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Inside the Mind of a Data-Driven Visionary: How James Lea, of Project Science is Revolutionizing Predictive Project Management

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I first encountered James Lea at an industry event for project professionals in London's Kings Cross Tech-hub, nestled next to Google's flagship, UK headquarters.

As a Fellow of the Association for Project Management (APM), James has long been at the forefront of developments in the project and program management field.

Listening to him present to an auditorium of senior practitioners, it was clear that his insights on how project management can be transformed by better application of data, and rollout of innovative predictive technologies would be invaluable to share.

James is the founder and CEO of Project Science, a boutique consultancy focused on the predictive elements within project, program, and portfolio management. By using data to capture project information and learning lessons from the past, his firm seeks to create applications that better predict future project outcomes, understand behaviors, and recognize the parameters that impact performance. His organization innovates to scale and increase the efficiency of project models, methodologies, and algorithms.

Recalling early on in his career, his work on a major program within the aviation sector, James found himself drawn to the predictive capabilities that the project needed to forecast delivery dates. He recalls, "We discovered that having really good requirements actually makes projects far more predictable."

He goes on “Using our model we were able to generate correlations, and we got to a point where we knew that a given volume of requirements would require a certain amount of work and duration. We were able to make predictions.”

“The project’s thorough documentation meant the data we captured was incredibly useful in supporting our understanding,” James explains. “The premise was that simple approaches, such as documenting effort expended on work packages can improve and optimize project controls. This data, when applied to future scenarios supports effective predictions and assess resource requirements.”

These experiences laid the foundation for a career dedicated to the effective use of data in predicting and shaping project, program and portfolio outcomes.

James emphasizes that while the data collection methods have remained relatively constant over time, the application of this data has evolved significantly. “Intelligent decisions based on better predictions are now possible,” he says. “Our research potentially has far-reaching applications, not just on project execution but also on how teams engage and the culture they operate in. With possible benefits and improvements to how projects are planned and managed during the execution phases.”

As we move on the conversation turns to the articles which James has authored, on practitioners embracing project-derived uncertainty and the importance of leaning into project prediction. He acknowledges the seeming contradiction but insists, “We often perceive uncertainty and predictability as opposites, but in reality, things are more predictable than we think. Statistical thinking can be applied to projects. Essentially, we’re managing uncertainty in a very structured way, defining parameters based on past knowledge and experience. Projects are a trade-off between knowns and unknowns, with project managers tasked with managing risks associated with the latter. The skill lies in continually assessing and responding to this trade-off.”

Effective project management, according to James, requires proficiency in handling high uncertainty while simultaneously establishing constraints to increase predictability. “Despite claims that constraints hamper projects, data shows they often improve outcomes,” he notes. “However, this approach requires a supportive project culture that is both willing to extract the data and to learn lessons for the future”

Psychology also plays a significant role at both organizational and individual levels. “Fostering a culture where those critical conversations are enabled is essential for data to be effectively used,” James says. “There must be confidence in data-supported predictions, which necessitates robust processes and procedures to be instituted.

Initiatives such as the Project Data Analytics Task Force is exploring opportunities around automation of work breakdown structures, aiming to create automated approaches, where data can be extracted within live project situations.”

Methodologies like Lean and Six Sigma, which emphasize data capture and process management, also offer valuable lessons. “Understanding the effects of rework and focusing on customer needs from the outset are key,” he adds.

Addressing complex projects like the UK's Crossrail infrastructure program that was completed in 2023, James shares insights on managing such large-scale endeavors. "Complex mega-projects don't require overly complex methodologies. Ensuring effective planning and execution remain the core tenets of successful delivery. While complex projects may need more resources, the fundamental task of project management is executing delivery of effective plans."

"Our evidence suggests that while the profession is adept at tracking project progress, we need to improve overall data extraction and its formal use as a predictive tool."

James is candid about the profession's other shortcomings in learning from its past. "We need disciplined setting of project parameters and managing change systematically to make project activities repeatable. Sharing resultant data and lessons learned is crucial, and while industry associations promote this, more buy-in is required at industry level."

When asked if project management is an art or a science, James is quick to highlight the importance of a balanced approach. "Project discussions can become very science-based, and tend not to be very engaging, turning off stakeholders. Polished communication and facilitation skills are much more effective in ensuring buy-in, and this really is more of an art. The best practitioners are in my experience well-rounded, engaging with clients and people effectively, not just sorting through data."

On the integration of digital technologies and Artificial Intelligence (AI) within the profession, James again offers a nuanced view. "Newer practitioners almost always bring extensive technical capabilities, but they also need experience and confidence to challenge effectively. Integrating recent technology with tried and tested methods is crucial. While technology will handle tasks like risk management and assurance better, human-led interactions and leadership remain essential".

Looking to the future, James is clear on the profession's need for improvement. "The profession must strive for more predictable outcomes and successful project delivery." To achieve this, we urgently need to share project data and democratize access to it." he continues, "This requires client involvement, as well as the industry establishing standard ways to capture, codify and share data, aligned with privacy regulations."

For new project managers, James advises working to their strengths and passions, being clear on their professional drivers and remaining curious. "To increase project success rates significantly the industry needs to continue to attract top talent, with a broad range of skills."

Next steps for James and his work in Project Science Ltd are ambitious "Personally, I'm focused on scaling the lessons I've learned to support the profession. I'll continue to advocate the necessity of project data science in advancing our field."

And James' final thoughts on how the profession will change, he states categorically and without hesitation, "we need to be leaders of change, not observers: we'll see a future where projects are delivered more predictably and at lower cost."

You can learn more about James Lea's work at Project Science Ltd on his website www.projectscience.co.uk, where he also shares research findings, podcasts, and articles. You can try out

predictive analytics using Project Science's apps, available on the Atlassian Marketplace.

Follow James on LinkedIn for the latest updates.