opportunity to learn a great deal about their chosen profession from those with "real world" experience.

TYPES OF MENTORING PROGRAMS

Mentoring programs exist in many forms; however, they can be broadly classified into two major groupings.

Formal Mentoring Programs

A formal Mentoring program requires a significant commitment of resources. Extensive record keeping is required, training budgets must be expanded, administrative systems for the program need to be developed and lost billable time must be anticipated and monitored. There are typically four steps to the development of a formal Mentoring program.

1. **Description:** Each job/position in the organization must have a written position description. Career paths must be laid out for each job grouping such as "project manager." The criteria for advancing into a particular job/position must be described. The criteria for performing a particular job/position must also be outlined.

This step requires the organization to develop a process for Mentoring. The firm must evaluate each position, staff advancement practices, training needs, etc. It also provides benchmarks to measure performance and goal setting. For staff, this step provides a "road map" for advancement and improvement. Obviously, the achievement of goals must bring the appropriate reward such as a promotion, salary increase, etc.

2. **Skill Assessment:** Each less experienced individual participating in the Mentoring process must first be assessed as to their current skill level and performance. This provides a benchmark for them and for the firm to measure their growth. Mentors must also be assessed for their capabilities in meeting the requirements of their role.

3. **Mentoring:** The actual Mentoring process is time-consuming and continues over a long period of time. Implementation may require less experienced staff to seek an advanced degree, take other college courses, attend professional development seminars, read books, or undertake a myriad of other activities. The mentor must monitor and encourage this effort. Eventually, a mentor's role may end and a new individual may take over as mentor.

4. **Performance Assessment:** The success or failure of the Mentoring effort must be regularly assessed. This process must be on an individual basis and for the program as a whole. The Mentoring program must be continually appraised and adjusted to reflect the needs, capabilities and growth of your staff.

Informal Mentoring Programs

This is the most common type of Mentoring program and is widely practiced in the construction industry. Informal programs occur in two types.

1. **Kismet:** In this type of informal program, Mentoring is left to fate as younger and older staff develop friendships. In some cases, a more experienced individual is committed to the development of junior staff and seeks to help them advance. Generally, the firm plays little or no role in this Mentoring process.

2. **Active Encouragement:** In some firms, the informal Mentoring process is developed by encouraging more experienced staff to mentor junior members of the team. Activities may be planned to foster this effort, budgets may provide funds for Mentoring and training programs, and a general atmosphere of concern for the development of younger staff may pervade the organization.

SUMMARY

In 1974, fresh out of architecture and MBA university programs and only 23 years old, I joined a large Chicago-based architectural firm. Although lacking any real practical experience, but based on my academic credentials and potential, I had a unique opportunity as a senior member of the organization. Unfortunately, I didn't have any actual idea of how the architectural business and project management worked. Fortunately, two proven project managers took me under their wing and taught me a great deal. Trial-by-fire is a good learning experience combined with two great mentors.

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