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Current Events

MDC® INDUSTRY EVENTS

2015 ABA Construction Forum, Annual Meeting, Boca Raton, FL

Construction Lawyer's Bucket List Conference
MDC® attending and exhibiting on April 16-18

[More Info](#)

2015 ABA Construction Forum, Midwinter Meeting, Scottsdale, AZ

My favorite Mistakes: What Doesn't Bankrupt You Makes You Stronger

MDC® attended on Jan 29-30

[More Info](#)

Understanding and Surviving Project Complexity

Written by [Robert C. McCue](#), PE, MDCSystems®

The article [Complexity is Often the Culprit in Cost Overruns and Delays](#) was first published in the MDCAdvisor last year (March 2014) and garnered

much feedback. In today's article we will revisit the Complexity and Systems Thinking topics and foster additional discussion of *how* and *why* project failures are driven by *complexity*.

Complexity
As Culprit

Complexity often arises to frustrate even the best efforts of Architects, Engineers and Contractors working to complete projects on time and budget. Many of the comments generated addressed broader implications of the application of both Systems Thinking concepts and an understanding of complexity to problems in society in general and to government programs directed at solving specific problems. We have included these observations although our expertise at MDCSystems® is primarily focused on preventing, understanding and resolving Architectural, Engineering and Construction failures.

In order to provide a context for the observations, let me restate and re-emphasize the key points discussed and presented in the 2014 [Complexity article](#). For our forensic analysis purposes, projects can be considered to be in four classes of control states. (See Snowden & Boone, Website - Ref D).

(1) Simple: projects which are easily organized and managed using standard Project Management Body of Knowledge (PMBOK) principles known to all project managers;

(2) Complicated: projects requiring advanced project management skills and abilities. These are the situations where experience

2015 ASHRAE Winter Conference, Chicago, IL
"Big Projects, Big Picture and Big Impact"
MDC® attended Jan. 24-28
[More Info](#)

Contact Us

MDCSystems® Headquarters
37 North Valley Road
3 Station Square, Suite 100
Paoli, PA 19301

Ph: 610.640.9600
Toll Free: 1.888.MDC.9977
Fax: 610.640.9609



rules the day.

In these two categories all problems can be recognized and resolved by the application of advanced Project Management skills by team members or by an expert consultant/advisor. (Been There Done That).

(3) **Complexity**: projects that have serious structural challenges and/or interdependencies that do not always respond predictably to advanced PMBOK techniques. One characteristic that helps identify complex projects is that both structural and interactive relationships often change with each passing week and it can be difficult to predict their future effects. For these projects decentralized management is a valuable alternative to 'centralized command and control' techniques. Trial and error solutions can be implemented across the entire spectrum of the project to determine what works to pull the enterprise back into a manageable project state and condition.

(4) **Chaos**: Failing to restore the project inevitably results in moving to the fourth category - chaos. This domain is one of no return and nothing will work to salvage the enterprise and these projects are ultimately abandoned. Examples abound around the world. 'Black Swan events (Ref 5), high impact/low frequency events, are at the genesis of many of these cases.

The intention of the [original Complexity as Culprit article](#) was to explain this approach to understanding the types of engineering and construction projects that MDCSystems® is called upon to advise/consult on and to show how Systems Thinking (Ackoff) could help provide insight to the three "functioning" project categories and assist in salvaging the project.

Below are a sample of the insightful comments received from our readers in response to this article and our understanding of where -- given the Simple, Complicated, Complex, and Chaos project categories -- these examples and experiences are most instructive in solving future project challenges:



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MDCSystems® Attending the ABA Construction Forum's Annual Conference Waldorf Astoria, Boca Raton, FL, April 16-18

Join MDCSystems® at the Construction Lawyer's Bucket List Conference in beautiful Boca Raton, FL, for the 2015 Annual Meeting of the American



Bar Association's Construction Forum. We all want the skills and knowledge that combine to create our vision of professional excellence. We will spend a professional lifetime acquiring and honing them before we trade in our briefcase and wingtips for a cooler and flip-flops. The program of the 2015 Annual Meeting

focuses on many of these “bucket list” skills and areas of practice.

Please stop at our booth to learn more about MDCSystems® and our professional capabilities or just to say hello.

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