MOIRA ALEXANDER
PMP ISP ITCP IP3P

Data Analytics and KPIs for Project Success

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How to use data analytics to improve project outcomes

Worldwide revenues for big data and business analytics is expected to grow to more than $187 billion by 2019 and the project management industry is projected to hit $5.81 trillion by 2020. Here is how some organizations are leveraging data analytics to improve their project performance.

Ted Friedman, vice president and analyst at Gartner, predicts the following four trends will drive fundamental changes in the use of data and analytics:

- Instead of just reflecting business performance, data analytics will become the driver of operations.
- Data and analytics will become infused in an organization's architecture from end to end, creating a holistic approach -- and this will include

strategic project management in EPMOs (enterprise program management offices).

- Executives will use data and analytics for business strategy and growth, creating new additional roles for professionals.
- Experts share insights on how data improves project performance

Companies of all sizes have been using data analytics to seek out opportunities, reduce costs, create efficiencies, make better and faster decisions, and ultimately increase customer satisfaction; this also translates at the project, program and portfolio levels since these greatly enable company-wide strategy.

At the Chicago Bulls, Matthew Kobe, director of analytics, says its Business Strategy and Analytics team uses consumer insights to drive the strategic direction of the organization. They use data analytics to focus on three key areas of insight -- fan levels, business transactions, and digital engagement -- to inform the organization's strategic choices. He shares more about their focus on the three areas below:

1. **Fan Level Insights** -- The Bulls are building a robust CRM and data warehouse solution that delivers a more holistic view of our fans. "We seek to understand psychographic elements that help us to understand why a person is engaging and transacting with the Bulls," says Matthew. They also want to "understand satisfaction and areas for improvement by capturing fan specific feedback on all elements of the fan experience."
2. **Transactional Insights** -- The team analyzes all business transactions including ticketing, concessions, and merchandise, and wherever possible, Matthew says "We tie these transactional elements back to the fan to build out a more complete customer view."
3. **Digital Engagement Insights** -- "The Bulls have a significant digital presence illustrated by the second largest social media following for any

sports team in North America," says Kobe. Because of this, they work to understand the types of content fans are engaging with and how those engagements drive their fans downstream behaviors. They again make every effort to link engagements back to the fan to help their continued effort to further expand on their customer view.

"With these three areas under our purview, we are able to more effectively influence change across the organization. Specifically, we have impacted nearly every area that influences a fan's experience with the Bulls: Ticketing, Sponsorship, Digital Content, Marketing, and Concessions," he says.

Jason Levin, vice president of Institutional Research at Western Governors University (WGU), also shared how they use data analytics to create project wins. "Conceptually, the most important data for project success is having a measurement plan that includes implementation fidelity and efficacy," he says.

He suggests answering this question: "How do we know we are doing what we intended to do?" and "How do we know if what we did worked?" Jason elaborates further on their methods for measuring implementation fidelity and efficacy.

For implementation fidelity, WGU has used many methods, ranging from analyzing log data of student sessions with electronic learning materials to having faculty use hashtag notations in the student notes.

For efficacy, "our bias is to use randomized control trials, but we also use quasi-experimental methods. The most important data is to have a clearly defined outcome variable that can be reliably measured. Western Governors University (WGU) has a competitive advantage with outcome variables compared to traditional higher education institutions. At WGU, all our assessments are centrally developed to rigorous standards. This system of

assessment produces much more reliable data than having faculty individually assigning letter grades.”

He also describes another unique aspect of data at WGU - its “domain taxonomy or hierarchy of learning outcomes mapped to learning materials and assessments. Student learning behavior can be mapped between the electronic course materials and assessment. Formative assessment data is more predictive of success on the high stakes assessment than simple page views.”

To make the best decisions, companies need to be able to extract precise and relevant information from the data available. Absent this, raw data, no matter the quantity, serves no purpose. Ultimately, companies are seeking the type of information that tells them what their customers want most and is critical for guidance on project initiatives, direction, execution, and metrics.

How are companies using data analytics to improve project outcomes?

No matter what the industry, from technology to sports or education, data analytics has become an essential tool for enabling successful project outcomes and ultimately company-wide strategy.

“We use data analytics to examine almost everything about our platform, including how many times our users request customer support, says Jonathan Rodriguez, Founder, and C.E.O. at BitMar Networks. “The first thing that we realized was the more solutions we offered before our users even requested them, the less our users requested customer service”.

He has confidence that by implementing data analytics, BitMar found a completely new approach to recruiting. Data told BitMar that “your users do not need your tech support, they prefer to talk to one another, instead. So, provide that functionality and let them be.” This highlighted the need for the company to hire community enthusiasts instead of customer service staff.

BitMar embarked on a project to develop a self-help platform for customers. “Who would have thought that we would have been able to provide a platform in which the users get to help themselves, at virtually zero cost on our end? ” says Rodriguez. Data analytics not only helped BitMar zoom in on the types of projects they should be taking on, it also identified opportunities within projects to improve customer satisfaction and still reduce internal costs.

Jason Levin (WGU) says that “probably the most successful project to date has been the Leadership and Communication course designed to educate students along the affective domain. Using quasi-experimental methods, we demonstrated significant improvement in retention and credit accumulation. Based on that research the course was implemented in the undergraduate Health Professions programs, which now serves about 1,000 students per month.”

When it comes to the Chicago Bulls, Matthew says, using fan level and transactional insights to do an initial customer segmentation of their ticket buyers was a top priority over the last year. “We wanted to understand whether we had any vulnerabilities across segments and any gaps in our product portfolio.” Specifically, he says they identified opportunities to further develop fans that fall into the young professionals and families segments and took fan level insights to further build out personas for these segments to help functions understand how to engage them.”

Further, the Bulls used these consumer insights to accomplish the following:

- Identify opportunities to further develop each of the segments

- As the functions built out strategic plans, the Strategy and Analytics team was able to partner with them to establish metrics to evaluate success
- Develop a new charity event targeted at young professionals and,
- Make modifications to ticket products with a greater emphasis on creating Bulls Snapchat content

What are the limitations of working with data analytics?

The Chicago Bulls Strategy and Analytics team learned two important lessons.

- They had to begin with “why.” -Why do we want to capture certain data points and what are the resulting use cases. “We have very limited opportunities with our most important fans to capture data. We need to ensure that we are capturing data that will advance our consumer insights and provide opportunities to more personally engage our fans in the future,” says Matthew.
- Finding the right time to use technology to sustain and accelerate a process. “We have found that leading with technology results in lower adoption and force fitting the technology into a less efficient process. By outlining the process and bootstrapping an analytical solution, we are better equipped to evaluate technology options and select one that really pushes the organization forward.”

“There is a quote that has been attributed to Albert Einstein that says ‘not everything that can be counted counts, and not everything that counts can be

counted,’” says Jason Levens, of Western Governors University. “In education, this is very true. Understanding what is going on with student and faculty psychology is critically important but difficult to measure. This is especially true if you are trying to measure these concepts in real-time and not relying on survey instruments. It is clear, by the research generated by scales like grit or mindset how important these data are to educational outcomes.”

Bottom-line

With the data analytics and project management industries growing at an explosive rate, it only makes sense to use both powerful tools in combination and interwoven into a company’s fabric to create a more sustainable competitive advantage. The following section discusses the role of Key Performance Indicators in measuring project success.

The Role of KPIs

Key performance indicators do a lot more than provide ratios for measuring progress and success. Key performance indicators play an indispensable role in project management and aid in measuring success or failure of project activities.

Key performance indicators serve as a key measure of how effectively project or project activities have performed in relation to identified, required, and agreed-to strategic objectives. Without KPIs, the success of projects and project activities is simply a guessing game, with no way to quantify goal attainment. They offer companies a way to do the following:

- Identify and reinforce the link back to strategy. Ultimately key performance indicators help organizations either affirm or refute project efforts,

processes, and deliverables in relation to the company-wide goals and vision.

- Provide insight to all stakeholders and team members as to their roles and expectations. This is a very important factor; it keeps everyone on the same page throughout project execution and avoids surprises and confusion down the road. KPIs shouldn't be a secret; they should be shared with everyone involved to enable the best possible outcome.

- Determine the "lead" or "lag" in performance. KPIs offer a way to monitor performance along the way and provide visibility. KPIs provide project teams with a heads-up when things start to lag behind. It indicates where things are going right and where they're falling short.

Great thought leaders should always strive toward having advance awareness and multiple options as well as being as abundantly prepared to adopt project strategies that fully align with company-wide strategies.

Measuring Team Strength and Performance

Understanding and selecting the best suited KPIs to measure project-team performance may not always be easy. As mentioned earlier, the types of KPIs will vary depending on critical success factors (CSF), like industry, product, or service and stakeholder business and operational strategies; nonetheless, KPIs must be clearly identified, achievable, and quantifiable in an appropriate form and within specified parameters in order to be completely suitable.

As a general example, if one CSF of a new software business is to develop a web-based portal that will garner a specified number of new customers to sign up for a monthly subscription service, then possibly one type of KPI may be quantitative in nature, and it could be new customer subscriber tallies. When determining KPIs, clearly and accurately define critical success factors first and

then determine KPIs that most accurately directly tie back to the CSFs. Again both the CSFs and KPIs must be clearly defined and agreed to by stakeholders and ranked in order of importance to the overall business strategy and goals.

Types of Project Management KPIs for Team Performance and Strength

- **Financial gauges**: These are typically utilized when the measure is monetary.
- **Quantitative gauges**: These are typically utilized when the measure is not financial but is a numerical count.
- **Qualitative gauges**: These are utilized when the measure is not numerical in nature.
- **Process gauges**: These can be used when measuring efficiency levels.
- **Team-performance gauges**: These can be a form of qualitative gauge for measuring team performance and strength

KPIs that are likely the most suitable for measuring team performance and strength would typically be qualitative in nature; depending on the nature of the project, product, service, or industry, this could also be a quantitative or process gauge also, since team and individual activities may involve the utilization of specific processes or tallies in order to accomplish goals. How these KPIs are identified and utilized will determine how effective they are as a measure.

Project-Performance-Based KPIs

Project-performance-based indicators can measure various factors such as costs, progress, value, performance, and other success factors. Here are just a few of the more commonly used key performance indicators in project management:

- Cost Performance Index (CPI)
- Cost Schedule Index (CSI)
- Actual Cost (AC)
- Budgeted Cost of Work Scheduled (BCWS)
- Cost Variance (CV)
- Earned Value (EV)
- Estimate at Completion (EAC)

- Planned Value (PV)
- Planned Value (PV)
- Return on Investment (ROI)
- Schedule Performance Index (SPI)
- Schedule Variance (SV)

Team-Based KPIs

Team-based KPIs should attempt to capture least some of these (as applicable):

- Project and task dependencies and handoffs among team members

- The level of team-member independence and interdependence
- Demonstrated leadership abilities
- Ways for assisting one another with varying workloads when applicable
- Ways for supporting one another through issues and resolving conflict
- Absenteeism and impact on team workload and schedules

- Actual standards of work quality in relation to the requisite standards
- Level of participation and commitment to project work as evidenced by inputs and outputs
- Level of buy-in, attitude, and interaction throughout a project
- Levels of clear and effective team member communication in various forms
- Ability to meet project deliverables and keep within the project scope

Steps in Determining Appropriate KPIs

Step One: Consider Outlining the Team “To Be” List

When trying to determine KPIs for measuring your project team performance, strength, and overall synergy think about your expectations and requirements of a successful team in relation to project and business-requirements objectives. It is important to know as precisely as possible what

you are looking for before you can decide how to accurately measure it. Give consideration to at least some of the following:

- Determine what specific individual team member characteristics, qualities, and skills you are looking for.
- Consider what a successful team should look like in terms of how they work together, interact, and communicate, as well as the level of professionalism, commitment, participation, and group dynamics, among other things.
- Factor in how members are anticipated to interact and communicate with other stakeholders external to the team, such as front-line staff, as well as management, vendors, and clients.
- Identify individual and team-based factors you believe can positively or negatively impact project outcomes.
- Determine exactly how you envision the team working together, as well as with other stakeholders, to accomplish project and overall business objectives.
- Gain input from company management as well as team members and stakeholders prior to solidifying KPIs. This can greatly aid in smoothing buy-in from all parties.

Outlining this “to be” list should help greatly in determining KPIs for effectively and accurately measuring team performance and strength. As mentioned above, regardless of their nature, remember that KPIs must be clearly

identified, achievable, and quantifiable in an appropriate form and within specified parameters in order to be fully achieved.

Step Two: Zoom In on Important Selection Criteria

To further solidify and expand on your requirements from your team and its members, layer in the ten PM knowledge areas (scope, time, cost, quality, human resource, communications, risk, procurement, and stakeholder management) and try to identify exactly how your team influences each of them and is in turn influenced by integrating them. This will aid in ensuring that you have assessed and incorporated all applicable areas into your selection criteria.

Step Three: Determine Which KPIs Work as an Accurate Measure for the Required Need(s)

Bernard Marr, a leading global authority and best-selling author on organizational performance and business, has written a book specifically on KPIs. In Key Performance Indicators (KPI): The Seventy-Five Measures Every Manager Needs to Know, he outlines twelve KPIs specific to measuring employee performance. Although they are employee-based in general, some of the following may be adapted to measure project team performance:

- Employee Satisfaction Index
- Employee Engagement Level
- Staff Advocacy Score
- Employee Churn Rate
- Absenteeism Bradford Factor
- 360-Degree Feedback Score
- Training Return on Investment

Project-team-based KPIs enable businesses to accurately measure project-team performance to ensure that teams are optimally working together to achieve project objectives in ways that can be directly tied back to company-wide goals and strategy. Remember, all KPIs must be appropriately identified, reachable, and realistically measurable, as well as clearly communicated, documented, and agreed to.

There need not be a divide or distinction between thought leaders and project leaders. The ability to effectively execute on business strategy through projects should always remain a primary focus.

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About the Author

Moira Alexander, PMP, I.S.P., ITCP/IP3P

Moira is a media recognized thought leader, the author of "LEAD or LAG: Linking Strategic Project Management & Thought Leadership" and Founder & President of Lead-Her-Ship Group. Moira has 20+ years in business (IS&T) and project management for small to large businesses in the US and Canada. To find out more about Moira, go to www.leadhershipgroup.com.

She is a certified IT and Project Management Professional, a project management and IT freelance columnist for publications like CIO and TechRepublic. Moira also creates ghostwritten thought leadership content for executives and blog content for businesses worldwide under her byline.

Moira is a co-host and contributor for the Price of Business Talk Radio "technically speaking" segment, part the BizTalkRadio Network.