

How Visualization Enhances Traditional Business Analysis in the Federal Space

by **Justin Cullifer**, Sr. Visualization Analyst

Executive Summary

Imagine how nice it would be to write requirements for a system that already exists! There would be little or no guesswork and you could view and interact with the system as you draft and validate your requirements. Sounds utopian, right? Not any longer. Visualization is the means by which traditional Business Analysis is taken to the next level.

In 2008, 24% of IT projects worldwide were either canceled before completion or delivered but never used, according to The Standish Group. Within the Federal Government, there is little tolerance for the failure of such a large percentage of projects. Historically, Federal projects have used traditional, more cumbersome methods of requirements gathering putting them at higher risk of failure. A trend has emerged whereby Federal agencies are embracing new methods of operations with respect to delivering their critical IT projects. At OneSpring, we are leading this emerging trend, using our Joint Application Modeling® as a component of our revolutionary Stream Process™ to apply visualization to the requirements definition process in the Federal space. Visualization has been proven to resolve issues of speed, accuracy and resource demands.

Traditional Business Analysis gathers requirements in textual format. In addition to lists, bullets and paragraphs of written requirements, Business Analysts may create simple wireframes or have conversations with developers to describe the end product they anticipate. This leaves the vision of the end product open to interpretation by both the business stakeholders and the developers. Wireframes and storyboards lack interactivity and therefore require vast amounts of written documentation to describe behaviors and patterns associated with fields on the page and workflow. Thus, there is disparity between how the requirements are provided (intent) and how they are delivered (reality). Having worked in the field of analysis for over a dozen years with clients across the globe, I know that stakeholders respond better when they can see how their requirements will be represented. As a Business Analyst, we might capture 250 words to define a single requirement, but there is an old saying that a picture is worth a thousand words. How have you documented requirements in the past? In a requirements management system, Word documents, or Excel spreadsheets? And how many business stakeholders have you met that have looked forward to validating massive amounts of written requirements? Personally, I have written requirements documents consisting of as little as five pages for minor system enhancements to as many as several hundred pages for the implementation of an enterprise system and have never met a stakeholder who enjoyed the validation process.

Visualization is the next step in requirements gathering. It improves upon traditional methods in many ways. Visualization allows the Client to experience their requirements in an interactive way rather than reading and then interpreting what is on a piece of paper. As an emerging trend for eliciting, capturing, and validating requirements, visualization promotes a shared vision of project requirements. At OneSpring, our Visualization Analysts (VAs) create visual representations of the requirements while concurrently capturing the written explanation of the requirements. This allows the stakeholders to experience their requirements in a manner that appears and functions like the to-be-developed system. Visualizations tell the whole story of the set of requirements, allowing stakeholders and developers to eliminate any ambiguity by maneuvering through interactive screens and workflows. Typical projects rely on developers to produce such an interactive system, but the OneSpring method puts the power in fewer and less expensive VA resources, thus reducing the project timeline and cost of development rework. Further, it allows the VA to vet requirements in an environment that is significantly more realistic than traditional wireframes or process flows and in less than half the time.

Consider the scope of many government IT projects. I invite you to visit USASpending.gov, a website that tracks project spending across all agencies of the Federal government. The projects displayed on the site are considerable in size and will undoubtedly each require hundreds (if not thousands) of pages of documented requirements. The Business Analysts who document the requirements for these large projects have two choices: regurgitate what they have gathered from hundreds of pages of information into hundreds more pages of requirements documentation, or aide in the creation of a robust visualization that allows the stakeholders to experience their requirements rather than leave the process with individual visions about how requirements

delivered in paragraph form will be interpreted. I am an advocate for the later approach. In the Federal space, effective requirements gathering is even more important – after all, it is our tax dollars and often our national security at risk if a project fails. A Business Analyst for Federal projects is challenged to quickly learn the subject while simultaneously navigating the classified nature of the material and the disparate sources of information. Add to these constraints the cumbersome, traditional methods of requirements gathering, limited exposure to detailed system material until the Analyst is in requirements gathering sessions, and limited or no exposure to the contractors that will ultimately develop the system, and it is no wonder so many projects in the Federal Space are behind schedule or over budget. The combined impact of the size, scope and constraints in Federal Projects makes them ideal candidates for the more streamlined and effective visualization approach to requirements gathering.

My first project that utilized requirements visualization within the Federal government was an effort to modernize a case management system by migrating from a mainframe environment to a service-oriented web environment. By mainframe system standards, the client’s legacy mainframe was not so bad for “green screens”. Many of the stakeholders had a difficult time accepting the fact that their old friend, the mainframe, was being retired. As we visualized future functionality and introduced widely accepted, user-friendly web standards, the visualization served to break down any preconceived notions and mental barriers that were in the way of eliciting quality requirements. We created a fully interactive visualization of the future software product right before the stakeholders’ eyes without the need to use expensive development resources. Simultaneously, we captured the corresponding functional requirements and business rules.

Federal government stakeholders are some of the most knowledgeable and genuinely interested clients with whom I have ever worked. They are eager to share their real-world experiences to ensure that their requirements are captured clearly and accurately. Within this particular Federal agency the subject matter experts were organizationally and geographically distant. OneSpring provided these stakeholders access to their visualized requirements on a central server that is accessible from any geographic location at any time of day. The stakeholders could then view and click through the visualization and also leave comments and suggestions for enhancements to the visualization and associated requirements. The comments could be applied broadly to the page, or more specifically to a widget on the page. This enabled my team to collaborate with subject matter experts across the country, obtain a variety of perspectives, and in enable the stakeholders to enjoy a clear representation of their agreed upon requirements throughout the course of the requirements gathering process. There are indisputable benefits of pairing traditional business analysis tactics with innovative visualization. Visualization promotes a shared vision of project requirements, eliminates any uncertainty on the part of developers producing the end product, and saves time and money for projects. Visualization is key to improving requirements understanding, clarity, and successful validation. The necessary supporting documentation produced during the process only enhances the shared vision of the future system. More than ever, the Federal Government is embracing change to their traditional methods of operations and is embracing the visualized requirements approach.

For more information on how OneSpring can enhance your project process and help your project team benefit through visualizing requirements, please contact us at Clarity@OneSpring.net.

About the Author



Justin Cullifer is a Senior Visualization Analyst with OneSpring. With over twelve years of experience in the field of business analysis, Justin has led analysis efforts for projects within Federal and State governments, financial services and insurance industries. He has produced and delivered business analysis training throughout his career and always applies a common-sense approach to defining requirements. He holds a Bachelors of Science in Marketing and resides in Atlanta, Georgia.

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