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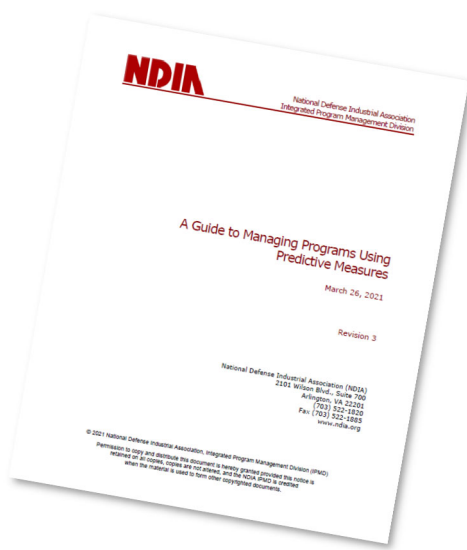
# April Showers Bring ... Predictive Measures?

Greetings practitioners! As the old adage goes, this time of the year is expected to be relatively precipitous. However, in our neck of the woods, April has been anything but rainy — which goes to show that predictive measures are not always accurate in determining what future weather will be like. In the world of program management, though, using predictive measures can be helpful in managing a program. This month's newsletter brings an interesting look at "Managing Programs Using Predictive Measures", along with an ongoing look through the "It is not one World" lens of project management.

## Managing Programs Using Predictive Measures

Recently, the National Defense Industrial Association Integrated Program Management Division issued a draft guide to "Managing Programs Using Predictive Measures", dated March 26, 2021 - Revision 3. This "Draft" was issued under a 30-day review period.

Program management (i.e., the management of programs) can be divided into two major phases. First is the planning phase, where the baseline is established in terms of cost, schedule, and performance objectives that need to be successfully accomplished to meet client requirements. Once the baseline is established, the second phase is statusing, monitoring, and controlling the actual activities against the baseline and then making adjustments as appropriate to meet the cost, schedule, and performance objectives.



As a Program Manager (PM) performs the second phase, several metrics or measures can assist in meeting program objectives. These measures provide a comparison of current program status against the planned measures. Earned Value Management (EVM) is a project management control technique which effectively integrates actual accomplishment in terms of cost, schedule, and scope. However, EVM as a management approach should be supplemented with additional measures and metrics during the monitoring and controlling phase to attain a more comprehensive understanding of current performance and to help management make well-informed decisions. These additional measures and metrics can

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provide valuable predictive indicators that can be used to develop and implement effective mitigation plans.

In 2008, the National Defense Industrial Association (NDIA) Industrial Committee for Program Management (ICPM) completed a study on Predictive Measures of Program Performance. The objectives of this study were to:

- Develop a common set of predictive measures for use by government and industry program managers to ensure program success
- Help contractors and their government counterparts predict program performance and pursue root causes and corrective actions for performance issues
  - Predictive measures that cover the program's lifecycle from pre-award through contract close-out
  - Predictive measures that can be tailored to the contract characteristics, contract type, and program phase
- Recommend an NDIA standard for predictive metrics.

### **Highlight(s)**

This resultant documentation consisted of a set of 24 potential measures that were documented in a Microsoft PowerPoint presentation.

This Guide began with a re-assessment of the original study and its proposed measures, adding some additional measures and deleting others, and documenting the measures as a more usable Microsoft Word document in a standard format.

Each of the measures from 2008, and additional measures as they were identified, were assessed as to their suitability as predictive measures. For example, many regard EVM as a measure of current performance and mostly rearward looking; however, EVM does have a predictive nature to its measures in that it can be used as an indicator of future performance by applying current efficiencies to remaining work. Throughout this Guide, these measures are many times referred to as metrics. For the purposes of this Guide, usage of the terms "metrics" and "measures" are synonymous.

The measures identified in this Guide were documented in such a way to ensure their predictive nature. Also, it can be useful to think of measures and metrics as indicators that can be both leading indicators (predictive) and lagging indicators. For instance, actual staffing being less than planned staffing can be a leading indicator that the future planned work tasks will not be accomplished (predictive of future performance). The same indicator can be a lagging indicator that sufficient human resources could not be hired or transferred to meet the planned level of staffing.

The metrics described in this Guide follow a prescribed format as much as possible. The metric discussion is divided into several sections:

- Metric Definition – A brief discussion of the metric and how it is defined.

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- Calculations – How the metric is calculated.
- Output/Threshold – What the output of the calculation provides, typically in graphical format, and any thresholds that should be noted in using the metric for analysis or management action.
- Predictive Nature – What aspect of this metric provides predictive information.
- Possible Questions – Potential questions that a PM or Line Manager might consider when performing a deeper dive into the analysis of the metric and aid in managing the program.
- Caveats/Limitations/Notes – This portion was considered optional and not all metrics may include it. This section identifies some aspects of the metric that may be of interest to the user, e.g., when a particular metric is less predictive.

One of the most critical aspects of each discussion is the Predictive Nature; this Guide is intended to provide a summary of measures that are truly predictive in nature. However, it is recognized that some of the measures included in this Guide are not truly predictive, e.g., Schedule Performance Index (SPI), Cost Performance Index (CPI), and Baseline Execution Index (BEI). Nonetheless, historical information contributes to predicting future performance. While these measures are not predictive by themselves, predictive measures can be developed by coupling them with other information; hence, they have been kept in the Guide.

The intended audiences for this Guide are organizations (government and industry) that are looking for standard approaches to manage programs. This Guide is not intended to provide a new set of standards that would be required to assess program performance, but instead provide a “menu” of typical measures that could be applied. Some metrics are better suited for certain applications than are others. Each organization should decide which measures are most appropriate for its environment and select only those measures suitable for its purposes. In this sense, this document differs from the original 2008 ICPM study that had as one of its objectives to recommend a “standard” for predictive measures.

While the document describes numerous measures or metrics, some well known and some possibly not so well known, the NDIA is not recommending a specific set of measures or metrics to be used on any particular program. There are multiple indicators described in this document that provide useful information for the (program or line) manager to examine so as to investigate root causes to revise the plan – i.e. manage. Each of these measures provide valuable indicators that should be used to develop corrective actions. As stated above, each organization needs to use the measures described as they feel appropriate. This document is a “guide.” This document does not provide a roadmap on how to develop the corrective action, but it would typically consist of identifying the root cause of the “out of bounds” measure and making adjustments in either the plan (i.e. replanning) or the execution of the plan. Each organization may have their own approach on how to manage using these metrics and the Possible Questions help in starting the management process.

While there are over 30 measures identified in this document, program managers will typically focus on the top 5 to 8 measures at any one time to assess the status of the program. These top 5 to 8 measures will vary over the life cycle of the program. It is noted that a major purpose of the predictive measures concept, as well as any measures used, are intended to promote a deeper dive into the measures reported. By themselves, the measures provide a snapshot of the program status, but only through an investigation of the cause of a measures value, through discussion, can a program manager truly understand the program status and future course.

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While the intent of this document is to provide guidance for all programs, many programs that were considered in the development of this Guide, as well as some of the artifacts, are based on Department of Defense (DoD) experiences. For these programs, some of the metrics are more appropriate during one or more acquisition phases. To document this, Appendix A provides a summary table of the metrics and their applicability in one or more DoD Acquisition Phases.

This document is intended to be a living document, so it will be updated periodically (approximately every three years). If you have a comment or suggestion for improving the Guide, please contact the NDIA IPMD Chair or Vice Chairs.

The complete “Managing Programs Using Predictive Measures” draft document can be found on the [EFCOG Project Delivery Working Group webpage](#).

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***It is Not One World — What We Do and How We Do It Matters***

## The True Cause of Project Failures

— From [Boston Management Consulting, Intl.](#)

### Introduction

Project failures have become a common term that every project manager or business executive wants to separate themselves from. We tend to point the finger at one reason or the other being the cause of the failure. No one wants to take responsibility for the failure as it may tarnish their performance records. Would it? If it did, then most project managers and other managers would be in the hot seat for bad performance. As a matter of fact, you would be hard-pressed to find a project manager who has not had their fair share of project failures.

A study recently done by the Standish Group 2015 Chaos report (based on the criteria of on time, on budget with a satisfactory result for 50,000 projects around the world, ranging from tiny enhancements to massive systems re-engineering implementation) indicated that only 29% of all projects were successful, 52% were challenged, and 19% failed<sup>1</sup>. It is important to note that smaller and moderate sized projects, as well as those that took an agile approach, had a higher rate of success. Larger projects, on the other hand, had a very high rate of failure.

Additionally, based on PMI’s 2016 Pulse of the Profession report, “organizations waste US\$122 million for every US\$1 billion invested due to poor project performance.”<sup>2</sup>

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# The True Cause of Project Failures

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These numbers are quite scary and beg the question: what is causing all these project failures? And why is it that project organizations just can't seem to get their arms around these failures and improve results? Is the problem tied to projects by nature? Or do PMs and their organizations have something to do with the outcome?

To answer the above question, we need to first understand what project failure is, then what contributes to project success or failure, and finally how we can attempt to eliminate or reduce project failure and increase the level of success.

## **What is Project Failure?**

To state it simply, we can say that a project has failed if it did not meet its intended objectives. As stated above, the Standish Group in 2015 measured projects on being delivered on time, on budget with a satisfactory result. Projects are typically initiated to satisfy a business objective, which, in turn, could be part of a larger organizational strategy. At the same time, the project must also meet most stakeholder expectations. If the project can meet both the business objectives and all stakeholder expectations, then we can consider it a success. However, the picture is not as clear as we wish it could be. Most of the times, we do not have clear objectives (scope) to go by. In other instances, we work in a culture where stakeholders are constantly changing their expectations and adding more as the project progresses. Sometimes, perception plays a role. Consider a surgery where the surgical procedure is successful, but the patient still dies. Did the surgery fail? In the realm of projects, this might be a project that satisfies all the criteria of success but still carries the sense of failure because that's what people think it is. People in business have been saying "perceived" equals "real" for many years, and we can't change that.

So if stakeholders, business people, financial managers, end users, peers and superiors all think your project has failed, it surely has. Late projects, projects over budget, projects that don't deliver the business value they promise, and obviously projects that deliver the wrong product...these are all failed projects.

## **Project Success Contributors**

According to the 2015 Standish Chaos report, the following are key factors (in order of importance) that contribute to a project's success:

- **Executive Support:** by providing financial and emotional backing.
- **Emotional maturity:** the team's behaviors, skills and the weakest link within.
- **User Involvement:** in the project decision-making and information and requirements gathering process.
- **Optimization:** improving business effectiveness and optimizing a collection of many small projects or major requirements. Optimization starts with managing scope based on relative business value.
- **Skilled staff:** is highly proficient in the execution of the project's requirements and deliver of the project or product.
- **SAME** is Standard Architectural Management Environment. The Standish Group defines SAME as a consistent group of integrated practices, services, and products for developing, implementing, and operating software applications.
- **Agile proficiency** means that the agile team and the product owner are skilled in the agile process.
- **Modest execution** is having a process with few moving parts, and those parts are automated and streamlined. It also means using project management tools sparingly and only a very few features.

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- **Project management expertise** is the application of knowledge, skills, and techniques to project activities in order to meet or exceed stakeholder expectations and produce value for the organization.
- **Clear Business Objectives** is the understanding of all stakeholders and participants in the business purpose for executing the project. Clear Business Objectives could also mean the project is aligning to the organization's goals and strategy.

## Causes of Project Failures

Here, we could easily state that lack of presence of the success factors above would lead to project failure by default. However, I am going to take a different approach and explain the causes the way I see them. This is because research on this topic will yield many results, and although there are many causes of project failure, I will focus on the most common, yet critical factors that result in project failure.

**Organizational Culture** – This is at the heart of most project failures. Very few organizations have the infrastructure, education, training, or management discipline to bring projects to successful completion. Since the organization sets the company policies by which the project team will have to abide, a lack of knowledge about project management will result in lack of consideration for what projects need in order to succeed. The end result of this is inefficient authority systems and gaps in approval processes and weak support for the project team within the organization. The best solution is to look into creating and setting a Program Management Office (PMO) that can control the project management efforts centrally and provide the needed support for the project teams.

**Inadequately Trained and/or Inexperienced Project Managers** – This is very wide spread, and especially in developing countries where business grew faster than the organizational infrastructure itself. So, we find companies that have grown to over 100 employees, with about 20 project managers who have taken on such roles from engineering or other departments. These project managers are clearly not prepared to handle projects that require intricate dependencies, planning, estimating and collaboration amongst project teams. They also lack the proper knowledge and certifications that should be expected for them to perform their tasks successfully. Professional training should be provided and, at a minimum, there should be a few PMP certified professionals amongst the team. This will ensure that they at least know what the best practices are.

**Lack of Project Governance** – Organizations that grow from operational and functional to projectized can only succeed if they set the proper governance for their project management. Project Governance is the rules and regulations or standards under which projects function. It covers the mechanisms put in place to ensure compliance with those standards. Governance requires buy-in from senior management to empower PMO's and program managers so that policies can be enforced. Here again, a PMO would do a lot of good to bring projects into control.

**Inadequate Tools and Methods** – As many organizations grow, they tend to make do with what resources and processes they have in order to deal with project challenges. However, each resource may

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be working on a different wavelength and using different tools. This results in many documents being created, several procedures for the same task, and multiple software and manual tools being used to plan and estimate projects. Most of these software tools could be quite outdated and need to catch up with the times. A good start to repair this problem is to look to project management software solutions that the team can adopt.

**Poor Requirements Management** – This should actually be almost at the top the list. Poor requirements management can be attributed to one out of each three project failures. Poor requirements gathering could mean that we either did not collect complete requirements or we left out some key stakeholders. This means that either we will deliver the wrong product, miss out some important features and functions that should have been there, have to make constant changes in the scope, or even drop the project once the true scope and feasibility is clear. Poor requirements are like a cancer that will most likely kill any project's chance of success. Boston Management Consulting International offers training for business analysts in requirements gathering and can also help them attain certification from the IIBA.

**Poor Planning and Estimating** – Planning and estimating require the necessary knowledge and expertise. Poor planning can lead to under-estimations of efforts and budgets, as well as fatal oversights. Planning should be practiced by well-trained and certified planners. Get them trained and certified!

**Inadequate Communication and Reporting** – Poor communication can break anything, whether it's your project, operation, or even your family life. Without all communication and reporting being properly planned for, we could be executing in the dark. Develop a communications plan. Talk to consultants if you don't know how to develop the plan.

**Poor Risk Management** – Most organizations do not want to deal with risks. There have been instances where project managers even hid the risks in order to keep their projects alive. The general perception is that if the risks are brought to light, the project could be looked upon as a failure and an expensive and risky one. However, poor risk management can result in huge losses and even in companies going under. It is strongly advisable that risk management be incorporated into the methodology of each project organization. Additionally, there is specialized software for Risk Analysis, as well as risk management certification training that can prepare a risk professional to take on such important tasks.

**Misalignment between Projects and Organizational Strategy** – If all the right ingredients for success are there, but we go and initiate the wrong projects, what good would it do? It is essential that an organization implement an enterprise view of all their project portfolios and group investments in ways that can help them identify where the efforts should be applied. Additionally, proper program management must be in place so that related efforts are grouped into programs to gain the most benefits. There is certification training for portfolio and program managers endorsed by PMI that could be a great start.

*1 2015 Standish CHAOS Report*

*2 <http://www.pmi.org/-/media/pmi/documents/public/pdf/learning/thought-leadership/pulse/pulse-of-the-profession-2016.pdf>*

# Just for Fun: April's Notable Events and Famous Birthdays

1 — Apple Computers was founded (1976), and March Madness champions were crowned in 1985 (Villanova), 1991 (Duke), 1996 (Kentucky), and 2002 (Maryland).

2 — Singer Marvin Gaye (1939), and actor Dana Carvey (1955) were born.

3 — Actors Marlon Brando (1924) and Alec Baldwin (1958), comedian Eddie Murphy (1961), and **Olympic champion skier Picabo Street** (1971) were born.



4 — The North Atlantic Treaty Organization (NATO) was signed (1949), actor Robert Downey Jr. was born (1965), and Martin Luther King Jr. was assassinated (1968).

5 — Actors Spencer Tracy (1900), Bette Davis (1908), and Gregory Peck (1916) were born.

6 — The first modern Olympic games opened (1896), explorers Matthew A. Henson and Robert E. Perry reached the North Pole (1909), Twinkies were introduced (1930), and country singer Merle Haggard (1937) was born.

7 — Jazz singer Billie Holiday (1915) was born, the World Health Organization was founded (1948), actors Jackie Chan (1954) and Russell Crowe (1964) were born.

8 — Siddhartha Gautama, founder of Buddhism (563 BC), and former First Lady Betty Ford (1918) were born, and **Hank Aaron broke Babe Ruth's home run record** (1974).



9 — The Civil War ended with the Confederate surrender to the Union (1865), and publisher Hugh Hefner was born (1926).

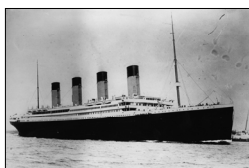
10 — The American Society for the Prevention of Cruelty to Animals was established (1866), the PGA was formed (1916), and sportscaster John Madden was born (1936).

12 — Author Tom Clancy and TV personality David Letterman were born (1947), and Russian cosmonaut Yuri Gagarin became the first person in space (1961).

13 — 3rd U.S. president Thomas Jefferson (1743), and wild west outlaw Butch Cassidy (1866) were born.

14 — President Abraham Lincoln was assassinated (1865), baseball star Pete Rose (1941), and actors Brad Garrett (1960) and Sarah Michelle Gellar (1977) were born.

15 — Artist/inventor Leonardo da Vinci was born (1452), and **the Titanic sank** (1912).



16 — Aviator Wilbur Wright (1867), actor Charlie Chaplin (1889), and basketball Hall of Famer Kareem Abdul-Jabbar (1947) were born.

17 — Actress Jennifer Garner (1972) was born.

18 — The Great San Francisco earthquake struck (1906), and baseball Hall of Famer Catfish Hunter (1946), actor Rick Moranis (1953), and TV talk host Conan O'Brien (1963) were born.

19 — The Revolutionary War began (1775), actors Dudley Moore (1935), Ashley Judd (1968) and Kate Hudson (1979) were born, the Branch Dividian siege ended (1993); and the Federal Building in Oklahoma City was bombed (1995).

20 — Nazi leader Adolf Hitler (1889) and singer Luther Vandross (1951) were born, and the mass shooting at Columbine High school in Littleton, Colorado, took place (1999).

21 — Queen Elizabeth II of England was born (1926).

22 — Rock star Peter Frampton was born (1950).

23 — Playwright William Shakespeare (1564), 15th U.S. president James Buchanan (1791), actress Shirley Temple (1928), and singer Roy Orbison (1936) were born.

24 — Singer/actress Barbara Streisand (1942) and singer Kelly Clarkson (1982) were born.

25 — Jazz singer Ella Fitzgerald (1918) and actor Al Pacino (1940) were born, the **United Nations was organized** (1945), and actress Renee Zellweger was born (1969).



26 — Naturalist John James Audubon (1785) and entertainer Carol Burnett (1933) were born.

27 — Telegraph inventor Samuel Morse (1791), and Civil War general and 18th U.S. president Ulysses S. Grant (1822), were born, and the first Social Security checks were distributed (1937).

28 — 5th U.S. president James Monroe (1758), former Iraqi president Saddam Hussein (1937), and TV personality Jay Leno (1950) were born.

29 — Jazz bandleader Duke Ellington (1899) was born, the zipper was patented (1913), and race car legend Dale Earnhardt (1951), comedian Jerry Seinfeld (1954), and actresses Michelle Pfeiffer (1957) and Uma Thurman (1970) were born.

30 — Country singer Willie Nelson (1933) and basketball Hall of Famer Isiah Thomas (1961) were born, **the Vietnam War ended with the fall of Saigon** (1975), and actress Kirsten Dunst was born (1982).



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