

# Construction Risks: Identifying, Managing and Mitigating

Jon Alvarez, AIA

Frances M. Gast

David Pieterse, Esq.

“Top 10” Legal Issues in Construction  
Contracting

**NIXON PEABODY**<sub>LLP</sub>  
ATTORNEYS AT LAW

# The Construction Contract

## “Three Legged Stool”

1. **Scope**
2. **Price**
3. **Time**

# Construction Issues (Contract Issues)

- **Timing and Bargaining Leverage**
- **Unforeseen Conditions – Who Bears the Risk?**
- **Force Majeure Events**
- **Contractor's Warranty**
- **Contractor's Review of Plans, Specifications and the Project Site**
- **Termination for Convenience**

# Construction Issues (Contract Issues)

- **Treatment of Damages**
  - Liquidated Damages
  - “Mutual” Waiver of Consequential Damages
  - Delay Damages
- **Termination for Convenience**
- **Dispute Resolution**
- **Long Lead Items and your Contractor’s Request for Indemnification**
- **Ownership of the Project Plans and Specifications (Architect)**

NIXON PEABODY<sub>LLP</sub>  
ATTORNEYS AT LAW

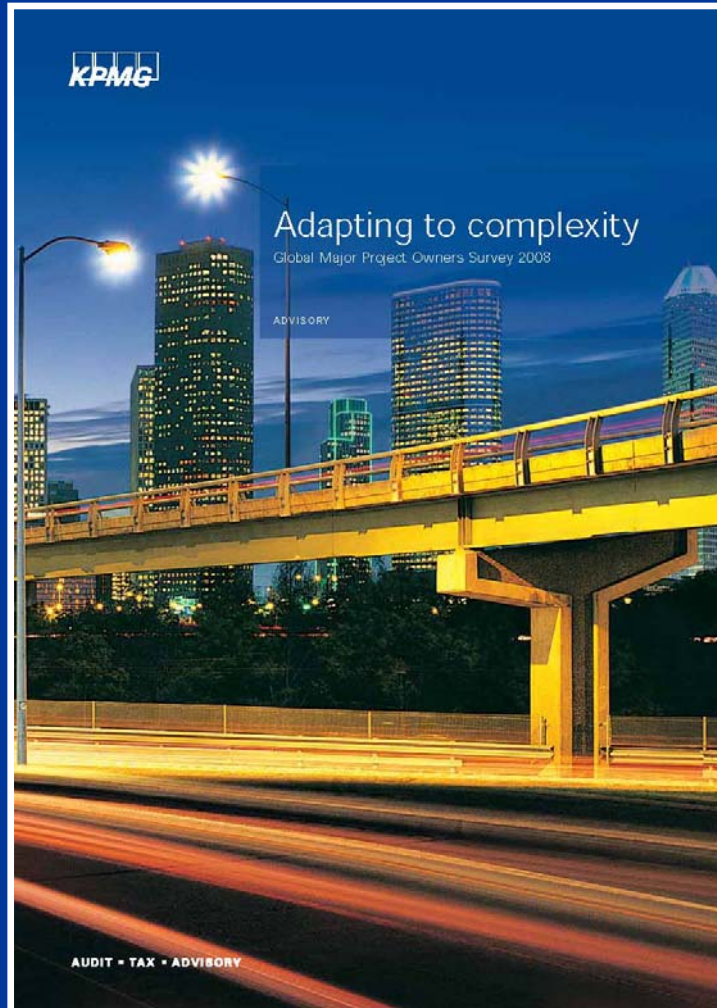


# Construction Risk: Identifying, Managing and Mitigating

April 6, 2009

KPMG LLP

# Introductions



In KPMG's **2008 Global Major Project Owners Survey**, we focused the views of leading construction owners around the world.

# Top Risks Facing the Industry

Owner Perspective
1. Availability of Qualified Contractors
2. Shortage of Internal Resources
<b>3. Managing Risk</b>
4. Rising Cost of Construction
5. Environmental Matters
6. Availability of Qualified Vendors
7. Delivery on Time and Budget
8. Regulatory Matters
9. Technology
10. Transferring Risk
11. Entering New Markets

Contractor Perspective
1. Shortage of Qualified Resources
<b>2. Managing Risk</b>
3. Transferring Risk
4. Securing Forward Workload
5. Entering New Markets
6. Gaining Competitive Edge
7. Succession Planning
8. Bonding Capacity
9. Reducing Overhead
10. Industrial Relations

Source: KPMG's 2005 Global Construction Survey

Source: KPMG's 2007 Global Construction Survey



# Top Risks Facing the Industry

Owner Perspective
1. Availability of Qualified Contractors
2. Shortage of Internal Resources
3. Managing Risk
4. Rising Cost of Construction
5. Environmental Matters
6. Availability of Qualified Vendors
7. Delivery on Time and Budget
8. Regulatory Matters
9. Technology
<b>10. Transferring Risk</b>
11. Entering New Markets

Source: KPMG's 2007 Global Construction Survey

Contractor Perspective
1. Shortage of Qualified Resources
2. Managing Risk
<b>3. Transferring Risk</b>
4. Securing Forward Workload
5. Entering New Markets
6. Gaining Competitive Edge
7. Succession Planning
8. Bonding Capacity
9. Reducing Overhead
10. Industrial Relations

Source: KPMG's 2005 Global Construction Survey

# Risk Management: Key Themes



## Effective Risk Management practices throughout the project lifecycle?

- Owners: ~ 60%
- Contractors: ~ 80%

## Use of Advanced Qualitative Risk Management techniques?

- Owners: ~ 50%
- Contractors: ~ 50%



# Construction Risk Management

**Institutional owners of major construction projects are faced with a series of critical issues. For many institutions, capital expenditures are reaching an all time high, and represent a potential substantial risk in nearly all aspects of project delivery.**

**Often complicated, fast-paced and risky endeavors, construction projects are be prone to cost overruns, fraud, misconduct, waste and abuse, as well as being carried out in a constrained and demanding environment subject to increased scrutiny.**

**The execution of major capital projects presents owners with enormous challenges. Having an appropriate level of oversight and control in place is critical, only in doing so can risks be mitigated.**

# Construction Risk



**Risks are uncertainties, liabilities, or vulnerabilities, which may cause a project to deviate from its defined plan. While risk in a project environment cannot be totally eliminated or transferred, it can be monitored and minimized or mitigated wherever possible. To succeed, organizations must commit to addressing risk management throughout the project lifecycle.**

- The objective of a risk management process is to minimize the impact of unplanned incidents on the project by identifying and addressing potential risks before significant negative consequences occur
- Risk management incorporates the identification, analysis, and management of project risks
- The purpose of risk analysis is to determine the relative exposure in terms of time and cost. Risk management is concerned not only with identifying risks, but also with reducing risks to an acceptable level. It includes maximizing the probability of positive events and minimizing the probability and consequences of adverse events.

# Institutional Risk Management



**Institutional Risk Management is the establishment of an overall strategy, at the Institutional level, of how risks will be addressed and managed.**

- Institutional risk strategies must take into account the organization's overall appetite for project risk vs. reward.
- At the project level, it is critical to gain an understanding of the risks that will be managed by the contracted Program or Project Manager
- The focus of Institutional Risk Management is to ensure that project level risks are being effectively managed and escalated to the Institutional Level as appropriate.
- Leading practices include the establishment of a Risk Committee that includes both project management and institutional management.

# Project Risk Management



**Project Risk Management is the processes, policies, and procedures, implemented by the project manager, to identify, analyze, manage, and respond to potential project risks.**

- The focus of Project Risk Management is to ensure that minor, day-to-day project level risks are being effectively managed on an ongoing basis.
- It is also the responsibility of the project team to ensure that more significant risks are quickly escalated to the Institutional Level.
- While minor risks can be managed and reported as part of the daily project management process, any major risks should be before a project Risk Committee.

# Primary Elements of the Risk Management Process



The primary elements of the risk management process, at the project level, is the same as that at the corporate level and would typically include the following elements:

- **Plan** – deciding how to approach and plan the risk management activities for a project. The overall plan should include delineation of risk management
- **Identify** – determining which risks might affect the project and documenting their characteristics. Risk identification is an iterative process and provides a formal opportunity for project members to identify and capture information related to potential risks and opportunities on the project

# Primary Elements of the Risk Management Process



- **Analyze** – Performing both a qualitative and a quantitative analysis of risks and conditions inherent to the project and analyzing them in terms of:
  - Qualitative Analysis – Prioritizing risks in terms of their impact on the project. Qualitative analysis typically includes prioritizing risks in terms of their critically and potential impact on the project.
  - Quantitative Analysis – Measuring the probability that the risk will impact the project and quantifying the degree of impact that it will have on project cost, schedule, quality, or objectives.



# Primary Elements of the Risk Management Process

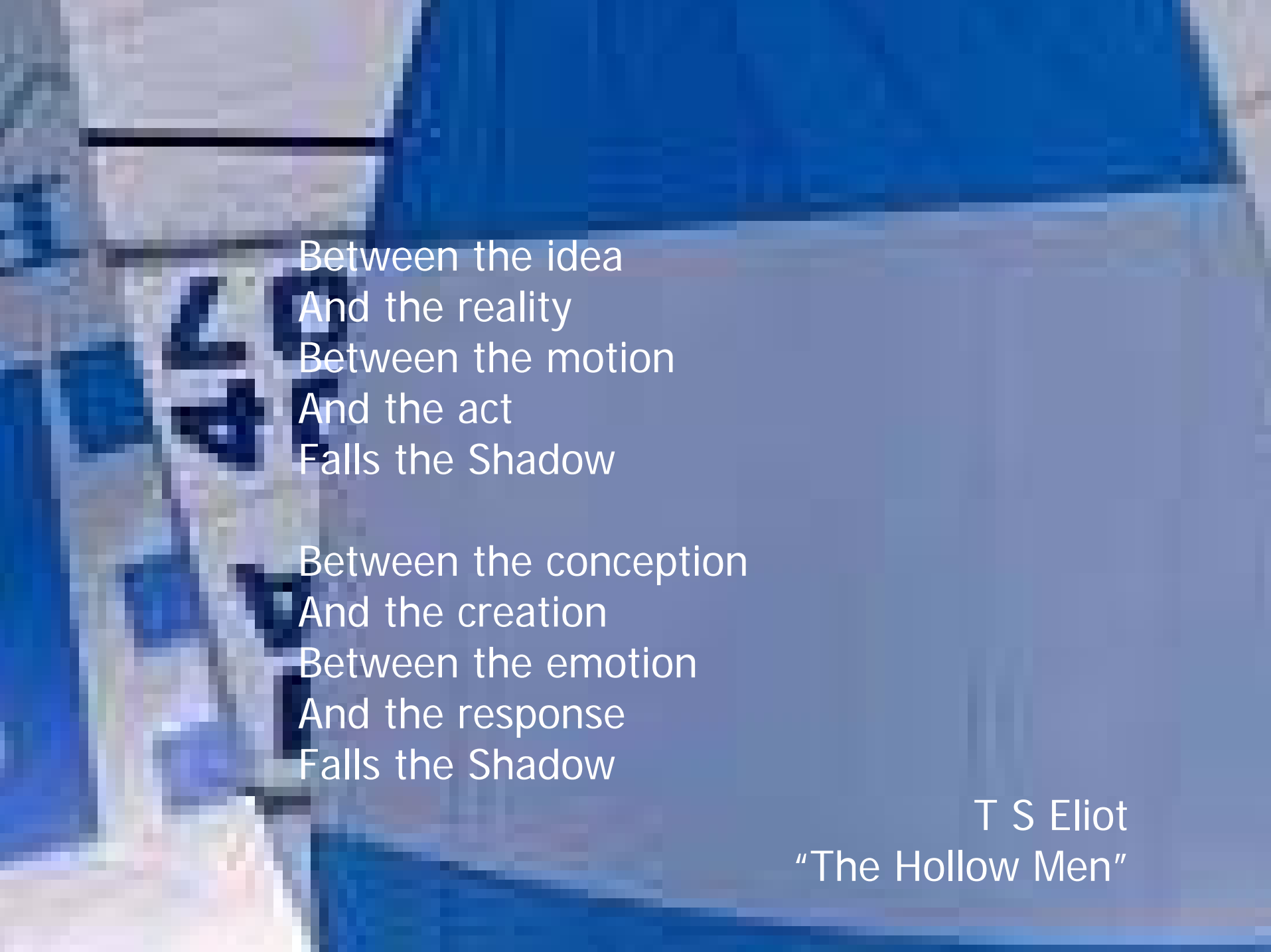


- **Respond** – Formulation of an appropriate strategy to respond to the identified risk, which normally is chosen from among the following options:
  - Elimination or avoidance of the risk altogether so that its impact is no longer pertinent to the project.
  - Transference of risk to a third party (e.g. insurance, hedging, contracting).
  - Mitigation by identifying actions that will minimize the impact of the risk on project cost, schedule, quality, or objectives.
  - Acceptance of the risk as inherent to the project. Acceptance is generally a viable strategy for high consequence, low likelihood risks, which then must be closely monitored to formulate appropriate responses if the risk does materialize

# Primary Elements of the Risk Management Process



- **Monitor** – Once risks have been identified, and an appropriate response is formulated, the risk and response must be formally documented, assigned a risk owner, and included in the control functions and documents of the ongoing project monitoring process.
- **Report** – Executing risk reduction plans and evaluating their effectiveness throughout the project life cycle. From an institutional perspective, it is critical that reporting procedures include guidelines on escalation of risks to appropriate decision makers.



Between the idea  
And the reality  
Between the motion  
And the act  
Falls the Shadow

Between the conception  
And the creation  
Between the emotion  
And the response  
Falls the Shadow

T S Eliot  
"The Hollow Men"

# RISKS

Time and Cost

Mission

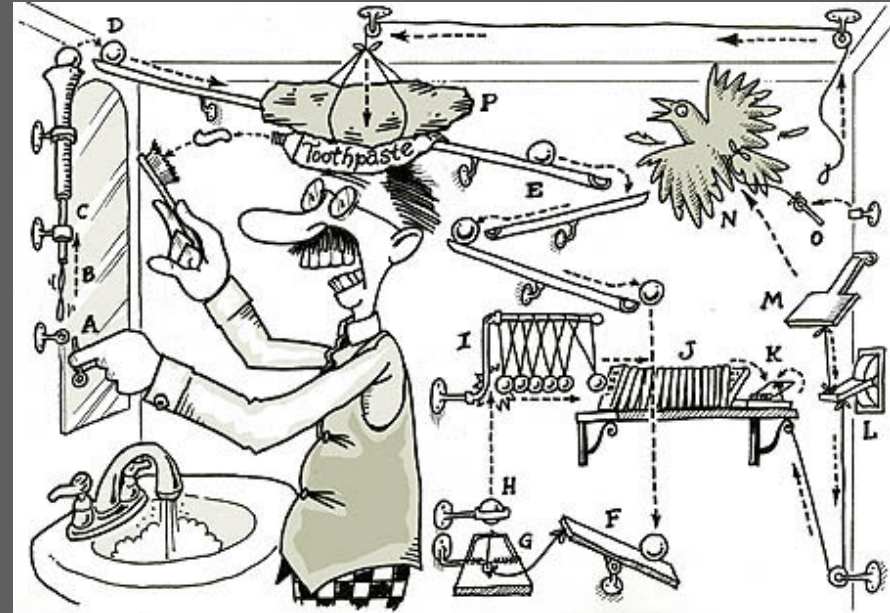
# A FEW THINGS TO KEEP IN MIND...

- IT TAKES THE RIGHT ORGANIZATION
- IT'S WHAT YOU DO AT THE BEGINNING THAT MATTERS MOST
- IT'S NOT ALL IN THE RFP

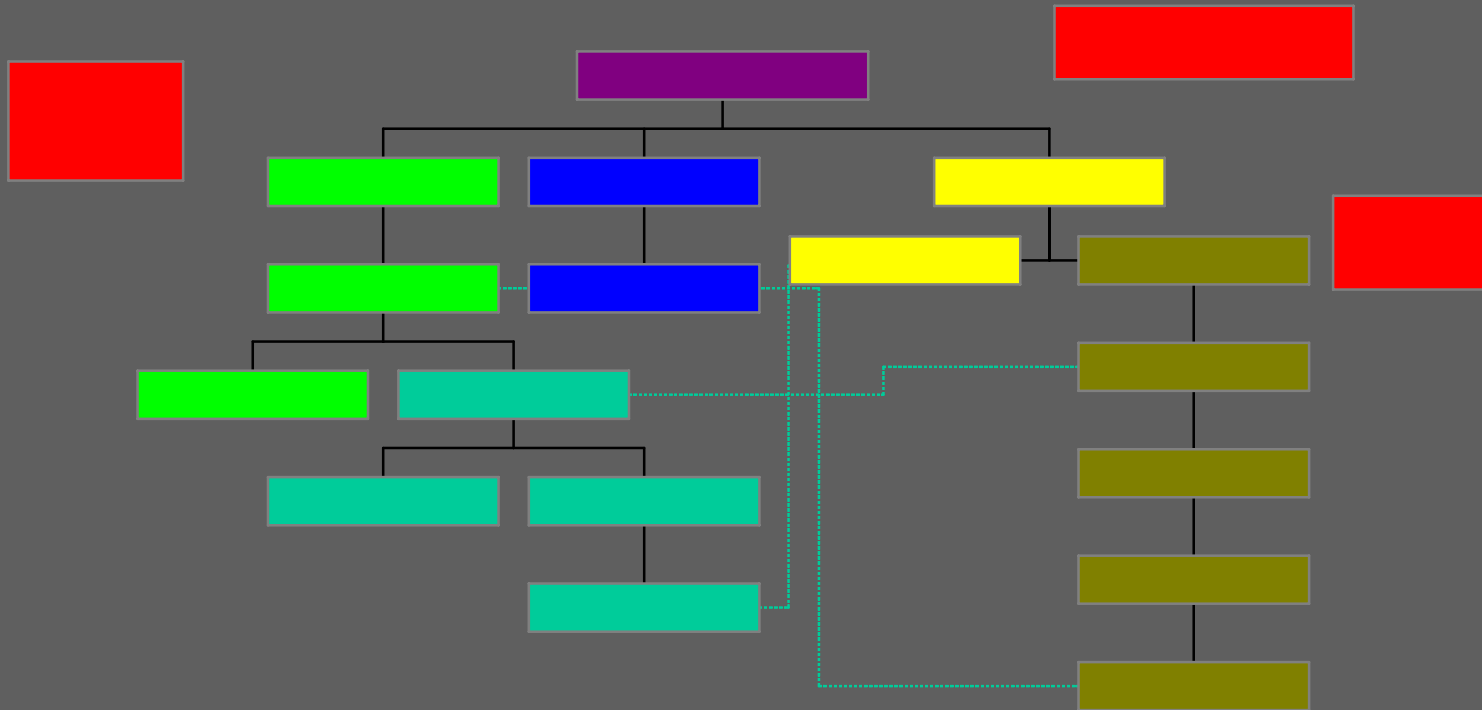


# Why A Complex Building Project Is Like (Custom) Manufacturing.

- Defining the outcome
- Putting the team together
- Planning/programming
- Financing
- Scheduling
- Designing
- Engineering
- Finding and purchasing the right materials
- Execution
- Testing/ Commissioning
- Evaluating
- Fixing bugs



# The Bureaucratic Model

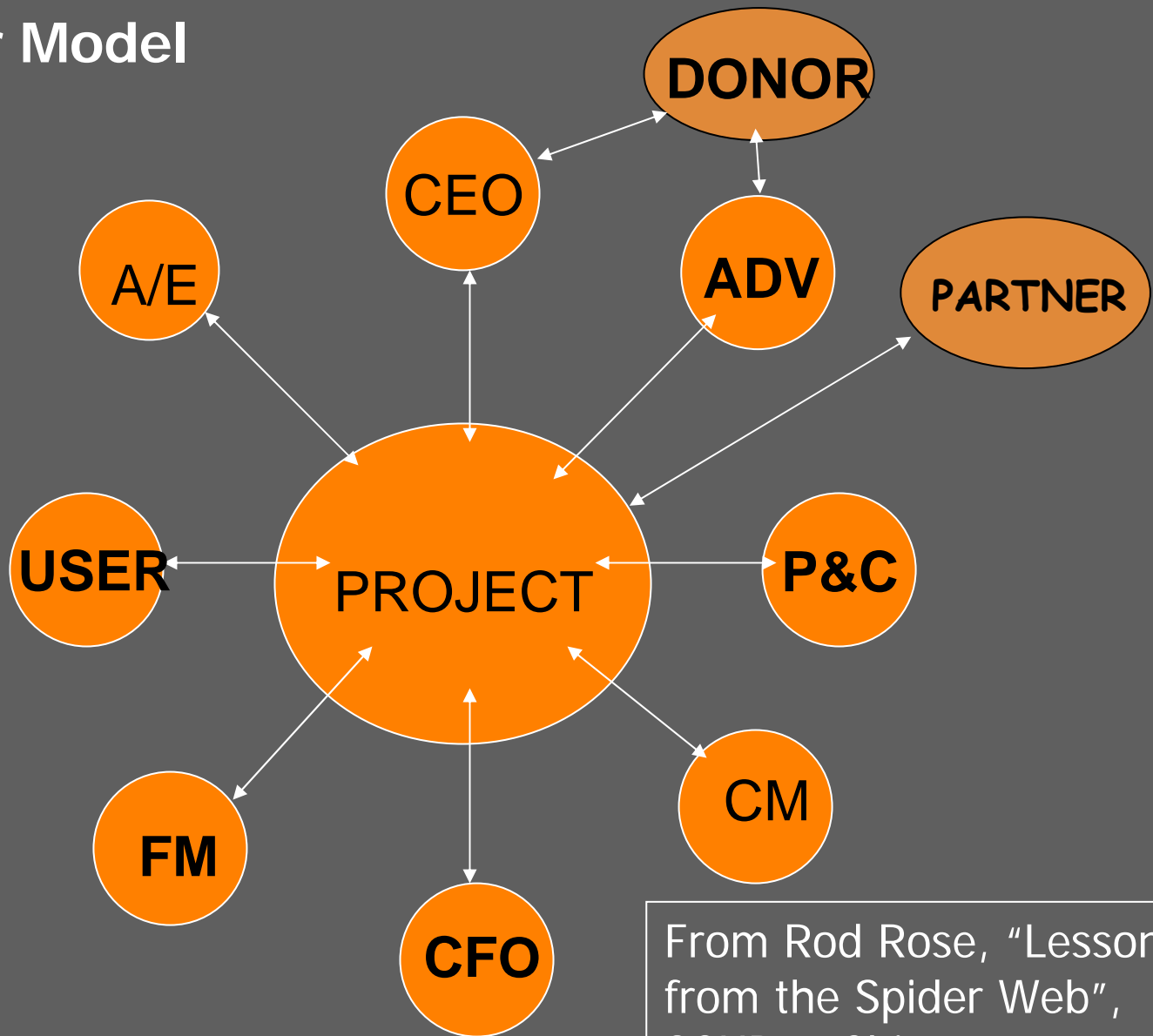






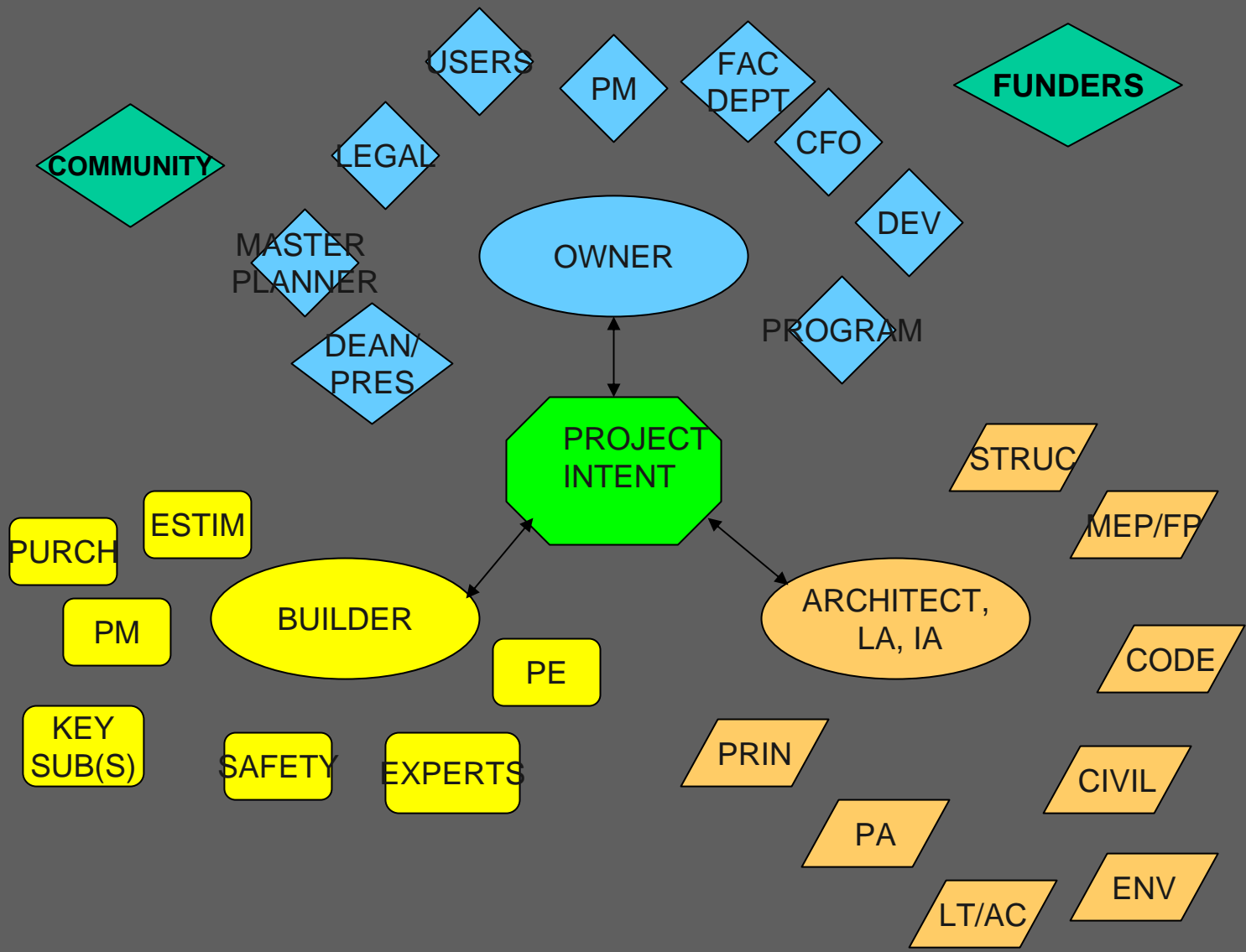
A skunk works is a group of people who, in order to achieve unusual results, work on a project in a way that is outside the usual rules.

# Developer Model



From Rod Rose, "Lessons from the Spider Web", SCUP42 Chicago.

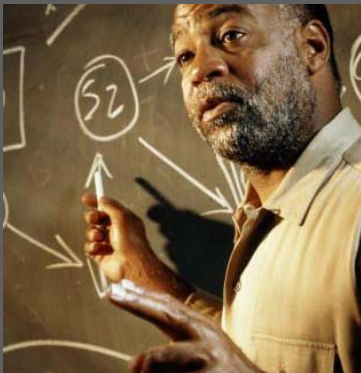
# WHO ARE THE STAKEHOLDERS?



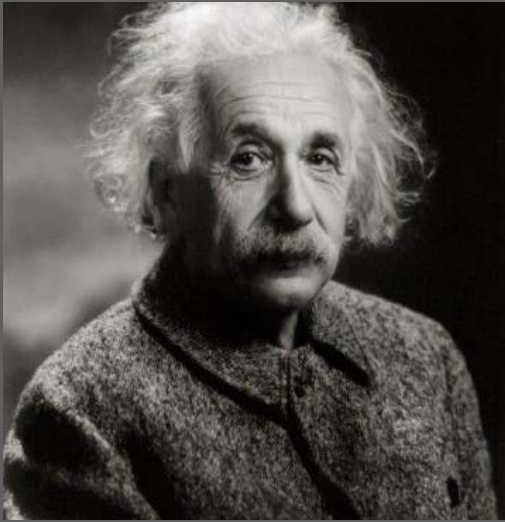
# Role of the Client



- Set the strategic goals and project intent -- and insist that they are met.
- Identify program
- Identify site
- Set budget and schedule parameters
- Manage the project!!!!



# Client Role – Myths and Challenges



- The Client knows everything they need to know.
- The Client doesn't know anything.
- The Client's point person is inexperienced (or out of the loop or terrified).
- The Client is disorganized.
- The Client is a drill sergeant.
- There are so many people involved, it's hard to know which one is the actual client.



# Building Commitment To Project Goals And Intent

- Building a common language and points of reference
- Learning about the institution
- Studying the Master Plan and Strategic Plan
- Clarifying the RFP

To know what to leave out and what to put in; just where and just how, ah, that is to have been educated in the knowledge of simplicity.

Frank Lloyd Wright

# The Client Culture

- Importance of understanding the decision-making culture
- Consultants need to find a Cultural Guide
- What is unique about a university culture?
  - Quirky hierarchy
  - Words matter (grammar matters!)
  - Faculty expect to lecture and they are trained to argue
  - Sense of time (semester schedule, building for the long-term)
  - Anything else?

# Program for Tomorrow



- Focus forward
- Don't solve yesterday's problems
- Appropriate benchmarking
- Be open minded





# Unresolved Issues



- Define scope: what's in and what's out
- Explore the broadest range of options from the beginning
- Have a clear definition of project expectations
- Be aware of diverse cultural issues
- Pay close attention
- Call time-out when necessary

# Summary Themes

- Know how the project meets the mission
- Be intentional about the team
- Plan how you will deal with the inevitable problems – how you will mitigate and manage them
- Seek trust, balance, quality
- Communicate, collaborate
- Develop your tools before you start