

Demonstrating Product Success in an Agile Project Environment ^{1, 2, 3}

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Executive Summary

Have you ever struggled with demonstrating and communicating product success to your Agile project stakeholders? If yes, then let me show you how to better connect with your stakeholders through the development and use of performance measures.

As project managers, we need to demonstrate to our stakeholders how well our agile projects are doing and there are some good project measures currently in place, such as burndown and agile velocity, to describe how the agile project is doing. What is not so accessible, are the measures that demonstrate how well your project is producing a product that meets customer requirements and expectations. This paper will present a process to help Agile project managers to identify and develop meaningful and unique measures to demonstrate product success.

Introduction

Theoretically, every agile project is working toward producing a product or service that is fulfilling an organizational need that aligns to a strategic goal and vision for the future of the organization. Maybe that alignment to the bigger vision is very clear to the project team, maybe it has been buried in the day to day demands of meeting project deadlines or lost to staff turnover. Whatever

¹ Any opinions and conclusions expressed herein are those of the author and do not reflect the views of the U.S. Census Bureau.

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the reason, prioritizing the production of metrics that demonstrate progress to the future state tends to get lost in the speed to produce features and meet user expectations. The process covered in this paper will help project managers use strategic documents to identify and develop measures that will demonstrate the success of products created within the Agile project environment.

Program Management

Before the work begins, this process assumes that there is some level of program management at your organization. Measure development is one piece of program management and relies on all phases of program management to be effective. Figure 1 and the descriptions below show how each area of program management contributes value to the identification, development, and use of performance measures.

Strategic Planning

This process is where the organization leadership develops vision and priorities for the future of the organization. The strategic plan will document the vision and strategic priorities for the organization.

Portfolio Management

This process is where the organization selects and funds projects that will move the organization to its future state. When done right, the projects within the portfolio will be aligned to the strategic goals and objectives.

Project Management

This process manages the work of a project. A well-run project will produce data that can be used to create measures to demonstrate progress to the future state.

Performance Management

This process is where metrics are identified and produced. The metrics will inform leadership if they are moving their organization to its future state. It is this process where we will develop metrics for product success.



Figure 1 Program Management

Agile Environment

Next, we need to understand the Agile environment to identify and develop product metrics. Most important is that Agile project management is based on a mindset. This Agile mindset recommends an iterative development methodology that utilizes person to person communication and feedback, continuous change, continuous improvements, and producing working results.

Agile Project Characteristics

When working with measures, these characteristics, described below, influence how measure data should be collected.

Iterative – The Agile process is iterative in nature. The products are developed in pieces with each sprint improving and building the product and the team learning from the preceding work in the previous sprints.

Mindset - Agile is an approach and a mindset. It does not have a list of instructions, specific certifications, or a black-and-white template. There is project management software that promotes agility, but the practice is meant to be freestyle in its practice.

Efficient Communication – The Agile process incorporates communication directly into the work. The 12 principles behind the agile manifesto stipulate: “The most efficient and effective method of conveying information to and within a development team is face-to-face conversation.”

Tangible Results - Agile creates tangible, working results. After each iteration, the team delivers a version that is then revised by the stakeholders. According to the 12 principles, “Working software is the primary measure of progress.”

Agile Product Characteristics

The characteristics of an agile product, described below, capture the changeable product nature of the Agile environment, and can make measuring product success more challenging.

Customer Oriented – The success or failure of the products delivered in an Agile environment are determined by the Customer. Customer oriented products are the number one priority of the Agile team.

Feature Based – In Agile, a feature-based flow of work defines the attributes of the product before the final product is complete. This makes the final product fluid with customer requirements driving the work.

Adaptative – Adaptation is expected in an agile work environment. Project teams will embrace the change and adapt the products produced in the agile process to the change. This is normal and adaptive process defines Agile.

Collaborative – Agile is collaborative. It is about working and communicating with the customer and across the team and the resulting products need to be a collaboration between the team and customer to be successful.

Innovative – Agile is the perfect platform for innovation. The iterative, learning nature of innovation is a good match to the development process created in the Agile process. Innovation grows during iterations and is not stifled by a “final” product vision found in the waterfall method.

The Right Solution – Lastly, agile products are the right solution. If the process is fully embraced, the development team and the customer work together to envision and develop the final product.

Demonstrating Success

With the Agile project environment in mind, the process in this paper will help align your product success with the vision of success within your organization. This process utilizes strategic documents to build a framework so that you can identify and develop metrics. These strategically aligned metrics will in turn help the team to demonstrate product success to their stakeholders. Specifically, the stakeholders that are more removed from the Agile process (i.e., leadership), but nonetheless, are necessary to reassure that the project is moving the organization to its future state (and deserving of funding).

Demonstration Example

Here is an example to demonstrate how to align an organization’s vision to an Agile project. This project is to solve a problem of duplicate legacy systems providing similar, if not the same functionality. The impact of this problem is that the legacy systems create unnecessary IT complexity, increased operational costs, and they complicate the organization’s ability to implement cutting-edge methodology. The project was funded to complete a new consolidated system for processing operations residing in the legacy systems. Figure 2 provides a summary of this information.

Problem
Duplicate legacy systems providing similar, if not the same, functionality
Impact
Creates unnecessary IT complexity and increased system operational costs
Complicates ability to implement cutting-edge methodology
Solution
A new, consolidated system for processing operations

Figure 2 Demonstration Project

Epics

The epics in Agile are a collection of multiple tasks or user stories. They are usually responsible for producing a major deliverable, which may include various features. The epics in this example are as follows:

- Data Management
- System Metadata
- Customer Portal
- Customer Management
- Operational Controls
- Adaptive Design

Defining Success

The process to define product success will help you build a framework of strategic goals and objectives so that you may focus on the best and most informative metrics. There are many different forms of strategic planning, but this process focuses on the most common practice that produces a strategic plan with goals, objectives, and outcomes. In addition to a strategic plan, hopefully there are other documents in your organization to review such as vision boards, project charters and stakeholder presentations that will provide insight into the vision that leadership has for your project. Each level of information within the strategic plan and other documents will provide a path to follow as you work toward specific metrics to describe “product success.” To begin, the five levels of strategic information used in the examples are defined below.

Goals – Focused 3-5 years out, goals provide a broad base for your organization’s strategic vision. In a strategic plan the vision is the broadest statement of vision followed by the goals which provide a smaller target. When reviewing your strategic plan, you should see your project within one or more of the goals.

Objectives – Focused 1-2 years out, objectives provide a more specific target for your measure ideas. Objectives are action statements that describe the intended results of activity designed to accomplish the strategic goals and vision. Aspects of your project should align to one or more objectives and the measure ideas should capture that activity.

Outcomes – Focused 1-2 years out, outcomes describe the final state or achieved results of strategic objectives. Outcomes describe the effect of the objectives and provide a more specific blueprint of what to measure in your project.

Benefits – The focus of benefits can be short-term or long-term depending on where in the text you find them. Ultimately, they should be at a level to help you focus your search for measures to define product success.

Success Factors – The focus of success factors are usually incremental steps to an outcome. Success factors, when done correctly, will provide useful targets for measurement. You may find them readily available, or you may be able to extrapolate them from strategic objectives and outcomes.

Figures 3-5 are examples that were developed to show what the process can look like. Using the demonstration project as the target, a review of the Census Bureau's strategic plan and some vision canvases (for real projects), the process generated the flows shown in the examples. The wording for the goals, objectives, outcomes, benefits, and success criteria have been shortened from the original text for space constraints.

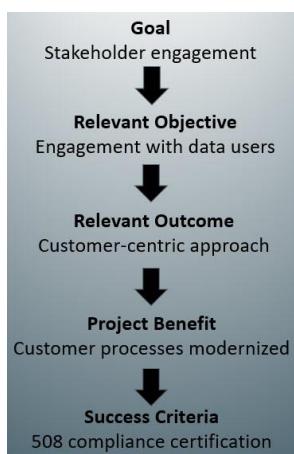


Figure 3 Example 1
Stakeholder Goal



Figure 4 Example 2 Innovation
Goal



Figure 5 Example 3
Organization Goal

Measure Framework

The intermediate goal of the strategic alignment process is to create a measure framework. The framework, as it evolves, will begin to illustrate, and demonstrate the strategic alignment of your agile project. Figure 6 shows how the alignment examples create a framework when placed side by side. Ultimately, the alignment process will not only communicate where your project connects with the strategic vision but also creates a robust framework to help in the search and identification of strategically aligned measures.

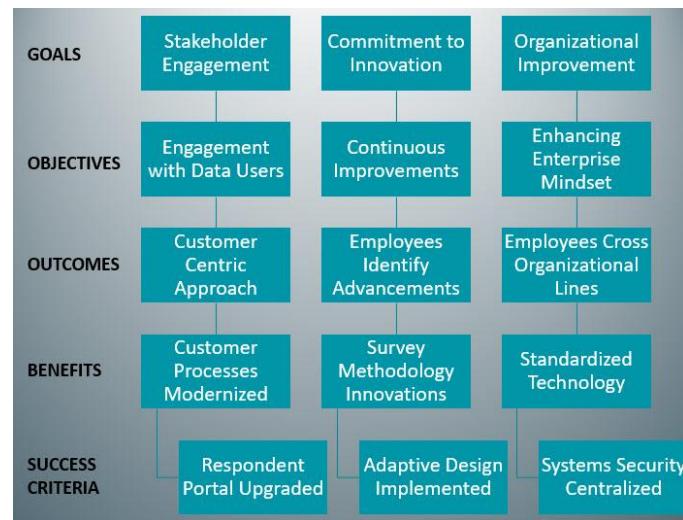


Figure 6 Measure Framework Example

Measure Identification

The next step in the process is measure identification. The framework will provide the guidance for where to look for measures, but research will help to identify good candidates to demonstrate the success of your project's product.

Measure Types

It helps to understand the two different types of measures to use, leading and lagging indicators, to show product success. These two types of measurements are used when assessing performance in a business or organization. A leading indicator is a predictive measurement, and a lagging indicator is an output measurement. The difference between the two is a leading indicator can influence your project's direction and a lagging indicator can only show the outcome of what has been completed.

To apply it to our process, let's use the accommodation of users with disabilities, commonly known as 508 compliance, as an example. 508 compliance is where software products and websites assure accessibility to users with disabilities. In this example, a leading indicator would track the implementation of 508 compliance requirements as a predictive measure for screen reader functionality and accessibility. Conversely, a lagging indicator would track the rate of accessibility for users with disabilities to measure the result or outcome for accommodation of users with disabilities. This example shows how important it is for you to include a mix of both leading and lagging measures to demonstrate product success.

Measure Teams

When you are working to identify the measures, standing up a measure team could be beneficial. The measure team is a good way to engage staff closest to the data to identify measures and later develop prototypes. Teams help create direct accountability and can provide a relaxed and non-judgmental approach for integrating the project team into the decision-making process. Measure teams work best when members possess a diversity of skill sets such as programming, data analysis, and communication skills. The team process may also allow you to matrix in extra resources if your project team does not have the time to identify and create meaningful metrics.

Search for Measures

The strategic alignment exercise will have given you a head start on identifying measures and the measure team will also be a good resource. Additionally, a document review of your project charter will provide measure ideas along with other scope documents. Searching customer requirements and lessons learned from previous projects could provide measure candidates and researching industry standards, quality standards, and benchmark projects may provide tried and true measures to use in your project.

Organize Your Work

What project manager doesn't love a good spreadsheet? Once you have your measure framework together – or even as you create your measure framework, a spreadsheet will help to keep the effort organized, more thorough, and possibly more understandable for those who need the details together. Teams usually become more productive if work is organized into boxes to fill. Figure 7 shows one way to organize the information with tabs for the goals and lines for each column in the framework. Depending on the number of goals, objectives, outcomes, and epics the lines can become quite numerous. Using a spreadsheet format will help keep a large operation organized and will also support working bottom up as you find new success factors or existing measures that need to be aligned or justified.

Objective	Outcome	Benefit	Success Criteria	Epic	Leading Measure	Lagging Measure
Engagement with Data Users	Customer Centric Approach	Customer Processes Modernized	Respondent Portal Upgraded	Respondent Portal		

Stakeholders Innovation Organization +

Figure 4 Measure Framework Spreadsheet Example

Identify Key Measures

The process to identify key measures uses a systematic review to reduce a big list of measures to a defendable and socialized list of the best and most feasible choices. The process uses two sets of criteria - those that describe a measure's purpose and those that quantify the development of a measure. The purpose criteria represent a conceptual process where you elevate those measures that are perceived to provide the most informative data (think about the questions that you get over and over) and best portray the organization's strategic vision. The review of the development criteria will assign values to elevate those measures that are ready to be developed (think easy wins, low hanging fruit) to higher positions on the list. The final step in the scoring process is to combine the purpose and development results and calculate a total score. The resulting score will quantify the value of each measure so that leadership may decide how best to spend project resources producing and maintaining performance measures. For a more in-depth description of this scoring method, please see my 2021 paper co-authored with John Walsh titled *Performance Management Reality Check*.

Measure Development

Plan for Measure Data

Developing measure prototypes will be an iterative process where the measure teams will develop measures, present the metrics in graphical form, and create sample reports with the metrics and analysis. The process of pulling together the measure data, creating the graphs, and developing the sample reports will help you determine a baseline effort for the whole process and examine the usefulness of the resulting metrics. In an Agile project environment, a project team would need to revise project scope to include data capture, insert data gathering into the requirements and add storyboards into the appropriate increments. If outside resources are not available, then the project manager would need to identify resources for developing, maintaining, and communicating measures.

Produce Metrics

Perhaps the most crucial step to the production process is to work with leadership to develop the final version of the metrics. Involving leadership and other stakeholders in the development process will ensure that the final reports and dashboards will contain metrics in their most usable and understandable form. After the new metrics are approved by the stakeholders, the project manager will need a person or team to manage the inventory of old and new metrics, metric production, and the metric review process. Depending on the number of measures and size of leadership group, this process may require a good deal of time to manage. The list below is some of the tasks required to produce metrics:

- Generate metrics, analyze results, and develop reports and/or update a dashboard
- Schedule metric review meetings and ensure subject matter experts are there to discuss the data
- Store and maintain an archive of old metrics and reports

Periodically, the project team should review the measures because, as the agile project progresses, some measures will become less important or useful and new measures will need to be added.

Conclusion

An agile project environment is by design changeable, and this can make product success metrics hard to identify. By following the process presented here a project manager should find a solid method for identifying leadership priorities, aligning products and measures to those priorities, and producing metrics to demonstrate that alignment. The process has a few steps that will require resources to complete, and the project manager will need to balance resources with the project itself. Ultimately, both the project manager and the organization will need to choose to invest resources to produce metrics that demonstrate the success of the agile project and its products.

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Susan Hostetter, PMP, is a Project Manager at the U.S. Census Bureau in Washington, DC, USA. As a data analyst and project management professional, she has been instrumental in standing up and improving PMO processes for risk management, project management, portfolio management, schedule management, cost management, performance management and strategic planning. Her papers have been published in the PM World Journal and she has presented project management topics at PMI chapter events and at the University of Maryland's and University of Texas at Dallas' PM Symposiums. She has a Masters Certificate in Project Management from George Washington University, a Masters Degree in Management with Project Management emphasis from University of Maryland's University College and a Bachelors Degree in Business Administration, with a minor in Economics, from Mary Baldwin College. Susan can be contacted at susan.lynn.hostetter@census.gov