

Complexities, Size Matters, the Death of Simple Project Management, and... Welcome to the November edition of the PM World Journal

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Welcome to the November 2017 edition of the **PM World Journal** (PMWJ), the 64th uninterrupted monthly edition. This edition contains **26** original articles, papers and other works by **28** different authors in **16** different countries. News articles about projects and project management around the world are also included. Since the primary mission of this journal is to support the global sharing of knowledge, please share this month's edition with others in your network, wherever in the world they may be.

For the past year I have used this opportunity to discuss important trends or issues that I see as journal editor. This month, I want to discuss complexity, not in depth but from my perspective. Increasing complexity in programs and projects has been a major topic in project management for the last ten years. It has been the subject of many papers and conferences, and is now mentioned by the Project Management Institute (PMI®) in various standards and white papers. Nevertheless, I think there are still some doubters that complexity is anything new, perhaps especially in the project controls field where estimators, planners, schedulers and earned value management professionals have been working on complex programs and projects in aerospace, defense, energy and other industries for decades.

Complexity itself, however, is not a simple topic. It has many dimensions, changes and increases with the size and nature of a project, and has led to new perspectives on the nature of project management. This in turn is leading to some fundamental changes in the project management field.

Complexities – some dimensions and perspectives

Consider complexity related to a few major topics in PMI's PMBOK Guide and most other standards, guides and books on project management – just for single projects.

Scope management complexities – Project scope management has long been associated with complexity. Yes, technical complexity is real and has been an important aspect of scope management for decades, in some industries more than others. But today there are two trends magnifying the complexity: rapid rates of change in most technologies, and the increasing amount of information technology (IT) on nearly every project. Since IT is one of the most rapidly changing technologies in the world, these two trends alone can multiply complexity on many projects. Longer term planning is more difficult. And supply chains, contracts and organizational relationships can be affected, all in turn affecting scope. Complexity is also compounded by the digitalization of projects. Every element of a project, including tasks, materials, components, software, suppliers, resources, designs, responsibilities and everything else has a digital record. Every project of any size creates massive databases that must be managed; every project now includes IT, database administration and cybersecurity both as additional scope and resource requirements. And these digital records and databases must be planned, administered and managed, either by specialized experts or by project team members. It can all get complicated in a hurry.

Contracting and procurement complexities – Most projects involve contracts, and procurement of materials, equipment, services or other resources. Large organizations have procurement departments to deal with contracts, procurement processes and supplier relations. But every project manager is responsible for identifying and planning the contracts and purchases needed for her or his project. How many of you prepare your own contract documents, or read every line in those prepared by your contacts department. Now consider the entire supply chain for a project, the contracts and legal issues involved, and the potential impact on your project if issues arise. And then consider international supply chains, different laws and regulations in different countries or jurisdictions, translation issues, disputes and claims by sub-contractors or suppliers (anywhere in the supply chain). What could possibly go wrong?

Leadership, human factors complexities – One of the primary topics in the PM field for decades, leadership of teams may be the most important aspect of successful project or programme management. But combine leadership with psychology, emotional intelligence, cultural intelligence, virtual teams, multiple generations, multiple primary languages, multiple work schedules and time zones, multiple organizations and organizational relationships, multiple personal and group communication issues, etc. And how do such complexities need to be addressed in different locations and cultures, on cross-border projects, with truly complex mixtures of teams and human resources. You get the picture.

Stakeholder complexities – It seems difficult enough sometimes dealing with a single stakeholder. Today, projects stakeholders are generally defined as any person or organization that can have a negative or positive impact on the progress or outcome of a project. Typical project stakeholders include senior management, customers (internal or external), employees, contractors and suppliers, regulators and often the general public or external groups. Effective stakeholder engagement generally requires a project manager to identify key stakeholders, determine (and understand) both their interests and potential impact on the projects, and plan an appropriate engagement strategy for each. And engagement means more than one-way communication; it can include meetings, discussions, media relations, legal and political considerations, and often executive actions. For large (or even many small) public projects, and certainly any involving public services, stakeholder engagement can be complicated, time consuming and important. For many project teams, this process is neither easy nor much fun.

Logic, interfaces, schedule complexities – We are all familiar with critical path planning, project logic, activity networks and resultant project schedules. Complexities and unintended consequences can arise from many aspects of planning and scheduling, including the experience, knowledge and capabilities of project planners, capabilities and capacities of software systems and tools, planning assumptions, information available, external factors and other issues. Perhaps the biggest issue related to schedule complexity (and risk) however is related to coupling in project networks and potential perturbations. Bob Prieto addresses these complexities and risks in detail in his latest paper [1]. He describes nine categories of couplings: control, co-dependent, assumption, constraint, external, stakeholder, message, temporal and uncoupling. According to Prieto, “The greater the coupling between activities, the greater the complexity and the likelihood of propagating disruptions...” [1] These are significant complexity measures (issues) that are almost entirely overlooked in most projects, in my opinion. The underlying complexities and risks associated with second and third order coupling is often completely unknown.

Complexities in risk management – Needless to say, many obvious risks jump out of the above paragraphs. Wherever there are complexities, there are uncertainties and risks. Some risks directly stem from the complexities, for example, supply chain and procurement risks associated with critical equipment or other resources. Other risks arise from the complexities associated with the people and relationships on a project, whether on the project team, among stakeholders or simply the experience, knowledge and capabilities of the project manager. Finally, there are serious performance risks related to the interconnectedness of the scope, modularity, schedule, supply chain, human factors and other complexities. All of this seems obvious, but how on earth does one deal with all these risks? It does not seem so simple.

The above paragraphs discuss just a few topics. Other writers have described many other sources of complexity in programs and projects, often organizing complexities into categories. Alan Stretton has provided a great assessment of sources and categories of complexity identified in the professional literature by other researchers and experts in his paper published in the PMWJ earlier this year. [2] Some of the categories of complexities and sources of complexity discussed in Alan's paper include environmental, political, strategic, organizational, technical, temporal, structural, context, people, ambiguity, socio-political, emergent, institutional, individual, regulatory, financial, project management, project team, client/customer, uncertainty, pace and several others. Dozens of types of risks are identified. [2] Alan followed that paper with a discussion of complicated vs complex in his March paper on those topics. [3]

Multiply the complexities for programs and portfolios

The complexities mentioned above may not be present or so overwhelming on many (smaller) projects. Even for those with few complexities, however, you might appreciate what happens to the number and potential impact of those issues when dealing with multiple projects, programs of projects, or portfolios of programs and projects. For programs, Prieto shows clearly the impact of complexities associated with both known and unknown couplings in project networks, and when projects are coupled (logically connected) in programs. [1] Many other authors have discussed this aspect of complexity, as described by Stretton. [2,3] For programs and portfolios, managing complexities does not get easier.

The size of a program or project drastically changes complexity

I have long held the belief that as programs and projects increase in size, the formality of the project management must also increase. That is, for larger projects, project management should be done "by the book" – according to formal textbooks and standards. Perhaps that is still generally true, but complexity changes things considerably. And the more complexity, the worse it gets. To summarize his research, Stretton identifies 80 sources of complexity in 10 categories. [2]

According to Prieto in 2015, "Large complex projects differ from those that comprise the traditional domain of projects as defined and served by the Project Management Institute and its Project Management Body of Knowledge (PMBOK). Remember its admonishment that PMBOK provides a management framework for most projects, most of the time. Large complex projects appear to live outside these boundary conditions." [4] As Prieto pointed out in 2015 and is still the case, most mega projects are considered failures according to traditional success measures. Many authors, researchers and organizations are trying to answer the question, why are so many projects still failing? Perhaps the answer is that traditional project management practices are no longer enough in a world of increasing complexity.

Is simple project management dead?

Perhaps if your project is a micro-project, one you can do yourself in a few weeks or months, with a clear scope of work and all resources readily available, it can be planned and managed quickly and easily with simple PM techniques and tools. But if a project involves any information technology at all (perhaps even ANY technology), more than three people, lasts longer than three months, requires resources from two or more suppliers, involves more than one stakeholder, and is for a commercial purpose, complexities multiply rapidly.

Some authors are offering suggestions. In his latest paper, Prieto says more focus is needed on stronger foundations, understanding flows and couplings (not just activities), and robust stakeholder engagement. [1] He outlines more solutions in his 2015 paper. [4] Alan Stretton quotes Terry Cooke-Davies (2016): "Traditional project management tools such as the work breakdown structure (WBS) are excellent for complicated projects but, on their own, are inadequate for complexity," and Stephen Hayes (2016): "When dealing with complex programmes, the reality is that, while they remain important, traditional project management methods and tools are not sufficient." Stretton concludes, "There appears to be widespread agreement with the position of Prieto and Hayes that traditional project management standards, guidelines, and tools and techniques, are quite simply inadequate for complex programs/projects, particularly large ones." [3]

The importance of project context, uncertainties, complexity and risk seems to be increasing. More research and new models for managing complex projects and programs are needed, along with more agile thinking, responsiveness and decision making. I believe that the demand for project management education and training will continue to increase in coming years. Continuous learning is becoming even more important in the project management field. Simple straightforward project management as a life skill, even as a professional philosophy, is positive and important. But simple project management as a professional approach might really be just about DEAD! What do you think?

Now - This month in the Journal

This edition of the PMWJ is again slim with only 26 original works when our normal volume is more than 30. Surprisingly, we had no submittals of advisory or commentary articles. Usually someone has something to say or share. I hope some of you will contribute some good advice or an opinion piece for the December edition.

Nevertheless, this month's edition again includes some major works and important ones. As suggested above, don't miss the new featured paper by Bob Prieto this month on "*Complexity in Large Engineering and Construction Programs*." Alan Stretton has also contributed another important paper on the strategic planning process and project origins in his paper titled "*Deliberate and emergent strategies and origins of projects*." Two good papers from Indonesia are included, by Trian Hendro Asmoro and Ardiansyah, both related to cost estimating for major projects in the Indonesian oil and gas industry. Stephen Paterson in Thailand addresses an issue in the same industry in his paper "*Incentivizing Early Completion of Major Oil and Gas Projects*." Dr O. Chima Okereke has contributed another paper aimed at officials in his home country of Nigeria in "*Sustainability is a Critical Criterion for Success in the Current Nigerian Railways Projects*". Professors Antonio Nieto Rodgriguez and Marco Sampietro have authored an important research-based paper titled "*Why Business Schools keep Neglecting Project Management Competency*." Featured papers are serious works that contribute to the global PM body of knowledge, so please give them a look and a possible reading.

Three series articles are included this month. Darren Dalcher in UK has facilitated another interesting 'Advances in Project Management' article, this month by Routledge authors Ron Meyer and Ronald Meijers. Read Darren's interesting introductory article titled "*The leaders we deserve?*" Then read the article titled "*Developing Leadership Agility: Different Projects, Different Approaches.*" Meyer and Meijers are authors of the book *Leadership Agility: Developing Your Repertoire of Leadership Styles*, recently published by Routledge.

Oliver Lehmann in Germany has authored the fourth article in his series on "Project Business Management", this month's instalment titled "*Leading Project Teams across Corporate Borders.*" Oliver is author of the book "*Situational Project Management: The Dynamics of Success and Failure*", published by Auerbach/Taylor and Francis in 2016.

We are happy to include three Student Papers this month. Emmanuel Abah, graduate student at the Federal University of Technology, Minna in Nigeria is the author of "*Evaluation of Nigerian Construction Industry Preparedness to adopt Supply Chain Management.*" Danlie Jiang, graduate student at SKEMA Business School in Lille, France, is the author of "*Benchmarking the Final Payment Terms and Conditions of FIDIC, AIA, EJCDC and Consensus Contract Documents.*" Racha Temaoui, graduate student at SKEMA Business School in Paris, is the author of "*Is your privacy in danger when using social media? An analysis of the contractual terms and conditions using Multi-Attribute Decision making.*" We congratulate these students on their good works and publication in the journal.

Two Second Edition papers are included that were recently presented at the 11th [Annual UT Dallas Project Management Symposium](#) in August. The two topics addressed are relevant to many projects and organizations today: *Considerations for Information Security in Projects*, by Neelov Kar; and *Imperatives for Successful Collaboration in Virtual Teams*, by Anil Wadhawa. Both author live in Texas.

Informative reports are again included this month from Cecilia Boggi in Argentina, Alfonso Bucero in Spain, Miles Shepherd in UK and Jouko Vaskimo in Finland. In addition to his report about project management organizations and major projects in Finland, Jouko also covers last week's 2017 PMAF conference in Helsinki, complete with some great photos of speakers. Six book reviews are also included this month. All of the articles, papers, reports and reviews included in the PMWJ represent significant work by the authors, and some contain significant new knowledge. Please read those of interest to you, then share them with others. Sharing knowledge multiplies the impact of good ideas, and some ideas (like projects) can change the world.

The rest of this article is our monthly boilerplate. Please read if this is your first time with the PMWJ or read again if you are a regular; it's important for sustaining this publication.

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Good luck with your projects!

References

1. Prieto, Bob (2017); Complexity in Large Engineering and Construction Programs; *PM World Journal*, November 2017; available at <http://pmworldjournal.net/article/complexity-large-engineering-construction-programs/>
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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 35 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 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); and Russian Project Management Association. He was made an honorary member of the Project Management Association of Nepal in 2010. From June 2006 until March 2012, he was the managing editor of the *PM World Today* eJournal. He occasionally provides high level advisory services for major programs, global organizations and the U.S. federal government. David has a BA in Business Administration from the University of Washington and a Master's degree in business from Idaho State University in the USA. He has published widely and spoken at conferences and events worldwide.

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