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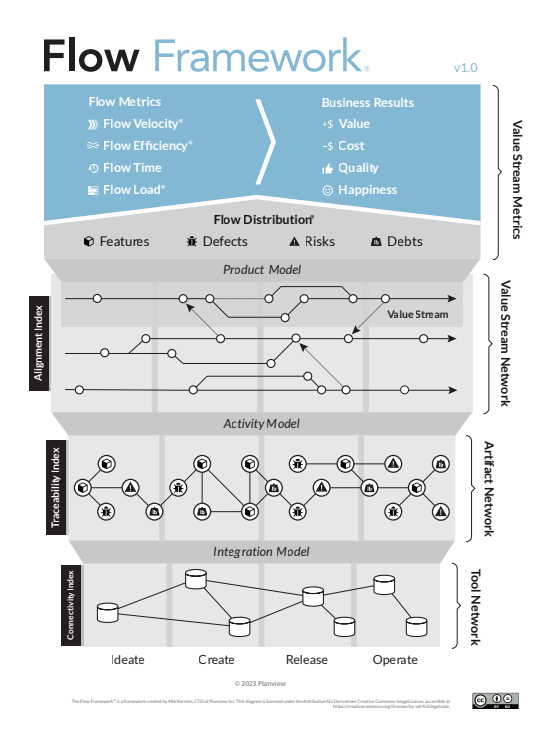
EBOOK

Flow Metrics: A Business Leader's Guide to Measuring What Matters in Software Delivery

Amidst the fast-paced and uncertain business environment, enterprises are grappling with the urgent challenge of delivering greater value to their customers faster than competitors. The lack of accurate measurement correlating technology work to business outcomes hinders their ability to assess progress, identify improvement opportunities, and achieve the agility and impact necessary for customer satisfaction. Swift action is imperative to unlock the path towards accelerated value delivery.

Dr. Mik Kersten's Flow Framework® empowers enterprises to achieve a new level of value stream measurement and optimization, leading to maximum outcomes that significantly benefit both the business and customers. Through the implementation of Flow Metrics, business and technology leaders gain access to a common and visual language that seamlessly aligns software delivery outcomes with strategic objectives.

In this eBook, we discuss how these powerful metrics enable business and technology leaders to precisely measure the flow of value delivery, and identify bottlenecks, inefficiencies, and areas for improvement. With Flow Metrics as a guiding compass, enterprises can optimize their processes, eliminate waste, and streamline workflows, ultimately accelerating value delivery to customers.



Flow Metrics center around the principle that all software-related work – design, development and delivery – must be creating value for the business. If your work isn't creating value, why are you doing it?

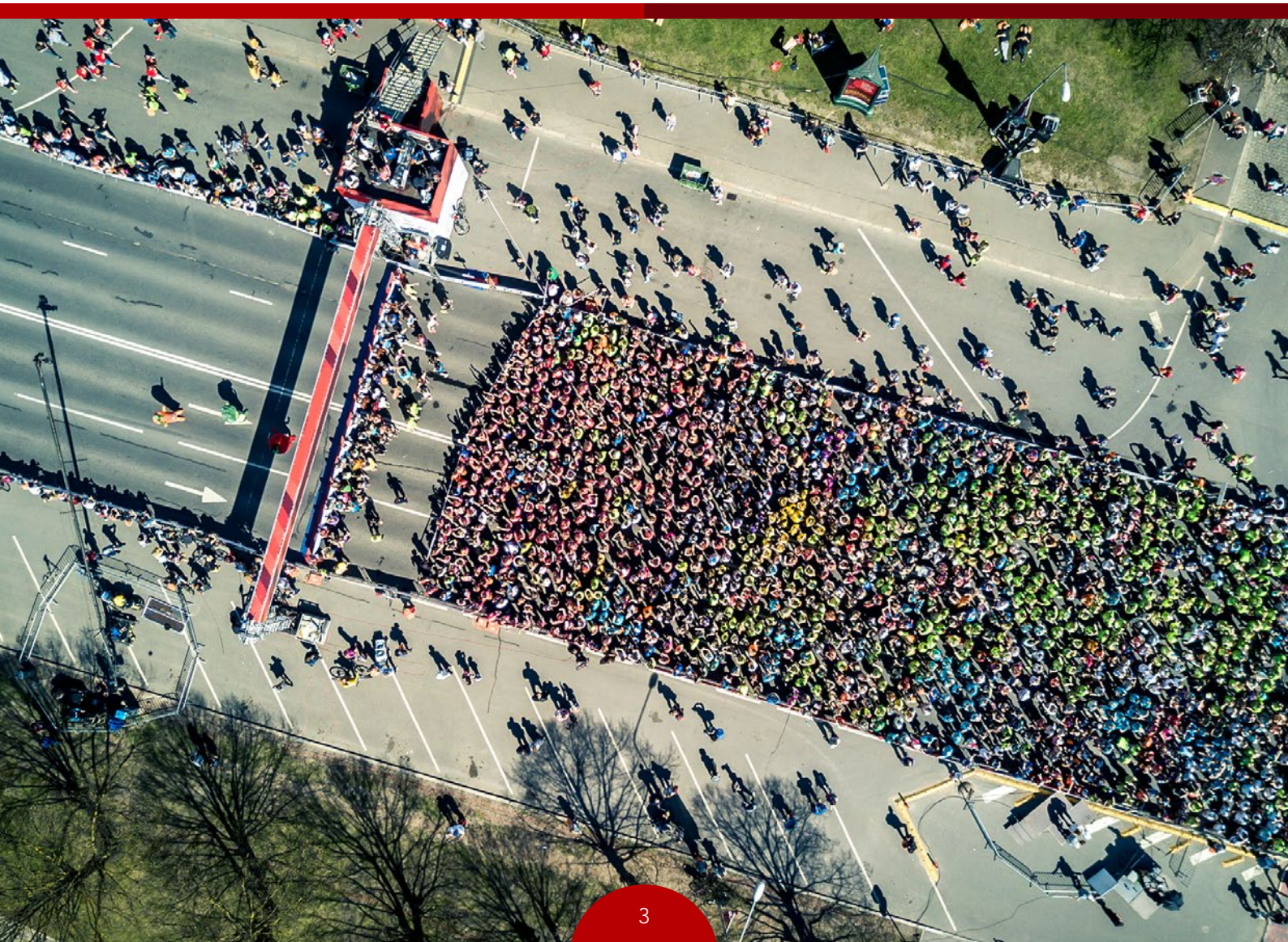
Why Flow Metrics?

While trillions are being invested in emerging technologies, tooling, methodologies (Agile, SAFe®, DevOps), and top-tier talent, the majority of business and technology leaders lack the visibility and metrics needed to determine whether they are actually improving. Previous attempts at measuring software delivery at scale have failed because they have been based on proxy metrics (for example, counting the number of lines of code committed or the frequency of deployments). While there is value in monitoring local activities like these, it's essential to prioritize the business outcomes from the work – not just steps within the process.

Flow Metrics are designed to get organizations focused on delivering value. By monitoring the objective data that is captured from integrated software delivery toolchains – across teams, tools and departments – organizations can generate clear, business-centric metrics to improve decision-making and help answer crucial questions such as:

- How is software delivery impacting revenue, quality and costs?
- What is slowing value delivery down?
- How are transformation initiatives performing?
- Where should investments be made to improve customer satisfaction?

These are questions that Flow Metrics can help answer. By tracking them in correlation with business outcomes (value, cost, quality, and employee happiness), leaders can make significant strides in accelerating time-to-market, increasing revenue and improving customer satisfaction.



What are Flow Metrics?

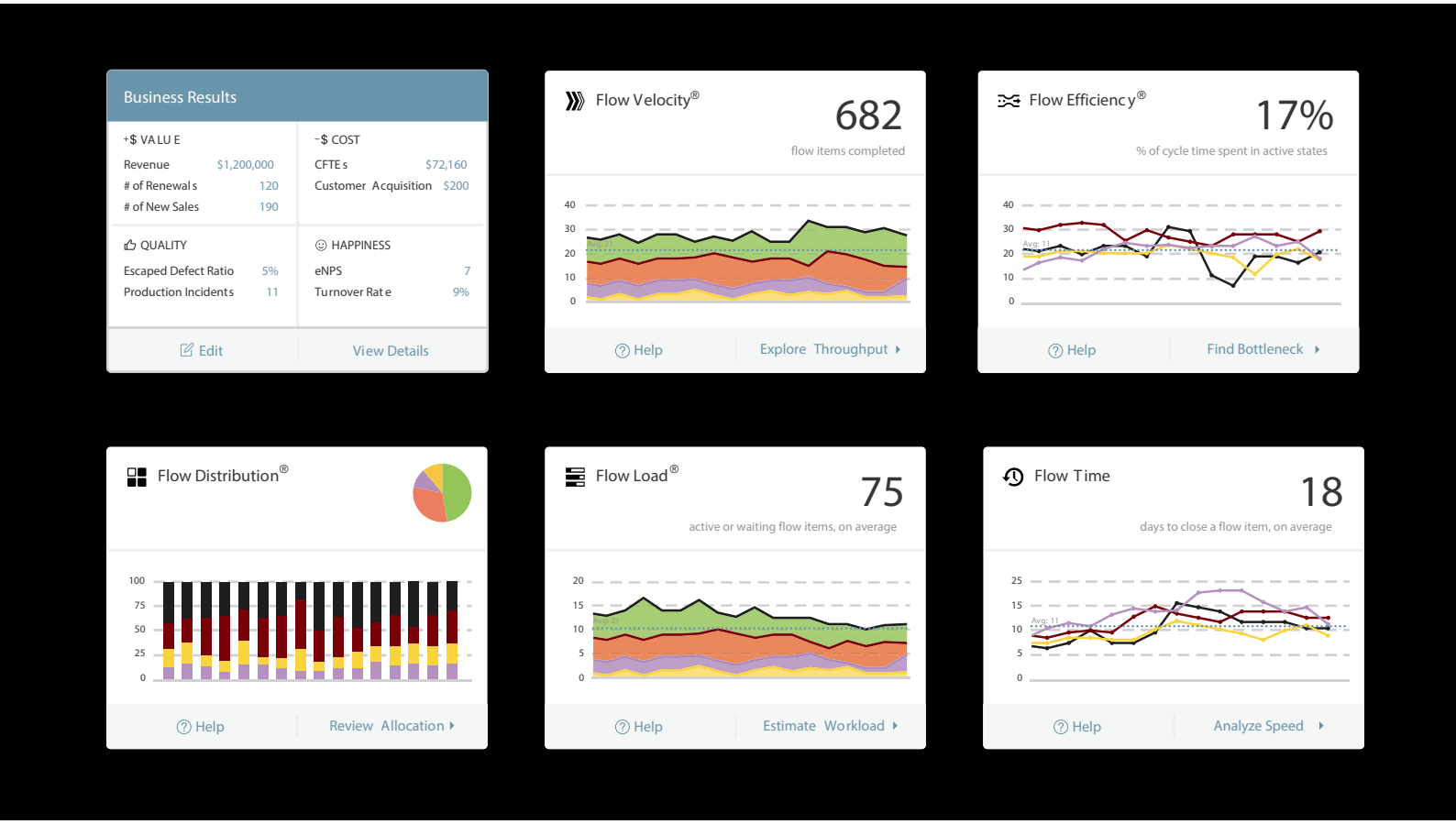
The Flow Metrics – Flow Velocity®, Flow Efficiency®, Flow Time and Flow Load® – combined with Flow Distribution®, present a new approach to measuring software delivery value streams. They provide a clear indication of whether your value streams are sufficient to support targeted business outcomes:

- Is value delivery accelerating? (Flow Velocity®)
- Is upstream work holding up delivery? (Flow Efficiency®)
- Is time-to-market getting shorter? (Flow Time)
- Is demand overwhelming capacity? (Flow Load®)
- Are priorities in line with business objectives? (Flow Distribution®)

Flow Velocity, along with Flow Time, are sometimes called "the money metrics". They tell you how much business value you're delivering, and how quickly. While the money metrics are naturally the most appealing, the supporting metrics – Flow Load and Flow Efficiency – indirectly impact these money metrics.

The Flow Metrics categorize value-creating work into four types of Flow Items, including Features (relating to business value), Defects (representing quality), Risk (security and compliance), and Debt (obstacles to future delivery). The following pages will walk you through the intricacies of each Flow Metric, showcasing how they leverage the flow of work to optimize value delivery.

Presenting Flow Metrics in a visually digestible way is equally important as identifying them. Planview Viz provides instant access to an organization's value stream metrics in a simple, customizable interface and with all the tools for creative data presentation. Below are examples of Flow Metrics from the Planview Viz dashboard.



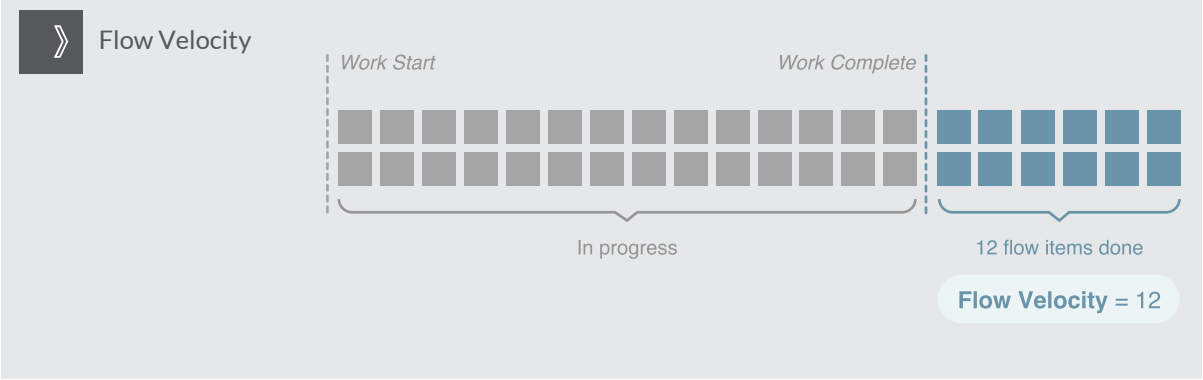
Flow Velocity – How fast are we delivering business value through software delivery?

Flow Velocity is a measure of productivity. It tells you how many items were completed over a given period of time (week, or month over month). Tracking your Flow Velocity over an extended period provides historical data so that teams can see if their delivery rates have improved, helping them to provide more accurate estimates/forecasts on how much work (and value) they can deliver.

Adapted from the Agile concept of velocity by determining how many units of work (e.g. story points) are delivered in a specific time frame (for example, a two-week sprint), Flow Velocity applies this same concept to the four Flow Items that represent value to your customers. A simpler, less granular measure, Flow Velocity doesn't rely on size or scope estimates, or the priority of each Flow Item. It assumes that business prioritization and value definition is complete and focuses purely on the end-to-end movement of Flow Items (which are representative of *all* of the work being delivered).

Visualize your Velocity

It's important to monitor and track your Flow Velocity in a way that is easy for the human eye to consume. Forget spreadsheets, you should aim to visualize the data in a way that can instantly show the viewer how many items you delivered this month.



FLOW VELOCITY IN ACTION USING PLANVIEW VIZ

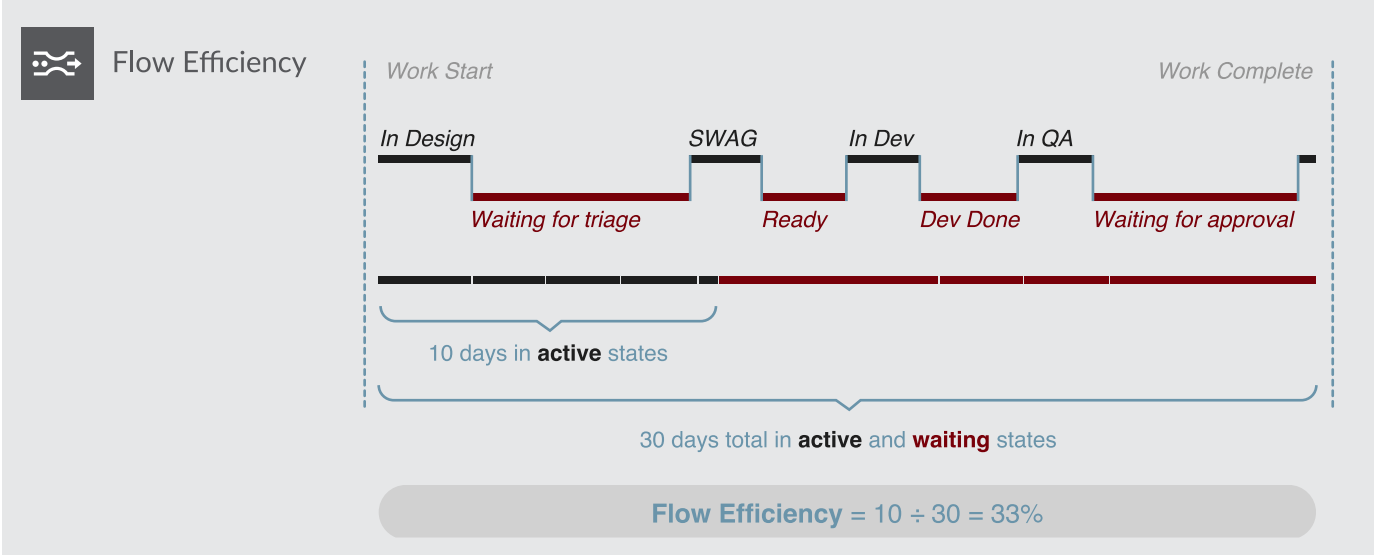
Case Study: Sometimes quick wins means long term customers

A software company had a low Flow Velocity for features and long Flow Time that was impacting customer renewal rates. Across a double month period, Flow Time took 20+ days on average as the value stream was focused on "home runs" – big, thorny, deal-breaking features for their largest customers – when the business could actually make lots of customers happy – and secure in their renewals – with small, quick wins.

An experiment was hatched to dedicate one day a month to "quick wins" – mostly user interface (UI) and usability debt items. The Product Value Stream Lead worked with the business to prioritize and in just one quarter, Flow Time was cut by 50% and Flow Velocity doubled. Not only were they able to meet their renewals target, but employee happiness (measured via eNPS) improved greatly, because they were able to deliver more value faster and pay down UI debt that had been accumulating for some time.

Flow Efficiency – What value-adding work is actively being worked on?

A major part of Flow Metrics is tracking all the work that goes into planning, building and delivering a product for the business. Just as it's important to track how much value you're delivering, how long work is taking, and how much WIP your teams have, it's also vital to track what work is actively (code, test, automation, designing and all that creative work) being worked on to identify where waste and wait states are holding up value delivery. Flow Efficiency helps determine the proportion of your Flow Items (features, defects, debt, risk) that are actively being worked on.



If your Flow Efficiency is low, it's an indication of waste – items are stagnate or in a wait state for some reason. You can see a domino effect: the more items you have waiting means the more WIP (Flow Load) and the larger the queues in the value stream. As queues grow, waste increases through overutilization and context-switching, adding further delay. Using the Flow Efficiency metric, you can readily see excessive wait times and work to reduce or eliminate bottlenecks.

It's important to note that this metric is based on Flow Time (elapsed time work takes to be completed from the moment it enters the value stream), not cycle time (the time it takes to complete a single step in the process). Flow Efficiency, therefore, captures wait time both upstream and downstream, monitoring the whole value stream and process from end-to-end.

FLOW EFFICIENCY IN ACTION USING PLANVIEW VIZ

Case Study: When is work really "done"?

An enterprise's value stream often comprises many work states and transitions. So many variations can make it extremely difficult to identify where work is actually waiting. It's important, then, to be able to abstract this information. The Flow Framework enables you to do that by enforcing four key states: new, active, waiting and done.

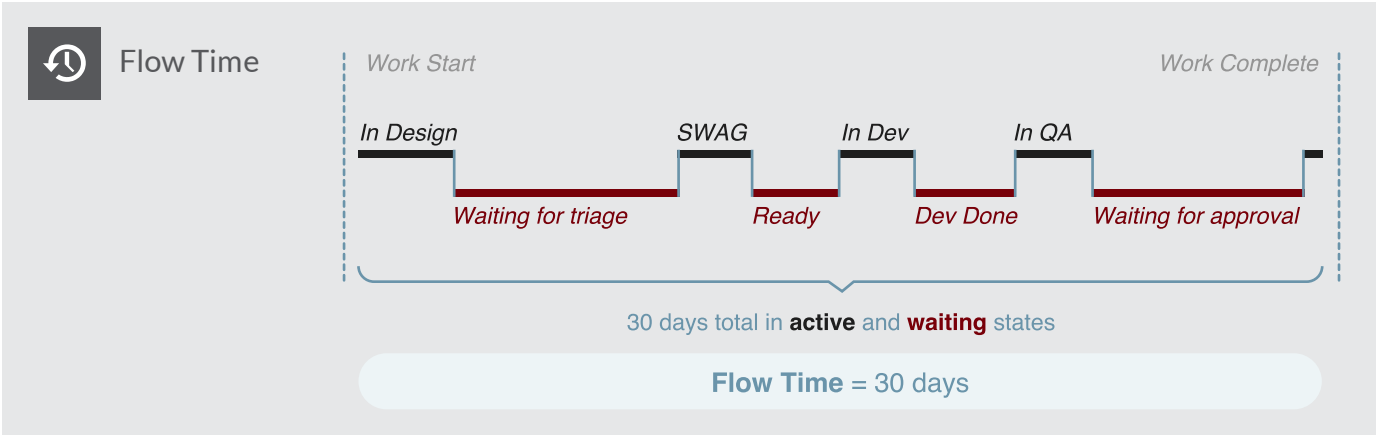
One large U.S. healthcare organization was able to use the Flow Efficiency metric to improve their processes. While they had a strong Flow Velocity, the team happiness was very low with complaints around too much context switching.

By using Flow Metrics in relation to feature work, they could see that there was high Flow Load and strong cycle time. Curiously, their Flow Efficiency indicated that there were very few wait states. By digging deeper, they could see that many work items were stuck in an active state, with a team of eight working on a staggering 120 "active" items.

The Flow Efficiency was actually a false positive. It highlighted that they needed to rethink the way they tagged work, which in turn would enable them to improve the way they worked. Without the visibility provided by Flow Metrics, they would not have focused on these improvements..

Flow Time – How fast are we delivering business value?

Every second counts in software delivery. That's why Flow Time is so important to IT and business leaders. A measure of speed and predictability, this metric tells you what your time to value is, helping you answer that frequent complaint, "Why are things taking so long?" Crucially, this metric enables you to be more accurate with your time-to-market forecasts, improving customer relations and retention, as well as supporting the business in its financial planning.



Flow Time helps clear up the confusion that lingers around time measurement in software delivery. In Lean manufacturing, there are two key metrics used for process improvement: lead and cycle time. The former measures the entire process, from when a customer first makes a request to completion, and is all the customer cares about. The latter refers to the time it takes to complete a step in the process (such as development). The problem with these metrics in software delivery is that they're too ambiguous. Delivery lead time, for instance, is used by DevOps teams, referring to code commit to deploy, measuring only the delivery pipeline on the "right side" of the value stream (the Release stage).

Instead of a developer-centric measure of time, we need a customer-centric measure like Flow Time, which is the elapsed time work takes to be completed from the moment it enters the value stream (approved by business stakeholders) to completion (end user obtaining value from product), including both active and wait states, including weekends and off-hours. By analyzing trends over time, this metric can tell you if your acceleration investments are actually improving your time-to-value. Flow Time appeals to business and product owners as it can tell them how long a request takes to be completed once it has been approved. It enables you to be approximately right, instead of exactly wrong.

FLOW TIME IN ACTION USING PLANVIEW VIZ

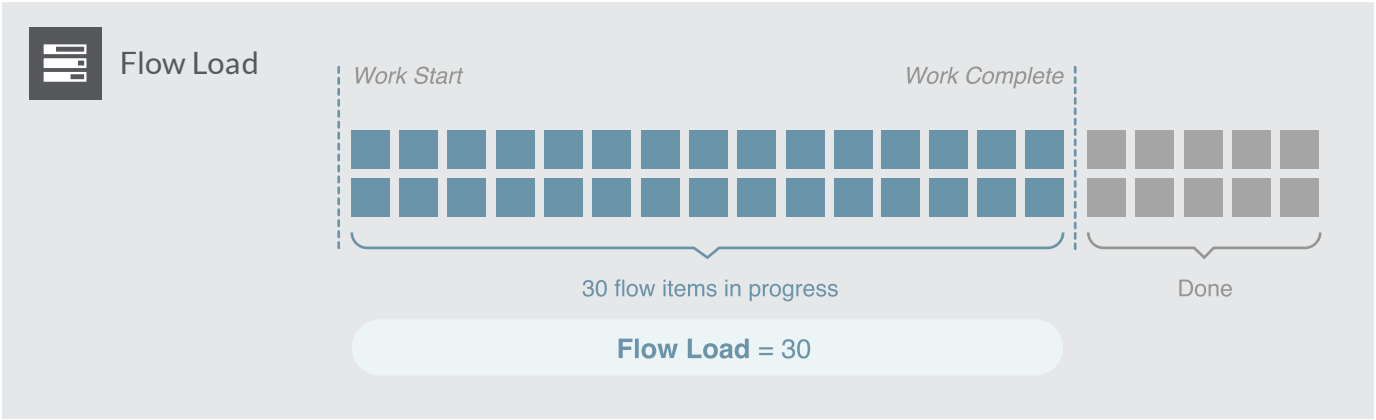
Case Study: Optimizing Flow Time for defects

One software company observed that Flow Time for defects was too long. This directly impacted the Flow Load, with the organization identifying a high defect load across a three week period. Flow Time to repair was long and the happiness of both users and testers was at risk. They examined the underlying factors and found the bottleneck – the longest wait state was in "code review."

Working with the Engineering Lead, they decided to initiate a trial whereby they released low risk defects without a code review, while maintaining the process for more complex code changes. They then monitored the reopen rate to see if it had a negative effect before doing it at scale. Flow Velocity went up, Flow Load went down (ensuring teams didn't burn out from context switching) and Flow Time was reduced (from 22 days to 11 days over a two-month period).

Flow Load – Is demand outweighing capacity?

The happiness and engagement of the people who plan, build and deliver software has a direct correlation on the productivity and quality of their work. Combined with the rise of burnout in IT staff, it's not surprising that there's a renewed focus on ensuring teams are not overburdened with the digital demands of the business. After all, you want the people who best understand how to create value through software to be empowered, healthy and motivated. Flow Load is an important measure in that respect – as well the key to understanding problems in both Flow Velocity and Flow Time.

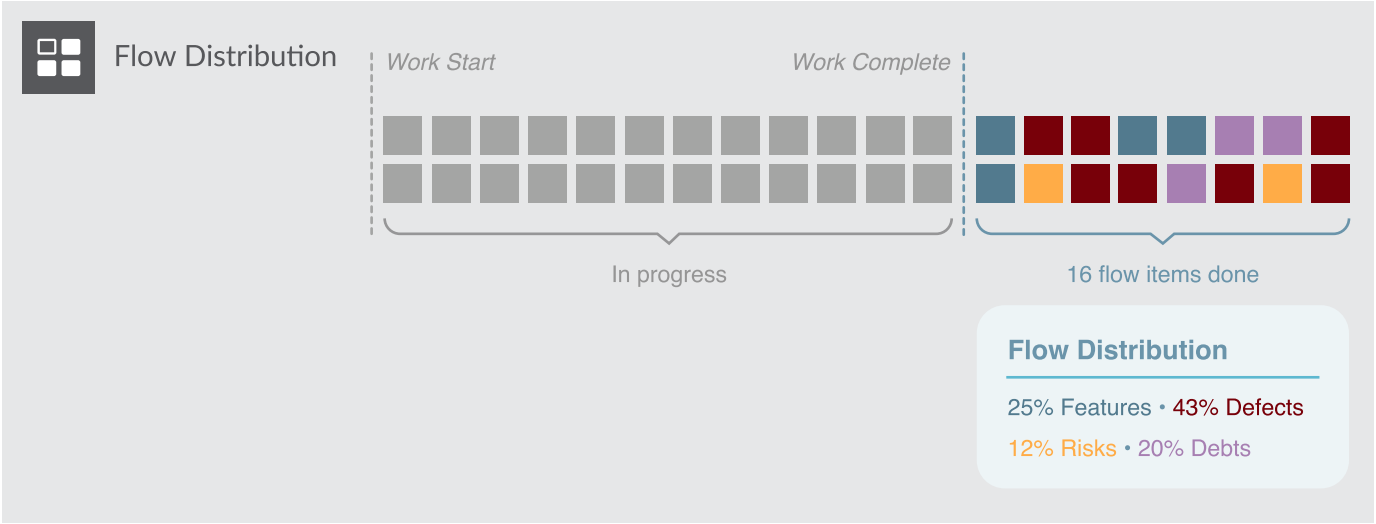


Flow Load measures the number of Flow Items being actively worked on in a value stream, denoting the amount of WIP. If the total number of items being worked on (either in an active or waiting state) in a value stream is too great, there will be a negative effect on output. Tracking Flow Load shows changes in Flow Velocity and Flow Time, showing the business the point at which taking on too many Flow Items at the same time reduces output.

Excessive Flow Load can be correlated with with inefficiency. As Donald Reinertsen emphasizes in his book The Principles of Product Development Flow, when WIP is high, queues are high. By tracking Flow Load, you can set a level that maximizes Flow Velocity and minimizes Flow Time – such as increasing workload for seasoned teams working on a mature product value stream, but reducing it for a smaller team on an exploratory product.

Tracking work through Flow Distribution

All product value streams should have a healthy and dynamic mix of .the four Flow Items – Features, Defects, Risk, and Debt – in order to maintain in order to maintain Flow Velocity and accelerate the delivery of business value. That's where Flow Distribution comes in. By tracking the proportion of Flow Items, work can be adjusted to meet the most pressing business needs, as well as provide data-driven analysis for important discussions around trade-offs with the business.



A decision to do one thing is a decision to delay something else. For example, achieving a high Flow Velocity for new product release features is desireable; however, it frequently involves prioritizing these features over other critical tasks, such as addressing bugs and technical debt. Neglecting these aspects can ultimately erode the product's long-term value and sustainability.

Flow Distribution can also be set for an entire organization in order to deliver a high-level business goal. Bill Gates did this, for example, with Microsoft's Trustworthy Computing initiative, focusing the company on risk and security improvements. If your organization is under threat from a more nimble company, you may want to move from an old platform to the cloud, and optimize software delivery to bring new features to customers rapidly. This measure is tuned to the investment necessary for success in a particular value stream – and it is also the metric needed for refining investments over time.

FLOW DISTRIBUTION IN ACTION USING PLANVIEW VIZ

Case Study: Focusing on the right work to grow revenue

At a leading virtual healthcare platform, the merger of separate companies had resulted in disparate teams and tools, as well as a lack of visibility into the amount and types of work that were flowing through the separate systems.

Using Flow Metrics to create standardized measurement across these value streams allowed them to measure their success. The newfound visibility revealed that increasing quality issues stemmed from overlooked technical debt.

Empowered with this insight, leaders made well-informed tradeoffs, prioritizing investment in feature development to boost revenue growth. Simultaneously, they strategically allocated resources to address technical debt, safeguarding the platform's long-term health and ensuring teams were focused on meaningful contributions.

After adjusting the Flow Distribution, development work shifted from an unhealthy mix with too much risk work to a healthy mix that delivered features while still addressing technical debt.

Planview® Viz

Instantly visualize and analyze Flow Metrics with Planview Viz®

Now that you've discovered the advantages of Flow Metrics in driving better outcomes, the nex step in adoption is finding software that automates the collection, visualization, and analysis of these metrics. A value stream management solution like Planview Viz empowers your organization to swiftly gain real-time insights into your value stream flow, allowing you to accelerate value delivery through faster and more impactful data-driven decisions.

More than half of the Fortune 100 use Planview to improve business outcomes

Key Benefits

Business-Aligned Visibility

Connect tech and the business with a single, simple set of metrics for the entire IT portfolio.

Measurable Transformation ROI

Leverage leading indicators to communicate the impact of transformation initiatives.

Customer Satisfaction

Improve predictability and meet your commitments with value stream capacity analytics.

Speed and Productivity

Identify opportunities to realize revenue faster with AI-driven, real-time insights and bottleneck detection.

Smarter Investments

See where investments are going and learn how to reduce waste, rebalance portfolios and maximize the return.

Talent Retention

Implement the playbook for creating a culture of excellence and continuous improvement.

"For many, digital transformation is notoriously difficult to execute and optimize without proper visibility. Planview's insights dashboard promises to solve this massive issue and save millions with a data-driven approach rolled up across product portfolios directly to our IT leaders."

– Bryan Fleming, former SVP, Product & Technology, T-Mobile

To learn more, watch an on-demand demo of **Planview Viz** to see how easy it is to visualize your Flow Metrics, or visit our **product page**.

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