

## **A Devil's Advocate: Agile from a distance, the big waterfall world, and Welcome to the April 2017 PMWJ**

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Welcome to the April 2017 edition of the **PM World Journal** (PMWJ). This 57<sup>th</sup> edition continues to reflect the international nature of this publication; 20 original articles, papers and other works by 23 different authors in 12 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.

Since last August, on the recommendation of several international advisors, I have used this opportunity to mention important trends or issues that I see as journal editor. This month I want to discuss agile project management, one of the hottest topics in the project management professional field, and especially within PMI and its large segment of membership in information systems, software and technology industries.

Last month in this space I discussed the growing relevance of categorization, context and typology of projects – that is, the importance of fully understanding one's project in order to apply the most appropriate project management principles, processes and expertise. In my opinion, nowhere is that context more relevant than in the application of agile approaches.

It seems to me that agile is often presented as a general alternative to more traditional (waterfall) project life cycle-based processes. I have recently also been informed that "agile" will permeate many sections of the next edition of PMI's Guide to the Project Management Body of Knowledge (PMBOK® Guide). If this is true, the implications and potential impact are significant. But is this a good idea? Are the interest in and applicability of Agile as widespread as it is made out to be? What has been heard on the topic from those in organizations and industries where traditional "waterfall" project life cycles and project management approaches, methods and processes are widely used?

### **A Devil's Advocate**

According to Wikipedia, the **Advocatus Diaboli** (Latin for **Devil's Advocate**) was formerly an official position within the Catholic Church: one who "argued against the canonization (sainthood) of a candidate in order to uncover any character flaws or misrepresentation of the evidence favoring canonization". In common parlance, the term *devil's advocate* describes someone who, given a certain point of view, takes a position he or she does not necessarily agree with (or simply an alternative position from the accepted norm), for the sake of debate or to explore the thought further. [1]

I believe that "devil's advocate" is one of the most important concepts in program risk management and governance. It may often be the only way to protect against "groupthink". Again referring to Wikipedia: **Groupthink** is a psychological phenomenon that occurs within a group of people in which the desire for harmony or conformity in the group results in an irrational or dysfunctional decision-making outcome. Group members try to minimize conflict and reach a consensus decision without critical evaluation of alternative viewpoints by

actively suppressing dissenting viewpoints, and by isolating themselves from outside influences. [2]

I learned the value of these concepts during my second term on the PMI board of directors in 2002 when I saw fellow board members sometimes voting with the majority without fully debating an issue or decision. I found myself playing devil's advocate simply to raise questions and force more discussion, when I thought a pending decision might be important. At the time, there was even a policy that PMI board members must "speak with one voice", which I found both disheartening and even somewhat frightening. Rather than empower leaders, there was a tendency to silence dissent (or criticism).

Now playing devil's advocate again, are the PM professional world, academic researchers, organizations and many in the field of project management getting carried away with the "Agile" concept? Is it as widely applicable or used as implied in the many articles and papers on the topic? How important is the move towards Agile, how many executives care and in how many organizations and industries does it really apply? Why are those who do not use Agile so silent on this topic?

### **Agile from a Distance**

One of the best papers that I've found on the subject of Agile and its potential widespread applicability is "Can agile project management be adopted by industries other than software development" by Salum, Amaral, da Silva and Almeida. [3] The paper presents a good introduction to Agile including its history and main practices, including SCRUM and iterative planning, product development, customer feedback and delivery activities. The authors conducted a major literature review, research among companies in Brazil and analysis, with the underlying question being "Can these practices, techniques and tools be adapted to other types of products and project environments, whose characteristics resemble software projects that are innovative and have a dynamic development environment experiencing constant change?" [3]

The authors also research the existence of agile "enablers" in their research, meaning environmental conditions that could lead to the adaptation of Agile methods. Some of those enablers were the existence of Agile-like project conditions: small product development teams, teams 100% dedicated to a project; co-location of project team members; active involvement of customers/stakeholders; team self-management; and less formal project management processes.

Now, based on what I know about Agile project management, I pose some questions based on the following, using "distance" as an analogous term. A short paragraph each should suffice.

**Industry – project-based or product-based distance** – It is my understanding that Agile concepts are used almost exclusively for new product development, primarily for the development of software-based products or systems. It seems to also be migrating to use for innovation in other industries. How applicable is it, or can it be, for projects where most products are procured? For example, how can Agile be applied on construction projects? For any project involving physical facilities, products or systems, especially any with safety issues, it would seem that waterfall planning, design and implementation models must be required. For a massive refinery, oil and gas well, renewable energy, transportation system, hospital or medical device, automobile, aircraft or many other projects, iterative Agile methods would not seem practical or would be useful only in limited tasks. Am I wrong?

**Size of a project – distance from the software elements of a project** - Based on my experience, I believe that the larger the project, the more formal the project management processes and systems should be. Also, for larger projects, documentation becomes more important. Both formality and documentation seem anathema to Agile. If product or system development is included in a project, its position and importance may well decrease inversely with the size, complexity and nature of a project. For example, I worked for several years on multi-billion dollar light rail development programs (in Dallas and Seattle) which included software and system development sub-projects. Internal software development primarily had to do with agency information systems development; transportation program system development was primarily related to track and train controls, signaling, fare administration, communications and similar system-wide capabilities, and technologies internal to engines, train cars, buses and facilities. The internal projects might be candidates for Agile methods; the system technologies were all procured so any agile methods would have been used by suppliers. The projects where Agile could have been used were a small fraction of the total program budgets.

Certainly environmental conditions for transportation projects are dynamic, but how useful can Agile methods be for similar large programs and projects? It seems to me that having good WBS, cost estimating, scheduling, procurement, risk management, quality, safety and reporting processes are much more important. Perhaps it is a question of when and how innovation might be needed.

**Executive/Stakeholder distance from a Project** – although it seems clear that for product-based organizations, innovation and new product development projects are critical and (should) support strategies, in all likelihood there are several layers of management between small projects and top executives. In my experience, the further from a project, the less knowledge there is about the project management issues, processes and tools used on any given project. How many company executives know about, understand or care about Agile (or any other type of) project management? In IT departments, knowledge may exist at the very top, at the CIO level. But it is also likely that many IT projects involve procurement, installation and operation of software or technology solutions from vendors, where any Agile applications are invisible (on the supplier's side). For project-based organizations, where knowledge of project management should be much more widespread, there may also be cultural, educational or political reasons why managers may resist Agile (not enough plans to approve, not enough financial controls, too much freedom, too much risk, etc.). How much knowledge of Agile will exist among stakeholders outside of the project organization?

**Geography – real and practical distances** – we publish articles and papers from around the world in the PMWJ. Over the last five years, I don't believe we have published anything on Agile from Africa or Latin America, some from India but nowhere else in Asia. Nearly everything related to Agile has come from authors in North America or Europe. Is Agile only applicable or of interest to projects and organizations in fully-developed Western economies? According to CompTIA, an IT professional association, revenues for the global IT market was set to surpass \$3.8 trillion in 2016; of the total global IT industry, 31% is in North America, 29% in Asia, 24% in Europe, 9% in South America and 7% in all of Africa. [4] Other global IT market data reflects the same distribution across continents.

While there is certainly some software development underway in Latin America, for the Spanish and Brazilian Portuguese markets, it is miniscule compared with North America and Europe. Does this mean low use of Agile in either Africa or Latin America? Certainly technology product development will grow in those places, but how soon? Meanwhile, where is the knowledge transfer related to waterfall (traditional) project management?

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## **The big waterfall world of projects and project management**

Now let's step back and look at industrial output around the world, and where the projects are. Here are a few industries and some comments.

**Agriculture & Food Production** – According to a 2007 article on Forbes.com, Euromonitor International reckons the packaged food industry—including everything from pasta and cooking oil to canned and frozen foods—is worth almost \$1.6 trillion. Meanwhile, the World Bank puts the food and agriculture sector at 10% of global gross domestic product, which, taking the bank's 2006 estimate of about \$48 trillion, would make the sector worth about \$4.8 trillion. [5] A majority of farms around the world are small operations, as are most restaurants. In between are various food packaging, distribution and service organizations, including retail shops and mega-stores. Even small farms have projects. My guess is that a very small fraction of projects in this sector use Agile. Am I wrong?

**Construction** – Global Construction 203 forecasts the volume of construction output will grow by 85% to \$15.5 trillion worldwide by 2030, with three countries – China, USA and India – leading the way and accounting for 57% of all global growth. [6] Fueled by urbanization, globalization, infrastructure renewal and the burgeoning needs of developing “megacities,” construction in emerging markets is expected to double within a decade and will become a \$6.7 trillion business by 2020. [7] How many projects in the construction sector use Agile methods? How many in emerging economies?

**Government Expenditures** – According to a list posted on Wikipedia, national expenditure budgets for countries totaled approximately \$20.8 trillion in 2016. Expenditures for the USA were estimated at \$3.9 trillion, for China at \$2.9 trillion, Japan at \$1.9 trillion, Germany at \$1.5 trillion, France at 1.4 trillion and the UK at \$1.1 trillion. [8] Let's just say 20% of these amounts are spent on programs and projects; that is \$4.1 trillion worldwide. Most governments procure products and services, so most government programs and projects are actually performed by contractors. How many government programs and projects involve software or product development, that might use Agile methods?

**Health and Medical** – According to a report on ReportLinker.com, Global healthcare expenditure was \$7.6 trillion in 2013 and was expected to grow to \$9.5 trillion by 2018. Healthcare includes all the services, products, equipment and facilities involved in the prevention, treatment and management of illness and the preservation of mental and physical well-being. The whole industry cover various sectors such as alternative medicine, medical facilities, medical devices, medical services, organ supplies, and veterinarian services. [9] Certainly software, systems and technology permeate medical services, but to what extent? I think most medical devices, facilities, processes and procedures that impact patient health or safety must be subject to rather strict planning, design and quality control; those projects would seem to require a waterfall lifecycle. Internal software developed for individual systems and devices, of course, could be developed by small teams using Agile, but what percentage of projects in the healthcare and medical fields would that entail?

**Information Technology (IT)** – According to the CompTIA report cited above, the global market in 2016 was expected to be \$3.8 trillion. North America was to account for 31%, or approximately \$1.2 trillion. In the USA, breakdown by category is 24% for IT hardware, 25% for IT services, 21% for software and 30% for telecom services. [4] Which of these categories includes Agile projects? The same report indicates that of the entire US IT industry, 82.6% of firms are “micro-size” with 1-9 employees, 15.1% are small IT establishments (10-99 employees), 2.0% are medium-sized (100-499 employees), and 0.3% are large IT organizations (500+ employees). 45% of IT employment is in micro or small-size

companies, although a larger percentage is employed by larger organizations in software development (66.1%). In which categories and organizations are the projects? Which of those involve hardware, services or operations, and which involve new products or systems?

**Infrastructure** – According to a PWC report in 2014, infrastructure spending worldwide will grow from \$4 trillion per year in 2012 to more than \$9 trillion per year by 2025. Overall, close to \$78 trillion is expected to be spent globally between 2014 and 2025. [10] How many organizations involved with infrastructure projects will use Agile methods?

**Mining** – The global mining industry is forecast to witness excellent growth over the next five years. The industry is estimated to reach US \$1,783 billion by 2017, with a CAGR of 7.4% from 2012 to 2017. The highly fragmented industry comprises the mining of iron ore, coal, precious metals, diamonds, bauxite, manganese, and base metals. [11]

**Petroleum** – According to Wikipedia, the petroleum industry includes the global processes of exploration, extraction, refining, transporting (often by oil tankers and pipelines), and marketing of petroleum products. The largest volume products of the industry are fuel oil and gasoline (petrol). Petroleum (oil) is also the raw material for many chemical products, including pharmaceuticals, solvents, fertilizers, pesticides, synthetic fragrances, and plastics. [12] This is a multi-trillion \$ industry. I don't have raw data but know there are thousands of projects in this industry. What percentage use Agile?

These are just a few industries where traditional waterfall project lifecycles and management processes would seem to remain appropriate in most parts of the world. Certainly there is overlap in the numbers mentioned, but I think the message is clear. If these and other industries where traditional projects and waterfall-based project management represent such an enormous portion of the global economy, why is Agile the hottest topic in project management? Yes, technology and software are critical to business and modern economies. And yes, technology companies spend a lot of money on projects. But...

Maybe I'm completely off base with this article. Maybe it's all about innovation, competition and leadership. If you work for a product-based company with a need to innovate, develop and introduce new software or technology quickly, then of course you should use Agile and any other useful project management tools available. But for project management researchers, professional bodies and service providers, perhaps more focus should be placed on organizations and leaders struggling with projects in the waterfall world. That is still the biggest need, in my opinion.

One last point: According to PMI's 2017 Pulse of the Profession, "Agile is a topic of growing importance in project management, with 71 percent of organizations now reporting they use agile approaches to their projects sometimes or more frequently than in the past. In fact, over the past 12 months, one in five projects has used agile approaches, whereas another one in five has used hybrid or blended approaches. And, perhaps as significant, is the percentage of projects that used something other than agile, hybrid, or plan-driven approaches, which could be a further blend or customization of other approaches (23%)." [13] Based on the paragraphs above and my estimate of the number of traditional projects around the world, I think that PMI's research results are highly skewed in favor of product-based and technology organizations in Europe and North America, and some conclusions in their report are most likely inaccurate.



## Now - This month in the Journal

Now for this month's journal which again contains some interesting and outstanding works. Two featured papers are included this month, both on topics relevant to stakeholders in Africa. The paper by Dr. Mario Kossmann and Ian Brooks shows us how a charity project can be successfully implemented. Dr. Okereke discusses how PPM expertise can help alleviate the energy shortage on the continent. Both papers are well worth reading.

Four series articles are included. Darren Dalcher in UK has facilitated another excellent 'Advances in Project Management' article by Routledge author Fred Voskoboynikov in San Francisco. Darren's fascinating introductory article is titled "What has Taylor ever done for us? Scientific and humane management reconsidered." Fred's article then delves into "the psychological aspect of management." Rasoul Abdolmodhammadi in Malaysia, representing the David Hillson's Risk Doctor Partnership, has authored "Democratic Risk Management" in which he outlines how to effectively decentralize project risk management. A third article in the series on *Managing and Working in Project Society* is included this month, authored by Mats Ragnarsson and Prof Rolf Lundin in Sweden. Their article includes an interesting story about a "digitization project" that has changed education in Sweden.

Two advisory articles are included, by American Ralph Moore in Wyoming and Raju Rao in India. The article by Alan Stretton started out as a letter to the editor but ended up a commentary article, on the topic of guidelines for non-traditional projects. Alan's article was stimulated by my March editorial on the growing importance of categories, context and typology. It's always nice to learn that someone read my editorial.

We are happy to include another unique creative work this month, "The Devil's Dictionary of Project Management Terms" by Kik Piney in France. This is very funny! We tried to publish on April 1<sup>st</sup> but did not make it. Funny nonetheless! Thank you, Kik.

Second Edition papers by two of our global advisors who are also pioneers in the PM professional world, Russ Archibald and Bob Youker. Russ' paper was co-authored by the late Jean Pierre Debourse, former dean of the ESC Lille graduate school in France and originally presented at the 3<sup>rd</sup> International PMI Mexico PMTOUR 2011 Project Management Conference in June 2011. Titled "Proposals to Accelerate Advancement from Project Manager to Senior Executive," it's a paper many of us want to have read by bosses and investors. Bob Youker's paper titled "The Difference between Different Types of Projects" was originally presented at the IPMA world congress in Florence, Italy in 1992. My March editorial also motivated Bob to send this paper in; it's still relevant these 25 years later.

Interesting regional reports are again included this month from Alfonso Bucero in Spain, Jouko Vaskimo in Finland and Miles Shepherd in the UK. Miles' report includes discussion of the award of a Royal Charter to APM in the UK, one of the most important events in the project management professional world this decade, perhaps this century so far.

An interesting good book review is also included. The book *The Performance of Projects and Project Management: Sustainable Delivery in Project Intensive Companies*, is edited by Laurence Lecouvre who is graduate programs director at SKEMA in France, and includes chapters by leading European researchers. You will recognize many of the names; this is an important book and the review by Dr. Catherine Cockrell is excellent.

All of the articles, papers, reports and reviews this month contribute to the global project management body of 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 subscriber; it's important for sustaining this publication.

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## **Thanks to Authors and Sponsors**

I want to thank the authors who contributed to this edition of the PMWJ. Most have included an email address at the end of her or his author profile. If you find an article or paper useful or interesting, let the author know. Better yet, ask questions, start a discussion, share information and knowledge. We also want to thank our advisors, correspondents and contributing editors around the world. These teams include leaders from academic and professional organizations in around 50 countries.

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## Share it forward

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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](http://www.pmworldjournal.net)) and Managing Director of the PM World Library ([www.pmworldlibrary.net](http://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. Since 2010 he is an honorary member of the Project Management Association of Nepal. From June 2006 until March 2012, he was the managing editor of *PM World Today*. 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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