

DevOps Primer for SDLC Professionals

Leading Managing The Value Stream - CI/CD DevOps Pipeline



Leading Managing The Value Stream - CICD DevOps Pipeline



Transforming Your
Ideas Into Reality

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Agile & DevOps Global Standards Organization

DevOps 6 Core Principles

<https://www.devopsagileskills.org>

<https://www.devopsagileskills.org/dasa-devops-principles/>

Leading Managing The Value Stream - CICD DevOps Pipeline

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Succeeding at Agile & DevOps Adoptions and Transformations

We have been failing and continue to fail at a rate of 70 to +90%, depending your source, with our Agile, DevOps and DevSecOps adoptions and transformations.

The following white paper will provide insight and understanding to “what” and “how” using a Value Stream and Value Stream Mapping may be able to help you turn things around or not become part of this negative statistic as you think, work and lead ~~manage~~ your CI/CD pipeline efforts.

The known ingredients to be successful at Agile, DevOps, and DevSecOps adoptions and transformations are the following:

- Understanding Agile, DevOps & DevSecOps are “Mindsets”
- Requires leaders to have a “Transformational Leadership” skill set working and empowering by vision
- Evolve the organization’s DNA to be Product “value” based, not Project “cost” based
- Plan and execute their adoptions and transformations starting with Culture & Mindset, following the prescribed sequence of; culture, mindset, people, process (flow), and tools
- The reason why we fail and continue to fail is because most organizations start with tools or process
- If the “CULTURE” is not in place to support the required “MINDSET”, (remember Agile, DevOps, and DevSecOps are “MINDSETS”), than your adoption and transformation will fail. It’s that simple. No silver bullet. No shortcut.

The challenge is it is that simple, but that hard to change culture and mindsets... Are you and your organization up to the challenge... Have the stomach or appetite to succeed?

Reflecting on decades of working with organizations to transform and sustain success with their Software Development Life Cycle (SDLC), Continuous Integration Continuous Delivery and Deployment (CI/CD) Pipelines, and Software Factories, a Department of Defense (DoD) term, leveraging DASA’s 6 Core DevOps Principles, and using Value Stream and Value Stream Mapping can GREATLY help you, your team, and your customer succeed.

Value Stream & Value Stream Mapping

Is the illustration or visualization of how you intend to flow value to the customer

Most organizations think of their value stream and map their value stream from their organization’s perspective. However, following **DASA DevOps Principle 1 Customer-Centric Action**, and **Principle 3 End-To-End Responsibility**, we need to look from your customer’s perspective not just your organization’s perspective of how your services and products are flowing value to the customer. This includes the customer’s eco-system of product and service providers, of which you are most likely one of many. Initially working with your customer up front on this way of thinking, helps determine who are the key provider’s from the customer’s point of view, which will influence or impact your organization’s ability to flow value to your customer.

How or Where do I Start?

Most organizations start by mapping out their value stream by mapping out their SDLC or CI/CD pipeline processes.

What sometimes gets missed or is considered a byproduct or afterthought is the front-end and back-end steps. Front-end steps being initial contact, information or requirements gathering, establishing or initially setting customer expectations. Back-end steps being customer support, upgrades, patches/updates...etc., basically sustaining your products and services to your customer.

The first step or requirement for deciding which value stream tool to use is to work with your Enterprise IT or IT leaders to figure out how “EVERYONE,” internal and external to your organization, can have access to the Value Stream Tool/Map and corresponding communications and documentation. The often missed, not understood, or ignored requirement is that you NEED/REQUIRE “**EVERYONE**” internal and external involved in flowing value to the customer, be able to view the higher levels or common steps, information, and responsibilities for flowing value to the customer. In addition, at that location there needs to be some ability for “EVERYONE” internal and external to communicate and provide ideas, innovation, and information. My experience has been that most organizations, including those household brand names we all know, have very few or a limited set of collaboration and communication tools where EVERYONE internal and external can actually use. Therefore, your initial or starting Value Stream tool selection is going to be limited, and possibly chosen for you simply by process of elimination.

This is ok and actually a good thing... you are now focused on establishing who you can visually communicate and collaborate with, and more importantly... how!

Once the document’s location, collaboration and communication requirements are decided based on accessibility, the initial Value Stream Map can be posted. Here again, Keep It Simple (KIS)! Initially, any sort of document tool; Power Point, Word, Visio, Miro Board, Murrell Board, Wiki, Confluence Page... etc. can be used to start documenting your value stream. The point is to post something, to establish a starting point, and start communicating and collaborating... having the conversation.

Realize that what is really going on here is you and your team are defining and evolving the “Culture” and “Mindset” in so many ways, laying the foundation or setting the team up for future success. Think of it this way, you’re learning by doing, failing fast, iterating in small chunks.

Following the common saying “eating our own dog food”, we are going to work iteratively in small chunks, each iteration building upon the previous one. Meaning, during and at the end of the sprint we solicit feedback, and make updates to the value stream and value stream map and the location, or technology. As the weeks and months go by, let this new way of communicating and collaborating become the foundation for how you, your customer, and customer’s partners think and work together.

Over time, you will see or realize that how you think and work together for managing your Value Stream follows or is very similar to how you think and work to flow value to the customer. Yes, even the customer will see or realize that by working in this manner, they are partially responsible for what and how value flows to themselves. More importantly, everyone will see and realize, how we come together, especially in problem solving or decision making over the value stream, can provide a model for how we problem solve and make decisions in development, delivery, and deployment.

Who is the #1 Resource in creating your Value Stream?

Simply, the customer, who needs to be actively involved in co-creating and responsible for their contributions and active involvement in sustaining the Value Stream.

Objective one (1) involving the customer, for the Agile and DevOps adoption or transformation to be successful, is for the customer to be an actively involved, and a contributing member in your scrum team.

Objective two (2) is for the customer's active scrum team member to be the main communicator and collaborator, providing the feed back into their organization. Needs, requirements, information, and most importantly the decisions made by the scrum team need to be fed back into the customer organization and its partner eco-system.

Realize that the decisions made by the scrum team are the navigation system of both organizations for how value is going to flow or expected to flow to the customer

Any conflicts, issues or problems are discussed and path forward is decided in the scrum team, by the scrum team, NOT people in the hierarchy regardless of their title or role. Why? In the scrum team is where the Subject Matter Experts (SMEs) are located whom are closest to the real-time information or "reality" of what is happening or about to happen. The Scrum Team has the best opportunity to realize, respond, and most importantly react, in real-time (make a decision and move forward), thus avoiding or mitigating the risk or undesired situation from occurring.

Communicate and Collaborate when creating your Value Stream

Both “internally” & “externally”

Internally:

When your organization collaborates and communicates around the visualized value stream, the organization is rallying around how to think and work in accordance with flowing value to the customer. The people, process (flow) and tools are architected, organized, configured and operate based on how to best flow value.

The bonus or value add is that the political animals or those using a What’s In It For Me (WIIFM) approach, those who manage or lead using a transactional value and believe set focused on themselves, have a much harder time due to a significantly reduced opportunistic landscape where they can build their rice bowls, kingdoms, or centers of power. Having everyone focused, incentivized, and working together at flowing value to the customer is the desired state which results in the desired behaviors and outcomes.

Externally:

Review the high level or process steps and related information of your value stream map with your customer to get their perspective. In accordance with **DASA DevOps Principle 3 End-To-End Responsibility**, also review this with key or critical service or product vendors in your customer’s ecosystem.

Be aware that your customer’s key product or service companies’ may create dependencies, have direct or indirect influence, and provide insights and perspective for how to streamline, gain efficiencies or effectiveness in flowing value to the customer

Unexpected Value Add

The most successful leaders and leadership style for leading an Agile and DevOps adoption or transformation is a Transformational Leader using a Transformational Leadership skill set. The main method or way in which a transformational leader communicates and collaborates is by vision.

By using a Value Stream Map, a “**Transactional**” based leader can be introduced and become comfortable using vision. This can jumpstart or accelerate their evolution to a Transformational Leader.

Value Stream in Action

Operating and Executing, Managing Flowing Value to Your Customer Using Your Value Stream.

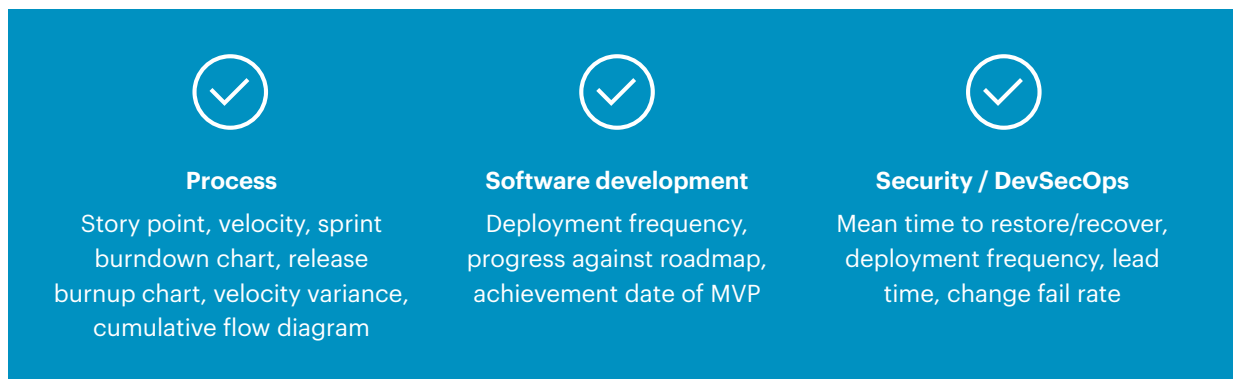
Big Picture – Holistic View:

What I stress to my students and clients, when thinking and working using a value stream, is to think and work from the big picture or holistic context following **DASA DevOps Principle 2 Create with the End in Mind** as your target.

The more you and your customer can align on clarity and definition, the more firmer target or goal you are making for your teams to hit.

Metrics – Can Also be An Indicator of Maturity

What I have witnessed with my clients is their level of operational maturity is represented by the type of metrics they are using. In the early stages of adopting and getting used to working with Agile and DevOps the focus is on the development side of the house or more traditional metrics focused on code development.



The next level of maturity starts to use metrics regarding the health of the CI/CD pipelines and developers.

- Cycle time
- Automated test coverage
- Amount of duplication
- Cyclomatic complexity
- Number of defects developers
- Velocity, the rate at which your team delivers working, tested, ready for use code
- Number of commits to the version control system per day
- Number of builds per day

The next level of maturity is to incorporate flow metrics, for how we flow value to the customer.

- Flow velocity - how much value did we deliver?
- Flow efficiency - do we know where our bottlenecks are?
- Flow time - how fast did we deliver value?
- Flow load - is demand impacting on capacity?
- Flow distribution - do we have business priority alignment?

Take a look at <https://flowframework.org/>

The final stage of maturity has the organization, customers, and partners understanding their value stream, and how value flows to the customer in enough granular detail to be able to create their own proprietary metrics or redefine existing metrics to better monitor and provide feedback for how they collectively flow value. The changes appear subtle, but the result has a HUGE impact.

For example, take “Flow Efficiency” stated above, and in our development and testing tools we use a field in the tool which has the time stamp tied to the person’s role or title. We’ll now have the options or ability to evolve or modify “Flow Efficiency” to be “Developer Flow Efficiency” or “Tester Flow Efficiency”. If we take this thinking a step further, we could tie the time stamp to the individual developer or tester’s name. We’ll now have the options or ability to have “Developer #1 Flow Efficiency” or “Tester #1 Flow Efficiency” metrics based on the individual level.

My **CAUTION** or **recommendation** if you go down to the individual level is that the individual’s name is not published or used in these metrics where others can publicly view or see. As a matter of fact, have these individual metrics only be accessible and available to the individual, and NOT management.

Where I have found this level of granularity most useful, providing positive and unexpected or surprising results which may not be about the individual, occur when the individual was able to view their information, and when they were ready, they brought their statistics to their manager, mentor, teacher, coach or peer, and had the conversation using the performance information, communicating this type of information in the “**context**” that they intended it to be used.

Value Stream simplifies Automation decisions and priorities

One of the best ways to achieve DASA Principle 5 Continuous Improvement and DASA Principle 6 Automate Everything You Can is to use Value Stream Mapping.

Documenting and visualizing the details of people, process, testing, metrics, and tools, by observing and monitoring how value flows, ideas and innovation can be tested and tried. When efficiencies are realized, the manual steps can be automated, providing repeatability and consistency in the CI/CD pipelines.

The real value came when my clients realized that by linking their automation decisions and priorities to the value stream improvement ideas, the automation decision making and prioritization became much easier and simpler. Disappeared were the long meetings or drawn out discussions with people posturing for what to automate first based on what they wanted. We simply worked with the customer to prioritize what manual steps, proven ideas or innovation provided the most improvement or stability to flow value securely and consistently to the customer.

Notice the reinforcement and focusing effect going on here, protecting and sustaining a culture and mindset for flowing value to the customer, not what is in the best interest of a person, team or segment of the organization.

Where are you going to find the most value or improvement?

“Handing off” between the value stream steps in the process, or within the value stream step in the process?

The answer is “handing off” between the value stream steps in the process. A fellow team mate many years ago referred to this as the baton hand off. Think of a track and field relay team and how much they practice, or more importantly how critical the baton handoff is for winning, and beating the competition. Same with value streams. Take a really close look at time spent or lost opportunity which occurs between the value stream process steps for some easy opportunities or low hanging fruit for improvement.

Transparency

Thinking and working using a Value Stream with your customer and other service or product vendors provides a new found level of transparency. Transparency is the great equalizer, and leveler of the playing field, which focuses organizations and their people on the goal of flowing value to the customer. This is one of the greatest adoption and transformation success factors which most people and organization’s do not realize, do not share, or openly discuss.

Why?

Because entrenched transactional based power broker’s behaviors will become visible and marginalize the trust and credibility others may have placed in them. Thinking and working transparently is required and a HUGE part of culture change.

Take a moment to reflect on this and realize the power of the Value Stream Map to provide transparency to evolve and sustain a transformational culture.

What value is most valued by your customer?

“How” you deliver may be equal to or more valuable, predictable, and dependable than “what” you deliver.

Understanding your organization’s use of metrics, provides a maturity measurement to help build confidence not only in the people of the organization but your customer’s confidence in your organization’s ability to deliver and deploy. This leads us to the realization that “how” we Continuously Deliver and Deploy (CD) may be equal to or more important than “what” we are delivering or deploying. What I have seen from industry is that once the product and service companies align to their customer, and all their organizations have matured around a common and shared value stream, there is a realization of “consistency” and “predictability.” Business leaders like predictability so they evolve their way of thinking and behavior, becoming focused and dependent on knowing that something is going to be delivered at the end of every sprint ritual.

Lightbulb Moment

Realize this is the answer, solution or path forward which resolves the emphasis, demand, or requirement for a predetermined feature or function to be delivered by a certain date.

Having the customer and possibly a key partner resource be an active member in the scrum team, actively participating means that customer and possibly the partner are involved with and help to organize the backlog or epics, stories, and tasks. The organizing is an opportunity for the customer and partner to align with your organization, what is going to be ready to deliver and deploy at the end of your sprint. Over time, the customer and partner's thinking and behavior changes or evolves due to the confidence and trust in the scrum team to deliver something which works at the end of the sprint. The active customer and partner resource are now feeding back into their organizations what is planned to be developed when from the backlog. The customer and partner's business plans, business targets, goals and strategies are now based on the scrum team's ability to deliver. The conversations and planning now shift from "what needs to be delivered/deployed" to "what can be delivered/deployed" at the end of the sprint. The BIG SHIFT in perspective and expectations are that the scrum team is now in charge of its destiny, leading and making real-time decisions based on what the team knows they can accomplish within a sprint or couple of sprints. Notice the dependency on decision making in or by the scrum team.

As time goes on, confidence and trust will grow. A real time indicator that the scrum team has gained or earned trust is when the customer's business leaders make statements about the "ability to consistently deploy" or "I can work with knowing I will receive something at the end of the sprint, and as we get closer to the end of the sprint, I'll set expectations accordingly to the "what.""

This behavior is an indicator that the customer's eco-system is now working symbiotically at an optimized mature state. To improve the Value Stream will require an improvement in people, process and tools.

The beauty of leading by using a value stream once the value stream has matured to this level is that you are now operating at a level of "trust", where you are protecting and sustaining the ability to flow value to the customer.

What about Technical Debt or Maintenance of the CI/CD pipeline?

In order to achieve this level of:

- maturity
- consistent flow
- dependability and trust

your strategies regarding technical debt, and run and maintain items will require that they are placed in the backlog and a percentage of this work is given to the scrum team or teams each sprint. For example, during grooming, the sprint team grooms 20% of its capacity to work on technical debt or run and maintain stories and tasks, 80% on new feature or function development stories and tasks.

Summary

There are many white papers published on Value Stream and Value Stream Mapping, and we expect many more with the increasing awareness on these topics. Especially with a growing emphasis for flowing value to the customer, evolving from project (cost based) to product (value based).

In this white paper we looked at Value Streams and Value Stream Mapping from the lens of a Transformational Leader to provide a solid foundation, setting you, your team, and customer up for success in your real world application of this subject matter.

As a transformational leader looking for a solid tool to help modernize their organization, visualizing the Value Stream is one of the strongest tools you can have in your tool box. Use the visualized value stream as a focus point, like a hub in the center of a bicycle wheel holding and bringing all the spokes together to a center spot. All of the communications and collaborations can now be grounded on an agreed upon and visualized current or future state. This affect exponentially improves and enables the ability for the organization to define, evolve, and sustain a transformational based culture, mindset, people, process (flow) and tools, while using transparency. Another value add is the that thinking and working using the Value Stream as prescribed, enables you to incorporate 5 of the 6 DASA DevOps Principles into your culture, mindset or DNA of how your organization thinks and works. It is rare to find a tool which provides so much value to the organization's success for its Agile, DevOps, or DevSecOps adoptions and transformations.

We hope that the preceding white paper provided insight and understanding to “what” and “how” using a Value Stream and Value Stream Mapping may be able to help you, your team, and customer succeed as you think, work and lead ~~manage~~ your CICD pipeline efforts.

Thank you for your time

John Ruppel



Transforming Your
Ideas Into Reality





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John Ruppel is a trainer and transformation consultant at SoftEd who specialises in agile transformations and culture, DevOps, DevSecOps, and transformational leadership skills. He is the author of the book TYIIR (Transforming Your Ideas Into Reality), the book KIS (Keep Intuition Simple), and is experienced in helping organizations in many different countries to operate dynamically.

For more than 20 years, John has had consistent success working with Fortune 100 companies, entrepreneur-led organisations, government departments and individuals to help grow their business and their people. Supporting them in scaling secure, sustainable operations that achieve business-critical objectives.

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