

Program Management Is Anything but Simple

Interview with Robert Prieto^{1,2}

CEO, Strategic Program Management, LLC
Former Chair, Parsons Brinkerhoff
Former Senior VP, Fluor



Interviewed by Yu Yanjuan
Journalist, Project Management Review: PMR (China)

Introduction to the interviewee

Robert Prieto is now Chairman & CEO of Strategic Program Management LLC. As David Pells has said, he is one of the world's preeminent authorities on the management of mega programs, large projects, construction management and the global construction industry.

Majoring in Science, he hasn't received academic training in project management, which is an edge in his eyes as he is in a better position to challenge traditional project management to embrace changes and trends.

As the inventor of 4 issued patents, he is a scientist working in the field of project management. As a distinguished practitioner, he has participated in numerous large and complex projects. He has taken up many industry roles such as Presidential Appointee of APEC Business Advisory Council and World Economic Forum – Engineering & Construction Governor.

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For his work, he has been recognized by a number of awards such as Fellow of the Construction Management Association of America; CMAA Chairman's Award.

Interview

Part 1: Program Management Requires Broader Strategic Focus and Tighter Integration

Q1. Please use several words / phrases to describe Program Management in your eyes.

Robert Prieto (Prieto): In its simplest form, an organization's strategic business objectives and desired outcomes are addressed through development of a comprehensive strategic plan. Program management is about translating that strategic plan into a defined set of discrete but interrelated activities (projects) and then managing the delivery and successful completion of these activities in a holistic way.

Program management is the process of providing execution certainty to meet the strategic business objectives of an owner.

Program management requires a broader, more strategic focus than project management and a tighter integration across all elements of the execution process, including:

- Organizational enablement around clearly articulated strategic business objectives, that have been agreed to and will be continuously communicated
- Program definition focused on needs vs. wants
- Stakeholder outreach and engagement
- Establishment of programmatic and technical requirements
- Development of top-level execution strategies, schedules, and budgets reflecting the range of risks that the program could face
- Risk planning and approach to risk management, including appropriate modeling of risks
- Acquisition and contracting strategy, assessing risks, costs, schedules and logistics requirements, employing AI enabled supply chain tools where appropriate
- Execution planning, with a heightened emphasis on the "flows" not just the activities
- Implementation of an integrated management and support toolset, including select use of AI enabled insights
- Program governance and oversight
- Management and integration of defined projects, carefully understanding scope gaps not in the program's purview and white space risks

- Assessment of cost, schedule, quality, and health, safety, and environmental (HSE) metrics and forecast trends and key assumptions
- Management and allocation of contingencies and ongoing risk assessment
- Ongoing alignment and communication

But program management is anything but simple.

While many of the processes that one may employ resemble the practices of good project management, the focus is very different. Nowhere are these differences more clearly seen than in how the owner's role shifts under program management delivery.

Q2. It's common that people mistakenly understand programs as large projects. How will you describe the distinction between programs and projects?

Prieto: There are many possible ways to describe the differences between programs and projects but let me take a simple approach.

Program management is the definition and integration of a number of projects to cause a broader, strategic business outcome to be achieved. It is not necessary for any or all of these projects to be large in their own right.

Program management is not just the sum of all project management activities but also includes management of the risks, opportunities, and activities that occur "in the white space" between projects. It also requires a heightened focus on the flows inside the project as well as those impacting the project from the outside.

While an individual project will employ a specific project delivery approach (design-bid-build, design-build, DBOM, etc.), program management may combine different delivery approaches across multiple projects to best achieve the desired strategic business objectives.

Part 2: Adequate Management Oversight Is Essential

Q3. In program management, how should program managers get the support of top management such as C-suite?

Prieto: Program management assignments by their very nature involve the management of large complex multi-project endeavors, often involving billions of dollars of investment. They will both directly affect the program manager's organization financially and carry even larger reputational risks to the company.

Effective management reviews are essential and should include not only the project manager's boss and oversight elements at that level but also engagement, often C-suite engagement, from at least the next higher level.

When inadequate management oversight by the right people, with the right skills, asking the hard questions does not happen, the C-suite will become engaged but high performing organizations drive this engagement before a problem exists.

Part 3: Executive Sponsor Is a Governance role

Q4. You've worked as Executive Sponsor for many programs. What are your feelings about this role? Would you like to offer some tips for new Executive Sponsors of programs?

Prieto: I see this as a key role in effective management of both programs and projects. It is a role which often does not give adequate consideration to the skill set required and how this role relates to that of the program manager.

A key piece of advice would be to remember that this is a governance role and not a management role. The executive sponsor has responsibilities to the program and the program manager but importantly has roles and obligations with respect to the client and other key stakeholders. The executive sponsor provides leadership on culture and values; brings a broader organizational risk perspective; provides regular challenge seeking out opportunities as well as mobilizing resources to support challenges beyond the program team's capabilities or purview; provides real time assessment of team and its management's performance; and sponsors regular program review meetings, mobilizing participation from other elements of the organization.

The executive sponsor also engages with the client's executive level ensuring that a climate for success exists.

My advice to a new executive sponsor is simple: don't be a seagull, flying in periodically and making a mess. Don't confuse leadership with management but do know enough about the nuts and bolts of project performance to ask the key second and third order questions.

Don't hesitate to ask the hard questions, to challenge assumptions or call out poor performance. The program will not be successful if issues are left to fester.

Part 4: Qualities of Program Teams

Q5. You've written about the topic of resilience. What do you think of the importance of resilience in Program Management?

Prieto: Program management is typically employed in the delivery of large scale critical assets. Their desired outcomes typically speak to the lifecycle of the facility. By their nature these critical assets require a degree of resilience to be designed into the facility. Ensuring that the basis of design does not merely address the technical performance standards is within the program manager's scope. He must ensure that there exists an expanded basis of design that encompasses both a construction and operating & maintenance basis of design. The addition of a construction basis of design improves construction productivity and efficiency. The facility is designed to be efficiently built. In the consideration of a construction basis of design, we will see designers reducing the number of different types of components, standardizing on a smaller number. This reduces the number of spares required, increasing the likelihood they will be available if needed.

The consideration of an operations & maintenance basis of design will result in features which enhance operating and maintenance, better supporting recovery of the facility after an event that had affected it.

Resiliency can be designed and built in and the program manager is in one of the best positions to achieve it without adding to either the first cost or lifecycle cost of the facility.

Q6. Do you believe Technology Quotient (TQ) is important in Program Management? Why or why not?

Prieto: I don't believe that the Technology Quotient of any individual is important to program management. Having said that I do believe that the overall capability of the program management team is important in program success. I will take a high performing team over a team of high TQ individuals.

There are many things to look for in such high performing teams. I guess at some level TQ is one element but I will also be looking for individuals with high emotional quotients (EQ) since after all the principle resource we deploy in the delivery of programs are people. Another aspect of a successful team is its FARness, or flexibility, adaptability and responsiveness, the very ingredients of resilience. I will look for team members who bring different perspectives, actively challenge and can handle challenge. Finally, there must be thoughtful and decisive leadership who understands the value of time in program management.

Q7. What do you believe are the top qualities of a program manager?

Prieto: Recognizing that program management roles often undertake activities more traditionally performed by the owner, a desirable program manager will have proven themselves in working with the highest levels of owner organizations, understanding their strategic business

objectives, developing an agreed to strategy and approach to deliver the required outcomes, and putting in place a high-performance team with successful execution.

They will have a broad perspective; understand and to a degree adopt the owner's perspective; and bring and communicate a clear program execution vision, laser focused on execution in a complex, challenging and changing environment, and the personal and team drive that success will require. They will promote trust and transparency.

Part 5: Common Causes for Program Failure

Q8. You've participated in so many large complex programs. Based on your observation, what are the common causes for program failure?

Prieto: I will give you a more extensive list in a second but I want to call out the very first of these risks since on every large underperforming program I have personally looked at it was present and in fact was the critical issue the program was facing. This risk is straight forward, the owner's Strategic Business Objectives have not been clearly articulated, agreed to and continuously communicated. Each of these three aspects is important.

Looking more broadly, here are the top reasons programs fail.

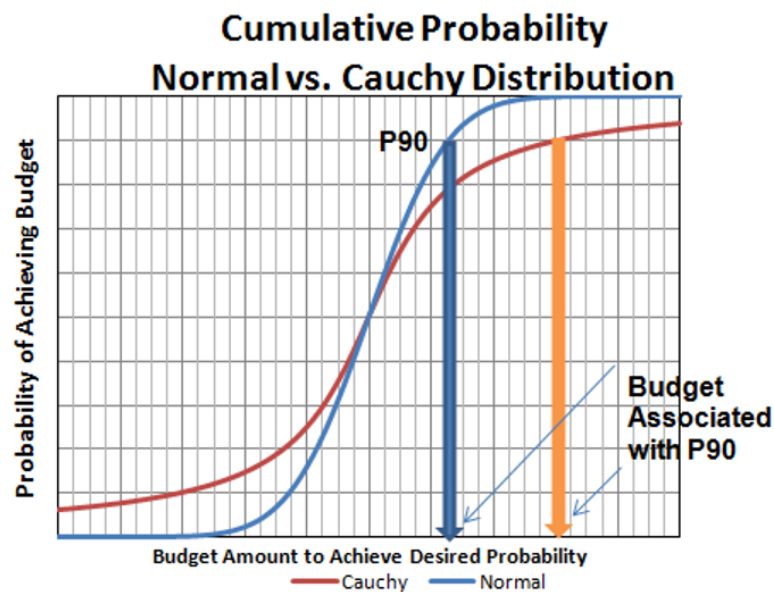
- Strategic Business Objectives have not been clearly articulated, agreed to and continuously communicated
- Inefficient organization/decisions structure
- Inadequate risk management and risk reserves
- Unrealistic cost estimates and schedules
- Poor scope definition
- Inadequate execution plan
- Shortage of resources
- Delays in engineering, procurement, and construction
- Absence of a "no change" culture
- Poorly developed goals and expectations
- Misalignment between stakeholders
- Impacts of change and length and cost of delays underestimated
- Geological risks or natural elements not clearly defined
- Environmental, safety, and existing conditions unclear

Part 6: Risk and Change Management in Large Complex Programs

Q9. Would you please offer some suggestions on principles to deal with risks and changes in large complex programs?

Prieto: The most important thing is to deal with them. “Denial” and “Hope” are not effective strategies.

Let me start with dealing with risk. This is an area where I think we get ourselves in trouble even before the real efforts on the program begin. Our risk assessment practices tend to drive us towards excluding rare, impactful events, modeling risk behavior as normally (or similarly) distributed. It is not. Large complex programs exhibit the same type of “catastrophic” behavior that we see in other large complex systems such as in nature. Rare events happen much more frequently than we are led to expect. This “fat tail” can be seen in a Cauchy distribution. A rare 5 sigma event that has a one in three and a half million chance of happening in a normal risk distribution and now has a one in sixteen chance of happening if the risk behaves more catastrophically as seen in a Cauchy fat tail distribution.



But we must be sensitive even more when it comes to risk in large complex projects. The first is that the shape of the risk distribution curve as well as the top risks the project is facing changes over the lifetime of the project. That initial assessment of top risks and their relative contributions changes as the project proceeds and even worse, the rare events our risk modeling effectively eliminated and took off our radar screen are likely becoming more important. A second risk aspect to pay attention to are the assumptions we make. As good as they may be at the time that we made them they are still assumptions. Assumptions need to be tracked since “assumption migration” is a key feature of risk behavior in large complex projects.

Let me turn now to dealing with change in large complex programs.

First, time is not your friend. A program manager must understand the value of time. How does a day of time impact project cost and schedule? What about even an hour or a minute?

Second, what are the cascading disruptions that the change has caused or will cause.

Third, there is a tendency when a change occurs to try to get back on the original execution plan. Would a sailor blown off course seek to get back to the original one or plot a new course that gets him where he is going most efficiently? Recovering to the baseline drives a set of management decisions and approaches which may fail to clearly understand the systemic changes in project environment acting on the project until a much later stage when “normal” corrective actions have failed to yield desired results. These systemic changes may be the result of combinations of factors such as “assumption migration”, “constraint coupling”, “white space risks”, inherent complexity and inadequate baselines based on Gaussian modeling in an increasingly non-Gaussian environment. The effected corrections may act to increase inefficiency of execution as resources are “jerked” from one task to another.

Fourth, if a change is required, there is one last question to ask. When should the change be made, now, later in execution, startup or afterwards?

Part 7: Future of Program Management

Q10. As far as you are concerned, what are the future focuses of Program Management?

Prieto: In one sense it is simple, to improve our collective performance in delivering large complex programs which today see a failure rate of approximately two out of three. But we cannot get there by merely doing what we have always done better. We must be willing to challenge the very foundations of project management theory itself. Just as Newtonian physics broke down at scale, I would suggest that we may be seeing a similar breakdown at scale on large complex projects and programs.

Q11. Based on your experience, what should we pay attention to in managing complex programs involving AI and blockchain? How will AI and blockchain influence the way we manage programs?

Prieto: Tomorrow’s AI enabled project manager will require familiarity with how AI is being employed, the veracity and robustness of the assumptions made and importantly any potential biases that may be reflected in the training data used to create the embedded AI algorithms. Sensitivity to assumptions including constraints will also take on increased importance and assumption migration will need to be closely tracked.

Optimization parameters reflected in AI enabled analysis must be closely understood. In the short to medium term AI enablement will be task focused around valuable use cases.

Some of the new considerations for project managers include:

- Veracity and quality of results
- Emerging legal and liability issues
- Thoroughness and quality of due diligence and impact assessment of AI ethical issues
- Hidden biases
- Quality and limits of training data
- Lack of verifiability
- Diagnosis of errors
- Access to sufficient data including relevant dark data
- Access to required AI skills
- Uncertainty around compliance with existing regulations developed pre-AI
- Data integrity
- Adequacy of interoperability
- Assumption tracking and linkage to AI use cases
- Constraint awareness and tracking as it relates to the AI we deploy
- Insight into AI optimization parameters

Turning to blockchain I see one overarching value creator, the creation and protection of a single version of the truth. In that regard two use cases will be of importance to project managers:

- Supply chain
- Building Information Models (BIM)

With respect to supply chain, advantages importantly include data privacy and security. Blockchain enables addressing challenges such as shipment visibility, invoice dispute resolution and goods management over time. It provides unmatched real-time visibility for multiple partners allowing each partner to view a chronological, immutable transaction history that removes blind spots and enables monitoring of critical milestones. Shared business rules and agreements on specified data views for each trading partner on the blockchain ensure secure visibility to only the data provisioned for each partner.

Enabling technologies such as 5G, which will drive the Internet of Things (IOT), and Blockchain, which will provide the necessary single-version-of-the truth or trust regime that BIM level 3 will require, are essential for all encompassing multi-party collaboration.

Part 8: Career Story and Advice

Q12. I noticed that you majored in science rather than PM in college. Do you enjoy what you are doing now? What brings the greatest joy to you as a professional?

Prieto: My major was nuclear engineering. It was only years later that I understood that a nuclear engineer was really trained as a systems engineer integrating all aspects of the project including the soft aspects such as regulations, stakeholders and market considerations. In my view, systems engineering and program management share a common perspective.

Sometimes I think that not having the academic training in PM may have served me well. It has let me build a model of program and project management for large, complex endeavors that clashes with many of the fundamentals of classical PM theory.

Throughout my career I have enjoyed winning; doing first of a kind things and sometimes being able to lay out new paths forward. While I have moved through my career, the nature and direction of my professional focus has changed. Today I am interested in challenging classical PM theory, contemplating the opportunities and challenges presented by AI, and looking at non-traditional constraints on my industry represented by financial and insurance markets and our struggle for innovation.

I have always found something to love in whatever I am doing and have always found the unmet challenges to focus on.

Q13. What are the driving factors of your success in Program Management? What would you like to say to newcomers in this field? I

Prieto: I am not sure whether it would rise to the level of a motto but I do think my success can be described by Vision, Focus and Drive.

My advice is simple, challenge all facts and perspectives continuously, while seeking out new perspectives to look at the challenges you will face. Remember that often assumptions masquerade as facts.

As a program manager, your job is to mobilize the best team, not a team of the best individuals. Create a framework built on trust and transparency which will allow them and by extension the program to be successful.

A final thought to share with the members of your program team. Remind them that it is their job to screw up at least once a day. If they don't, they are not pushing the envelope on performance. But there is a corollary to this admonishment – Tell, Tell, Tell. If they do, you can help them address the screw up but more importantly to learn.

As a program manager, you are not just responsible to your client, your company and the stakeholders you impact. Importantly, you are responsible to your team and the people that comprise it. They will learn from you and be motivated by you. Let them tell your story.

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About the Interviewer



Yu Yanjuan

Beijing, China



Yu Yanjuan (English name: Spring), Bachelor's Degree, graduated from the English Department of Beijing International Studies University (BISU) in China. She is now an English-language journalist and editor working for Project Management Review Magazine and website. She has interviewed over forty top experts in the field of project management. In the past, she has worked as a journalist and editor for other media platforms in China. She has also worked part-time as an English teacher in various training centers in Beijing. For work contact, she can be reached via email yuyanjuan2005@163.com or LinkedIn <https://www.linkedin.com/in/yanjuanyu-76b280151/>.