

Six Fresh Eggs: A half dozen new ideas for managing projects in a rapidly changing VUCA world ^{1, 2}

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ABSTRACT

Perhaps eggs are not the perfect metaphor for project management. But how many project managers or organizations have “laid an egg” by not working on the right project? How many have ended up with “egg on their faces” by screwing up a project? How many project managers have “killed the goose that laid the golden egg” by ignoring a critical stakeholder? With the rate of project failures remaining high, it seems that some fresh ideas are needed.

This paper identifies six new ideas (or fresh perspectives) for project management in a world characterized by volatility, uncertainty, complexity and ambiguity (VUCA), as follows: (1) Break large projects into smaller, more manageable projects, migrate to program management and focus on strategy, stakeholders and benefits; (2) Reverse Environmental Impact Analysis (EIA) – analyze the impact of changing conditions and environmental factors on your projects; (3) Stakeholder Intelligence – understand your stakeholders’ changing attitudes and issues over the course of a program or project, how VUCA affects project stakeholders; (4) Benefits Engineering – rather than value engineer scope to meet cost and schedule goals, adjust benefits to maximize value and customer satisfaction; (5) DARPA vs The Hunger Games – harness diversity, new knowledge and team-based innovation to create new solutions; and (6) Strategic Agility – when and how to adapt agility and agile project management.

Maybe some of these ideas will help project managers avoid constantly “walking on eggshells” or getting “goose eggs” from mid-project collisions.

Keywords: project complexity, program management, reverse EIA, project innovation, agile, strategic agility, stakeholder intelligence, benefits engineering

INTRODUCTION

This paper is a summarized introduction to several topics, each of which deserves more attention and treatment than is possible in these few pages. The topics and ideas are based on

¹ Second Editions are previously published papers that have continued relevance in today’s project management world, or which were originally published in conference proceedings or in a language other than English. Original publication acknowledged; authors retain copyright. This paper was originally presented at the 13th [Annual University of Texas at Dallas Project Management Symposium](#) in May 2019. It is republished here with permission of the author and conference organizers.

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several things – the apparent continuing high rate of project failures; the topic of this conference, i.e. increasing pace of change in the world and the VUCA conditions faced by many projects; a growing body of knowledge associated with program(me) management, including standards and government guidelines in Australia, UK and USA; some brilliant recent papers published in the *PM World Journal*; and my recent experience working on a major U.S. government program.

BAD EGGS: FAILURE RATES REMAIN HIGH

A survey published in HBR found that the average IT project overran its budget by 27%. Moreover, at least one in six IT projects turns into a "black swan" with a cost overrun of 200% and a schedule overrun of 70%. In other words, while most IT projects will fall short of their budget targets, a few might overshoot the targets so much as to cause catastrophic organization-wide problems. [1] Annual surveys and studies, white papers and reports by various organizations worldwide seem to indicate that project success and failure rates continue at unsatisfactory levels. This seems surprising based on the widespread knowledge and use of project management models, standards and tools. With all the experience that now exists related to projects and PM, what's going on? Is it all due to the VUCA world? What can we do to improve outcomes? Below are some ideas.

IDEA 1: SOME EGGS ARE TOO BIG! – GO SMALL, MIGRATE TO PROGRAM MANAGEMENT

According to Mieritz, "A recent Gartner user survey shows that large IT projects are more likely to fail than small projects... Runaway budget costs are behind one-quarter of project failures for projects with budgets greater than \$350,000. Small is beautiful — or at least small projects are easier to manage and execute. The failure rate of large IT projects with budgets exceeding \$1 million was found to be almost 50% higher than for projects with budgets below \$350,000. To optimize success, look for ways to limit the size, complexity and duration of individual projects, and ensure funding has been committed..." [2]

PMI's publication "Navigating Complexity – A Practice Guide" (2014) contains a Questionnaire on pages 33-35, with questions such as the following:

- Can the project requirements be clearly defined at this stage?
- Can the project scope and objectives be clearly defined?
- Are the project constraints and assumptions likely to remain stable?
- Are the stakeholder requirements likely to remain unchanged?
- Are there a limited number of relationship dependencies among project components?
- Are project team members based in the same location?
- Is the project being performed or coordinated within a single organization?
- Will the project be conducted over a relatively short period of time?
- Etc. (total of 48 questions)

None of the "Possible Actions" for different "Complexity Scenarios" discussed in Chapter 6 include reducing the size of the project, simply more complicated steps to attempt to reduce or

deal with complexity issues. [3] Yet for nearly every question, if one can answer “yes” or “probably” instead of “no”, which would be the case for smaller projects, complexity might be greatly diminished.

One of the best treatments of this topic was authored by Michael Rosato in a student paper titled “Go Small for Project Success”. Some of his points: “As you read through these various studies one can quickly correlate many of the issues back to a single variable in the project and that is project size... The statistics just confirm a relatively easy assumption that a larger project is going to be harder to complete successfully than a smaller one... The planning of large projects with many dependencies regardless of methodology increases the complexity... With larger projects.. challenges are magnified and exaggerated compared to similar challenges on.. smaller projects. [4] These points were also made by The Standish Group in their 2013 CHAOS Manifesto. [5]

Stretton has offered some guidance on the subject of complexity in recent papers. In a definitive 2017 paper, he outlined various categories of complexity from leading authorities, culminating in a table outlining the following general sources: environmental;, socio-political, stakeholders and customers, strategic business outcome complexities and uncertainties, technological and methods, project portfolio structural complexities, program/project execution complexities, and organization/people related complexities. Within each category are many factors, all of which increase with project size. Stretton further discusses the differences between complication, complexity and uncertainty in his March 2017 paper, also worth studying. [6]

An excellent discussion of complexity is in a 2015 paper by Oehman, Thuesen, Ruiz and Gerald in which the authors study project, programme and portfolio complexity from an engineering systems perspective. [7] While the authors advise against simplifying complex projects and programs, they do not address the simple solution of reducing project size in order to reduce difficulties associated with complexity.

Over the last few years, I have studied the topic of program management vs traditional project management. Just comparing PMI’s standards, one can see the dramatic difference in perspective. While the PMBOK Guide focuses on elements of a project and project management processes, program management standards and guides broaden the perspective to strategic alignment, stakeholder engagement, benefits and governance. Basic project management is assumed; inter-project relations and coordination is required. The focus shifts to project selection (strategic alignment, business cases, prioritization), stakeholder value, benefits realization (during and long after completion of individual projects) and oversight.

Another tremendous advantage of program management is also the focus on “non-project” activities, many of which often impact the success or failure of a project. For example, organizational change and activities required for benefits to be realized, i.e. user training.

It seems to me that if many projects fail due to weak planning (wrong project, poor estimating, too many uncertainties), too much complexity (due to all of the issues discussed above) or not

delivering value (stakeholder needs, benefits, return on investment), then reducing the size of a project or breaking up a large project and managing the resulting multiple projects as a program could help solve some problems. I've seen this approach work successfully on a large US government program where for multiple reasons, large facility upgrade projects are broken into multiple smaller projects that are easier to estimate and plan, easier to hire contractors for, and can be completed within single fiscal years (easier to budget). Not all eggs are the same size; it may be easier to buy a dozen of the same size and combine or use as needed.

IDEA 2: UGLY DUCKLING OR BLACK SWAN – REVERSE EIA

The completion of an environmental impact assessment for major construction projects has been a basic requirement for many years in the United States. It makes sense to fully understand the potential impact of a project on the physical, economic and social environment where the project will occur. But what about the impact of the environment on the project? With all of the difficulties associated with VUCA conditions, doesn't it make sense to analyze the risks to the project of potential changes, complexities, uncertainties and other environmental factors?

This is a topic in which I have been interested in for many years. In 1998, I presented a paper at the PMI'98 Symposium in which I described recent changes, trends and events around the world with potentially significant impact on the project management profession. [8] I updated that paper with a new one delivered in South Africa in 1999. [9] In both papers, I addressed global economic, industrial, geo-political, social and technological changes and trends, providing a possible decision-making model for PMI and other global organizations. I expanded the model to cover the impact of significant disruptive events, including natural disasters, political changes, wars and other similar dramatic change. [10, 11] I ended up calling this awareness "global business intelligence", suggesting that organizations should be conducting environmental scanning, trend analysis and other assessments of external conditions, especially as economies, industries, markets and supply chains become more globalized. [12]

Now I want to take his model further and suggest a "reverse environmental impact analysis", that is, an assessment of various changes, trends and disruptive events on a program, project or organization. This is nothing more than a broader approach to environmental risk analysis, but a little more formalized. Based on the categories I've already identified in the papers mentioned above, one can establish a framework of topic categories and issues, assign someone to conduct appropriate research (deep or shallow, but at least identify the big and more obvious trends), and consider the potential impact on your program or projects. This should give you a heads up on what VUCA issues you might need to worry most about.

I think PMI has already embraced this approach in their 2018 Pulse of the Profession report on "Maximizing the Benefits of Disruptive Technologies on Projects." [13] The PMI report focuses on disruptive digital technologies, especially those emanating from advances in cloud computing, internet of things and artificial intelligence. This is a good start but it does not go far enough. Economic, industrial, political and social changes, trends and disruptive events can

also have dramatic impacts on projects, programs and organizations and should also be assessed in today's dynamic VUCA environment.

The ugly duckling story represents an opportunity arising from an unexpected hatching of an out of place egg. The Black Swan represents an emerging threat from a totally unexpected source or event. In all likelihood, many projects will encounter both, with serious potential repercussions for those who are not prepared.

IDEA 3: GEESE THAT LAY GOLDEN EGGS - STAKEHOLDER INTELLIGENCE

A great deal has been written about stakeholders in recent years, with stakeholder management added to PMI's PMBOK Guide as a fundamental element of project management. But there's always more to learn. Several important contributions to the literature include those by Pirozzi [14] and Stretton [15, 16, 17]. Pirozzi states "... in complex projects the success factor is the satisfaction of both stakeholder requirements and stakeholder expectations. Stakeholder Management processes are then key to achieve project success at various levels of complexity." He goes on to discuss the relationship of managing stakeholder value to project success in conditions of complexity. [14]

Stretton provides a real service by identifying potential stakeholders and organizing them into some useful classes, categories and groupings, the most recent being providers (project manager, project team, project suppliers), investors (sponsors, funders, shareholders), purchasers (users, customers, contracting parties), and influencers (authorities, media, community). Multiple stakeholders exist within each of these categories and groups, each of which requires some knowledge, planning and interaction during any decent-sized project or program. [15]

The need for stakeholder analysis, engagement and management is well established and generally well understood in the project management world. But every stakeholder is also subject to the impact and influences of disruptive changes, trends and events. How many companies, programs or project teams implement stakeholder monitoring processes to identify and assess changes in stakeholder expectations or attitudes? This is the point; stakeholder management is not a one or two-time analysis, planning and communication process. It must be continuous. Project teams must know, understand and relate to their stakeholders on a continuous basis in order to minimize stakeholder-related risks and to increase success factors. This is what is implied by "Stakeholder Intelligence".

The fable about the goose that laid the gold eggs is relevant here. We should not take for granted that key stakeholders will continue to share our optimism, knowledge or expected outcomes. This is especially true for customers, investors or financial backers without whose support a project will fail.

IDEA 4: EGGS NOT CHICKENS: BENEFITS ENGINEERING

Benefits realization management (BRM) is a relatively new topic in project management, but it's a very real and very important topic. While BRM standards, requirements and models have existed in the Australia, New Zealand and the United Kingdom for many years, no such standard has been implemented in the USA until very recently. In PMI's Standard for Program Management (4th Ed, 2017), Benefits Management is one of the main pillars (along with strategic alignment, stakeholder engagement and governance). In late 2018, PMI issued a Practice Guide for BRM that describes the benefits management process in detail.

Crispin "Kik" Piney in France has authored a transformational book on the topic titled "Earned Benefits Program Management" in which he combined the topics of earned value management (EVM) and benefits realization to maximize the ability to realize financial value through effective measures of benefits realization. He clarified many aspects of this approach in a series of articles published in the *PM World Journal* in 2018. [18] This paper assumes the reader is familiar with BRM.

The concept of benefit engineering comes from Oliver Lehmann in Germany, author of the books *Situational Project Management: The Dynamics of Success and Failure* (2016) and *Project Business Management* (2018), published by Routledge. In His paper on Benefits Engineering [19], introduces the topic in the context of projects performed for a customer that get into trouble with looming cost increases, missed milestones, technical hurdles or other performance issues. The tradeoff, according to Lehman, is often for a contractor to reduce costs through cost engineering in order survive (or to ensure a profit on the project) which might in fact reduce value to the client (or otherwise make a client unhappy and damage the client relationship). Lehman references NASA's change from a "Faster-Better-Cheaper" approach to a "Mission Success First" philosophy that helped NASA overcome a period of mission failures caused by lack of communications internally and inside their supply networks. [19]

According to Lehmann:

Cost engineering can be a formidable approach to make a project or a project portfolio cost efficient by simplifying items and activities, replacing gold-plated deliverables with those that are actually needed, and by focusing a project on its core deliverables, removing unnecessary workload and costs from the contractor's team. Often, the effect is rather detrimental and cost engineering can turn a good relationship with the customer into a conflict that damages the project from the customer's perspective as much as from that of the contractor."

"The basic question of benefit engineering is quite simple: 'How can we propose a change to the project that is beneficial for the customer and allows the adjustment of price, fees, deadlines, and other terms of the contract that make it impossible for the contractor to perform a successful project.'

Benefit engineering is an alternative approach to cost engineering, when it is necessary to move a customer project out of trouble or even crisis. It is more powerful than cost engineering, because there are fewer factors that limit its implementation, but the challenges on project managers to apply it are also higher, particularly when the relationship with the customer is difficult. Benefit engineering can be used to improve individual projects, but also for entire portfolios to meet two goals: Make the project business profitable and customers happy.” [19]

Benefit engineering by definition focuses on benefits, not traditional project parameters or performance measures. It requires deep understanding of both the contractor’s side (resources, capabilities, processes, culture, etc.) and the customer’s needs, wishes and wants. Benefits engineering is not easy and requires very mature project management to be successful.

Not all eggs have chickens inside; we need to know what we have, what we can do and what changes can be acceptable to customers and contractors alike. In other words, as NASA learned, when mission comes first, all sides can win.

IDEA 5: BROWN EGGS - DIVERSITY & TEAMWORK FOR INNOVATION

There’s no question that overcoming the challenges posed by VUCA conditions requires innovation – related to people, processes, tools or technologies. But how does innovation happen? The idea that successful innovation is based on a breakthrough idea by a brilliant individual is a myth.

The Hunger Games Approach

The Hunger Games is a 2012 American science fiction-adventure film directed by Gary Ross and based on Suzanne Collins’s 2008 novel of the same name. It was the first installment in *The Hunger Games* film series and was produced by Nina Jacobson and Jon Kilik, with a screenplay by Ross, Collins, and Billy Ray. The film stars Jennifer Lawrence, Josh Hutcherson, Liam Hemsworth, Woody Harrelson, Elizabeth Banks, Lenny Kravitz, Stanley Tucci, and Donald Sutherland. The story takes place in a dystopian post-apocalyptic future in the nation of Panem, where a boy and a girl from each of the nation's 12 Districts are chosen annually as "tributes" and forced to compete in The Hunger Games, an elaborate televised fight to the death. [20]

In the story, the games are designed to result in only one winner, with contestants expected to kill each other, a throwback to the gladiators of ancient Rome. Each one on his or her own; only one left standing. It represents extreme individualism and the ability of participating individuals to innovate. Of course, that’s not how it worked out (watch the movie or read the book); for this paper, The Hunger Games is mentioned as a contrast to the teamwork emphasized at DARPA.

The DARPA Approach

The Defense Advanced Research Projects Agency (DARPA) within the U.S. Department of Defense is famous in the United States for successfully sponsoring and managing extremely challenging, complex and difficult projects. DARPA comprises approximately 220 government employees in six technical offices, including nearly 100 program managers, who together oversee about 250 research and development programs. DARPA has developed and demonstrated a very successful model for sophisticated teamwork of individuals and organizations to achieve project results very quickly.

According to their website: “For sixty years, DARPA has held to a singular and enduring mission: to make pivotal investments in breakthrough technologies for national security... Working with innovators inside and outside of government, DARPA has repeatedly delivered on that mission, transforming revolutionary concepts and even seeming impossibilities into practical capabilities. The ultimate results have included not only game-changing military capabilities such as precision weapons and stealth technology, but also such icons of modern civilian society such as the Internet, automated voice recognition and language translation, and Global Positioning System receivers small enough to embed in myriad consumer devices. DARPA explicitly reaches for transformational change instead of incremental advances, but does not perform its engineering alchemy in isolation. It works within an innovation ecosystem that includes academic, corporate and governmental partners... For decades, this vibrant, interlocking ecosystem of diverse collaborators has proven to be a nurturing environment for the intense creativity that DARPA is designed to cultivate.” [21]

Innovation Takes Teamwork

According to Keith Ayers in a brilliant article published in 2008, “Innovation Takes Teamwork”. Innovation is not a brilliant idea; innovation is a process. A brilliant idea becomes an innovation when it is turned into a product or system that produces significantly improved results. There are four steps in the innovation process: creating, advancing, refining and executing... the talents required at each step of the process are very different. So different, in fact, that it is unlikely one individual will be strong on more than one of the four steps. This means that for innovation to succeed, it needs to be a team-based process... [22]

The key to creating a culture of innovation is for leaders to recognize the talents needed, identify those talents in their team members and encourage full team participation in working through the innovation process. [22]

Diversity is Important

“It should come as no surprise that innovation relies on the exchange of ideas that come from different sources...The most successful organizations stimulate innovation by building cultures that encourage it. On some scale, almost every organization carries the seeds of innovation in the diversity of perspectives represented by different disciplines. The challenge lies in getting these groups and individuals, many of whom speak different professional languages and even

have different values, to routinely share their ideas in the spirit of collaboration and innovation.” [23]

“The list of successful, youthful Silicon Valley entrepreneurs is long, and it might seem as though celebrated startup founders are getting younger all the time. However, it turns out that the idea that most successful startup founders are 20-something entrepreneurs is more of a persistent Silicon Valley myth. Yes, they exist, but statistically it's rare. According to a recent study by MIT, the average age of a successful company founder is much older than you might think. The study, which was conducted by MIT Sloan professor Pierre Azoulay and PhD student Daniel Kim, analyzed 2.7 million people who founded companies between 2007 and 2014. According to the results, the average age of entrepreneurs who started a company that went on to hire just one employee was 41.9, and the average age of founders who started a high-growth company is even older, at 45 years old. ‘Our primary finding is that successful entrepreneurs are middle-aged, not young,’ the study reads. ‘Founders in their early 20s have the lowest likelihood of successful exit or creating a 1 in 1,000 top growth firm.’” [24]

“Young stars dominate the technology headlines. But outside the Internet, research shows, innovators are actually getting older as complexity rises... great ideas by themselves don’t lead to breakthrough technologies or successful companies. Ideas are a dime a dozen. The value comes from translating ideas into inventions and inventions into successful ventures. To do this, you have to collaborate with others, obtain financing, understand markets, price products, develop distribution channels, and deal with rejection and failure. In other words, you need business and management skills and maturity. These come with education, experience, and age... Indeed, research revealed that the average and median age of the founders of *successful* U.S. technology businesses (with real revenues) is 39. We found twice as many successful founders over 50 as under 25, and twice as many over 60 as under 20. So everyone has a shot at success, but age provides a distinct advantage... The young have the outrageous ideas, but its older people who achieve business success. [25]

We live in an era of exponentially expanding technologies. Moore’s law describes the advances in computing power. Today there are other fields of science and engineering advancing just as rapidly, such as robotics, synthetic biology, medicine, and nanomaterials. Understanding these diverse technologies isn’t the domain of the young. Though college dropouts may know all about social media, it is very unlikely that they understand the intricacies of nanotechnology and artificial intelligence as well as their elders do. These are complex technologies that require not only a strong education but also the ability to work across domains and collaborate with intellectual peers in different disciplines of science and engineering... Given all the new complexities in the sciences, it is no surprise that innovators are actually getting older. [25]

Brilliant individuals are great, but it seems that teamwork and diversity are the real keys for successful innovation. Have you ever tried quail eggs (I did in Brazil a few years ago), brown eggs, free-range chicken eggs, duck eggs, goose eggs?

IDEA 6: MYSTERIOUS EGGS DILEMMA - STRATEGIC AGILITY

Agile project management and its extension to agility have taken the project management world by storm in the last 15 years. Stemming from the Agile Manifesto authored in 2001 by a group of 17 software developers, “agile” has gone from the preferred approach to software development projects, to a robust set of project management methodologies, to being embedded in more traditional project management guides and standards, including the latest edition of PMI’s PMBOK Guide. In 2017, PMI published several “Pulse of the Profession In-Depth Reports” on Agility. [26, 27]

According to PMI, more and more organizations are adapting agile PM, with a corresponding commitment to greater agility. There is some debate about this, as agile appears most effective when employed in smaller teams, in high technology environments and for innovation. And those conditions do not fit many projects. [28] One of the most interesting studies was by a team of Brazilian and American researchers whose results were published by PMI in 2014 in a paper titled “Can Agile Project Management Be Adopted by Industries Other than Software Development?” The researchers concluded that agile PM can be effective across multiple industries, but with some challenges, stating:

“The survey shows the presence of the following enablers for Agile PM implementation: (a) Project teams have over two years of experience; (b) Significant experience of the project manager; (c) Small project teams, up to 12 professionals; (d) Tendency to employ multi-disciplinary project teams; (e) Some companies already organize their innovative project teams in small, co-located groups; and (f) More than half of the companies have involved the customers/stakeholders in the project planning.

... the study identified potential barriers for agile PM implementation in ‘traditional industries’. The use of agile PM is challenged by the (a) need to assign full-time dedicated project teams; (b) difficulty of co-locating project team members; (c) difficulty in creating large multi-disciplinary teams; (d) challenge of involving customers with a high degree of influence in project development; and (e) the superficial involvement of suppliers.” [29]

The question I now pose is when and how should agile PM and/or agility be implemented? It seems that this question should now be included in all project planning and startup efforts, in order to capture the benefits of agility and to avoid some of the challenges.

Based on my experience working on a variety of projects, large and small, I believe that the larger the project, the more formal the project management processes and systems should be. This is for several reasons. Communication becomes much more complicated on large projects, which may employ many people, organizations, suppliers and stakeholders. Larger projects are more likely to have multiple contractual, regulatory and legal considerations, especially if any government organizations or public corporations are involved. There are far more project details, assumptions and risks. For these reasons and others, more

documentation is required. That said, I also think that Agility can help offset some of the challenges of VUCA conditions.

It seems to me that agile PM and/or greater agility is most appropriate when smaller teams can be organized, such as in smaller organizations, smaller projects, software and system development efforts, high technology environments, new product or service development, marketing, finance, law, education and similar conditions and application areas. Agile seems appropriate for innovation-related initiatives. These conditions actually exist in most industries. The project planning and startup phases of projects are also performed by relatively small teams where agility could also be highly useful. Interestingly, agility can be emphasized for the other topics of this paper: smaller projects, environmental analysis, stakeholder engagement, benefits engineering and innovation.

It seems that many new ideas and concepts are often connected to each other, like eggs of a species or birds of a feather.

SUMMARY

This paper has presented six concepts that may be useful for planning, organizing and managing projects in today's VUCA world. Reducing project size, even breaking large projects into multiple smaller ones, and migrating to program management were offered as ways to reduce complexity and increase success rates. A reverse environmental analysis was described as a process for assessing the impact of external VUCA-related risks and threats to a project. Increasing stakeholder intelligence by monitoring changes in stakeholder needs and attitudes, arising from rapid changes and VUCA influences, was recommended. Benefits engineering was introduced as an alternative for saving problem projects. The importance of diversity and teamwork to innovation was discussed, based on recent research. Strategic agility was suggested as a means for dealing with VUCA conditions, with attention to appropriate alignment with project conditions and requirements. Hopefully one or more of these ideas will be useful to readers. These 'fresh eggs' also deserve further research.

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About the Author



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David L. Pells is Managing Editor of the *PM World Journal* (www.pmworldjournal.net) and Managing Director of the PM World Library (www.pmworldlibrary.net). David is an internationally recognized leader in the field of professional project management with more than 40 years of experience on a variety of programs and projects, including engineering, construction, energy, defense, transit, technology and nuclear security, and project sizes ranging from thousands to billions of dollars. He occasionally acts as project management advisor for U.S. national laboratories and international programs, and currently serves as an independent advisor for a major U.S. national security program.

David Pells has been an active professional leader in the United States since the 1980s, serving on the board of directors of the Project Management Institute (PMI®) twice. He was founder and chair of the Global Project Management Forum (1995-2000), an annual meeting of leaders of PM associations from around the world. David was awarded PMI's Person of the Year award in 1998 and Fellow Award, PMI's highest honor, in 1999. He is also an Honorary Fellow of the Association for Project Management (APM) in the UK; Project Management Associates (PMA - India); Istituto Italiano di Project management (ISIPM); and Russian Project Management Association. In 2010 he was awarded an honorary membership by the Project Management Association of Nepal.

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To see other works by David Pells, visit his author showcase in the PM World Library at <http://pmworldlibrary.net/authors/david-l-pells/>