Kanbanstudy
Targeting success

A Guide to the

KANBAN BODY OF KNOWLEDGE (KBOK™ GUIDE)

The Practical Implementation Guide for Managing Workflows using Kanban

(Includes Examples from popular digital Kanban tools, facilitates integration with other Agile frameworks, and recommends ways to use AI for increased productivity.)

Kanbanstudy
Targeting success

A Guide to the

KANBAN BODY OF KNOWLEDGE

(*KBOK™ Guide*)

A Comprehensive Guide to Implementing Kanban,
with practical examples

(Includes insights into how Artificial Intelligence can enhance Kanban Workflows)

Library of Congress Cataloging-in-Publication Data

A Guide to the Kanban Body of Knowledge (KBOK™ Guide)

Includes bibliographical references and index.
ISBN: 979-8-9898916-1-0

1. Kanban Method. I. Kanbanstudy™. II. *KBOK™ Guide*

ISBN: 979-8-9898916-1-0

Published by:
Kanbanstudy™, a brand of VMEdu, Inc.
12725 W. Indian School Road, Suite F-112
Avondale, Arizona 85392 USA
Email: support@kanbanstudy.com
Website: www.kanbanstudy.com

20 2 5 9 0 4 9 4 2

PREFACE

A Guide to the Kanban Body of Knowledge (KBOK™ Guide) provides guidelines for the successful implementation of Kanban—one of the most widely used Agile methodologies for managing business Workflows and processes. Originating in manufacturing, the application of Kanban has expanded across industries such as software development, services, healthcare, education, retail, sales and marketing, human resource management, and finance. Kanban can be used to manage Workflows in companies of any size, from small businesses with fewer than 10 employees to large enterprises with tens of thousands of employees.

The *KBOK™ Guide* is designed as a reference and knowledge resource for both experienced Kanban practitioners and other product or service development professionals. It is also suitable for individuals with no prior experience or knowledge of Kanban or other Workflows management methods. As the Kanban method continues to grow and evolve globally, our goal with the *KBOK™ Guide* is to share lessons learned and best practices.

Unlike other bodies of knowledge or books related to Kanban, KBOK™ is completely free and supported on kanbanstudy.com, offering free certifications, webinars, videos, and study guides—ideal for any professional seeking a fundamental understanding of Kanban or exploring a career in the field. Additionally, KBOK™ focuses on real-life issues and practical problems faced by Kanban practitioners and how these can be addressed using modern tools and artificial intelligence (AI).

KBOK™ is well-organized and enjoyable to read. Unlike most Kanban books, which are overly comprehensive and require readers to go through the entire content to understand key concepts, KBOK™ follows the 80-20 rule—meaning 80% of the core concepts can be understood by reading just 20% of the book. The remaining content can be referred to as needed when dealing with more complex Kanban tasks.

With the objective of helping Kanban practitioners address practical challenges faced by the profession, the book also clearly illustrates how the Kanban function can interact with other popular frameworks such as Scrum, Waterfall, OKRs, and DevOps. The book also includes examples of how Kanban workflows are implemented using popular IT tools, enabling readers to begin applying Kanban in their organizations while using the guide as a reference.

The *KBOK™ Guide* draws from the combined knowledge and insights gained from thousands of Workflows across various organizations and industries. In particular, feedback from the global Kanban community and inputs from the VMEdu® Global Authorized Training Partner Network—comprising 2,000+ companies in 50+ countries—played a significant role in its creation. The development of the *KBOK™ Guide* has truly been a collaborative effort involving numerous experts and practitioners from diverse disciplines.

The widespread adoption of the *KBOK™ Guide* method standardizes how Kanban is applied to Workflows globally and significantly helps organizations improve their overall productivity and return on investment. Additionally, it fosters deeper thought and deliberation regarding Kanban's application to different types of Workflows, which will, in turn, contribute to the expansion of the *Kanban body of Knowledge (KBOK™ Guide)* and future updates to this guide.

It is our hope that each reader learns from and enjoys this guide as much as the many authors and reviewers enjoyed the process of compiling the collective knowledge and wisdom contained within it.

Happy reading!
Kanbanstudy Academic Team

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

1 INTRODUCTION

Kanban is one of the most widely used Agile methodologies/frameworks for managing business Workflows and processes. This guide reviews how Kanban can be used to manage Workflows, support tickets, and support product development.

The key objectives of Kanban are to facilitate visualization of Workflows, limit work in progress, and optimize Workflows to deliver high business value in a short timeframe. To achieve these objectives, Kanban incorporates artifacts, such as a Kanban Board and a Kanban Backlog. The Kanban Board is created by the Kanban Manager and/or the Kanban Team. The Kanban Backlog is created by the Product Owner. These roles and their associated responsibilities are discussed in the Kanban Roles section of this guide.

1.1 Kanban Origin

Kanban Origins in Manufacturing

- **Background: Post-War Japan (1940s–1950s)**

  After WWII, Japan's manufacturing industry needed to become highly efficient to rebuild its economy. Toyota, under pressure to compete with American car manufacturers (who had large production volumes), began exploring new production strategies.

- **Taiichi Ohno – The Father of Kanban**

  Taiichi Ohno, an industrial engineer at Toyota, played a central role in developing what became known as the Toyota Production System (TPS). One of the innovations within TPS was Kanban.

  Kanban means "signboard" or "visual card" in Japanese.

  Ohno was inspired by how supermarkets managed inventory — they only restocked what was needed, when it was needed. He applied this idea to manufacturing. Kanban practices in Toyota included:

  - Kanban Cards: Used as visual signals to indicate when parts needed replenishing.
  - Pull System: Instead of pushing materials through the system, downstream processes would “pull” what they needed from Index
  - Inventory Control: Helped minimize overproduction, one of the seven deadly wastes (*muda*) in lean manufacturing.

- **2000s – Kanban Enters Software Development**

  - Key Milestone: Adapted Toyota’s principles to knowledge work
  - Application: Track software Tasks in Agile development
  - Focus: Flow efficiency, limit WIP (Work-In-Progress), continuous delivery

- **2010s – Kanban Goes Mainstream**
  - Industries: Expanded beyond software to marketing, HR, education, finance, etc.
  - Kanban Method: Formalized by David J. Anderson – 6 core practices:
    1. Visualize the flow of work
    2. Limit WIP
    3. Manage flow
    4. Make policies explicit
    5. Feedback loops
    6. Improve collaboratively
  - Tools: Vabro, Trello, Jira, Asana, Monday.com, Clickup etc.

- **2020s – Digital Transformation & Scaling**
  - Trend: Widespread use in remote and hybrid work
  - Integration: AI and automation in Kanban tools

1.2 Kanban Application Areas

Apart from manufacturing, the application of Kanban has been extended to a variety of industries and applications, including software development, services, healthcare, education, retail, and more. David J. Anderson first adapted the Kanban principles for software development and documented this in his 2010 book (Anderson, 2010).

Although Kanban has a wide range of applications, it is important to understand that its principles and practices can be applied to existing Workflows and organizational processes. Kanban can be utilized by organizations across different industries for various areas of application, such as:

- Task management,
- Workflows automation,
- Business process management,
- Inventory management,
- Business operations management,
- Production planning,
- IT Service Management,
- Escalation Management etc.

Some prominent departments and functional areas where Kanban is widely used include:

- Business Analysis
- Customer Service
- Design
- Finance
- Human Resource
- Information Technology
- Learning and Development
- Legal and Compliance
- Marketing
- Operations
- Product Management
- Project Management
- Sales
- Strategy

Many digital Kanban tools and SaaS platforms offer pre-defined Workflows templates for each of these prominent solution areas. These AI-generated templates help teams set up Workflows with minimal effort, based on the actual work that needs to be planned and executed.

AI enhances Kanban Workflows by automating Task prioritization, predicting activity timelines, and identifying bottlenecks. It enables smarter resource allocation, improves decision-making, and provides data-driven insights, resulting in increased efficiency, reduced delays, and more adaptive, agile project management processes.

1.3 Benefits of Kanban

Kanban is a popular Workflows management method that helps teams visualize work, limit work in progress, and improve efficiency. Here are important reasons why Kanban is beneficial:

1.3.1 Better Workflows Visualization and Management

1.3.1.1 Visualizes Work

Kanban visualizes work by using a Kanban Board , which represents Tasks as cards that move across columns labeled with Workflows stages (e.g., "To Do," "In Progress," "Done"). Each card contains Task details, assignees, and deadlines, giving a clear picture of ongoing work. The board highlights bottlenecks, Task statuses, and team capacity in real time, ensuring smooth flow. By making work visible, Kanban improves collaboration, accountability, and efficiency, helping teams quickly identify issues and optimize their Workflows. Multiple Digital Kanban tools like Vabro, Trello, Jira, Clickup, or Asana enhance visibility by integrating analytics and automation.

1.3.1.2 Improves Transparency

Kanban increases transparency by visualizing the entire Workflows on a shared board, making Tasks, progress, and bottlenecks visible to everyone. Each Task has clear ownership, deadlines, and status updates, ensuring accountability. Work-in-Progress (WIP) limits prevent hidden inefficiencies, while real-time updates keep the team informed. This openness fosters better collaboration, trust, and decision-making, as everyone can see priorities, blockers, and capacity at a glance, leading to a more efficient and predictable Workflows.

1.3.2 Improved Efficiency and Productivity

1.3.2.1 Reduces Waste

Kanban reduces waste by identifying inefficiencies and eliminating unnecessary work. The visual board highlights bottlenecks, redundancies, and idle Tasks, enabling quick resolution. By focusing on a pull-based system, Kanban ensures teams work only on what is needed, avoiding overproduction. It also minimizes context switching, communication gaps, and resource misallocation, leading to a leaner, more efficient Workflows with higher productivity and faster delivery.

1.3.2.2 Encourages Faster and Continuous Delivery

Kanban encourages continuous and faster delivery by maintaining a steady, uninterrupted Workflows where Tasks move smoothly from start to completion. Unlike sprint-based methods, Kanban’s pull system ensures that new work begins only when capacity is available, preventing bottlenecks. By visualizing Tasks on the board, teams can identify inefficiencies and optimize their processes. This results in frequent, incremental releases of work, allowing organizations to deliver value to customers faster while continuously improving quality and efficiency.

1.3.2.3 Enhances Focus

Kanban enhances focus by limiting Work in Progress (WIP), ensuring that team members concentrate on fewer Tasks at a time instead of multitasking. The visual board clearly shows priorities, reducing distractions and confusion.

With Tasks organized in columns, individuals can see what needs immediate attention, avoiding unnecessary context switching. Kanban's pull-based system lets team members start new work only when they have capacity, preventing overload. This structured approach helps maintain a steady Workflows, reduces stress, and increases efficiency. By fostering a clear, organized, and distraction-free environment, Kanban enables teams to stay engaged and deliver high-quality work faster.

1.3.2.4 Balances Workload

Kanban balances workload by visualizing Tasks and ensuring even distribution among team members. This helps prevent individuals from taking on too many Tasks at once, reducing burnout and inefficiencies. The pull-based system ensures that work is started only when capacity is available, preventing bottlenecks and idle time. By continuously monitoring the board, teams can identify workload imbalances and redistribute Tasks accordingly. Kanban also promotes real-time collaboration, allowing adjustments based on priorities and team availability. This structured approach optimizes efficiency, keeps productivity steady, and ensures that no team member is overwhelmed or underutilized, leading to a smoother Workflows.

1.3.2.5 Limits Work in Progress (WIP)

Work in Progress (WIP) limits in Kanban help by restricting the number of Tasks a team can work on at any stage, preventing overload and bottlenecks. By focusing on fewer Tasks at a time, teams improve efficiency, reduce multitasking, and speed up delivery. WIP limits also highlight Workflows issues early, ensuring a smooth and predictable process. This promotes continuous flow, better resource allocation, and higher-quality output, ultimately leading to faster project completion and improved team productivity.

1.3.2.6 Increases Accountability

Kanban increases accountability by making work visible on a shared board, where each Task has a clear owner and status. Team members take responsibility for their assigned Tasks, ensuring clarity on who is handling what. Work-in-Progress (WIP) limits prevent neglected Tasks, while real-time updates track progress. The pull-based system ensures that individuals commit to work only when ready, fostering ownership. This transparency encourages collaboration, trust, and responsibility, leading to a more efficient and accountable team.

1.3.2.7 Integrates with Artificial Intelligence (AI)

Kanban can integrate with Artificial Intelligence(AI) by automating Task management, predicting bottlenecks, and optimizing Workflows. AI-enabled analytics provide real-time insights into cycle times, team performance, and workload distribution, helping teams make data-driven decisions. Smart automation can prioritize Tasks, assign work based on team capacity, and send alerts for delays or WIP limit breaches. AI-driven forecasting predicts Workflows issues before they occur, ensuring smoother delivery. By reducing manual effort, improving accuracy, and increasing efficiency, AI-enabled Kanban systems help teams work smarter and deliver value faster.

1.3.3 More Flexibility, Adaptability and Scalability

1.3.3.1 Adapts to Changes

Kanban adapts to change by offering a flexible, pull-based Workflows that allows teams to adjust priorities in real time. Unlike rigid frameworks, Kanban has no fixed iterations, enabling continuous updates without disrupting progress. The visual board makes changes transparent, helping teams quickly reorganize Tasks and resources. Additionally, Kanban's data-driven insights help teams identify bottlenecks and improve processes dynamically. This adaptability makes Kanban ideal for fast-changing environments, ensuring teams can efficiently respond to new demands without compromising Workflows stability.

1.3.3.2 Works for Any Industry

Kanban works for any industry because it is a flexible, visual Workflows management system that adapts to different work environments. In software development, it helps teams track coding, testing, and deployment. In manufacturing, it optimizes inventory and production flow. In healthcare, it improves patient care coordination. Marketing teams use Kanban to manage campaigns, while HR departments track hiring and onboarding processes. Finance, education, and retail also benefit from its ability to enhance efficiency and reduce bottlenecks. With its visual Task tracking, WIP limits, and adaptability, Kanban ensures streamlined Workflows, making it effective for teams in any industry. Some tools, such as Vabro, include thousands of Kanban templates for various industries, which can be easily adapted to do any work within most companies.

1.3.3.3 Scalable

Kanban is highly scalable because it adapts to teams of any size, from small startups to large enterprises. It works at the individual, team, and organizational levels, allowing businesses to expand their Workflows without disrupting processes. Kanban's visual board structure remains effective whether managing a few Tasks or coordinating multiple departments. Work-in-Progress (WIP) limits ensure efficiency as workload scales. Digital Kanban tools integrate with AI and automation, supporting complex Workflows. As companies grow, Kanban enables seamless Workflows adjustments, cross-team collaboration, and continuous improvement, making it a powerful framework for scaling operations while maintaining efficiency and flexibility.

1.3.3.4 Supports Remote Work

Kanban supports remote work by providing a visual, collaborative, and flexible Workflows management system accessible from anywhere. Digital Kanban tools like Vabro, Trello, Jira, Clickup and Asana allow teams to track Tasks in real time, ensuring transparency and accountability, while automated notifications keep remote team members updated. AI-driven analytics help monitor performance and predict bottlenecks. With cloud-based access, integrations with communication tools, and real-time updates, Kanban ensures seamless coordination, making remote work more efficient, organized, and productive while reducing miscommunication and delays.

1.3.4 Continuous Improvement and Quality

1.3.4.1 Enables Data-Driven Decisions and Predictability

Kanban enables data-driven decisions and predictability by providing real-time metrics and analytics on Workflows performance. Key indicators like cycle time, lead time, Work-in-Progress (WIP) limits, and bottlenecks help teams identify inefficiencies and optimize processes. Cumulative flow diagrams, throughput analysis, and heatmaps offer insights into workload distribution and Task completion rates. AI-enabled Kanban tools predict trends, suggest optimizations, and automate reporting. By continuously tracking and analyzing data, Kanban helps teams make informed decisions, improve efficiency, allocate resources effectively, and enhance overall productivity, ensuring continuous improvement and better business outcomes. By continuously analyzing performance, Kanban enhances reliability and ensures smoother, more predictable project outcomes.

1.3.4.2 Encourages Collaboration

Kanban improves collaboration by visualizing work on a shared board, ensuring all team members have a clear understanding of Tasks, priorities, and progress. Real-time updates keep everyone informed, reducing miscommunication. Work-in-Progress (WIP) limits promote teamwork by encouraging members to focus on completing Tasks together before starting new ones. Digital Kanban tools integrate with communication platforms like Slack, Microsoft Teams, and Zoom, enabling seamless discussions. By fostering transparency, accountability, and shared responsibility, Kanban creates a collaborative work environment where team members can coordinate efficiently, resolve issues quickly, and continuously improve Workflows processes for better overall productivity.

1.3.4.3 Supports Continuous Improvement (Kaizen)

Kanban supports continuous improvement (Kaizen) by providing real-time visibility into Workflows. Regular retrospectives and feedback loops encourage incremental process refinements. By fostering a culture of experimentation, adaptation, and learning, Kanban helps teams continuously refine their processes, enhance productivity, and deliver higher-quality outcomes over time.

1.3.4.4 Enhances Customer Satisfaction

Kanban enhances customer satisfaction by ensuring faster, more reliable deliveries through an optimized Workflows. By continuously identifying and resolving bottlenecks, teams can deliver high-quality products and services more efficiently. Kanban's data-driven approach ensures that priorities align with customer needs, allowing for quick adjustments based on feedback. The system also supports continuous improvement (Kaizen), leading to consistent process enhancements. With better predictability, reduced lead times, and improved collaboration, Kanban helps organizations meet customer expectations more effectively, ultimately fostering trust and long-term satisfaction.

1.4 Why use KBOK™ vs. other Kanban Books or Bodies of Knowledge

1.4.1.1 Free download of KBOK™

To support growth and standardization in Kanban frameworks and knowledge, Kanbanstudy.com has made the Kanban Reference Guide (KBOK™) available for free on its website. Any Kanban practitioner or anyone interested in the field of Kanban can easily download and use the guide as a convenient reference for personal study or professional work.

Not sure about the quality of KBOK™? Just download it and see for yourself—***it's free***!

1.4.1.2 Free certifications, webinars, videos, study guides

The KBOK™ is supported on Kanbanstudy.com with free certifications, webinars, videos, and study guides—ideal for any professional seeking a fundamental understanding of Kanban or exploring a career in the field. The free certification will also give you a head start and recognition in the Kanban field.

Please visit www.Kanbanstudy.com for more details.

1.4.1.3 Practical, Contemporary, and supports AI

Most Kanban books and Bodies of Knowledge are overly theoretical, lengthy, and lack practical examples or explanations of contemporary concepts—such as how Artificial Intelligence (AI) or automation tools can be used by Kanban practitioners to work more effectively. However, KBOK™ is written with a focus on real-life issues and practical problems faced by Kanban practitioners, and how these can be addressed using modern tools and AI.

1.4.1.4 Practice Kanban in Real Life with Vabro.ai

Kanbanstudy has partnered with Vabro.ai—an AI-enabled SaaS platform—to practically demonstrate how the theoretical concepts taught in KBOK™ are applied using a real AI-enabled tool.

For more details, please visit www.Kanbanstudy.com.

1.4.1.5 80-20 Rule: (20% of KBOK™ is Sufficient)

Most Kanban books are overly comprehensive and expect readers to go through the entire content to understand key concepts. However, KBOK™ follows the 80-20 rule—meaning 80% of the core concepts can be understood by reading just 20% of the book. The remaining content can be referred to as needed when dealing with more complex Kanban tasks. All four process chapters—*Setup, Plan, Execute, and Enhance*—include mandatory inputs, tools, and outputs, and are ideal for those seeking a high-level understanding of Kanban. Similarly, the chapters on *Principles*; *Kanban Roles and Artifacts*; *Kanban Metrics and Reports*; and *Kanban Cadences and Collaboration* can be simply perused by those who want to learn the basics of Kanban. These essential sections make up only 20% of the book's content. The more detailed concepts are designed for experienced practitioners and can be easily accessed as needed while performing specific Kanban activities.

1.4.1.6 Well-Organized and Enjoyable to Read

Unlike other Kanban books or Bodies of Knowledge (BOKs), the KBOK™ is well-organized and engaging to read. Chapter 2 discusses the six principles of Kanban; Chapter 3 focuses on Kanban Roles and Artifacts; Chapter 4 covers Kanban Metrics and Reports; and Chapter 5 explores Kanban Cadences and Collaboration. The actual work performed by Kanban practitioners is structured into four chapters detailing the Kanban processes—Setup, Plan, Execute, and Enhance. These chapters include six processes that provide step-by-step guidance to help practitioners carry out their work effectively.

1.4.1.7 Applicable to Organizations of all Sizes and Industries

- The concepts in the Kanban Reference Guide (KBOK™) are applicable to the following: Kanban initiatives in any industry
- Products, services, or any other outcomes delivered to stakeholders
- Kanban initiatives of any size or complexity

The Kanban concepts in KBOK™ can be effectively applied to initiatives across any industry—from small efforts or teams with as few as two members to large, complex initiatives involving thousands of team members across multiple teams.

1.4.1.8 Aligns with other Frameworks including Scrum, OKRs, DevOps

Unlike other Kanban books, which typically do not show how the Kanban function can interact with other popular frameworks such as Scrum, OKRs, DevOps etc., KBOK™ includes an Appendix to illustrate how the Kanban concepts align with other leading frameworks used by professionals in the industry.

1.4.1.9 Advanced Certifications for Senior Kanban Professionals

Multiple advanced certifications are available for senior Kanban professionals, based on the Kanban Reference Guide (KBOK™).

For more details, please visit www.Kanbanstudy.com.

1.4.1.10 Available in 6 languages

The Kanban Reference Guide (KBOK™), along with its courses and certifications, is available in six languages: English, French, German, Italian, Spanish, and Portuguese.

For more details, please visit www.Kanbanstudy.com.

1.4.1.11 2,000+ Partners in 50+ Countries, 300,000+ LinkedIn Group

Kanbanstudy.com has partnered with VMEdu Inc.—a reputable professional learning and certification company that also collaborates with well-known brands such as ScrumStudy.com, KanbanStudy.com, OKRStudy.com, 6SigmaStudy.com, and more.

VMEdu has over 2,000 Authorized Training Partners in 50+ countries, a LinkedIn group with more than 300,000 members, and more than 2,000,000 certified students. This positions us as a global leader in the professional education field.

For more details, please visit VMEdu.com or www.Kanbanstudy.com.

1.5 Purpose of the KBOK™ Guide

The Kanban method has proven to be a preferred approach for managing business Workflows and processes. This guide reviews how Kanban can be used to manage Workflows, support tickets, and product development.

The KBOK™ Guide serves as both a reference and a knowledge resource for experienced Kanban practitioners, as well as for those in product and service development—including individuals with no prior experience or knowledge of the Kanban approach. Its contents are organized for easy reference by the Kanban Team: Product Owner, Kanban Manager, and Kanban Team members.

Kanban is a non-prescriptive method, allowing for flexibility in its application. While not all of the Kanban processes detailed in the KBOK™ Guide are required for every initiative, they should be applied based on the specific needs of the organization, Workflows, project, product, or team.

The content of the *KBOK™ Guide* is also valuable for individuals preparing for the following Kanbanstudy™ certification exams:

- Kanban Essentials with AI Certified (KEC)
- Kanban Professional with AI Certified (KPC)
- Kanban Manager with AI Certified (KMC)
- Kanban Product Owner with AI Certified (KPOC)
- Kanban with Scrum, DevOps, and OKRs Certified (KSDOC)

1.6 Framework of the KBOK™ Guide

The KBOK™ Guide is divided into the following areas:

- Kanban Principles, covered in Chapter 2, expand on the six foundational concepts on which Kanban is based: Empirical Process Control, Iterative or Incremental Development, Collaborative Leadership, Value-Based Prioritization, Self-Organization, and Visualization.
- Kanban Roles and Artifacts are discussed in Chapter 3.
- Kanban Metrics and Reports are discussed in Chapter 4.
- Kanban Cadences and Collaboration are covered in Chapter 5.
- Kanban Processes, covered in Chapters 6 through 9, include the fundamental Kanban processes and their associated inputs, tools, and outputs.

1.6.1 Kanban Principles

Kanban principles are fundamental to the effective implementation of the Kanban method, applicable to various Workflows and organizational processes. These principles aim to optimize existing processes, foster collaboration, and drive continuous improvement. The key principles include:

- Empirical Process Control: Decisions are based on observation and data. Organizations refine current Workflows using Kanban to minimize resistance to change and support continuous improvement.
- Iterative or Incremental Development: Changes are implemented incrementally, allowing for course corrections based on stakeholder feedback and evolving Workflows understanding.
- Collaborative Leadership: Leadership is encouraged at all organizational levels, fostering a culture of shared responsibility, open communication, and continuous learning.
- Value-based Prioritization: Work is prioritized based on the value it delivers to customers, with a focus on understanding customer needs, business value, risks, and dependencies.
- Self-Organization: Teams are empowered to manage their responsibilities autonomously, promoting accountability, motivation, and effective decision-making.
- Visualization: Workflows are made visible through tools like the Kanban Board and Backlog, enhancing transparency, identifying areas for improvement, and enabling data-driven decisions.

Together, these principles support agile, adaptable Workflows that drive efficiency, collaboration, and customer-centric outcomes.

1.6.2 Kanban Roles and Artifacts

The key roles in the Kanban framework are those of the Kanban Team and Stakeholders. The Kanban Team is responsible for understanding the needs of the organization and implementing the Kanban method effectively. The three primary roles within the Kanban Team are Product Owner, Kanban Manager, and Kanban Team Members. Stakeholders—such as senior management, customers, suppliers, or any other individuals or teams who interact with or benefit from Kanban Workflows—collaborate with the Kanban Team to improve Workflow efficiency, help prioritize tasks, and ensure alignment with broader business goals.

Artifacts are visual or management aids that help teams visualize workflows and determine the best ways to optimize them to deliver high business value in the shortest time possible. Typical artifacts used in Kanban include Tasks and Task Groups, Kanban Workflows, Kanban Backlog, and Kanban Boards.

- Kanban Tasks are individual actions to be completed, while Task Groups are collections of related tasks necessary to achieve a specific output or goal.
- Kanban boards visually represent workflows, displaying tasks in columns to track progress, identify bottlenecks, and ensure smooth work execution.
- A Kanban backlog is a prioritized list of tasks or work items waiting to be processed, typically organized by urgency.
- Kanban Boards visually represent workflows, displaying tasks in columns to track progress, identify bottlenecks, and ensure smooth work execution.

1.6.3 Kanban Metrics and Reports

Kanban metrics and reports track team performance and workflow efficiency, providing insights into cycle time, throughput, and bottlenecks. These data-driven tools help teams make informed decisions to improve processes, optimize resource allocation, and enhance overall delivery speed and quality.

Metrics are used to help an organization understand the current state of Workflows and processes, which, in turn, assist the team in making informed decisions about changes that can bring improvements. Using metrics can also help an organization commit to and efficiently meet the service or product obligations of its customers, including factors related to time, cost, quality, risk, and scope. Some of the key metrics on which reports are based in Kanban include:

- Work in Progress (WIP) Aging Work in Progress (or Work Item Age)
- Cycle Time
- Throughput
- Lead Time
- Takt Time
- Queue Length
- Flow Efficiency

When applying the Kanban method within an organization, reports can be used to generate insights into Workflows and communicate work progress, issues, and risks to stakeholders. Many digital Kanban tools enable practitioners to leverage elaborate, AI-driven reports to make data-driven decisions. Some of the key reports used in Kanban are:

- Workflows Reports
- Team Reports
- Individual Performance Reports
- Cycle Time Reports
- Lead Time Distribution Reports
- Flow Efficiency Reports
- Throughput Reports
- Work in Progress (WIP) and WIP Aging Reports

- Cumulative Flow Diagrams (CFD)
- Blocker and Cluster Analysis Reports
- Capacity Utilization Reports
- Forecasting Reports
- Burndown Charts
- Service-Level Agreement (SLA) Adherence Reports

1.6.4 Kanban Cadences and Collaboration

Kanban cadences are regular meetings like standups, reviews, and planning sessions that promote collaboration, transparency, and continuous improvement within teams and across workflows.

Collaboration in Kanban involves shared visibility, real-time communication, and teamwork, fostering transparency, faster issue resolution, and continuous workflow improvement. It can be facilitated through transparent Kanban Boards, cadences or meetings, forms, dependency tracking, reports, and IT-enabled options such as chats, messages, comments, mentions, watches, and the sharing of files and links.

Some common Kanban Cadences include:

- Planning Meeting and Replenishment Meeting
- Kanban Team Meeting or Daily Stand-up Meeting
- Completed Work Item Review Meeting
- Retrospective Meeting
- Risk and Issue Review Meeting

Some methods to foster Collaboration in Kanban include:

- Forms
- Escalations
- Reports
- IT-enabled Collaboration

1.6.5 Kanban Processes

Kanban processes address the specific activities and flow of a Kanban initiative. In total, there are six fundamental Kanban processes that apply to all initiatives. These processes are grouped into four phases and are presented in Chapters 6 through 9 of the *Kanban Body of Knowledge*, as shown in Table 1-2. These Kanban processes are generally not sequential—they are iterative in nature and may overlap with one another.

Chapter	Phase	Fundamental Kanban Processes
For Entire Organization or Workspace:		
6	Setup	1. Determine Kanban Vision 2. Determine AI-enabled Kanban Tool (optional)

For Specific Kanban Initiative:		
7	Plan	3. Form Kanban Team 4. Optimize Workflows and Determine Stakeholders
8	Execute	5. Get Work Done
For Entire Organization or Workspace, and for Specific Kanban Initiative:		
9	Enhance	6. Retrospect and Improve

Table 1-1: Fundamental Kanban Processes

These phases describe each process including their associated inputs, tools, and outputs. In each process, some inputs, tools, and outputs are mandatory (those with an asterisk [*] after their names), while others are optional.

Whether to include the optional inputs, tools, and/or outputs depends on the particular initiative, organization, or industry. Inputs, tools, and outputs denoted with an asterisk are considered mandatory or critical to the successful implementation of Kanban in any organization.

1.6.5.1 Setup Phase

1. *Determine Kanban Vision*—In this process, the Product Owner(s) responsible for establishing and providing overall direction for Kanban activities within the organization or department are identified. The Product Owner(s) then create a Kanban Vision Statement, which provides overarching guidance, inspiration, and focus for setting up the Kanban function. The Kanban initiative can be introduced as a trial for select projects or Workflows within the company, or implemented across the entire organization for broader adoption.

2. *Determine AI-enabled Kanban Tool (optional)*— In this optional process, the Product Owners and relevant Stakeholders help to select an AI-enabled Kanban tool for the entire organization or for a specific department. In the absence of an AI-enabled Kanban tool, the Kanban Team can use manual methods to carry out their activities. AI-enabled Kanban tools enhance efficiency, accuracy, and decision-making by automating Tasks, analyzing vast datasets, and providing real-time insights. Companies have reported a 50%–75% increase in productivity and a 50%–80% decrease in costs when successfully completing Kanban initiatives using an AI-enabled tool that aligns with their Requirements.

1.6.5.2 Plan Phase

3. *Form Kanban Team*— In this process, the team responsible for implementing the Kanban Workflows is identified. The Kanban Team consists of the Product Owner, Kanban Manager, and Team Members. Together, they ensure the effective application of Kanban practices to optimize processes and outcomes.

4. *Optimize Workflows and Determine Stakeholders*—To effectively implement Kanban, it is essential to start by reviewing and understanding existing Workflows. This involves mapping current processes, identifying bottlenecks and delays, and assessing value streams.

To ensure a consistent and professional appearance in documents, aligning the footer of odd and even pages is essential. This involves setting the footer margins and placements so that they are symmetrical across all pages, whether odd or even. By maintaining uniformity, the document achieves a polished layout that improves readability and aesthetic appeal. Additionally, the footer can be customized to include information such as page numbers, document title, or other key details, ensuring they are positioned identically across the alternating pages.

By analyzing these elements, organizations can pinpoint areas where Kanban principles can be applied to streamline processes, reduce waste, and improve efficiency. Stakeholders in Kanban include the customers, leadership, project sponsors, and any individuals impacted by or influencing Kanban Workflow outcomes.

Determining stakeholders and involving stakeholders to optimize Workflows is crucial to ensure buy-in and facilitate smooth implementation. In this process, the Kanban Team and stakeholders work together to determine an improved Workflows for Kanban implementation. It is important to break down work into smaller, manageable units, such as Task Groups and Tasks. A visual Kanban Board should be created with columns representing different Workflows stages, such as “To Do,” “In Progress,” and “Done.” To prevent overloading and improve focus, work-in-progress (WIP) limits should be set for each column.

Clear Workflows rules and policies should also be defined to govern the movement of Work Items between columns and to handle exceptions. Continuous monitoring and improvement are critical; regular retrospectives and feedback loops help identify areas for optimization. By iteratively refining the Workflows, organizations can achieve significant improvements in efficiency, quality, and customer satisfaction through Kanban implementation.

1.6.5.3 Execute Phase

5. *Get Work Done*— In this process, the Kanban team regularly reviews the Kanban Backlog to prioritize upcoming work and assesses the Kanban Board to track tasks in progress. The team ensures that work items are clear, manageable, and ready to be pulled into the relevant To Do column when there is capacity. As tasks move through the Workflow, from To Do to In Progress and finally to Done, the team focuses on completing each item efficiently. Regular reviews help identify bottlenecks, optimize flow, and maintain a steady pace of output. Completed Work Items are the primary output, driving the team's overall progress.

1.6.5.4 Enhance Phase

6. *Retrospect and Improve*—The objective of this process is to review and reflect as a team to identify lessons on what went well, what didn’t work as expected, and where improvements are needed. This involves examining how Task Groups and Tasks move through the Workflows to understand the Workflows, cycle time, and the areas where the flow is slowing down or getting stuck.
   It also includes refining the Kanban Workflows and gathering insights from stakeholders to ensure better support for team Workflows, aligning the Workflows with broader organizational goals, and addressing any service-level concerns. Additionally, it facilitates the use of quantitative data to implement improvements, monitor impact, and maintain a steady flow.

2 PRINCIPLES

Kanban principles form the foundation of the Kanban method. They can be applied to any type of Workflows or organizational process and must be adhered to in order to ensure the proper application of Kanban.

The key Kanban principles are:

- Empirical Process Control
- Iterative or Incremental Development
- Collaborative Leadership
- Value-based Prioritization
- Self-organization
- Visualization

2.1 Empirical Process Control

When applying Kanban to Workflows and other processes, planning and implementation decisions are based on observation and empirical evidence. Organizations should first understand their current Workflows and processes, then incorporate Kanban principles and artifacts to optimize them. By refining existing Workflows and processes, rather than creating new ones, Kanban minimizes resistance to change within the organization, facilitating smooth transitions and continuous improvements.

Empirical process control is a foundational principle in Kanban that emphasizes making decisions based on observation, experience, and actual data rather than assumptions or detailed upfront planning. It recognizes that in complex, evolving work environments (like software development, service delivery, or operations), it's impossible to predict everything in advance. Instead, continuous learning and adaptation are key.

This principle is built on three core pillars, Transparency, Inspection and Adaptation:

2.1.1 Transparency

Transparency means that the process, Workflows, and Work Items are visible and understandable to all stakeholders. In Kanban, this is achieved through visual tools like Kanban Board s, where Tasks are represented as cards and moved through different Workflows stages (e.g., To Do → In Progress → Done). This visibility enables better communication, shared understanding, and real-time insight into the current state of work.

2.1.2 Inspection

Inspection involves regularly reviewing both the process and the work. In Kanban, teams monitor metrics like lead time, cycle time, work-in-progress (WIP), and throughput. They also review Workflows efficiency, blockers, and bottlenecks. These inspections are often done during daily stand-ups, service delivery reviews, or retrospective meetings.

By examining the current flow and performance, teams can detect deviations, inefficiencies, or emerging issues before they become major problems.

2.1.3 Adaptation

Based on what is observed during inspection, teams make informed adjustments to improve the process. This might include:

- Limiting WIP more strictly to reduce multitasking
- Reallocating resources
- Reconfiguring the Workflows stages
- Changing policies or prioritization strategies

The goal is to continuously evolve the process to respond to changing demands and improve outcomes over time.

2.1.4 Summary

Empirical process control aligns perfectly with Kanban's focus on evolutionary change rather than radical transformation. It supports gradual, data-driven improvements without disrupting the existing system. It also helps teams become more adaptive, responsive, and resilient in the face of uncertainty or change.

By embracing empirical process control, organizations foster a culture of continuous improvement, accountability, and learning, leading to more effective and efficient service delivery.

2.2 Iterative or Incremental Development

Iterative development (or incremental development) requires that current Workflows and their performance be baselined first. Changes must be agreed upon by relevant stakeholders, and any agreed-upon changes are then implemented incrementally. Iterative development allows course correction. All stakeholders involved progressively gain a better understanding of what needs to be delivered as part of an initiative and, in turn, incorporate this learning into the process in an iterative manner.

Iterative and Incremental Development is a core principle in agile methodologies, including Kanban. While Kanban does not prescribe iterations (like sprints in Scrum), it naturally supports this principle through continuous flow and ongoing delivery. This allows teams to evolve their products and processes in small, manageable steps, leading to continuous improvement and value delivery.

2.2.1 What It Means

- Incremental development refers to delivering work in small, usable pieces that add value. Instead of waiting until an entire project is complete, Kanban Teams deliver features or improvements piece by piece.
- Iterative development means refining or revisiting work over time. After releasing an increment, the team gathers feedback, learns from it, and improves the next increment. This loop continues, allowing better alignment with customer needs and changing priorities.

2.2.2 How It Works in Kanban

Kanban promotes this principle through several practices:

- **Continuous Delivery of Value**

  Kanban Workflows are designed for flow-based delivery, meaning Work Items are pulled through the system as capacity becomes available, not bundled into fixed iterations. This encourages small, incremental releases that can be delivered to users more frequently.

- **Work-in-Progress (WIP) Limits**

  By limiting how much work can be in progress at once, Kanban promotes focus and completion of smaller Tasks. This inherently supports incremental delivery, as teams complete and deliver small units of work regularly.

- **Feedback Loops and Learning**

  After each Work Item or feature is completed, teams use feedback mechanisms (like customer feedback, analytics, or reviews) to learn and iteratively improve. This supports adaptive development where each new piece builds on lessons from the previous one.

- **Metrics and Flow Optimization**

  Using metrics like cycle time, lead time, and throughput, teams can observe trends over time, helping them make iterative improvements to the Workflows itself—not just the product.

2.2.3 Benefits in Kanban

- Faster time-to-market by delivering smaller chunks sooner
- Early and continuous feedback from stakeholders or customers
- Greater adaptability to change, as priorities can shift without disrupting the whole plan
- Reduced risk, since smaller changes are easier to test, revert, or adjust
- Steady progress, promoting team morale and stakeholder confidence

2.2.4 Summary

Although Kanban doesn't use time-boxed iterations like Scrum, it fully embraces iterative and incremental development by:

- Encouraging small, continuous improvements
- Delivering value frequently
- Adapting based on real-world feedback

This principle helps teams stay flexible, responsive, and focused on delivering the right value at the right time.

2.3 Collaborative Leadership

When applying Kanban principles, it is imperative to foster an environment where leadership is encouraged at all levels throughout the organization. The goal is to create an open work culture where people collaborate effectively by sharing information, suggesting improvements, and taking collective accountability for executing the work. Leaders should practice effective listening, empathy, commitment, and insight while sharing their power and authority with team members. They are expected to be stewards who achieve results by focusing on the needs of all team members.

Collaborative leadership is a vital principle in Kanban that emphasizes shared responsibility, active participation, and collective ownership of outcomes. Rather than relying on top-down authority or command-and-control management, Kanban encourages leadership at all levels and fosters a culture where decision-making is distributed, and teamwork drives success.

This approach is key to creating a culture of continuous improvement, one of the core goals of Kanban.

2.3.1 What Is Collaborative Leadership?

Collaborative leadership involves:

- Engaging team members in decision-making processes
- Encouraging diverse perspectives and ideas
- Fostering open communication and trust
- Empowering individuals to take initiative and ownership
- Aligning around shared goals, rather than enforcing hierarchy

In Kanban, leadership isn't limited to those with formal titles. Every team member can lead by example, suggest improvements, identify issues, and contribute to better outcomes.

2.3.2 How Collaborative Leadership Manifests in Kanban

Here's how this principle plays out in practice:

- **Leadership at Every Level**

  Kanban promotes "leader-leader" rather than "leader-follower" dynamics. Anyone—developers, testers, service desk agents, etc.—can propose changes, challenge inefficiencies, or highlight blockers in the Workflows. Authority is distributed, not centralized.

- **Facilitating Change Through Consensus**

  Rather than enforcing change top-down, Kanban uses collaborative discussion and data (such as flow metrics) to guide decisions. Teams are more likely to support and sustain change when they help design it.

- **Creating Safe Environments**

  Collaborative leadership fosters psychological safety. Teams feel safe to speak up, question existing processes, or suggest improvements without fear of blame. This leads to more experimentation and innovation.

- **Roles Become Guides, Not Gatekeepers**

  Roles like service delivery managers or coaches in Kanban act more like facilitators or mentors, supporting team growth, removing obstacles, and guiding improvement—not dictating how work should be done.

- **Shared Accountability**

  Outcomes are not the responsibility of a single person or department. Everyone contributes to—and is accountable for—the flow of work and the value delivered. This shared ownership strengthens team alignment and purpose.

2.3.3 Why It Matters in Kanban

- Encourages continuous improvement through collective insight
- Builds trust and respect within and across teams
- Increases buy-in and motivation since changes are co-created
- Enables adaptive leadership, suited for fast-changing environments
- Reduces bottlenecks caused by decision silos

2.3.4 Summary

Collaborative Leadership in Kanban means enabling everyone to lead, contribute ideas, and take part in evolving the system. It breaks down traditional hierarchies and supports a culture where people work together to continuously improve how value is delivered.

By practicing collaborative leadership, Kanban Teams become more empowered, resilient, and innovative, creating better outcomes for both the team and the organization.

2.4 Value-based Prioritization

This principle requires the team to gain a clear understanding of the needs and expectations of customers, those who use the Kanban Workflows and/or those who benefit from the work done through Kanban Workflows. To understand customers' needs, the team must gain insight into what is perceived as 'value' by the customers themselves. The team can then prioritize work in their Kanban Workflows based on business value and consider any risks and dependencies involved in executing the work effectively and efficiently.

Value-Based Prioritization is a core principle in Kanban that focuses on delivering the highest possible value to customers and stakeholders by ensuring that work is prioritized based on its potential impact, urgency, and alignment with business goals.

Instead of working on Tasks in the order they arrive or based on arbitrary deadlines, Kanban encourages teams to make informed prioritization decisions—guided by data, customer needs, and strategic objectives.

2.4.1 What Is Value-based Prioritization?

At its heart, value-based prioritization means:

- Working on what matters most
- Delivering the maximum value with minimal waste
- Continuously reassessing priorities as context, customer needs, or business goals evolve

This helps teams stay aligned with real-world demands and ensures that limited capacity is used in the most effective way possible.

2.4.2 How Kanban Supports Value-Based Prioritization

Kanban provides several tools and practices to help teams prioritize effectively:

- **Work Item Types and Classes of Service**

  Kanban allows different types of work (e.g., features, bugs, technical debt, emergencies) to be visually distinguished and assigned Classes of Service, such as:

  - Expedite (urgent, high business value)
  - Fixed Date (must be delivered by a certain time)
  - Standard (normal value)
  - Intangible (low visibility but important for the long term)

  This helps teams make data-driven decisions about what to pull next based on value and urgency.

- **Visual Prioritization on the Kanban Board**

  Kanban Board s clearly show which Work Items are queued and in progress. By reviewing the backlog or "ready" column, teams can have collaborative discussions about what to pull next, focusing on delivering the highest-impact items first.

- **Feedback Loops and Flow Metrics**

  By using flow metrics (like lead time, cycle time, throughput), teams can track how efficiently high-value items are being delivered. These insights help refine future prioritization decisions to better meet stakeholder expectations.

- **Regular Meetings**

  In Kanban, replenishment meetings (also known as commitment meetings) or daily stand-up meetings are used to regularly review and prioritize the backlog.

  During these meetings, stakeholders and team members collaborate to decide which items to bring into the system, focusing on those that will deliver the most value.

2.4.3 Why Value-based Prioritization Matters

- Ensures teams focus on delivering real business outcomes, not just completing Tasks
- Helps avoid wasting time on low-value or outdated requests
- Increases customer satisfaction by delivering what they care about most
- Enables faster ROI by tackling high-value items early
- Supports strategic alignment between the team and organizational goals

2.4.4 Summary

Value-Based Prioritization in Kanban means continuously evaluating and choosing work based on its potential value to customers and the business. By using visual tools, collaborative discussions, and flow metrics, Kanban Teams can focus their limited time and resources on what matters most.

This principle not only drives efficiency and impact but also fosters a culture of customer-centricity, strategic thinking, and continuous delivery of value.

2.5 Self-Organization

Kanban practices embrace the idea that team members are self-motivated and seek to take on greater responsibility. The team will deliver greater business value when it is self-organized. Self-organized teams consist of autonomous individuals who fully understand the requirements, devise the best means to deliver them, and take complete accountability for the results they deliver. Business leaders in a Kanban environment play a critical role in enabling a team to become self-organized. They should understand the team's maturity level and provide leadership that encourages the team to evolve into a group of peer professionals.

Self-organization is a key principle in Kanban that empowers teams to manage their own work, make decisions collaboratively, and continuously improve without needing constant oversight or direction from management. It promotes autonomy, accountability, and adaptability, allowing teams to respond more effectively to change and deliver better outcomes.

2.5.1 What Is Self-Organization?

Self-organization means that a team:

- Chooses how work is executed
- Manages its own Workflows
- Identifies and solves problems
- Improves processes continuously
- Collaborates to make decisions, rather than relying on top-down instructions

In Kanban, self-organization is not about working in isolation—it's about empowering the team to take ownership of their responsibilities and to drive improvement from within.

2.5.2 How Kanban Supports Self-Organization

Kanban's framework and practices naturally encourage and support self-organizing teams:

- **Visual Workflows (Kanban Board)**

  The Kanban Board makes all work visible, enabling team members to understand the current state of Tasks and decide what to work on next based on capacity, urgency, and value—without needing to wait for external direction.

- **Work-in-Progress (WIP) Limits**

  By setting WIP limits, teams manage their own workload, avoid overcommitment, and focus on finishing Tasks rather than starting too many. This encourages discipline and collaboration around managing flow.

- **Pull System**

  Instead of assigning work top-down, Kanban uses a pull-based system, where team members choose the next Work Item based on readiness and capacity. This gives individuals control over how and when they take on new work.

- **Feedback Loops**

  Kanban encourages frequent feedback through daily standups, flow reviews, and retrospectives. These discussions are led by the team, and they're opportunities to identify blockers, share ideas, and improve processes together.

- **Evolutionary Change**

  Kanban advocates for continuous, evolutionary change rather than radical overhauls. Self-organizing teams are in the best position to understand what's working and what needs adjustment—and they're empowered to make those changes themselves.

2.5.3 Why Self-Organization Matters

- Increases motivation and engagement by giving people control over their work
- Promotes accountability, since the team takes ownership of both the process and outcomes
- Enables faster decisions without needing constant approval or escalation
- Improves adaptability, allowing teams to quickly respond to new information or changes in priority
- Encourages innovation and learning, as team members experiment and improve the way they work

2.5.4 Summary

Self-organization in Kanban means that teams manage their own Workflows, make collaborative decisions, and take ownership of improvement. Kanban provides the structure, transparency, and flexibility that support this autonomy.

By fostering self-organization, Kanban helps teams become more empowered, efficient, and responsive, driving better results and a healthier work environment.

2.6 Visualization

Visualization of Workflows is a core principle of the Kanban method. Teams are encouraged to maintain a transparent work environment to identify areas for improvement, experiment with changes, and measure the results. This approach ensures that changes are made based on observation and collected data. Visualization of Workflows is facilitated in Kanban using a Kanban Backlog and a Kanban Board. The Kanban Backlog contains all the Tasks or Task Groups to be completed by the Kanban Teams involved in the initiative, while the Kanban Board reflects the status of the work the team is currently executing.

Visualization refers to making work visible—which means clearly representing Tasks, Workflows, statuses, and issues in a way that everyone can easily understand. By visualizing the work and the process it flows through, teams can improve collaboration, identify inefficiencies, and make more informed decisions.

2.6.1 Why Visualization Matters

In knowledge work (like software development, customer support, or marketing), most Tasks are intangible—they exist as ideas, documents, or digital items. Without visualization, it's hard to know:

- What work is being done
- Who is doing it
- Where things are stuck
- What's coming next

Visualization brings clarity and transparency, allowing teams and stakeholders to manage and improve the flow of work more effectively.

2.6.2 How Kanban Implements Visualization

Kanban offers several practical ways to make work and processes visible:

- **Kanban Workflows**

  A Kanban Workflows represents the sequence of steps that Task Groups or Tasks go through, from initiation and planning to delivery and completion. Keeping the Workflows transparent and lean is essential for successful and efficient work completion.

- **Kanban Board**

  The Kanban Board is the most iconic visualization tool in the Kanban method. It usually consists of columns representing stages in the Workflows (e.g., *To Do*, *In Progress*, *Review*, *Done*) and cards representing Work Items.

  As cards move across the board, it provides a real-time view of where work stands.

- **Kanban Backlog**

  The Kanban Backlog is a dynamic repository of Task Groups or Tasks to be completed by the Kanban Teams involved in an initiative. It provides a clear understanding of what needs to be done and facilitates flexibility and adaptability among the Kanban Teams to respond to changing circumstances. Each Kanban Team will have its own Kanban Backlog.

- **Work-In-Progress (WIP) Limits**

WIP limits are visually shown at the top of each column. If a column reaches its limit, no new Tasks can be pulled in until something moves forward—this helps avoid overloading the team and makes Workflows congestion immediately visible.

- **Card Details and Visual Cues**

Each card can include labels, color codes, tags, deadlines, or priority levels. For example:

  - Red tags for blockers
  - Green for high-priority items
  - Icons or avatars to show who's responsible

These visual cues make it easy to grasp critical information at a glance.

- **Cumulative Flow Diagrams and Metrics**

Charts and diagrams (like cumulative flow diagrams) visualize how Workflows function over time. This helps teams spot bottlenecks, analyze lead time, and track improvements.

2.6.3 Benefits of Visualization in Kanban

- Improves communication: Everyone can see what's happening at all times
- Builds shared understanding of goals, priorities, and progress
- Makes bottlenecks obvious, helping teams resolve them faster
- Increases accountability by clearly showing who is doing what
- Drives continuous improvement, as teams have visual feedback on how their process is performing

2.6.4 Summary

Visualization in Kanban turns invisible work into a visible, shared picture. By using boards, cards, WIP limits, and visual metrics, Kanban enables teams to see the current state of their work, understand the flow, and make better decisions.

This principle is the foundation for transparency, team alignment, and process improvement—making it one of the most powerful aspects of the Kanban method.

3 KANBAN ROLES AND ARTIFACTS

Kanban does not prescribe any new roles for an organization. However, organizations that successfully implement Kanban generally make use of the Kanban Team, which comprises the Product Owner, Kanban Manager, and Kanban Team Members. The Kanban Team is collectively responsible for effectively implementing the Kanban method.

3.1 Kanban Team

The Kanban Team is responsible for understanding the needs of the organization and implementing the Kanban method effectively. The three prominent roles within the Kanban Team are Product Owner, Kanban Manager, and Kanban Team Members.

3.1.1 Product Owner

The Product Owner, also referred to as Product Manager, Service Request Manager, Project Owner, or simply Owner, is the voice of the customer. Typically, the Product Owner is responsible for understanding customer needs and communicating those needs to the Kanban Team members. In initiatives involving large-scale efforts, there may be multiple Product Owners. Additionally, the Product Owner may sometimes take on the role of Kanban Manager for an initiative.

The key responsibilities of a Product Owner include:

- Gathering requirements and ensuring that the initiative's vision aligns with the needs of relevant stakeholders, the Product Owner is responsible for providing clarity and direction to the Kanban Team members.
- Tracking the progress of work using metrics such as cycle time, lead time, and throughput to monitor the team's performance and make prioritization decisions.
- Participating in continuous improvement activities to reflect on the effectiveness of Workflows or processes, including gathering feedback from stakeholders and identifying opportunities for improvement.

3.1.2 Kanban Manager

A Kanban Manager, also referred to as a Flow Manager, Service Delivery Manager, Collaborator, or Team Admin, is responsible for the proper implementation of the Kanban method to manage Workflows and processes. The Kanban Manager leverages Kanban principles to foster transparency, collaboration, and efficiency within the team (and the organization as a whole).

A Product Owner may also assume the role of Kanban Manager for an initiative. The Kanban Manager can add or change Kanban Team Members and is responsible for managing the Kanban Board. In certain situations, multiple Kanban Managers may be assigned to an initiative.

Some key responsibilities of a Kanban Manager include:

- Possessing in-depth knowledge and expertise in Kanban principles, practices, and techniques, and implementing core Kanban concepts (such as visualizing Workflows, limiting Work in Progress (WIP), managing flow, and continuous improvement).
- Reviewing the Task Groups and Tasks created by the Kanban Team Members on the Kanban Board, and helping the Kanban Team create Task Group Templates when needed, so the team can effectively replicate similar work.
- Facilitating regular meetings, such as Daily Stand-up Meetings or Kanban Team Meetings.
- Facilitating Retrospective Meetings to reflect on processes, identify areas for improvement, and implement changes to enhance quality and productivity.
- Training and helping teams overcome challenges and bottlenecks.

3.1.3 Kanban Team Members

Kanban Team Members, also referred to as Developers, Contributors, or Board Members, perform the actual work involved in delivering results to stakeholders. Kanban Team Members can directly create Task Groups and Tasks on the Kanban Board and then implement those Tasks to deliver the expected results. They contribute to the overall effectiveness and success of an initiative by consistently and efficiently delivering high-quality products and services.

Some of the key responsibilities of Kanban Team Members include:

- Visualizing the Workflows through the use of a Kanban Board and ensuring that all Work Items are represented on the board and moved across it to show real-time progress.
- Adhering to Work in Progress (WIP) limits agreed upon for each stage of the Workflows. WIP limits are typically imposed by specifying the maximum number of Tasks allowed in a column on the Kanban Board. Team Members focus on completing work before pulling in new items, which helps maintain a balanced flow and prevent work overload.
- Prioritizing Work Items, Tasks, and Task Groups on the Kanban Board.
- Setting dependencies between Task Groups and Tasks and estimating Tasks when needed.
- Managing the Workflows by addressing bottlenecks, delays, and dependencies.
- Communicating openly and collaborating effectively with other team members to share information about the status of work, dependencies, and any issues.
- Reflecting on the processes, identifying areas for improvement, and experimenting with changes to enhance productivity, quality, and collaboration.
- Taking ownership of the quality of their work and being accountable for delivering business value to stakeholders by ensuring that Work Items meet the specified Acceptance Criteria.

Figure 3-1 displays the Airtable "Employee onboarding" workspace that tracks team members, roles, emails, teams, onboarding Tasks etc. It includes sorting, filtering, color-coding, and sharing features for streamlined onboarding management across Leadership, Engineering, and Marketing.

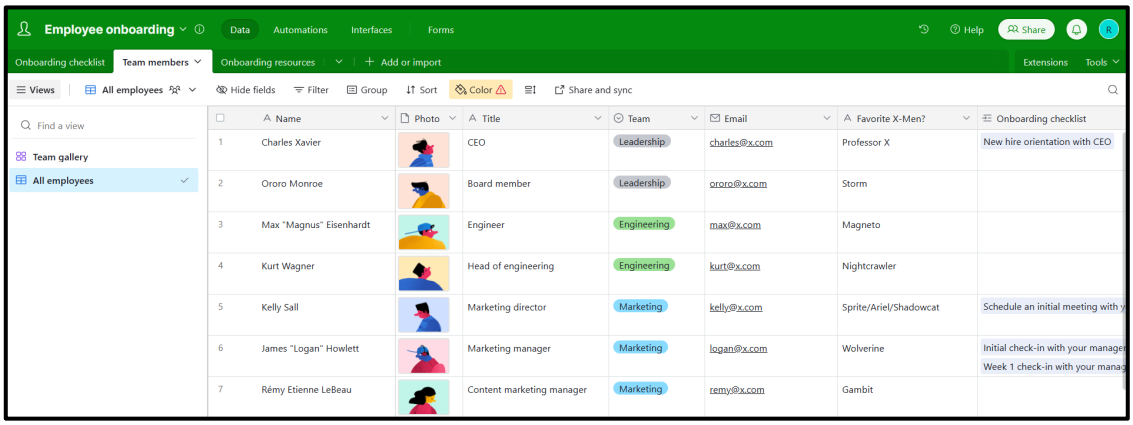

Figure 3-1: Organization Setup (Source: Airtable)

Figure 3-2 displays the VM Foods Marketing Team workspace on a platform (like Asana) displays an overview with curated work, members (SM, JD, ED), and goals. It allows adding team descriptions, resources, and new goals, facilitating collaboration and progress tracking towards objectives like increasing SEO marketing and improving brand image.

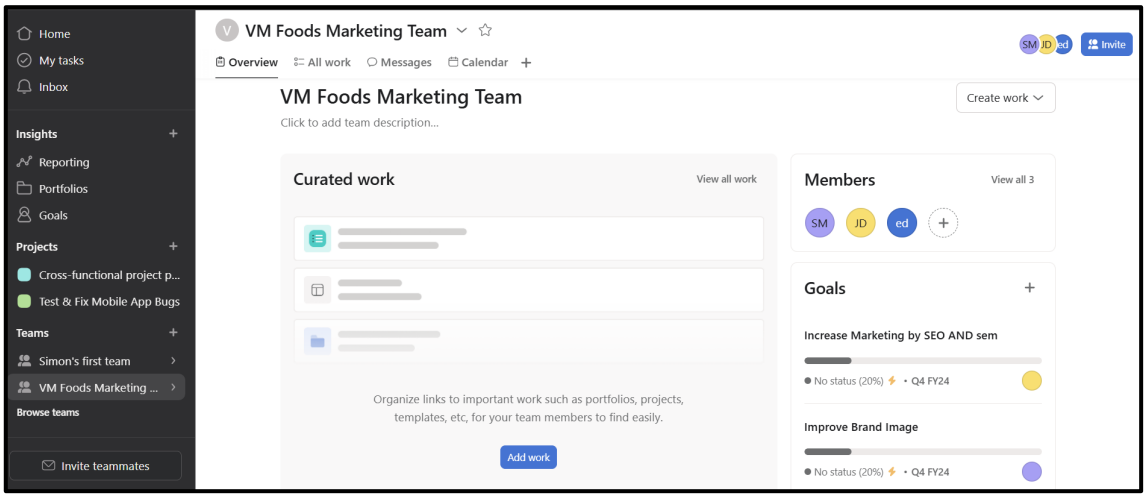

Figure 3-2: Setting up an Organization for Kanban (Source: Asana)

Figure 3-3 is an interface from Vabro, showing a Kanban template with "Team" details. It features tabs for team selection, fields for assigning Kanban Manager and members, and a comment section with threaded replies, facilitating team collaboration and communication within a Kanban initiative.

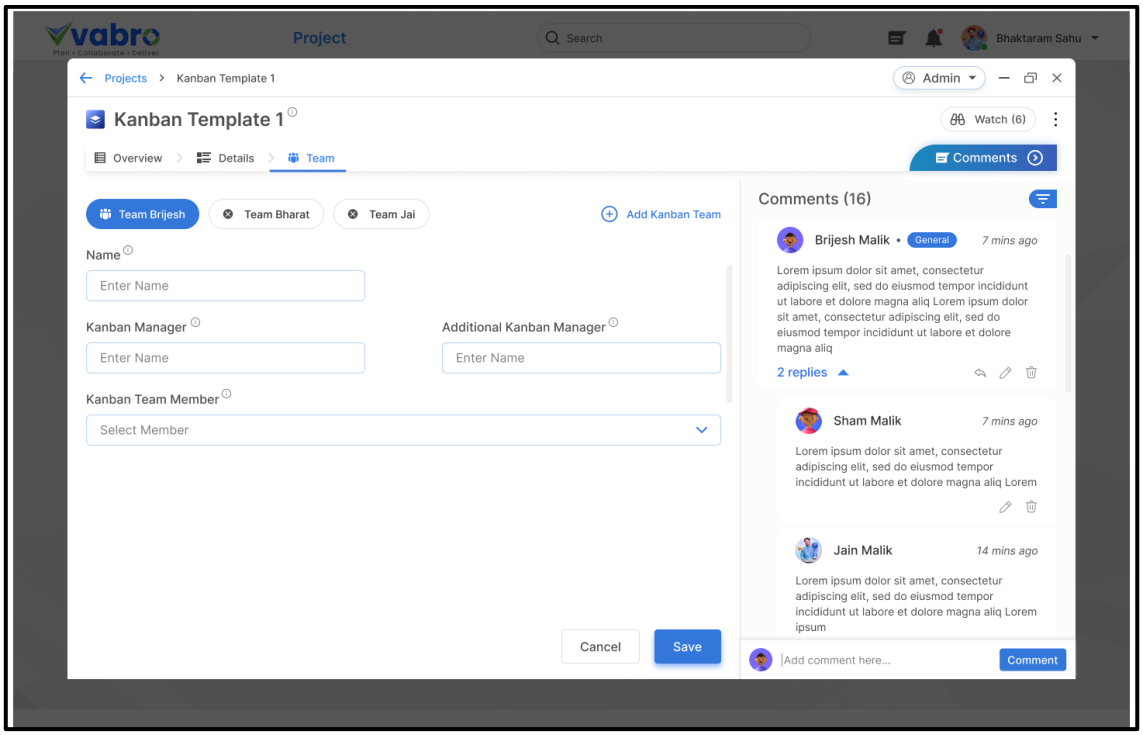

Figure 3-3: Preparing an Organization to adopt Kanban (Source: Vabro)

3.1.4 Stakeholders

Stakeholders of an initiative can include individuals, groups, and entities that can affect, be affected by, or perceive themselves to be affected by the initiative. In the context of a Kanban initiative, these stakeholders collaborate with the Kanban Team to influence Workflows efficiency, help prioritize Tasks, and ensure alignment with broader business goals. Stakeholders may include:

- Senior management will be responsible for defining the strategic direction, securing funding, and allocating resources for the Kanban initiative.
- Customers or end users will be responsible for collaborating with the Kanban Team to define and prioritize requirements and drive continuous improvement.
- External suppliers or service providers who contribute to various stages of the Workflows.
- Project and DevOps teams with whom the Kanban Team has dependencies.
- External customers, or internal and external teams, providing requirements for a Kanban Workflows.
- Any other individuals or teams interacting with or benefiting from the Kanban Workflows.

Effective communication with Stakeholders helps synchronize work across the Kanban initiative.

3.2 Roles and Responsibilities in Digital Kanban Tools or SaaS Platforms

Table 3-1 summarizes the key roles and their associated responsibilities in Kanban when using various digital Kanban tools or SaaS platforms:

Digital Kanban Tools or SaaS Platforms	Roles and Key Responsibilities
Vabro	• Product Owner: Gathers and prioritizes requirements, tracks progress, and participates in continuous improvement. • Kanban Manager: Configures boards, oversees Workflows, facilitates regular meetings, implements the Kanban method, and trains and mentors teams. • Team Member: Works on Tasks, and monitors progress. • Workspace Member: Has read-only access
Jira	• Product Owner: Prioritizes backlog. • Team Member/Developer/Contributor: Executes Tasks and provides updates.
Monday.com	• Owner: Oversees progress and goals. • Team Member: Updates statuses and completes Tasks. • Viewer: Has read-only access.
ClickUp	• Owner: Supervises Workflows. • Member: Handles Tasks and updates statuses. • Guest: Limited access to Tasks.
Asana	• Project Owner: Manages priorities and progress. • Collaborator/Team Member: Works on Tasks. • Guest: External collaborator with restricted access.
Azure DevOps	• Product Owner: Manages backlog. • Stakeholder: Observes and provides feedback. • Developer: Executes Tasks and updates statuses.

Table 3-1: Kanban Roles in Some Digital Kanban Tools

3.3 Kanban Artifacts

Artifacts are visual or management aids that help teams visualize Workflows and determine the best ways to optimize them in order to deliver high business value in the shortest time possible. Some typical artifacts used in Kanban include the Tasks and Task Groups, Kanban Workflows, Kanban Backlog, the Kanban Board, and various Kanban reports.

3.3.1 Tasks and Task Groups

Kanban Tasks are individual Work Items or activities represented visually on a Kanban Board. Each Task moves across columns that reflect stages in a Kanban Workflow. Kanban Task Groups organize related Tasks into categories like features, bugs, improvements, or epics, streamlining Workflow, prioritization, and collaboration across teams or projects.

Structure of a Kanban Task

A well-structured Kanban Task should include the following:

1. Title

- A short, descriptive summary of the Task.
- Example: Design homepage banner

2. Description

- A detailed explanation of the Task's purpose, context, and expectations.
- Include relevant background, links, mockups, or references.
- Example: Create a responsive banner for the homepage promoting the spring sale. Include two calls-to-action and align with the new brand guidelines.

3. Creator/Assignee

The default owner of Task Groups or Tasks is the Kanban Manager or Kanban Team Member who creates them. Kanban Tasks and Task Groups are not prioritized and are created directly on the Kanban Board by the Kanban Manager and/or Kanban Team Members. The Assignee is the person responsible for completing the Task Group or Task.

- Typically, in Kanban, the Creator and Assignee of a Task or Task Group are the same person.
- However, at times, some Kanban Tasks or Task Groups may be created by one person (the Creator) and assigned to another person (the Assignee). As per Agile principles, it is recommended that the Assignee voluntarily accepts the Tasks or Task Groups assigned to them by the Creator. Tasks should not be imposed on the Assignee; instead, the Assignee should take ownership of the work they choose to do.

4. Work Status

Columns on the Kanban Board are used to track the work status and completion of Kanban Task Groups and Tasks. Typically, a standard Kanban Board consists of six columns; however, the board can be modified to suit the information needs of the stakeholders. The Kanban Board can be adjusted by adding, editing, or removing columns.

The following seven column types are recommended for use on a standard Kanban Board:

- To Do—This consists of new Tasks when they are initially added to the board. These are Tasks that need to be completed but have not yet been started.
- Committed—This consists of Tasks selected for implementation. These are Tasks for which the team has clarity about the work to be done. These Tasks will be selected for implementation in the near future.
- In Progress—This consists of Tasks that team members are currently working on.
- On Hold—This consists of Tasks that are temporarily paused or delayed due to various reasons, such as external dependencies, resource constraints, or pending decisions.
- Escalate (Optional)—This consists of Tasks that need to be escalated to another Kanban Board or to another person or group (e.g., for approval)..
- Review—This consists of Tasks that are completed but are under review or evaluation by the team (or the Kanban Manager) to confirm if they meet the agreed-upon criteria.
- Done—This consists of Tasks that have been completed by the team. Tasks are considered complete when the team moves them to the "Done" column of the Kanban Board.

5. Priority

- Label or tag indicating urgency or importance (e.g., Low, Medium, High, Critical).

6. Due Date / Deadline

- When the Task needs to be completed.
- Helps with time-sensitive Workflows and planning.

7. Checklist / Subtasks

- Break down the main Task into smaller actionable steps.
- Example for a design Task:
    - Review branding guide
    - Create mockup
    - Get stakeholder feedback
    - Finalize and export files

8. Attachments

- Files, images, or documents necessary to complete the Task.

9. Labels / Tags

- Categories, teams, technologies, or departments related to the Task.
- Example: Marketing, UI Design, Urgent

10. Approvals

By default, approval upon Task completion is not required for Tasks or Task Groups. If approval is needed, the Kanban Manager or Kanban Team Members who created the Tasks or Task Groups should specify that approval is required from the Kanban Manager or Product Owner before a Task or Task Group is marked as complete.

11. Comments / Discussion

- A thread where team members can collaborate, ask questions, or provide updates.

Best Practices

- Keep Tasks small and specific to avoid confusion or delays.

- Limit work in progress (WIP) to reduce context switching.
- Review and update Tasks daily or weekly during stand-ups or retrospectives.
- Use color-coded labels and automation rules (in tools like Vabro, Trello, Jira, ClickUp) for efficiency.

Example: A well-structured Kanban Task

- Task Title: Implement User Login Functionality
- Description: Create a login form that allows users to sign in with their email and password. Include form validation and error handling.
- Due Date: April 11, 2024
- Creator/Assignee: Alex Martinez
- Tags/Labels: Frontend, Authentication, High Priority
- Status: In Progress
- Checklist/Sub Tasks:
    - Design login form UI
    - Implement frontend validation
    - Integrate with backend API
    - Add error messages for failed logins
- Attachments/Links:
- Design mockup
- API documentation
- Approval Required: Yes – Product Owner must review before marking complete.

Figure 3-4 shows a "Design Requests" board in Vabro, with Tasks categorized as "New," "In Progress," and "Complete," displaying Workflows details, deadlines, and assigned team members, indicating Workflows management.

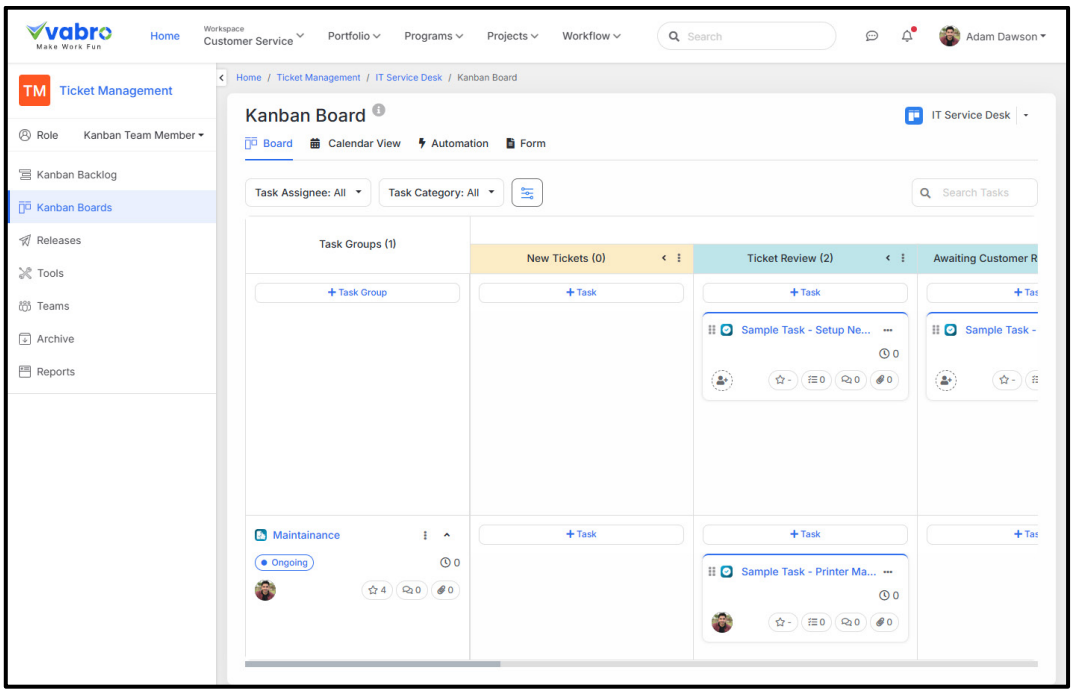

Figure 3-4: Kanban Board with Task Groups and Tasks (Source: Vabro)

Figure 3-5 shows a "Design Requests" board with Tasks in "New," "In Progress," and "Complete" columns, displaying Workflows details, deadlines, and assigned personnel, illustrating a Workflows management system.

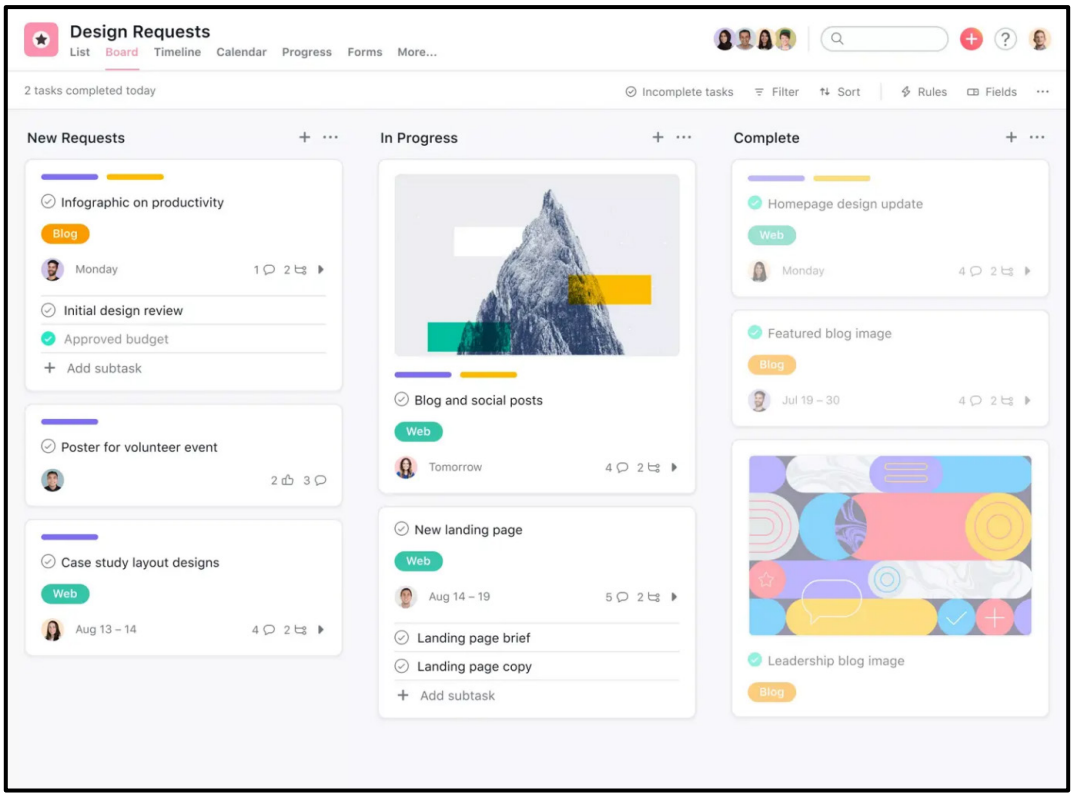

Figure 3-5: Illustration of Sample Kanban Board from Digital Tool (Source: Asana)

Figure 3-6 shows a Jira Kanban Board for "Beyond Gravity" software initiative, displaying Tasks categorized by status (To Do, In Progress, In Review, Done), with assigned team members and issue details.

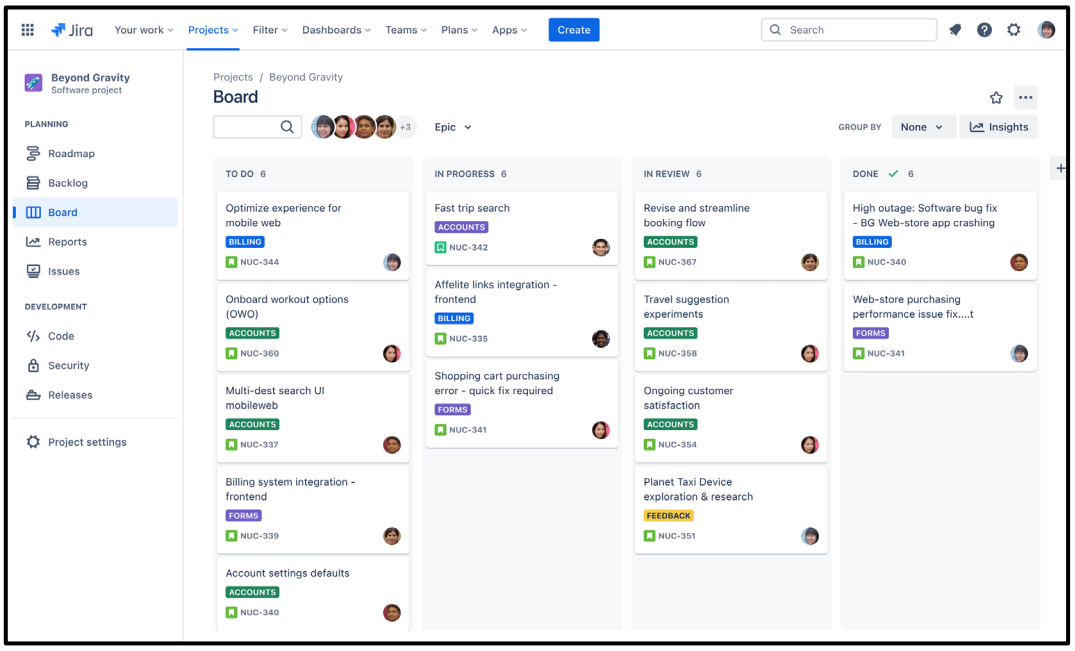

Figure 3-6: Sample Kanban Board (Source: Jira)

Figure 3-7 shows a Vabro Kanban Board with a pop-up window asking to "Send Task Group for Approval" for "Maintenance," indicating a Task management Workflows process.

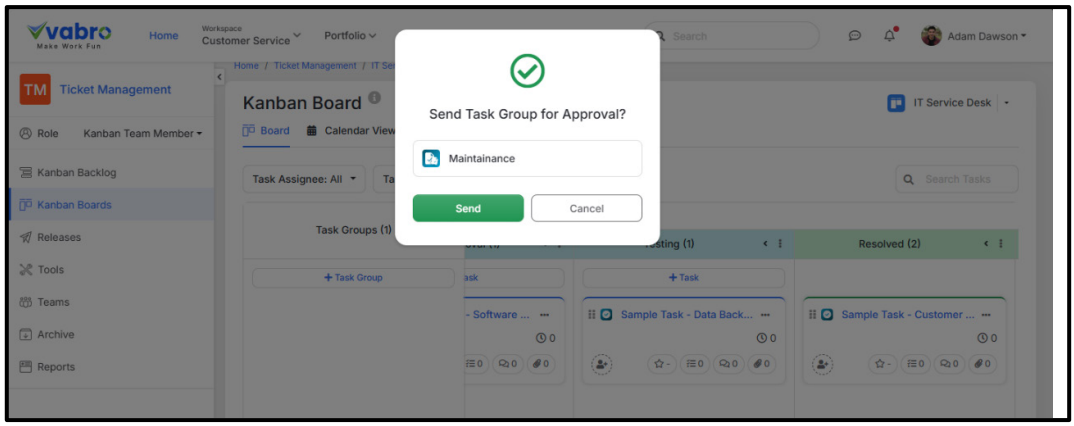

Figure 3-7: Steps in Task Group Review and Approval Process (Source: Vabro

3.3.1.1 Kanban Cards

Kanban cards are visual elements used on a Kanban Board to represent individual work items or tasks. Each card contains information about a specific task and helps teams manage and track work in progress through different stages of a Workflow.

Kanban cards are much more than just task notes — they are a core part of the Kanban methodology, enabling teams to manage work visually, collaboratively, and efficiently. Whether working on software development, marketing campaigns, operations, or any other Workflow, Kanban cards help ensure that nothing slips through the cracks and that everyone stays aligned on the progress of work.

The main goal of a Kanban card is to:

- Visualize work clearly and transparently.
- Communicate task details at a glance.
- Track progress as tasks move through Workflow stages (e.g., To Do → In Progress → Done).
- Limit work in progress (WIP) by showing how many tasks are active at any given time. A Kanban card typically includes the following information (though this may vary based on the tool or use case):

A Kanban card typically includes the following information (though this may vary based on the tool or use case):

Element	Description
Title	A brief summary of the task
Description	More detailed info on what needs to be done
Creator/Assignee	The person creating a Task or responsible for completing the Task
Work Status	Where the task is in the Workflow (often reflected by the card's position on the board)

Element	Description
Priority	Low, Medium, High – helps in focusing on critical tasks
Due Date	When the task should be completed
Checklist/Subtasks	Subtasks or steps to complete the main task
Attachments/Links	Designs, docs, specs, or related resources
Labels/Tags	Help categorize or filter tasks (e.g., "Bug", "Feature", "Backend")
Approvals	Specifies if approval required, and from whom
Comments	Space for collaboration or updates on the task

Table 3-2: Kanban Card Template

At times, some Kanban tools also allow tracking of the time taken by the assignee to complete specific tasks.

Figure 3-8 shows the task view that displays details for "Create UI components," including description, team, board, release, status ("To do"), and assignee options. It supports feedback-based development with no approval required.

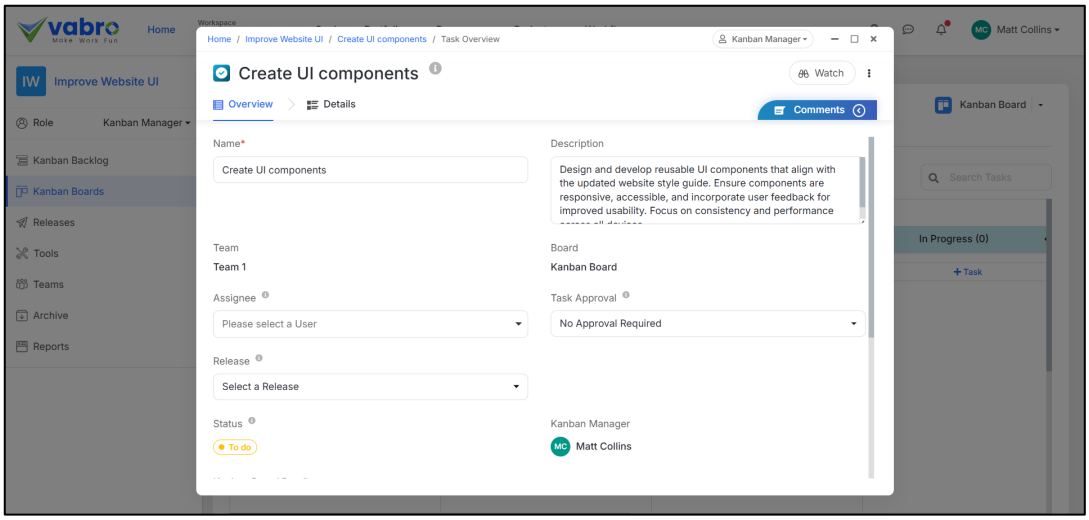

Figure 3-8: Sample Kanban Card (Source: Vabro)

Figure 3-9 shows a task management board that displays project statuses: To Do, In Progress, and Completed. The “Interactive Webinar” task is highlighted, marked completed with full progress and over 200 participants' feedback.

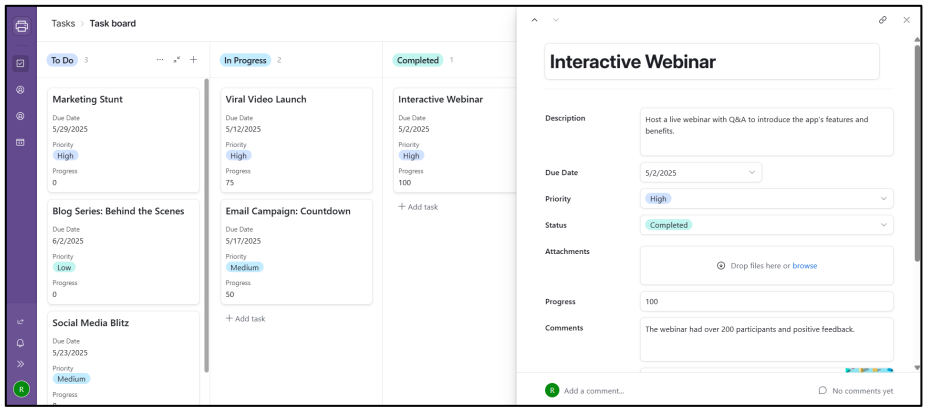

Figure 3-9: Kanban Card Template (Source: Airtable)

Figure 3-10 shows a lead tracking board that displays a single backlog task, “Collate Leads for March,” with medium priority. Task details panel is open, showing no assignee, Monday due date, and empty description field.

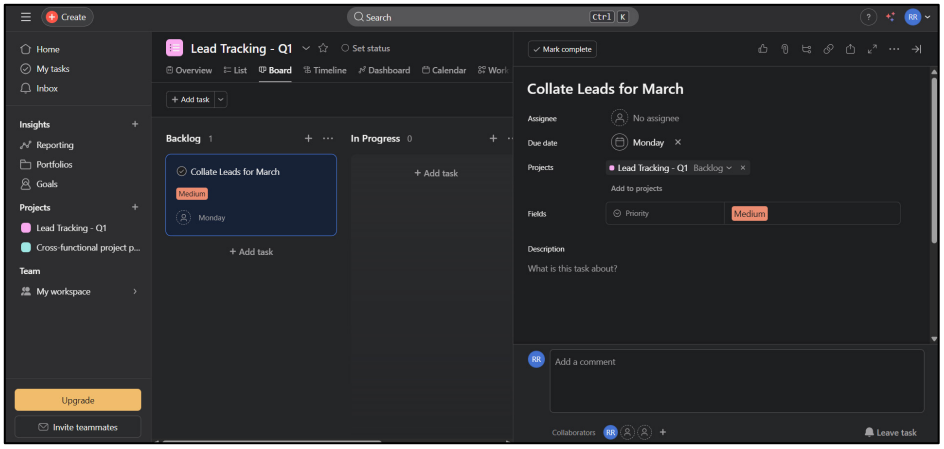

Figure 3-10: Kanban Card Template (Source: Asana)

Figure 3-11 shows the task view that displays “Account Setup” with a To Do status, high priority, and no description. Start date is 3/18/24. Options menu is open, showing task actions and sharing settings.

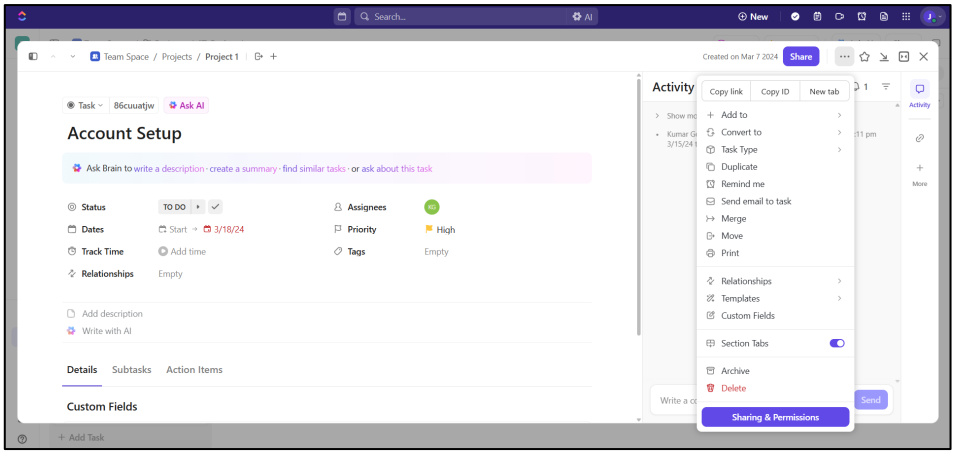

Figure 3-11: Sample Kanban Card (Source: ClickUp)

Kanban Cards in Practice

1. **Creating the Card:**
   - A team member identifies a new task and creates a card.
   - The card is placed in the "Backlog" or "To Do" column.

2. **Moving the Card:**
   - As work begins, the card is moved to "In Progress".
   - Once completed, it moves to "Done" or "Completed".

3. **Visual Feedback:**
   - Team members can instantly see what's being worked on, what's pending, and what's done.
   - Bottlenecks can be identified by observing where cards are piling up.

Digital vs Physical Kanban Cards

Physical Boards	Digital Boards
Cards are sticky notes or index cards on whiteboards	Cards are virtual and used in tools like Vabro, Trello, Jira, Monday.com, Clickup, Asana or Azure DevOps
Easy for quick brainstorming or small teams	Ideal for remote teams and large-scale collaboration
Limited automation	Supports automation (e.g., moving cards based on conditions)

Table 3-3: Digital vs Physical Kanban Cards

3.3.1.2 Upcoming Work Items

Upcoming Work Items in Kanban are Tasks or Task Groups, prioritized and ready to be pulled into the Kanban Workflows when capacity allows.

Kanban manages upcoming work by maintaining a prioritized backlog and using a pull-based flow, WIP limits, and regular backlog replenishment to ensure the team always works on the most valuable Tasks at the right time—never too early, never too late.

How to Manage Upcoming Work Items in Kanban

1. **Separate Column in the Kanban Board**
   This is the most commonly used approach to manage upcoming work in Kanban. Upcoming Work Items can be placed in a separate "Upcoming Tasks" column on the main Kanban Board. These items are then moved to the "To Do" column when the team has the capacity to work on them.
   This is a common and effective way to manage upcoming work in Kanban, especially for Tasks expected to be addressed in the near future.

2. **Using the Kanban Backlog**
   Upcoming Work Items may be created in the Kanban Backlog and are typically ordered by priority or value. Items move from the backlog into the Workflows (e.g., "To Do") when there is capacity (pull-based). The backlog is not time-boxed—work is pulled when ready, not scheduled in sprints.
   Although this approach is used in some Kanban tools, there are several disadvantages to using a Kanban backlog for upcoming work:

   Prioritization Can Become Blurry
   - A large Kanban backlog without strict prioritization rules can lead to confusion or constant re-prioritization, which wastes time and creates uncertainty.

   Delayed Feedback Loops
   - Without structured planning (e.g., well defined User Stories/Work Items or regular reviews), feedback loops may be slower or less deliberate, affecting alignment and quality.

   Overloaded Backlog = Cognitive Load
   - Since Kanban doesn't prescribe how to prune or groom the Kanban Backlog regularly, it can grow uncontrollably and become overwhelming.

   Work in Progress (WIP) Limits Might Not Cover Backlog
   - WIP limits typically apply to work already in progress, not to upcoming work in the backlog. This can lead to a "hidden" overload if backlog items pile up while waiting for attention. This often happens when the team chooses to leave upcoming Tasks in the backlog instead of moving them into WIP on the Kanban Board, making it harder to manage.

   Less Visibility for Stakeholders
   - Stakeholders accustomed to prioritized backlogs or clear release plans may find a Kanban backlog—with multiple upcoming Work Items—harder to follow unless there is a defined structure and regular communication.

3. **Using a specialized Prioritized Product Backlog**
   In tools such as Vabro, which offer well-defined Scrum and DevOps templates, upcoming work can be systematically organized and prioritized within specialized Prioritized Product Backlogs. These backlogs provide Product Owners with multiple options to create and manage User Stories, often using AI to accelerate the entire process. Once prioritized, the User Stories can be moved into the Kanban Workflows when the team has availability—where they are further broken down into Tasks and Task Groups.

   Key Benefits of this approach:
   - Keeps the main Workflows board clean and focused.
   - Allows for better prioritization and planning.
   - Supports just-in-time decision making, which is central to Kanban.

Pull System

- Instead of pushing Tasks onto the team, team members pull the next Work Item when they have capacity.

- This is based on Work In Progress (WIP) limits, which control how many items can be in each stage at once.
- Helps avoid overload and improves focus.

Replenishment or Commitment Point:

Upcoming Work Items are pulled into the Kanban Board:

- At regular intervals (e.g., weekly), the team holds a replenishment meeting.
    - During this meeting, items from the backlog are reviewed and moved into the "To Do" column or the first active stage.
    - This is the commitment point—once work is pulled in, it should flow to completion.
- Using explicit policies to decide when and how to pull work.
    - For example: “Only pull the next item if there are fewer than 3 Tasks in progress.”
- Using visual signals
    - Visual Signals on the board can help manage flow (e.g., color-coded cards, flags, swimlanes).

Continuous Flow

- Kanban allows work to be pulled in at any time, so it supports continuous delivery rather than time-boxed cycles.
- This makes it ideal for operational, support, or maintenance teams, where work is unpredictable.

3.3.2 Kanban Workflows

A Kanban Workflows is the end-to-end process that a Work Item follows from the moment it's requested to the moment it's delivered. It represents the sequence of steps a team uses to plan, execute, and complete work in a flow-based system. Keeping the Workflows transparent and lean is essential for successful and efficient work completion.

A key principle of Kanban is the visualization of the Workflows, which aids in its continuous improvement. Visualization is facilitated using the Kanban Board, which helps teams identify bottlenecks, optimize processes (e.g., by eliminating waste), and improve overall team efficiency and productivity.

A Kanban Workflows can have one or more Kanban Boards, which help visualize the entire Workflows. This is described in detail in Section 3.4.4.1.

Figure 3-12 shows Vabro Genie AI's workspace setup interface, highlighting recommended templates and Workflows for various departments, particularly Learning & Development.

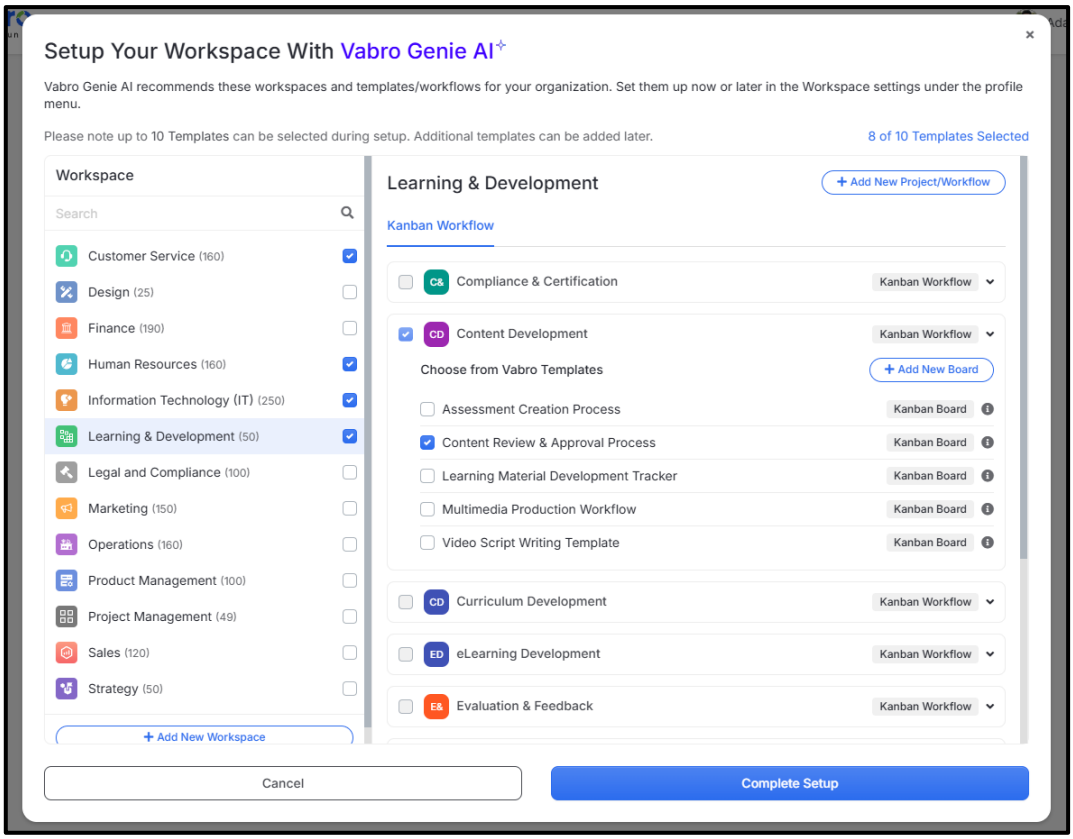

Figure 3-12: Illustration of Learning and Development Workflows (Source: Vabro)

Figure 3-13 displays template center, from ClickUp showcasing the templates for common HR Tasks, such as employee development plans, directories, engagement surveys, and expense reports, aiming to streamline HR processes.

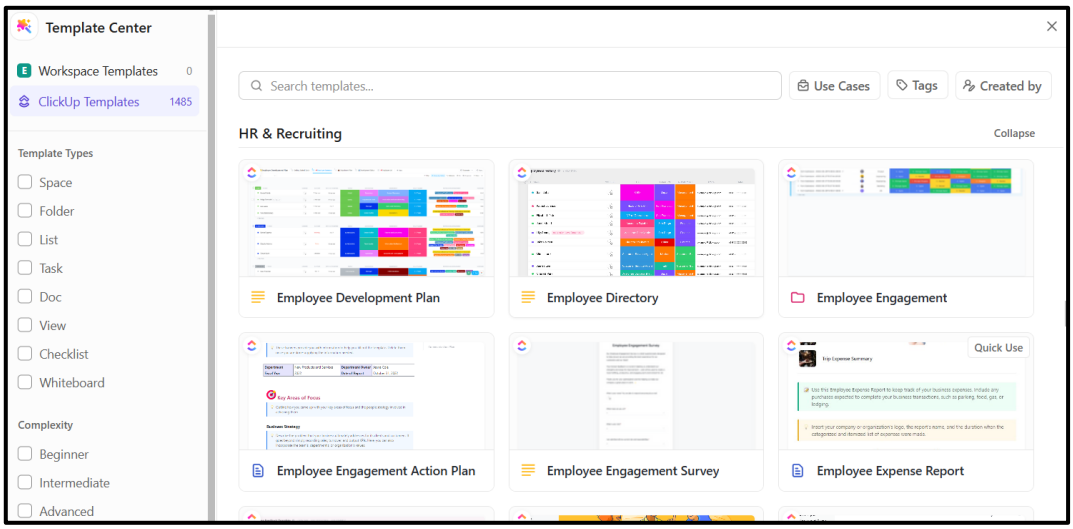

Figure 3-13: Selection of a Workflows and its Components (Source: ClickUp)

Figure 3-14 presents a Kanban-style Task management board with columns like "To Do," "In Progress," "On Hold," and "Questions." It helps teams organize Tasks, categorize Work Items using labels, and streamline their Workflows.

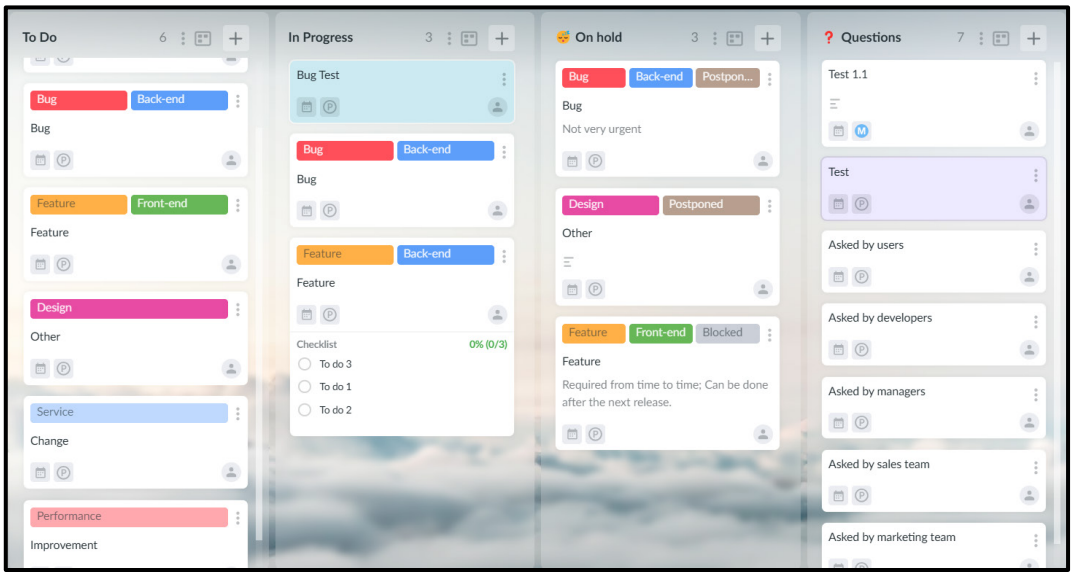

Figure 3-14: Use of Workflows in Kanban (Source: Kanbanchi)

Figure 3-15 shows the Workflows settings for "Expense Management" within a "Kanban Workflows management" system, detailing the various stages.

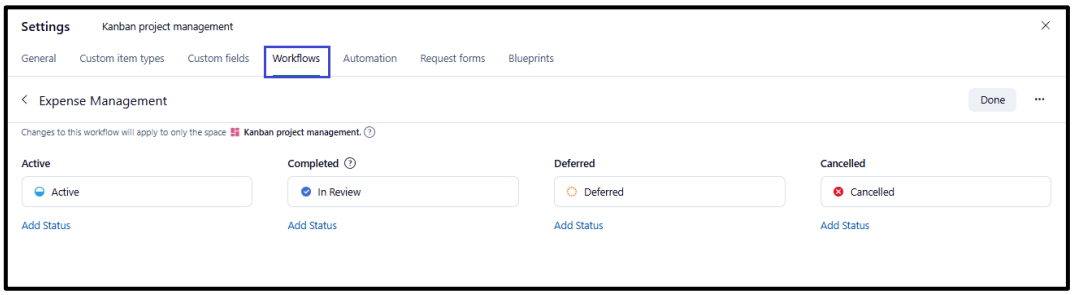

Figure 3-15: Workflows in Kanban (Source: Wrike)

3.3.3 Kanban Backlog

The Kanban Backlog is a dynamic repository of Task Groups or Tasks to be completed by the Kanban Teams involved in an initiative. It provides a clear understanding of what needs to be done and facilitates flexibility and adaptability among the Kanban Teams to respond to changing circumstances. Each Kanban Team will have its own Kanban Backlog.

The Kanban Backlog includes all the Task Groups and Tasks being worked on by the Kanban Teams that are part of the initiative. This offers an overview of all the work being performed by the relevant Kanban Teams. The Kanban Backlog can be organized by Tasks or Task Groups for better visualization and Workflows overview.

Typically each Kanban Backlog will have its own Kanban Workflows; also each Kanban Workflows can include one or more Kanban Boards, which are a visual representation of the Kanban Workflows.

Figure 3-16 shows a Vabro software interface for ticket management, displaying a backlog of Tasks assigned to team members.

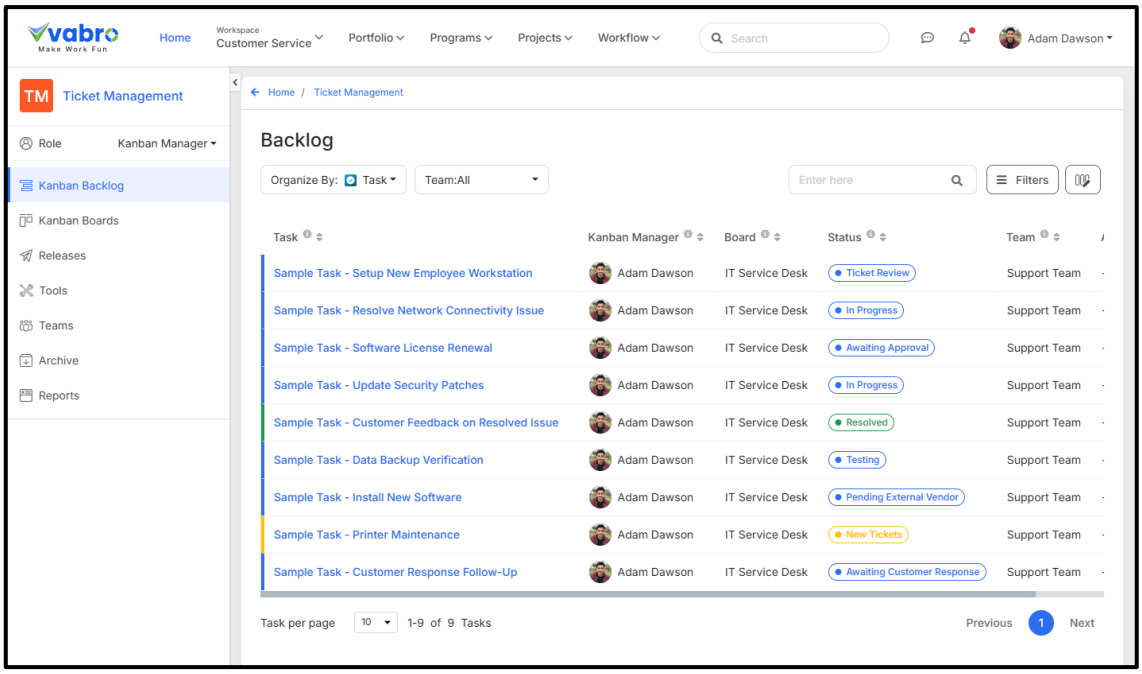

Figure 3-16: Digital Kanban Backlog with associated Kanban Boards (Source: Vabro)

Figure 3-17 displays a customer support ticket list in ClickUp, showing open and pending tickets with their details.

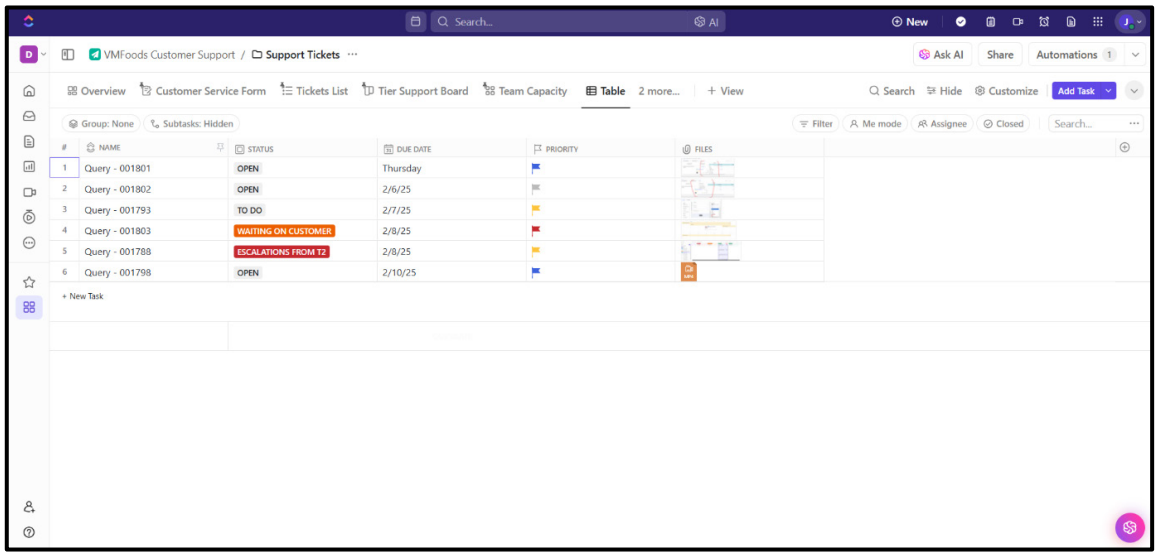

Figure 3-17: Illustration of a Digital Kanban Backlog (Source: ClickUp)

Figure 3-18 shows a Kanban Board in Basecamp tool with Tasks organized into "To-do," "In Progress," "In Review," and "Completed" columns.

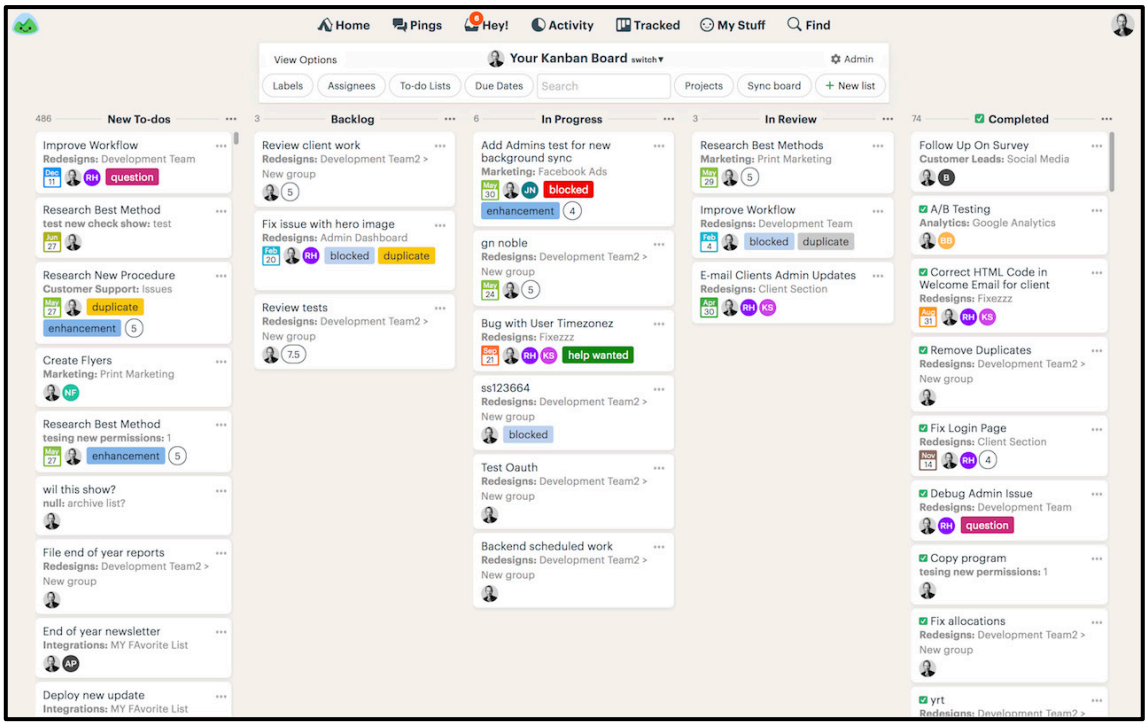

Figure 3-18: Sample Kanban Board (Source: Basecamp)

Figure 3-19 displays a Kanban Board interface of Notion, showing Tasks categorized as "To Do," "In Progress," and "Complete," with assigned team members and progress tracking for a design initiative.

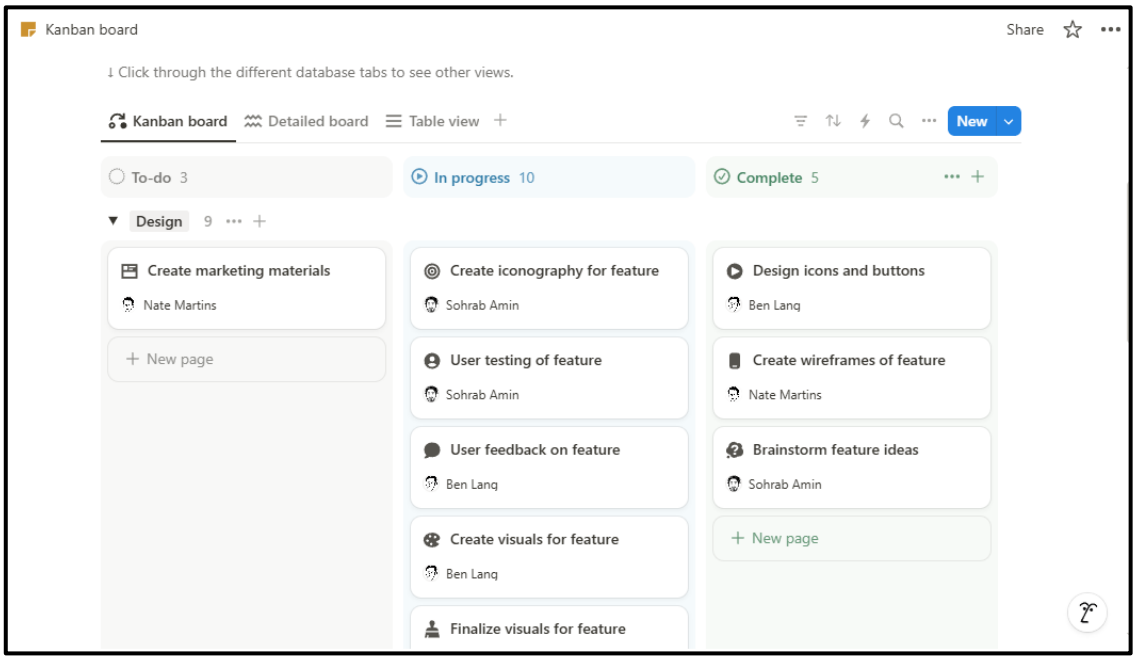

Figure 3-19: Sample Kanban Board (Source: Notion)

3.3.4 Kanban Boards

A Kanban board is a key component of Workflows. A Workflow represents the sequence of steps that task groups or tasks go through, from initiation and planning to delivery and completion. However, a Workflow may involve multiple Kanban boards, task groups, tasks, or activities that support service delivery or product development. A task is a set of action items or activities to be completed by a Kanban team member to whom the task is assigned. For example, designing the layout or creating a wireframe. A task group consists of multiple related tasks required to deliver an output or result in a product

A typical Kanban Board consists of multiple columns and rows, representing various stages a Task Group, Task, or Work Item goes through from start to completion. For example, columns on a Kanban Board might include 'To Do', 'Committed', 'In Progress', and 'Done'. Rows on the Kanban Board typically represent the categorization or grouping of work or Tasks based on features, categories, assigned persons, priority levels, and/or Task types. For example, categorizations could include Initiation, Requirements Gathering, Planning, Implementation, Review, and Closing.

Kanban Boards should allow the Kanban Manager and/or Kanban Team Members to directly add Work Items, Task Groups, or Tasks to the board. A Work Item can be an activity, a set of activities, a feature, or another piece of work that Kanban Team Members, collectively or individually, need to execute to fulfill a request or order. A Task Group includes a set of related Tasks to deliver a product, service, or feature. Task Groups can optionally be saved as Task Group Templates, allowing team members to easily create similar Tasks or Task Groups in the future. Tasks can be continually added to Task Groups by the Kanban Manager or team members. Tasks can also be broken down into subtasks, which are typically in the form of a checklist of activities that need to be completed to finish the entire Task.

Target dates can be added to the Task Groups and Tasks created on the Kanban Board. However, there are no target dates associated with subtasks. By default, Tasks and Task Groups do not require approval and can be managed and completed by the Kanban Team Members themselves. However, if needed, the Kanban Team Member implementing a Task can request approval from the Kanban Manager to confirm that the Task is complete. The Kanban Team Members can also specify any dependencies between the Kanban Tasks and other Tasks (from the same or another Task Group).

3.3.4.1 Kanban Workflows with multiple Kanban Boards

A Kanban Workflows can involve multiple Kanban Boards, especially in more complex processes or larger teams.

Using several Kanban Boards for one Kanban Workflows can help when:

- Different teams or departments have separate Workflows.
- Projects need to be tracked at both high-level and detailed levels.
- Teams want to separate personal Tasks, team Tasks, and cross-functional Tasks.
- Same Kanban Team is handling multiple product lines, clients, or services.

Examples of Multi-Board Setups

Team-Specific Workflows:

- Design Team Board
- Development Board

QA Workflows:

- Project Phase Boards:
- Backlog Grooming Board
- Sprint Planning Board
- Release Management Board

DevOps Workflows (with both Development and Operations Boards for the same team):

- One board for feature development
- Another for bug fixing
- Another for deployment/release Tasks

3.3.4.2 Swimlanes in Kanban Board

A swimlane is a visual aid used in various Workflows and processes to categorize and organize Task Groups or Tasks based on specific criteria. Swimlanes are represented as horizontal sections within Workflows management tools. In a Kanban Board, swimlanes are the horizontal sections that separate different Tasks and Task Groups. This is done by representing various dimensions, such as assigned person, process stage, priority level, or work type.

Swimlanes are horizontal rows on a Kanban Board that help to visually separate and organize Work Items based on a specific category or context—while still following the same vertical Workflows stages (like To Do → In Progress → Done). They are analogous to lanes in a swimming pool—different lanes for different types of Tasks, but all flowing in the same direction.

Swimlanes make it easier to:

- Group related work (e.g., by project, priority, team, feature, etc.)
- Track work for multiple teams on one board
- Highlight blocked or expedited items
- Separate business-as-usual Tasks from strategic initiatives
- Prioritize visually without breaking your Workflows

Common Swimlane Categories

By Priority

- Expedited
- High Priority
- Normal

By Team or Role

- Development
- Design
- QA

By Client or Project

- Client A
- Internal Project
- Mobile App

By Task Type

- Bug Fixes
- Features
- Maintenance

> *Swimlanes Example*:
>
> In a small software development initiative, swimlanes in the Kanban Board might be used to represent different stages of team activities, such as initiation, requirements gathering, planning, implementation, and closing.

Figure 3-20 presents a Kanban Board, displaying Tasks categorized by status. It shows Task details, progress, assigned team, and allows filtering/grouping, facilitating product management and Workflows visualization.

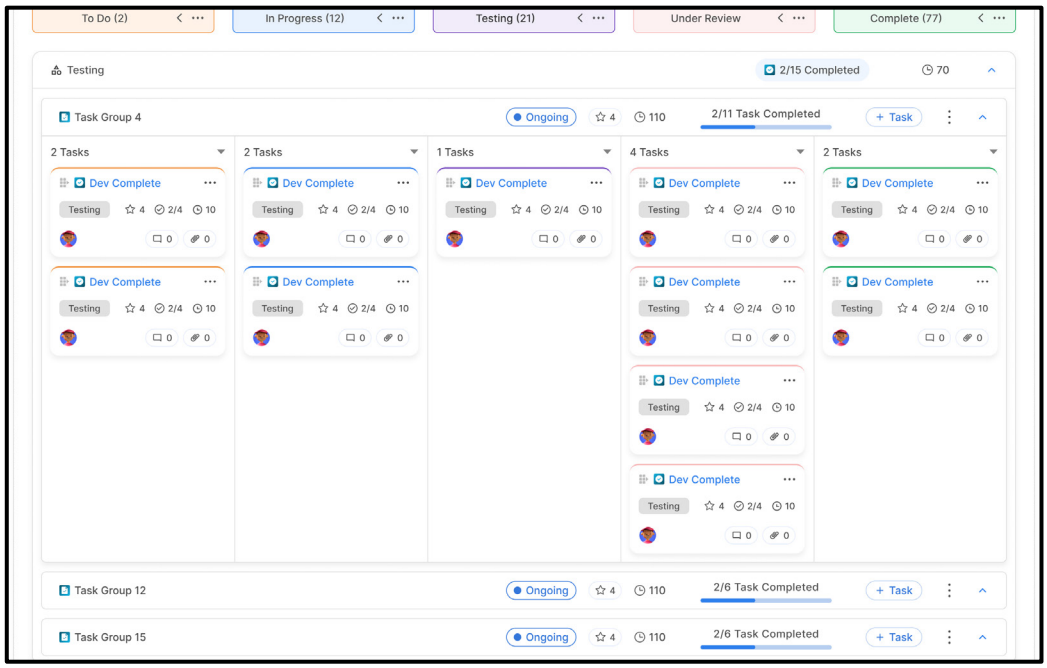

Figure 3-20: A Digital Kanban Board with Swimlanes (Source: Vabro)

Figure 3-21 presents an HR recruitment dashboard showing a "Candidate Status Board." It visualizes the hiring pipeline stages with candidate counts, enabling recruiters to track applicant progress and manage the recruitment Workflows efficiently.

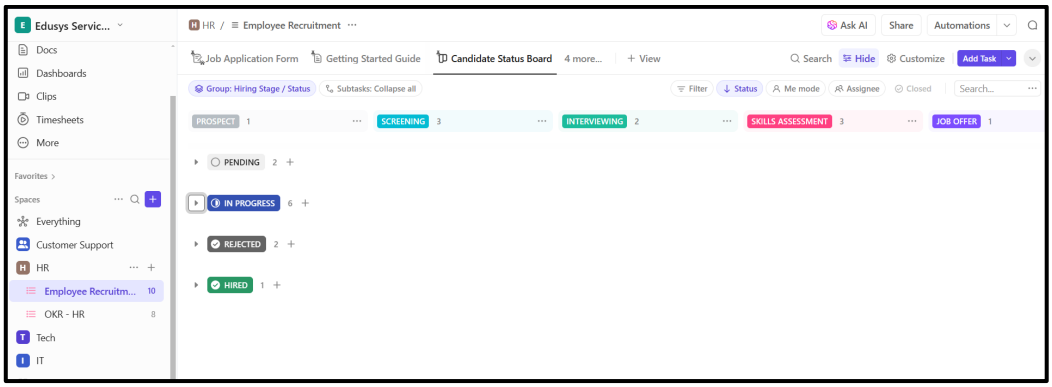

Figure 3-21: Digital Kanban Board (Source: ClickUp)

3.3.4.3 Using Kanban Boards to Manage Escalations

Using Kanban Boards to manage escalations in product management and project delivery can be highly effective for visualizing, tracking, and resolving issues as they arise. Escalations on a Kanban Board enable teams to transfer Tasks to specialized teams for quicker resolution. This ensures that bottlenecks are efficiently addressed, and Workflows stay on track. Escalations can be created at a Kanban Board level and exposed to team members working on the board. Escalations can be set up by the Kanban Manager for any Kanban Team.

Visualizing the Escalation Workflows:

- Create or Mark an Escalation Column: Add a dedicated column on the Kanban Board for escalations or create specific swimlanes for escalated issues on the primary Kanban Board. This enhances visibility and allows the team to prioritize escalated Tasks immediately.
- Select Destination Workspace and Board: If a column is marked for escalation, the destination workspace and the associated Kanban Board need to be selected. Escalations are sent with proper comments for context.
- Set Severity Levels and SLAs: Once the destination workspace and Kanban Board are selected, define severity levels and associated Service Level Agreements (SLAs) for escalations to ensure timely resolution.
- Escalation Setup and Approval: After the escalation request is configured from the source Kanban Board, the destination Kanban Board receives an escalation setup approval request. Upon approval, Tasks from the source board can be escalated to the destination board.
- Triggering Escalations: Kanban Team Members can escalate Tasks to the destination Kanban Board by moving Tasks to the Escalated column. This action triggers the escalation, and an instance of the Task is created on the destination board. Tasks requiring approvals could also be escalated to a single person or a group of persons.
- Status Updates and Notifications: Once the Kanban Team Member at the destination board completes the escalated Task, a status update notification is triggered to the source Kanban Board. This ensures that the originating team stays informed about the Task's progress and resolution.

This structured approach to managing escalations through Kanban Workflows helps maintain process efficiency, reduces delays, and fosters accountability across teams.

Figure 3-22 shows a digital dashboard for IT request management in Smartsheet. It displays various IT-related requests categorized by their status, such as *Received*, *Assigned*, *In Progress*, and *Completed*.

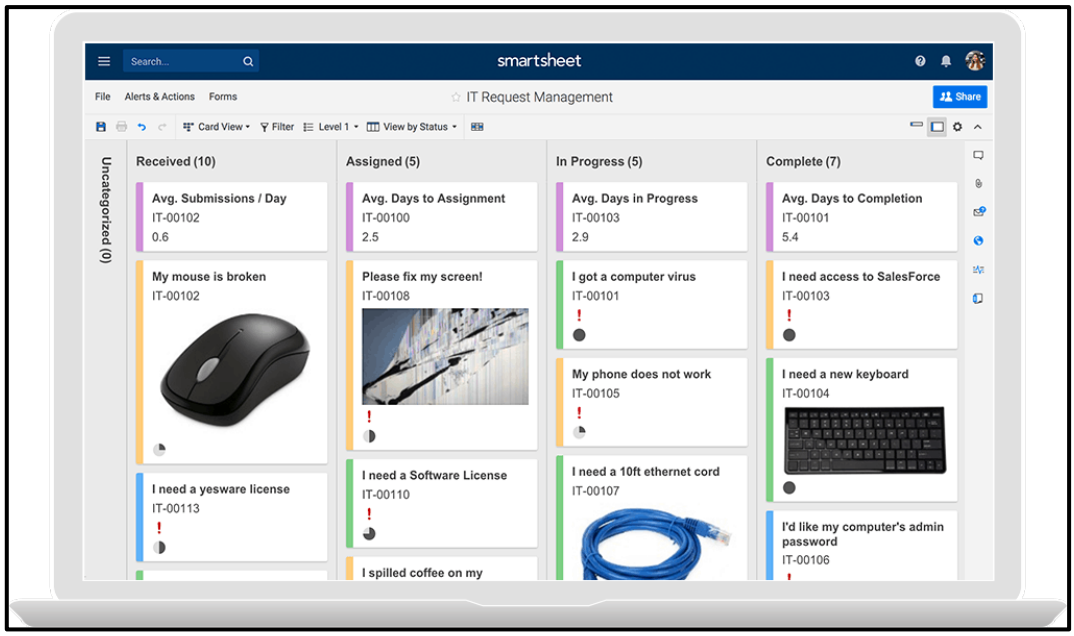

Figure 3-22: Sample Kanban Board (Source: Smartsheet)

Figure 3-23 shows Nifty's Workflows management board for the "Q2 Marketing Campaign", with Tasks organized by status columns such as *Campaign 1*, *Campaign 2*, *Editor Review*, and *Completed*. It displays various marketing activities, including deadlines and assigned team members, illustrating a collaborative Workflows for efficient campaign execution.

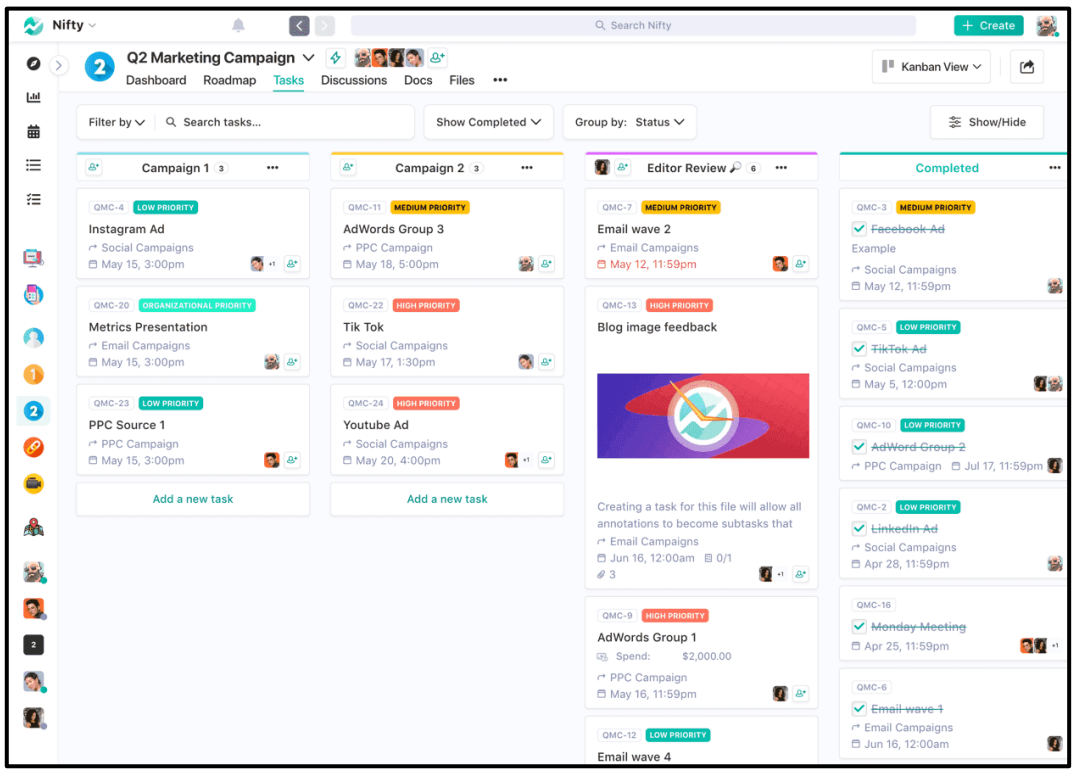

Figure 3-23: Sample Kanban Board (Source: Nifty)

Figure 3-24 shows the Vabro software interface displaying a ticket management backlog. It lists various Tasks with details such as assigned team members, status, and priority, indicating a system for tracking and managing support tickets or Tasks.

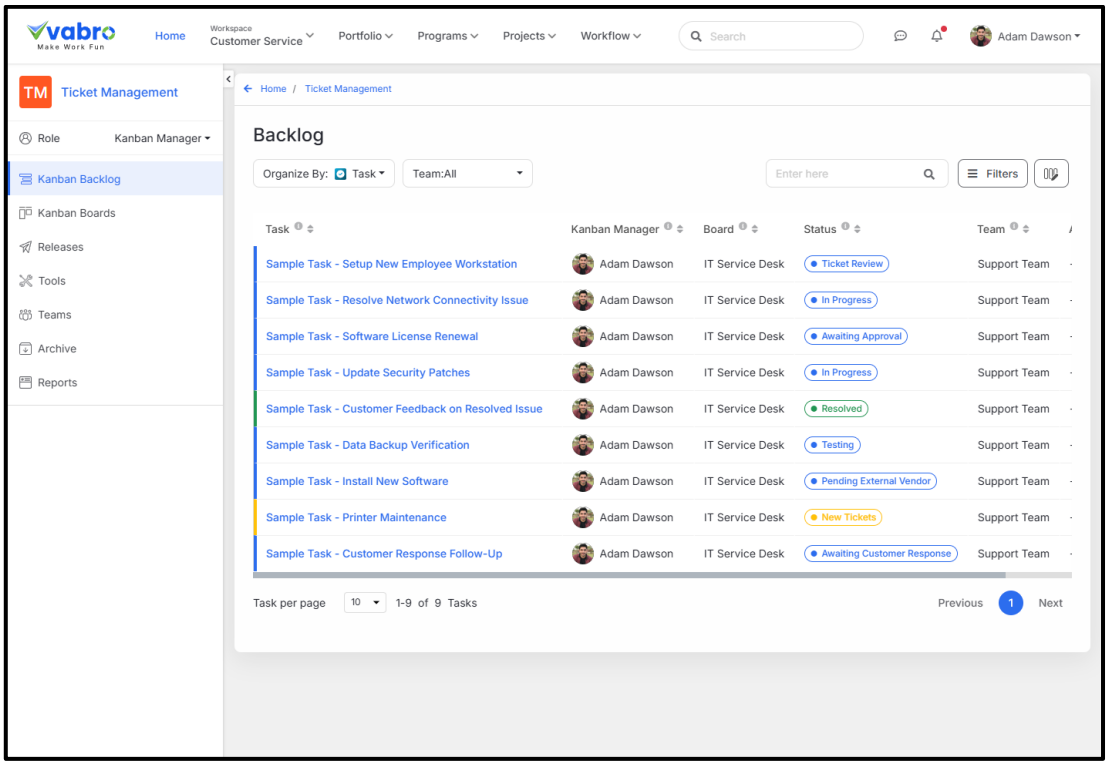

Figure 3-24: Kanban Backlog Setup Process (Source: Vabro)

Figure 3-25 above shows a candidate tracking system in ClickUp with two open positions: Project Manager and Operations Manager. Each position lists applicants and their progress in the hiring process. The system displays details such as contact information, current hiring stage, salary expectations, and application status, enabling efficient management of the recruitment pipeline.

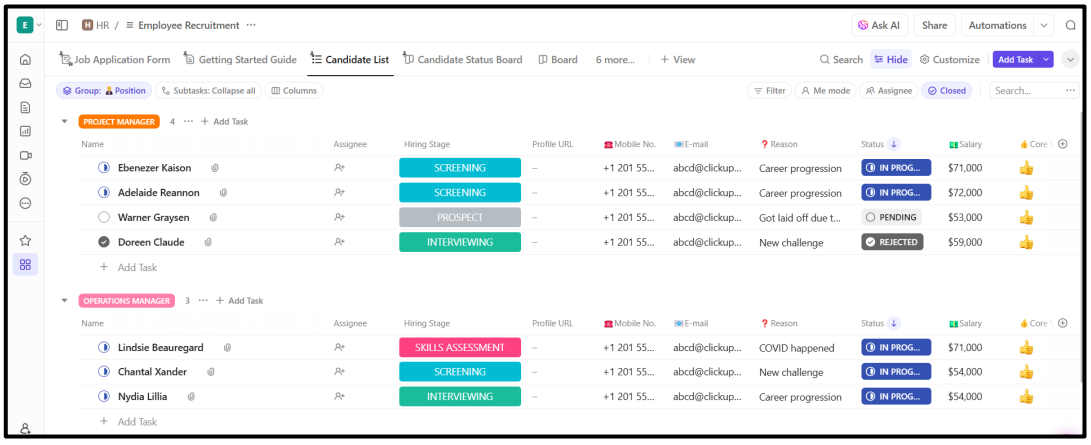

Figure 3-25: Sample Kanban Backlog (Source: ClickUp)

This Page is Intentionally Left Blank

4 KANBAN METRICS AND REPORTS

Kanban metrics and reports track team performance and workflow efficiency, providing insights into cycle time, throughput, and bottlenecks. These data-driven tools help teams make informed decisions to improve processes, optimize resource allocation, and enhance overall delivery speed and quality.

Metrics are used to help an organization understand the current state of Workflows and processes, which, in turn, assist the team in making informed decisions about changes that can bring improvements. Using metrics can also help an organization commit to and efficiently meet the service or product obligations of its customers, including factors related to time, cost, quality, risk, and scope. Some of the key metrics on which reports are based in Kanban include:

- Work in Progress (WIP) Aging Work in Progress (or Work Item Age)
- Cycle Time
- Throughput
- Lead Time
- Takt Time
- Queue Length
- Flow Efficiency

When applying the Kanban method within an organization, reports can be used to generate insights into Workflows and communicate work progress, issues, and risks to stakeholders. Many digital Kanban tools enable practitioners to leverage elaborate, AI-driven reports to make data-driven decisions. Some of the key reports used in Kanban are:

- Workflows Reports
- Team Reports
- Individual Performance Reports
- Cycle Time Reports
- Lead Time Distribution Reports
- Flow Efficiency Reports
- Throughput Reports
- Work in Progress (WIP) and WIP Aging Reports
- Cumulative Flow Diagrams (CFD)
- Blocker and Cluster Analysis Reports
- Capacity Utilization Reports
- Forecasting Reports
- Burndown Charts
- Service-Level Agreement (SLA) Adherence Reports

Many organizations prefer to generate reports related to the performance of individuals, teams, Workflows, projects, DevOps initiatives, operations, etc.

This can be facilitated through the use of a digital Kanban tool or a SaaS product. These tools provide real-time dashboards and comprehensive reports to manage work efficiently, even when teams are not collocated.

4.1 Kanban Metrics

Metrics are essential in Kanban because they provide objective, data-driven insights into how workflows through a system. They help teams understand performance, spot inefficiencies, and continuously improve their process. Metrics in Kanban are critical for understanding, managing, and improving Workflows. They turn invisible work into measurable results, enabling teams to become more predictable, efficient, and continuously better at delivering value.

4.1.1 Why Metrics Matter in Kanban

- Measure Workflows Performance

  Kanban relies on flow-based metrics to track how efficiently work moves through the system. Some of the key metrics include:

  - Cycle Time – How long it takes to complete a Task
  - Lead Time – Time from request to delivery
  - Throughput – Number of Tasks completed over a period

  These metrics help teams understand how long work takes and how much they can deliver.

- Improve Predictability

  By analyzing past performance, teams can forecast future delivery more accurately. This helps in planning, setting realistic expectations, and making reliable commitments.

- Identify Bottlenecks and Delays

  Metrics highlight where work is piling up or moving slowly. For example, if cycle time is increasing or throughput is dropping, it signals a problem in the flow that needs attention.

- Support Continuous Improvement

  With regular monitoring, teams can use metrics to evaluate the impact of process changes, enabling evidence-based decisions for continuous improvement (Kaizen).

- Drive Accountability and Transparency

  Metrics make work visible and measurable. This promotes team accountability and builds trust with stakeholders, who can see how work is progressing and how value is delivered.

4.1.1.1 Work in Progress (WIP) Aging Work in Progress (or Work Item Age)

Work in Progress (WIP) Aging—also known as Work Item Age—is a Kanban metric that tracks how long a Task has been in progress since it started but hasn't been completed yet. This is a valuable Kanban metric for tracking how long Tasks have been in progress. It helps teams spot delays, reduce idle time, and keep work flowing smoothly by encouraging timely completion of ongoing Tasks.

What It Measures

- Work Item Age = Current Date – Start Date of the Task

- It applies only to Tasks that are currently in progress (not yet done).
- It gives real-time insight into how long active Tasks have been open.

Why It's Important

- Detects slow or stuck Tasks early before they become bottlenecks.
- Helps teams focus on finishing older work first, improving flow.
- Encourages discipline around limiting WIP and managing Task aging.
- Provides forecasting clues: older items are more likely to be delayed or at risk.

How It's Used in Practice

- Teams often use a WIP Aging Chart, which shows:
  - Each in-progress Task,
  - Its age (in days),
  - Its location in the Workflows.

This makes it easy to spot Tasks that are aging beyond typical limits or expectations. This is a valuable Kanban metric for tracking how long Tasks have been in progress. It helps teams spot delays, reduce idle time, and keep work flowing smoothly by encouraging timely completion of ongoing Tasks.

4.1.1.2 Cycle Time

Cycle Time is a key flow metric in Kanban that measures how long it takes to complete a Task once it enters the "In Progress" stage until it reaches "Done." It is a crucial Kanban metric that measures how long it takes to complete a Task once work has started. It provides valuable insights into team performance, helps forecast delivery, and supports continuous process improvement.

What It Measures

- Cycle Time = End Date – Start Date
- It tracks the active time a Work Item spends being worked on.
- It does not include time spent in the backlog or waiting to be started.

Why Cycle Time Is Important

- Predictability
  - Helps teams understand how long it usually takes to complete a Task.
  - Enables better forecasting of future work delivery.
- Performance Tracking
  - Teams can monitor trends and see whether they're speeding up or slowing down over time.
- Process Improvement
  - Long or increasing cycle times may indicate bottlenecks, blockers, or inefficiencies.
  - Encourages teams to reduce unnecessary delays and streamline their Workflows.
- Customer Satisfaction
  - By delivering work faster and more predictably, teams can meet deadlines and deliver value more consistently.

How It's Visualized

- Cycle Time Scatterplots: Show the distribution of cycle times for completed Tasks.
- Control Charts: Help track variability and highlight outliers or patterns in process performance.

Ideal Use in Kanban

- Combine Cycle Time with other metrics like Lead Time and Throughput for a full picture of team efficiency.
- Use historical cycle time data to estimate Service Level Expectations (SLEs)—for example, "85% of Tasks are completed in 4 days or less."

4.1.1.3 Throughput

Throughput in Kanban refers to the number of Work Items completed during a specific time period (e.g., per day, week, or month). It tells you how much work your team delivers over time. It is a core Kanban metric that shows how many Tasks your team completes in a given time period. It helps with forecasting, capacity planning, and spotting trends in team performance.

What It Measures

- Throughput = Count of completed Tasks in a given time frame
- It measures output, not time.
- Unlike cycle time (which tracks how long Tasks take), throughput shows how many Tasks are finished.

Why Throughput Is Important

- Performance Monitoring
  - Tracks how productive the team is over time.
  - Helps assess if delivery is increasing, decreasing, or stable.
- Forecasting
  - Historical throughput allows teams to predict future delivery capacity.
  - For example: "We complete an average of 20 items per week."
- Capacity Planning
  - Helps decide how much work the team can commit to in upcoming weeks or sprints.
- Supports Continuous Improvement
  - Sudden drops or irregular throughput may signal Workflows issues, blockers, or overcommitment.

How It's Visualized

- Throughput Run Charts: Display the number of completed items per time interval.
- Used alongside Cycle Time and WIP to analyze team flow and performance.

Best Practices

- Track different work types (bugs, features, support Tasks) separately if needed.
- Avoid comparing raw throughput across different teams—context matters (Task size, complexity, etc.).
- Combine with Work Item Age and Cycle Time for more comprehensive insights.

4.1.1.4 Lead Time

Lead Time in Kanban measures the total time it takes for a Work Item to go from request to delivery—in other words, from the moment it is added to the backlog until it is completed. Lead Time is a vital Kanban metric that tracks how long it takes to deliver a Work Item from request to completion. It gives insight into responsiveness, supports better forecasting, and helps teams improve customer satisfaction by reducing delays.

What It Measures

- Lead Time = Completion Date – Request Date
- It includes waiting time (before work starts) and active work time.
- It tracks the entire customer experience, not just the time spent working.

Why Lead Time Is Important

- Customer Focus
    - Lead Time reflects the customer's wait time, helping teams understand how long it takes to deliver value.
- Predictability
    - Helps estimate when future work will be completed.
    - Reduces uncertainty and improves planning accuracy.
- Process Optimization
    - A long or increasing lead time may point to delays in starting work or Workflows inefficiencies.
    - Enables teams to optimize queues, reduce delays, and improve responsiveness.
- Supports Service-Level Expectations (SLEs)
    - Teams can use historical lead time data to set delivery expectations (e.g., "85% of Tasks are completed within 7 days").

How It's Visualized

- Lead Time Histogram: Shows the distribution of lead times across completed items.
- Cumulative Flow Diagram (CFD): Helps visualize how work is flowing and where lead time might be increasing.

Difference from Cycle Time

Table 4-1 shows the differences between Cycle Time and Lead Time.

Metric	Start Point	End Point	Focus
Lead Time	When item is requested	When item is delivered	Customer experience
Cycle Time	When work starts	When item is delivered	Internal process time

Table 4-1: Differences between Cycle Time and Lead Time

4.1.1.5 Takt Time

Takt Time is a flow metric that represents the maximum amount of time available to produce a single unit of work in order to meet customer demand. The term comes from the German word *Takt*, meaning "pulse" or "beat." Takt Time in Kanban sets the pace your team needs to follow to meet customer demand consistently. It helps align Workflows with expectations, balance capacity, and identify inefficiencies—making it a powerful tool for flow optimization.

What It Measures

- Takt Time = Available Work Time / Customer Demand
- It tells you how frequently you need to complete a Task or deliver value to meet expectations.

  Example**:**

  If your team works 40 hours per week (2,400 minutes) and the customer expects 10 items per week:

  Takt Time = 2,400 minutes / 10 items = 240 minutes per item

  This means your team should complete one item every 240 minutes to meet demand.

How It's Visualized

- In Kanban, Takt Time is visualized using charts or dashboards that compare actual throughput against the required pace of work to meet customer demand. It may appear on cumulative flow diagrams, control charts, or custom widgets showing average output per time interval.
- Visual cues like color coding or threshold lines help teams quickly assess whether they're ahead, behind, or on track. This supports decision-making and enables timely adjustments to maintain consistent flow and delivery performance.

Why Takt Time Is Important in Kanban

- Aligns Delivery with Demand
    - Helps ensure your team is delivering work at a pace that matches what the customer or market requires.
- Identifies Overproduction or Underproduction

- If actual delivery is faster than takt time, you may be overproducing (wasting resources).
- If it's slower, you may be falling behind customer expectations.

- Supports Flow Efficiency
  - Helps balance Workflows by ensuring teams don't overload or underuse their capacity.
- Useful in Repetitive or Predictable Environments
  - While Takt Time is more common in manufacturing, it can be applied in Kanban Teams handling repetitive, consistent demand, like customer support or content production.

Takt Time vs. Other Metrics

Table 4-2 captures the differences between Takt Time and other key metrics used in Kanban.

Metric	Measures	Focus
Takt Time	Time allowed per unit (target rate)	Customer demand rate
Cycle Time	Time to complete one Task	Actual performance
Lead Time	Time from request to delivery	Total customer wait time

Table 4-2: Takt Time vs. Other Metrics

4.1.1.6 Queue Length

Queue Length in Kanban refers to the number of Work Items waiting in a queue before they are actively worked on. These items are in stages where no one is currently working on them, such as "To Do" or any waiting/ready states between active stages. Queue Length is a Kanban metric that tracks how many Tasks are waiting to be worked on. It helps identify bottlenecks, reduce idle time, and improve flow efficiency—making it essential for optimizing team performance and delivery speed.

What It Measures

- Queue Length = Count of items waiting in a specific stage (usually non-active columns like "Ready for Review" or "Waiting")
- It reflects the volume of work that is idle or waiting for attention.

Why Queue Length Is Important

- Reveals Bottlenecks
  - Long queues can signal blockages or capacity issues in the Workflows.
  - For example, too many items in "Ready for Testing" may mean the QA team is overloaded.
- Improves Flow Efficiency

    - Reducing queue length minimizes wait time, helping to lower lead time and boost overall delivery speed.

- Supports Work-In-Progress (WIP) Limits
    - Monitoring queues helps enforce WIP limits by showing where work is piling up unnecessarily.
- Enhances Predictability
    - Short, consistent queues lead to more predictable cycle and lead times, making delivery more reliable.

How It's Visualized

- Cumulative Flow Diagrams (CFDs) can visually highlight growing queue lengths over time.
- Kanban Board s also show queues directly in each column—visually representing where work is stalled.

Queue vs. Active Work

Table 4-3 shows how Queue and Active Work relate to each other.

Stage	Work Type	Example
Queue Stage	Waiting/Idle	"Ready for Review"
Active Stage	In Progress	"Coding," "Testing"

Table 4-3: Queue vs. Active Work

Only queue stages contribute to Queue Length.

4.1.1.7 Flow Efficiency

Flow Efficiency measures the percentage of time a Work Item spends actively being worked on versus the total time it spends in the system, including waiting or idle time. Flow Efficiency is a powerful Kanban metric that shows how much of a Work Item's time is spent on productive work vs. waiting. It helps teams identify waste, improve processes, and deliver value faster with greater predictability.

What It Measures

- Flow Efficiency = (Active Work Time ÷ Total Lead Time) × 100

  Where:

    - Active Work Time = Time spent actually working on the item
    - Total Lead Time = Time from when the item was requested to when it was delivered (includes wait time)

Example:

If a Task takes 2 days of active work but spends 8 days total in the system:

Flow Efficiency = (2 ÷ 8) × 100 = 25%

Why Flow Efficiency Is Important

- Uncovers Waste
    - Low flow efficiency often means work is spending more time waiting than being worked on.
    - Highlights opportunities to reduce delays, blockers, and context switching.
- Boosts Productivity
    - Helps teams focus on minimizing idle time, leading to faster delivery without overworking.
- Informs Process Improvements
    - Enables teams to identify non-value-adding activities in their Workflows.
    - Encourages smoother transitions between stages.
- Improves Forecasting
    - A more efficient flow leads to more predictable delivery, helping with planning and setting accurate expectations.

How It is Tracked

- Often visualized in flow analytics dashboards or derived from Cycle Time breakdowns.
- Tools like control charts or time-in-state reports help separate active vs. waiting time.

What is a Good Flow Efficiency?

- Many knowledge-work teams (e.g., software, marketing) start with 5–15% flow efficiency.
- The goal is not 100%, but rather continuous improvement by reducing waste and delays over time.

4.2 Kanban Reports

Reports in Kanban play a crucial role in monitoring, analyzing, and improving Workflows performance. They provide data-driven insights that help teams make informed decisions, identify inefficiencies, and continuously enhance their process. Reports in Kanban are vital for transparency, performance tracking, and continuous improvement. They turn raw Workflows data into actionable insights, enabling teams to deliver value more efficiently and consistently.

4.2.1 Why Reports Matter in Kanban

- Visualize Workflows Efficiency

  Reports like Cumulative Flow Diagrams (CFDs) show how work moves through various stages, helping teams see trends, bottlenecks, or delays in real time.

- Measure Key Metrics

  Reports track essential flow metrics such as:

  - Cycle Time (how long a Task takes to complete)
  - Lead Time (total time from request to delivery)
  - Throughput (number of Tasks completed in a given time)

  These metrics help teams set realistic expectations and improve predictability.

- Support Continuous Improvement

  By regularly reviewing reports, teams can identify patterns, uncover waste, and prioritize areas for improvement. This supports the Kaizen mindset (continuous improvement) promoted by Kanban.

- Enable Data-Driven Decisions

  Instead of guessing or relying on assumptions, teams use factual data from reports to guide changes in WIP limits, process policies, or resource allocation.

- Promote Transparency and Accountability

  Sharing reports with stakeholders fosters trust and alignment, as everyone can clearly see how the team is performing and where improvements are needed.

Figure 4-1 presents a dashboard in Vabro displaying various reports categorized under “Kanban" methodology. It features visual representations of key metrics like sprint burndown, velocity, lead time, and cycle time, offering insights into work progress and team performance.

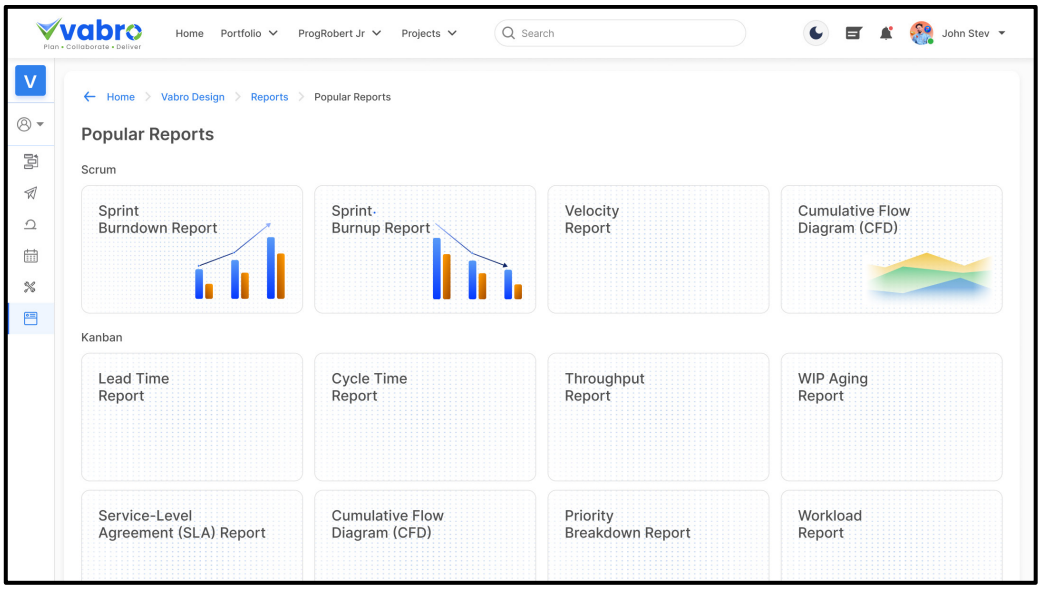

Figure 4-1: Reports Overview (Source: Vabro)

Figure 4-2 shows a dashboard, specifically the "Home" screen of Basecamp, displaying active initiatives and teams. It highlights the "Orange Team" with a focus on their completed initiatives and progress, alongside other teams and their ongoing initiatives with deadlines and progress indicators.

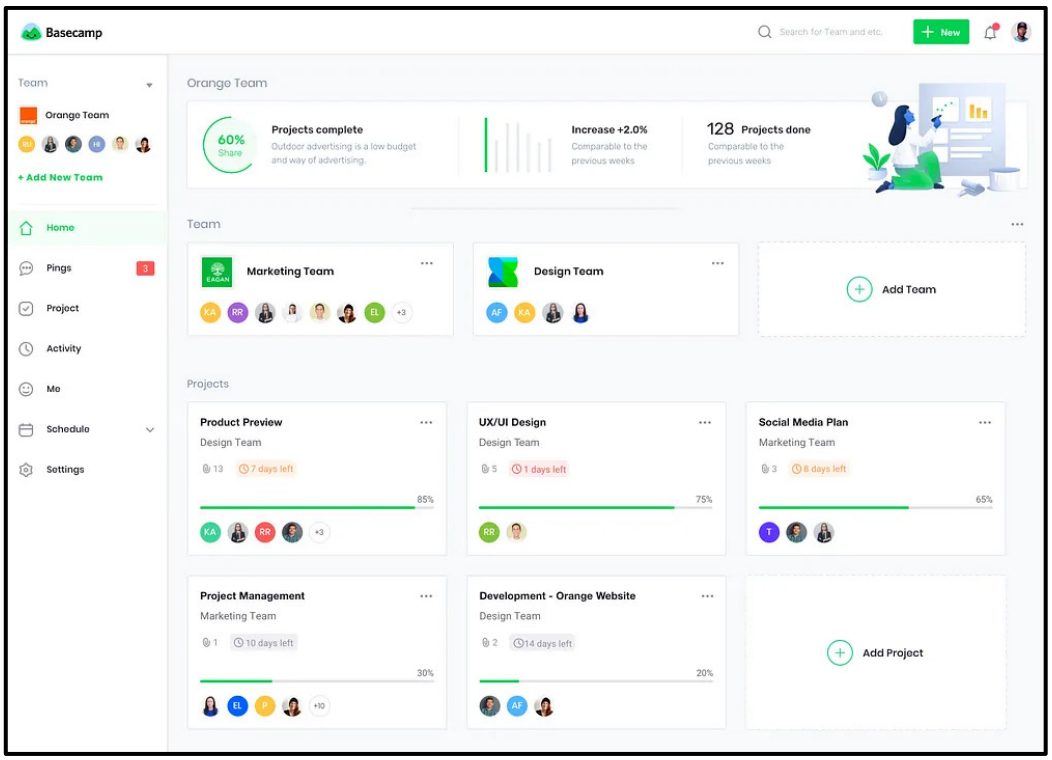

Figure 4-2: Reporting Progress Updates to Stakeholders (Source: Basecamp)

Figure 4-3 shows the Kanbanchi Kanban interface, displaying options to create or browse Kanban Boards, access reports (including Agile charts), and manage user settings, highlighting Workflows management features.

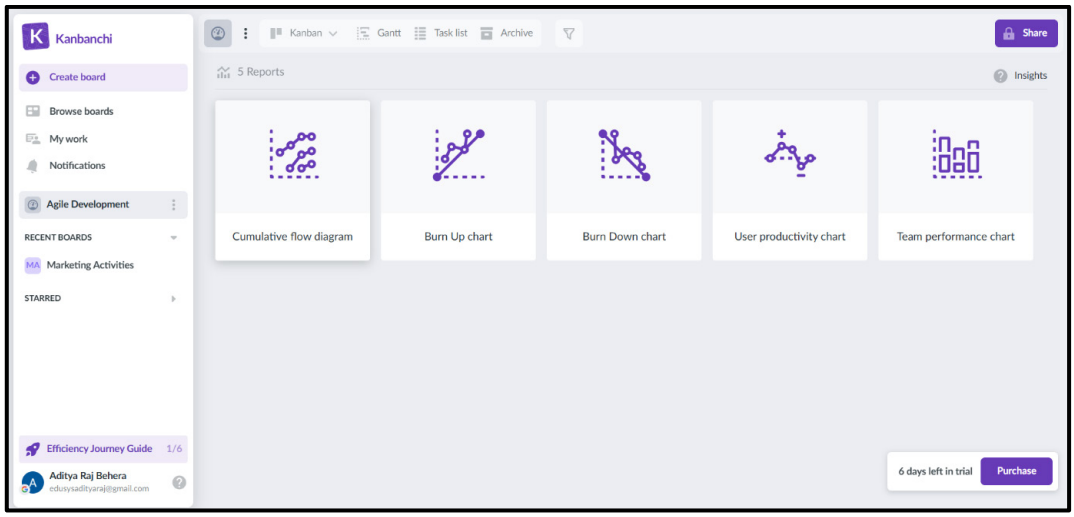

Figure 4-3: Types of Reports in Kanban (Source: Kanbanchi)

4.2.2 Workflow Reports

Workflows reports enable teams to evaluate progress at the Workflows level and unlock actionable insights through AI-driven analytics. These reports provide insights into detailed Workflows-level performance and real-time metrics to optimize customer service Workflows and enhance decision-making. Workflows reports analyze the efficiency of the processes and stages through which Tasks progress. They often feature data on Task distribution across stages, time spent in each stage, and the identification of process bottlenecks.

> *Workflows Example*:
>
> A Workflows report might show that Tasks spend an average of 2 days in the "In Progress" stage but 4 days in the "Testing" stage, suggesting that the testing phase may require additional resources or process optimization. Additionally, a Workflows report can also be generated based on the artifacts used in the initiative.

Figure 4-4 displays Vabro's reporting dashboard, showing Task Group creation and completion trends over time, with a detailed breakdown of individual Task Group statuses and priorities.

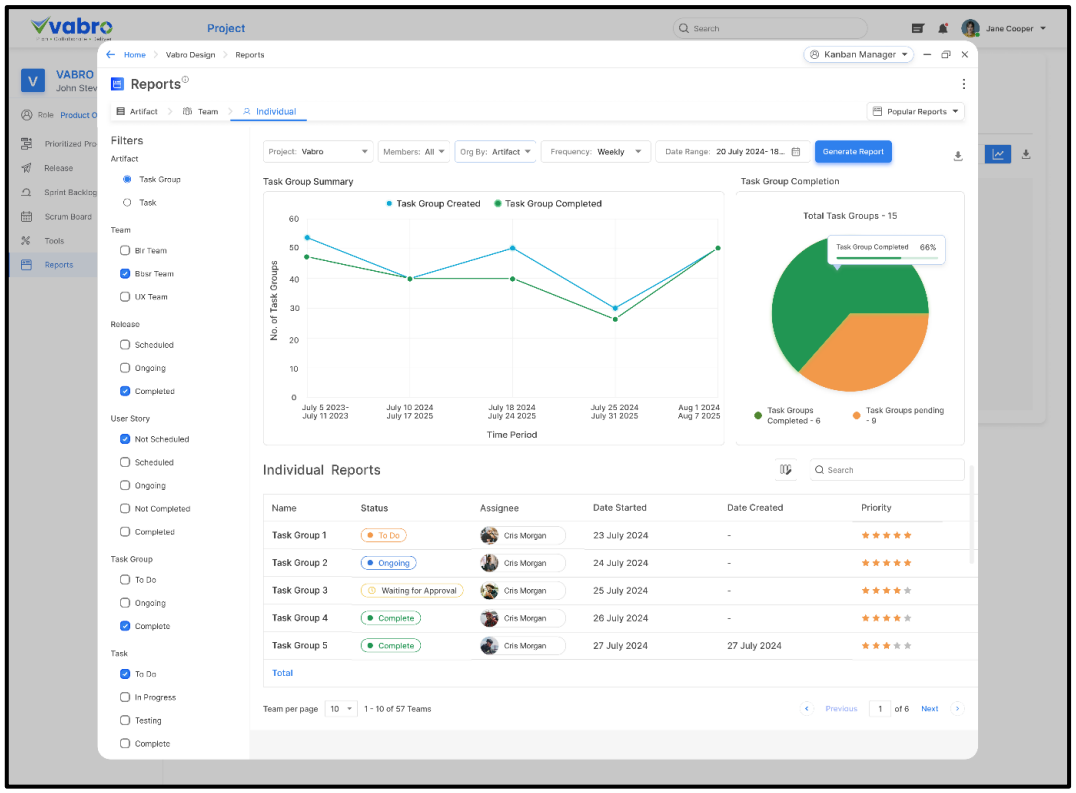

Figure 4-4: Workflows Report (Source: Vabro)

Figure 4-5 displays a Workflows Report, of Monday.com, on employee onboarding metrics with three charts: "Onboarding by department" (bar chart showing counts per department), "Onboarding by site" (bar chart comparing New York and Remote), and "Onboarding by month" (line chart showing a declining trend from March to June 2022). It provides a visual overview of onboarding progress and trends.

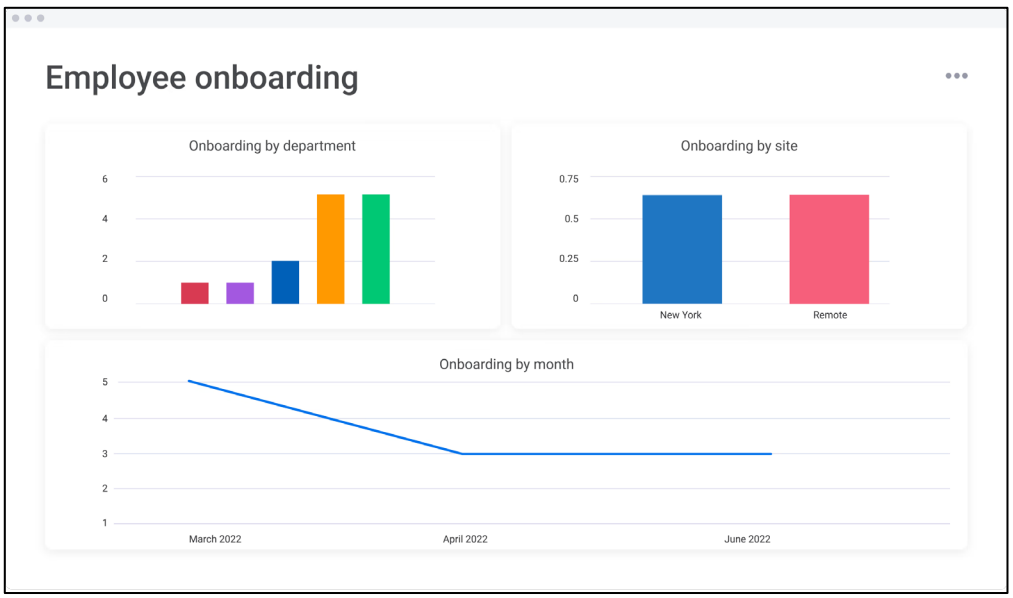

Figure 4-5: Workflows Report (Source: Monday.com)

4.2.3 Team Reports

Team reports enable teams to gain insights into overall performance on a real-time basis and identify bottlenecks to ensure timely resolutions and smoother Workflows. These reports provide a holistic view of the team's performance, highlighting collaboration and collective productivity. Metrics may include the number of Tasks completed by the team, average cycle time, sprint velocity, and the identification of bottlenecks.

> *Team Reports Example*:
>
> A team report might reveal that the team completed 50 Tasks in a development cycle, with an average cycle time of 3 days per Task, and that Tasks in the Review stage experienced delays, indicating a potential area for process improvement.

Figure 4-6 shows Vabro's reporting dashboard, displaying a summary of boards, Task Group statuses, and team performance metrics, with charts visualizing Task progress and completion.

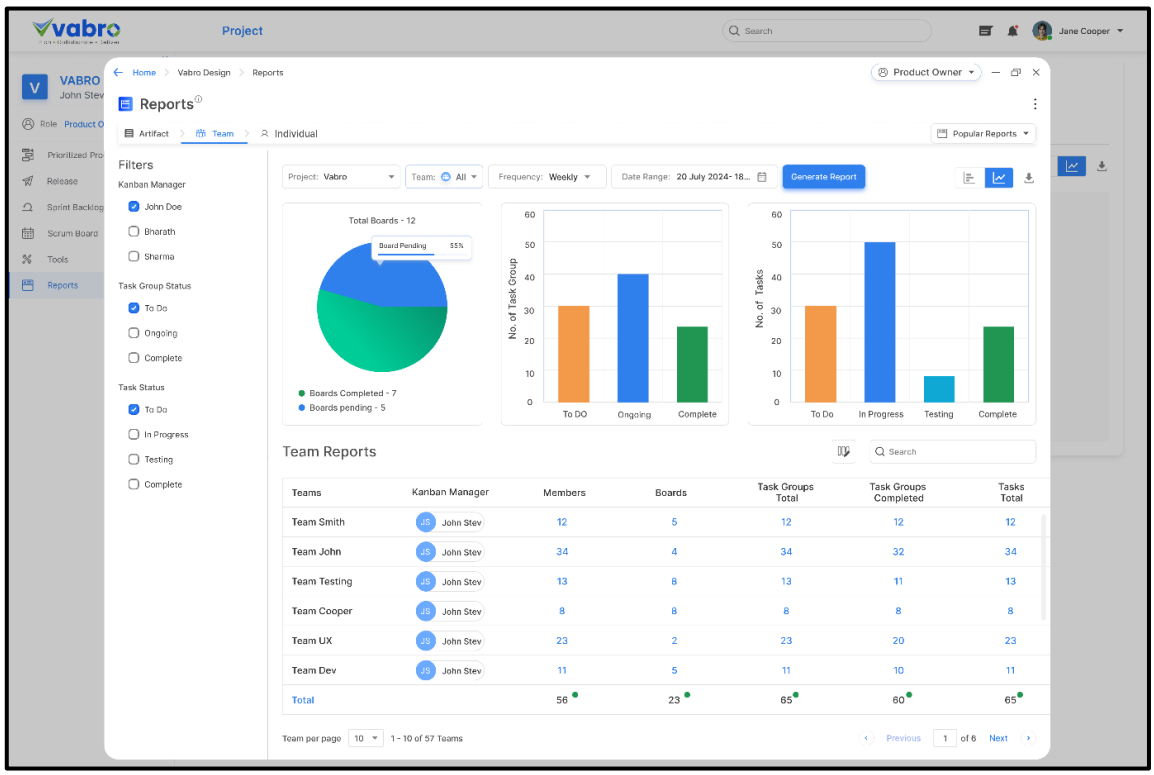

Figure 4-6: Team Report (Source: Vabro)

Figure 4-7 depicts a Workflows management dashboard in ClickUp showcasing the status of Tasks across different categories: Unassigned, In Progress, and Completed. It further breaks down Task distribution by assignee, highlighting the percentage of Tasks assigned to each individual and the number of open Tasks they currently have.

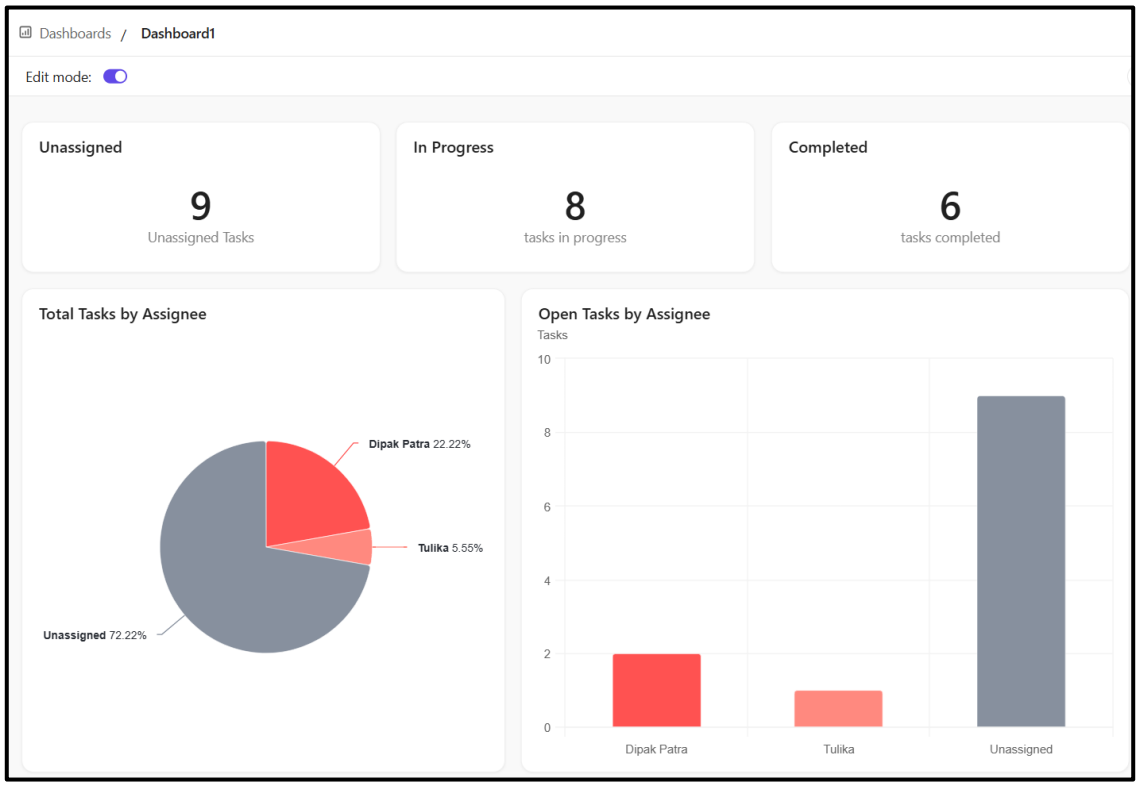

Figure 4-7: A Variant of Team Reports in Kanban (Source: ClickUp)

4.2.4 Individual Performance Reports

Individual performance reports focus on assessing the contributions and productivity of team members. They typically include metrics such as Tasks completed, time spent on Tasks, adherence to deadlines, and quality of work.

Individual Performance Report Example:

Individual Performance Report of Developer - John Doe

- Tasks Completed: 45
- Average Cycle Time: 5 hours/Task
- Adherence to Deadlines: 100%
- Reopened Tasks: 0
- Blocked Items: 2 (resolved in 4 hours)

John demonstrates excellent productivity, timely delivery, and high-quality work with minimal blockers.

Figure 4-8 shows a Vabro software interface displaying a "Individuals Report" for an initiative called "Board 12." The report lists various Tasks for all team members, with their estimated completion times in days.

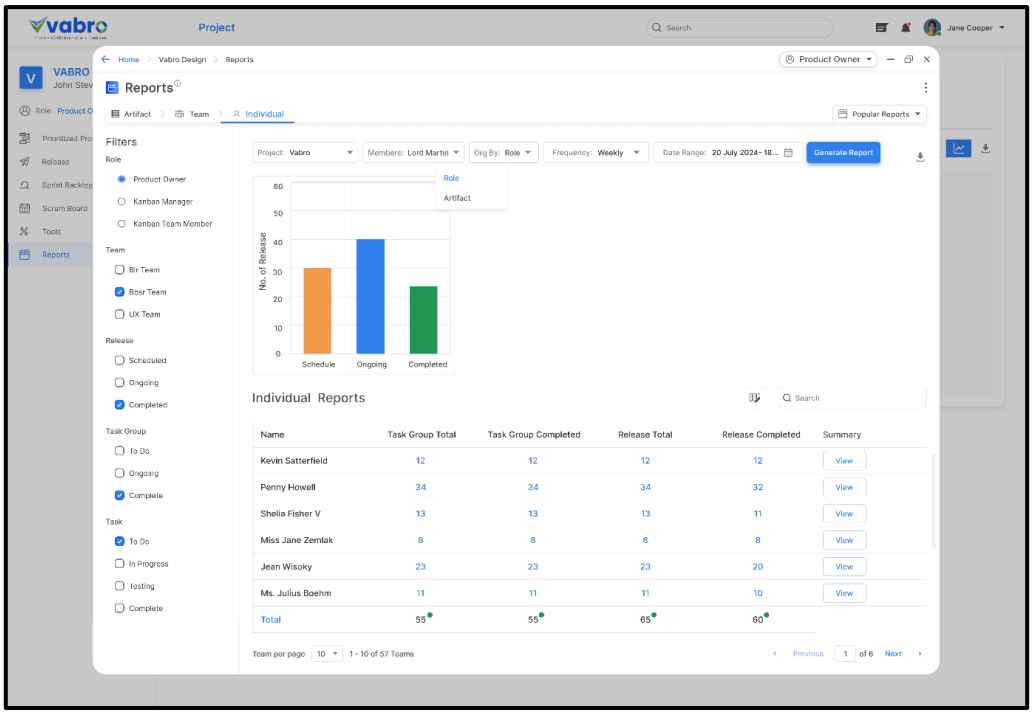

Figure 4-8: Individual Performance Report (Source: Vabro)

Figure 4-9 displays Asana's bar graph visualizing the number of goals owned by different individuals: James Smith, John Doe, and Simon Murphy. James Smith has the highest number of goals with 10, followed by John Doe with 4, and Simon Murphy with 1.

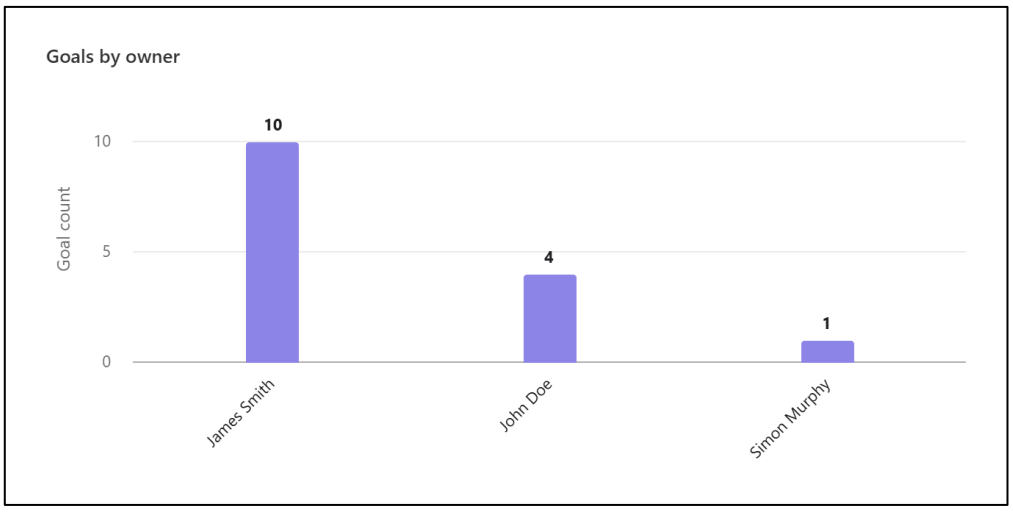

Figure 4-9: Individual Performance Report (Source: Asana)

4.2.5 Cycle Time Reports

A Cycle Time Report is used to measure the efficiency of a process or Workflows and to determine a team's Task completion time. Cycle Time is the total amount of time that a Work Item, such as a Task or feature, remains in the 'Work in Progress' status. Therefore, it is the duration taken for a Work Item to move from the 'In Progress' column to the 'Done' column on a typical Kanban Board.

The metrics used in this report include Average Cycle Time, Median Cycle Time, Minimum Cycle Time, and Maximum Cycle Time.

- Average Cycle Time is the mean duration of all Work Items or Tasks under implementation.
- Median Cycle Time is the middle value of all sorted Cycle Times.
- Minimum and Maximum Cycle Time are the shortest and longest durations, respectively.

Figure 4-10 shows a Vabro "Cycle Time Report" for "Board 12," visualizing Task completion times. It displays a list of Tasks and their corresponding durations represented by horizontal bars, indicating the time spent on each Task.

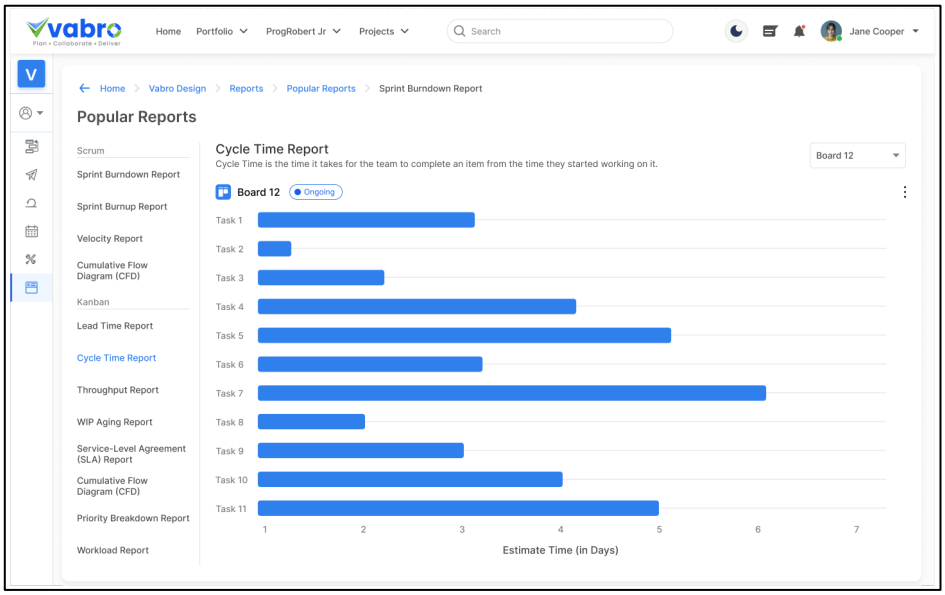

Figure 4-10: Cycle Time Report (Source: Vabro)

Figure 4-11 shows a "Cycle Time Trend Gadget" in Jira tool, displaying the average time it takes to complete Tasks over five time intervals. The overall average cycle time is 25.33 hours, with a downward trend indicated by the orange line.

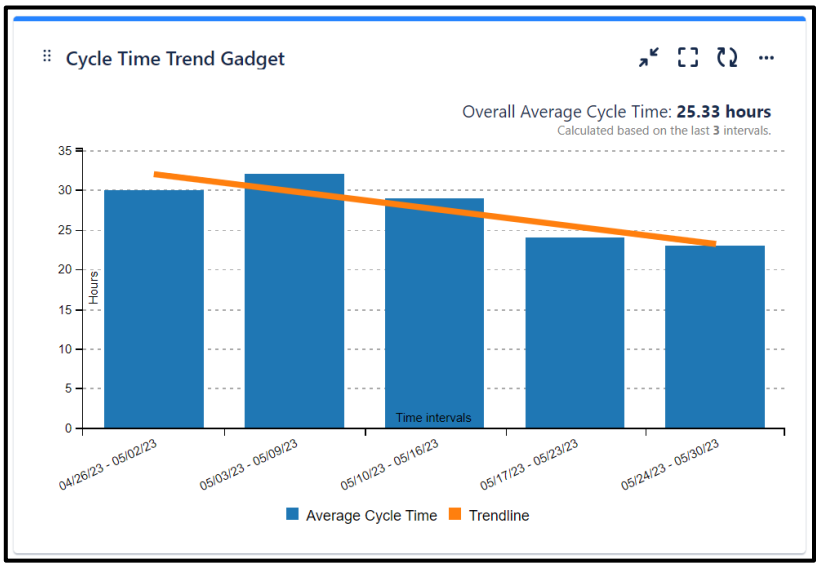

Figure 4-11: Cycle Time Report (Source: Jira)

The key benefits of using a Cycle Time Report are to help teams:

- Identify improvement opportunities to optimize Workflows.
- Provide accurate estimates of delivery times to set stakeholder expectations and commit to targets.
- Consider the Cycle Times of various processes and prioritize those that offer the highest improvement benefits.
- Identify and eliminate blockers in the process.
- Focus on continuous improvements by targeting Cycle Time reductions.

Depending on the information needs of the Kanban Team and other stakeholders, Cycle Time Reports can include control charts, histograms, summary tables, and/or line graphs. Below is a brief description of how each visual can be used:

- Control charts can be used to present the Cycle Time of individual Tasks, features, or Work Items over a specified duration. This visual helps the team understand any variations in Cycle Time, identify outliers, and address them to bring the Cycle Time within acceptable limits. In a typical Cycle Time control chart, the Task or feature completion date is plotted on the x-axis, and the number of hours or days taken to complete the Task or feature is plotted on the y-axis.
- Histograms can be used to depict the distribution of Cycle Time frequency for Completed Work Items in a given Workflows. In a typical histogram, Cycle Time (in hours or days) is plotted on the x-axis, and the number of Work Items is plotted on the y-axis.
- Summary tables can be used to capture numerical summaries of gathered Cycle Time data, providing a detailed comparison of Cycle Times for specific teams or Work Items across different time periods. A typical summary table might contain information on the average, median, minimum, and maximum Cycle Times for various categories of Work Items in a Workflows or across Workflows related to selected teams over a specific timeframe.
- Line graphs can be used to depict trends in Average Cycle Time over a specified duration. A typical line graph will have selected time periods on the x-axis and Average Cycle Time on the y-axis.

4.2.6 Lead Time Distribution Reports

A Lead Time Distribution Report can be used to assess average lead time, lead time per Task or Work Item, and trends in lead time. Average lead time is the mean of the lead times associated with a Work Item or Task under consideration. Lead time per Task or Work Item refers to the total time taken from when a request for a Work Item (or order) is received until it is delivered. Trends in lead time refer to recurring patterns for a Work Item or Task that the team can identify. Lead time is a key metric that can be viewed from either the customer's or the team's perspective. From the customer's perspective, lead time is referred to as customer lead time—the duration the customer waits from placing an order to receiving it. From the team's perspective, lead time is referred to as system lead time—the duration an order, request, or Work Item stays in the system, from the time it enters until it leaves the system.

The Lead Time Distribution Report can be visually represented by a histogram that captures average lead time, providing insights into the nature of lead times in Workflows or processes under review within an organization. This helps evolve a fit-for-purpose or customer-focused approach, as it allows teams to focus on variations in lead times rather than just a single lead time value. In a typical histogram, the number of hours or days from when a Work Item gets committed to when it is completed is plotted on the x-axis, while the count of Work Items is plotted on the y-axis. By using histograms to analyze lead times, teams can commit to stakeholders based on the most frequently occurring lead times for the Work Items under consideration.

4.2.7 Flow Efficiency Reports

A Flow Efficiency Report can be used to measure how efficiently Work Items or Tasks move through the Workflows. Some of the key metrics used are flow efficiency, value-adding time, and non-value-adding time. Flow efficiency is the ratio of value-adding time to the total cycle time, and it helps to minimize non-value-adding time. Value-adding time is the total duration that a team actively works on the Task or Work Item. Non-value-adding time is the total duration that a Task or Work Item remains idle, without any team members working on it. To assess flow efficiency, a team needs to gather data on the start and end dates for a Work Item, the time that the Work Item spends in each column of the Kanban Board, and the time that the team is actually spending on the item versus its wait time. A simple formula to assess flow efficiency is:

Flow Efficiency = (Value-adding Time / Cycle Time) * 100

A Flow Efficiency Report can be presented using a data summary table or a bar or line chart. A data summary table on flow efficiency helps an organization understand the average flow efficiency of a specific number of Work Items over a specified duration by considering value-adding time, cycle time, and non-value-adding time. Similarly, a bar or line chart depicts the flow efficiency across Work Items to identify patterns, reduce wait time, and balance workload.

4.2.8 Throughput Reports

A Throughput Report can be used to assess the capacity or productivity of a team or system by measuring the number of Work Items or Tasks completed over a specific time period (e.g., daily, weekly, bi-weekly). Some of the metrics related to throughput include average throughput, trends in throughput, and variability in throughput. Average throughput is the average number of Work Items or Tasks completed over a specified duration.

Trends in throughput are patterns or changes in throughput over a specified time period. Variability in throughput refers to variations in the number of Tasks completed over a specified duration. High throughput indicates high productivity or capacity.

Throughput can be visually represented using a run chart or a summary table. A simple summary table captures information on the number of Work Items completed by a team over a specified time period. It may optionally contain information on categories of Work Items if a more detailed analysis is needed.

When using a run chart to display throughput, the x-axis represents the timeline, and the y-axis represents throughput. The bars indicate the type of Work Item or Task being examined. This will help decipher patterns or trends in throughput, allowing teams to assess the causes of those trends and determine the next course of action.

Figure 4-12 displays a dashboard in Vabro, showcasing a "Throughput Report" with a bar chart visualizing Task completion rate across five teams over five weeks. It tracks Task progress, highlighting completion rates and potential bottlenecks, aiding in data-driven decision-making for Workflows optimization.

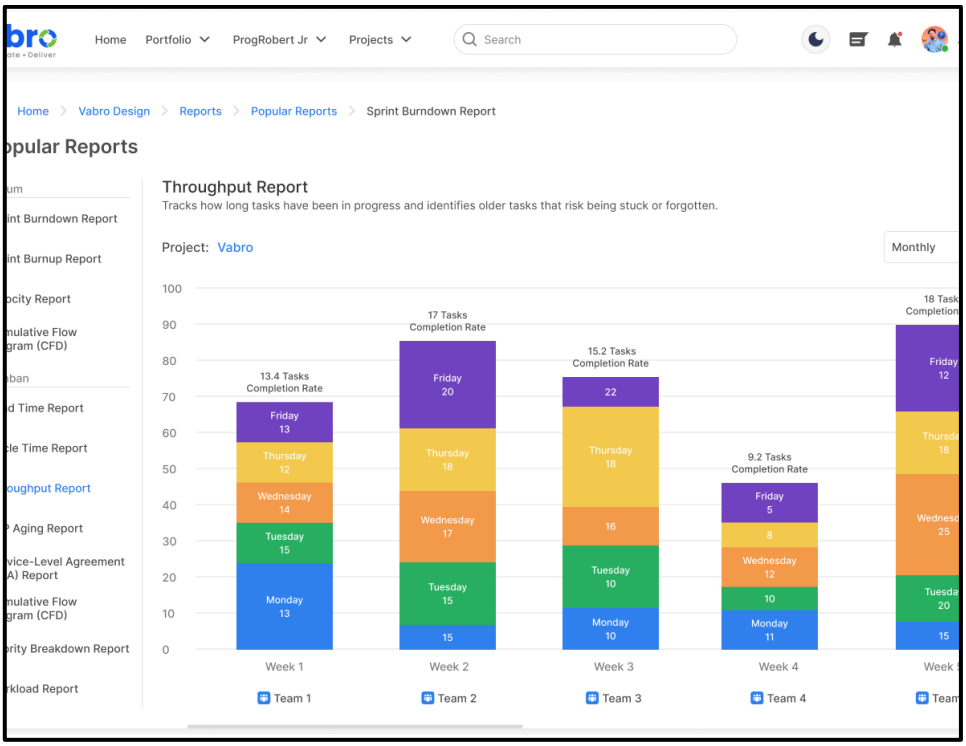

Figure 4-12: Throughput Report (Source: Vabro)

Figure 4-13 depicts a Jira Kanban Velocity/Throughput chart, illustrating the amount of work completed over successive time intervals, with bars showing completed story points and an orange line tracking the average velocity. The chart shows a current average velocity of 24, calculated from the last three intervals, suggesting a trend of increasing productivity over time.

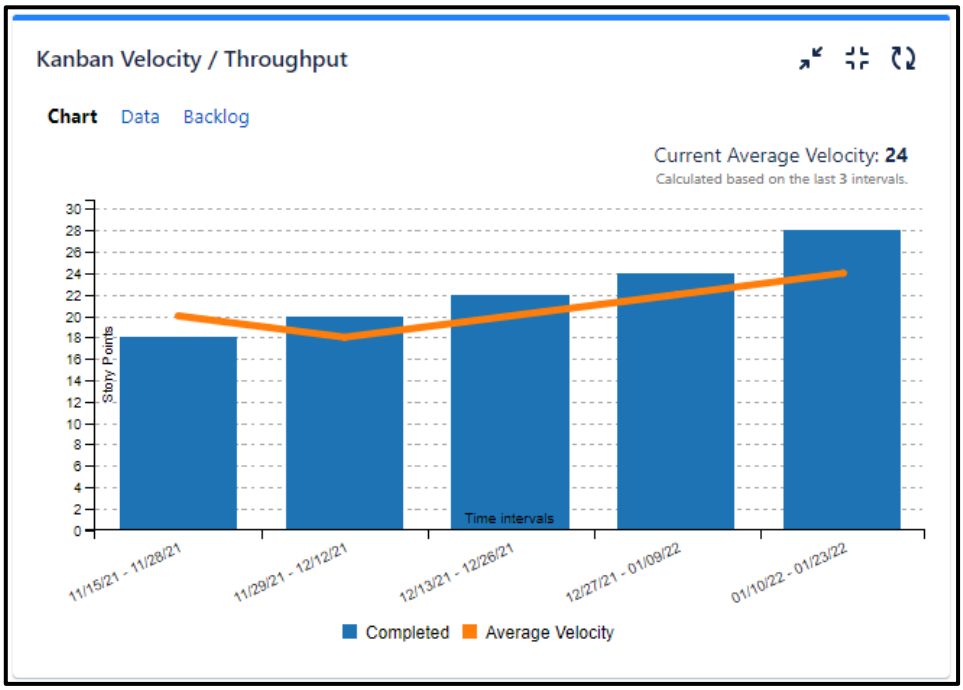

Figure 4-13: Sample Throughput Report (Source: Jira)

4.2.9 Work In Progress (WIP) and WIP Aging Reports

The WIP Report can be used to track the number of Tasks or Work Items under implementation by a Kanban Team at any given time. This report helps the team manage its workload by setting a limit on the number of items that the team can work on, based on the availability and complexity of the work. The metrics that can be used for WIP are current WIP, average WIP, WIP age, and WIP limits. Current WIP refers to the number of Work Items or Tasks currently in various stages of implementation. Average WIP is the average number of Work Items or Tasks under implementation at a specific time or over a specified duration. WIP age refers to the period of time that a Work Item or Task has been under implementation. WIP limits refer to the maximum number of Tasks or Work Items that can be worked on by the team at a specific time or over a specified duration.

The WIP Report can be visually represented using cumulative flow diagrams (CFDs), charts, and graphs. When using a CFD, teams can determine how Tasks or Work Items accumulate and move through the Workflows by depicting the number of Work Items or Tasks in progress at each stage of the Workflows. Whether using CFDs, charts, or graphs, the WIP Report helps the team maintain flow efficiency by identifying and removing impediments, balancing workload, and improving cycle time.

4.2.10 Priority Breakdown Reports

Tracks the priorities of Tasks in a Kanban Board giving a visual overview to understand the team's priority based on requirements.

Figure 4-14 displays a Task Priority Breakdown, in Vabro, showing the distribution of Tasks across five priority levels, represented by star ratings. The bar graph indicates the number of Tasks assigned to each level, with the 4-star priority having the highest count and the 1-star being the lowest, suggesting a focus on moderately high-priority items.

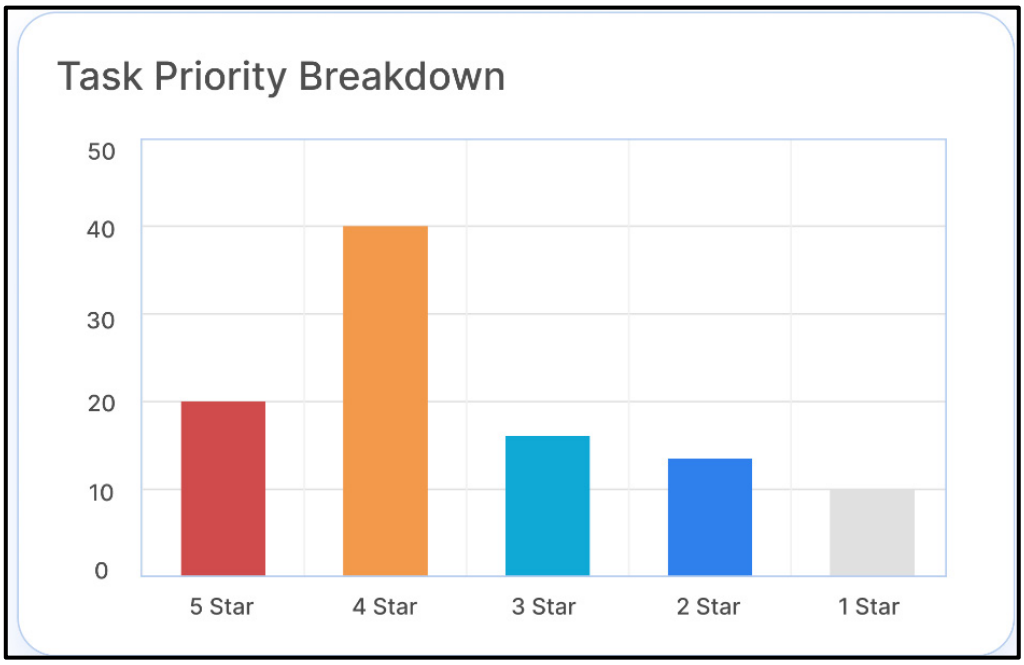

Figure 4-14: Sample Priority Breakdown Report (Vabro)

4.2.11 Workload Reports

Tracks the capacity of Team Members based on the number of Tasks being worked on by them as an Assignee.

Figure 4-15 above depicts a Team Workload distribution chart in Vabro, showing the percentage and count of Work Items assigned to each team member. The chart reveals that John Doe has the highest workload at 30%, while Robert Heads has the lowest at 10%.

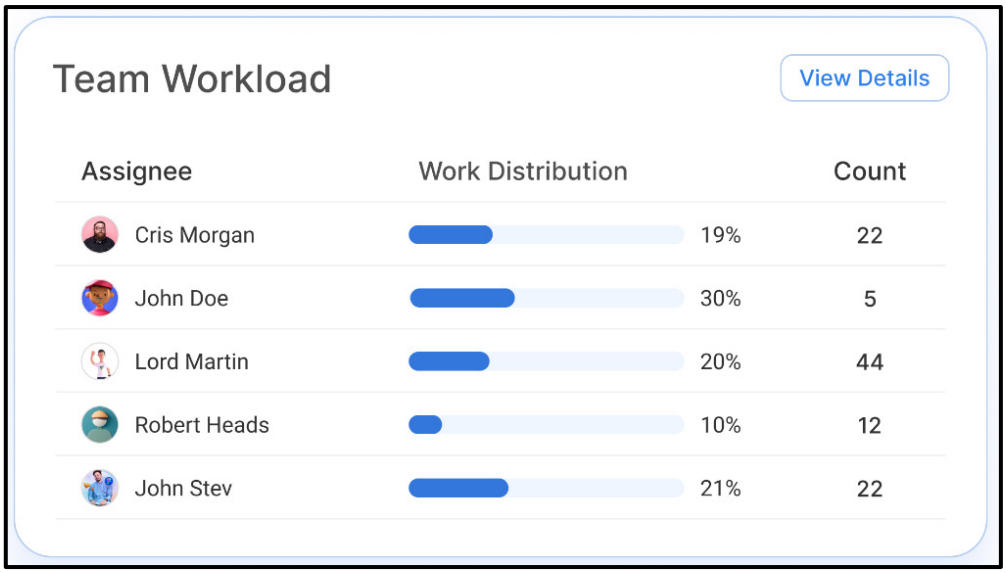

Figure 4-15: Sample Workload Report (Source: Vabro)

Figure 4-16 displays a ClickUp workload management screen, showing team members' assigned Tasks and their distribution over time, with color-coded indicators for Task status and potential overcapacity. The timeline view allows for visualizing individual and team workload, facilitating resource allocation and Workflows management.

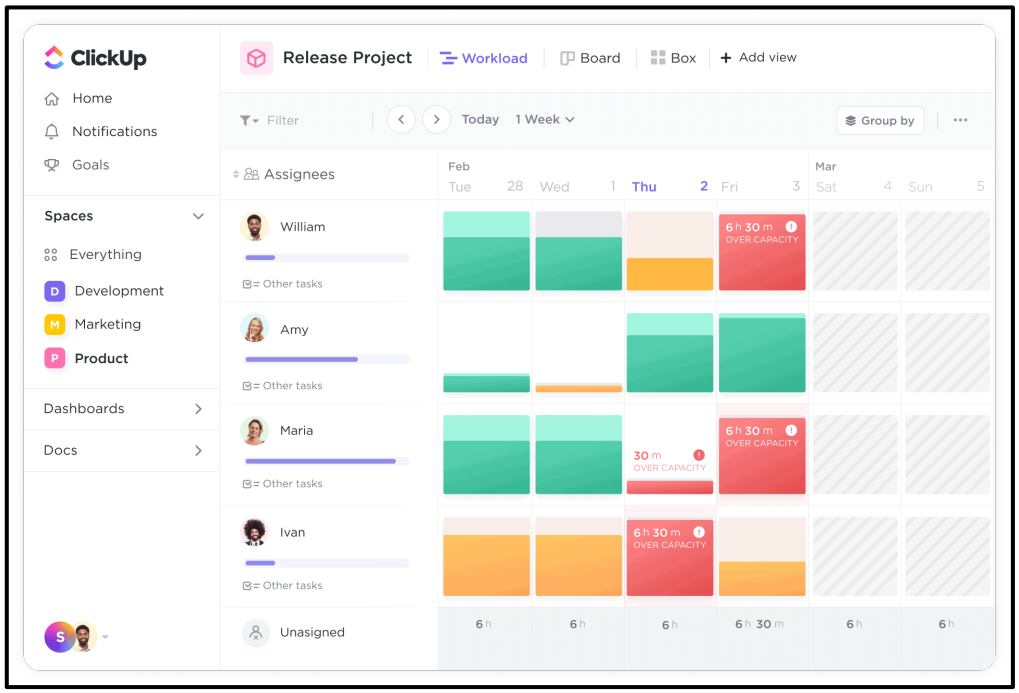

Figure 4-16: Sample Workload Report (Source: ClickUp)

Figure 4-17 shows a Workflows management interface, from Nifty, displaying a workload view for team members across different Workflows over a weekly timeline. It visualizes Task assignments, progress, and capacity, with features for filtering, searching, and creating new Tasks or documents.

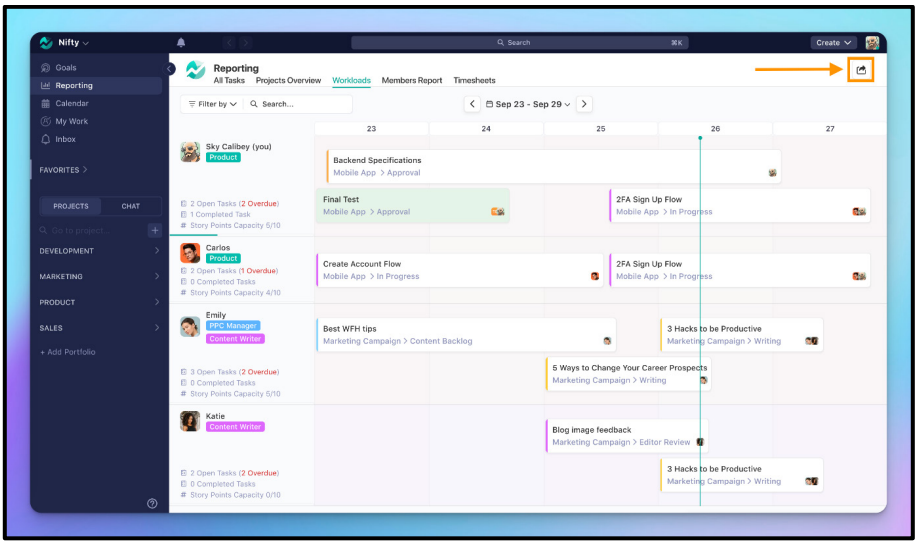

Figure 4-17: Sample Workload Report (Source: Nifty)

4.2.12 Cumulative Flow Diagram (CFD)

A CFD tracks the number of Tasks in each stage over time, providing a visual overview of how work is progressing through the Workflows. A stable cumulative flow diagram indicates a smooth process, while bottlenecks appear as a widening gap in a specific stage. This helps in identifying stages where Tasks pile up, highlighting areas for process improvement or resource reallocation.

Figure 4-18 shows Jira CFD visualizing a "Flow Load" over time, displaying the progression of story points across different Task stages: To Do, In Development, In Testing, Pre-Release, and Done. The rising trend in the total area indicates an increasing number or size of Tasks moving through the Workflows over the observed time period.

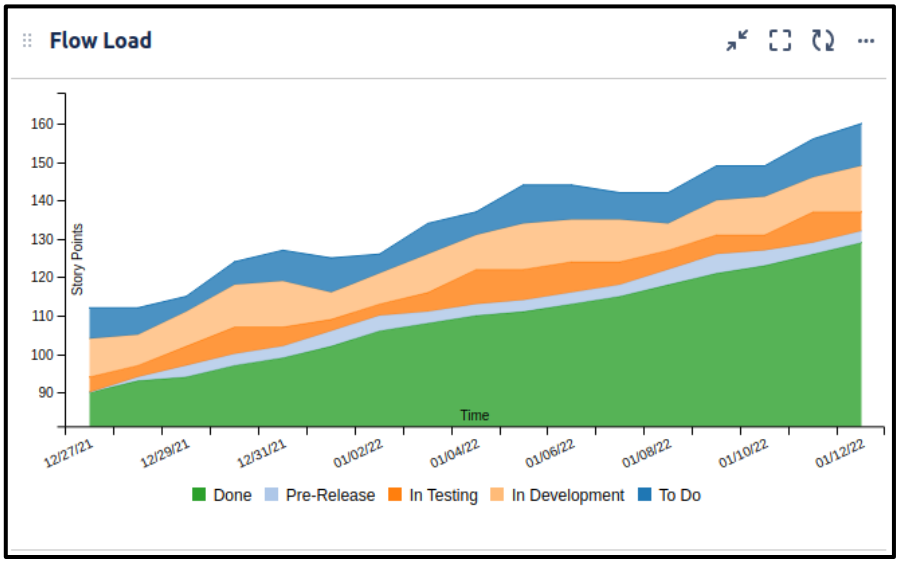

Figure 4-18: Cumulative Flow Diagram (Source: Jira)

Figure 4-19 shows a Vabro dashboard displaying a Cumulative Flow Diagram (CFD), tracking Task progress across different statuses.

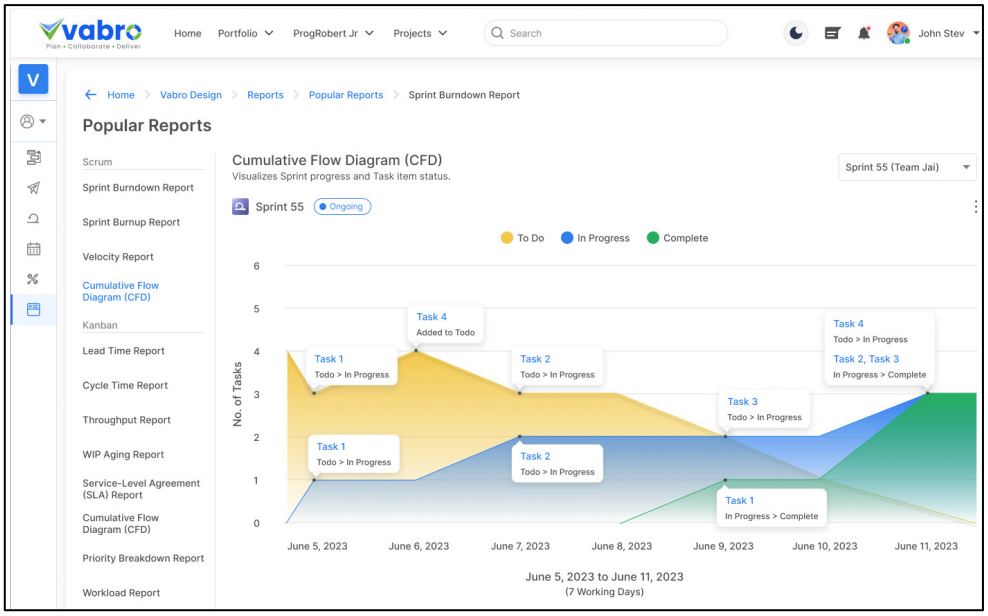

Figure 4-19: Sample CFD (Source: Vabro)

4.2.13 Blocker Clustering and Analysis Reports

Blocker Clustering and Analysis Report helps track and analyze Tasks blocked during the Workflows, focusing on the frequency, duration, and causes of blockers. By understanding what's causing work to be delayed, teams can take action to prevent these blockers in the future. This may involve rethinking dependencies, redistributing resources, or improving communication with other teams.

Table 4-4 shows a Block and Clustering and Analysis Report that helps assess frequency and impact of various blockers.

Blocker Category	Frequency	Impact
A	5	3
B	7	5
C	6	4
D	8	6

Table 4-4: Block and Clustering and Analysis Reports

4.2.14 Capacity Utilization Report

Capacity Utilization Report helps measure the percentage of time team members spend working on active Tasks versus idle or waiting states. This report is especially valuable for optimizing resource allocation. High-capacity utilization suggests efficiency, while low utilization may indicate potential to take on more work or the need to streamline processes.

4.2.15 Forecasting Report

Forecasting Report uses historical data to predict how long similar Tasks or Workflows will take to complete in the future. This allows managers to provide data-driven estimates for Workflows timelines, which can be particularly valuable for long-term planning and managing stakeholder expectations.

4.2.16 Service-Level Agreement (SLA) Adherence Report

An SLA Adherence Report tracks how often the team meets SLAs, which are commitments to complete certain types of work within a specific timeframe. SLA adherence reports are critical for identifying any recurring patterns of delay and addressing them promptly. These reports can also inform the need for capacity adjustments or Workflows optimizations.

Figure 4-20 shows a pie chart visualizing the distribution of items within and outside of a Service Level Agreement (SLA). The chart shows that 85% of the items are within the SLA, while 15% are outside SLA

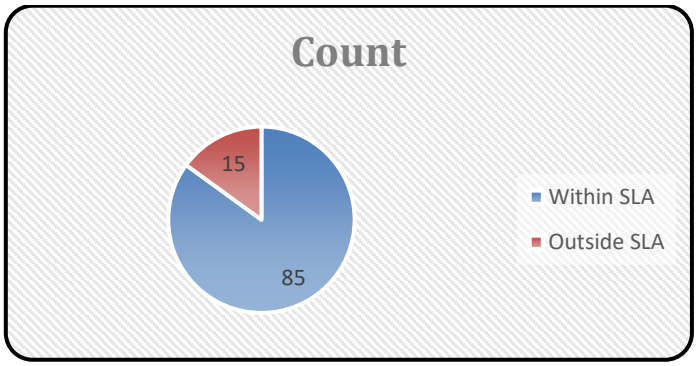

Figure 4-20: SLA Adherence Report

This Page is Intentionally Left Blank.

5 KANBAN CADENCES AND COLLABORATION

When Kanban Teams are working on an initiative or across multiple initiatives, they may need to collaborate with other teams regarding features, information, shared resources, dependencies, etc. This necessitates collaboration among teams to maximize the efficiency and effectiveness of Workflows and processes. Collaboration can be facilitated through the use of transparent Kanban Boards, cadences or meetings, forms, dependency tracking, reports, and IT-enabled collaboration options such as chats, messages, comments, mentions, watches, and the sharing of files and links.

Kanban Boards significantly improve collaboration in Workflows by providing a clear, visual overview of Tasks and their progress. In a collaborative environment, all team members can easily see what Tasks are in progress, who is working on what, and the status of each Task. This transparency promotes shared understanding and coordination among team members, allowing for timely updates and adjustments to workloads.

By breaking down the Workflows into clearly defined stages (e.g., 'To Do', 'In Progress', 'Done'), Kanban Boards make it easy for teams to identify potential bottlenecks, or areas where additional resources may be needed. This ensures that teams can address issues promptly, minimizing delays and ensuring smoother progress. Moreover, Kanban Boards foster a culture of continuous improvement by allowing teams to evaluate their Workflows regularly, identifying areas for optimization. This collective process leads to better collaboration, as all members contribute to refining and enhancing Workflows efficiency over time.

5.1 Kanban Cadences

Although Kanban does not prescribe specific cadences or meetings, they do play a critical role in facilitating effective collaboration among teams and stakeholders by ensuring certain activities occur at regular intervals. These cadences help maintain a consistent Workflows by enabling teams to plan, implement, and review work regularly. By adopting these cadences, Kanban Teams can ensure a steady Workflows, align with broader corporate objectives, and continuously improve their processes.

Some of the key meetings that can be used in Kanban are as follows:

- Planning Meeting and Replenishment Meeting,
- Kanban Team Meeting (or Daily Standup Meeting),
- Delivery Review Meeting,
- Retrospective Meeting, and
- Risk and Issue Review Meeting

5.1.1 Planning Meeting and Replenishment Meeting

A Planning Meeting (or Replenishment Meeting) is a meeting facilitated by the Kanban Manager, during which the team selects new Work Items or Tasks from the Kanban Backlog or Kanban Board and moves them to the To Do (or Committed) column of the Kanban Board. The selection of Work Items is based on team capacity and the priority of Work Items (as determined by the Product Owner). This meeting ensures that the team targets a steady Workflows in accordance with the prioritization of work, which is based on business value and dependencies. Typically, Planning Meetings are held at the start of the Workflows and usually span 30 to 60 minutes.

However, the time limit and frequency are not fixed and can be decided collectively by the Product Owner, Kanban Manager, and Kanban Team. Planning Meetings can be facilitated through the use of Kanban tools or SaaS products.

5.1.2 Kanban Team Meeting or Daily Stand-up Meeting

A Kanban Team Meeting (or Daily Stand-up Meeting) is a short daily meeting for Kanban Team Members, during which the team discusses what they've accomplished since the last meeting, what they plan to do before the next meeting, and any impediments or issues they are currently facing. This meeting typically lasts 15 minutes and is usually conducted at the start of each day. It is intended to help Kanban Team Members align their focus, communicate openly, and effectively address issues. The meeting is typically held in-person and in a stand-up format, or online using a webinar tool, to ensure it stays within the 15-minute timeframe.

5.1.3 Completed Work Item Review Meeting

A Completed Work Item Review Meeting helps assess the effectiveness of workflows and work items in delivering business value to the customer. Stakeholders involved in the initiative discuss metrics such as cycle time, lead time, WIP limits, and others to evaluate the impact of the Completed Work Items and identify opportunities for improvement in future value delivery. This meeting typically lasts 30 to 60 minutes and is held at the end of each week and/or upon completion of a project or service delivery.

5.1.4 Retrospective Meeting

A Retrospective Meeting is held to help the team review its current goals, strategies, and the alignment of its Workflows with the broader organization's strategic goals and objectives. The team reflects on any bottlenecks that impacted their Workflows and identifies opportunities for future improvements in effectiveness. Typically, the Retrospective Meeting lasts between 30 and 60 minutes and can be held upon the completion of Workflows or at the end of service delivery.

5.1.5 Risk and Issue Review Meeting

A Risk and Issue Review Meeting is held to identify, assess, and manage risks and issues that could impact—or are currently impacting—the Workflows and delivery of business value. This meeting can be scheduled regularly or held as needed by the team to address specific risks or issues. Typically, it lasts between 30 and 60 minutes.

5.2 Kanban Collaboration

5.2.1 Forms

The use of forms is another key means of collaboration in Kanban. In a Kanban system, forms are essential tools that help capture, track, and communicate various aspects of the Workflows, enhancing collaboration among team members and even extending to external customers. These forms ensure that information flows smoothly between Tasks and teams, making it easier to identify and resolve issues quickly. Here are a few key types of forms used for collaboration in Kanban Workflows:

- **Task/Work Item Request Forms:** These forms are used to request new Work Items or Tasks to be added to the Kanban Board. They typically capture essential details such as Task description, priority, assignee, expected completion time, and dependencies. By using standardized request forms, teams can ensure that all necessary information is available when a Task is added, reducing confusion and improving transparency. These forms can be used internally within the company or can also be used to gather information from external sources, such as actual customers.

> ***Form Request Example 1*:**
>
> An HR leave request form streamlines the submission process. Employees fill out fields such as *Name*, *Department*, *Leave Type* (sick, vacation, etc.), *Start/End Dates*, and *Reason*. Upon submission, the digital Kanban tool automatically generates a card in the "New Requests" column of the HR board. HR reviews the card, moves it to "Under Review", and then to "Approved" or "Rejected" based on the decision. Comments enable clarifications, while the tool's automation triggers notifications to employees when the status is updated.
>
> ***Form Request Example 2*:**
>
> A customer support form captures details such as *Customer Name*, *Email*, *Issue Type*, *Description*, and *Attachments*. Upon submission, the digital Kanban tool automatically generates a card in the "New Tickets" column of the support board. Support agents assign tickets and move them to "In Progress", adding comments for updates as needed. Once resolved, tickets are moved to "Closed", with the tool's automation sending status notifications to customers. This process ensures organized tracking, efficient assignment, and clear communication.

- **Review/Feedback Forms**: These forms are used to collect feedback on completed Tasks or Work Items, such as performance reviews or post-delivery assessments. Feedback forms can identify areas for improvement, which helps teams refine their processes and collaboration strategies over time.

  Using forms in a Kanban environment ensures that crucial information is captured consistently, reducing the risk of miscommunication, improving visibility, and ultimately fostering better collaboration across teams.

Figure 5-1 shows a Smartsheet form titled "New Campaign Request Form" being edited. The form includes fields for campaign details such as name, description, channels, and dates, allowing users to input information for new marketing campaigns. The interface also provides options to add or remove fields and customize the form's appearance.

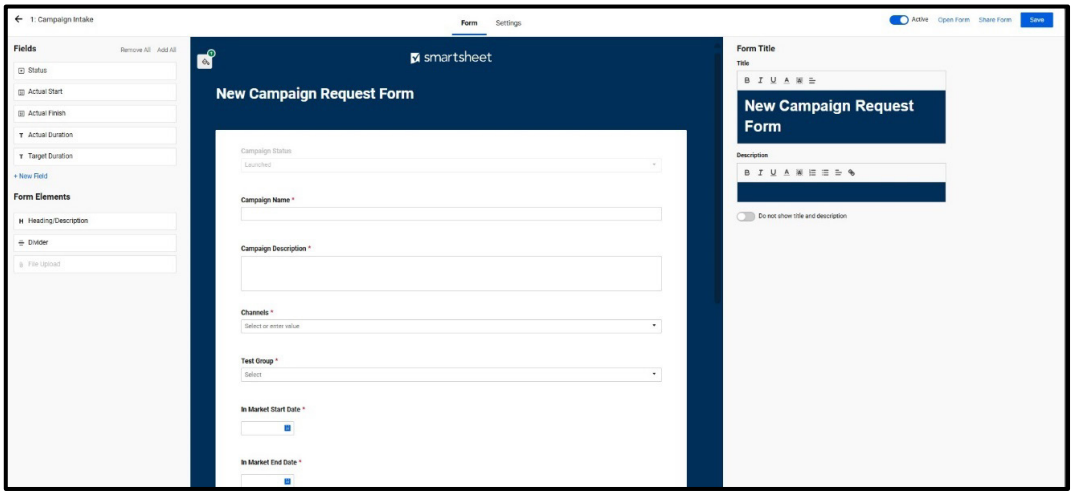

Figure 5-1: A Variant of Forms used in Kanban (Source: Smartsheet)

Figure 5-2 shows a Kanban Board interface in Notion with a form titled "Report Bug." The form includes fields for description, name, and email, and is accessible to anyone at VMFoods via a shared link, indicating a system for internal bug reporting.

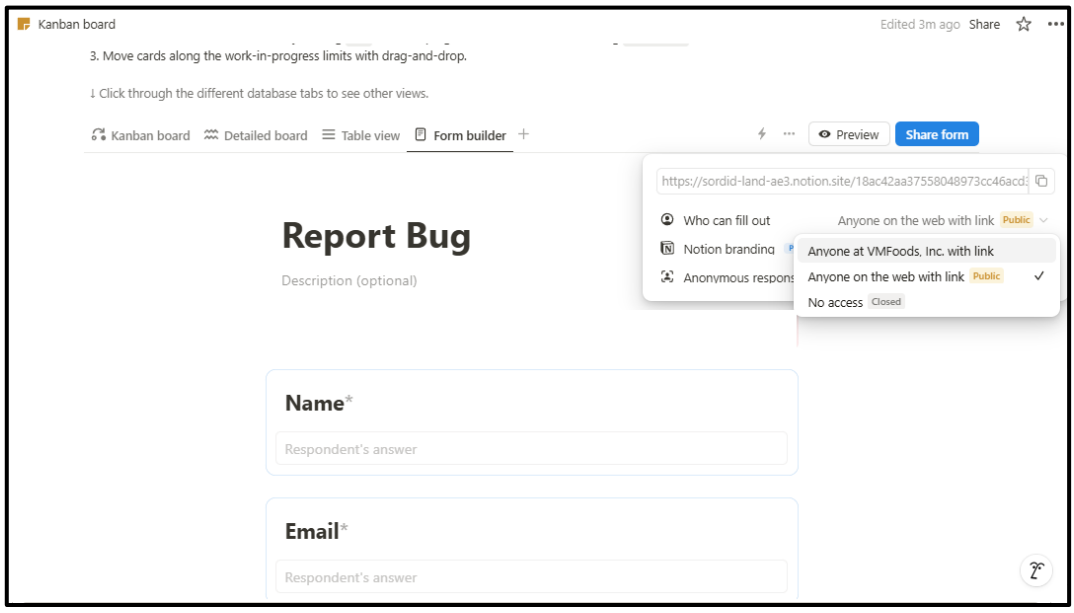

Figure 5-2: Variant of Forms used in Kanban (Source: Notion)

Figure 5-3 shows a chat interface in Wrike. It suggests various actions such as drafting, brainstorming, summarizing, and coding assistance, indicating an AI assistant designed to support diverse Tasks. A text input box at the bottom allows users to enter their requests.

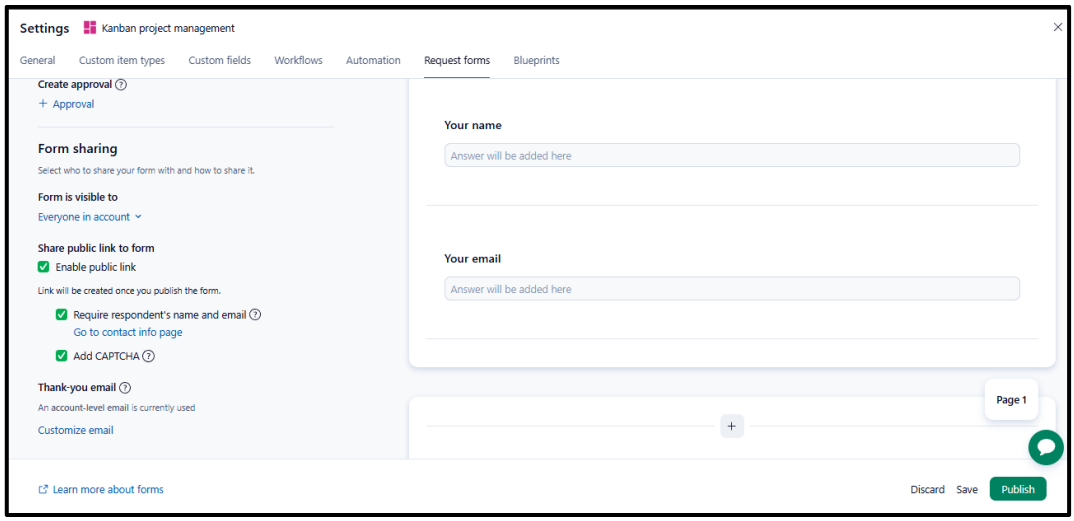

Figure 5-3: A Variant of Forms used in Kanban (Source: Wrike)

Creating and Sharing Forms:

Teams can create and share forms at the Kanban Board level. Fields can include single-line text, multi-line text, checkboxes, radio buttons, calendars, attachments, descriptions, and more. Forms can be created and used by teams across divisions or departments to facilitate work completion.

Figure 5-4 shows a form builder in Vabro, demonstrating the creation of a "Leave Application" form, which can be used by any company employee to submit a leave request to their HR team. The form highlights drag-and-drop functionality for adding fields such as name, email, department, and designation, along with options for customizing the form layout.

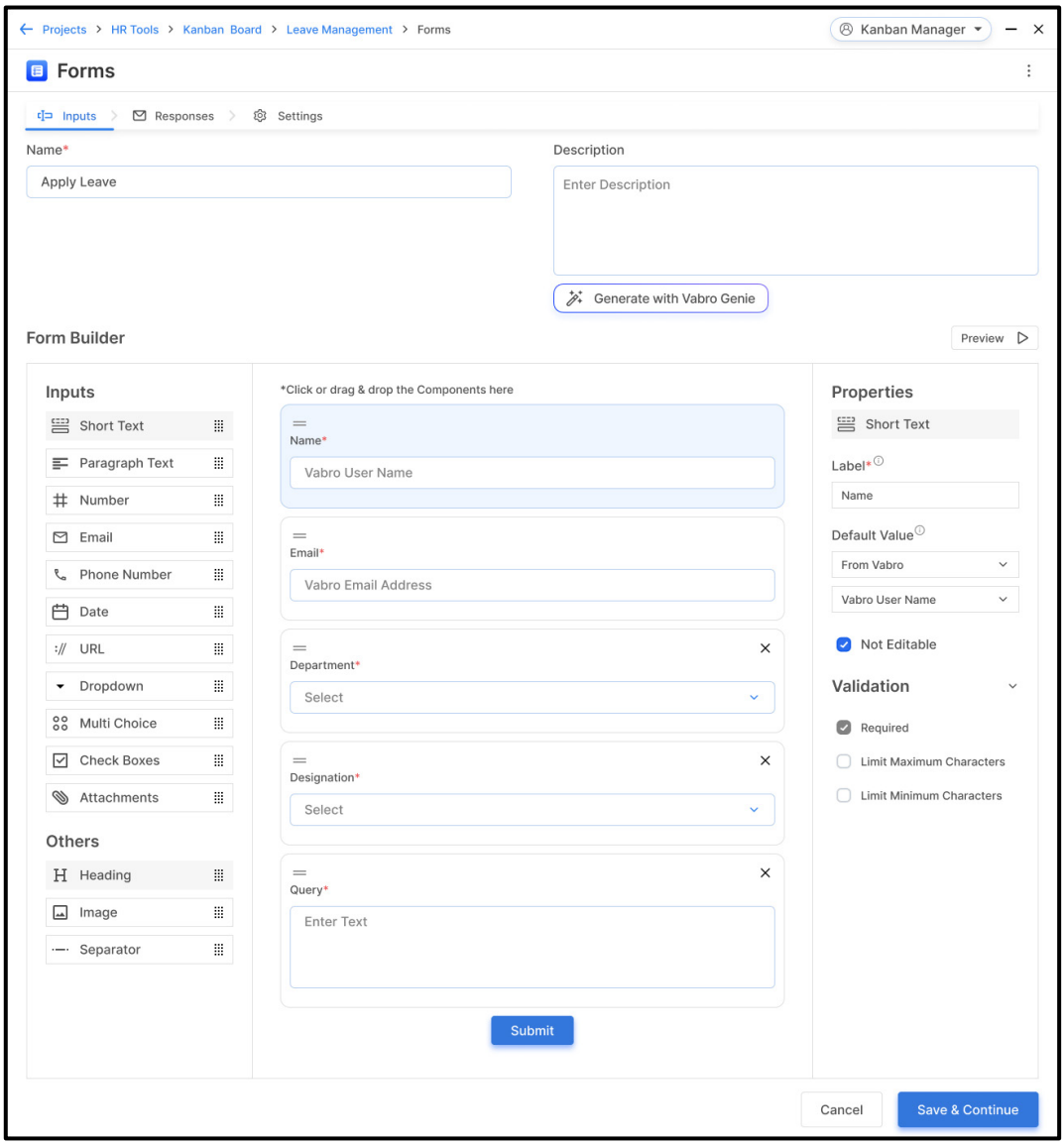

Figure 5-4: Creation of a Form for Collaboration in a Digital Kanban Tool (Source: Vabro)

Figure 5-5 shows a form titled "Requests for Creative Production" being edited in Asana. The form includes fields for request details and allows customization of settings, such as who can access and submit the form, highlighting its use for managing creative Workflows requests.

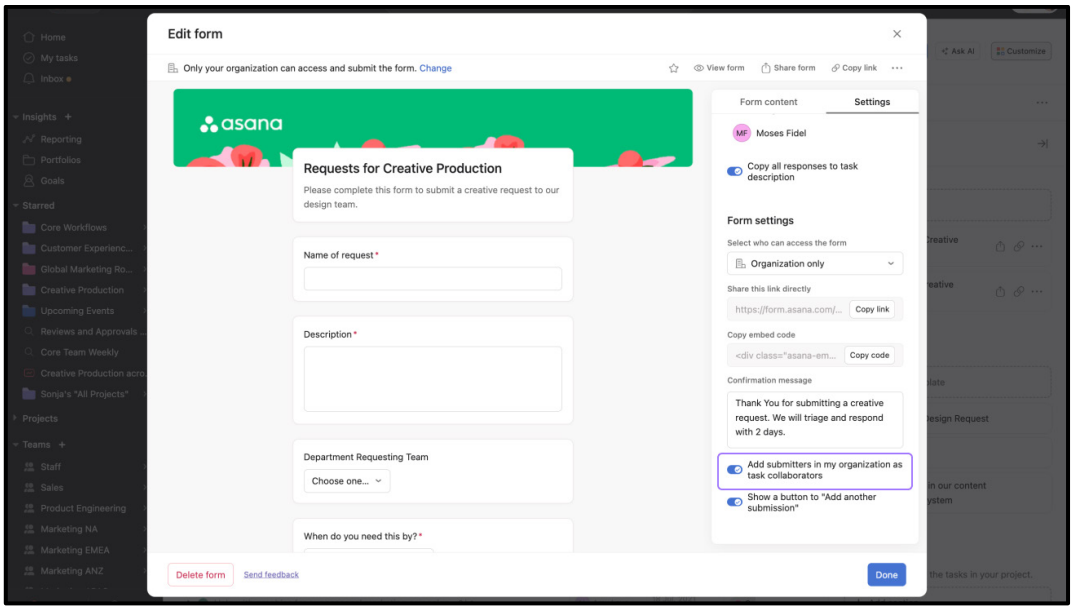

Figure 5-5: Form Creation (Source: Asana)

Figure 5-6 shows a Jira form titled "Initiative New Campaign - Task Form" being edited. The form includes fields for summary, description, and attachments, and allows adding help text. On the right, a menu shows available fields like assignee, category, and due date that can be added to the form.

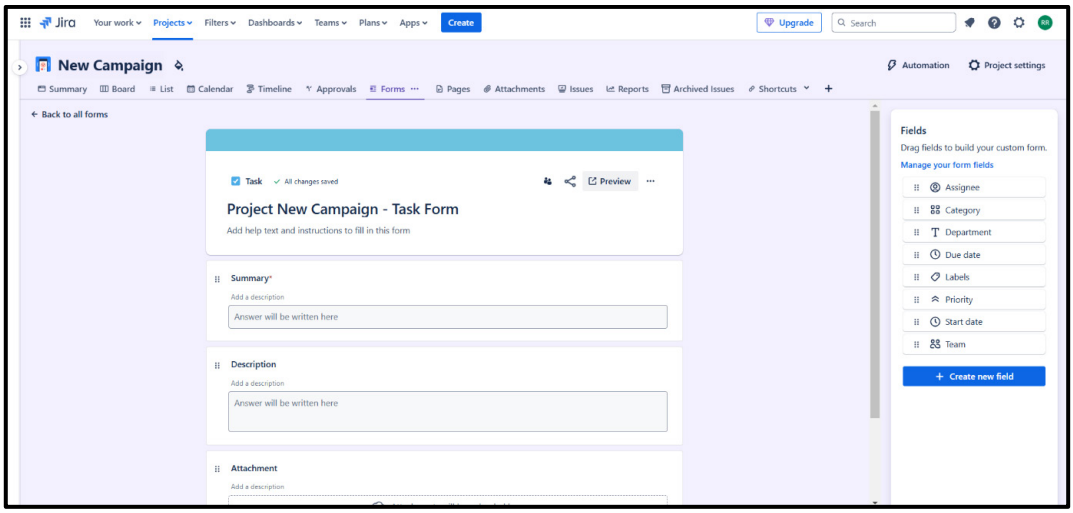

Figure 5-6: Form Creation (Source: Jira)

Managing Tasks with Forms

Managing Tasks with forms can be an effective way for teams to streamline Workflows, enhance collaboration, and track submissions from both internal teams and external customers. Here's how teams can leverage forms to manage Tasks seamlessly:

5.2.1.1 Form Templates

- Creation of Templates: Users can design and store standardized form templates for recurring Tasks, such as leave requests, feedback collection, progress updates, incident reports, or request submissions. These templates can be reused as needed.
- Customizable Fields: Fields can be customized to capture all necessary data for different Tasks. For example, you can include text boxes, dropdown menus, checkboxes, and file upload sections, depending on the nature of the Task.
- Predefined Workflows: When reused, forms can automatically trigger predefined Workflows. For example, once a form is submitted, it can assign Tasks to specific team members, send notifications, or move the Task to the next stage.

Figure 5-7 shows Vabro's Leave Management dashboard with HR and Finance forms, submission details, and actions like Submit and Reports.

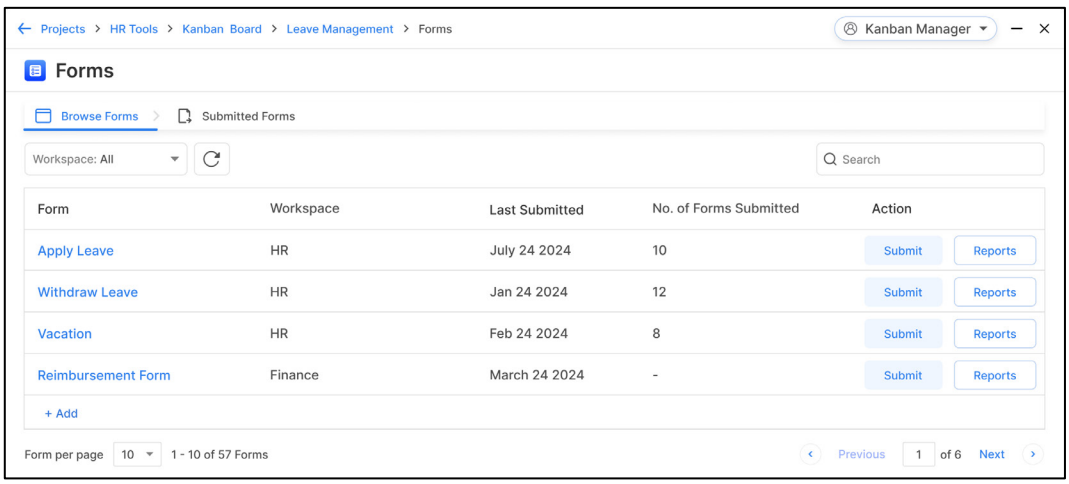

Figure 5-7: Sample Form Template (Source: Vabro)

5.2.1.2 Task Management and Team Collaboration

- Assigning Tasks: Once a form is submitted, it is added to the Kanban Board as a Task and can be assigned to relevant team members or departments for follow-up. Task owners are notified, and form responses are stored for quick reference.
- Real-Time Updates: Team members can update Task statuses in real time. Comments, feedback, and progress updates can be shared with the team, ensuring everyone stays on the same page.
- Collaborative Communication: Team members can communicate within the Task interface using comments or a discussion board. They can also set reminders and prioritize Tasks as needed.

Figure 5-8 shows Vabro's Kanban Board for Leave Management, displaying Tasks in columns: Submitted, Rejected, Under Review, Approved, and Rejected.

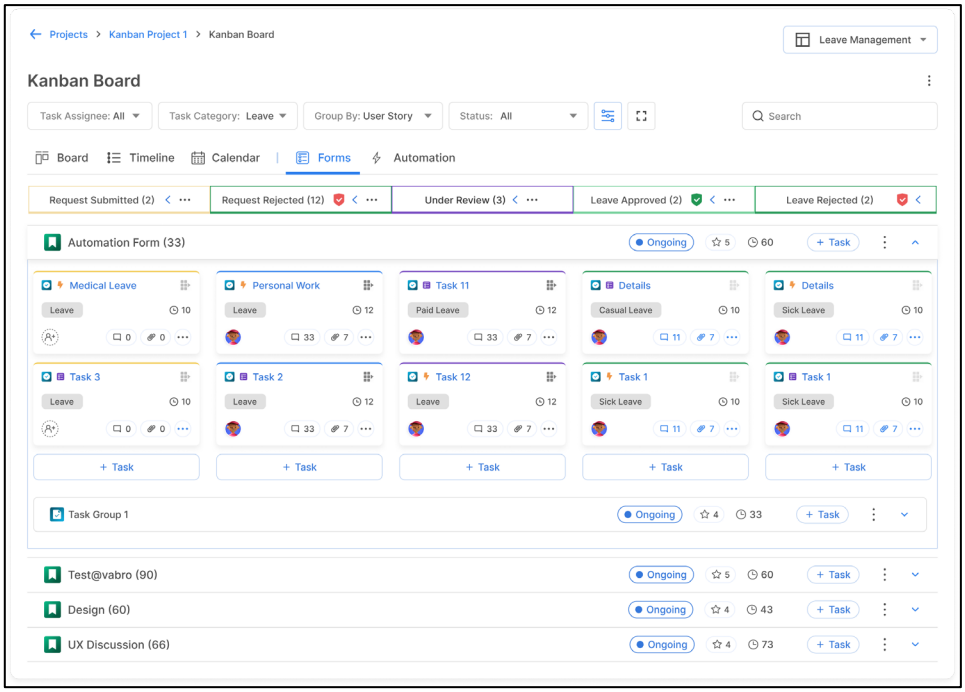

Figure 5-8: Kanban Board for Leave Management (Source: Vabro)

Figure 5-9 shows a Leave Request Form in Vabro for John Smith, detailing team, assignee, status, board details, and approval options.

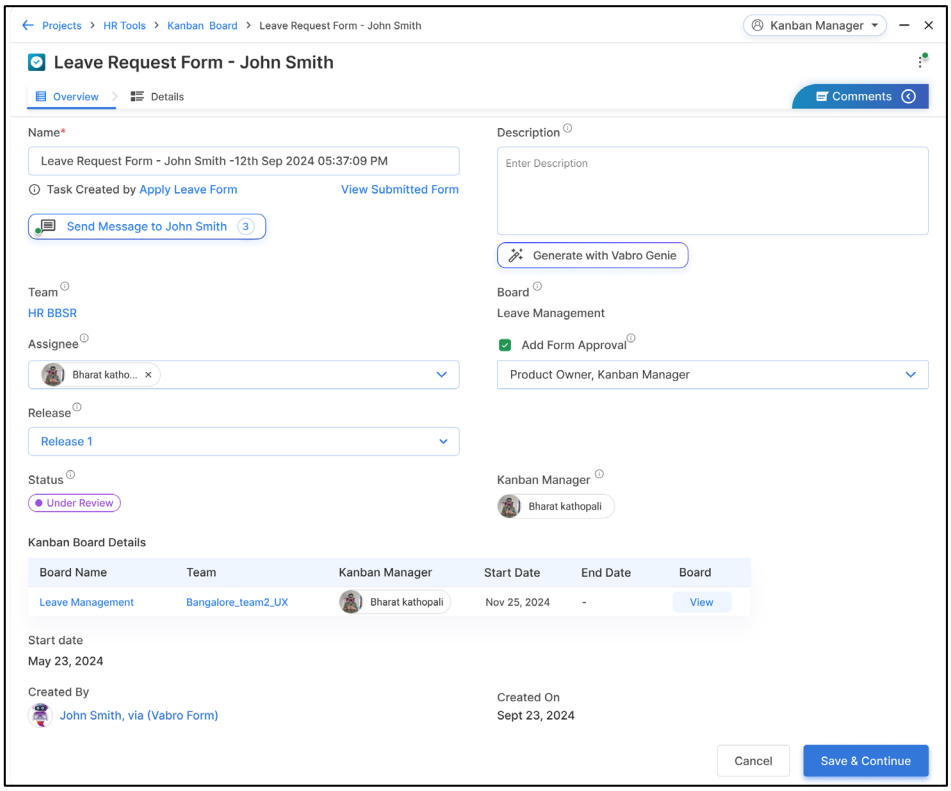

Figure 5-9: Sample Leave Request Form (Source: Vabro)

5.2.1.3 Communication with the Form Submitter

- Automated Acknowledgment: After a form is submitted, an automated response can be sent to the submitter to acknowledge receipt and outline any next steps.
- Custom Responses: If the form requires follow-up or clarification, forms can enable direct communication with the submitter via email, chat, or notifications. Custom responses can be created based on the nature of the request.
- Feedback Loops: If a Task or request requires additional information or clarification, team members can request more details from the submitter. For example, an automated clarification email or chat message can be sent to the submitter.

Figure 5-10 shows Vabro's "Apply Leave" form with employee details, supporting documents, and a template selection for leave response messages.

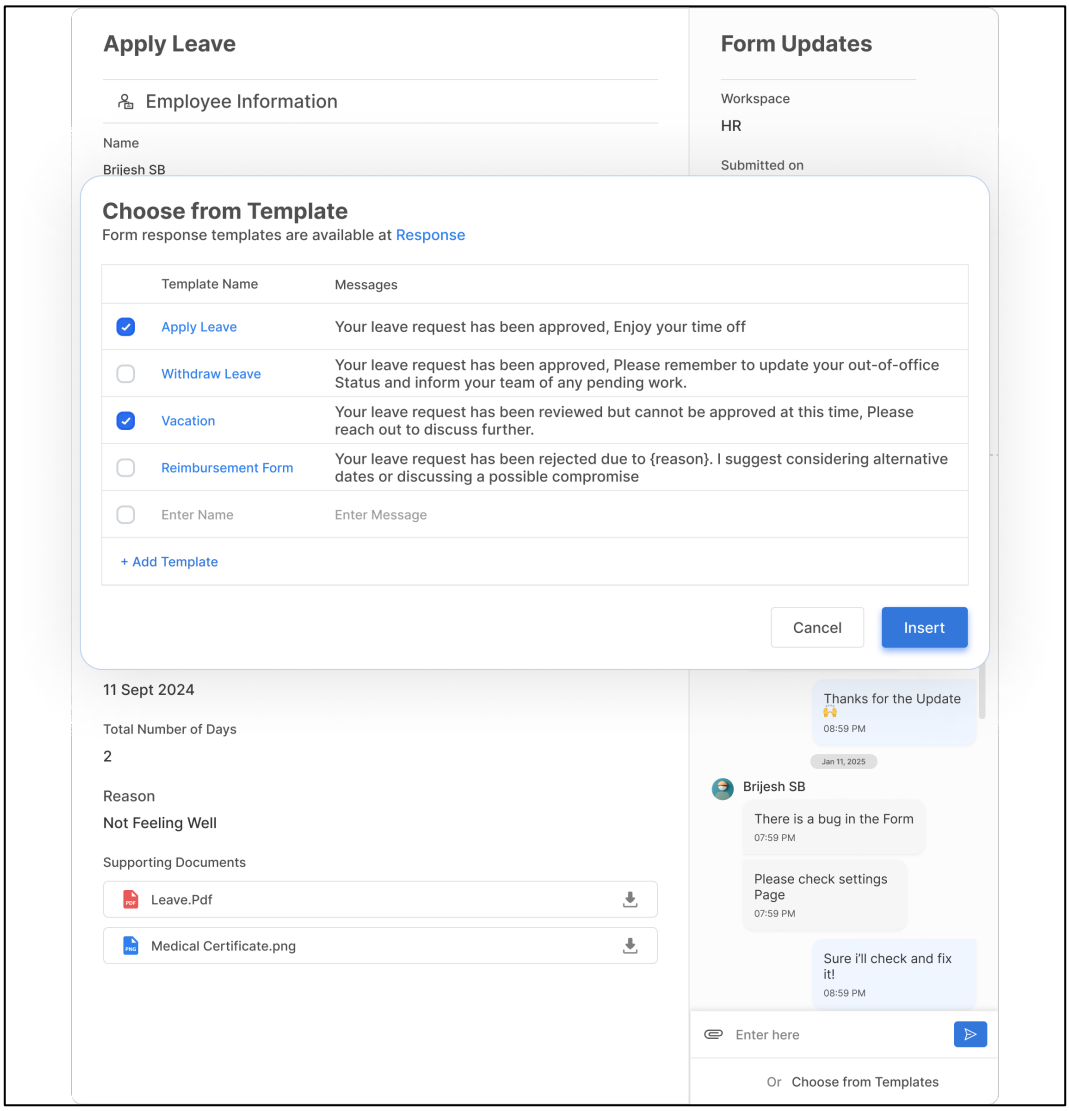

Figure 5-10: Form Template Selection for Leave Response (Source: Vabro)

5.2.1.4 AI-Generated Responses

- Automating Initial Replies: AI can generate initial responses based on the content of submitted forms. For example, it can automatically confirm submissions, provide estimated timelines, or suggest potential solutions based on keywords or past form data.
- Smart Suggestions: When submitters include specific keywords or phrases in their forms, AI can suggest possible resolutions, answers, or resources before human intervention is needed. This reduces response times and enhances customer satisfaction.
- Follow-Up Automation: AI can trigger follow-up messages based on specific timelines or conditions. For instance, if a form requires action within 24 hours, AI can send a reminder or escalate the Task to management if it remains incomplete.

Figure 5-11 shows Vabro's Forms interface with response templates, sample questions from Vabro Genie AI, and options to insert, edit, or delete templates.

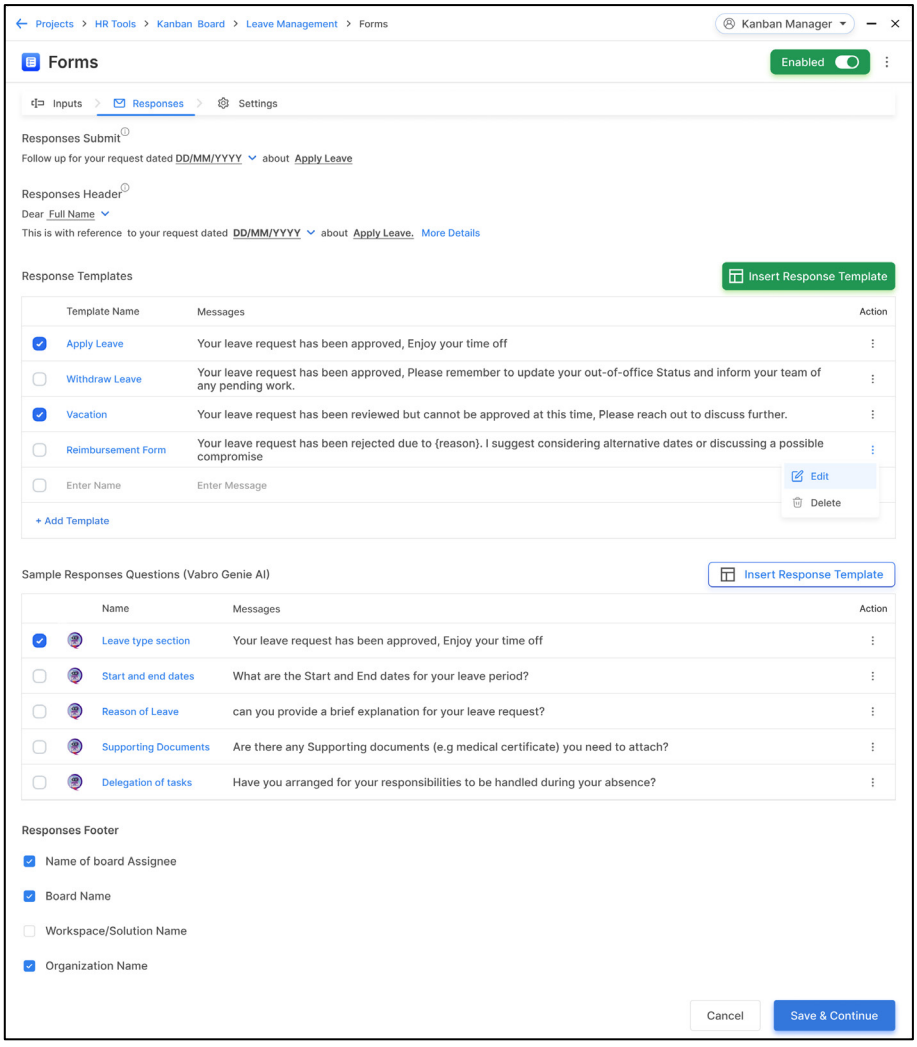

Figure 5-11: Form Interface with Response Templates (Source: Vabro)

5.3 Escalations

Kanban tools are highly effective for managing escalations within Workflows. By providing real-time visibility into Tasks and progress, these tools help teams quickly identify bottlenecks, delays, or issues that may require escalation. When a Work Item encounters a roadblock or exceeds a defined threshold, such as WIP limits or lead time, the Kanban Board can trigger an alert, signaling the need for escalation.

Kanban tools often include features like color-coded flags, custom tags, or notification systems to highlight critical Tasks that need immediate attention. For example, if a Task is stalled in a particular column for too long, it can be flagged for escalation to a manager or team lead.

Some Kanban tools allow the creation of an Escalation Column on Kanban Boards, so that Tasks placed in this column are escalated to another board. This enables the responsible parties to take quick action, whether it's addressing the issue directly or reallocating resources to resolve it.

When an issue is escalated, relevant parties can immediately communicate, share necessary files, or brainstorm solutions. By integrating escalations directly into the Workflows, Kanban ensures that issues are addressed promptly without disrupting the overall flow, leading to more efficient problem-solving and smoother processes.

5.3.1 Planning Escalations

Planning escalations in Kanban Workflows is a strategic approach to managing Tasks that require prioritization or intervention. This supports efficient escalation management and can be tailored to complex Workflows, especially those involving cross-team collaboration. Here's how it works in detail:

5.3.1.1 Escalation Trigger and Initial Setup

- Escalation Column: The first step is to create an Escalation column on your Kanban Board. This designated area is where Tasks requiring escalation are moved.
- Identifying Escalated Tasks: Tasks that are stuck, delayed, or marked as urgent are transferred to the Escalation column, signaling the need for special attention or intervention.

Figure 5-12 shows Vabro's Kanban Board for Customer Tickets, featuring Task columns (Ticket Received, Assigned, In Progress, Done) with options to edit, add, or delete columns.

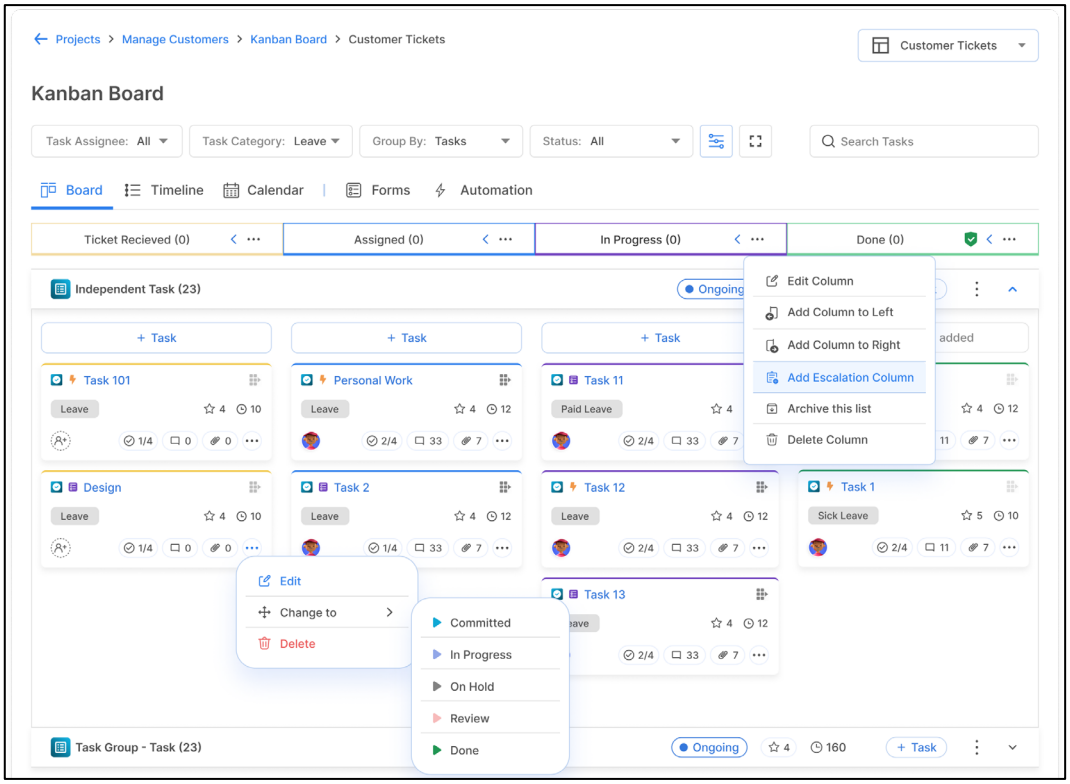

Figure 5-12: Kanban Board for Customer Tickets (Source: Vabro)

5.3.1.2 Setting Escalation Destinations

- Escalation Destination Boards: Once Tasks are moved to the Escalation column, you can define escalation destination boards—specific locations where Tasks are sent for further action.
- Multiple Destinations: Digital Kanban tools allow you to set multiple destination boards. For example, escalated Tasks can be routed to:
    - Technical Support for resolution
    - Management for oversight and decision-making
    - Cross-Functional Teams when collaboration across departments is required
- Flexible Escalation: This flexibility ensures that Tasks are escalated to the appropriate team or individual for timely resolution.

Figure 5-13 shows Vabro's Kanban Board with an "Escalated" column added. A pop-up explains how to escalate Tasks using this new column.

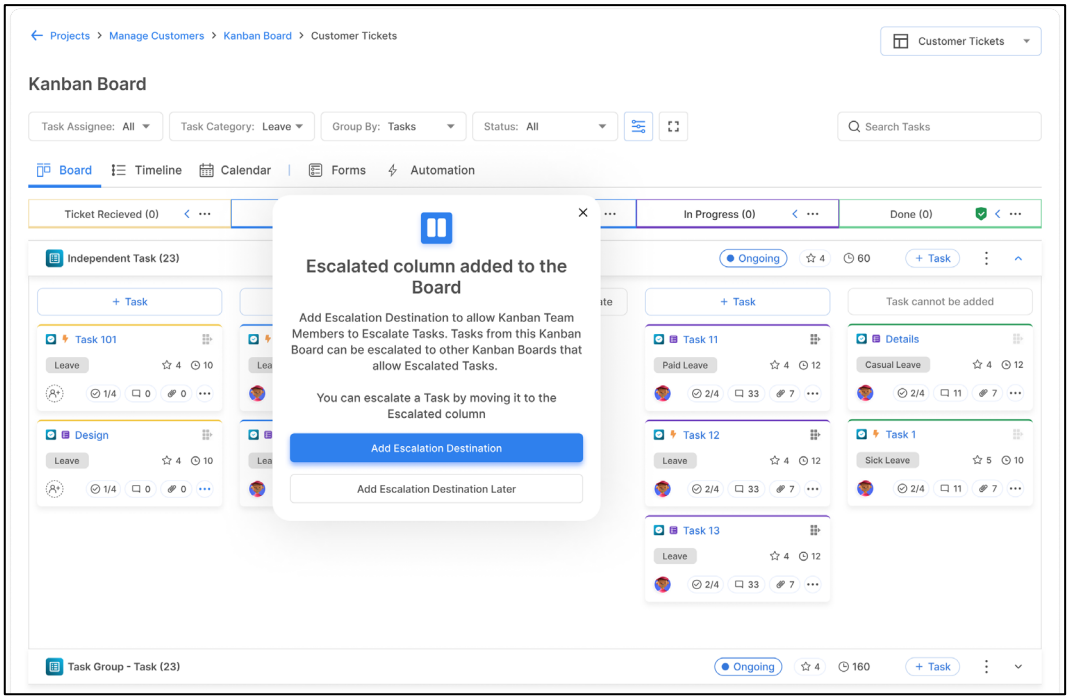

Figure 5-13: Kanban Board with Escalation Column (Source: Vabro)

Figure 5-14 displays Vabro's Kanban Board with the "Escalation Destinations" window open. It shows three destinations: Tech Tickets, Payment Tickets, and L1 Support, each assigned to specific support teams. There's also an option to create a New Escalation Destination.

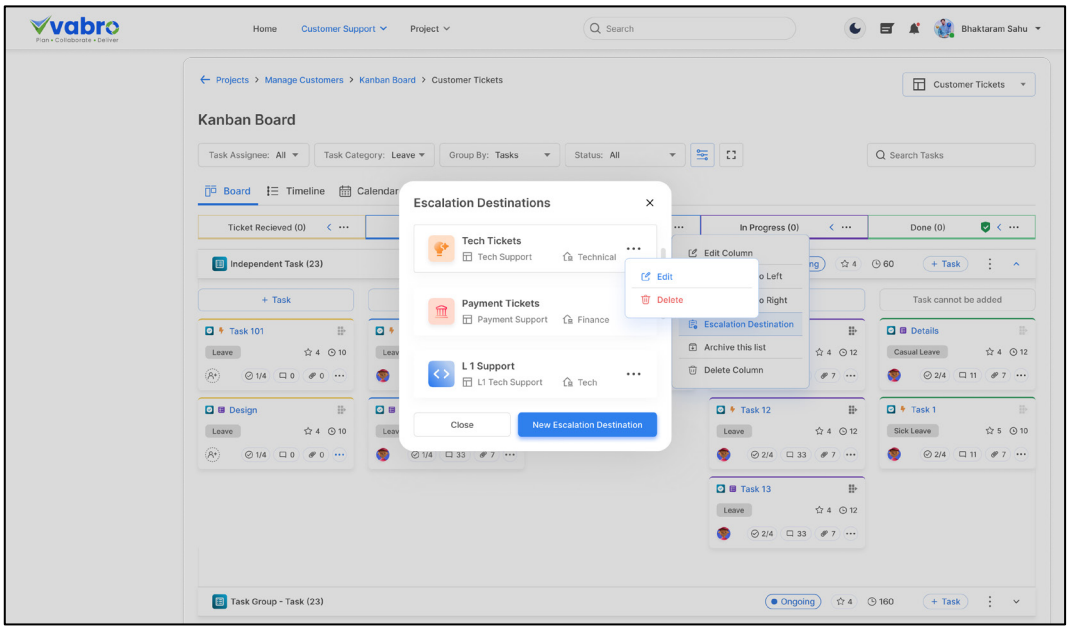

Figure 5-14: Kanban Board with Escalation Destinations (Source: Vabro)

5.3.1.3 Severity Levels and SLA Timings for Escalations

Digital Kanban Tools allow you to configure Severity Levels that correlate with the Service Level Agreements (SLAs) for resolution times:

- Critical Tasks: Must be resolved within 1 hour.
- High-priority Tasks: Must be resolved within 2 hours.
- Medium-priority Tasks: Should be resolved within 4 hours.
- Low-priority Tasks: Can be resolved within 8 hours.

These severity levels help prioritize Tasks, ensuring that urgent matters are addressed more quickly, while less critical Tasks follow their own timelines.

The Kanban Manager can customize these SLAs based on the specific needs of the organization or Workflows. Once a Task is escalated, it must be resolved within the defined SLA to avoid further escalation or negative consequences.

Figure 5-15 shows the "New Escalation Destination Board" setup window within Vabro's Kanban Board.

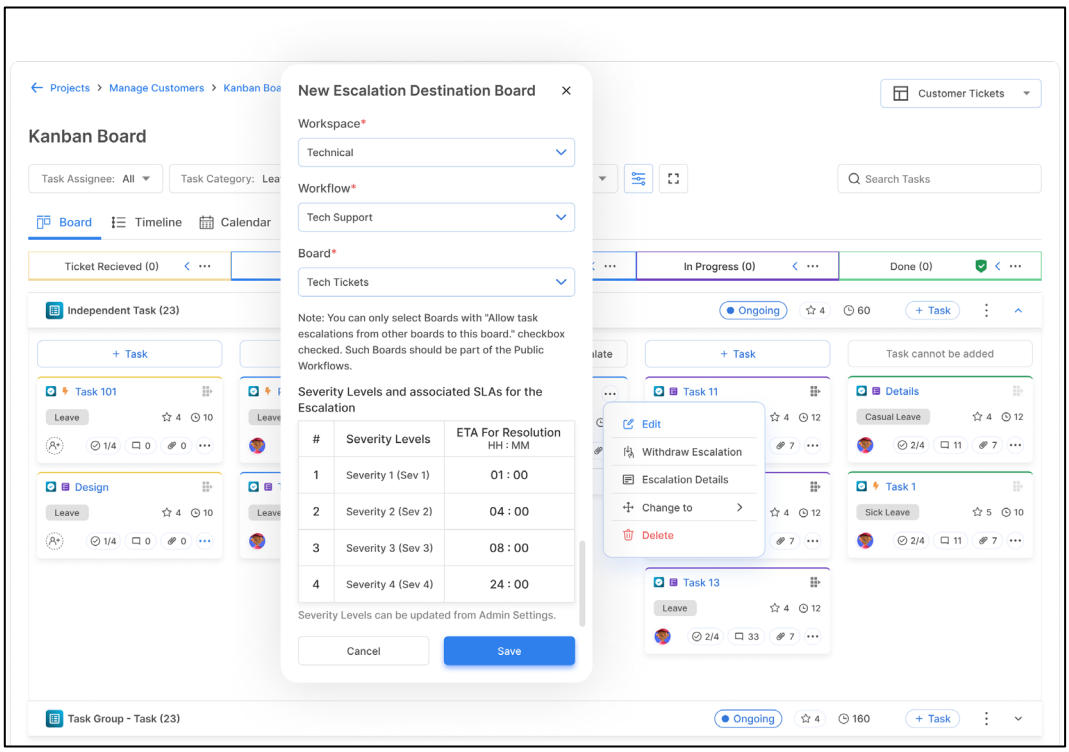

Figure 5-15: New Escalation Destination Board (Source: Vabro)

5.3.1.4 Managing Complex Workflows with Multiple Escalation Columns

For complex Workflows, Digital Kanban Tools provide the option to add multiple Escalation Columns within a single Kanban Board. This is especially useful when the escalation process requires cross-team collaboration. The escalation columns in a Kanban Board can include:

- First Escalation Column: A Task may be escalated to a specialized team (e.g., technical support).
- Second Escalation Column: If unresolved, the Task can be escalated to management or a higher authority for quicker intervention.
- Third Escalation Column: If still unresolved, a cross-functional team can be Tasked with resolving the issue, involving multiple departments or stakeholders.

This structure allows for a tiered escalation approach, where each stage introduces a higher level of attention, increasing urgency and priority accordingly.

5.3.1.5 Notifications and Alerts

As Tasks progress through the escalation process, notifications and alerts can be configured to inform relevant stakeholders at each stage. For example:

- A notification can be sent to the support team when a Task is escalated to them.
- If the SLA for a Task is about to be breached, the relevant manager or team lead can be alerted.

This ensures the team remains aware of critical Tasks and that responsibilities are clearly defined at each stage of the escalation.

5.3.2 Managing Escalations

Managing escalations within Workflows provides an interactive and transparent process, where both the source and destination boards work in tandem to ensure efficient Task resolution. This system promotes collaboration, accountability, and visibility throughout the escalation process. Here's a detailed breakdown of how the escalation process works and how Digital Kanban Tools manages Task resolution:

5.3.2.1 Task Management on Destination Board

When a Task is escalated from the source board, it is automatically transferred to the destination board. This signals that the Task requires immediate attention from the destination team. At this point, members of the destination board are notified of the new Task awaiting their action.

5.3.2.2 Acceptance or Rejection of an Escalation

The members of the destination board are prompted to either accept or reject the escalation:

- Acceptance: When a team member accepts the Task, it is officially added to the board for resolution.
- Rejection: If the destination team feels that the escalation is inappropriate or that they aren't the right team to handle it, they can reject the Task. This keeps the process flexible, ensuring that Tasks are not escalated unnecessarily or to the wrong team.

Figure 5-16 shows a Task escalation request (*E-Unable to Login* with Severity 1) awaiting approval. Tasks are organized in columns: Ticket Received, Assigned, In Progress, and Done.

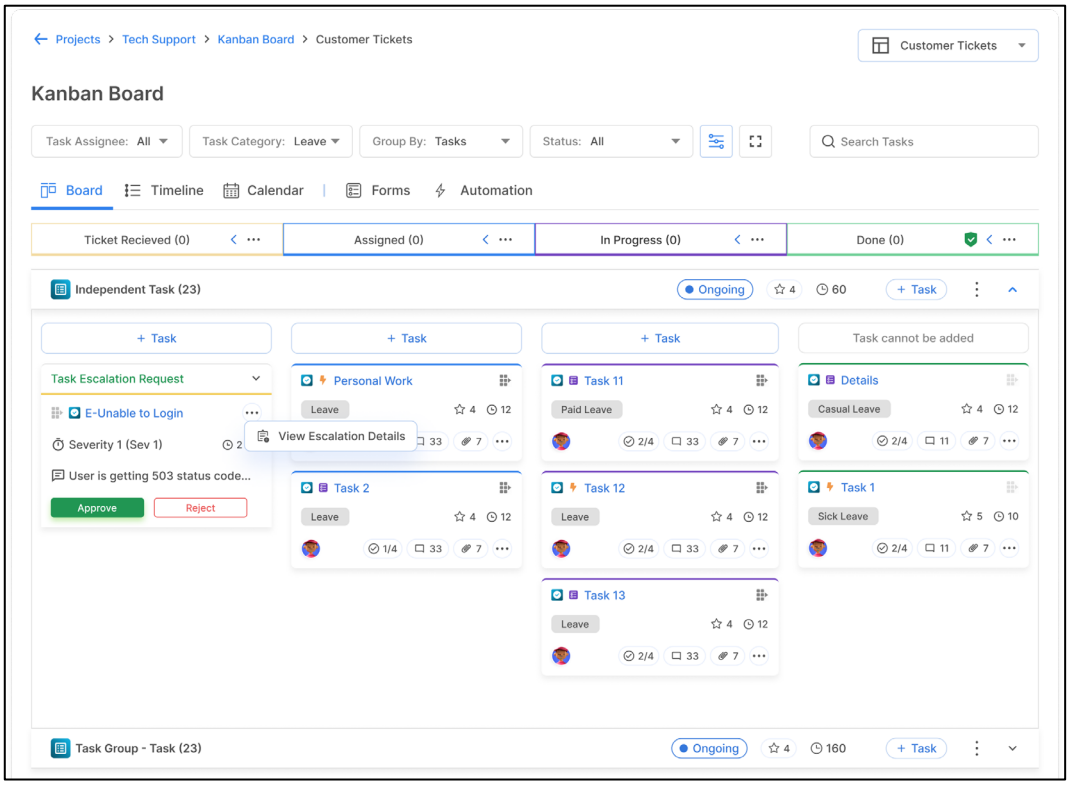

Figure 5-16: Task Escalation Request (Source: Vabro)

Figure 5-17 shows an escalation request (*Unable to Login*) with Severity 3 (SLA: 12 hrs). Details include source Task, board, Workflows, escalator, and approval options: Accept or Reject.

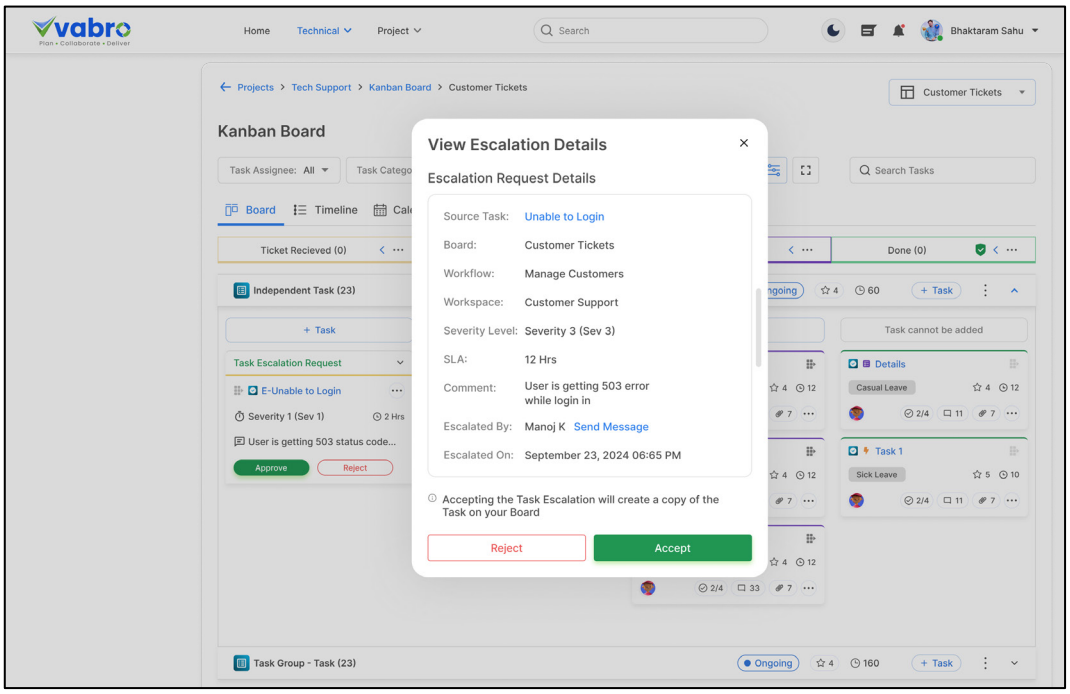

Figure 5-17: Escalation Request (Source: Vabro)

5.3.2.3 Automated Labels and Tags to Enhance Transparency

Once the escalation is accepted or rejected, automated labels and tags are applied to the Task on both the source and destination boards. These labels serve as indicators of the Task's current status, providing real-time visibility into its progress.

For example, tags such as "Escalated," "Accepted by Destination," or "Resolved" may be used.

This ensures both teams have a transparent overview of the Task's progress at any given moment, even if they are working on different boards.

Figure 5-18 displays Task statuses: Ticket Received, Assigned, Escalated, In Progress, and Done. Tasks can be escalated by moving them to the *Escalated* column for priority handling.

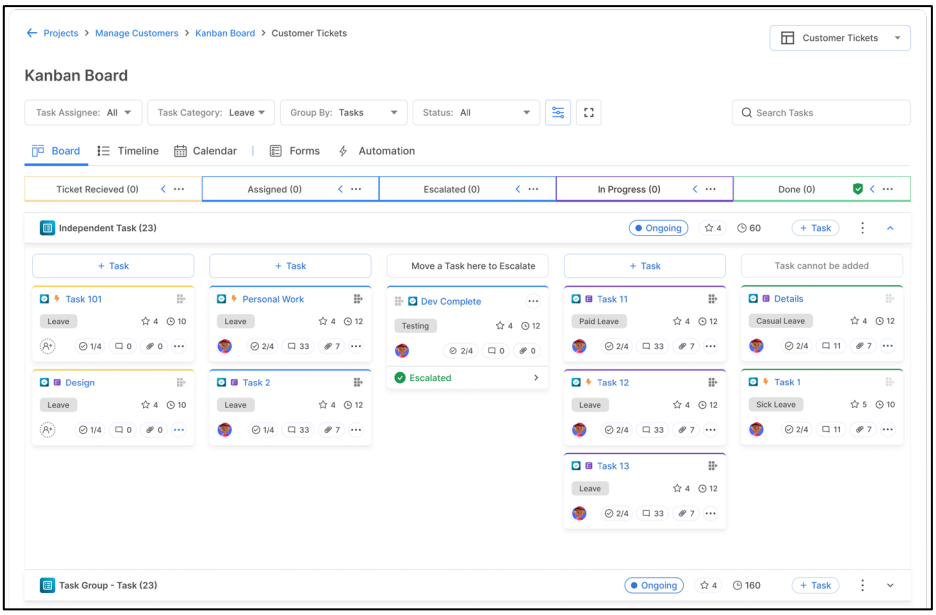

Figure 5-18: Task Statuses (Source: Vabro)

5.3.2.4 Task Completion with Notification Back to the Source Board

Once the escalated Task is completed on the destination board, a notification is sent back to the source board. This allows the user who escalated the Task to close it on the source board, ensuring that the Task is fully tracked and completed. This two-way communication guarantees that the entire team remains aligned on the Task's lifecycle, from escalation to resolution.

Figure 5-19 shows Tasks by status: Ticket Received, Assigned, In Progress, Escalated, and Done. Escalated Tasks display as *Escalation Complete* when resolved.

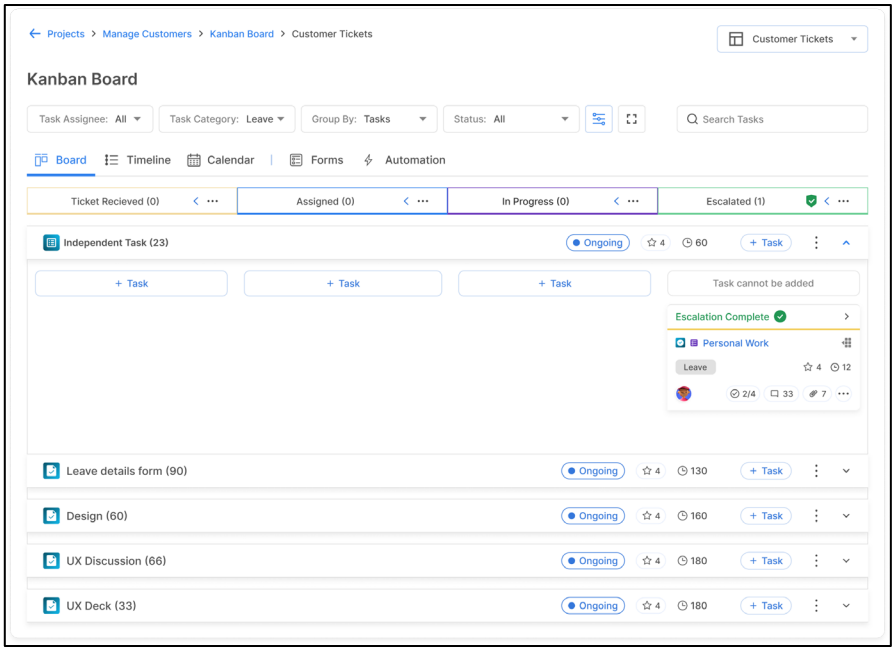

Figure 5-19: Tasks by Status (Source: Vabro)

5.3.2.5 Two-Way Communication Throughout the Escalation Process

Digital Kanban Tools facilitate two-way communication throughout the escalation process, allowing for clarification or feedback. This is essential when additional information or input is needed to move the Task forward. For example, the destination team might request more details about the issue, or the source team may provide additional context about the Task. This continuous communication enables both teams to collaborate effectively, ensuring the Task is thoroughly understood before resolution.

Figure 5-20 displays View Escalation Request Details, including Task source, status, assignee, board, Workflows, workspace, severity level, SLA, comments, and escalation date, with options to send messages or close the request.

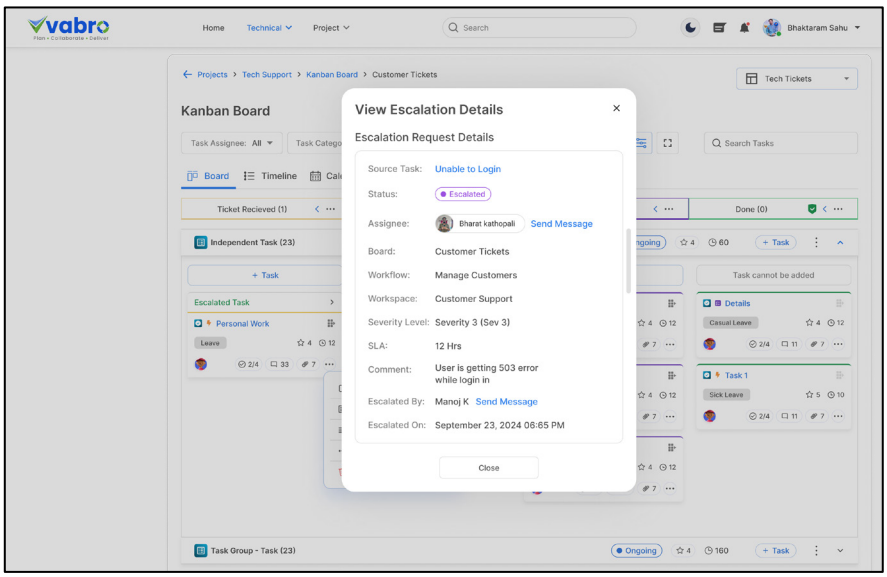

Figure 5-20: View Escalation Request Details (Source: Vabro)

5.4 Reports

Reports play a crucial role in enabling collaboration within a Kanban system by providing transparency and shared insights across teams. These reports capture and present key performance metrics, such as cycle time, lead time, throughput, and WIP (Work in Progress), that help team members stay aligned on progress and issues. By making these metrics accessible, reports create a common understanding of the current state of work, which fosters more effective collaboration between teams and stakeholders.

For example, a Cycle Time Report allows teams to identify delays in the Workflows and discuss solutions to address bottlenecks. Similarly, a WIP report helps teams manage their workload by ensuring they do not exceed capacity, promoting balanced effort across the team. With real-time access to performance data, teams can engage in timely discussions, provide feedback, and adjust Workflows as needed.

Furthermore, reports facilitate communication with external stakeholders by offering them a clear view of Workflows progress, risks, and challenges. This shared visibility ensures that everyone is working towards the same goals, with a clear understanding of priorities and obstacles. Ultimately, reports serve as a tool for continuous improvement, helping teams collaborate effectively to enhance Workflows efficiency and achieve business objectives.

Additional information about Reports in Kanban is discussed in Chapter 4 “Kanban Reports and Metrics.”

5.4.1 IT-enabled Collaboration

Kanban collaboration is significantly enhanced by IT tools, which provide real-time visibility, seamless communication, and efficient Workflows management. Collaboration in IT tools is facilitated through various media such as chats, messages, comments, mentions, watches, and the sharing of files and links. Digital Kanban tools offer a shared platform where team members can access and update the Kanban Board, regardless of their location. This facilitates collaboration by ensuring that everyone has the same, up-to-date information about Task status, priorities, and deadlines.

IT tools enable teams to track Work Items, manage dependencies, and identify bottlenecks in the Workflows. By using these tools, teams can easily share data, collaborate on Tasks, and address issues quickly. Additionally, Kanban tools often include features like comments, mentions, and notifications, which promote real-time communication among team members and stakeholders.

Integration with other software tools is another key benefit. IT tools can sync with Workflows management, messaging, and file-sharing systems, ensuring that teams can collaborate without switching between multiple platforms. For instance, teams can attach documents to specific Tasks, chat directly about Task details, or track changes using version control.

These digital tools make Kanban Workflows more transparent, organized, and adaptable, improving cross-functional collaboration and ensuring that teams remain aligned and focused on their goals. Ultimately, IT tools help streamline communication and collaboration, making the Kanban process more efficient and effective.

Ways IT Tools Enhance Kanban Collaboration:

1. **Real-Time Updates and Notifications**
    - Automated messages notify the team when:
        - A card is moved to a new column (e.g., "In Progress" → "Review")
        - A deadline is approaching
        - A comment or file is added to a task
    - Keeps everyone in the loop without needing to check the board constantly.

2. Centralized Communication

- Conversations about specific tasks or cards happen in threads or channels linked to those items.
- Prevents siloed communication and helps capture decisions/discussions in one place.

3. Task Assignment and Mentions

- Team members are tagged in messaging tools (e.g., @John please review the bug fix on Card #32) to prompt action.
- Direct linking from chat to specific Kanban items improves speed and clarity.

4. Integrated Bots and Commands

- Bots (e.g., Vabro Automation, Trello Bot in Slack) let users:
    - Create or move cards
    - Assign team members
    - Add comments
- All from within the chat app.

5. Collaborative Decision-Making

- Messaging tools provide a space for quick polls, brainstorming, or consensus-building around tasks on the board.
- Ideal for asynchronous collaboration across time zones.

6. Transparency Across Teams

- Cross-functional teams (e.g., dev + design + QA) use shared channels to discuss Kanban progress and blockers.
- Promotes a shared sense of ownership.

This Page is Intentionally Left Blank.

6 SETUP

This chapter includes the processes related to Setting up of a Kanban initiative at an organization or department level: Determine Kanban Vision and Determine AI- enabled Kanban Tool.

Setup, as defined in *the Kanban Body of Knowledge (KBOK™)*, is applicable to the following:

- Kanban initiatives in *any* industry
- Products, services, or any other results to be delivered to Stakeholders
- Kanban Initiatives of any size or complexity

Kanban can be applied effectively to any initiative in any industry—from small initiatives or teams with as few as two team members to large, complex initiatives with up to several thousand members in several teams.

To facilitate the best application of the Kanban framework, this chapter identifies inputs, tools, and outputs for each process as either "mandatory" or "optional." Inputs, tools, and outputs denoted by asterisks (*) are mandatory, or considered critical to success, whereas those with no asterisks are optional.

It is recommended that the inexperienced Kanban practitioners and those individuals being introduced to the Kanban framework and processes focus primarily on the mandatory inputs, tools, and outputs; while experienced Kanban professionals, including Sponsors and relevant Stakeholders strive to attain a more thorough knowledge of the information in this entire chapter.

This chapter is written from the perspective of either the entire organization or a specific department that wants to set up a Kanban function from scratch. The outputs from this chapter will serve as valid inputs for all Kanban initiatives undertaken by the organization or the respective department.

The processes described in this chapter need to be carried out only once to establish the Kanban function within the organization or department. After this setup, for individual Kanban initiatives, only the concepts in *Plan* (Chapter 7), and *Execute* (Chapter 8) need to be followed. The concepts outlined in *Enhance* (Chapter 9) can be applied after the completion of specific Kanban initiatives or at regular intervals—for example, once a month.

The Setup phase begins with the Senior Management identifying the Product Owner(s) responsible for establishing and providing overall direction for Kanban activities within the organization or department. The Product Owners(s) then create a Kanban Vision Statement that offers overarching guidance, inspiration, and focus for setting up the Kanban function. The Kanban initiative can be introduced as a trial for selected projects or Workflows within the company, or implemented across the entire organization for broader adoption.

As the final step in the Setup Phase, an AI-enabled Kanban Tool can optionally be identified which would facilitate all Kanban activities within the organization or department.

The goal of the Setup phase is to establish the overall Kanban function by defining the Kanban Vision, identifying the Product Owner(s), planning the initial roll-out of Kanban, and optionally finalizing an AI-enabled Digital Kanban Tool to support all Kanban initiatives within the organization or a specific department.

It is also important to realize that although all phases and processes are defined uniquely in the Kanban Body of Knowledge, they are not necessarily performed sequentially or separately. At times, it may be more appropriate to combine some phases and/or processes, depending on the specific needs of each initiative.

Figure 6-1 provides an overview of the Setup phase processes, which are as follows:

6.1 Determine Kanban Vision— In this process, Product Owner(s) responsible for guiding Kanban activities across the organization or department are identified. They develop a Kanban Vision Statement to provide strategic direction, inspiration, and focus. The Kanban initiative may be launched as a trial for select projects or Workflows, or deployed organization-wide for broader impact.

6.2 Determine AI-enabled Kanban Tool (optional)— In this optional process, Product Owners and stakeholders select an AI-enabled Kanban Tool for the organization or a specific department. If unavailable, manual methods are used. AI-enabled tools boost efficiency, accuracy, and decision-making through automation and real-time insights, leading to significant productivity gains and cost reductions. Selection involves evaluating analytics, automation, predictive modeling, reporting capabilities, integration, scalability, user-friendliness, and security to support continuous improvement and effective decision-making.

Figure 6-1 shows all the inputs, tools, and outputs for processes in the Setup phase.

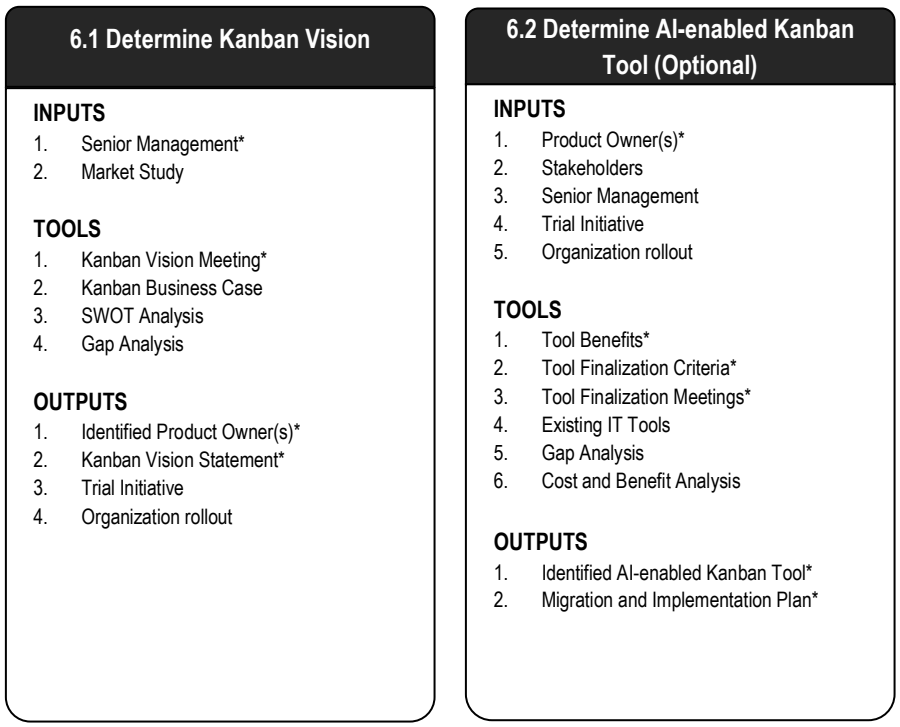

Figure 6-1: Setup Phase Processes Overview

Note: Asterisks (*) denote a "mandatory" input, tool, or output for the corresponding process.

Figure 6-2 below shows the mandatory inputs, tools, and outputs for processes in Setup phase.

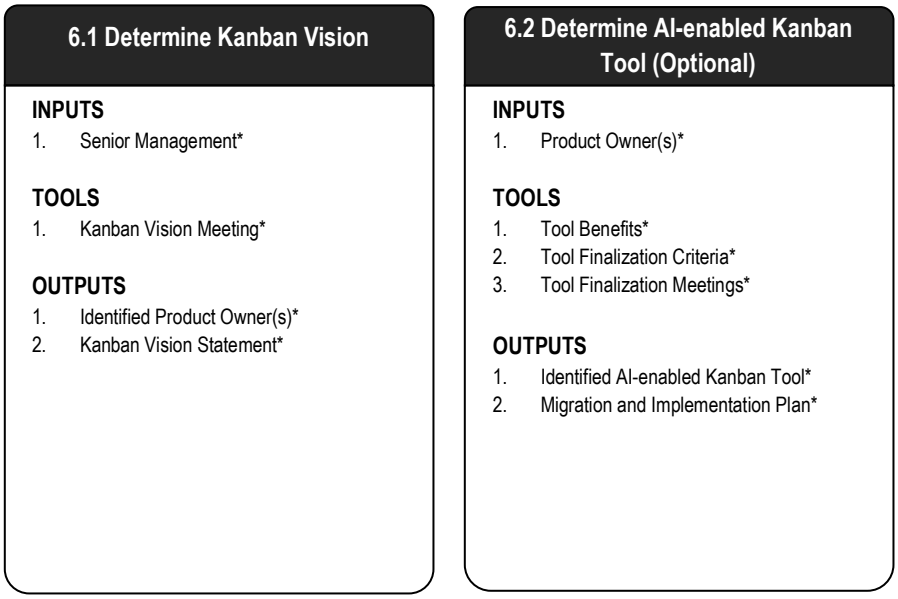

Figure 6-2: Setup Phase Processes Overview (Essentials)

Note: Asterisks (*) denote a "mandatory" input, tool, or output for the corresponding process.

6.1 Determine Kanban Vision

In this process, the Product Owner(s) responsible for establishing and providing overall direction for Kanban activities within the organization or department are identified. The Product Owner(s) then create a Kanban Vision Statement, which provides overarching guidance, inspiration, and focus for setting up the Kanban function. The Kanban initiative can be introduced as a trial for select projects or Workflows within the company, or implemented across the entire organization for broader adoption.

Figure 6-3 shows all the inputs, tools, and outputs for *Determine Kanban Vision* process.

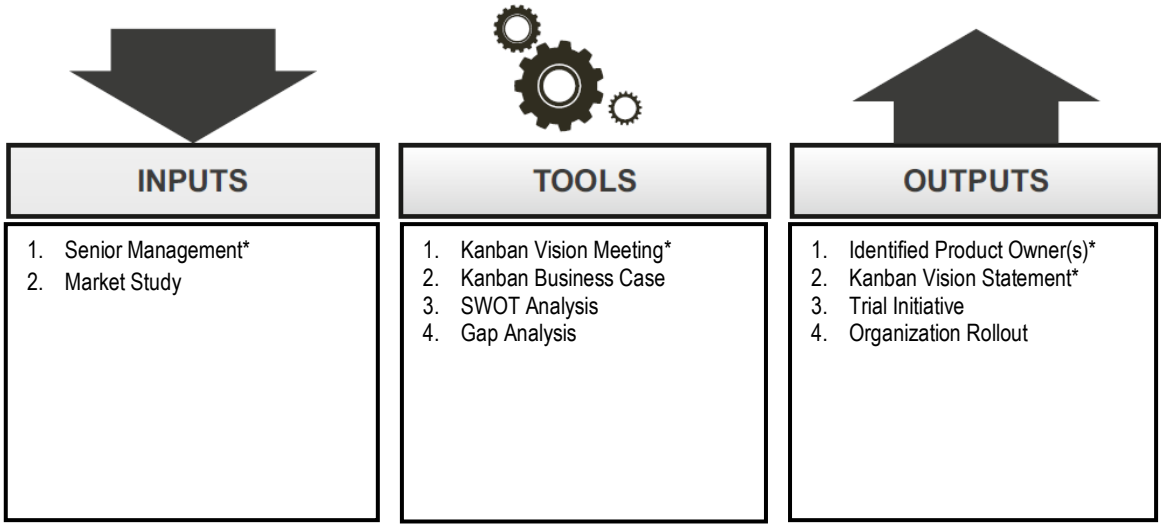

Figure 6-3: Determine Kanban Vision—Inputs, Tools, and Outputs

Note: Asterisks (*) denote a "mandatory" input, tool, or output for the corresponding process.

6.1.1 Inputs

6.1.1.1 Senior Management*

Senior Management in a company comprises top executives responsible for strategic planning, decision-making, and overall organizational leadership. This includes roles such as Chief Executive Officer (CEO), Chief Financial Officer (CFO), Chief Operating Officer (COO), department heads, and directors. They ensure business goals align with Company Vision, profitability, and growth.

Senior management sets the vision, provides resources, and champions cultural change for Kanban adoption. They align goals, remove organizational blockers, support continuous improvement, and promote flow-based metrics to ensure teams are empowered and processes evolve toward greater efficiency and value.

6.1.1.2 Market Study

A market study provides critical insights into industry trends, customer expectations, and competitive benchmarks. A market study of similar industries using Kanban reveals best practices, success factors, and measurable benefits, guiding informed decisions and realistic expectations for implementation.

6.1.2 Tools

6.1.2.1 Kanban Vision Meeting*

The Kanban Vision Meeting brings together Senior Management and relevant Stakeholders to review the business case, and organizational readiness. The goal is to align expectations, clarify objectives, and formally decide whether to proceed with the Kanban initiative, ensuring leadership support and a shared understanding of the implementation path.

6.1.2.2 Kanban Business Case

A business case may be a well-structured document or a verbal statement that outlines the rationale for initiating a Kanban initiative. It can be formal and comprehensive or informal and brief. Regardless of the format, it typically includes key details such as the initiative's background, business purpose, desired outcomes, identified risks, and if possible, high-level estimates of time, effort, and cost.

The Kanban business case serves as a key input in defining the Kanban Vision by outlining the strategic goals, expected benefits, and organizational challenges. It provides clarity on why Kanban is being adopted, ensuring the vision aligns with business needs, promotes value delivery, and supports continuous improvement across teams.

Kanban Business Case may be created by anyone within the company who has experience in Kanban or understands the value of establishing a Kanban practice within the company.

Steps in developing a Business Case for Kanban

1. Determine Current Challenges (Problem Statement)

Some challenges in the current work environment could be:

- Lack of transparency: Work is not clearly visible, leading to missed deadlines and miscommunication.
- Bottlenecks and delays: Uncontrolled multitasking and overcommitment are slowing down delivery.
- Inefficient prioritization: Work is often started without clear business value or urgency.
- Low team morale: Frustration builds up due to unclear Workflows, dependencies, and rework.
- Unpredictable delivery: Stakeholders are often surprised by delays or last-minute changes.

2. Identify Expected Benefits from Kanban Implementation in the company

Some Identified Benefits could be:

A. Operational Efficiency

- Reduced cycle times
- Balanced workload across team members
- Better use of team capacity

B. Work Visibility & Control

- Real-time dashboards of work status

- Faster identification of bottlenecks or risks

C. Predictable Delivery

- Improved forecasting using metrics like lead time and throughput

D. Improved Collaboration

- Shared ownership of work
- Encourages more frequent communication

E. Scalability & Flexibility

- Easy to scale across departments
- Works well in both IT and non-IT environments

3. Determine Risks and Mitigation Strategies when migrating to Kanban

Sample Risk and Mitigation Strategies when migrating to Kanban are mentioned below:

Risk	Mitigation
Resistance to change	Run pilot with early adopters, show quick wins
Misuse of metrics	Educate team on purpose and proper use
Lack of leadership support	Involve leadership early, show alignment to strategic goals
Overcomplicating Kanban	Start simple, evolve over time

Table 6-1: Sample Risk and Mitigation Strategies

4. Determine and Quantify Costs and Benefits

Some potential costs are mentioned below:

Category	Description
Training	Workshops or onboarding for teams and stakeholders
Tools & Licenses	Kanban software (e.g., Vabro, Jira, Trello, Azure DevOps)
Consulting/Coaching	External Agile/Kanban coaches (optional)
Implementation Time	Team time to set up boards, define Workflows, and update policies
Change Management	Communication, buy-in activities, internal advocacy
Ongoing Monitoring	Time spent in retrospectives and metrics reviews

Table 6-2: Potential Costs to Quantify Costs and Quality

Some Benefits are mentioned below:

Category	Description	Estimated Impact
Increased Productivity	More throughput due to limiting work in progress and improved focus	10–50% increase in output
Faster Delivery Times	Reduced cycle time and quicker feedback loops	20–60% faster delivery
Improved Visibility	Real-time tracking of work; better forecasting with metrics like lead time and throughput	Immediate benefit
Reduced Waste	Less context-switching and rework, fewer meetings	Efficiency gains
Higher Quality Output	More time for testing, improved process clarity	Lower defect rates
Improved Team Morale	Empowered teams, less overwork, clearer roles	Increased engagement & retention
Lower Operational Costs	Streamlined processes, less firefighting, reduced project overruns	Cost avoidance / savings

Table 6-3: Benefits of Quantifying Costs and Quality

5. Decide to Proceed with Kanban implementation

Based on analysis of Costs and Benefits, a decision may be made to proceed with the Kanban initiative.

6.1.2.3 SWOT Analysis

SWOT is a structured approach to initiative planning that helps evaluate the **S**trengths, **W**eaknesses, **O**pportunities, and **T**hreats related to a Kanban initiative. This type of analysis helps identify both the internal and the external factors that could impact the initiative. Strengths and weaknesses are internal factors, whereas opportunities and threats are external factors. Identification of these factors helps Stakeholders and decision makers finalize the processes, tools, and techniques to be used to achieve the initiative objectives. Conducting a SWOT Analysis allows the early identification of priorities, potential changes, and risks.

A sample SWOT Analysis for Kanban Methodology is shown below:

Strengths (Internal Positive Factors)

- Improved Workflows visibility: Teams can see work status in real-time.

- Enhanced efficiency: Reduces multitasking and bottlenecks with WIP limits.
- Low implementation cost: No major tool or role changes needed.
- Scalable and flexible: Easy to apply across departments or teams.
- Supports continuous improvement: Encourages incremental evolution over time.

Weaknesses (Internal Negative Factors)

- Cultural resistance to change: Some teams may prefer existing methods.
- Lack of Kanban experience: Teams may need training or coaching.
- Misuse of metrics: Data can be misunderstood or misused by management.
- Requires discipline: Success depends on regular updates and adherence to WIP limits.

Opportunities (External Positive Factors)

- Benchmarking against industry peers: Many leading companies use Kanban successfully.
- Faster response to market changes: Shorter delivery cycles improve agility.
- Increased customer satisfaction: More predictable, value-focused delivery.
- Integration with existing tools: Works with Vabro, Jira, Trello, Azure DevOps, etc.

Threats (External Negative Factors)

- Competing methodologies: Other frameworks (Scrum, OKRs) may have stronger support in the org.
- Tool limitations: Existing platforms may need configuration.
- Lack of leadership buy-in: Without support, adoption may stall.
- Overreliance on visual boards: Focus may shift to the board instead of actual outcomes.

6.1.2.4 Gap Analysis

Gap Analysis is a technique used to compare the current, actual state with some desired state. In an organization, it involves determining and documenting the difference between current business capabilities and the final desired set of capabilities.

Here is a Gap Analysis for Kanban implementation—a structured way to compare an organization's current state against the desired future state with Kanban, helping identify areas that need development or change.

Category	Current State	Desired Future State with Kanban	Gap	Action Needed
Workflows Visibility	Work is tracked in silos or spreadsheets	Unified visual board for all team activities	Limited transparency	Set up Kanban Board to visualize Workflows
Work in Progress (WIP)	No limits; teams Multitask heavily	WIP limits defined and enforced	Overload and context-switching	Educate on WIP limits, pilot with real examples
Process Standardization	Inconsistent processes across teams	Shared understanding of Workflows stages and policies	Confusion and delays	Define and document process policies
Metrics & Feedback	Basic or no performance metrics tracked	Track cycle time, lead time, throughput, and flow efficiency	Lack of data-driven improvement	Use tools to collect and review Kanban Metrics
Continuous Improvement	Retrospectives are rare or ad hoc	Regular reviews to improve flow and reduce waste	Missed improvement opportunities	Schedule consistent retrospectives
Tooling & Systems	Multiple tools, limited integration	Centralized or integrated Kanban tool	Fragmented systems	Choose and configure a suitable Kanban tool
Team Readiness	Teams unaware or sceptical of Kanban	Teams trained and engaged in Kanban practices	Low adoption potential	Provide training, onboarding, and pilot program
Management Support	Leadership focused on output, not flow	Leadership aligned with flow-based delivery principles	Misaligned incentives	Educate management on Kanban value and metrics

Table 6-4: Sample Gap Analysis

6.1.3 Outputs

6.1.3.1 Identified Product Owner(s)*

One of the outputs of this process is the identification of the Product Owner(s) for the Kanban Initiative. The Product Owner(s) take overall responsibility for Kanban initiatives within the company. They ensure alignment between business goals and Workflows execution, collaborate with stakeholders, and work closely with Kanban Managers and the Kanban Team to support the successful implementation of Kanban and its strategic objectives.

The Product Owner role is described in more detail in section 3.1.1.

6.1.3.2 Kanban Vision Statement*

A Kanban Vision Statement contains the purpose and goals of implementing Kanban, aligned with business objectives. It outlines desired outcomes such as improved Workflows, transparency, efficiency, and continuous delivery of value. It also reflects the organization's commitment to adaptability, collaboration, and a culture of continuous improvement through visualized and managed work processes.

6.1.3.3 Trial Initiative

If feasible, a small-scale demo or trial Kanban initiative could be conducted with one or a few teams over a period of 3–6 months to assess the viability, time and cost implications, risks, and potential effects of using Kanban within the company. This would help evaluate its practical benefits before considering a full-scale rollout across the entire organization.

6.1.3.4 Organization Rollout

The organization aims to implement Kanban across all divisions to enhance Workflows transparency, increase efficiency, and support agile practices.

6.2 Determine AI-enabled Kanban Tool (optional)

In this optional process, the Product Owners and relevant Stakeholders help to select an AI-enabled Kanban tool for the entire organization or for a specific department. In the absence of an AI-enabled Kanban tool, the Kanban Team can use manual methods to carry out their activities.

AI-enabled Kanban tools enhance efficiency, accuracy, and decision-making by automating Tasks, analyzing vast datasets, and providing real-time insights. Companies have reported a 50%–75% increase in productivity and a 50%–80% decrease in costs when successfully completing Kanban initiatives using an AI-enabled tool that aligns with their Requirements.

Selecting an AI-enabled Kanban tool involves evaluating capabilities such as data analytics, automation, predictive modeling, and reporting. Key factors include integration with existing systems, scalability, user-friendliness, and security to enhance continuous improvement and decision-making efficiency.

Figure 6-4 shows all the inputs, tools, and outputs for *Determine AI-enabled Kanban Tool(optional)* process.

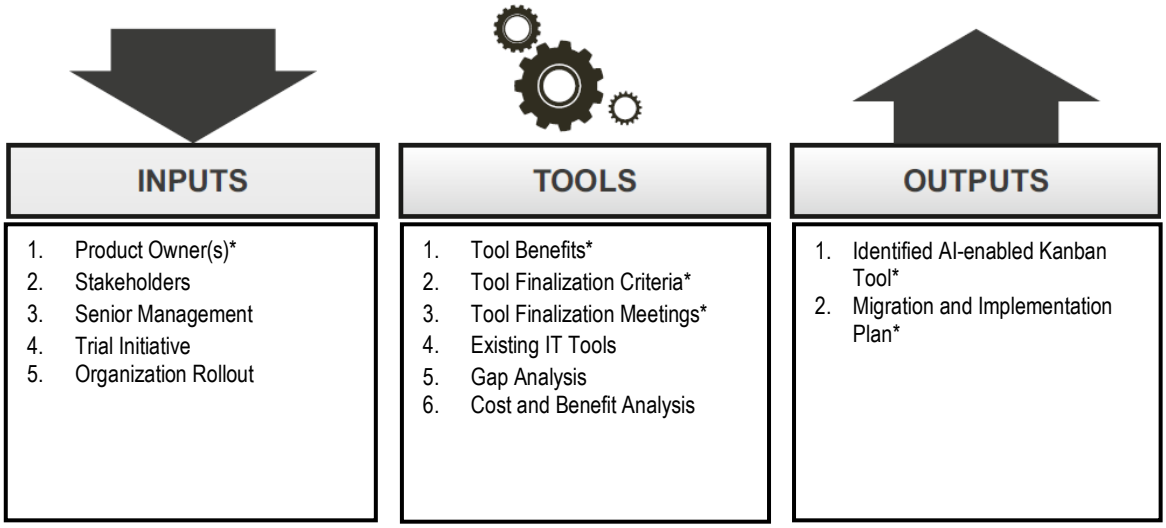

Figure 6-4: Determine AI-enabled Kanban Tool (optional)—Inputs, Tools, and Outputs

Note: Asterisks (*) denote a "mandatory" input, tool, or output for the corresponding process.

6.2.1 Inputs

6.2.1.1 Product Owner(s)*

Product Owner(s) provide key input in determining the most suitable AI-enabled Kanban tool by identifying team needs, aligning tool capabilities with product goals, and ensuring it supports backlog management, prioritization, and Workflows visibility to enhance overall productivity and agility.

The Product Owner role is described in section 3.1.1.

6.2.1.2 Stakeholders

Stakeholders influence the selection of an AI-enabled Kanban tool by providing input on requirements, aligning the tool with business goals, and ensuring cross-functional team support.

The Stakeholders role is described in section 3.2.

6.2.1.3 Senior Management

Senior management determines the AI-enabled Kanban tool by evaluating strategic alignment, cost-effectiveness, and scalability, ensuring it meets organizational goals and supports efficient, data-driven decision-making across all teams.

The Senior Management role is described in section 6.1.1.1.

6.2.1.4 Trial Initiative

Described in Section 6.1.3.3.

6.2.1.5 Organization Rollout

Described in Section 6.1.3.4.

6.2.2 Tools

6.2.2.1 Tool Benefits*

It is important to evaluate the potential benefits of using an AI-enabled Kanban tool. Some possible benefits include:

1. Easy Setup based on Industry Best Practices

- AI-enabled Kanban tools can set up an entire Kanban organization, along with Workflows and processes, within minutes—Tasks that would otherwise be too laborious and time-consuming to complete manually. Moreover, the setup can incorporate experiences based on global industry best practices.

2. Faster Data Processing and Analysis

- AI can process large amounts of structured and unstructured data in seconds. Identifies trends, patterns, and correlations that might be missed manually.

3. Improved Decision-Making

- Provides data-driven recommendations to support strategic planning.
- Predictive analytics help forecast market trends, risks, and opportunities.

4. Automation of Repetitive Tasks

- Reduces manual effort in data entry, requirement gathering, and report generation.
- Saves time by automating business process mapping and Workflows analysis.
- Can learn from and replicate previous Kanban initiatives, ensuring continuous improvement.

5. Enhanced Accuracy and Reduced Human Error

- AI minimizes errors in calculations, data interpretation, and documentation.
- Improves requirement validation and ensures consistency across projects.

6. Real-Time Insights and Reporting

- AI-enabled dashboards provide live business intelligence for quick decision-making.
- Generates reports and visualizations tailored to Stakeholder needs.

7. Better Risk Management

- AI detects anomalies, compliance risks, and inefficiencies in business processes.
- Helps in proactive risk mitigation strategies.

8. Improved Collaboration and Communication

- AI-driven chatbots and virtual assistants streamline Stakeholder and Kanban Team engagement.
- Enhances documentation with automated summarization and sentiment analysis.

9. Cost Efficiency and Scalability

- Reduces resource costs by automating time-consuming Tasks.
- Scales with business growth, handling increasing data complexity efficiently.

6.2.2.2 Tool Finalization Criteria*

It is important for the Kanban Team, in collaboration with Product Owners, Stakeholders, and Senior Management, to determine the criteria for selecting an appropriate AI-enabled Kanban tool.

Some criteria for finalizing an AI-enabled Kanban tool include:

1. **Business Needs Alignment** – Ensures the tool meets organizational objectives and analysis requirements, and can be rolled out to the trial initiative or the entire organization, depending on the preferred rollout approach.
2. **Functionality and Features** – Supports data analytics, automation, predictive modeling, and reporting capabilities.
3. **Ease of Integration** – Seamlessly integrates with existing systems and Workflows.
4. **User-Friendliness** – Offers an intuitive interface for efficient adoption and usability.
5. **Scalability** – Accommodates future business growth and evolving needs.
6. **Data Security and Compliance** – Adheres to industry regulations and protects sensitive information.
7. **Cost and ROI** – Justifies investment with measurable efficiency gains and business value.
8. **Customization and Flexibility** – Allows tailoring to specific business processes.
9. **Support and Maintenance** – Provides reliable vendor support, updates, and troubleshooting.
10. **Stakeholder Feedback** – Aligns with input from key users and decision-makers.

6.2.2.3 Tool Finalization Meetings*

The Kanban Team may need to coordinate multiple meetings with Product Owners, Stakeholders, vendors, tool providers, Senior Management, IT and security teams, subject matter experts, and other relevant individuals or organizations to evaluate and finalize the selection of an AI-enabled Kanban tool that aligns with organizational goals, Stakeholder needs, and business Requirements.

The agenda for such tool finalization meetings could include:

1. **Review Business Needs and Objectives** – Discuss key Requirements and expected benefits.
2. **Evaluate Shortlisted Tools** – Compare features, functionality, and vendor support.
3. **Integration and Scalability Assessment** – Ensure compatibility with existing systems and future growth.
4. **Cost-Benefit Analysis** – Assess ROI, licensing fees, and maintenance costs.
5. **Security and Compliance Review** – Verify adherence to data protection policies and regulations.
6. **Stakeholder Feedback** – Gather insights on usability and alignment with Workflows.
7. **Decision and Next Steps** – Finalize tool selection, implementation strategy, and rollout plan.

Desired Outcome from such Tool Finalization Meetings are:

- Selection of the most suitable AI-enabled Kanban tool.
- Defined implementation roadmap and training plan.
- Assigned responsibilities for deployment and monitoring.

6.2.2.4 Existing IT Tools

The selection of an AI-enabled Kanban tool is significantly influenced by the company's existing IT tools and infrastructure. Key factors include:

1. **Integration Compatibility** – The AI tool must seamlessly integrate with current software, databases, and enterprise systems (e.g., ERP, CRM, BI tools).
2. **Data Accessibility** – It should effectively utilize and analyze data stored in existing IT systems.
3. **Security and Compliance** – Must align with the company's IT security policies and regulatory Requirements.
4. **Scalability and Performance** – Should complement current IT capabilities without causing performance bottlenecks.
5. **User Adoption** – Familiarity with existing tools can impact ease of adoption and training Requirements.
6. **Cost Efficiency** – Avoiding redundant functionalities and leveraging existing licenses can optimize costs.
7. **Customization and Flexibility** – Ability to adapt to the current IT ecosystem without significant reconfiguration.

6.2.2.5 Gap Analysis

Gap Analysis is an effective technique to identify gaps between current Kanban capabilities and the desired state enabled by an AI-enabled tool, ensuring an informed selection process.

Steps for Gap Analysis

Step 1: Identify Current State

- Assess existing Kanban processes, tools, and methodologies.
- Review data management, reporting, and decision-making capabilities.
- Evaluate user experience and efficiency of current tools.

Step 2: Define Future State

- Establish desired AI-driven capabilities (e.g., automation, predictive analytics, real-time insights).
- Identify improvements in data processing, visualization, and decision support.
- Consider scalability, security, and integration Requirements.

Step 3: Identify Gaps

- Determine inefficiencies, limitations, or missing features in existing tools.
- Analyze challenges in data accuracy, accessibility, and reporting.
- Assess gaps in automation, machine learning, and AI-driven insights.

Step 4: Prioritize Gaps Based on Business Impact

- Categorize gaps as **critical, high, medium, or low priority** based on business impact.
- Align identified gaps with business objectives and Stakeholder needs.

Step 5: Define Requirements for AI-Powered Tool Selection

- Specify key functionalities needed to bridge identified gaps.
- Establish evaluation criteria for potential AI-enabled Kanban tools.

Step 6: Develop an Action Plan

- Shortlist AI-enabled tools that meet the identified Requirements.
- Plan integration with existing IT infrastructure.
- Establish a timeline for tool selection, testing, and implementation.

6.2.2.6 Cost and Benefits Analysis

A Cost-Benefit Analysis (CBA) evaluates the financial and non-financial advantages of a decision by comparing its costs and benefits. It helps businesses and policymakers determine feasibility, efficiency, and profitability. A well-conducted CBA ensures informed decision-making, optimizing resource allocation and maximizing value while minimizing risks and unnecessary expenses.

CBA helps assess the financial and strategic value of implementing an AI-enabled Kanban tool by comparing its costs with anticipated benefits.

Cost Analysis: This considers both direct and indirect costs associated with using an AI-enabled Kanban tool.

A. Direct Costs: Some typical direct costs are:

- Software Licensing Fees – One-time purchase, subscription, or pay-per-use model.
- Implementation and Integration Costs – Expenses related to deployment, customization, and integration with existing IT systems.
- Training and User Adoption – Costs for upskilling employees and change management efforts.
- Maintenance and Support – Ongoing costs for updates, vendor support, and troubleshooting.
- Infrastructure Costs – Potential investment in cloud storage, data processing, and security enhancements.

B. Indirect Costs: Some typical indirect costs are:

- Downtime and Transition Costs – Productivity loss during implementation and learning phase.

- Data Migration and Cleaning – Costs associated with transferring data from legacy systems.
- Compliance and Security Upgrades – Additional expenses to meet regulatory Requirements.

Benefit Analysis: This considers both quantifiable and qualitative benefits of using an AI-enabled Kanban tool.

A. Quantifiable Benefits

- Increased Productivity – Automation reduces manual Tasks, improving efficiency by 50%-75%.
- Cost Savings – Reduced operational costs due to fewer manual errors and optimized processes.
- Faster Decision-Making – Real-time insights improve response time and strategic planning.
- Improved Accuracy – AI minimizes human error in data analysis and reporting.
- Scalability – AI-driven tools adapt to growing data needs without additional workforce investment.

B. Qualitative Benefits

- Enhanced Data-Driven Culture – AI empowers informed decision-making across departments.
- Better Stakeholder Collaboration – Improved reporting and insights foster strategic alignment.
- Competitive Advantage – Advanced analytics provide deeper market insights.
- Regulatory Compliance – AI helps track and ensure adherence to data governance standards.

Return on Investment(ROI) Calculation:

After determining the Costs and Benefits, the Return on Investment (ROI) can be calculated using the following formula:

$$\text{ROI} = \frac{\text{Total Benefits} - \text{Total Costs}}{\text{Total Costs}} \times 100$$

This helps:

- Estimate cost savings from automation and efficiency improvements.
- Compare against investment costs over a defined period (e.g., 3-5 years).

Decision Making: Based on the ROI after a Cost-Benefit Analysis, the possible decisions are:

- If benefits significantly outweigh costs, proceed with implementation.
- If costs exceed expected value, reconsider tool selection or implementation strategy.

6.2.3 Outputs

6.2.3.1 Identified AI-enabled Kanban Tool*

An AI-enabled Kanban tool is a game-changer for Kanban Teams, enabling them to make data-driven decisions faster and more accurately. It streamlines Workflows, enhances strategic planning, and optimizes business processes. Companies have reported a 50%–75% increase in productivity and a 50%–80% decrease in costs when successfully completing Kanban initiatives using an AI-enabled tool that aligns with their Requirements.

How an AI-enabled Kanban Tool Supports Kanban Teams:

- **Automates Data Collection and Processing** – Aggregates data from multiple sources for quick analysis.
- **Advanced Analytics and Insights** – Identifies patterns, trends, and anomalies to guide decision-making.
- **Predictive Modeling** – Forecasts future outcomes and potential risks based on historical data.
- **Interactive Dashboards and Reports** – Generates real-time visualizations for better presentation and reporting.
- **AI-driven Recommendations** – Provides actionable suggestions to optimize business strategies.
- **Process Optimization** – Identifies inefficiencies and suggests improvements to business operations.

Key Benefits for Kanban Managers:

- Saves time by automating data analysis and reporting.
- Improves accuracy with AI-enabled insights.
- Enhances decision-making with predictive analytics.
- Supports strategic planning with deep data-driven insights.
- Boosts collaboration with real-time data sharing and reporting.

By leveraging an AI-enabled Kanban tool, Kanban Teams can increase efficiency, make more informed decisions, and drive business growth with confidence.

Selecting the appropriate AI-enabled Kanban Tool:
Selecting the right AI-enabled Kanban tool depends on an organization's specific needs, such as data integration capabilities, user interface preferences, scalability, and budget.

Here are some notable options to consider (this list is not exhaustive):

- **Vabro (with Vabro Genie AI)**
  Vabro, with its Vabro Genie AI, significantly enhances Kanban implementations by automating Task prioritization, streamlining Workflows, and offering real-time analytics. The AI-driven features improve efficiency, optimize resource allocation, and provide valuable insights, making it an essential tool for teams seeking to boost productivity and maintain smooth project management.

- **Trello (Butler Automation)**
  Trello offers Butler, an AI-enabled tool for automating Tasks like assigning cards, setting due dates, and moving Tasks between lists based on user-defined triggers.

- **Kanbanize**
  Kanbanize uses AI to optimize Workflows with predictive analytics, automation of Task prioritization, and visual management features for better decision-making and increased efficiency.

- **Monday.com**
  Monday.com's AI features automate Workflows, provide insights into project status, suggest Task priorities, and predict project timelines, enhancing overall team productivity and project management.

- **ClickUp**
  ClickUp integrates AI for Task prioritization, intelligent scheduling, and Workflows automation, offering smart suggestions and streamlining team collaboration within Kanban Boards.

- **Leankor**
  Leankor leverages AI to deliver intelligent project management features like Workflows automation, data-driven insights, and performance analytics to help teams optimize their Kanban processes.

- **Jira Software (with Automation)**
  Jira's AI-enabled automation tools enable Kanban Board users to automate repetitive Tasks, set rules for managing Workflows, and track progress with predictive data insights.

- **Asana (with Smart Automation)**
  Asana's AI features offer predictive Task management, automated Workflows actions, and smart suggestions to improve the efficiency of Kanban Boards.

- **Wrike**
  Wrike's AI-driven tools enhance Kanban Boards with intelligent Task sorting, progress tracking, and predictive analytics to help teams stay on schedule and optimize resource allocation.

- **ZenHub**
  ZenHub integrates with GitHub, providing AI-driven Kanban Boards for development teams, featuring automated Workflows management, intelligent backlog prioritization, and analytics to boost productivity and efficiency.

When evaluating these tools, consider factors such as ease of use, integration with existing systems, scalability, and cost. It's advisable to take advantage of free trials or demo versions to assess which tool aligns best with your organization's requirements.

6.2.3.2 Migration and Implementation Plan*

Here's a structured Migration and Implementation Plan for an AI-Powered Kanban Tool:

1. Assessment and Planning

- Define Objectives: Identify key goals for implementing the AI-enabled tool (e.g., improving analytics, automation, decision-making).
- Evaluate Current Systems: Assess existing tools, Workflows, and data structures to determine integration needs.
- Identify Stakeholders: Involve key team members, including IT, data analysts, and decision-makers.
- Risk Assessment: Analyze potential challenges such as data loss, downtime, or user adoption issues.

2. Tool Selection and Readiness

- Compare AI Tools: Evaluate different AI-enabled Kanban tools based on features, scalability, and cost.
- Infrastructure Check: Ensure compatibility with existing databases, cloud platforms, and security policies.
- Data Preparation: Clean, organize, and standardize data for smooth migration.
- Training and Onboarding: Develop a training plan to familiarize users with the new tool.

3. Migration and Implementation Execution

- Pilot Implementation: Run a small-scale test with a subset of users before full deployment.
- Data Migration: Transfer historical and live data securely, ensuring data integrity.
- Integration with Existing Systems: Connect the AI tool with CRM, ERP, or other business applications.
- Workflows Adaptation: Modify business processes to align with the new tool's capabilities.

4. Testing and Optimization

- System Testing: Validate data accuracy, functionality, and AI-generated insights.
- User Feedback: Collect feedback from end-users to address concerns and refine usability.
- Performance Monitoring: Track key performance indicators (KPIs) to assess effectiveness.

5. Full Deployment and Continuous Improvement

- Rollout Plan: Implement the tool for a specific trial initiative or, if applicable, roll it out organization-wide in phases to ensure a smooth transition.
- User Support: Provide ongoing training, documentation, and help desk assistance.
- Optimization and Updates: Continuously refine processes, update AI models, and adapt to business needs.

This Page is Intentionally Left Blank.

7 PLAN

This chapter includes the processes related to planning of a Kanban initiative: Form Kanban Team, and Optimize Workflows and Determine Stakeholders.

Plan, as defined in *the Kanban Body of Knowledge (KBOK™)*, is applicable to the following:

- Kanban initiatives in *any* industry
- Products, services, or any other results to be delivered to Stakeholders
- Kanban Initiatives of any size or complexity

Kanban can be applied effectively to any initiative in any industry—from small initiatives or teams with as few as two team members to large, complex initiatives with up to several thousand members in several teams.

To facilitate the best application of the Kanban framework, this chapter identifies inputs, tools, and outputs for each process as either "mandatory" or "optional." Inputs, tools, and outputs denoted by asterisks (*) are mandatory, or considered critical to success, whereas those with no asterisks are optional.

It is recommended that the inexperienced Kanban practitioners and those individuals being introduced to the Kanban framework and processes focus primarily on the mandatory inputs, tools, and outputs; while experienced Kanban professionals, including Sponsors and relevant Stakeholders strive to attain a more thorough knowledge of the information in this entire chapter.

This chapter is written from the perspective of a single Kanban initiative within the company or a specific department and follows the *Setup* chapter, where the Kanban function is established for the entire organization or a specific department. The outputs from this chapter will serve as valid inputs to *Execute* (Chapter 8), and *Enhance* (Chapter 9) Kanban activities, which are discussed in subsequent chapters.

The Plan phase begins with forming the Kanban Team which would work on the Kanban initiative. The team responsible for implementing the Kanban Workflows includes the Product Owner, Kanban Manager, and Team Members. The Product Owner and Kanban Manager are central to managing Workflows and ensuring outputs that drive value creation. Depending on the team's needs, the Product Owner may also take on the role of Kanban Manager. Team Members are skilled individuals who develop specialized products or deliver solutions that support the Kanban initiative. Together, they ensure the effective application of Kanban practices to optimize processes and outcomes.

This is followed by optimizing Workflows and determining Stakeholders of the Kanban initiative. To implement Kanban effectively, organizations must review existing Workflows, map processes, identify bottlenecks, and assess value streams. Applying Kanban principles streamlines processes, reduces waste, and boosts efficiency. Key stakeholders include customers, leadership, project sponsors, and anyone impacted by Workflow outcomes. Involving stakeholders early is crucial to optimize Workflows, gain buy-in, and ensure a smooth, successful Kanban implementation.

The goal of the Plan phase is to form the Kanban Team and identify stakeholders to establish optimized Kanban Workflows for the Kanban initiative.

It is also important to realize that although all phases and processes are defined uniquely in the Kanban Body of Knowledge, they are not necessarily performed sequentially or separately. At times, it may be more appropriate to combine some phases and/or processes, depending on the specific needs of each initiative.

Figure 7-1 provides an overview of the Plan phase processes, which are as follows:

7.1 Form Kanban Team— In this process, the Kanban Team is identified, consisting of the Product Owner, Kanban Manager, and Team Members. The Product Owner and Kanban Manager are crucial in managing Workflows and delivering value. Depending on the team's structure, the Product Owner may also serve as the Kanban Manager. Team Members possess the necessary skills to develop specialized products or provide solutions that support the Kanban initiative.

7.2 Optimize Workflows and Determine Stakeholders— In this process, the Kanban Team review existing Workflows by mapping processes, identifying bottlenecks, and assessing value streams. This analysis helps identify opportunities to apply Kanban principles for streamlining, reducing waste, and improving efficiency. Key stakeholders include customers, leadership, project sponsors, and anyone influencing or impacted by Kanban Workflows. Identifying and involving stakeholders early is essential for optimizing Workflows, securing buy-in, and ensuring a smooth and successful Kanban implementation.

Figure 7-1 shows all the inputs, tools, and outputs for processes in the Plan phase.

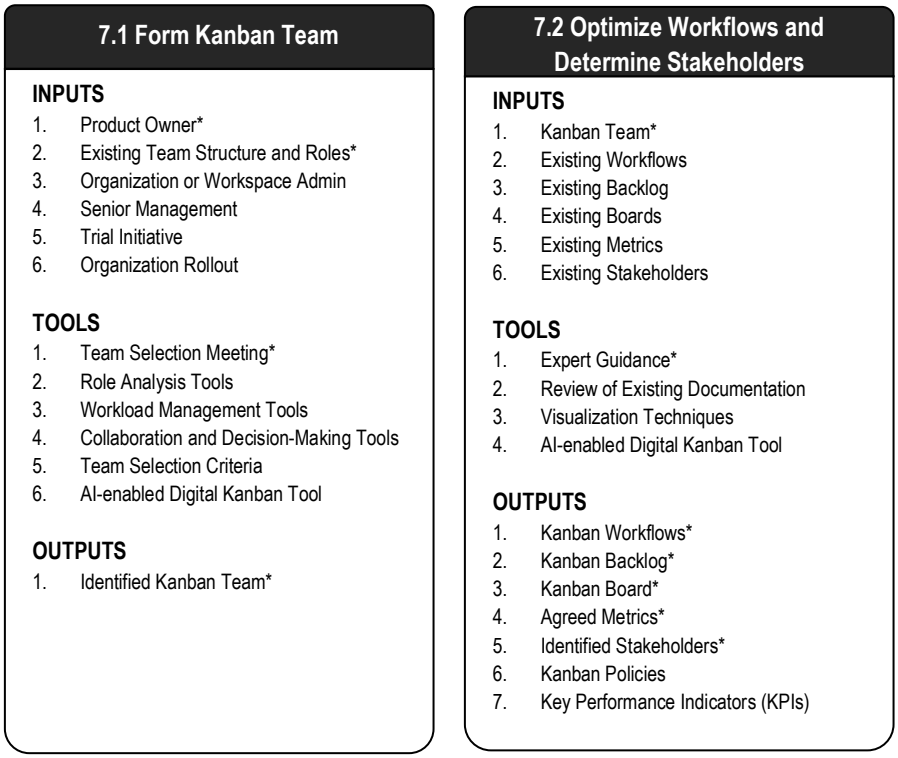

Figure 7-1: Plan Phase Processes Overview

Note: Asterisks (*) denote a "mandatory" input, tool, or output for the corresponding process.

Figure 7-2 below shows the mandatory inputs, tools, and outputs for processes in Plan phase.

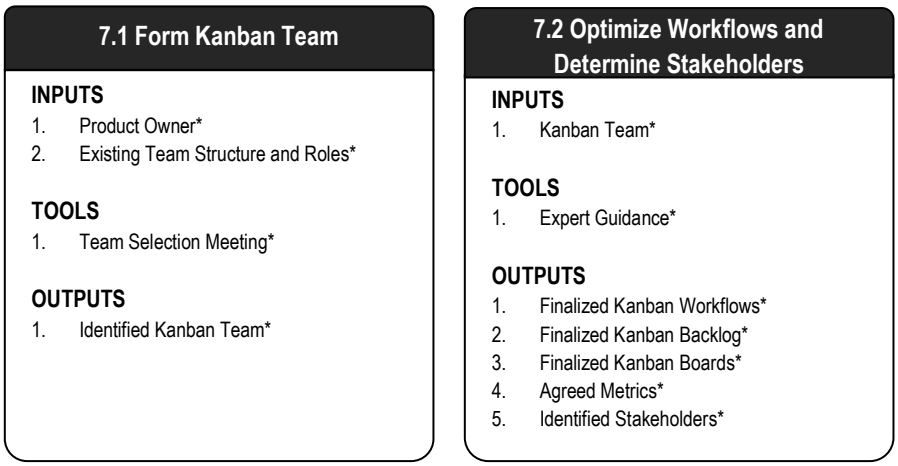

Figure 7-2: Plan Phase Processes Overview (Essentials)

Note: Asterisks (*) denote a "mandatory" input, tool, or output for the corresponding process.

7.1 Form Kanban Team

In this process, the team responsible for implementing the Kanban Workflows is identified. The Kanban Team consists of the Product Owner, Kanban Manager, and Team Members. Together, they ensure the effective application of Kanban practices to optimize processes and outcomes.

The Product Owner and Kanban Manager play key roles in managing the Workflows and producing outputs that drive value creation. In some cases, the Product Owner may also serve as the Kanban Manager, depending on the team's structure and requirements. Team members are individuals with the necessary skill sets to develop specialized products or deliver solutions that support the Kanban initiative.

Figure 7-3 shows all the inputs, tools, and outputs for *Form Kanban Team* process.

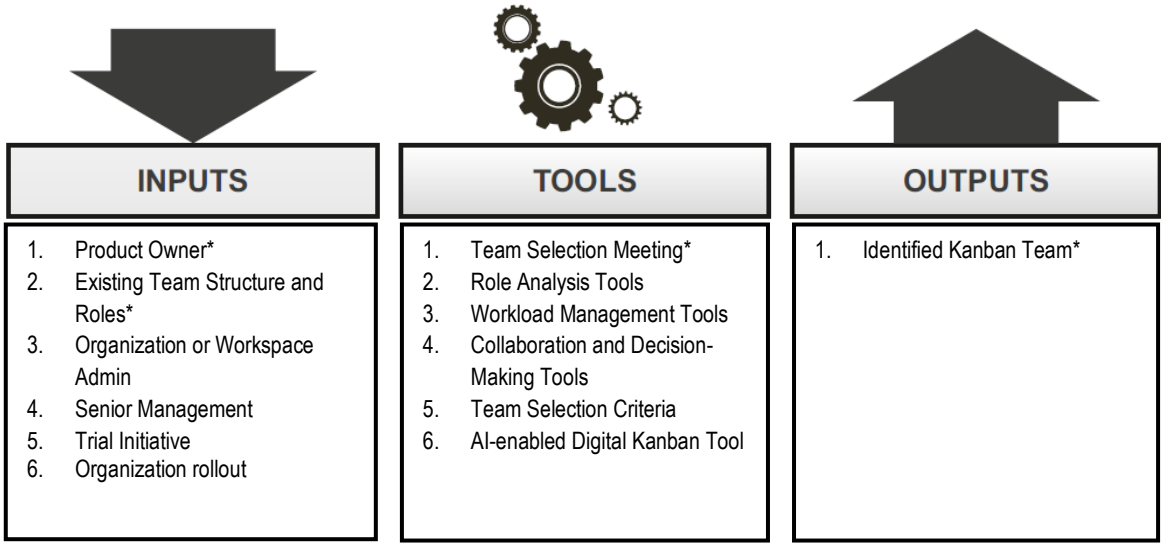

Figure 7-3: Form Kanban Team—Inputs, Tools, and Outputs

Note: Asterisks (*) denote a "mandatory" input, tool, or output for the corresponding process.

7.1.1 Inputs

7.1.1.1 Product Owner*

Product Owner provides vision, priorities, and backlog items, ensuring alignment with stakeholder needs to support the formation of a focused, collaborative, and value-driven Kanban team.

Product Owner(s) role is described in section 3.1.1.

7.1.1.2 Existing Team Structure and Roles*

The current team structure and roles provide a foundation for establishing the Kanban Team. By analyzing existing roles, responsibilities, and the overall team structure, organizations can identify potential Kanban roles and define their corresponding responsibilities. For example, Project Managers can transition into Product Owner roles, while Developers and Testers can become part of the Development Team within the Kanban method. Understanding the team's strengths, weaknesses, and communication styles is crucial for forming an effective Kanban Team. This analysis ensures that roles are aligned with individual skill sets, fosters better collaboration, and supports the smooth implementation of the Kanban Workflows.

7.1.1.3 Organization or Workspace Admin

When using a digital Kanban tool or SaaS product to implement Kanban, an Organization or Workspace Admin is essential for setting up and managing the organization and its workspaces. The Organization Admin typically holds a leadership role, ensuring strategic alignment and providing operational oversight across the organization. Their key responsibilities include:

- Overseeing the Entire Organization: Managing the overall structure within Kanban tool to ensure Workflows align with organizational goals.
- Managing Workspaces, Users, and Settings: Controlling access, configuring settings, and managing users across all workspaces to maintain consistency and security.
- Ensuring Transparency: Facilitating seamless coordination across teams and Workflows by promoting visibility into Workflows, Tasks, and performance metrics.
- Having a dedicated admin ensures efficient setup, smooth operations, and effective collaboration within the Kanban environment.

Figure 7-4 displays an interface for setting up a new organization within the software platform Vabro. The form captures essential details such as the company name, contact information, website, employee count, and industry, likely for account registration or profile creation.

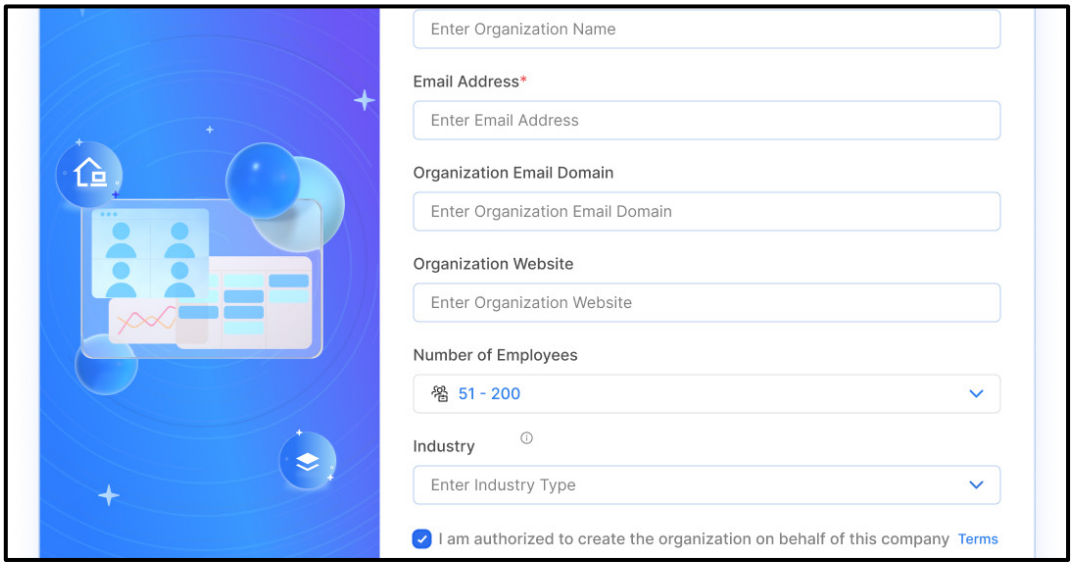

Figure 7-4: Organization Setup (Source: Vabro)

A Workspace Admin is responsible for:

- Managing specific workspaces, including Workflows, users, and configurations.
- Bridging overarching organizational strategies with day-to-day activities.
- Ensuring smooth Workflows execution within individual workspaces.

Figure 7-5 illustrates the Vabro workspace setup interface, featuring an AI tool called Vabro Genie. It guides users through selecting workspaces and templates tailored to their organization, offering options such as Customer Service, Finance, and IT, with predefined Workflows like Ticket Management and Kanban Boards.

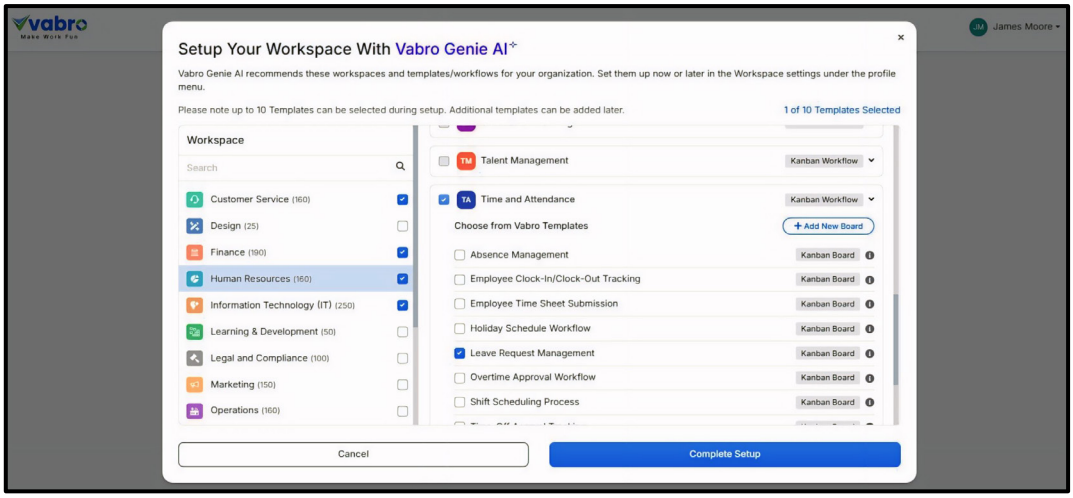

Figure 7-5: Workspace Setup (Source: Vabro)

7.1.1.4 Senior Management

Senior management offers strategic direction, organizational goals, resources, and support, enabling the formation of a Kanban team aligned with business objectives and empowered for success.

Senior Management role is described in section 6.1.1.1.

7.1.1.5 Trial Initiative

Trial initiative provides a focused objective, scope, and experimental framework, helping shape the Kanban team structure, roles, and Workflows for learning and continuous improvement.

Described in Section 6.1.3.3

7.1.1.6 Organization Rollout

Organization rollout offers standardized practices, training, and governance, guiding the Kanban team's formation to align with broader transformation goals and ensure consistency across teams.

Described in Section 6.1.3.4

7.1.2 Tools

7.1.2.1 Team Selection Meeting*

A well-structured team selection meeting is crucial for forming a high-performing Kanban Team. During this meeting, the team's goals, required skills and experience, and desired team dynamics should be discussed. Key factors to consider include technical expertise, problem-solving abilities, and communication skills. A collaborative approach should be used to select team members who complement each other's strengths and weaknesses, fostering a balanced and effective team.

7.1.2.2 Role Analysis Tools

In Kanban, forming effective teams involves clearly understanding roles, responsibilities, and Workflows. While Kanban doesn't prescribe specific roles like Scrum, there are tools and techniques that can help with role analysis to form high-performing Kanban teams. Here are some tools and approaches you can use:

1. RACI Matrix (Responsible, Accountable, Consulted, Informed)

Purpose: Clarifies who is responsible for what within the Workflows.

Application:

- Map each process or Kanban lane to team members.
- Identify overlaps or gaps in responsibilities.
- Helps define roles even in flat or flexible team structures.

2. Value Stream Mapping

Purpose: Visualizes the entire flow of work from request to delivery.

Application:

- Identify key stages and who is involved.
- Spot bottlenecks or unclear ownership.
- Align team members to specific parts of the value stream based on skills or availability.

3. Skills Matrix

Purpose: Evaluate current team capabilities vs. needed skills.

Application:

- Helps form balanced teams by matching roles to skills.
- Encourages T-shaped skill development to increase flexibility.

4. Team Member Role Canvas

Purpose: A template to capture what each person contributes.

Application:

- Each team member outlines their responsibilities, preferred Tasks, and improvement areas.

- Promotes self-awareness and team alignment.

5. Persona Mapping (Internal Team Personas)

Purpose: Understand the motivations and pain points of team roles.

Application:

- Especially useful for cross-functional teams.
- Helps align role expectations and avoid misunderstandings.

6. Work Item Types Analysis

Purpose: Understand what kinds of workflow through the system.

Application:

- Identify if certain team members specialize in certain item types.
- Match team structure to the type of work (e.g., support vs. innovation vs. maintenance).

7. Kanban Cadences and Role Fit

Purpose: Align meeting participation with role responsibilities.

Application:

- Decide who should attend Kanban meetings (e.g., Replenishment, Service Delivery Review, Risk Review).
- Ensures the right people are involved in the right decisions.

7.1.2.3 Workload Management Tools

Managing workload effectively is crucial when forming and running Kanban teams. Since Kanban is all about flow efficiency and limiting work in progress (WIP), workload management is integrated directly into the system. Here are some powerful tools and techniques used in Kanban to manage workload while forming and maintaining balanced teams:

1. Work In Progress (WIP) Limits

Purpose: Prevents team overload and context switching.

Application:

- Set WIP limits per column (e.g., “In Progress”) or per person.
- Adjust based on team capacity and flow metrics.
- Encourages finishing work before starting new Tasks.

2. Cumulative Flow Diagram (CFD)

Purpose: Visualizes flow stability and highlights bottlenecks.

Application:

- Identify stages with growing queues = overloaded teams.
- Use to adjust staffing, WIP limits, or split roles.
- Helps in balancing demand vs. capacity.

3. Throughput Tracking

Purpose: Measures how much work a team completes over time.

Application:

- Helps determine realistic team capacity.
- Compare throughput across roles or work types to balance workload.
- Useful for forecasting and setting expectations.

4. Cycle Time & Lead Time Metrics

Purpose: Understand how long Work Items take from start to finish.

Application:

- Spot inconsistencies in delivery that may indicate uneven workloads.
- Teams can rebalance work if some members are slower due to overload.

5. Swimlanes and Card Assignments

Purpose: Visual organization of work by person, class of service, or team.

Application:

- Use swimlanes to track workload across people or teams.
- Helps visually balance work and avoid overloading specific individuals.

6. Skills Matrix (Again!)

Purpose: Map skills to availability for better load distribution.

Application:

- Rotate work more fairly.
- Plan cross-training to reduce dependency on overloaded roles.

7. Blocked/Flagged Items Tracking

Purpose: Highlight work that's stuck or waiting.

Application:

- Blocked cards = potential for workload imbalance or over-commitment.
- Use to analyze root causes and adjust how work is distributed.

8. Team Utilization Charts (Tool-Specific)

Purpose: Used in tools like Jira, Trello, or Kanbanize to track team capacity.

Application:

- See at a glance who is over/underutilized.
- Adjust incoming work or reassign Tasks.

Kanban Mindset for Workload

Unlike rigid planning, Kanban encourages:

- Pull-based systems: People pull work only when they're ready.
- Visualizing capacity: So everyone can see who's free or overloaded.
- Continuous flow: Instead of batch assignments or sprints.

7.1.2.4 Collaboration and Decision-Making Tools

Collaboration and decision-making are critical when forming and running Kanban teams, especially since Kanban thrives on transparency, continuous improvement, and shared ownership. While Kanban itself doesn't prescribe specific collaboration tools, it provides cadences, visualizations, and lean principles that foster team alignment and smart decision-making.

Here is a breakdown of the best Collaboration and Decision-Making Tools/Practices in Kanban to help form and guide effective teams:

1. Kanban Board (Physical or Digital)

Purpose: Shared visual space for all team members.

Application:

- Enables team-wide visibility into who's doing what.
- Facilitates discussions around priorities, blockers, and progress.
- Great for distributed teams when using digital tools (e.g., Jira, Trello, Kanbanize, Azure DevOps).

2. Daily Kanban (Stand-Up) Meetings

Purpose: Promote daily collaboration and alignment.

Application:

- Discuss flow of work, blockers, and next actions.
- Focuses on movement of work, not status updates.
- Builds team habit of shared responsibility.

3. Service Delivery Review

Purpose: Evaluate how well the team is delivering.

Application:

- Team reviews metrics like lead time, throughput.
- Decisions on improvements are based on data, not opinion.

- Encourages data-informed collaboration.

4. Replenishment (Commitment) Meetings

Purpose: Decide collaboratively which work to pull into the system.

Application:

- Aligns team members and stakeholders on priorities.
- Helps balance customer demand with team capacity.

5. Feedback Loops & Retrospectives

Purpose: Continuous improvement and open discussion.

Application:

- Teams reflect on how they collaborate and make decisions.
- Often facilitated using lean/agile retrospective formats.
- Focus on psychological safety and team learning.

6. Explicit Policies

Purpose: Set clear team agreements on how work gets done.

Application:

- Policies like WIP limits, Definition of Done, pull rules.
- Shared understanding reduces friction and improves decision-making.
- Written on the board or in the team charter.

7. Kanban Cadences Chart (for team roles)

Purpose: Aligns recurring meetings with team responsibilities.

Application:

- Each cadence supports a different type of decision.
- Helps decide who should be involved in what.
- Cadences include Strategy Review, Risk Review, Operations Review, etc.

Decision-Making Tools & Approaches

1. Work Item Prioritization Frameworks

Tools like:

- WSJF (Weighted Shortest Job First)
- Cost of Delay
- Class of Service

Help teams decide what to pull and when, based on real value.

2. Decentralized Decision-Making

Purpose: Empower individuals and sub-teams.

Application:

- Use Kanban Board visibility and explicit policies to allow autonomous decisions.
- Reduces bottlenecks and over-reliance on leadership.

3. Risk Review Meetings

Purpose: Proactively manage risk.

Application:

- Identify risky or uncertain work early.
- Make collaborative decisions on mitigation or escalation.

4. Obeya Room (Big Visual Room) — Optional Advanced

Purpose: Cross-functional collaboration for strategic alignment.

Application:

- Shared space with visuals, metrics, goals.
- Used in larger, scaled Kanban environments.

Summary Table:

Tool/Practice	Type	Helps With
Kanban Board	Visual	Team alignment, transparency
Daily Standups	Meeting	Flow coordination, blockers
Service Delivery Review	Meeting	Performance decisions
Replenishment Meeting	Meeting	Work selection & prioritization
Explicit Policies	Agreement	Consistent decision rules
Metrics (Lead Time, CFD, etc.)	Data Tool	Informed discussions
Feedback Loops/Retros	Meeting	Continuous improvement
Prioritization Models (WSJF, etc.)	Framework	Decision-making logic

Table 7-1: Collaboration and Decision-Making Tools - Summary

7.1.2.5 Team Selection Criteria

Unlike Scrum, Kanban does not require specific roles or fixed teams, so the team selection criteria for forming Kanban teams are more flexible — but they should still be intentional and aligned with the flow of work.

1. Alignment with the Value Stream

Why: Kanban teams should be formed around services or value streams, not arbitrary org charts.

Look for:

- People who contribute to the flow of a particular type of work.
- Ability to manage a shared backlog of customer requests from start to finish.

2. Cross-Functional Coverage (as Needed)

Why: Even though Kanban can work with specialized roles, it's ideal to cover all skills needed to move work to "done."

Look for:

- Skills balance across analysis, design, development, testing, support, etc.
- T-shaped individuals for flexibility.

3. Workload Capacity and Availability

Why: Kanban uses real capacity to guide work intake.

Look for:

- Team members who have bandwidth and time to contribute meaningfully.
- Avoid overloading individuals with multiple team commitments.

4. Collaboration Willingness

Why: Kanban relies on shared ownership and flow-based thinking.

Look for:

- Team members who are comfortable with transparency and collaboration.
- Willingness to engage in daily standups, retrospectives, and feedback.

5. Systems Thinking & Flow Awareness

Why: Kanban teams are expected to manage and optimize flow, not just do Tasks.

Look for:

- Ability to understand the bigger picture beyond personal Task lists.
- Open to metrics like lead time, throughput, WIP limits.

6. Commitment to Continuous Improvement

Why: Kaizen (continuous improvement) is a core Kanban principle.

Look for:

- People who are open to retrospectives, experiments, and adjusting Workflows.
- Constructive mindset toward feedback.

7. Role Flexibility (Nice to Have)

Why: Work often shifts dynamically in Kanban.

Look for:

- Individuals who are okay stepping out of strict role boundaries when needed (e.g., a dev helping with testing).

8. Clear Customer or Stakeholder Interface

Why: Teams need a way to manage incoming requests.

Look for:

- Someone who can act as a Service Request Manager or represent the customer's voice.

Traits of Ideal Kanban Team Members

Criteria	Must Have / Nice to Have	Notes
Contributes to value stream	Must	Core team function
Availability (capacity)	Must	Part-time OK if realistic
Skill coverage for Workflows	Must	Can include specialized roles
Collaboration mindset	Must	For meetings, feedback
Systems thinking	Must	Understands dependencies
Flexible role boundaries	Recommended	Encourages agility
Open to improvement	Must	Key for team growth

Table 7-2: Traits of Ideal Kanban Team Members

7.1.2.6 AI-enabled Digital Kanban Tool

An AI-enabled digital Kanban tool enhances team formation by analyzing Workflows data, skill sets, and workload capacity to suggest optimal team compositions. It leverages predictive analytics to forecast delivery timelines and identify potential bottlenecks. These tools support intelligent Task assignment, real-time collaboration insights, and continuous improvement by automating feedback loops. By using AI, organizations can form balanced, efficient Kanban teams aligned with the value stream, leading to improved productivity, agility, and decision-making in dynamic environments.

Figure 7-6 shows Vabro's workspace setup interface with a progress pop-up. It displays the "Human Resources" workspace being configured with suggested templates, while a modal window indicates that the setup is 40% complete and in progress.

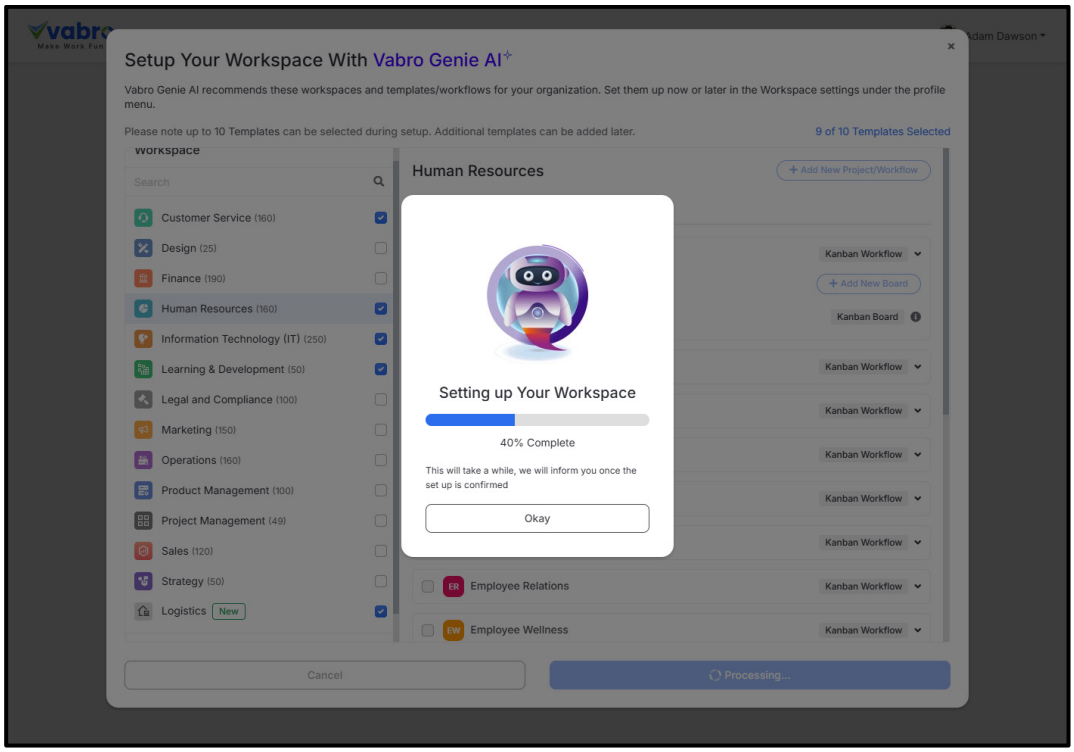

Figure 7-6: Use of AI in Digital Kanban Tool (Source: Vabro)

7.1.3 Outputs

7.1.3.1 Identified Kanban Team*

The Product Owner reviews the current team structure and roles to identify suitable candidates for the Kanban Manager and Kanban Team Members. This evaluation ensures that the selected individuals align with Workflows needs and possess the necessary skills to effectively contribute to the success of Kanban initiatives.

This process results in the finalization of the Kanban team, which includes the Product Owner, Kanban Manager, and Kanban Team Members.

For more information on the Kanban Team, see section 3.1.

7.2 Optimize Workflows and Determine Stakeholders

To effectively implement Kanban, it is essential to start by reviewing and understanding existing Workflows. This involves mapping current processes, identifying bottlenecks and delays, and assessing value streams. By analyzing these elements, organizations can pinpoint areas where Kanban principles can be applied to streamline processes, reduce waste, and improve efficiency. Stakeholders in Kanban include the customers, leadership, project sponsors, and any individuals impacted by or influencing Kanban Workflow outcomes. Determining stakeholders and involving stakeholders to optimize Workflows is crucial to ensure buy-in and facilitate smooth implementation.

In this process, the Kanban Team and stakeholders work together to determine an improved Workflows for Kanban implementation. It is important to break down work into smaller, manageable units, such as Task Groups and Tasks. A visual Kanban Board should be created with columns representing different Workflows stages, such as “To Do,” “In Progress,” and “Done.” To prevent overloading and improve focus, work-in-progress (WIP) limits should be set for each column.

Clear Workflows rules and policies should also be defined to govern the movement of Work Items between columns and to handle exceptions. Continuous monitoring and improvement are critical; regular retrospectives and feedback loops help identify areas for optimization. By iteratively refining the Workflows, organizations can achieve significant improvements in efficiency, quality, and customer satisfaction through Kanban implementation.

Figure 7-7 shows all the inputs, tools, and outputs for *Optimize Workflows and Determine Stakeholders* process.

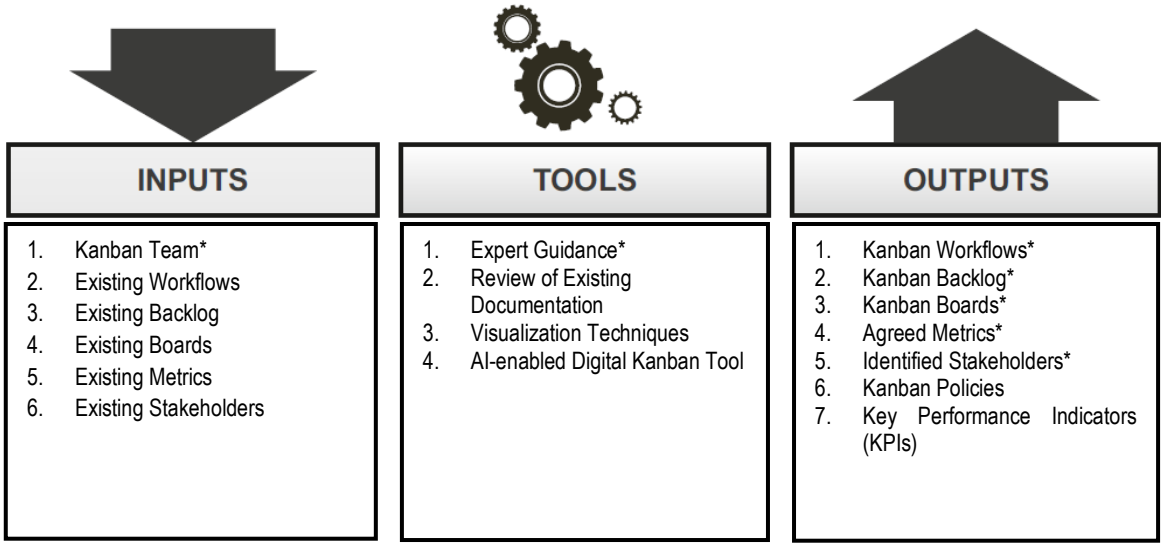

Figure 7-7: Optimize Workflows and Determine Stakeholders—Inputs, Tools, and Outputs

Note: Asterisks (*) denote a “mandatory” input, tool, or output for the corresponding process.

7.2.1 Inputs

7.2.1.1 Kanban Team*

For more information, see section 3.1.

7.2.1.2 Existing Workflows

Existing Workflows, if already in place, serve as critical inputs to the Optimize Workflows and Determine Stakeholders process. They provide insights into current practices, bottlenecks, and inefficiencies, enabling the team to make data-driven improvements. Analyzing these Workflows helps align future processes with actual work patterns and enhances overall efficiency and flow.

For more information, see section 3.4.2.

7.2.1.3 Existing Backlogs

The existing Kanban Backlog, if already available, serves as a valuable input to the Optimize Workflows process. It offers visibility into pending work, prioritization patterns, and flow issues. Analyzing the backlog helps identify inefficiencies, refine Work Item types, and ensure smoother, more predictable delivery in future Workflows iterations.

For more information, see section 3.4.3.

7.2.1.4 Existing Boards

The existing Kanban Backlog, if already available, serves as a valuable input to the Optimize Workflows process. It offers visibility into pending work, prioritization patterns, and flow issues. Analyzing the backlog helps identify inefficiencies, refine Work Item types, and ensure smoother, more predictable delivery in future Workflows iterations.

For more information, see section 3.4.4.

7.2.1.5 Existing Metrics

The Existing Metrics refer to the current performance indicators used to measure the effectiveness of the Workflows. These metrics may include lead time, cycle time, and throughput. Analyzing these metrics provides valuable insights into the current state of the Workflows, helping to identify areas for improvement. It is important to select metrics that are aligned with the organization's goals and can be easily tracked and measured.

For more information, see section 4.1.

7.2.1.6 Existing Stakeholders

Where existing stakeholders are associated with a Workflows or process targeted for optimization, their early engagement is essential to gather input and ensure alignment.

For more information, see sections 3.2.

7.2.2 Tools

7.2.2.1 Expert Guidance*

Expert guidance plays a critical role in enhancing the effectiveness of Kanban Workflows. Experienced professionals help teams assess their current Workflows, identify bottlenecks, and uncover inefficiencies that may hinder progress. They facilitate a comprehensive review process, ensuring alignment with organizational goals and industry best practices. Experts provide valuable insights into optimizing work-in-progress (WIP) limits, improving Task prioritization, and ensuring smoother Task flow across Kanban Boards.

Additionally, they guide teams in leveraging data-driven metrics such as lead time, cycle time, and throughput to monitor performance and make informed decisions. Through collaborative workshops and retrospective meetings, experts foster a culture of continuous improvement, encouraging teams to adapt their processes based on evolving needs. Their external perspective helps teams identify hidden issues and implement tailored solutions that enhance Workflows efficiency, ultimately driving better delivery outcomes and supporting sustainable growth within the organization.

Here is a step-by-step guide on how to plan for improving processes in a Kanban system—whether optimizing an existing Board or starting from a basic setup:

1. Understand the Current Workflows

- Map out the actual steps Tasks go through (even informal ones).
- Identify stakeholders, handoffs, wait times, and frequent blockers.

2. Visualize the Workflows

- Translate the current Workflows onto a Kanban Board with meaningful columns (e.g., “Ready,” “In Progress,” “Review,” “Done”).
- Add swimlanes or tags to distinguish types of work (e.g., bugs, features, enhancements).

3. Set Clear Goals

Decide what you're optimizing for:

- Faster delivery?
- Fewer bottlenecks?
- More predictable flow?

Align with team and stakeholder priorities.

4. Apply WIP Limits Thoughtfully

- Add Work-In-Progress (WIP) limits to identify overloading or stalled work.
- Start with soft limits, adjust as needed.

5. Measure Key Metrics

- Cycle Time: How long it takes to complete a Task once it starts.
- Lead Time: From request to delivery.
- Throughput: How many Tasks are completed over time.
- Use tools like Cumulative Flow Diagrams (CFD) to track trends.

6. Identify Bottlenecks & Waste

- Watch where work gets stuck or sits idle.
- Look for duplicate steps, unclear ownership, or excessive review cycles.

7. Engage the Team and Stakeholders

- Gather input from everyone involved in the process.
- Facilitate collaborative discussions about pain points and ideas.

8. Experiment and Iterate

- Introduce small changes (e.g., new policy, automation, lane split).
- Track their impact before committing long-term.

9. Hold Regular Retrospectives

- Review what's working and what's not.
- Create an improvement backlog (Kaizen mindset).

10. Make Policies Explicit

- Document rules clearly (e.g., "No more than 3 items in QA," or "Code must be peer-reviewed before Done").

7.2.2.2 Review of Existing Documentation

Reviewing existing documentation, such as process manuals, standard operating procedures, or Workflows plans, can provide a baseline understanding of the current Workflows and help identify areas for potential improvement. It can also highlight existing challenges or constraints.

7.2.2.3 Visualization Techniques

Using tools like flowcharts, swimlane diagrams, or Kanban Boards to visualize the Workflows can help identify bottlenecks, inefficiencies, and opportunities for improvement. It also increases team visibility and enhances understanding of the work.

Visualization techniques include:

- **Value Stream Mapping(VSM):**

  Value Stream Mapping is a Lean management method that visually maps the steps required to deliver a product or service, from start to finish. Each step is categorized as either:

  - Value-Added (VA) – Directly contributes to customer value.
  - Non-Value-Added (NVA) – Does not add customer value (e.g., wait time, rework, approvals).

  In a Kanban context, VSM helps you optimize flow by focusing on Workflows efficiency rather than just Task management.

Key Components of a VSM in Kanban

1. Customer Need / Trigger

- Start point of the value stream (e.g., customer request or internal demand)

2. Process Steps

- Represented as boxes or stages in your Kanban Board (e.g., "Design", "Develop", "Review", "Deploy")

3. Information Flow

- Shows how Tasks are triggered, assigned, or updated (e.g., automated notifications, meetings)

4. Material or Work Item Flow

- The actual movement of work through stages—your Kanban cards moving across columns.

5. Cycle Time / Lead Time

- Time taken for each step and the full process (lead time = request to delivery)

6. Wait Time

- Time work sits idle between stages (revealed through analysis of queues in Kanban)

7. Value-Added vs. Non-Value-Added Time

- Helps calculate process efficiency

How to Create a VSM in a Kanban System

Step 1: Map the Current Workflows

- Use your Kanban Board as the base.
- Note each stage as a process box.
- Include swimlanes for types of work (optional).

Step 2: Collect Data

Use metrics like:

- Lead time per card
- Time spent in each column
- Bottlenecks (work piling up)
- Blocked Tasks
- Rework frequency

Step 3: Identify Value vs. Waste

Analyze each stage:

- Does this step add value to the end user?

- Is this step required for compliance or internal needs?
- Can we streamline or eliminate it?

Step 4: Calculate Flow Efficiency

$$\text{Flow Efficiency} = \frac{\text{Total Value-Added Time}}{\text{Total Lead Time}} \times 100$$

Low efficiency = High wait or waste time.

Step 5: Propose Improvements

Ideas might include:

- Reducing WIP
- Automating handoffs
- Removing redundant steps
- Improving Task definitions

Step 6: Iterate and Re-measure

- Use retrospectives and metrics to monitor improvements over time.
- Keep your VSM updated.

Benefits of Using VSM in Kanban

- Better visibility into how work really flows
- Identifies waste and inefficiency
- Highlights bottlenecks and blockers
- Improves decision-making with real data
- Supports continuous improvement and Lean thinking

Example of Value Stream Mapping of a Software Development Kanban Board

Step	Avg. Time	Value-Added?	Comments
Backlog	—	No	Queuing delay
Ready for Dev	1 day	No	Waiting for team availability
In Progress	3 days	Yes	Active coding
Code Review	2 days	Partial	Quality control
QA	2 days	Partial	Functional testing
Ready to Deploy	1 day	No	Waiting for release slot
Deployed	—	Yes	Delivered value

Table 7-3: Example of Value Stream Mapping

Flow efficiency here might be ~43%, meaning over half of the process time is non-value added.

- **Flowcharts:** A flowchart is a powerful visualization technique used to review and improve Workflows in Kanban. It visually maps the sequence of Tasks, decision points, and process steps, enabling teams to identify bottlenecks, redundancies, or delays. By illustrating the flow of work, a flowchart helps teams analyze Task progression, streamline processes, and enhance efficiency. It fosters better understanding, supports data-driven decisions, and promotes continuous improvement in Kanban Workflows management. Flowcharts illustrate the sequence of steps and decisions within a process. Tools like Lucidchart, Microsoft Visio, and Draw.io are popular for creating flowcharts.

Figure 7-8 shows a flowchart that outlines a healthcare process: patients schedule appointments, check in, and are assessed for urgency. Based on results, they receive treatment or emergency care, ending with discharge from the facility.

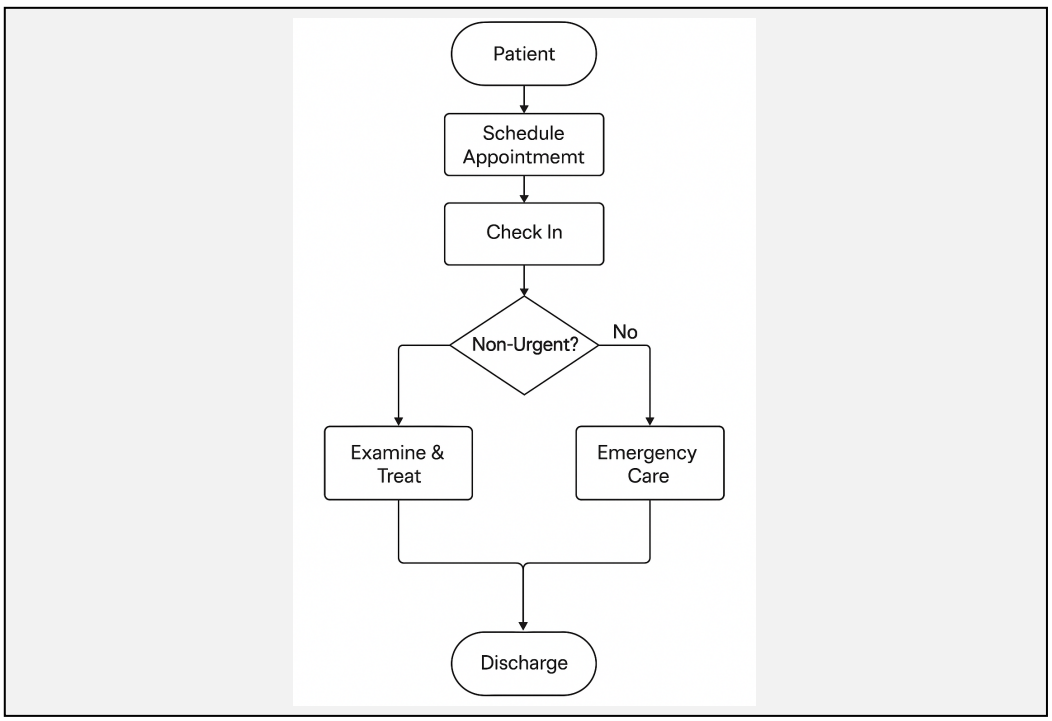

Figure 7-8: Flowchart for patients in the healthcare industry

- **Swimlane Diagrams:** A swimlane is a visual aid used in various Workflows and processes to categorize and organize Task Groups or Tasks based on specific criteria. Swimlanes are represented as horizontal sections within Workflows management tools. For more information, see section 3.5.3.2.

Figure 7-9 shows a swimlane diagram that illustrates order processing: the customer submits an order, sales prepares an invoice, the warehouse ships the order, and sales sends the invoice upon order confirmation.

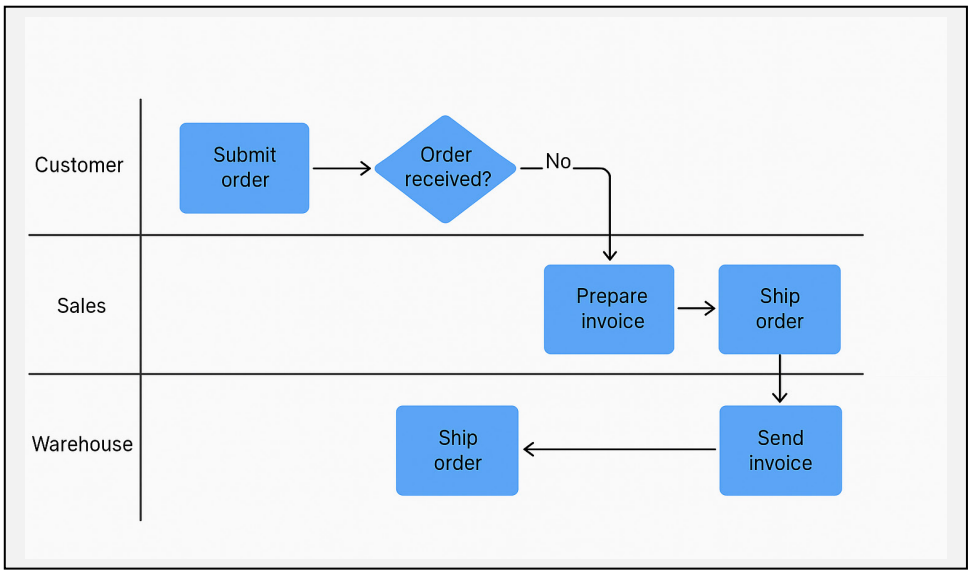

Figure 7-9: Simplified Swimlane Diagram

- **Process Maps:** Process maps graphically represent each step in a process, highlighting the flow of Tasks from initiation to completion. By mapping out the entire process, teams can easily identify bottlenecks, inefficiencies, or areas causing delays. Process maps provide clarity on Task dependencies and handoffs, enabling teams to optimize their Workflows. They support data-driven analysis, help eliminate waste and promote continuous improvement. Using process maps, teams gain a clearer understanding of their Workflows, ensuring better alignment with Kanban principles and enhancing overall delivery efficiency and performance. Process Maps provide more detailed insights than flowcharts, including specific information about each step in a process.

Figure 7-10 shows a Process Map that visualizes a software development workflow: from backlog to deployment, moving tasks through development, peer review, QA/testing, and finally marking them as done after successful delivery.

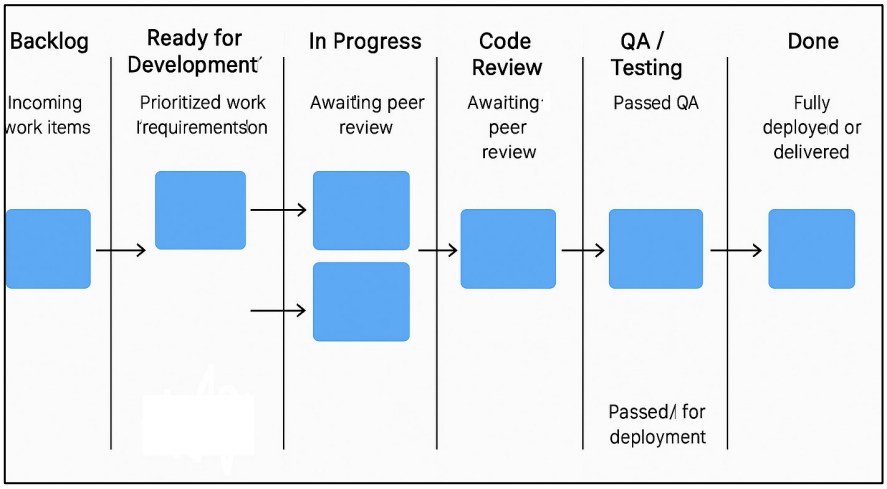

Figure 7-10: Process Map for a Small Delivery Project

Visualization techniques can be used to map out the existing Workflows in the following ways:

- Identify Steps: List all steps involved in the Workflows, from start to finish. For example: in a software development team using Kanban, the Workflows steps could include: Backlog Refinement → Task Prioritization → Development → Code Review → Testing → Deployment.

- Determine Inputs and Outputs: Specify the inputs required at each step and the outputs produced. For example:
    - Development Step: Input – detailed requirements and design specifications; Output – developed feature ready for review.
    - Testing Step: Input – developed code; Output – validated, bug-free feature ready for deployment. Mapping inputs and outputs reveals dependencies and potential gaps that could disrupt the flow.
- Define Roles: Identify who is responsible for each step in the process. For example, in the same software development process:
    - Developers are responsible for “Development.”
    - QA Testers handle “Testing.”
    - Release Managers oversee “Deployment.” Clearly associating Tasks with roles prevents confusion, ensures accountability, and improves handoffs between team members.

Combining these visualization techniques enables teams to better understand their Workflows, uncover inefficiencies, and implement targeted improvements.

7.2.2.4 AI-enabled Digital Kanban Tool

An AI-enabled digital Kanban tool enhances Workflows optimization by integrating artificial intelligence to streamline Task management, predict bottlenecks, and improve efficiency.

Figure 7-11 shows how Vabro Genie AI simplifies Kanban Workflows setup by recommending tailored workspaces and templates. Users can efficiently select and configure Workflows for departments like HR, IT, and Finance, enhancing productivity and automation.

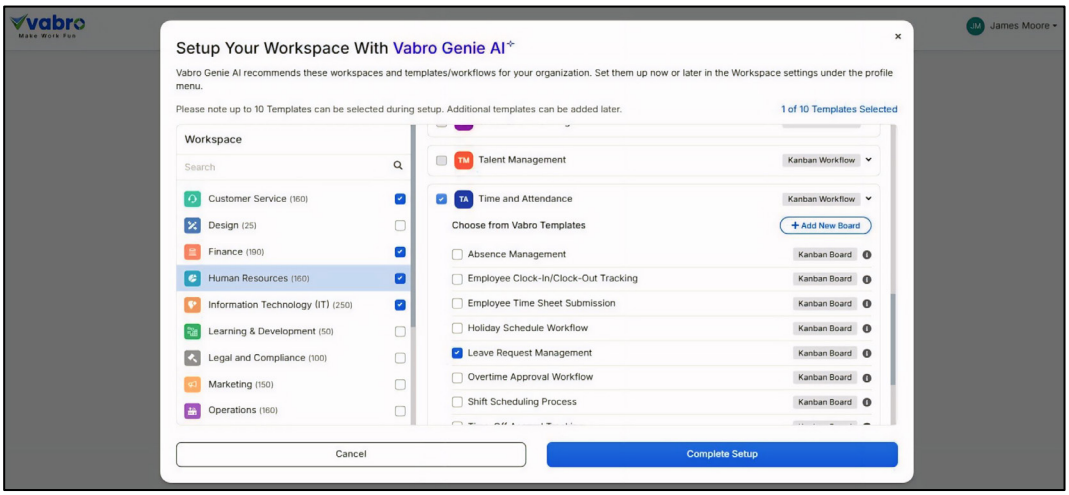

Figure 7-11: Workflows Setup using AI (Source: Vabro)

AI can analyze existing Workflows to clone similar Workflows in the future, ensuring consistency and efficiency across different Workflows or initiative. It also suggests best practices for Workflows across various solutions and workspaces, optimizing processes dynamically.

Figure 7-12 shows how Vabro Genie AI simplifies Workflows creation by allowing users to clone entire Workflows or customize specific properties like Tasks, approvals, priorities, and dependencies. This feature streamlines process replication, ensuring efficiency and consistency.

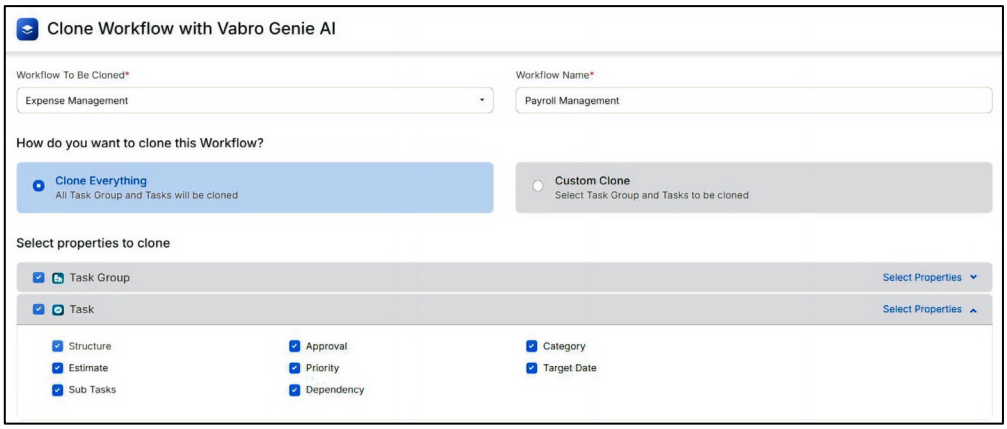

Figure 7-12: Cloning a Workflows using AI (Source: Vabro)

By continuously analyzing work patterns, AI identifies bottlenecks, improvement opportunities, and strategies to boost productivity and ROI. Real-time insights, predictive analytics, and automation empower teams to refine Workflows, enhance collaboration, and maintain agility.

7.2.3 Outputs

7.2.3.1 Kanban Workflows*

A Kanban Workflows visualizes Tasks, enhances transparency, identifies bottlenecks, and supports continuous improvement, aligning stakeholders and optimizing processes for efficient, collaborative work management.

Kanban Workflows is described in Section 3.4.2.

7.2.3.2 Kanban Backlog*

A Kanban backlog, created through Optimize Workflows and Determine Stakeholders process, organizes and prioritizes Tasks, ensuring clarity, alignment, and efficient Task flow to support continuous improvement and effective project execution.

Kanban Backlog is described in Section 3.4.3.

7.2.3.3 Kanban Board*

A Kanban Board provides a visual representation of Tasks across various stages. It enhances transparency, facilitates collaboration, and aligns team efforts. By incorporating stakeholder input, the board supports prioritized Task management, identifies bottlenecks, and promotes continuous delivery and process improvement.

Kanban Board is described in Section 3.4.4.

7.2.3.4 Agreed Metrics*

Agreed Metrics are a set of metrics used to measure the performance of Kanban implementation. These metrics should align with the organization's strategic goals and be easy to track and interpret. They should be reviewed regularly and adjusted as needed to ensure continued relevance.

For more information about Metrics, see section 4.1.

7.2.3.5 Identified Stakeholders*

Identified Stakeholders are key individuals or groups with a vested interest in the Kanban initiative. Recognizing them ensures clear communication, aligns expectations, and supports effective decision-making. Their input is crucial for refining Workflows, setting priorities, and achieving successful Kanban outcomes.

The Stakeholders role is described in Section 3.2.

7.2.3.6 Kanban Policies

Although not mandatory, it is recommended to create Kanban policies that are relevant to specific Kanban teams or even to the broader organizational hierarchy.

Kanban policies are formal rules and guidelines that govern how work is managed and moved across a Kanban system. These policies help teams align on expectations, ensure consistent decision-making, and foster transparency in Workflows. Below is a detailed and formal description of Kanban policies:

Kanban policies are explicit agreements that define how tasks are handled within each stage of a Kanban Workflow. These rules clarify when and how work items can be started, advanced, paused, or completed, ensuring uniformity and predictability in the process.

Key Characteristics of Kanban Policies

- Explicit
  Policies must be clearly documented and visible to all team members. Ambiguity is avoided to ensure consistency.

- Agreed Upon
  All stakeholders should be involved in the creation and maintenance of policies to encourage ownership and adherence.

- Transparent
  Policies should be posted prominently on the Kanban board (physical or digital) so that team members and external stakeholders understand how work is processed.

- Context-Sensitive
  Policies are tailored to fit the specific nature of the team's Workflow, domain, and work item types.

Common Types of Kanban Policies

- Entry and Exit Criteria (Definition of Ready / Done):
- Define what must be true before a work item can enter a column (e.g., "In Progress").
- Define what must be completed before moving the item to the next stage (e.g., tests passed, peer review complete).
- Work-In-Progress (WIP) Limits:
- Set a maximum number of items allowed in a column or swimlane to manage capacity and prevent overburdening.

Class of Service Policies:

- Define how different types of work items (e.g., standard, fixed date, expedite) are prioritized and handled.
- Pull Criteria: Establish rules for when team members can pull new work into a stage, based on availability and readiness.
- Escalation Rules: Define how blockers, delays, or urgent tasks should be managed and escalated.
- Replenishment and Commitment Policies: Describe how and when the team selects new items to enter the Workflow (e.g., weekly replenishment meeting).

Benefits of Formal Kanban Policies

- Predictability: Enhances the reliability of delivery by standardizing decision-making.
- Accountability: Clarifies responsibilities at each Workflow stage.
- Improved Flow: Reduces waste and delays by defining smooth handoffs.
- Continuous Improvement: Provides a baseline for evaluating Workflow efficiency and identifying improvements.

Example of Kanban Policies for a particular column in a Kanban Board:

Column: "In Development"

Entry Criteria:

- Work item has been selected during the replenishment meeting.
- Acceptance criteria are defined.
- No unresolved dependencies.

Exit Criteria:

- Code is written and unit tested.
- Code has been committed to the repository.
- Peer review is completed.

WIP Limit: 3 items

Pull Policy: Developers pull the next highest-priority item when capacity is available.

7.2.3.7 Key Performance Indicators (KPIs)

Kanban Metrics and Key Performance Indicators (KPIs) both provide valuable insights into the performance of a team, but they serve different purposes. While they can overlap in some areas, the key difference lies in their scope and application. Kanban Metrics are used to measure how effectively the team is managing its Workflow and delivery process on a micro level. KPIs, on the other hand, are focused on high-level organizational goals and customer satisfaction. Together, they form a comprehensive approach for continuous improvement: Kanban Metrics help optimize the system's flow, and KPIs ensure that the overall business goals are being met.

Kanban Metrics are specific to the Kanban method and focus on improving the flow of work within the system. They help teams visualize, manage, and optimize their Workflow by focusing on process improvement and cycle efficiency. Important Kanban Metrics are described in Section 4.2.

KPIs are broader, more strategic metrics that reflect the team's or organization's overall success in meeting business goals. While Kanban Metrics focus on operational flow, KPIs focus on business outcomes.

Key KPIs for Kanban Teams:

Customer Satisfaction

- Definition: A measure of how happy the customer is with the product, service, or feature delivered.

- Purpose: Directly correlates to the value delivered. Happy customers are a key indicator of success.
- Usage: Often measured through surveys (e.g., Net Promoter Score) or feedback loops.

Delivery Predictability

- Definition: How accurately the team can predict delivery timelines.
- Purpose: Predictability builds stakeholder trust and helps plan future work more effectively.
- Usage: This is measured by comparing the predicted delivery dates against actual delivery dates over time.

Time to Market

- Definition: The time it takes from idea conception to the release of a product or feature.
- Purpose: Measures the speed of delivery for new features or products.
- Usage: A shorter time to market provides a competitive advantage, allowing teams to respond faster to customer needs.

Quality Metrics

- Definition: Metrics related to the quality of the delivered work, such as defect rates, rework, or bug counts.
- Purpose: Ensures that the speed of delivery does not sacrifice quality.
- Usage: Can be tracked through defect density, number of critical bugs, or post-release defects.

Cost of Delay (CoD)

- Definition: The financial or business cost incurred from delaying a work item or feature.
- Purpose: Highlights the business impact of delays, helping prioritize work that brings the highest value.
- Usage: Helps decision-makers understand the urgency of specific work items.

Team Engagement or Happiness

- Definition: A measure of how motivated, engaged, or satisfied the team members are.
- Purpose: A happy, engaged team is more productive and collaborative.
- Usage: Can be measured through surveys, pulse checks, or feedback loops within retrospectives.

Key Differences Between Kanban Metrics and KPIs:

Aspect	Kanban Metrics	Key Performance Indicators (KPIs)
Focus	Process optimization and flow efficiency	Business outcomes and strategic goals
Scope	Operational level, tracking flow within the system	Broader, organizational, or team-level strategic measures
Examples	Cycle Time, Lead Time, Throughput, WIP, CFD	Customer Satisfaction, Delivery Predictability, Time to Market

Aspect	Kanban Metrics	Key Performance Indicators (KPIs)
Purpose	Optimize Workflow, identify bottlenecks, improve delivery speed	Measure business performance, track goal alignment
Usage	Focus on day-to-day operations and process improvement	Focus on long-term outcomes, business value, and success
Measurement Frequency	Real-time or short-term tracking	Periodic tracking (monthly, quarterly, etc.)
Audience	Team members, Kanban coaches	Stakeholders, leadership, business managers

Table 7-4: Differences Between Kanban Metrics and KPIs

How Kanban Metrics Feed into KPIs:

While Kanban Metrics are operational tools used for real-time process improvement, they ultimately feed into KPIs, helping teams and organizations align their daily performance with their strategic goals. For example:

- Lead Time and Cycle Time help improve Delivery Predictability.
- Throughput and Flow Efficiency contribute to the Time to Market by improving how quickly the team can complete work.
- WIP control can reduce bottlenecks, directly affecting the Cost of Delay and Customer Satisfaction.

By improving Kanban Metrics, a team can enhance its ability to meet the broader KPIs, ensuring that the business delivers value efficiently and predictably.

8 EXECUTE

This chapter includes the process related to execution of a Kanban initiative: Get Work Done.

Execute, as defined in *the Kanban Body of Knowledge (KBOK™)*, is applicable to the following:

- Kanban initiatives in *any* industry
- Products, services, or any other results to be delivered to Stakeholders
- Kanban Initiatives of any size or complexity

Kanban can be applied effectively to any initiative in any industry—from small initiatives or teams with as few as two team members to large, complex initiatives with up to several thousand members in several teams. To facilitate the best application of the Kanban framework, this chapter identifies inputs, tools, and outputs for each process as either "mandatory" or "optional." Inputs, tools, and outputs denoted by asterisks (*) are mandatory, or considered critical to success, whereas those with no asterisks are optional. It is recommended that the inexperienced Kanban practitioners and those individuals being introduced to the Kanban framework and processes focus primarily on the mandatory inputs, tools, and outputs; while experienced Kanban professionals, including Sponsors and relevant Stakeholders strive to attain a more thorough knowledge of the information in this entire chapter.

This chapter is written from the perspective of a single Kanban initiative within the company or a specific department and follows:

- The *Setup* chapter, where the Kanban function is established for the entire organization or a specific department.
- The *Plan* chapter, where the Kanban Team is formed, stakeholders are identified and optimized Kanban Workflows are created

The outputs from this chapter will serve as valid inputs to *Enhance* (Chapter 9) which is discussed in the next chapter.

In the Execute phase, the Kanban team regularly reviews the Kanban Backlog to prioritize upcoming work and assesses the Kanban Board to track tasks in progress. The team ensures that work items are clear, manageable, and ready to be pulled into the relevant To Do column when there is capacity. As tasks move through the Workflow, from To Do to In Progress and finally to Done, the team focuses on completing each item efficiently. Regular reviews help identify bottlenecks, optimize flow, and maintain a steady pace of output. Completed Work Items are the primary output, driving the team's overall progress. The goal of the Execute phase is to get work done for the Kanban Initiative and create Completed Work Items.

It is also important to realize that although all phases and processes are defined uniquely in the Kanban Body of Knowledge, they are not necessarily performed sequentially or separately. At times, it may be more appropriate to combine some phases and/or processes, depending on the specific needs of each initiative.

Figure 8-1 provides an overview of the Execute phase process, which is as follows:

8.1 Get Work Done—In this process, the Kanban Team regularly reviews the Kanban Backlog to prioritize upcoming tasks and tracks progress on the Kanban Board. Work items are pulled into the To Do column when there's capacity. As tasks move through the Workflow—from To Do to In Progress to Done—the team focuses on efficient completion. Regular reviews help identify bottlenecks, optimize flow, and maintain a steady output. Completed Work Items drive the team's overall progress.

Figure 8-1 shows all the inputs, tools, and outputs for processes in the Execute phase.

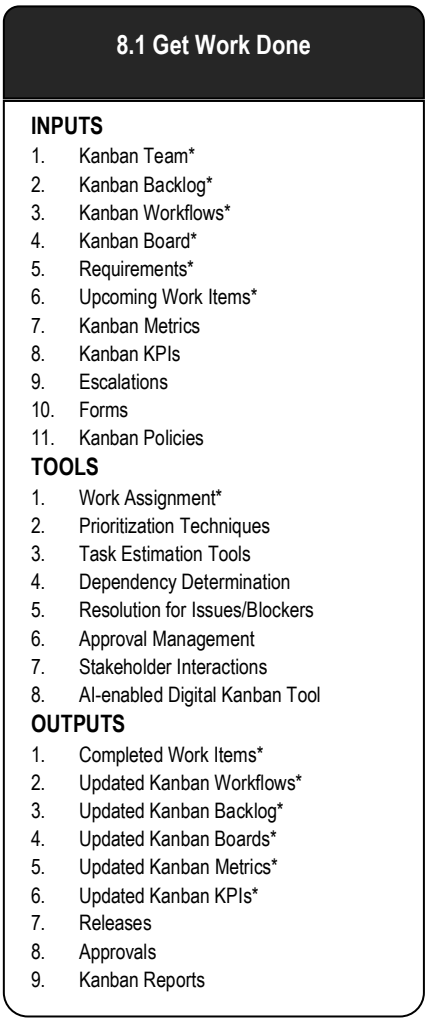

Figure 8-1: Overview of Execute Phase Processes

Note: Asterisks (*) denote a "mandatory" input, tool, or output for the corresponding process.

Figure 8-2 below shows the mandatory inputs, tools, and outputs for processes in Execute phase.

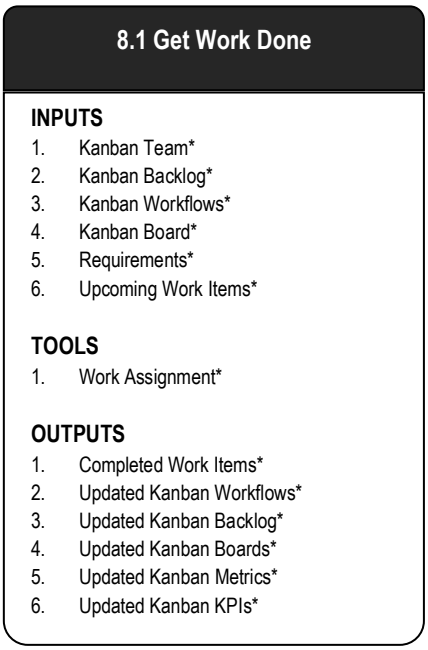

Figure 8-2: Overview of Execute Phase Processes (Essentials)

Note: Asterisks (*) denote a "mandatory" input, tool, or output for the corresponding process.

8.1 Get Work Done

In this process, the Kanban team regularly reviews the Kanban Backlog to prioritize upcoming work and assesses the Kanban Board to track tasks in progress. The team ensures that work items are clear, manageable, and ready to be pulled into the relevant To Do column when there is capacity. As tasks move through the Workflow, from To Do to In Progress and finally to Done, the team focuses on completing each item efficiently. Regular reviews help identify bottlenecks, optimize flow, and maintain a steady pace of output. Completed Work Items are the primary output, driving the team's overall progress.

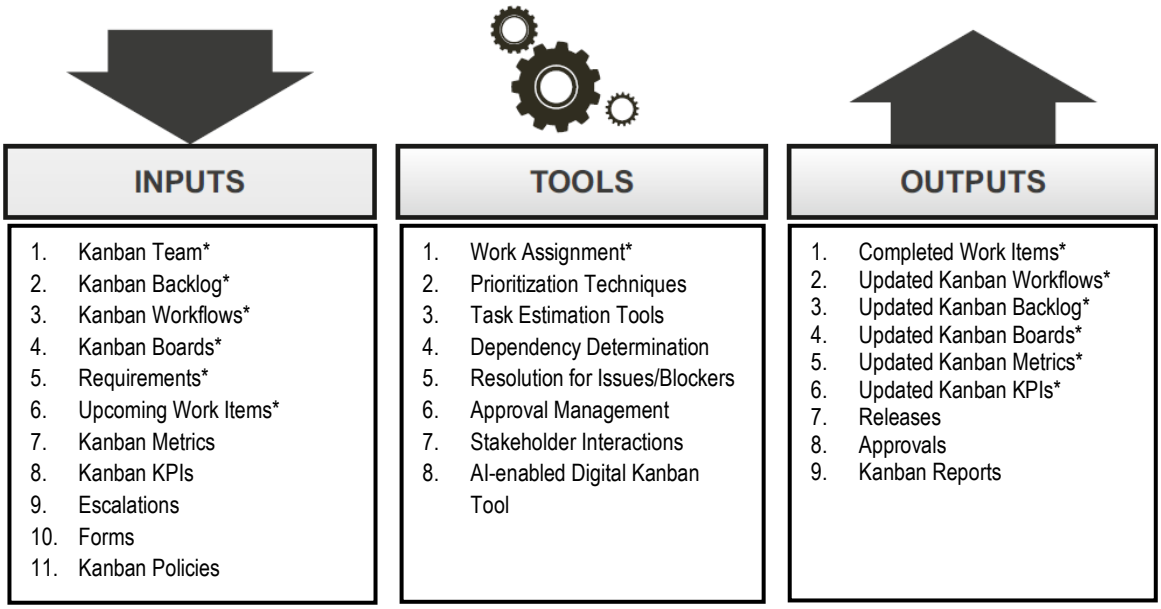

Figure 8-3: Optimize Workflows and Determine Stakeholders—Inputs, Tools, and Outputs

Note: Asterisks (*) denote a "mandatory" input, tool, or output for the corresponding process.

8.1.1 Inputs

8.1.1.1 Kanban Team*

Kanban Team pulls prioritized work, collaborates continuously, manages flow, limits work in progress, and delivers value iteratively, ensuring efficient execution within the 'Get Work Done' process.

For more information, see section 3.1.

8.1.1.2 Kanban Backlog*

Kanban backlog provides a prioritized, visible queue of Work Items, enabling the team to pull Tasks, manage flow, and deliver value efficiently in the process.

For more information, see section 3.5.2.

8.1.1.3 Kanban Workflows*

Kanban Workflows defines stages, policies, and transitions for Work Items, guiding the team in managing flow, ensuring clarity, and promoting efficiency in getting work done.

For more information, see section 3.5.1.

8.1.1.4 Kanban Boards*

The Kanban Board visualizes work, stages, and flow, enabling the team to track progress, identify bottlenecks, and manage Tasks effectively, ensuring transparency and alignment in the 'Get Work Done' process.

For more information, see section 3.5.1.

8.1.1.5 Requirements*

Requirements, whether they come from customers, internal stakeholders, regulatory bodies, or other sources, serve as the foundation for creating Work Items. These requirements are analyzed and translated into specific Task Groups, Tasks or User Stories that can be added to the Kanban Backlog or Kanban Board. A clear understanding of requirements is crucial for ensuring that the team is working on the right things and delivering value to the customer.

8.1.1.6 Upcoming Work Items*

Upcoming Work Items in Kanban act as prioritized inputs to the Get Work Done process, enabling smooth Task selection and continuous Workflows based on team capacity. They are derived from Requirements, as mentioned in Section 8.1.1.5.

Managing Upcoming Work Items in Kanban is described in Section 3.5.4.

8.1.1.7 Kanban Metrics

Kanban Metrics, like cycle time, lead time, and throughput, provide real-time insights into Workflow efficiency. By analyzing these metrics, teams can identify bottlenecks, optimize processes, manage WIP limits, and ensure smoother, faster delivery of work items in Kanban.

For more information, see section 4.2.

8.1.1.8 Kanban KPIs

Kanban KPIs, such as delivery predictability, customer satisfaction, and time to market, guide prioritization and focus, ensuring that the team aligns work to business goals, improving value delivery and decision-making.

For more information, see section 7.2.5.7.

8.1.1.9 Escalations

Escalations, or issues that require immediate attention, can trigger the creation of new Work Items. When an escalation occurs, a new Task or bug report may be created to address the issue. Escalations help prioritize work and ensure that critical issues are resolved promptly.

For more information, see section 5.4.

8.1.1.10 Forms

Forms provide structured templates for capturing essential work details, ensuring consistency, clarity, and completeness of information. They support efficient Task initiation, tracking, and collaboration throughout the 'Get Work Done' process in Kanban.

For more information, see section 5.3.

8.1.1.11 Kanban Policies

Kanban policies provide clear rules and expectations for how work is handled. They guide team behavior, manage flow, limit work-in-progress, and support collaboration, making them essential for effectively getting work done in Kanban.

For more information, see section 7.2.5.6.

8.1.2 Tools

8.1.2.1 Work Assignment*

Assigning Work Items to specific team members is a crucial step in the Get Work Done process. By considering factors such as skill sets, workload, and dependencies, teams can effectively distribute work and minimize bottlenecks. Proper assignment of Work Items also helps identify potential collaborations and dependencies between team members.

Kanban follows a pull-based system, meaning that work is not assigned to individuals by a manager or lead. Instead, team members pull work from a prioritized backlog or input queue when they have the capacity to do so. In Kanban, work assignment is self-directed, visual, and flow-driven, based on capacity and system constraints. This empowers teams, increases accountability, reduces overload, and leads to more predictable delivery.

Here is a detailed breakdown of how work assignment functions in Kanban:

1. Pull System, Not Push

- In traditional systems, work is "pushed" onto team members, often leading to overload and context switching.
- In Kanban, team members pull work themselves, ensuring they only take on Tasks when they have the capacity and focus.

2. Visualized Workflows on the Kanban Board

- All Work Items are represented as cards on a Kanban Board.
- The board is divided into columns representing stages of the Workflows (e.g., To Do, In Progress, Review, Done).
- This visualization helps team members see where work is, what's available, and what needs attention.

3. Prioritized Backlog/Input Queue

- The Product Owner or customer representative maintains and prioritizes the upcoming work as described in Section 3.5.4.
- Team members typically pull from the top of this queue, ensuring they are working on the most valuable items first.

4. WIP (Work-In-Progress) Limits

- Each stage in the Workflows has a WIP limit, restricting how many items can be in progress at once.
- These limits prevent bottlenecks and ensure focus.
- Team members can only pull new work if it doesn't exceed the WIP limit.

5. Self-Assignment & Collaboration

- Team members choose Work Items based on:
  - Skills and expertise
  - Availability

    - Task priority and urgency
- Collaboration is encouraged, especially on complex or blocked items.

6. Explicit Policies

- Teams define clear policies for when and how items can move between stages.
- This ensures consistency in how work is pulled and completed.

7. Continuous Flow & Improvement

- The goal is to maintain a steady flow of work, reducing idle time and delays.
- Regular stand-ups and retrospectives help adjust the process for better flow and team dynamics.

8.1.2.2 Prioritization Techniques

In Kanban, prioritization is a bit different from other project management methods like Scrum or Waterfall. Instead of relying on fixed-length iterations or detailed upfront planning, Kanban emphasizes continuous flow and visual management. Prioritization in Kanban is dynamic and fluid, allowing teams to respond to changing needs quickly.

Here is a detailed breakdown of prioritization techniques in Kanban:

1. Work Item Types and Classes of Service

Kanban encourages the use of Work Item Types and Classes of Service to manage and prioritize Tasks.

Work Item Types
These are categories of work such as:

- Features
- Bugs
- Technical debt
- Support tickets

Each type may have different priorities or handling procedures.

Classes of Service
Classes of Service define how work is treated. Common examples:

Class of Service	Description	Priority Implication
Expedite	Urgent, critical items that need immediate attention. Only 1 or 2 should exist at a time.	Top priority; jumps the queue
Fixed Date	Must be delivered by a specific date (e.g., compliance Tasks).	Scheduled accordingly to meet the date
Standard	Normal priority Tasks with no fixed date.	Handled in regular flow

Class of Service	Description	Priority Implication
Intangible	Important but not urgent (e.g., tech debt).	Often lower priority but should not be neglected

Table 8-1: Example of Classes of Service

2. Explicit Policies and Pull Criteria

Kanban systems rely on explicit policies for moving Tasks from one column to another. Prioritization occurs at the point of pull (when a team member pulls the next item from the backlog or "Ready" column).

Techniques:

- Define Pull Criteria: Rules that specify which item should be pulled next (e.g., "pull the highest-value item that fits the available skill set").
- Limit WIP (Work in Progress): By limiting WIP, you force prioritization decisions since not everything can be worked on at once.

3. Cost of Delay (CoD) and Weighted Shortest Job First (WSJF)

- **Cost of Delay (CoD)**

  CoD measures the impact of not delivering a feature over time. It's used to decide which Work Item to do first based on value lost if it's delayed.

  Formula:

  Cost of Delay = Business Value + Time Criticality + Risk Reduction/Opportunity Enablement

- **WSJF (Weighted Shortest Job First)**

  Popular in SAFe, WSJF builds on CoD by considering job size:

$$\text{WSJF} = \frac{\text{Cost of Delay}}{\text{Job Duration}}$$

  Items with the highest WSJF score should be prioritized. This helps optimize economic outcomes.

4. Replenishment Meetings / Commitment Point

In Kanban, replenishment meetings are used to decide what goes into the "Ready" column. This is where most prioritization discussions occur.

How it works:

- Team meets regularly (e.g., once per week or as needed).
- Stakeholders and team members review backlog items.
- Items are prioritized based on business value, urgency, risk, etc.
- Selected items are moved into "Ready" for the team to pull when they have capacity.

5. Visual Prioritization in the Backlog

The backlog in Kanban is often visually ordered, with the top item being the highest priority. Some other prioritization techniques used:

- Color codes (e.g., red for urgent)
- Tags or swimlanes to separate work types
- Priority labels (High, Medium, Low)

Visual cues make prioritization transparent and easy to update.

6. Cumulative Flow Diagrams (CFD) and Lead Time Analysis

Kanban encourages using metrics to inform prioritization. For example:

- A growing queue of bugs may signal the need to prioritize defect resolution.
- Long lead times in a certain work type may indicate a bottleneck that needs attention.

7. Stakeholder Input and Feedback Loops

In Kanban, stakeholder engagement is ongoing. Frequent feedback and collaboration help keep priorities aligned with real-world needs. Some tools used are:

- Customer interviews
- Data from deployed features
- Service Level Expectations (SLEs) to ensure timely delivery

Summary

Technique	Use Case
Classes of Service	Categorize and prioritize different types of work
WSJF / Cost of Delay	Quantify value and urgency
Pull Criteria	Set rules for choosing the next item
Replenishment Meeting	Collaborative prioritization
Visual Indicators	Transparency and flexibility
Metrics (Lead time, CFD)	Data-driven prioritization
Stakeholder Feedback	Keep priorities relevant

Table 8-2: Summary of Prioritization Techniques

8.1.2.3 Task Estimation Tools

In Kanban, Task estimation is typically approached differently from traditional project management or even other Agile methods like Scrum. Instead of emphasizing time-based estimations (e.g., story points or hours), Kanban focuses on flow, cycle time, and throughput to manage and forecast work.

However, there are still tools and techniques within the Kanban methodology that help teams estimate, prioritize, and deliver work effectively.

Description of Task estimation tools and methods used in Kanban:

1. Cycle Time Tracking

- Definition: Cycle time is the amount of time it takes for a Task to move from the start of the Workflows to completion.
- Tool: Cycle Time Charts
- Usage:
    - Visualize how long Tasks typically take.
    - Identify bottlenecks or variability in the Workflows.
- Estimation Role: Historical cycle time data is used to predict how long new Tasks might take, without needing to estimate each individually.

2. Cumulative Flow Diagram (CFD)

- Definition: A chart that shows the number of Tasks in each state (To Do, In Progress, Done) over time.
- Tool: CFD Graphs (available in tools like Jira, Azure DevOps, Trello with Power-ups)
- Usage:
    - Monitor work in progress (WIP).
    - Predict future delivery based on current flow.
- Estimation Role: Helps in forecasting completion of features or releases by analyzing the rate of work done.

3. Work Item Types and Class of Service

- Definition: Tasks are categorized by their type (e.g., feature, bug, maintenance) and by urgency (standard, expedite, fixed date, intangible).
- Tool: Swimlanes or color-coding on Kanban Boards
- Usage:
    - Classify and prioritize work visually.
    - Understand historical flow per category.
- Estimation Role: Historical performance per class/type allows estimation based on category, not individual Tasks.

4. Monte Carlo Simulation

- Definition: A statistical technique used to simulate many possible outcomes and forecast delivery dates.
- Tool: Specialized software/plugins
- Usage:

    - Run simulations using historical data.
    - Predict with a confidence interval when a batch of Tasks will be completed.
- Estimation Role: Provides probabilistic forecasting rather than deterministic estimates.

5. Lead Time vs. Cycle Time Analysis

- Definition:
- Lead Time: Time from Task creation to completion.
- Cycle Time: Time from when work begins to when it's finished.
- Tool: Lead/Cycle Time Reports
- Usage:
    - Compare how long Tasks wait before starting vs. time taken to complete once started.
    - Identify delays and optimize flow.
- Estimation Role: More accurate estimations based on when work is likely to start and finish.

6. Service Level Expectations (SLEs)

- Definition: An agreement on how long a Work Item should take to complete.
- Tool: Kanban policies (often shown visually on boards)
- Usage:
    - Define expected cycle time for different types of work.
    - Track how often the team meets expectations.
- Estimation Role: Tasks are planned with the SLE in mind, creating reliable forecasts for stakeholders.

7. Little's Law

- Definition: A formula used in queuing theory:

$$\text{Average Lead Time} = \frac{\text{Work in Progress (WIP)}}{\text{Throughput}}$$

- Tool: Kanban Metrics dashboard (many tools calculate it)
- Usage:
    - Estimate average lead time based on real-time WIP and throughput.
- Estimation Role: Enables high-level forecasting without Task-level estimation.

8. Planning Poker

A collaborative tool used to estimate the effort required to complete a Task. It is a consensus-based estimation technique used by teams to estimate the effort, complexity, or time required to complete a Task. It involves team members assigning estimates using a set of cards with values representing effort (e.g., Fibonacci sequence: 1, 2, 3, 5, 8, 13, etc.). This technique fosters team collaboration and helps avoid bias in estimates. While estimation is less emphasized in traditional Kanban, Planning Poker can still be valuable in Kanban initiatives for forecasting work completion and improving flow efficiency.

Summary: Kanban's Estimation Philosophy

Traditional Agile	Kanban Approach
Estimates in story points or hours	Uses flow-based metrics
Focus on individual Task estimation	Focus on system performance and throughput
Commit to sprint workload	Pull-based, continuous delivery
Planning in fixed iterations	Forecast using historical data trends

Table 8-3: Summary of Kanban's Estimation Philosophy

8.1.2.4 Dependency Determination

In Kanban, dependencies are constraints that prevent a Work Item from progressing independently through the Workflows. They often create delays, blockages, or increased lead time and need to be handled deliberately to maintain the system's flow efficiency.

In Kanban, teams should not avoid dependencies — they should visualize and manage them as part of the flow. Rather than hiding dependencies within sprints or backlogs, teams should expose them early, map them clearly, and use data to reduce their impact.

Goals of Dependency Determination in Kanban

- Improve flow: Avoid bottlenecks caused by waiting on other Tasks or teams.
- Increase visibility: Clearly see which Tasks rely on others.
- Enable better planning: Understand sequencing needs and resource requirements.
- Reduce risk: Identify points of potential delay before they happen.

Types of Dependencies

- Task-to-Task: Task B can't start until Task A finishes.
- Team-to-team: One team's work depends on another team's deliverable.
- Resource-based: A shared resource or person is needed for multiple Tasks.
- External: Waiting on third parties (e.g., vendors, regulatory bodies).
- Temporal: A Task must happen at or after a specific time/date.

How Are Dependencies Determined in Kanban?

1. Visual Workflows Analysis

- Tool: Kanban Board (digital or physical)
- Method:
    - Review blocked items, slow-moving Tasks, or work piling in certain columns.
    - Look for patterns in flow disruption.
- Clue: Cards in "In Progress" or "Waiting" columns for a long time often signal a hidden dependency.

2. Explicit Relationship Mapping Between Cards

- Tools:
  - Vabro (linked Task Groups, Tasks)
  - Jira (linked issues: “blocks”, “is blocked by”)
  - Kanbanize (“Related to”, “Precedes”, “Follows”)
  - Azure DevOps, Trello (with Power-Ups)
- Method: Use card linking to define:
  - “Depends on” (card B depends on card A)
  - “Blocks” (card A blocks card B)
- This allows real-time tracking of which items can’t proceed without others.

3. Tagging & Labeling for Dependency Identification

- Method:
  - Use labels, stickers, or tags (e.g., “External Dependency”, “Waiting on Backend”)
  - Assign colors to different dependency types
- Benefit: Enables quick filtering and tracking of all dependent items.

4. Use of Swimlanes or Grouping

- Visual Aid: Horizontal lanes can represent:
  - Functional areas (e.g., design, development)
  - Work packages (e.g., features, epics)
- Team ownership Insight: If a Task must cross lanes, it may have inter-team dependencies.

5. Workflows Policies to Expose Dependencies

- Kanban Policy: Define when a Task may move forward (e.g., “All upstream Tasks must be complete”).
- Checklist or Definition of Ready (DoR):
  - Use checklists to ensure that prerequisites are met.
    Example: “UI Mockups Approved” may be a precondition before development starts.

Indicators of Undiscovered Dependencies

- Repeated context switching or Task rework
- Tasks stuck in blocked/waiting states
- Missed deadlines or unstable flow
- Frequent handoffs between teams

Risks of Poor Dependency Management in Kanban

Risk	Consequence
Delayed Work	Longer lead times, missed delivery goals
Bottlenecks	Flow halts, Task queues build up
Poor Predictability	Forecasting becomes unreliable

Risk	Consequence
Decreased Throughput	Work Items pile up in queues

Table 8-4: Risks of Poor Dependency Management in Kanban

Tools and Techniques to Manage Dependencies

- Advanced Approaches
  - Monte Carlo Simulation with Dependencies
  - Predicts how dependencies affect flow and delivery date probabilities.
- Dependency Matrices
  - Grid-based mapping of interrelated Tasks or teams to spot and resolve conflict areas.

Best Practices

- Make dependencies visible – hide nothing; surface them on the board.
- Prioritize breaking dependencies – reduce cross-team or handoff delays.
- Apply WIP limits – encourages faster handling of blockers and dependencies.
- Foster cross-functional teams – reduce the need for handoffs.
- Track blockers and delays – treat them as metrics to improve the system.

8.1.2.5 Resolution for Issues and Blockers

In Kanban initiatives, resolving issues and unblocking stalled work is critical to maintaining a smooth Workflows and ensuring steady progress toward goals. It is essential to enable teams to quickly identify, assess, and remove impediments that disrupt the flow of work. Steps in issue and blocker resolution can include:

- Issue or blocker identification
- Issue categorization and assessment
- Resolution planning, prioritization, and escalation
- Resolution implementation and monitoring
- Feedback and improvement

By addressing issues and blockers effectively, Kanban initiatives can enhance their ability to overcome obstacles, maintain Workflows momentum, and deliver value consistently. This approach not only resolves immediate challenges but also empowers teams to identify and mitigate long-term inefficiencies, driving continuous improvement.

8.1.2.6 Approval Management

Kanban is a visual Workflow management method that emphasizes continuous delivery, limiting work in progress (WIP), and optimizing flow. While it is often associated with flexibility and simplicity, Kanban is highly effective in managing structured processes, including approval Workflows. Approval management within Kanban ensures that specific work items meet necessary review, validation, or compliance requirements before progressing to the next stage of the process or being considered complete.

Approval management in Kanban is a robust and adaptable process that enhances quality control, accountability, and compliance without disrupting flow. By visualizing approval stages, defining explicit policies, leveraging modern tooling, and integrating automation, Kanban teams can effectively manage approvals while maintaining agility and efficiency.

1. Visualizing Approval Stages on the Kanban Board

- In Kanban, all Workflow steps are represented as columns on a board. To incorporate approval management, dedicated columns can be introduced to reflect approval stages clearly.
  For example:

  To Do → In Progress → Review → Awaiting Approval → Approved → Done

  In this model:

  - "Awaiting Approval" indicates that the work item has been completed and is pending approval.
  - "Approved" signifies that approval has been granted and the item is ready for final delivery or deployment.

- This visual approach ensures transparency in the approval process, allowing team members and stakeholders to easily identify work items awaiting review or authorization.

2. Utilizing Explicit Process Policies

- A core principle of Kanban is the use of explicit policies—clearly defined rules that govern how work is performed and how transitions occur between Workflow stages. For approval management, explicit policies might include:
- Who is authorized to provide approval (e.g., a product owner, QA lead, or compliance officer).
- Criteria for approval, such as completed documentation, test results, stakeholder feedback, or regulatory sign-offs.
- Procedures to follow if approval is denied, such as returning the item to a previous stage with specified revisions.
- By establishing and communicating these policies, teams reduce ambiguity and ensure consistent handling of approvals.

3. Leveraging Labels, Tags, and Custom Fields

- In scenarios where board space is limited or the approval process is not linear, approval states can be tracked using:
  - Having “Approvals” as a specific Task Property while defining Tasks – described in Section 3.5.1.
  - Specific Labels or tags, such as Pending Approval, Approved, or Rejected.
  - Custom fields that reflect the current approval status or the name of the approver.
  - Card checklists to outline specific approval steps and track their completion.
- These methods provide flexibility while preserving clarity and traceability.

4. Work-In-Progress (WIP) Limits and Flow Efficiency

- Approval stages should be included within the Kanban system's WIP limits. This design choice encourages teams to monitor and address bottlenecks that may arise from delayed approvals. By limiting the number of work items in the approval stage, teams are incentivized to resolve pending approvals promptly, thereby maintaining flow efficiency and reducing lead times.

5. Automation and Notifications

- Modern Kanban tools (e.g., Vabro, Jira, Trello, Azure DevOps) support automation features that streamline approval processes. Examples include:
- Automatic notifications to alert approvers when an item enters an approval stage.
- Trigger-based transitions, where a card is automatically moved to the next stage upon receiving approval via a comment, checklist item, or status update.
- Integration with external systems, such as document management or CI/CD tools, to facilitate compliance and release approvals.
- Automation reduces manual overhead, shortens cycle times, and minimizes the risk of oversight.

6. Audit Trails and Compliance

- In many industries, maintaining a verifiable record of approvals is essential for compliance and governance. Kanban systems support this need through:
    - Activity logs that track who moved a card, when it was moved, and any associated comments or file attachments.
    - Card histories that provide a chronological view of each item's lifecycle, including approvals and rejections.
    - Version control integration to associate work items with specific changes or releases.
- This ensures full traceability and satisfies internal or external audit requirements.

8.1.2.7 Stakeholder Interactions

Stakeholder interactions become more transparent, timely, and data-informed—driving better alignment, faster feedback loops, and stronger collaboration across all levels.

For more information about Stakeholders, see section 3.3.

8.1.2.8 AI-enabled Digital Kanban Tool

In the context of Kanban initiatives, AI-enabled Kanban tools can provide recommendations that enhance Task management by streamlining Workflows, reducing decision-making time, and improving prioritization. By leveraging AI, teams can identify and organize Task Groups and Tasks that align with organizational goals, resource availability, and workload distribution. AI analyzes historical data, ongoing work, team performance metrics, and Workflows objectives to suggest Task Groupings and specific Tasks based on the following elements:

- Work Item Characteristics: Task dependencies, estimated effort, and Task type (e.g., development, testing, review).
- Historical Trends: Past throughput, lead times, and success rates for similar Tasks.

- Resource Availability: Current team capacity and skillset alignment.
- Priority and Impact: Business goals, deadlines, and the potential value of Tasks.

AI-enabled digital Kanban tools can also suggest Tasks for inclusion in specific Kanban Boards, addressing the needs of:

- Backlog Refinement
- Prioritization of Work
- Work In Progress (WIP) Management
- Risk Mitigation
- Cycle Time Reduction
- Innovation or Stretch Goals
- Resource Utilization
- Continuous Improvement

By incorporating the Task Groups and Tasks into Kanban initiatives, teams can optimize Workflows, enhance productivity, and better align efforts with organizational objectives.

Figure 8-4 shows Notion's Task management interface. It displays Task details, comments, and AI-assisted editing suggestions such as "Change tone," "Fix typos," "Shorten," "Summarize," and "Translate."

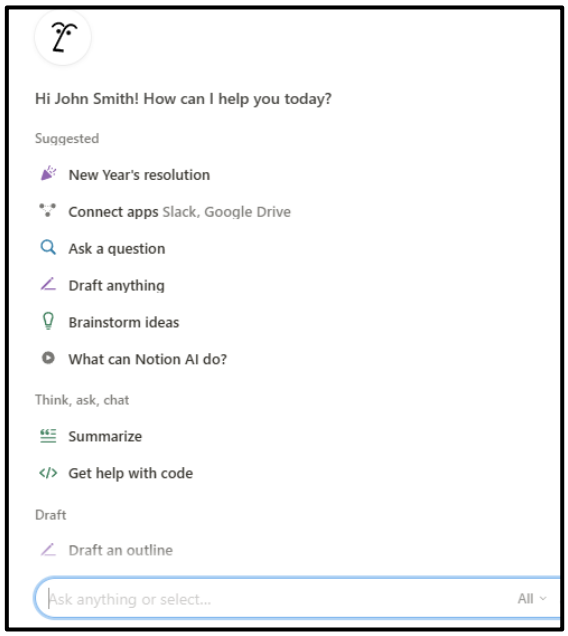

Figure 8-4: Use of AI in Kanban (Source: Notion)

Figure 8-5 shows a digital workspace for Task management in Wrike, featuring a Task titled "Communicate the details of the event," assigned to John Smith with a deadline of January 31. It includes AI-assisted options to modify the Task, such as "Change tone," "Fix typos," "Shorten," "Summarize," and "Translate."

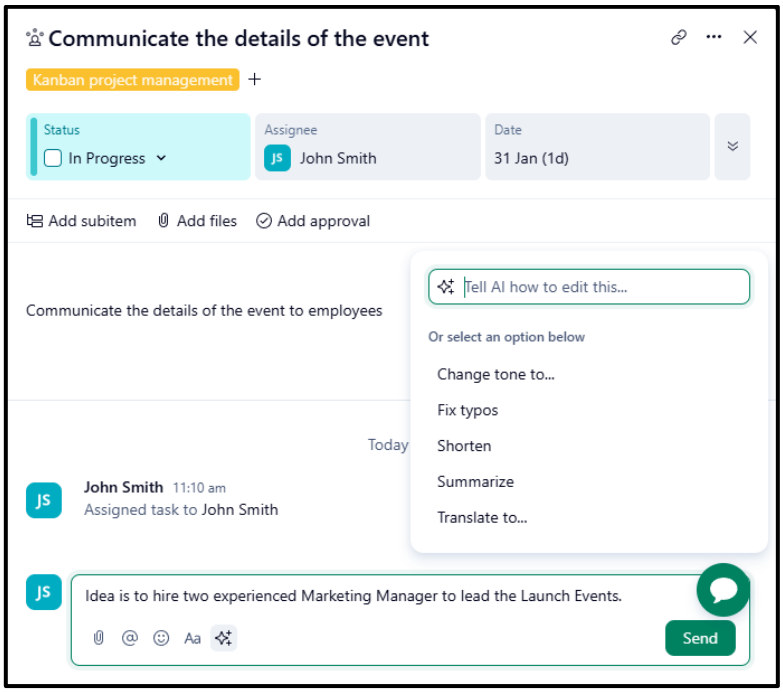

Figure 8-5: Use of AI in Kanban (Source: Wrike)

Figure 8-6 depicts a product management roadmap interface in Airtable, showcasing a feature titled "More control over notifications" in the backlog stage, with an option to create an AI-assisted field for further analysis. Users can interact with the feature details, provide feedback, and manage its progress within the product roadmap.

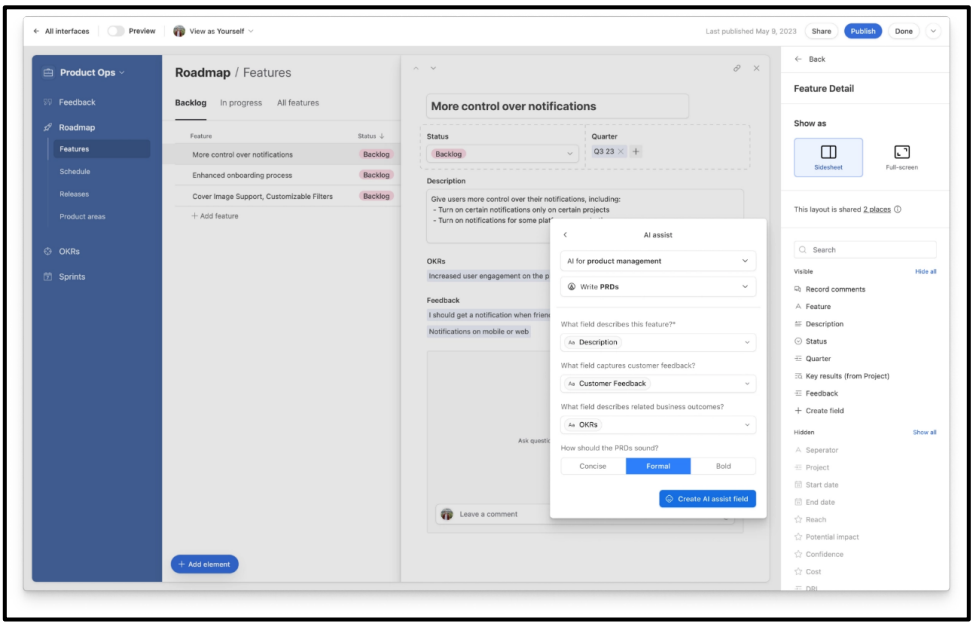

Figure 8-6: Use of AI in Kanban (Source: Airtable)

Figure 8-7 displays a Workflows management interface in Nifty, focusing on Task scheduling and recurrence options for a "Weekly Blog" article within the "Content Marketing" dashboard. It shows the recurrence pattern setup, highlighting an example of "Every first day of the month," along with options to customize the schedule, including start/end dates, reminders, and specific days of the week.

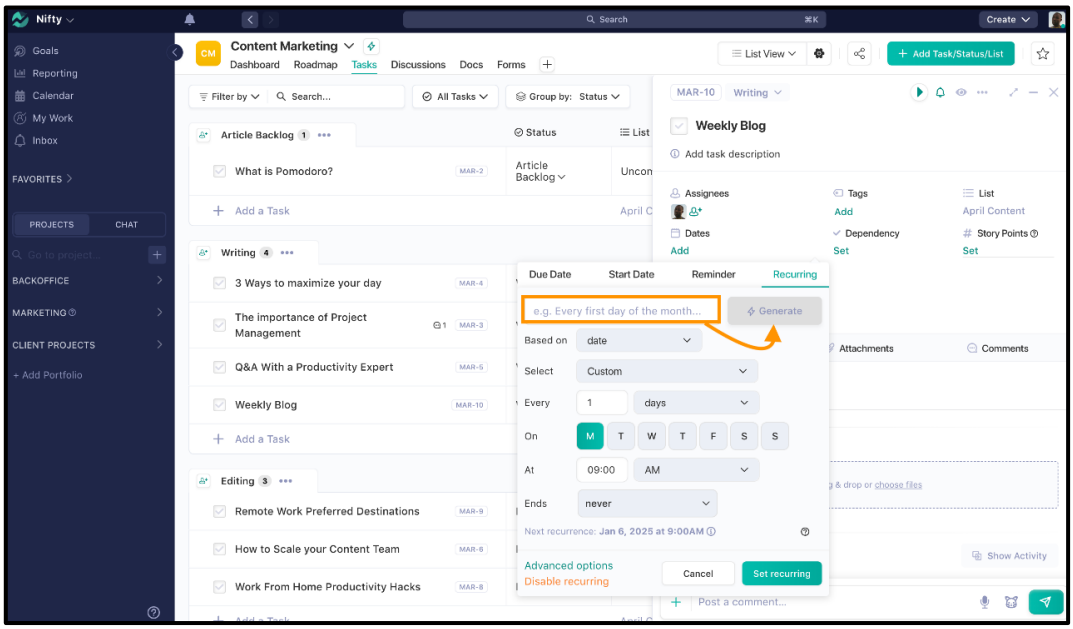

Figure 8-7: Use of AI in Kanban (Source: Nifty)

8.1.3 Outputs

8.1.3.1 Completed Work Items*

Completed Work Items in Kanban are Tasks or Task Groups that:

- Have moved through all the stages of the Kanban Workflows.
- Are no longer being worked on or reviewed.
- Are ready to be delivered, deployed, or archived.
- If defined, have satisfied the team's Definition of Done (DoD). The Definition of Done (DoD) for Work Items in Kanban defines when Tasks or Task Groups are considered complete, meeting all criteria such as functionality, quality, testing, and approval before delivery.

These items are usually placed in the final column of the board — often labeled "Done", "Completed", or "Ready for Delivery".

Characteristics of Completed Work Items

- Finalized: No further work, changes, or review are needed.
- Validated: Quality checks, testing, or approvals are complete.
- Tracked: They are counted in metrics like throughput and lead time.
- Archived or Delivered: Depending on the process, they may be handed off to a customer or stored for record-keeping.
- Approved or Rejected: If necessary, some Completed Work Items may require approval and must go through the approval management process outlined in Section 6.1.2.6. Based on the decision of the approvers, certain work items may be marked as "Approved," while others may be marked as "Rejected." If needed, some rejected work items may require rework before they can be approved.

Why Track Completed Work Items?

Tracking Completed Work Items allows teams to:

- Measure performance (e.g., using throughput or cycle time).
- Improve predictability of delivery.
- Identify bottlenecks by analyzing which items take too long.
- Celebrate progress and maintain morale.

Important Related Kanban Metrics

Metric	Description
Throughput	Number of Completed Work Items over a set period of time
Lead Time	Time from request to completion of a work item
Cycle Time	Time from when work starts to when it finishes

Metric	Description
Cumulative Flow Diagram (CFD)	Shows the status of all work items, including completed ones

Table 8-5: Related Kanban Metrics

Example Workflows Showing Completed Work Items

Here's a simplified Kanban Board with a completed item flow:

[Backlog] → [To Do] → [In Progress] → [Testing] → [Done]

A card representing a Task (e.g., "Develop Login Feature") starts in Backlog, gets pulled through each stage, and when it reaches Done, it's considered a Completed Work Item.

Tips for Managing Completed Work Items in Kanban

- Keep the Done column clean: Periodically archive completed items to avoid clutter.
- Use Automation: In digital tools like Jira, Trello, or Azure DevOps, automate movement to Done when checklists or Workflows are finished.
- Analyze Patterns: Review completed items during retrospectives to understand trends and blockers.
- Maintain DoD (optional): Will ensure that only work that truly meets the “Definition of Done” goes into the Done column.

8.1.3.2 Updated Kanban Workflows*

The updated Kanban Workflows, as an output of "Get Work Done," delivers improved visibility, streamlined Task flow, intelligent dependency management, and data-driven insights for higher team efficiency and agility.

For more information, see sections 3.4.2 and 7.2.1.2.

8.1.3.3 Updated Kanban Backlog*

The updated Kanban backlog reflects prioritized, actionable Tasks with improved clarity, reduced waste, and better alignment to team capacity and Workflows efficiency.

For more information, see section 3.4.3.

8.1.3.4 Updated Kanban Board*

The updated Kanban Board, as an output of "Get Work Done," showcases optimized Workflows, clear Task ownership, real-time status tracking, and enhanced visibility across teams and priorities.

For more information, see section 3.4.4.

8.1.3.5 Updated Kanban Metrics*

Kanban Metrics keep getting updated as work is done in the Kanban process, and these metrics help teams measure efficiency, identify bottlenecks, and continuously improve Workflow performance and delivery speed. Use of an AI-powered Digital Kanban Tool will greatly help in automatically updating and reviewing all important Kanban Metrics.

Kanban Metrics are discussed in section 4.1.

8.1.3.6 Updated Kanban KPIs*

After the "Get Work Done" process in Kanban, KPIs may be updated, reflecting how effectively the team met goals, delivered value, and optimized Workflow efficiency.

Kanban KPIs are discussed in section 7.2.3.7.

8.1.3.7 Releases

While Kanban does not have built-in release cycles like Scrum (e.g., sprints), it can still fully support the concept of releases—often more flexibly, if required.

Here is how Releases work in Kanban:

1. **Continuous Flow Instead of Time-Boxed Cycles**
   - In Kanban, work moves through the system continuously—there are no fixed sprints or release windows.
   - Once a work item reaches the final column (e.g., "Ready for Release" or "Done"), it's potentially shippable.
   - This makes Kanban ideal for continuous delivery or frequent releases.

2. **Visualizing Release States on the Board**
   - Kanban Teams can add release-specific columns or swimlanes to your Kanban board:
   - For example: To Do → In Progress → QA → Ready for Release → Released
   - Kanban Teams could also use labels, tags, or card types (e.g., "Release 1.2.0") to track which cards belong to which release.

3. **Release Policies**
   - Kanban encourages explicit policies to manage work. Kanban Teams can define policies like:
     - "Only release items from the 'Ready for Release' column after successful regression testing."
     - "Bundle all 'Ready' items for release every Thursday at 4 PM."
     - "Release any high-priority bug fix immediately after QA passes it."
   - Policies help the team know when and how things are released.

4. **Triggering Releases**
   - Kanban Teams can release in Kanban in different ways, depending on needs:
     - Continuous deployment: Every card that hits "Done" gets deployed right away.
     - Batch releases: Group several completed cards together and release them all at once (e.g., weekly).

- Manual or automated: Use a script, button, or DevOps pipeline to push code live once it's ready.

5. Tracking What's in a Release

- Kanban Teams can manage release content using:
  - Tags or versions on individual cards (e.g., "Release 3.5").
  - A release checklist card that links to all cards going into that release.
  - A dashboard or report showing completed items by release tag.
- This helps with transparency and communication with stakeholders.

6. Integration with DevOps Tools

- Modern Kanban tools (like Vabro DevOps, Jira, Trello + Power-Ups, Azure DevOps, or Kanbanize) often integrate with:
  - Git / GitHub / GitLab (track commits, branches, merges per card)
  - CI/CD pipelines (trigger automated builds, tests, and releases)
  - Test automation tools (link test results to cards)
- This means a card can move from "In Progress" to "Released" automatically as code progresses through the toolchain.

7. Post-Release Feedback Loop

- Kanban promotes continuous improvement, so after a release:
  - Review metrics (lead time, cycle time, deployment frequency).
  - Hold retros or feedback sessions (even though retros are not required in Kanban, they are useful).
  - Refine your policies or WIP limits based on what Kanban Teams have learned.

Summary: How Kanban Supports Releases

Feature	Description
Release Timing	Flexible—continuous or scheduled
Release Triggers	When work hits "Done" or based on policy
Board Visualization	Use columns/tags to show release status
Tooling	Integrates with CI/CD and DevOps pipelines
Release Policies	Explicit rules guide what/when/how to release
Metrics	Tracks throughput, lead time, and frequency
Post-Release Learning	Encourage feedback and improvement

Table 8-6: How Kanban Supports Releases

Figure 8-8 shows a software development Workflows management board, specifically the "Release Plan" view in ClickUp, with Tasks categorized by status (Overdue, Today, Done). It displays Task details such as title, assigned team, start and due dates, priority, and development type, providing an overview of the progress and schedule of ongoing software releases.

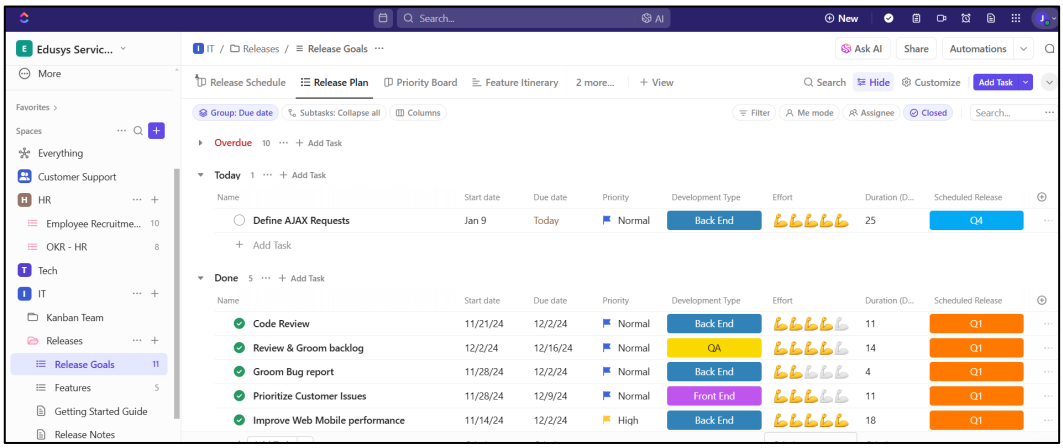

Figure 8-8: Sample Release Plan (Source: ClickUp)

Figure 8-9 shows the Vabro interface for a software release named "Sample Release," which is currently ongoing and scheduled for completion in 9 days, with a release date of January 31, 2025. It lists two Tasks in the "Release Backlog" section: "Sample Task - Setup New Employee Workstation" and "Sample Task - Customer Feedback on Resolved Issue."

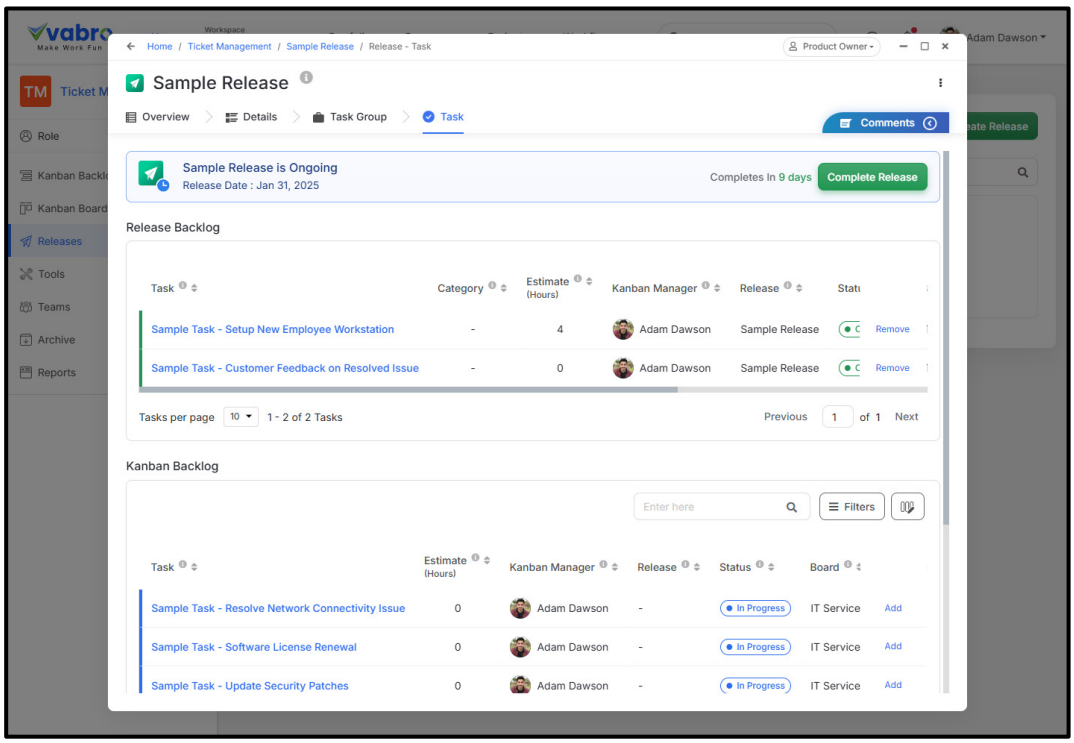

Figure 8-9: Sample Ongoing Release (Source: Vabro)

8.1.3.8 Approvals

Some Tasks or Task Groups may require approval before they are considered complete. In such cases, the assignee sends the Tasks or Task Groups to the Kanban Manager or Product Owner for approval, as required.

For more information about Tasks and Task Groups, please refer to Section 3.4.1.

8.1.3.9 Kanban Reports

Kanban reports provide insights into Workflow efficiency by tracking metrics such as cycle time, throughput, and WIP. These reports help teams identify bottlenecks and improve delivery performance. It is highly recommended to use an AI-powered digital Kanban tool, which can automatically update and review all key Kanban reports. These reports may be reviewed by Kanban Team Members, the Kanban Manager, the Kanban Product Owner, stakeholders, and senior management.

Kanban Reports are discussed in section 4.2.

9 ENHANCE

This chapter includes the process related to enhancing or improving Kanban initiatives: Retrospect and Improve.

Enhance, as defined in *the Kanban Body of Knowledge (KBOK™)*, is applicable to the following:

- Kanban initiatives in *any* industry
- Products, services, or any other results to be delivered to Stakeholders
- Kanban Initiatives of any size or complexity

Kanban can be applied effectively to any initiative in any industry—from small initiatives or teams with as few as two team members to large, complex initiatives with up to several thousand members in several teams.

To facilitate the best application of the Kanban framework, this chapter identifies inputs, tools, and outputs for each process as either "mandatory" or "optional." Inputs, tools, and outputs denoted by asterisks (*) are mandatory, or considered critical to success, whereas those with no asterisks are optional.

It is recommended that the inexperienced Kanban practitioners and those individuals being introduced to the Kanban framework and processes focus primarily on the mandatory inputs, tools, and outputs; while experienced Kanban professionals, including Sponsors and relevant Stakeholders strive to attain a more thorough knowledge of the information in this entire chapter.

This chapter can be applied to a single Kanban initiative within the company or a specific department, or to all Kanban initiatives across the company or a specific department. It follows:

- The *Setup* chapter, where the Kanban function is established for the entire organization or a specific department.
- The *Plan* chapter, where the Kanban Team is formed, stakeholders are identified and optimized Kanban Workflows are created.
- The Execute chapter where the Kanban Team works to create Completed Work Items.

The outputs from this chapter will serve as valid inputs for the improving and enhancing all the processes and activities defined in *Setup* (Chapter 6), *Plan* (Chapter 7) and *Execute* (Chapter 8).

The Enhance phase can be conducted at the end of a specific Kanban initiative with the team that worked on it, to identify lessons learned and improvement opportunities. It can also be performed at regular intervals by the entire Kanban function of the organization or a specific department, to reflect on and fine-tune Kanban Policies and create Reusable Templates for broader use within the Kanban function.

In the *Enhance* phase, the objective of the Kanban Team is to review and reflect on what went well, what did not, and where improvements are needed. This involves examining how Task Groups and Tasks move through Workflows to identify bottlenecks, reviewing Kanban Metrics and KPIs, and refining Kanban Workflows. Insights from stakeholders help align Workflows with organizational goals and address service-level concerns. Quantitative data is used to implement improvements, monitor their impact, and ensure a steady flow, thereby enhancing overall team performance.

The goal of the Enhance phase is to Retrospect and Improve, review Workflows, identify bottlenecks, refine processes, and drive continuous improvement.

It is also important to realize that although all phases and processes are defined uniquely in the Kanban Body of Knowledge, they are not necessarily performed sequentially or separately. At times, it may be more appropriate to combine some phases and/or processes, depending on the specific needs of each initiative.

Figure 9-1 provides an overview of the Enhance phase process, which is as follows:

9.1 Retrospect and Improve—In this process, the Kanban Team reflects to identify successes, challenges, and areas for improvement. This includes analyzing Task Groups, Tasks, and Workflows to find bottlenecks, refining Kanban Workflows, and aligning them with organizational goals. Stakeholder insights and quantitative data are used to drive improvements, monitor impact, and ensure a steady flow.

Figure 9-1 shows all the inputs, tools, and outputs for processes in the Enhance phase.

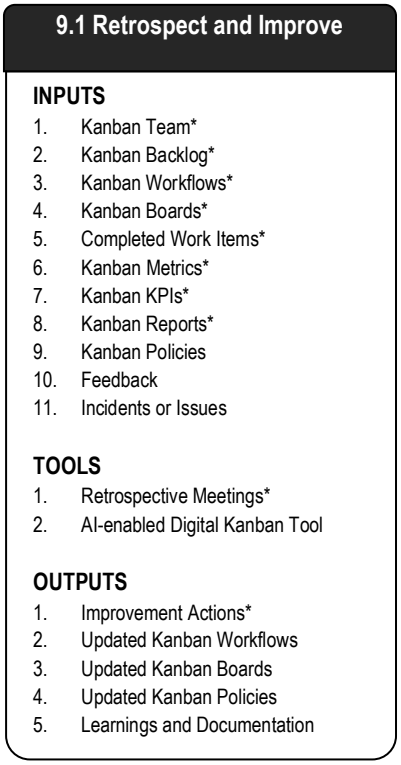

Figure 9-1: Overview of Review and Improve Phase Processes

Note: Asterisks (*) denote a "mandatory" input, tool, or output for the corresponding process.

Figure 9-2 below shows the mandatory inputs, tools, and outputs for processes in Execute phase.

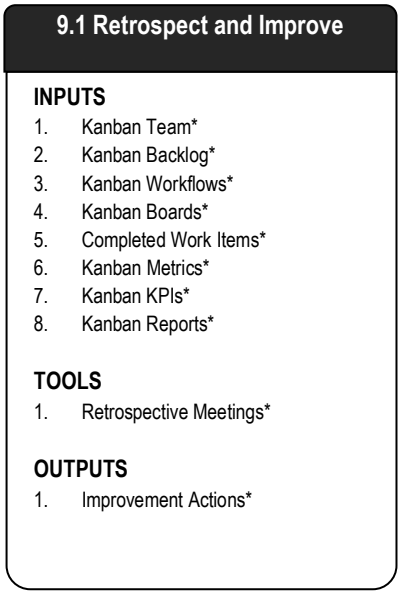

Figure 9-2: Overview of Enhance Phase Processes (Essentials)

Note: Asterisks (*) denote a "mandatory" input, tool, or output for the corresponding process.

9.1 Retrospect and Improve

The objective of this process is to review and reflect as a team to identify lessons on what went well, what didn't work as expected, and where improvements are needed. This involves examining how Task Groups and Tasks move through the Workflows to understand the Workflows, cycle time, and the areas where the flow is slowing down or getting stuck.

It also includes refining the Kanban Workflows and gathering insights from stakeholders to ensure better support for team Workflows, aligning the Workflows with broader organizational goals, and addressing any service-level concerns. Additionally, it facilitates the use of quantitative data to implement improvements, monitor impact, and maintain a steady flow.

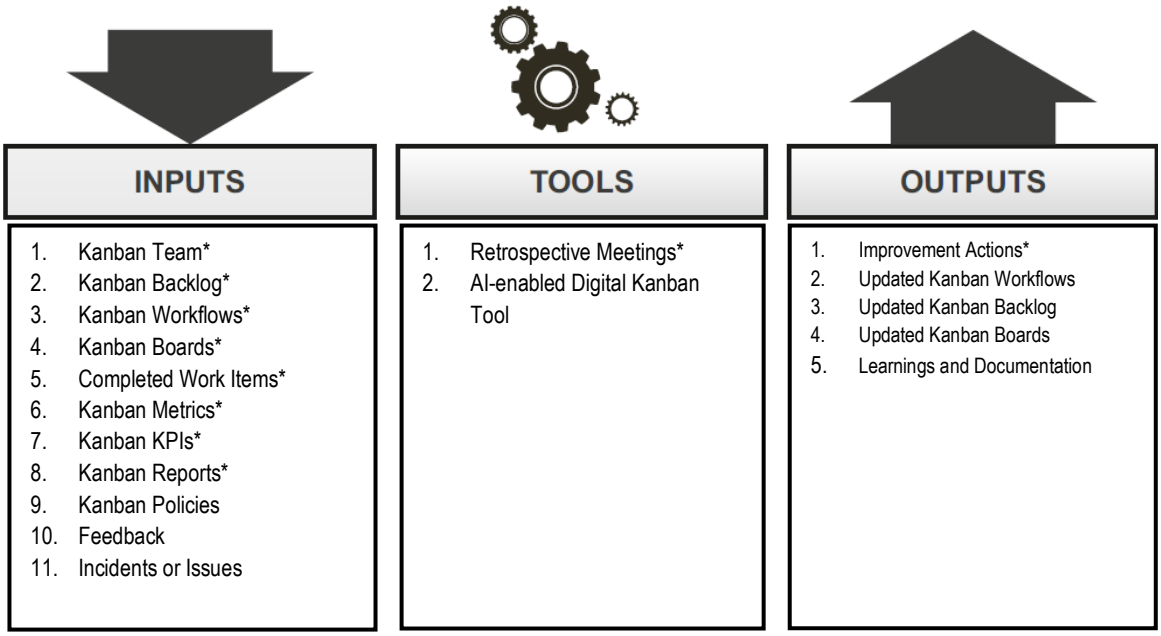

Figure 9-3: Retrospect and Improve—Inputs, Tools, and Outputs

Note: Asterisks (*) denote a "mandatory" input, tool, or output for the corresponding process.

9.1.1 Inputs

9.1.1.1 Kanban Team*

The Kanban team provides key insights, feedback, and performance data as input to Retrospect and Improve, helping identify flow issues, improve processes, and foster continuous improvement in delivery outcomes.

For more information, see section 3.1.

9.1.1.2 Kanban Backlog*

In Agile practices, particularly in Kanban, retrospectives are key moments for the team to reflect on how to improve processes and Workflows. The Kanban backlog provides critical data and insights that help guide these discussions. By using the Kanban backlog during retrospectives, teams make data-informed decisions, identify process bottlenecks, and define concrete actions for continuous improvement.

How the Kanban Backlog Supports Retrospectives:

Kanban Backlog Element	Retrospective Input Value
Blocked or Delayed Items	Highlights Workflow issues or external dependencies causing delays. Sparks discussion on how to reduce or eliminate blockers.
Cycle Time & Lead Time	Helps assess how long work items take to complete. Patterns can indicate inefficiencies that the team can address.
Work in Progress (WIP)	Shows how much work is being handled simultaneously. Too much WIP may lead to context switching and slowdowns—ideal for improvement conversations.
Backlog Aging	Reveals items that remain untouched or stagnate. These can indicate misalignment in priorities or issues in planning.
Completed Work	Offers a review of what was done, how effectively, and whether it met quality standards or the Definition of Done.
Task Types and Distribution	Helps analyze the balance of different types of work (e.g., bugs vs. features), supporting discussions on workload balance or prioritization.

Table 9-1: How the Kanban Backlog Supports Retrospectives

For more information, see section 3.4.3.

9.1.1.3 Kanban Workflows*

In the Kanban method, the Workflow represents how work moves through various stages—from start to finish. During retrospectives, analyzing the Workflow helps the team identify inefficiencies, bottlenecks, handoff issues, and opportunities for continuous improvement.

By using Kanban Workflows as an input, retrospectives shift from vague discussions to data-driven, process-focused conversations—leading to measurable improvements over time.

How Kanban Workflows Inform the Retrospective

Workflow Element	Insight for Retrospective
Flow Efficiency	Analyze how smoothly workflows through the system. Low flow efficiency may reveal waiting times, rework, or poor task definitions.
WIP Limits	Evaluate whether WIP (Work in Progress) limits are being respected or if they're too high/low, causing overload or underutilization.
Blocked or Stalled Columns	Identify stages where work consistently stalls. These bottlenecks often become a focal point for improvement discussions.
Handoff Points	Pinpoint where work moves between people/teams. Frequent issues here may suggest communication or process clarity problems.
Queue States (Ready for...)	Check if items sit too long in queue states. This highlights inefficiencies or unclear ownership.
Feedback Loops	Review stages like QA or Review. Delays or rework in these steps can signal issues in quality or unclear requirements.
Cycle Time per Workflow Stage	Helps identify which stages take longer than expected, prompting discussion on reducing complexity or improving capacity.

Table 9-2: How Kanban Workflows Inform the Retrospective

Purpose of Kanban Workflows in Retrospectives

- Visualize where flow breaks down
- Target specific stages for improvement
- Refine policies, definitions, and WIP limits
- Adapt the Workflow to better reflect reality

Example Questions to Ask in Retrospective

- Which Workflow stages consistently slow us down?
- Are our WIP limits helping or hindering flow?
- Are handoffs between roles/teams smooth and timely?
- Should we split, merge, or rename columns to better match our real process?

For more information, see section 3.4.2.

9.1.1.4 Kanban Boards*

The Kanban Board is a visual representation of the team's Workflow and current state of work. During retrospectives, the board becomes a powerful input for reflection, enabling the team to spot trends, bottlenecks, and inefficiencies in real time.

How Kanban Boards Inform the Retrospective

Board Element	Insight for Retrospective Discussion
Current and Completed Work Items	Shows what was accomplished and helps assess if expectations were met. Highlights success stories or delivery issues.
Blocked Items	Clearly highlights tasks that were delayed due to issues—useful for identifying recurring blockers and finding solutions.
WIP (Work in Progress)	Reveals if the team is overburdened or multitasking too much—often a cause of reduced focus and efficiency.
Bottlenecks on the Board	Shows where work is piling up. These pile-ups can guide discussion around workload balance or process redesign.
Aging Work Items	Helps identify tasks that have been stuck too long in one column, signaling unclear ownership, dependencies, or task complexity.
Swimlanes or Work Types	Helps reflect on whether priorities were well balanced (e.g., features vs. bugs, support vs. innovation work).
Process Policies & WIP Limits	Makes it easy to see if team is following defined process rules (e.g., WIP limits, pull policies), sparking discussion when they're not.
Blocked/Flagged Indicators	Visual markers (flags, labels) make it easy to highlight what consistently causes delays or quality issues.

Table 9-3: How Kanban Boards Inform the Retrospective

In the Retrospective, the Team Might Ask:

- What patterns do we notice on the board (e.g. blockages, delays)?
- Are we respecting our WIP limits? Should they be adjusted?
- Are certain columns consistently overloaded?
- Are we delivering a healthy mix of work types?
- What can we change to make workflow more smoothly?

Using the Kanban board in retrospectives helps teams:

- Reflect based on real, visible data
- Pinpoint where in the process issues occur
- Make informed decisions about Workflow adjustments
- Visualize improvement opportunities collaboratively

For more information, see section 3.5.1.

9.1.1.5 Completed Work Items*

In the Kanban method, reviewing Completed Work Items during the retrospective process is a powerful way to gain insight into the team's performance, effectiveness, and areas for improvement. By analyzing what has been completed, teams can reflect on quality, speed, and alignment with goals. By integrating Completed Work Items into the retrospective process, the team gains a data-driven understanding of what went well and what needs attention. This reflection ensures the team continually improves its practices and makes better-informed decisions in future iterations.

How Completed Work Items Inform the Retrospective

Completed Work Item Element	Insight for Retrospective Discussion
Definition of Done (DoD) Compliance	If defined, reviewing if work meets the agreed-upon DoD helps identify whether quality standards were consistently met or if adjustments are needed.
Work Completion Time (Cycle Time)	By examining how long tasks took to complete, teams can assess if cycle time is consistent or if delays indicate underlying inefficiencies.
Task Type Completion (Bugs, Features, etc.)	Reflecting on whether there was a balanced completion of tasks (features, bugs, technical debt) helps identify if work is aligned with the team's priorities.
Rework or Redoing Items	Analyzing whether completed tasks needed to be revisited can help identify weaknesses in the process or unclear requirements.
Customer or Stakeholder Feedback	If completed items were customer-facing, discussing any received feedback can highlight areas of success or improvements.
Work Quality (Defects, Failures)	Reviewing defects or failed work items can spark discussions on how to improve quality control and defect prevention in the future.
Task Ownership and Accountability	Reviewing whether work was delivered as planned and if ownership was clear throughout the process (e.g., were there delays due to lack of ownership?).

Table 9-4: How Completed Work Items Inform the Retrospective

In the Retrospective, Teams Can Reflect On:

- Quality of Completed Work: Did the items meet the Quality requirements? Were there quality issues (bugs, rework)?
- Cycle Time Analysis: Were tasks completed on time, or did any take significantly longer than expected? What factors caused delays (lack of resources, unclear scope)?
- Task Prioritization: Were the tasks completed aligned with the team's highest priority? Did the backlog reflect customer or business needs accurately?
- Customer Feedback on Work: Was any customer or stakeholder feedback provided on completed work? What lessons can we learn from their response?
- Process Improvements: Did we face any challenges while completing these tasks that indicate we need to improve specific processes or policies?

- Capacity and Workload Management: Did we overcommit, undercommit, or fail to manage our capacity well? Did it affect the quality or speed of the delivery?

Outcome of Using Completed Work Items in Retrospectives

Reviewing Completed Work Items allows the team to:

- Identify trends in task completion, quality, and cycle time
- Spot recurring issues such as incomplete tasks, delays, or quality problems
- Celebrate successes and recognize areas of improvement
- Refine processes and Workflows based on real, completed work rather than just theoretical planning
- Improve task prioritization and balance the mix of work items (e.g., feature development vs. bug fixing)

Example Retrospective Questions Using Completed Work Items:

- Did any completed tasks require rework? What was the root cause (e.g., unclear requirements, lack of communication)?
- How well did we meet our estimated cycle time for completed tasks? Where did we exceed the expected time, and why?
- Did we complete a balanced mix of work items (e.g., features, bugs, maintenance)? Should we adjust our priorities?
- Were any customer-facing tasks successfully delivered? Did they meet expectations based on feedback?

Work Items in Kanban is described in Section 3.4.1.2.

9.1.1.6 Kanban Metrics*

In the Kanban methodology, metrics provide quantitative data that reveal the efficiency, effectiveness, and areas for improvement within the Workflow. Using Kanban Metrics as input for retrospectives enables the team to base discussions on real data, allowing for better decision-making and actionable improvements. By integrating Kanban Metrics into the retrospective process, the team gains a deeper, data-driven understanding of how well the system is performing. The metrics allow teams to identify specific areas for improvement, set measurable goals, and track progress over time, ultimately leading to smoother Workflows, higher quality, and better overall team performance.

Key Kanban Metrics and How They Inform Retrospectives

Kanban Metric	Insight for Retrospective Discussion
Cycle Time	Cycle time measures the time it takes for an item to move from "In Progress" to "Done". High or inconsistent cycle times signal inefficiencies or bottlenecks that need to be addressed.
Lead Time	Lead time is the total time from when a request is made until it's completed. Retrospectives can focus on improving lead time by reducing unnecessary delays.

Kanban Metric	Insight for Retrospective Discussion
Work in Progress (WIP)	WIP limits show how many tasks are being worked on at a time. Excessive WIP can cause multitasking and delays. The retrospective can focus on adjusting WIP limits or improving focus.
Throughput	Throughput measures the number of items completed in a given period. Analyzing throughput helps the team assess whether their delivery pace aligns with goals and capacity.
Blocked Time	Blocked time measures how long tasks stay blocked or waiting on external dependencies. Retrospectives can use this data to identify frequent blockers and ways to minimize them.
Cumulative Flow Diagram (CFD)	The CFD visually shows the flow of work across different stages. It helps identify bottlenecks, areas of stagnation, and inefficiencies. Teams can discuss improving flow by reducing queues.
Flow Efficiency	Flow efficiency is the ratio of active work time to total cycle time, showing how much time is spent on value-adding activities versus waiting or idle time. Teams can discuss ways to reduce waiting time.
Queue Length	Queue length shows how much work is waiting to be processed at each stage. Long queues often signal bottlenecks and can be used in retrospectives to discuss potential solutions.
Little's Law	Little's Law relates WIP, cycle time, and throughput. It can help teams understand the relationship between how much work is in the system and how long it takes to complete tasks.
Work Item Aging	This metric shows how long items have been sitting in each stage, highlighting whether work items are getting stuck or neglected. Teams can focus on improving throughput for aged items.

Table 9-5: Key Kanban Metrics and How They Inform Retrospectives

In the Retrospective, Teams Can Reflect On:

- Cycle Time and Lead Time Trends: Are we meeting our cycle time and lead time goals? If not, which steps are causing delays, and how can we improve them?
- Work in Progress (WIP): Are we respecting our WIP limits? Should we adjust them to improve focus and flow? How do WIP limits impact bottlenecks and delays?
- Throughput: Are we delivering a consistent amount of work? What's the quality of completed tasks? How can we increase throughput while maintaining quality?
- Bottlenecks and Blocked Time: Where are tasks consistently getting blocked? What external factors or dependencies are slowing us down? How can we reduce blocked time?
- Flow Efficiency: Is our Workflow efficient? Are we spending too much time waiting for approval, review, or handoffs? How can we optimize the process to increase flow efficiency?

- Queue Length and Backlog: Are work items piling up in certain stages? Are we experiencing backlogs that impact delivery? How can we improve work distribution across stages?
- Improving the Cumulative Flow Diagram (CFD): Are there patterns of stagnation or bottlenecks visible in the CFD? What can we do to make the flow smoother?

Outcome of Using Kanban Metrics in Retrospectives

By using Kanban Metrics in retrospectives, teams can:

- Identify trends and patterns in Workflow performance (e.g., cycle time, throughput, or bottlenecks).
- Spot inefficiencies such as high WIP, excessive blocked time, or stalled queues that hinder progress.
- Make data-driven decisions about process improvements (e.g., adjusting WIP limits, changing Workflow stages).
- Visualize the impact of changes in future cycles by setting clear improvement goals and tracking them with metrics.

Example Retrospective Questions Using Kanban Metrics:

- Cycle Time: Why did some tasks take longer to complete than expected? Was it a complexity issue, a resource problem, or a Workflow bottleneck?
- Lead Time: Are we meeting our lead time targets for completing requests? Where are the delays happening in the process?
- Work in Progress (WIP): Are our WIP limits too high, leading to task switching and delays? Should we lower WIP limits to focus more on completing current tasks?
- Throughput: How many tasks are we completing in a given period? Are there external or internal factors affecting throughput?
- Bottlenecks (Blocked Time): Where are tasks getting stuck? Is there a dependency or process that consistently causes blocks? How can we address this?
- Flow Efficiency: Are we spending too much time waiting for approval or on other non-value-added activities? How can we improve the active time spent on work?
- Cumulative Flow Diagram (CFD): In the CFD, where do we see work piling up? What can we do to reduce congestion in certain Workflow stages?

Kanban Metrics are discusses in Section 4.1.

9.1.1.7 Kanban KPIs*

Kanban key performance indicators align more directly with business outcomes, team productivity, and process performance, rather than Kanban Metrics such as cycle time or throughput. These KPIs are used to assess overall system health and goal alignment and are critical during the Retrospect and Improve process to drive continuous improvement. By focusing on Kanban KPIs rather than just raw metrics, teams can have more meaningful retrospectives that align with business outcomes, quality, and customer satisfaction. These KPIs allow for data-driven discussions on improving performance and delivering better value to stakeholders, leading to sustained continuous improvement.

Key Kanban KPIs and Their Role in Retrospectives

Kanban KPI	Insight for Retrospective Discussion
Customer Satisfaction (CSAT)	Measures how happy customers are with the delivered work. Retrospectives can focus on whether the team is meeting customer expectations and how to improve.
Service Level Agreements (SLAs)	Tracks whether the team is meeting agreed-upon service levels or deadlines. Retrospectives can focus on improving delivery to meet SLAs more consistently.
On-time Delivery Rate	The percentage of work items delivered by the agreed-upon deadlines. The team can reflect on why deadlines were or were not met, and take action to improve delivery accuracy.
Quality (Defect Density)	Measures the number of defects found in completed work. The retrospective can analyze how quality can be improved in future work, whether through better testing, clearer requirements, or other means.
Team Capacity vs. Demand	Compares the team's capacity with the incoming work demand. Retrospectives can explore whether the team is consistently overloaded, underutilized, or if the work is well-balanced.
Work Item Prioritization Accuracy	Measures how well the team is able to prioritize the right work items based on business needs. If prioritization is off, retrospectives can focus on refining the backlog management process.
Value Delivered to Customers	Tracks the value (in terms of business objectives) delivered by Completed Work Items. The retrospective can focus on whether the team is delivering the right value to customers or if adjustments are needed.
Time to Market	Measures how quickly a work item or product feature reaches the customer. Retrospectives can focus on shortening this time by addressing bottlenecks or improving Workflows.
Flow Efficiency (Business Value)	A more business-focused version of flow efficiency that tracks how effectively the team's work generates business value per unit of time. Retrospectives can discuss reducing time spent on non-value-added activities.
Escaped Defects	The number of defects found in production after a feature is released. Retrospectives can examine the root causes of escaped defects and explore ways to improve quality assurance processes.

Table 9-6: Key Kanban KPIs and Their Role in Retrospectives

In the Retrospective, Teams Can Reflect On:

- Customer Satisfaction (CSAT): Are we meeting our customer satisfaction targets? What feedback did we receive from customers, and what can we improve based on that feedback?

- Service Level Agreements (SLAs): Are we consistently meeting our SLAs and deadlines? If not, what factors are causing delays, and how can we improve our forecasting and delivery timelines?
- On-time Delivery Rate: How often are we delivering work on time? If delays are occurring, is it due to inaccurate estimation, insufficient resources, or other factors that need addressing?
- Quality (Defect Density): Are we releasing high-quality work? How often are defects being found after delivery? What steps can we take to improve our quality assurance and testing processes?
- Team Capacity vs. Demand: Is our team capacity aligned with the incoming demand? Are we consistently overburdened, underutilized, or well-balanced? What adjustments can we make to better match capacity and demand?
- Work Item Prioritization Accuracy: Are we prioritizing the most valuable work? If we missed the mark on prioritization, how can we improve the process and ensure we're focusing on the highest-value tasks?
- Value Delivered to Customers: Are we delivering real value to customers with the work completed? Is there any misalignment between the work we're doing and the business goals or customer needs?
- Time to Market: How quickly are we getting features or products to market? If our time to market is slow, which process bottlenecks can we address to speed up delivery without compromising quality?
- Flow Efficiency (Business Value): Are we spending our time effectively? Are we delivering value at the same pace we are doing work? Where can we reduce wasted effort and improve flow?
- Escaped Defects: Are defects being caught before release, or are they escaping into production? What preventive measures can we implement to catch issues earlier in the process?

Outcome of Using Kanban KPIs in Retrospectives

By integrating Kanban KPIs into the retrospective process, teams can:

- Align work with business goals: Focus on delivering value rather than just completing tasks, ensuring that work contributes directly to customer satisfaction and business objectives.
- Improve capacity planning: Use KPIs like team capacity vs. demand and on-time delivery rate to ensure better resource allocation and prevent overburdening the team.
- Enhance quality: Track defect density and escaped defects to improve the team's quality assurance processes and reduce costly defects in production.
- Adjust priorities effectively: Use work item prioritization accuracy to ensure that the team is working on the right things, aligned with customer and business needs.
- Speed up delivery: Focus on reducing time to market by identifying bottlenecks in the process and finding ways to streamline the Workflow.
- Improve customer outcomes: Use customer satisfaction (CSAT) and value delivered to customers to ensure the team is delivering work that meets or exceeds customer expectations.

Example Retrospective Questions Using Kanban KPIs:

- Customer Satisfaction (CSAT): How did our recent work impact customer satisfaction? Are we meeting or exceeding customer expectations? What can we do differently next time?
- Service Level Agreements (SLAs): Did we meet our service level agreements this cycle? If not, what caused the delays, and how can we improve our delivery timelines?
- On-time Delivery Rate: How accurate were our delivery predictions? If we missed deadlines, what contributed to the delay, and how can we improve our forecasting process?
- Defect Density/Quality: Were there any defects in our completed work? How can we improve our quality control measures to reduce defects before delivery?

- Team Capacity vs. Demand: Did we feel overloaded or underutilized? Are our WIP limits and resource allocation aligned with the amount of work in the backlog?
- Work Item Prioritization: Were the highest priority items completed first? Did we focus on the most valuable tasks, or did we get distracted by lower-priority work?
- Value Delivered: Are we delivering work that provides tangible value to customers? How can we improve our prioritization and ensure we're addressing customer needs more effectively?

9.1.1.8 Kanban Reports*

In the context of Kanban, the Retrospect and Improve process is a vital element of continuous improvement. During retrospectives, teams reflect on their Workflows, identify opportunities for improvement, and propose actionable changes to optimize performance. A key input to this process is the use of Kanban reports, which provide detailed, data-driven insights into the team's Workflow, performance, and overall system health.

Kanban reports serve as a tool to measure and visualize critical aspects of the Kanban system, providing a foundation for objective discussions during retrospectives. These reports help teams identify inefficiencies, bottlenecks, or other issues within their Workflow, allowing them to make informed decisions about how to improve.

For more information, see section 4.2.

9.1.1.9 Kanban Policies

In the Kanban framework, Kanban policies define the rules, guidelines, and practices that govern how work is managed and flows through the system. These policies help ensure the system operates efficiently and consistently, while also enabling continuous improvement. When conducting retrospectives, Kanban policies are an essential input because they shape the Workflow and directly impact performance. During retrospectives, teams can assess whether the existing policies are helping or hindering their ability to deliver value and improve over time. Work item type policies, WIP limits, priority policies, definition of done (DoD) policies, SLAs, and other operational guidelines are reviewed to ensure they support the team's goals, minimize bottlenecks, and enhance Workflow performance.

By integrating Kanban policies into the retrospective process, teams gain the opportunity to optimize their Workflows continuously, adapt to changing needs, and drive incremental improvements that align with organizational objectives. Retrospectives focused on Kanban policies promote data-driven decision-making and collaborative problem-solving, enabling teams to maintain a lean, efficient, and high-performing system.

Purpose of Kanban Policies in the Retrospective Process

The purpose of using Kanban policies as input during retrospectives is to:

- Assess Policy Effectiveness: Determine if existing policies are supporting the goals of the team or if they need adjustments.
- Identify Bottlenecks: Sometimes policies create unintended bottlenecks or inefficiencies in the Workflow. Retrospectives allow the team to spot these issues.
- Promote Continuous Improvement: Kanban emphasizes continuous evolution, and policies should be reviewed regularly to ensure they remain relevant and effective.

- Drive Alignment: Reviewing policies ensures that the team's approach aligns with business goals, customer needs, and overall organizational objectives.
- Ensure Adaptability: Policies should be adaptable to changes in team capacity, workload, or external constraints. Retrospectives provide the opportunity to fine-tune these policies.

Types of Kanban Policies and Their Role in Retrospectives

Below are several types of Kanban policies that are often reviewed during retrospectives and how they influence the retrospective discussion.

1. Work Item Type Policies

- Definition: Work item type policies categorize work items into different types, such as features, bugs, technical debt, etc. Each type may have different Workflows or priorities.
- Retrospective Insight: The team may evaluate whether the current categorization of work item types is clear and helpful, or if it is leading to confusion or delays. For example, are bugs being prioritized over features appropriately? Or are certain types of work receiving insufficient attention?
- Actionable Outcome: The retrospective may suggest adjusting the prioritization rules, introducing new work item types, or changing how items are categorized to better reflect business needs.

2. Work In Progress (WIP) Limits

- Definition: WIP limits are policies that restrict the number of work items allowed in each stage of the Kanban board at any given time.
- Retrospective Insight: WIP limits play a key role in managing flow. In retrospectives, teams can review whether the WIP limits are appropriately set. Too many items in progress can lead to overload, while too few can result in underutilization. Reviewing WIP limits helps in finding the right balance.
- Actionable Outcome: The retrospective may result in adjusting WIP limits in different stages of the Kanban board, depending on team capacity or Workflow constraints.

3. Priority Policies

- Definition: Priority policies define how work items are ordered and prioritized in the system. This could involve explicit prioritization (e.g., by customer need or business value) or implicit prioritization (based on a set order of arrival or severity).
- Retrospective Insight: The team may evaluate whether the current prioritization rules are leading to the timely delivery of the most important work or if there are delays in addressing high-priority items. Are lower-priority tasks cluttering the board and delaying the completion of more critical tasks?
- Actionable Outcome: Changes to prioritization policies could be proposed, such as introducing more flexibility to reprioritize tasks or using a different method to identify priority items.

4. Definition of Done (DoD) Policies

- Definition: The Definition of Done (DoD) outlines the criteria that a work item must meet to be considered complete. This may include testing, documentation, deployment, and more.
- Retrospective Insight: In retrospectives, the team can assess whether the Definition of Done is clear, consistently followed, and appropriate for all types of work. If work items are being marked as complete too soon or without sufficient quality checks, it could lead to rework or defects.
- Actionable Outcome: If the team feels the DoD is too lax or too strict, the retrospective might suggest revisions, such as clarifying quality standards or adjusting when a task can be considered complete.

5. Service Level Agreements (SLAs)

- Definition: SLAs define the expected turnaround time or delivery time for work items or specific types of work (e.g., how long a bug fix should take or when a feature should be delivered).
- Retrospective Insight: Reviewing SLAs during retrospectives can reveal whether the team is meeting expectations. If SLAs are not being met, it may indicate problems in the Workflow, capacity planning, or prioritization.
- Actionable Outcome: If SLAs are being violated, the retrospective might suggest adjustments in workload distribution, resources, or Workflow policies to improve the team's ability to meet these targets.

6. Pull Policies

- Definition: Pull policies define how work is pulled into the system and who is responsible for pulling it. This could be based on team availability, priority, or other criteria.
- Retrospective Insight: Retrospectives provide a space to evaluate whether the current pull policies are effective. For example, are team members waiting for work to be pulled into the next stage? Are there misalignments in who is pulling the work or how work is handed off?
- Actionable Outcome: The retrospective might result in policy changes, such as adjusting how work is pulled based on team capacity, or improving collaboration across stages to prevent idle time.

7. Explicit Policies for Handling Blockers

- Definition: These policies define how to handle blocked work items and the escalation process for resolving blockers.
- Retrospective Insight: The retrospective allows teams to reflect on whether blockers are being effectively managed. Are blockers being identified and escalated quickly? Are they resolved promptly, or do they linger for extended periods, affecting flow?
- Actionable Outcome: The team may decide to introduce a more structured approach for addressing blockers, such as creating a more visible tracking system for blocked items or adjusting escalation procedures.

8. Risk Management Policies

- Definition: Risk management policies describe how to assess and mitigate risks in the Workflow. This could include managing dependencies, handling urgent requests, or addressing uncertainty in work.
- Retrospective Insight: In retrospectives, teams can review whether risks are being managed effectively, especially in uncertain or complex tasks. Are potential risks identified early, and are appropriate mitigation strategies in place?
- Actionable Outcome: The retrospective may lead to improvements in risk assessment, such as creating buffers in the system to handle unknowns or adjusting Workflows to better manage dependencies.

Benefits of Reviewing Kanban Policies in Retrospectives

- Identify Inefficiencies: Policies that are too rigid, unclear, or misaligned can create inefficiencies in the Workflow. Retrospectives provide the opportunity to identify and revise such policies.
- Adapt to Changing Contexts: As team needs, external factors, or business goals evolve, Kanban policies may need to adapt. Retrospectives allow teams to assess whether existing policies are still relevant and provide a forum for proposing adjustments.

- Optimize Flow: Policies such as WIP limits, pull policies, and priority rules directly affect how workflows through the system. Adjusting these policies in response to retrospective insights can lead to smoother, faster, and more predictable delivery.
- Improve Quality: Policies like the Definition of Done (DoD) and SLAs ensure that work meets a certain standard of quality. During retrospectives, teams can refine these policies to enhance quality and reduce defects or rework.
- Increase Transparency: Policies related to blockers, risk management, and escalation make issues visible and provide a structured way to handle challenges. Reviewing these policies ensures the team has a clear process for managing problems when they arise.

Kanban Policies are described in Section 7.2.5.6.

9.1.1.10 Feedback

In the Kanban framework, feedback is an essential input during the Retrospect and Improve process. Retrospectives are designed to reflect on past performance, evaluate what worked well, identify areas for improvement, and develop actionable steps for continuous improvement. Feedback serves as a critical element in this process, providing valuable insights into the effectiveness of the current Workflow, team dynamics, and overall system performance.

Feedback can come from various sources—team members, stakeholders, customers, or even automated systems—and it is essential for identifying bottlenecks, inefficiencies, and areas where adjustments are needed. When used effectively, feedback ensures that the retrospective process is data-driven, fostering a culture of continuous improvement. During retrospectives, teams analyze feedback to identify inefficiencies, bottlenecks, or misalignments with business goals. Ultimately, feedback is a powerful tool that drives data-driven decision-making, collaborative problem-solving, and incremental improvements, ensuring that the Kanban system remains adaptive, efficient, and aligned with organizational and customer objectives.

Purpose of Feedback in the Retrospective Process

Feedback serves several key purposes during the retrospective process:

- Identify Issues Early: Feedback helps highlight issues before they become significant problems, allowing teams to address them proactively.
- Foster Transparency: Feedback fosters a culture of openness, encouraging team members to voice concerns, share observations, and propose solutions.
- Build Trust: Encouraging regular and constructive feedback strengthens trust within the team, leading to better collaboration and problem-solving.
- Drive Continuous Improvement: By reviewing feedback, teams can pinpoint areas for improvement and make incremental changes to improve the Workflow.
- Align the Team: Feedback helps align the team's efforts and ensures everyone is on the same page regarding what's working well and what needs to change.

Types of Feedback in Kanban and Their Role in Retrospectives

In Kanban, feedback can be categorized into several types, each contributing uniquely to the retrospective discussion:

1. Team Member Feedback

- Definition: Feedback from team members is often direct, informal, and based on individual observations and experiences during the work cycle. It could be related to Workflow processes, communication, or the handling of work items.
- Retrospective Insight: Team members may offer insights on aspects like workload distribution, collaboration, and Workflow handoffs. Feedback can also highlight team dynamics, such as how communication flows between different roles or stages of the Kanban process.
- Actionable Outcome: Team member feedback might lead to changes in team collaboration practices, adjustments in task assignments, or improvements in how handoffs are managed between team members or departments.

2. Stakeholder Feedback

- Definition: Stakeholder feedback refers to the opinions and suggestions provided by external parties who are impacted by the work completed by the team. Stakeholders may include product owners, customers, business analysts, or department heads.
- Retrospective Insight: Stakeholders provide valuable insights into whether the team is meeting customer expectations, business needs, and quality standards. Feedback from stakeholders often highlights areas where the team's output may be misaligned with business goals or customer satisfaction.
- Actionable Outcome: Stakeholder feedback might prompt a team to adjust its prioritization policies, improve communication with stakeholders, or refine the Definition of Done (DoD) to better meet customer needs.

3. Customer Feedback

- Definition: Customer feedback focuses on how well the team's deliverables align with customer requirements and satisfaction. It often comes in the form of direct customer surveys, support tickets, usage analytics, or customer reviews.
- Retrospective Insight: This type of feedback provides a perspective on the value delivered and whether the work completed addresses customer pain points. Negative feedback from customers may reveal unmet needs or missed expectations, while positive feedback can confirm successful practices.
- Actionable Outcome: Customer feedback can drive process improvements in areas such as feature development, bug resolution, and customer support processes. It may lead to refinements in user stories, the backlog prioritization process, or testing practices to better meet customer needs.

4. Automated System Feedback

- Definition: In Kanban, automated feedback comes from tools, metrics, and reports that track and visualize the Workflow. This includes Cumulative Flow Diagrams (CFDs), Lead Time and Cycle Time reports, Throughput data, and other system-generated metrics.
- Retrospective Insight: This feedback provides objective, data-driven insights into how well the system is performing. It helps teams understand flow efficiency, identify bottlenecks, and evaluate the predictability of delivery.

- Actionable Outcome: System feedback may lead to improvements in the Kanban board setup, WIP limits, or task prioritization. It could also highlight the need for process adjustments to reduce cycle time or increase throughput.

5. Peer Reviews and Feedback

- Definition: Peer reviews provide feedback on individual work or team processes. In a Kanban system, this feedback may involve reviewing work items at various stages, such as during the "Ready for Review" or "In Progress" stages.
- Retrospective Insight: Peer feedback helps identify areas for improvement in quality, such as code quality, design, or documentation. It also helps improve the process of handing off work items between team members.
- Actionable Outcome: Peer feedback can lead to improvements in team collaboration, quality standards, or the Definition of Done. Teams may also implement more frequent or structured reviews to catch issues earlier in the process.

6. Feedback from the Workflow (Work Item Aging, Blocked Items)

- Definition: This feedback comes from Work Item Aging reports and Blocked Items reports, which show how long work items have been sitting idle or blocked at any stage of the Workflow.
- Retrospective Insight: This type of feedback helps teams understand whether there are any recurring issues that are causing delays or slowdowns in the process. For example, items that are consistently blocked or aging too long in a stage may point to issues with resource allocation or clarity in requirements.
- Actionable Outcome: Teams might adjust WIP limits, clarify Workflow policies, or make resource allocation changes to reduce blocking and improve the flow of work.

Benefits of Using Feedback in Retrospectives

- Objective Reflection: Feedback provides concrete data that allows teams to reflect on their processes, customer satisfaction, and team performance in an objective manner.
- Holistic Perspective: Feedback from multiple sources—team members, stakeholders, customers, and automated systems—provides a comprehensive view of the Workflow. This enables the team to make well-rounded improvements.
- Continuous Alignment with Goals: Regularly gathering and acting on feedback ensures that the team's work stays aligned with organizational goals, customer needs, and stakeholder expectations.
- Building a Culture of Openness: Feedback encourages open communication within the team and with external stakeholders. It fosters trust and a sense of ownership, making the retrospective process more collaborative and effective.
- Actionable Insights: Feedback translates into actionable insights. It helps pinpoint specific areas where the team can make changes to improve Workflow efficiency, product quality, and customer satisfaction.

9.1.1.11 Incidents or Issues

In the Kanban framework, incidents or issues are disruptions that affect the flow of work and overall system performance. These can be anything from unexpected blockers, unplanned work, delays, customer complaints, technical failures, or resource shortages.

The Retrospect and Improve process is an opportunity for the team to reflect on these incidents or issues, understand their root causes, and determine how to prevent or mitigate them in the future.

Incidents and issues are critical inputs to the retrospective process because they directly impact the efficiency and predictability of the Kanban system. By reviewing incidents and issues, teams can uncover systemic problems, improve process stability, and continuously improve their Workflow to minimize disruptions going forward.

During retrospectives, teams analyze the root causes of these incidents, evaluate their impact on the Workflow, and take actionable steps to prevent future occurrences. By addressing incidents in a transparent, data-driven manner, teams can improve risk management, optimize processes, and enhance collaboration. Ultimately, reflecting on incidents during retrospectives leads to more resilient Workflows, improved customer satisfaction, and continuous improvement within the Kanban system.

Purpose of Incidents and Issues in the Retrospective Process

The primary purpose of incorporating incidents and issues as inputs during retrospectives is to:

- Analyze and Address Root Causes: Incidents often have underlying causes that need to be understood and resolved. Retrospectives provide the time and space to investigate these issues in-depth.
- Prevent Future Disruptions: By reflecting on past incidents and issues, the team can identify patterns or systemic issues and put strategies in place to avoid similar problems in the future.
- Increase Transparency: Discussing incidents openly during retrospectives fosters a culture of transparency where problems are not hidden but instead are dealt with collaboratively and constructively.
- Improve Risk Management: Retrospectives allow teams to learn from incidents and develop proactive measures or policies to manage future risks and uncertainties.
- Promote Continuous Improvement: Evaluating issues helps the team take action on areas of weakness, making the Workflow more resilient over time.

Types of Incidents and Issues and Their Role in Retrospectives

There are several types of incidents or issues that can occur in a Kanban system, and each has a specific role in retrospective discussions. Understanding these incidents can help the team improve their Workflow and make necessary adjustments.

1. Work Blockers and Delays

- Definition: Blockers refer to any issue that halts the progress of work items, causing them to remain stagnant in the Workflow. This could be due to external dependencies, waiting for approvals, missing information, or technical roadblocks.
- Retrospective Insight: Work blockers are one of the most common incidents in Kanban systems. The retrospective allows the team to reflect on the causes of these blockers, such as bottlenecks in certain stages, unclear handoffs, or insufficient capacity in specific areas.
- Actionable Outcome: The team can identify whether the blockers were due to unclear WIP limits, dependency issues, lack of resources, or miscommunication. Based on this analysis, they can refine processes or adjust resource allocation to reduce future blockers.

2. Unplanned Work or Scope Creep

- Definition: Unplanned work or scope creep refers to tasks or requests that arise unexpectedly during a cycle and need to be addressed immediately, disrupting the planned Workflow.
- Retrospective Insight: Unplanned work disrupts the flow and can create inefficiencies by pulling resources away from planned work. In retrospectives, the team can evaluate how frequently unplanned work is introduced and whether it is properly prioritized.
- Actionable Outcome: The retrospective may lead to discussions on improving backlog refinement, enhancing prioritization practices, or introducing clearer guidelines on how to handle unplanned work to minimize disruption.

3. Quality Issues and Defects

- Definition: Quality issues or defects occur when work items do not meet the expected standards, either during testing, peer reviews, or customer feedback.
- Retrospective Insight: Defects often reveal gaps in the team's Definition of Done (DoD), testing procedures, or communication. In the retrospective, teams can reflect on how defects were handled, whether they were caught early, and what caused them to slip through.
- Actionable Outcome: Based on feedback, the team may decide to improve the DoD, enhance test coverage, or adjust the process for quality assurance to catch defects earlier and prevent them from impacting customer satisfaction.

4. External Dependencies

- Definition: External dependencies occur when the team relies on external parties, tools, or systems to complete a work item. Delays or failures from external sources can cause work to stall.
- Retrospective Insight: External dependencies are a common cause of delays in Kanban systems. The team can review how external factors influenced the flow of work and whether there are any recurring dependencies that caused issues.
- Actionable Outcome: Teams can propose strategies to better manage dependencies, such as increasing communication with external teams, introducing buffer time for dependencies, or revisiting the Workflow design to reduce reliance on external factors.

5. Capacity Issues and Resource Shortages

- Definition: Capacity issues occur when the team does not have enough resources (e.g., time, personnel, or expertise) to meet the demands of the Workflow, resulting in delays or incomplete work.
- Retrospective Insight: In retrospectives, teams can assess whether there was a misalignment between the workload and the capacity of the team. If there was a shortage of resources, the retrospective might examine whether tasks were under-estimated or if team members were overloaded.
- Actionable Outcome: The team can adjust WIP limits, task allocation, or resource planning to ensure that capacity is aligned with demand. They may also identify training opportunities to better equip team members to handle complex tasks.

6. Workflow and Process Inefficiencies

- Definition: Inefficiencies in Workflow refer to any steps, handoffs, or stages that slow down the process, resulting in waste or delays. This could include redundant meetings, unnecessary waiting periods, or manual tasks that could be automated.

- Retrospective Insight: Workflow inefficiencies can often be revealed through lead time, cycle time, or flow efficiency metrics. In retrospectives, the team can look at the stages where work is bottlenecked or where delays are introduced, evaluating whether certain steps can be streamlined or eliminated.
- Actionable Outcome: Teams can identify opportunities for process automation, reduced handoffs, or more efficient task routing. They may also propose changes to WIP limits or process policies to optimize flow.

7. Missed Deadlines and Delivery Delays

- Definition: Deadlines may be missed due to various reasons, including scope changes, resource limitations, or unplanned work. Delivery delays can harm customer relationships and business goals.
- Retrospective Insight: Missed deadlines are a symptom of larger issues within the system. Teams can analyze the causes, such as inaccurate estimates, frequent changes to priorities, or insufficient capacity to meet deadlines.
- Actionable Outcome: The retrospective may result in adjusting forecasting or estimation techniques, improving communication with stakeholders, or refining capacity planning to ensure that deadlines are met in the future.

8. Customer Complaints or Negative Feedback

- Definition: Customer complaints or negative feedback often arise when expectations are not met, whether in terms of quality, timeliness, or features.
- Retrospective Insight: In retrospectives, the team can review any complaints or negative feedback received and identify the root causes. Did the team misunderstand customer needs? Was the issue related to the quality of work, or was there a breakdown in communication?
- Actionable Outcome: The team may revise their requirements gathering process, implement better testing practices, or improve stakeholder communication to ensure that future work aligns more closely with customer expectations.

Benefits of Reviewing Incidents and Issues in Retrospectives

- Root Cause Analysis: By reflecting on incidents, the team can dig deeper into the root causes and take action to prevent similar problems in the future.
- Improved Risk Management: Discussing incidents regularly helps the team improve their ability to identify risks early, allowing for proactive risk mitigation strategies.
- Optimized Workflow: Analyzing incidents helps uncover inefficiencies, such as bottlenecks, unplanned work, or process delays, which can be optimized to improve overall system performance.
- Better Team Collaboration: Discussing issues openly fosters a culture of transparency and collaboration. It enables the team to work together to find solutions, rather than hiding problems or assigning blame.
- Customer-Centric Adjustments: Customer complaints and feedback, when discussed, can be used to make improvements that directly impact customer satisfaction, ensuring the team is focused on delivering value.

9.1.2 Tools

9.1.2.1 Retrospective Meetings*

In the Kanban framework, the Retrospective Meeting is an essential tool in the Retrospect and Improve process. It provides a structured opportunity for teams to reflect on their past performance, evaluate the effectiveness of their Workflows, identify areas for improvement, and agree on actionable changes. The retrospective meeting is not just a meeting but a key part of the continuous improvement loop, where insights and feedback are used to fine-tune the system and team processes.

Unlike traditional Agile retrospectives, which may be held at regular intervals (e.g., at the end of every sprint), Kanban retrospectives are often more flexible and happen at a cadence that suits the team's needs—whether that's regularly scheduled or triggered by specific incidents, bottlenecks, or performance issues.

By using data-driven insights from Kanban metrics, Kanban KPIs, Reports, Kanban Backlog, Kanban Workflows and Kanban Boards, teams can assess the effectiveness of their Workflows and pinpoint root causes of problems, such as bottlenecks, quality issues, or resource shortages. The retrospective meeting is not just a forum for discussing problems but a space for generating actionable solutions, fostering transparency, and aligning the team on continuous improvement. Whether using techniques like Start/Stop/Continue, 5 Whys, or Sailboat retrospectives, these meetings create a culture of collaboration and learning, ensuring that the team remains agile, focused on delivering value, and always improving.

Purpose of Retrospective Meetings in Kanban

The purpose of the retrospective meeting in Kanban is to:

- Promote Continuous Improvement: Retrospectives provide a dedicated space for teams to review and adjust their processes regularly. The goal is to ensure that the Kanban system evolves to be more efficient, productive, and aligned with team and organizational goals.
- Reflect on Performance: Teams use retrospectives to reflect on past cycles, incidents, work items, or Workflows. This reflection helps identify areas that worked well and areas that need attention, ensuring that the team learns from both successes and failures.
- Foster Team Collaboration and Transparency: Retrospective meetings create an open environment for team members to voice their opinions, share feedback, and collaborate on solutions to problems. This enhances team communication and trust.
- Drive Actionable Outcomes: The retrospective process encourages teams to make data-driven, actionable decisions that can directly improve Workflow efficiency, quality, and team dynamics.
- Identify Systemic Issues: While retrospectives focus on immediate issues or incidents, they also help identify larger, systemic issues in the Workflow, policies, or work culture that may be contributing to bottlenecks or inefficiencies.

Structure of Retrospective Meetings in Kanban

A typical retrospective meeting in Kanban may follow a general structure, but the format can vary depending on the team's specific needs and the nature of the process improvements required. Here is a general framework for how a Kanban retrospective meeting might be structured:

1. Set the Stage

- Duration: Typically lasts 60–90 minutes depending on the size of the team and complexity of the discussion.

- Objective: Create an environment where the team feels safe to share feedback. Set the tone by clarifying the purpose of the retrospective—improving processes, not assigning blame.
- Icebreaker (Optional): Engage team members with a light, non-work-related activity to help them relax ad focus on the meeting.

2. Review the Current State of the Kanban System

- Visualize Workflow: Use the Kanban board to review the current state of work in progress, lead time, cycle time, bottlenecks, or blocked work items.
- Analyze Metrics and KPIs: Discuss Kanban metrics (e.g., throughput, lead time, cycle time), KPIs, and Kanban reports to gain insights into how well the system is performing. This provides objective data on how the Workflow is functioning.

3. Identify and Analyze Incidents and Issues

Issues are ongoing or systemic problems that impact the flow or quality of work but may not cause immediate failure. Examples include a recurring blocker in code review, unclear requirements that slow development, and chronic bottlenecks.

Incidents are sudden, unexpected events that require urgent resolution to restore service, flow, or system stability. Examples include a production outage, a critical bug in a live environment, a hardware failure, or an urgent security vulnerability.

Some ways to identify Incidents and Issues:

- Recent Blockers and Delays: Review any incidents, blockers, or delays that occurred during the previous cycle. Discuss why they happened, their impact, and how they were resolved (or not).
- Customer Feedback: Incorporate any feedback from stakeholders, customers, or end-users to highlight areas where work may not have met expectations or created dissatisfaction.
- Work Quality and Bottlenecks: Look for issues related to the quality of deliverables or specific stages in the Workflow where work consistently gets delayed (e.g., overburdened stages, missing resources).

How Issues and Incidents affect Kanban Flow

- Interrupt the normal delivery of planned work.
- Increase cycle time for regular tasks.
- Skew flow metrics like throughput, aging charts, and cumulative flow diagrams.
- Force context-switching, leading to loss of team focus.
- Cause accumulation of unplanned work, reducing predictability.

In Kanban, the goal is not to eliminate issues/incidents entirely (which is unrealistic) but to visualize, manage, and learn from them.

How to Manage Issues and Incidents in Kanban

Practice	Description
Visualize Them Explicitly	Use distinct cards, colors, swimlanes, or tags (e.g., red cards for incidents) to show unplanned work

Practice	Description
Introduce an "Expedite" Lane or Class of Service	Urgent items like incidents can bypass WIP limits temporarily but are tracked separately
Track Root Causes	After resolution, perform root cause analysis (e.g., "5 Whys") to prevent recurrence
Measure the Impact	Analyze the volume and frequency of unplanned work to spot systemic weaknesses
Limit Expedite Use	Ensure expedited handling is exceptional, not routine, to maintain system stability
Review During Retrospectives	Regularly discuss issues/incidents and what they reveal about Workflow health

Table 9-7: Managing Issues and Incidents in Kanban

Important Principles to Manage Incidents and Issues:

- Flow Disruption Must Be Visible: Hiding incidents causes misleading flow metrics.
- Learning over Blaming: Focus on system fixes, not individual blame.
- Balance Speed and Stability: Resolving incidents quickly is important, but addressing root causes is even more critical.

Example of managing Issues and Incidents in Kanban:

A Kanban board might have:

- A normal swimlane for regular work.
- A critical incidents swimlane for urgent, high-priority interruptions.
- Expedite cards jump the queue but are visually marked so their impact is visible.
- Teams might set policies such as: "If more than 5% of our flow consists of incidents in a month, we trigger a process improvement retrospective."

4. Use Kanban Retrospective Techniques and Formats

Kanban teams can use various techniques or formats to make retrospectives more engaging and productive. These methods can be adjusted to the specific challenges the team is facing at the time.

4.1. Start, Stop, Continue

Overview

This technique helps the team assess what they should start doing, stop doing, and continue doing. It is simple and straightforward, making it one of the most commonly used retrospective formats.

How It Works

- Start: Discuss actions, behaviors, or practices that the team should begin doing. This could be new practices, habits, or strategies that could improve the Workflow.
- Stop: Identify things that are hindering progress and should be stopped. This might include ineffective processes, unnecessary meetings, or behaviors that are reducing team efficiency.
- Continue: Recognize the practices that are working well and should be continued. These could be aspects like communication, collaboration, or specific process steps that contribute to the team's success.

When to Use

- At the end of a cycle or a specific period, where the team can reflect on what worked and what didn't.
- When you want to keep the retrospective simple and focused on actionable improvements.

Benefits

- Clear and actionable: It encourages specific actions, making it easy to understand what to do next.
- Team ownership: Everyone in the team has a voice in shaping the direction forward.

4.2. 5 Whys

Overview

The 5 Whys technique is a simple, yet powerful tool for root cause analysis. It involves asking "why" repeatedly (typically five times) to identify the underlying cause of an issue. It's used to dig deeper into problems and find solutions that address the root cause, rather than treating the symptoms.

How It Works

- When a problem or incident is identified (e.g., a bottleneck in the Workflow), the team starts by asking "Why did this happen?"
- The answer to the first "why" becomes the basis for asking the next "why," and this process continues until the team has uncovered the root cause.
- Typically, this process is repeated 5 times, but sometimes it may require fewer or more questions to identify the core issue.

When to Use

- When dealing with recurring issues, bottlenecks, or incidents that are impacting the flow of work.
- If there's a need to go deeper and explore the root causes of problems that can be addressed systemically.

Benefits

- Uncovers root causes: Helps identify the underlying reasons for problems, allowing the team to address systemic issues.
- Improves decision-making: By addressing the real causes, teams can make decisions that lead to lasting improvements, rather than just treating the symptoms.

4.3. 4Ls (Liked, Learned, Lacked, Longed for)

Overview

The 4Ls technique encourages team members to reflect on four key areas: what they liked, what they learned, what they lacked, and what they longed for during the last work cycle. This retrospective format is valuable for balancing both positive and constructive feedback.

How It Works

- Liked: Team members share things they appreciated or enjoyed during the cycle.
- Learned: Discuss what new things the team learned, both about the work and the process.
- Lacked: Reflect on what was missing in the Workflow, whether it's information, resources, or skills.
- Longed For: Identify what team members wished could have been different or what they felt was lacking.

When to Use

- To ensure a more balanced perspective, where positive feedback and lessons learned are both acknowledged.
- When you want a broad reflection on the overall experience, from both a team and process perspective.

Benefits

- Balanced feedback: Encourages both positive reinforcement and constructive criticism.
- Holistic reflection: Helps identify areas for improvement across people, processes, and resources.

4.4. Fishbone Diagram (Ishikawa Diagram)

Overview

The Fishbone Diagram, also known as the Ishikawa Diagram, is a visual tool used to identify the potential causes of problems. The diagram is shaped like a fishbone, with the "head" representing the problem and the "bones" representing categories of potential causes.

How It Works

- The team writes the problem or issue at the "head" of the fishbone.
- The team then brainstorms potential categories of causes, such as people, processes, tools, and environment.
- For each category, team members identify specific causes and sub-causes contributing to the problem.
- After completing the diagram, the team can analyze the causes and prioritize them for resolution.

When to Use

- When you need to identify multiple potential causes of a problem or bottleneck, especially if the issue is complex or multifaceted.
- Ideal for root cause analysis, particularly when problems aren't immediately obvious.

Benefits

- Comprehensive: Helps the team consider all possible causes of an issue.
- Visual clarity: The diagram provides a clear, visual way to organize causes and spot patterns.
- Collaborative: Encourages the team to engage in a deeper discussion of issues.

4.5. Sailboat Retrospective

Overview

The Sailboat Retrospective is a metaphorical technique that uses the image of a sailboat to reflect on the team's performance. The sailboat represents the team's progress toward their goals, the wind represents things that are helping the team move forward, and the anchors represent obstacles holding the team back.

How It Works

- Wind: Discuss the things that are helping the team move forward, such as effective practices, tools, or team collaboration.
- Anchors: Identify the obstacles that are preventing the team from moving faster, such as bottlenecks, lack of resources, or poor communication.
- Rocks (Optional): Sometimes, the "rocks" represent major risks or potential failures that could disrupt the team's progress.

When to Use

- When the team needs to reflect on both positive and negative factors affecting their Workflow and progress.
- Ideal for a more visual or metaphorical approach to reflection.

Benefits

- Clear metaphor: The sailboat image is an easy way to structure the conversation and ensure the team focuses on both helpful and hindering factors.
- Creative: Encourages out-of-the-box thinking and can make the retrospective more engaging.

4.6. Dot Voting

Overview

Dot voting (also known as multi-voting) is a technique for prioritizing issues or ideas. Team members are given a set of dots or stickers to vote on the most important topics or areas for improvement.

How It Works

- Team members are presented with a list of topics, issues, or potential improvements.
- Each team member is given a set of dots (usually 3-5) and votes for the most important items by placing dots on them.
- The items with the most votes are prioritized for discussion and improvement.

When to Use

- When there are multiple potential topics to address, and the team needs to prioritize them.

- Useful when there are more improvement opportunities than time to address them.

Benefits

- Quick prioritization: Helps the team focus on the most important issues quickly.
- Democratic: Each team member has an equal say in what's prioritized, which can lead to better team alignment.

4.7. Lean Coffee

Overview

Lean Coffee is a structured, yet agenda-less meeting format where the team creates the agenda at the beginning of the meeting, votes on the topics to discuss, and discusses them in time-boxed intervals. It allows the team to address the most pressing issues in a focused way.

How It Works

- Team members suggest topics they want to discuss.
- The group votes on which topics are most important.
- The team discusses each topic in 5-10 minute blocks, then votes on whether to continue or move on to the next topic.
- Discussions continue until all topics are covered or time runs out.

When to Use

- When the team wants a flexible yet structured format for discussing multiple issues.
- Ideal for retrospectives where team members have various topics they want to discuss, but time is limited.

Benefits

- Flexibility: Allows the team to focus on the most pressing issues.
- Time-efficient: Ensures that only the most important topics are discussed in depth.

Democratic: Gives all team members the opportunity to influence the agenda.

- Root Cause Analysis: Identify the underlying causes of issues discussed in the previous step. Use techniques like 5 Whys or Fishbone diagrams to analyze the root causes of bottlenecks or incidents.
- Collaborative Solution Finding: Brainstorm potential solutions or improvements. This could involve adjusting WIP limits, revising work policies, improving communication practices, or optimizing resource allocation.
- Prioritize Actions: Once solutions are identified, the team should prioritize them based on their potential impact, feasibility, and urgency. This ensures that the team tackles the most pressing issues first.

5. Commit to Actionable Changes

- Action Plan: Define specific, actionable changes that will be implemented in the next work cycle. This could include adjustments to WIP limits, policy updates, tool improvements, or Workflow optimizations.

- Assign Responsibilities: Assign responsibility for implementing changes to specific team members or groups, ensuring there's ownership and accountability for each action item.
- Define Success Metrics: Agree on how the effectiveness of the changes will be measured in the next retrospective. This could involve tracking specific metrics (e.g., lead time, cycle time, work item aging) to determine whether the changes resulted in improvements.

6. Close the Meeting

- Review the Meeting Outcomes: Summarize the main takeaways from the retrospective. Make sure everyone is clear about what changes will be implemented and how success will be measured.
- Feedback on Retrospective: Ask team members to give feedback on the retrospective itself. What went well? What could be improved? This ensures that the retrospective process continues to evolve as well.
- End on a Positive Note: Highlight successes, improvements, or even small wins to end the meeting on an optimistic, motivating note.

Benefits of Retrospective Meetings in Kanban

- Continuous Improvement: Retrospectives provide a formal, structured opportunity to reflect on the process and make incremental improvements. This leads to the gradual optimization of Workflows, team dynamics, and processes over time.
- Increased Transparency: Regular retrospectives encourage openness and transparency within the team. Team members can discuss challenges, incidents, and successes without fear of judgment, fostering trust and collaboration.
- Data-Driven Decisions: By using metrics, Kanban boards, and reports, retrospectives help teams make data-driven decisions, ensuring that changes are based on concrete insights rather than opinions or assumptions.
- Identifying Systemic Issues: Retrospectives help teams uncover recurring problems and systemic issues in the Workflow, such as bottlenecks or miscommunication. This allows the team to address root causes rather than symptoms, leading to lasting improvements.
- Team Alignment and Motivation: Retrospectives provide an opportunity for the team to align on goals, objectives, and priorities. By celebrating successes and acknowledging areas for improvement, retrospectives help keep the team motivated and focused on their shared mission.

9.1.2.2 AI-enabled Digital Kanban Tool

An AI-enabled Digital Kanban Tool enhances Kanban retrospectives by offering real-time, data-driven insights into team performance and Workflow efficiency. It automatically analyzes lead times, cycle times, bottlenecks, and blockers, helping teams identify root causes of inefficiencies. AI can detect patterns, highlight anomalies, and even assess team sentiment through comments and feedback. With visual dashboards and predictive analytics, retrospectives become more focused, objective, and actionable.

AI-driven suggestions for process improvements support continuous, incremental change, perfectly aligning with Kanban's principles. This approach empowers teams to evolve their Workflows intelligently and sustainably, fostering a culture of ongoing learning and optimization.

9.1.3 Outputs

9.1.3.1 Improvement Actions*

In Kanban, the Retrospect and Improve process is a critical feedback loop focused on evolving the way workflows through the system. Unlike Scrum, where retrospectives happen at the end of each sprint, Kanban retrospectives are typically scheduled periodically or triggered by data-driven events (such as a significant rise in lead time or a recurring blocker). The key output of a Kanban retrospective is Improvement Actions — concrete, actionable changes aimed at optimizing flow, improving quality, and enhancing team collaboration. These actions are small, incremental, and guided by real system behavior rather than assumptions.

Some Types of Improvement Actions:

Category	Description	Examples
Flow Efficiency Improvements	Changes aimed at making work move faster and smoother through the system	Adjust WIP limits, split large work items into smaller ones, redefine work item types
Bottleneck and Blocker Resolution	Actions to remove recurring blockers or persistent bottlenecks	Create clearer acceptance criteria, improve cross-team dependencies management
Policy Adjustments	Updates to explicit process agreements ("how we work")	Update Definition of Done (DoD), refine pull policies, adjust Service Level Expectations (SLEs)
Visual Management Enhancements	Making the Kanban board or other visual tools more effective	Add new columns or swimlanes, color-code work item types, display flow metrics on the board
Team Collaboration Improvements	Actions that enhance communication and cooperation	Schedule regular stand-ups for blockers, introduce pairing or peer reviews
Risk Reduction and Quality Improvements	Changes that reduce the risk of delays or quality failures	Add quality checks earlier in the flow, implement technical debt tracking
Learning and Capability Building	Developing skills that support continuous improvement	Set up training for better estimation, bring in flow experts for workshops

Table 9-8: Types of Improvement Actions

Characteristics of Good Improvement Actions: Improvement actions in Kanban should be:

- Small and evolutionary (not big disruptive changes)
- Testable (you can measure their impact on the flow)
- Visible (tracked openly, often added to the Kanban board itself)
- Aligned with business goals (customer value, predictability, sustainability)

How to Manage Improvement Actions

- Track actions as Kanban cards in a dedicated swimlane ("Improvement Actions" lane)
- Apply WIP limits to improvement work too (to avoid overwhelming the team)
- Review progress regularly (in future retrospectives or flow reviews)
- Measure impact using flow metrics (e.g., lead time before and after)

Example of Improvement Actions during Retrospect and Improve Process:

Suppose during a retrospective, the team notices that review stages are causing major delays.

Improvement actions could be:

- Introduce clearer criteria for "Ready for Review"
- Set WIP limits for reviewers
- Add an automation to notify reviewers when items are ready
- Schedule weekly peer review sessions

9.1.3.2 Updated Kanban Workflows

After the Retrospect and Improve process in Kanban, Workflows are updated to reflect agreed improvement actions. Changes may include adjusting WIP limits, refining process policies, redefining Workflow stages, or enhancing visualization. These updates aim to optimize flow, reduce bottlenecks, and support continuous, evolutionary improvement aligned with Kanban principles.

9.1.3.3 Updated Kanban Backlog

After the Retrospect and Improve process in Kanban, the backlog is updated to include new improvement actions identified during the session. These actions may address Workflow inefficiencies, recurring blockers, quality issues, or team collaboration enhancements. Improvement items are typically added as distinct work items in the backlog or on the board, prioritized alongside regular work. This ensures that continuous improvement remains visible, actionable, and integrated into the team's day-to-day operations, supporting sustainable Workflow evolution.

9.1.3.4 Updated Kanban Boards

After the Retrospect and Improve process in Kanban, the Kanban boards are updated to incorporate changes designed to improve the flow of work. This might include adjusting Work-in-Progress (WIP) limits, redefining Workflow stages, or adding new swimlanes to address specific issues or improvements. New visualizations, such as metrics or charts, may be introduced to track progress on identified bottlenecks or blockers. Additionally, improvement actions or process adjustments agreed upon during the retrospective are added as visible work items or cards on the board. These updates ensure that the Kanban board remains aligned with continuous improvement and team goals.

9.1.3.5 Learnings and Documentation

After the Retrospect and Improve process in Kanban, key learnings and improvement actions are documented to ensure continuous progress. This documentation includes identified bottlenecks, blockers, or inefficiencies, along with the corresponding action items. The team also records any new process policies, Workflow changes, or tools introduced. This helps create a knowledge base for future retrospectives and ensures that lessons learned are captured, making them accessible for review and improvement. The documentation serves as a reference for tracking the effectiveness of implemented changes over time.

This Page Has Been Left Blank Intentionally

APPENDIX A. ADDITIONAL LEARNING

A.1 Scaling Kanban and Integrating with Scrum (ScrumBan)

ScrumBan is a hybrid agile framework that combines elements of Scrum and Kanban to provide an effective method for managing work. It incorporates Scrum's iterative processes alongside Kanban's principles of visualizing Workflows and promoting continuous progress. This combination offers a structured yet flexible approach to organizing and completing Tasks.

When starting an initiative, teams can choose whether to use Scrum or ScrumBan (Scrum combined with Kanban) to manage their work. This guide explores how Kanban can be applied to manage Tasks across all teams within an organization. The use of Scrum for managing projects, IT operations, and DevOps is discussed in detail in the *A Guide to the Scrum Body of Knowledge (SBOK® Guide), Fifth Edition*, and in the white paper *Extending Scrum to IT and DevOps*.

Typically, Scrum projects and Kanban Workflows are managed separately by different teams. However, at the enterprise level, businesses may have portfolios and programs that involve multiple Scrum projects and Kanban Workflows. To scale Kanban across an enterprise, it is essential that those responsible for managing portfolios and programs have visibility into all the work being performed by Scrum and Kanban Teams within the company. This may include multiple Prioritized Product Backlogs, Kanban Backlogs, and releases.

Figure A.1 shows a Kanban Board interface for 'Kanban Initiative 1,' displaying Tasks and user stories categorized by status (To Do, In Progress, Done). Various Tasks, such as 'Task Group,' and user stories like 'User Story 2' and 'User Story 1,' are visible, with some marked as complete and others showing ongoing progress, indicating a collaborative Workflows environment.

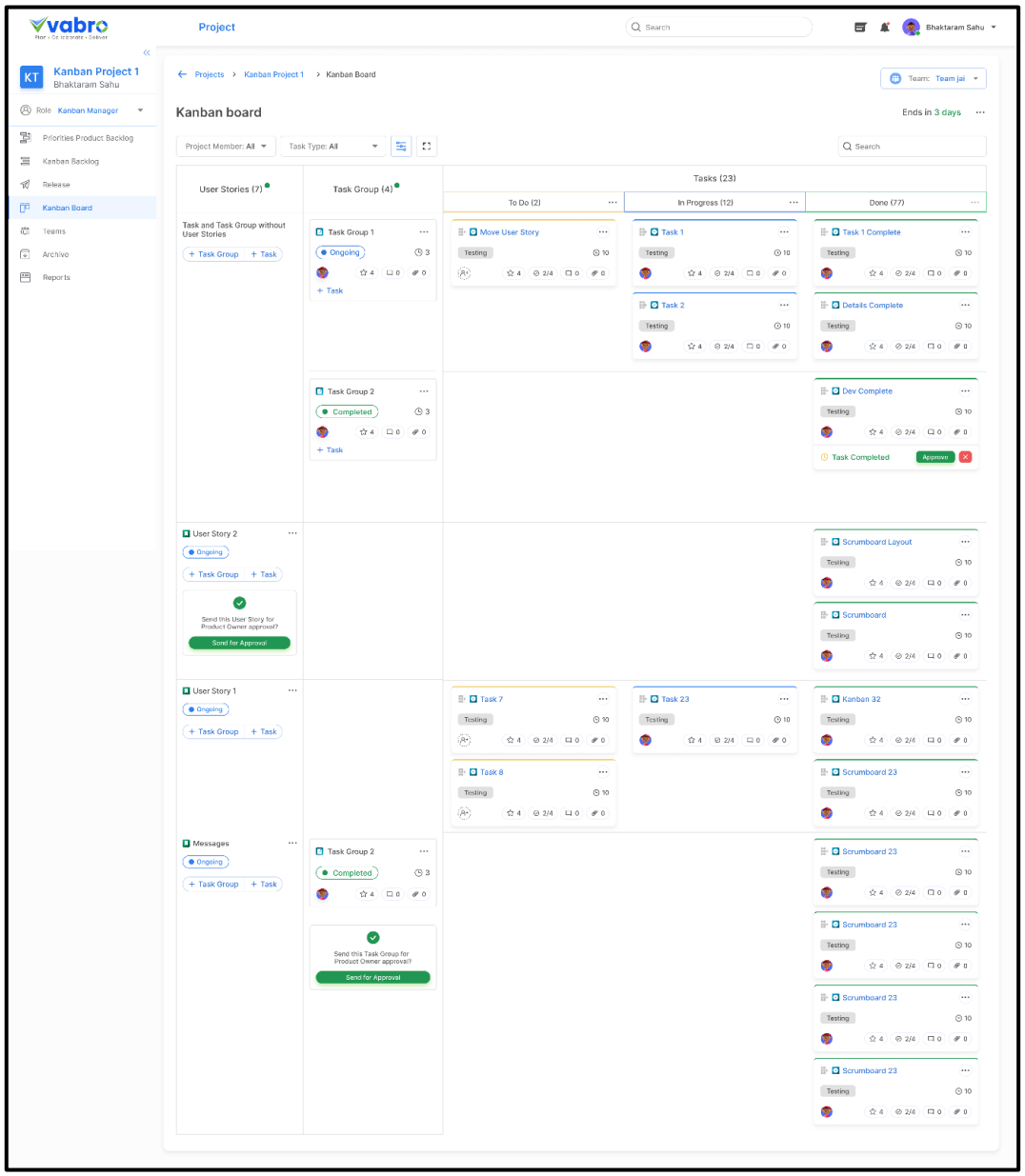

Figure A. 1: Use of Kanban Board in Scaling Kanban (Source: Vabro)

Figure A.2 shows a Kanban Board backlog in Vabro with various Tasks categorized by Task Group, user story, and category. It indicates their estimated time, assigned team, and current status. The Tasks are organized across different boards and assigned to various team members, reflecting the progress and Workflows of an ongoing project.

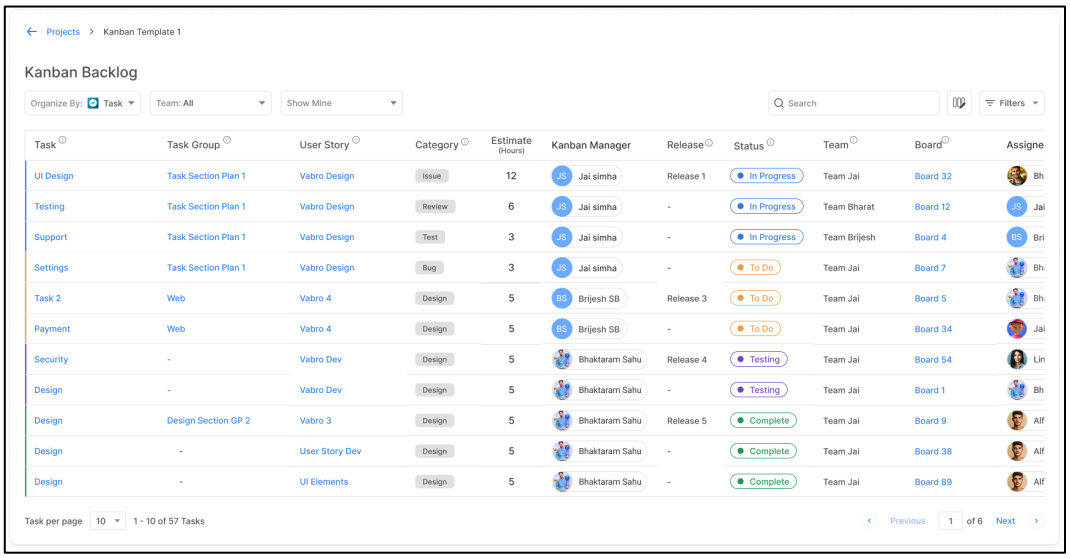

Figure A.2: Use of Kanban Backlog in Scaling Kanban (Source: Vabro)

A.1.1 Differences between Kanban Board and Scrum Board

Kanban Boards and Scrumboards are both visual tools used to manage work, but they serve different purposes. The key differences between a Kanban Board and a Scrum Board are:

- Kanban Boards allow team members to add Task Groups and Tasks directly to the board.
- Scrum Boards are used to track Tasks associated with user stories that have been pulled into the Sprint Backlog by the Scrum Master (to be worked on during the sprint).
- Kanban Boards can have any number of columns, offering more flexibility. This flexibility is not typically available with Scrum Boards, which are primarily used for tracking progress. Scrumboards generally have three main columns, with one or two additional columns that the Scrum Master can add to monitor specific progress details.
- Kanban Boards can specify a Work in Progress (WIP) limit within each column. The WIP limit is the maximum number of Tasks allowed in that column. WIP limits are not defined for Scrumboards as Scrumboards are used to depict the different stages of work within a Sprint (which is a time-boxed development cycle).
- Kanban Boards include completed work, planned work (yet to be started), work that has been put on hold, and more. Tasks that are no longer relevant to the current active work being done by the team can be archived. This ensures that WIP (Work-in-Progress) limits remain meaningful, as they apply only to relevant Tasks within each column of the Kanban Board. In contrast, Scrum Boards are time-based and focus solely on work in the current Sprint. They are reset at the end of each Sprint, which typically lasts one to four weeks.

A.1.2 Using Kanban for Broader Organizational Collaboration

When Kanban Boards interact with other Kanban Boards across an organization, it creates a cohesive ecosystem where dependencies and cross-functional Workflows are managed efficiently. To set up an effective Kanban structure for seamless interaction across the organization, the following steps can help ensure transparency, efficient dependency tracking, and streamlined communication:

A.1.2.1 Cross-Board Visibility

- Linked Kanban Boards: Establish links between boards for different teams (e.g., development, QA, marketing) to represent dependencies visually. Most Kanban tools allow linking cards across boards, making it easy to track which Tasks from one team depend on or impact Tasks from other teams.
- Shared Dependency Columns: Consider adding a "Waiting on Another Team" or "External Dependency" column on each board to capture when a Task is blocked by another team's work. This signals to the broader organization that coordination is required and flags potential issues before they become blockers.

A.1.2.2 Dependency Mapping and Signals

- Dependency Cards: Use special dependency cards or tags to highlight Tasks that are dependent on work from another team. For instance, if a feature being developed requires specific customer data from the sales team, the development Kanban Board should reflect this dependency. This visual indicator ensures that teams are aware of dependencies and can prioritize accordingly.
- Color-Coded Indicators: Apply color-coded tags to quickly signal which team is involved in each dependency (e.g., blue for development, red for design, green for marketing). This visual approach helps stakeholders across boards easily spot dependencies and plan their Workflows accordingly, ensuring a smoother coordination across teams.

A.1.2.3 Using Forms for Cross-team Collaboration

- Forms for Collaboration: Forms enable users and team members to collaborate across initiatives, workspaces, and organizations. Forms can be created at the Board level and made accessible to users. Once a user submits a form, a relevant Task is automatically generated at the Board level. Teams can then pick up these Tasks and work on them completely. Upon completion, the user is notified about the result. Additionally, automation can be applied to further streamline and automate the form handling process.
- Form Grouping and Access Levels: Forms can be organized based on various levels, such as Organization, Workspace, Workflows, or User. They can also be categorized according to the origin or function of the form, such as HR, Finance, Tech, etc. Users can view the status of forms and have the ability to edit or delete them as needed.
- Private vs. Public Forms: Forms can be set to either private or public access. Public forms allow any user to submit by accessing a link or embedding the form on third-party sites, similar to Google Forms. Private forms, on the other hand, are restricted and have dedicated pages created by the Kanban Manager or Kanban Team at the board level for more controlled access.

- A typical form can include the following information:
    - Name
    - Description
    - Form Link
    - Who can use the Form (Access Type: private or public)
        - Current board members
        - Members from this project
        - Members from this workspace
        - Current workspace members
        - Members from this organization
        - Anyone with the link
    - Target Artifact such as Task Group/Task
    - Artifact Name
    - Artifact Description
    - Artifact Priority
    - Artifact Category
    - Artifact Assignee
    - Form Level such as User/Team/Project/Workspace/Organization
    - Are form edits allowed after submitting?
    - Is form withdrawal allowed after submitting it?
    - Created by, Created on will be shown once form is created.
    - Form resolution options
- Once forms are submitted, Task Groups/Tasks will be created at the designated location or board for the respective teams. If permitted, the Kanban Manager or a Kanban Team Member can reject the form request before a Task Group or Task is created. In the Backlog and on the Board, an indicator can be displayed to differentiate between auto-generated Task Groups and manually created ones.
- Once approved or completed, the form is considered finished, and the user will be notified. When approving or sending the Task Group for approval, the Kanban Manager or a Kanban Team Member can choose from the resolve options defined during the form setup.

Figure A.3 shows a digital form interface from Airtable, titled 'New Product Launches,' in edit mode within a workspace. The form includes fields for 'Launch Name,' 'Status,' 'Launch Date,' 'Description,' 'Tags,' 'Start Date,' 'Deadline,' 'Flagged,' and 'Assets,' indicating that it is designed for managing and tracking new product launches.

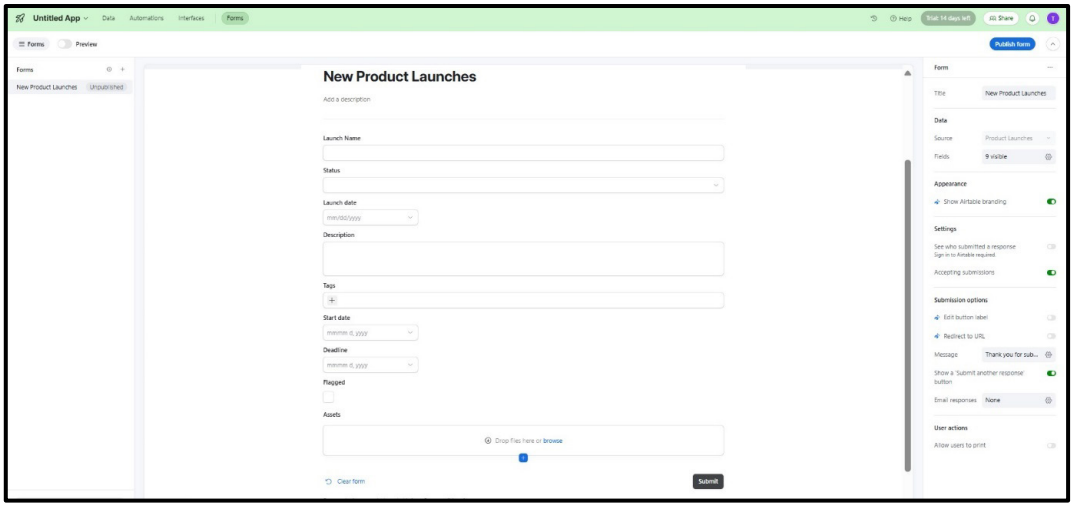

Figure A.3: A Variant of Forms used in Kanban (Source: Airtable)

Figure A.4 shows a form for the 'Automation' screen within a Nifty workspace, focused on editing a 'Project Request Form' with specific fields like 'Name (First and Last),' 'Email,' and 'Project Description.' It includes options to mark fields as required and select input types. The interface allows users to customize form fields and their properties to streamline project requests.

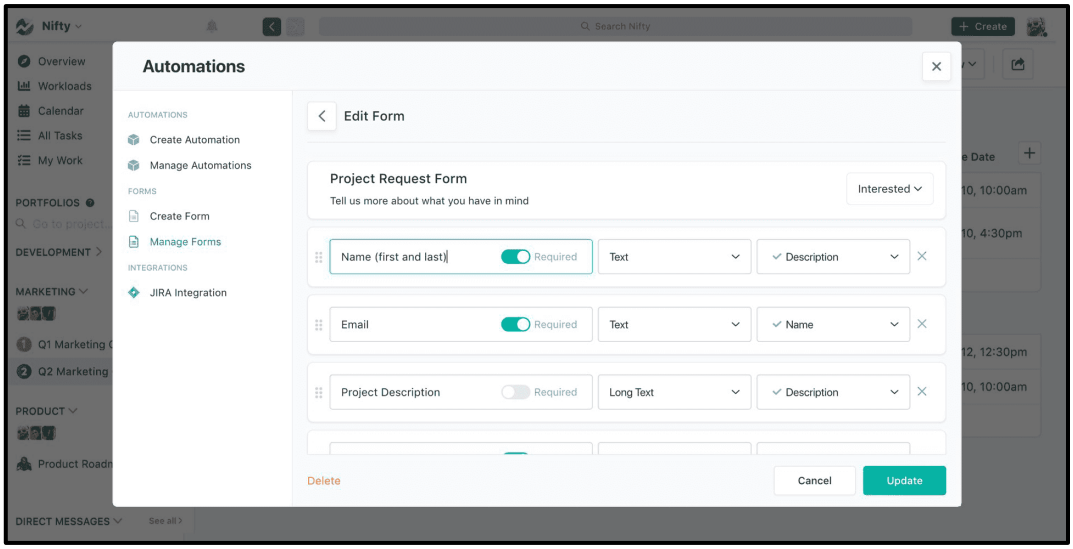

Figure A.4: A Variant of Forms used in Kanban (Source: Nifty)

Figure A.5 shows a form for the 'Automation' screen within a Nifty workspace, focused on editing a 'Project Request Form' with specific fields like 'Name (First and Last),' 'Email,' and 'Project Description.' It includes options to mark fields as required and select input types. The interface allows users to customize form fields and their properties to streamline project requests.

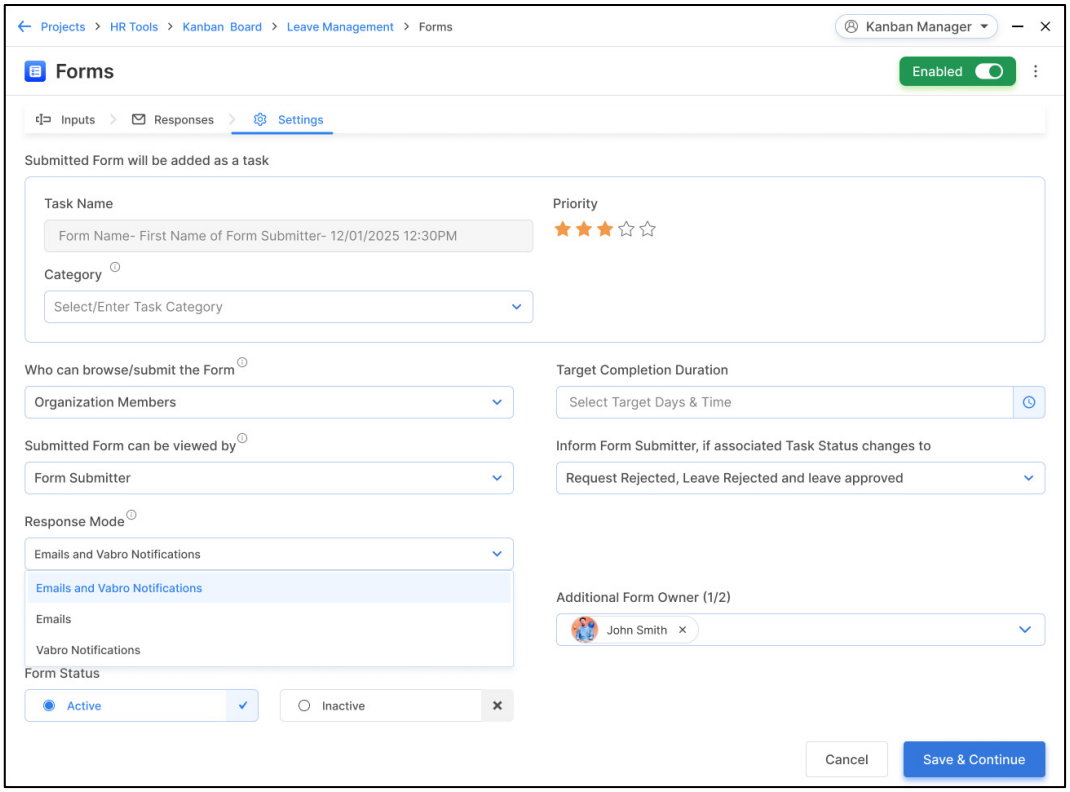

Figure A.5: Use of Forms Settings for Flexibility (Source: Vabro)

A.1.2.4 Example of How Forms can be set up in an Organization

Assume that the HR team creates a form for Leave Management allowing organization members to apply for leave.

Workspace	Human Resources
Project	Manage HR Operations (Kanban Workflows)
Board	Leave Management [Columns: Pending, Under Review, on Hold, Complete]
Product Owner	HR 1
Kanban Manager	HR 2
Kanban Team Member	HR 3 and HR 4

Table A-1: Example of Setting up Forms in an Organization

HR can set the following options in the Form:

<table>
<tr><td>Name</td><td>Apply Leave</td></tr>
<tr><td>Description</td><td>A form for organization members to apply leave.</td></tr>
<tr><td>Target Artifact Type</td><td>Task<table><tr><td>Artifact Name</td><td>Leave Request - [USER_NAME]</td></tr><tr><td>Artifact Description</td><td></td></tr><tr><td>Artifact Priority</td><td>4 Stars</td></tr><tr><td>Artifact Category</td><td>Leave</td></tr><tr><td>Artifact Assignee</td><td>HR 2</td></tr></table></td></tr>
<tr><td>Approve the form submission request before creating the artifact?</td><td>No</td></tr>
<tr><td>Form Status</td><td>Active or Inactive</td></tr>
<tr><td></td><td></td></tr>
<tr><td>Submitted Forms can be viewed by</td><td>Only me/Members in Kanban Board (Select a Board)</td></tr>
<tr><td>Who can use the form/Form Access/Permissions?</td><td>All Members from this organization:</td></tr>
<tr><td>Notify all affected members via email and notification?</td><td>Yes</td></tr>
<tr><td>Confirmation Message</td><td>Thank you for submitting your leave request. It has been forwarded to the respective teams. Please check your email for further details and updates.</td></tr>
<tr><td>Limit number of responses</td><td>No limit</td></tr>
<tr><td>Form edits allowed after submitting</td><td>No</td></tr>
</table>

Form withdrawal allowed after submitting	Yes
Form resolve Options	Approved Default: Your leave has been approved from [START_DATE] to [END_DATE] for [DURATION] days. Rejected Default: Your leave has been rejected from [START_DATE] to [END_DATE] for following reasons [Enter reason here]

Next, HR can create the form with the necessary details, including employee name/ID, email address, leave start/end dates, duration, reason for leave, and any other relevant information.

A.1.2.5 Regular Cross-Team Syncs and Standups

- Schedule short, regular sync meetings or standups between dependent teams to review cross-board statuses. During these syncs, teams can use their Kanban Boards as a reference to discuss dependencies and provide updates on progress or potential delays."
- Escalation Workflows for Dependencies: Establish an escalation process for unresolved dependencies that exceed a certain time limit. Teams can agree on a standard protocol, such as flagging the Task or moving it to a dedicated escalation column to bring it to leadership's attention.

A.1.2.6 Utilize Swimlanes for Cross-Team Projects

- For projects involving multiple teams, create swimlanes specific to each team or project phase. This keeps Tasks organized while illustrating the flow of work across different functions."
- Cross-Functional Swimlanes: For larger initiatives, incorporating cross-functional swimlanes within the board allows teams to see the entire Workflows without needing to jump between boards. This is particularly helpful for product and project managers who oversee the end-to-end process.

A.1.2.7 Align Work-in-Progress (WIP) Limits Across Teams

- If work is passed between teams, set shared WIP limits or align them based on typical throughput to prevent overloading any single team in the Workflows. A manageable WIP for each team ensures smooth workflow, reduces bottlenecks, and enhances the efficiency of cross-board interactions.

A.1.2.8 Dedicated Channels for Cross-Board Communication

- Use integrated communication channels within Kanban tools (e.g., Slack, Teams, or in-app comments) for Tasks involving other teams. A centralized discussion space for each Task facilitates updates, reduces redundant communication, and ensures that relevant information is easily accessible to all parties.

A.1.2.9 Track Key Metrics on Dependencies

- Measure the time Tasks spend in dependency-related stages, the number of Tasks dependent on other teams, and the average resolution times for these dependencies. Analyzing these metrics helps identify bottlenecks and informs process improvements across teams.

A.1.2.10 Service-Level Agreements (SLAs) for Inter-Board Dependencies

- Define SLAs or agreed timeframes for each team to complete Tasks that will impact another board. SLAs foster accountability across the organization, enabling teams to coordinate and plan more effectively around each other's timelines. Integrating multiple Kanban Boards using these methods helps teams manage dependencies, share accountability, and ultimately deliver projects more efficiently across all functions.

A.2 Using Kanban for DevOps

Along with developing new products and services, organizations typically have operational support and maintenance functions incorporated into their production environments. These operational or “Ops” functions were historically carried out by specialized teams or resources that worked differently from development teams. They also used different IT software tools and frameworks for managing operational activities. However, many organizations today have opted to combine development and operations functions into DevOps, integrating development and operational support activities.

Operational work typically involves recurring or repetitive Tasks, such as maintaining or supporting established products or services. This also applies to business operations like new employee hiring, financial reporting, payroll processing, as well as IT operations, such as customer support, call centers, systems monitoring, infrastructure management, and routine procedures. Operational work can be predictable, with set rules and procedures in place to address specific situations. On the other hand, project or development work produces a unique product or service and has a definitive beginning and end. By nature, project work is less predictable, as it consists of unique activities or Tasks specific to the project. Examples include creating a new software application or developing new functionality for an existing application.

Organizations can apply Kanban principles and artifacts to DevOps processes to streamline Workflows, improve collaboration, and increase efficiency. Using Kanban for DevOps involves defining and visualizing the Workflows of development and operational processes, limiting work in progress, prioritizing requirements, monitoring progress, and making continuous improvements.

Figure A.6 shows a Vabro interface for the "Prioritized Product Backlog," featuring various user stories, such as "Vabro mob design" and "Vabro dev." Each user story is assigned to different teams and boards, marked with priority stars and status indicators. The interface allows for effective organization and filtering of user stories, with options to create new ones or manage upcoming releases.

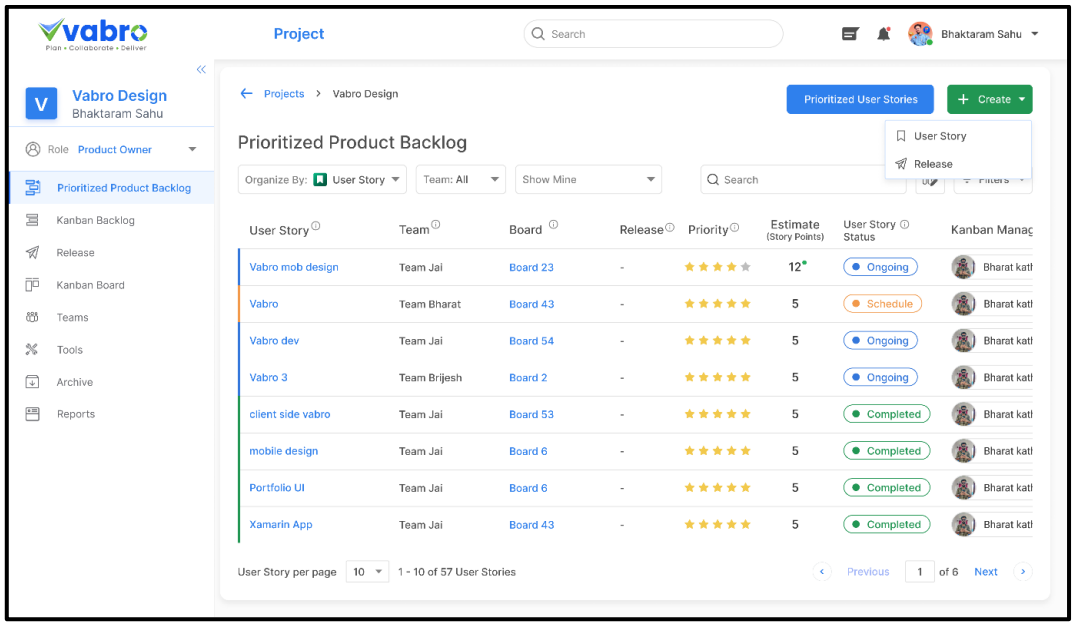

Figure A.6: Applying Kanban for DevOps (Source: Vabro)

A.2.1 Applying Kanban to DevOps

Kanban can be applied to DevOps in the following specific ways:

- Kanban Backlog Creation: When starting a Kanban initiative, the Product Owner can immediately create a Kanban Backlog for the initiative. Creating a Prioritized Product Backlog is optional; the Product Owner may choose to create one only if there's a need to define User Stories for specific requirements.
- User Stories Addition: The Product Owner adds User Stories to the Kanban Backlog or the Prioritized Product Backlog. The Kanban Manager pulls high-priority User Stories from the Prioritized Product Backlog to the Kanban Board. The Kanban Manager can pull in any number of User Stories at any time, but for each User Story, a target completion date should be set. The Kanban Manager or the Kanban Team can also estimate the effort required for each User Story, which helps in determining the amount of work to be completed based on the team's cycle time and velocity.
- Completion and Review: Once the User Stories pulled from the Prioritized Product Backlog are completed, they are reviewed by the Kanban Manager and then submitted to the Product Owner for approval. User Stories that are rejected by the Product Owner due to non-completion or non-compliance with the Acceptance Criteria are moved back into the Prioritized Product Backlog. These stories can then be worked on by the same or another Kanban Team involved in the initiative.

Summary of Using User Stories in Kanban:

- Creation: User Stories follow a predefined structure and serve as a simple way to document requirements and desired end-user functionality. These requirements are short, simple, and easy to understand, improving communication among business stakeholders and enabling better estimations by the team. User Stories help teams grasp user needs and expectations for the deliverables to be created. The Product Owner is responsible for creating and prioritizing User Stories in the Prioritized Product Backlog.
- Work Status: As the team works toward delivering results, the Kanban Team uses the Kanban Board. Team members break down User Stories into Task Groups and/or Tasks, which are then worked on by the team.
- Approval: Approval of User Stories, Tasks, or Task Groups can be sought from the Product Owner or another designated role/personnel, depending on the approval process set at the time the User Stories or Task Groups are created.

In some cases, a Kanban Board may not have any User Stories pulled from the Prioritized Product Backlog. In such instances, the board will display only the Task Groups and Tasks created by the Kanban Team. The Kanban Manager has the ability to view, edit, or delete Task Group Templates for the Kanban Team.

A.2.2 Kanban DevOps Roles

The typical roles in Kanban can be adapted by incorporating additional responsibilities when applying Kanban principles to a DevOps environment. The Kanban Team, as described in section 3.1, consists of the Product Owner, Kanban Manager, and Team Members.

Product Owner—In a DevOps environment, the Product Owner may have the following additional responsibilities, in addition to the standard duties associated with Kanban:

- Creating, Adding, and Prioritizing User Stories: The Product Owner is responsible for creating, adding, and prioritizing User Stories in the Kanban Backlog (or alternatively in the Prioritized Product Backlog) if User Stories are needed. It is important to note that defining User Stories is optional when applying the Kanban method.
- Defining Acceptance Criteria: The Product Owner defines the Acceptance Criteria for each User Story and ensures that the team understands the business value of the work they are doing.

Kanban Manager— When applying Kanban to DevOps processes, in addition to the typical responsibilities associated with Kanban, the Kanban Manager may have the following additional responsibilities:

- Pulling User Stories: Pulling User Stories from the Kanban Backlog (or Prioritized Product Backlog) to the Kanban Board for the team to work on.
- Estimating and Targeting: Ensuring that all User Stories are estimated by the team and have a specified target completion date before they are worked on.
- Reviewing and Submitting: Reviewing and submitting completed User Stories to the Product Owner for approval.
- Incident Management: Acting as the Incident Manager, responsible for reviewing and managing incidents and issues as they arise.
- Release Management: Serving as the Release Manager to help streamline DevOps releases.

Team Members— When applying Kanban to DevOps processes, in addition to the typical responsibilities associated with Kanban implementation, the Kanban Team Members may have the following additional responsibilities:

- Estimating User Stories: Estimating User Stories and specifying target completion dates.
- Creating Task Groups and Tasks: Creating Tasks and Task Groups to deliver the User Stories pulled into the Kanban Backlog by the Kanban Manager (from the Prioritized Product Backlog set up by the Product Owner). Creating Tasks and Task Groups to deliver User Stories pulled into the Kanban Backlog by the Kanban Manager (from the Prioritized Product Backlog set up by the Product Owner)

A.2.3 Kanban DevOps Releases

The Product Owner and/or Kanban Manager can optionally specify Releases. Releases represent functionalities or results to be delivered together at a specified time (e.g., new or improved features to be made available to stakeholders). To ensure that a Kanban Release is completed on time, multiple Task Groups, Tasks, and User Stories may need to be completed.

If Kanban Releases are created by the Product Owner or Kanban Manager, there should be an option to add Tasks to a Kanban Release when creating a User Story, Task Group, or individual Task. This ensures that all work related to the Kanban Release is tracked and contributes to the successful delivery of the corresponding deliverables.

Figure A.7 displays a "Portfolio Release Dashboard" in Vabro, showcasing a list of software releases for the "Vabro Portfolio". It includes the release names, release dates, progress in terms of completed features, and overall status (Ongoing, Scheduled, Completed). For example, "Vabro Release 1" and "Release V1.0" are marked as ongoing, "Release V3.0" and "Release V2.0" are scheduled, while "Release V4.0" has been completed.

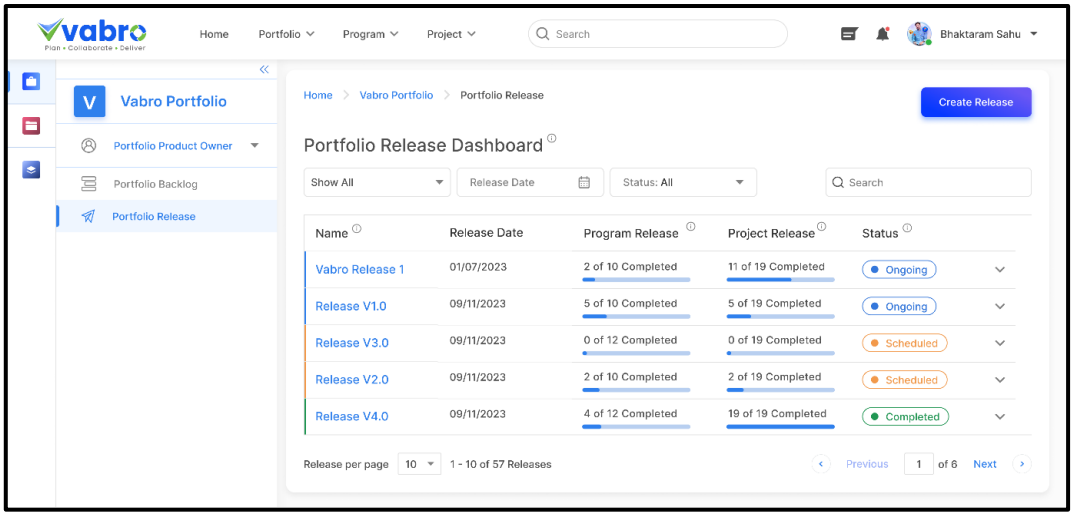

Figure A.7: Release Management in Kanban for DevOps (Source: Vabro)

The Product Owner specifies which User Stories are part of a Release. For independent Task Groups and Tasks not associated with a User Story, the Kanban Manager and/or Kanban Team Members can define which Tasks and Task Groups contribute to the results of the Release. User Stories, along with independent Tasks and Task Groups, can be pulled into a Release at any point before the Release is completed. A Release is considered done when all User Stories, Task Groups, and Tasks identified for the Release have been completed. By integrating Kanban with Scrum and DevOps, organizations can create a powerful combination that leverages the best of each framework. This synergy offers flexibility, continuous delivery, and high productivity for development teams.

- **Kanban with Scrum for Enhanced Workflows Efficiency**
  - Managing Work-in-Progress (WIP): Scrum organizes work into sprints with set timeframes and goals, while Kanban's WIP limits help prevent overload within a sprint, allowing the team to focus on completing high-priority Tasks without compromising quality.
  - Improving Flow Within Sprints: Kanban's pull-based system enables team members to take on Tasks as they become available, enhancing Workflows. Within a Scrum sprint, the Kanban Board displays Tasks at different stages, making it easy to visualize progress and identify potential bottlenecks. This visualization can increase Task completion rates and provide more accurate sprint forecasts.
  - Enhanced Sprint Planning: Teams can use Kanban data (such as cycle time and throughput) to better estimate the work for upcoming sprints. This data-driven approach helps Scrum teams improve the accuracy of their sprint planning and capacity estimation, leading to more predictable and reliable sprint outcomes.

- **Kanban and DevOps for Continuous Delivery**
  - Visualizing the DevOps Pipeline: Kanban aligns well with the continuous integration and continuous delivery (CI/CD) model of DevOps. By representing each stage of the pipeline on the Kanban Board (e.g., development, testing, deployment), teams can visually track the movement of code from commit to production. This allows for real-time monitoring and ensures smoother transitions between development, testing, and deployment.
  - Reducing Deployment Cycle Times: The constant flow of Tasks in Kanban, combined with DevOps automation, helps reduce deployment cycle times. Automating testing and deployment stages allows teams to quickly move items across the board, shortening the feedback loop and enabling faster delivery.

- Emphasizing Continuous Improvement: Kanban promotes continuous process refinement and improvement. By continuously monitoring Kanban Metrics such as lead time and cycle time, DevOps teams can identify areas of the deployment pipeline that require optimization, fostering ongoing improvement.

- **Daily Stand-ups and Kanban for Sprint Transparency**
  - Kanban Visualization in Standups: In Scrum's daily standup, using a Kanban Board to display Tasks that are in progress, completed, or blocked provides a quick, visual overview of the sprint's current status. This enhances transparency, making it easier to discuss roadblocks and next steps. It also allows for swift course corrections within the sprint, benefiting both Scrum and DevOps teams.
  - Kanban Signals for Task Progress: Kanban uses visual signals, such as color-coding, to indicate Task progress and priority levels. These signals can be particularly useful during daily Scrum standups by highlighting urgent issues, Tasks needing immediate attention, or dependencies. This visualization helps teams prioritize effectively and allocate resources where they're most needed.

- **Aligning Scrum's Retrospectives with Kanban's Continuous Improvement**
  - Retrospective Insights: Both Scrum and Kanban emphasize continuous improvement. In Scrum, retrospectives are held at the end of each sprint, whereas Kanban encourages a continuous review of metrics such as WIP, cycle time, and throughput. Combining these insights allows teams to review both sprint outcomes and Workflows efficiency, providing a broader perspective on potential improvements.
  - Addressing Process Bottlenecks: Scrum retrospectives can leverage Kanban data to identify and address bottlenecks. If specific Tasks consistently remain stuck in a particular stage, teams can adjust their processes, redefine WIP limits, or focus on resolving dependencies. This blend of practices creates a more adaptable approach to iteration and improvement.

- **Kanban Metrics and DevOps for Continuous Feedback**
  - Leveraging Kanban Metrics: Metrics like lead time, cycle time, and throughput help identify areas for improvement, enabling DevOps teams to address inefficiencies in the pipeline. These metrics provide insights into how quickly code moves through each stage, helping refine the CI/CD pipeline for faster, more reliable delivery.
  - End-to-End Monitoring: DevOps relies on continuous feedback throughout the development lifecycle. Kanban enhances this by visually representing feedback stages and Tasks awaiting validation. By incorporating feedback into the Kanban Workflows, teams can quickly address issues that arise post-deployment, improving product reliability and performance.

- **Blending Roles and Responsibilities**
  - Cross-Functional Collaboration: Kanban Boards facilitate collaboration between Scrum and DevOps teams by providing a shared view of Tasks. Developers, testers, and operations personnel can all use the same board to track their work, enhancing visibility and cross-functional alignment.
  - Defining Clear Ownership: In DevOps, responsibilities can often be blurred between development and operations teams. Kanban Boards help by assigning clear Task ownership and specifying each team member's role at every stage. This alignment between Scrum's role clarity and Kanban's visual Task ownership enhances accountability.

- **Scaling Kanban, Scrum, and DevOps**
  - Supporting Cross-Team Visibility: In larger organizations, multiple teams often work concurrently on different parts of a product. Kanban's visual system enables teams to track dependencies and identify potential blockers between Scrum teams and DevOps functions, fostering better coordination.
  - Method Flexibility: Kanban can be used at both the team and portfolio levels to provide real-time insights into the status of various teams' work. This scalability makes it easier for organizations to maintain alignment across Scrum, DevOps, and other teams working on different initiatives.

Combining Kanban with Scrum and DevOps creates a Workflows that balances structured planning with flexibility and continuous delivery. By integrating these frameworks, organizations can build a more resilient and adaptive development environment that meets the needs of today's fast-paced tech landscape.

A.3 Aligning Kanban with OKRs and Organizational Goals

OKRs (Objectives and Key Results) and organizational goals are essential strategic tools that companies use to drive and measure success in business initiatives. Organizational goals are broad, strategic objectives that outline a company's vision and the key outcomes needed to achieve success. They serve as guiding principles for all departments and teams.

OKRs, on the other hand, provide a structured framework for setting and tracking goals. They consist of two main components: Objectives and Key Results. Objectives are qualitative, inspirational statements that define what an organization aims to achieve. Each objective typically has multiple key results, which are measurable outcomes that indicate progress toward the achievement of that objective.

Objectives Example:
Objective: Increase customer satisfaction.
Objectives are broad, qualitative, and inspirational statements that define what the organization wants to achieve.

Key Results Example:
For the objective "increase customer satisfaction," the key results could include:

- Improve the Net Promoter Score (NPS) from 75 to 90.
- Achieve a 97% positive feedback rate from customers on support tickets.

Key results are quantitative, measurable outcomes that indicate how the organization will achieve the stated objectives. They are specific and actionable, providing a clear way to track progress.

A.3.1 Aligning the Kanban method with OKRs and Organizational Goals

Aligning Kanban with OKRs and broader organizational goals can significantly enhance a company's efficiency, focus, and adaptability. Kanban, with its visual, flow-based approach, is effective for managing work-in-progress and improving productivity. On the other hand, OKRs provide clear, measurable goals that help drive progress.

Steps involved in aligning the Kanban method with OKRs and organizational objectives include:

- Define the Organizational Goals: Establish clear strategic goals that reflect the vision of the organization. These goals should be aligned with the overall mission and vision of the company.
- Set Objectives and Key Results (OKRs): Break down the broader organizational goals into specific, measurable objectives. Key results should be actionable and measurable, helping track progress toward each objective.
- Map OKRs to Kanban Workflows: Integrate OKRs with the Kanban Board by assigning relevant Tasks or Work Items that align with the objectives and key results. Each Work Item should contribute to achieving specific OKRs.
- Monitor and Adapt: Regularly review the flow of work on the Kanban Board and evaluate how the completion of Tasks aligns with the progress of OKRs. Adapt Workflows or processes as necessary to ensure alignment with organizational goals.
- Foster Continuous Improvement: Use Kanban's continuous improvement principles, such as analyzing bottlenecks and optimizing Workflows, to ensure that work processes are continuously refined and more effectively aligned with OKRs.

Figure A.8 shows the ClickUp setup screen, where a user is selecting features of interest, such as Chat, Automations, Tasks & Projects, Dashboards, Goals & OKRs, Docs & Wikis, Forms, and Time Tracking, among other options. The interface indicates that the user is customizing their workspace by selecting the tools and functionalities that best suit their needs.

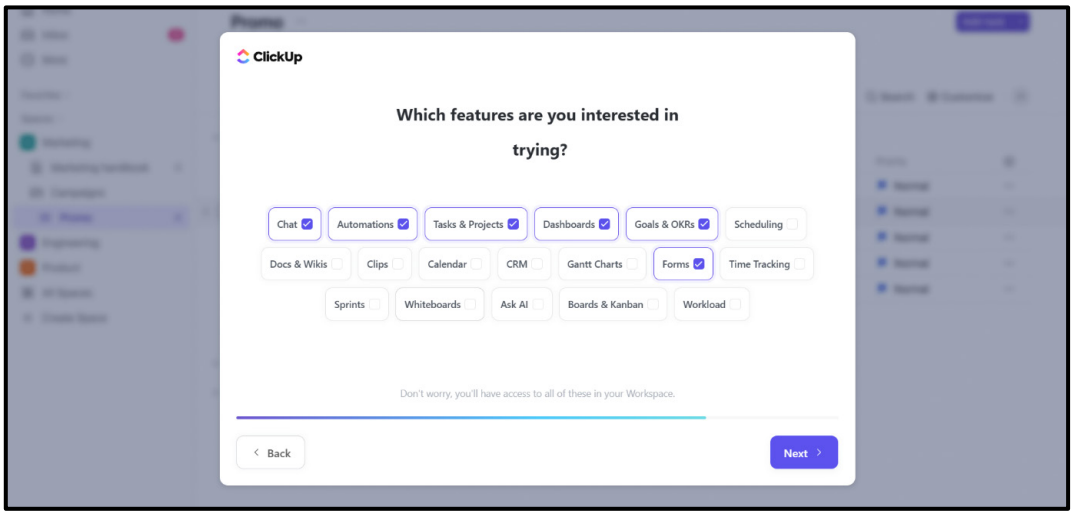

Figure A.8: Use of OKRs and other Features in Kanban (Source: ClickUp)

A.3.2 Defining Objectives and Key Results (OKRs) and Goals in a Kanban Context

When aligning Kanban with OKRs and goals, objectives can be defined at various levels, such as the organization, workspace, and Workflows. Workspace serves as the top level in the project delivery or product development hierarchy, allowing organizations to define, plan, track, and monitor Workflows in a centralized space. It helps streamline collaboration and ensures focus on delivering value at each stage of the process. In digital Kanban tools, workspaces are further broken down into projects or Workflows, offering flexibility to users. Multiple workspaces can be created or joined, but each workspace remains independent, enabling tailored management of each initiative.

Objectives at these levels can be defined as follows:

- At the organizational level, an Organization Admin can:
  - Define and manage both Organization-Level and Workspace-Level OKRs and goals. Objectives should include descriptive titles, detailed descriptions, and target outcomes/Key Results.
  - Set progress tracking settings and assign weightage for company and workspace goals. The following items, which contribute specific percentages to the objective, can be utilized:
    - Workspace
    - Project
    - Workflows
  - Maintain visibility into all workspace, Workflows, and individual OKRs (if set to public).
  - Monitor workspace goals to track their alignment with organizational objectives.
  - Ensure company objectives are linked to the progress of associated workspace, and Workflows goals.
- At the Workspace level, a Workspace Admin can:
  - Define and manage Workspace-level and Workflows OKRs.

- Set progress settings and weightage for Workspace and Workflows goals. Relevant items contributing to the objective percentage can include:
  - Workflows
  - User Stories (for DevOps)
  - Task Groups (for Kanban)
- Link Organizational Goals to Workspace Goals as Parent Goals through an approval process.
- Provide visibility into all Workflows and their associated OKRs within the Workspace. They can also view linked Organization Goals.
- Ensure Workspace goals are aligned with and support the broader company objectives.

- At the Workflows level, a Product Owner or Kanban Manager can:
  - Define and manage Workflows-level OKRs.
  - Set progress tracking and assign weightage to Workflows goals. The following items, which contribute a specific percentage to the objective, can be utilized:
    - Relevant user stories
    - Task Groups
  - Link Workspace Goals to Workflows Goals as Parent Goals through an approval process.
  - Provide visibility into all user stories, Task Groups, and associated OKRs within the Workflows.
  - Ensure that Workflows goals are aligned with company objectives.
- At the individual level, a team member can:
  - Define and manage personal OKRs privately.
  - Link Task Groups and Tasks they are working on to their individual OKRs.
  - Provide visibility into their own OKRs and assigned Tasks.
  - Ensure that Workflows goals are aligned with company objectives.

Figure A.9 shows a Vabro platform dashboard for tracking organizational and individual IT goals, focusing on "Organization Goals/Objectives" and a visible progress board. It highlights key results and their progress toward objectives such as "Increase Customer Satisfaction by 50%," "Improve Customer Response Time," and "Enhance Ticket Resolution Efficiency," each with specific timelines and assigned personnel.

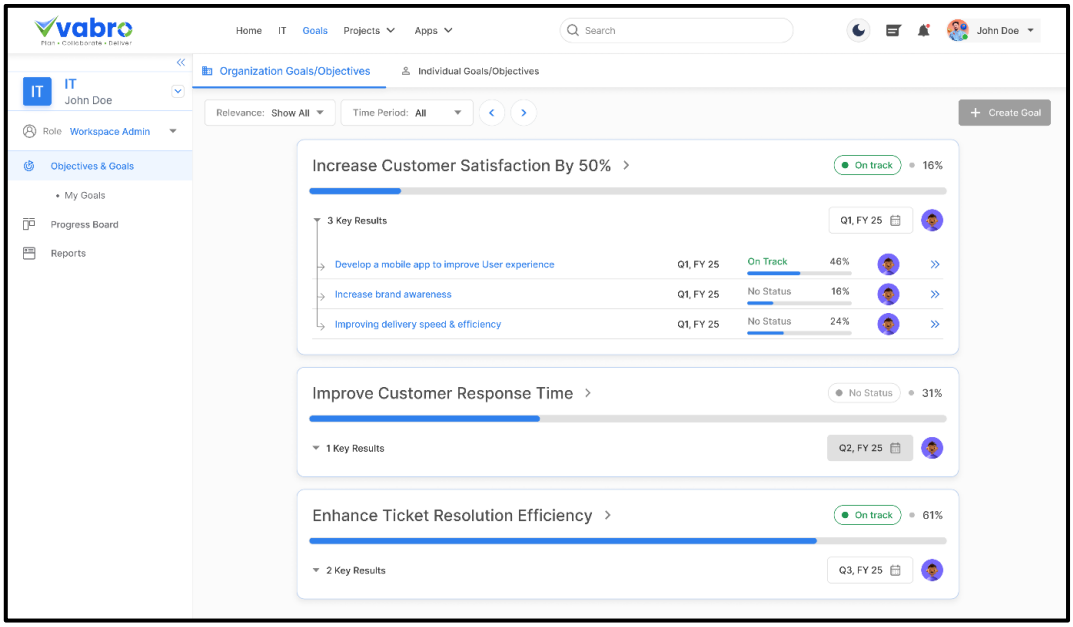

Figure A.9: Defining OKRs for an Organization in Kanban (Source: Vabro)

Figure A.10 shows a goal-tracking dashboard in Jira, focused on "Increase Customer Satisfaction." It displays progress and related Workflows, highlighting two sub-goals: "Develop & Launch VMFoods Mobile App" and "Expand Online Delivery to Tier 2 Cities," each with progress bars and assigned timelines.

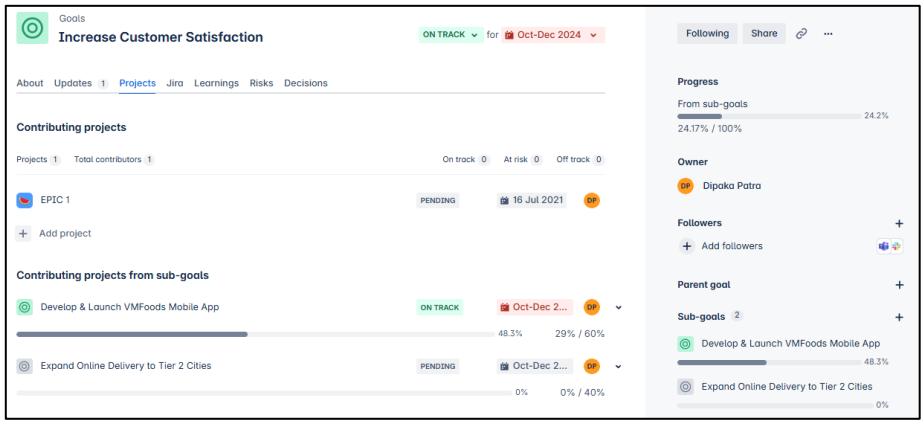

Figure A.10: Company-level OKRs (Source: Jira)

Figure A.11 shows a goal-tracking dashboard for VMFoods, Inc., displaying the company's strategic objectives and their progress. It highlights key goals such as "Increase Sales" and "Increase Customer Satisfaction," along with their sub-goals and assigned teams, indicating the timeline and current status of each objective.

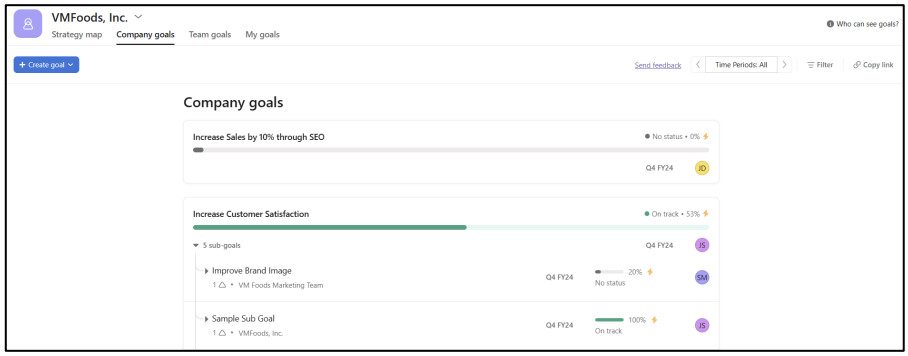

Figure A.11: Company Goals (Source: Asana)

Figure A.12 shows a goal-tracking interface in ClickUp, focused on increasing brand awareness and engagement, with current progress at 9%. It lists target metrics, such as increasing website traffic by 20% and growing social media followers by 30%, showing progress indicators and Task breakdowns for each.

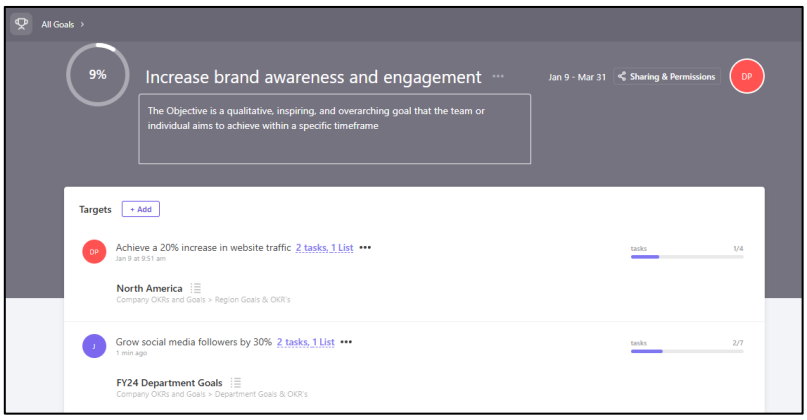

Figure A.12: Example of a Company-level OKR (Source: ClickUp)

Objectives should be ambitious, qualitative goals that drive the team's purpose and align with the organization's vision. For example, an organizational-level objective could be 'Enhance product quality and customer satisfaction'.

Key Results: These are quantitative measures that indicate progress toward the objective, such as "Reduce production defects by 20%" or "Achieve 90% positive customer feedback." With Kanban, OKRs and goals can be integrated by associating specific Tasks on the Kanban Board with these key results. Each column on the board, representing different stages of work, becomes a visual roadmap toward the objective.

Figure A.13 shows a progress tracking interface in Vabro for the key result, "Develop a mobile app to improve User Experience," which is part of the goal to "Increase Customer Satisfaction by 50%." The completion rate is 54%, and the Workflows is on track. The interface displays associated projects, Workflows, and related documents, along with a progress graph and a comment section for team communication.

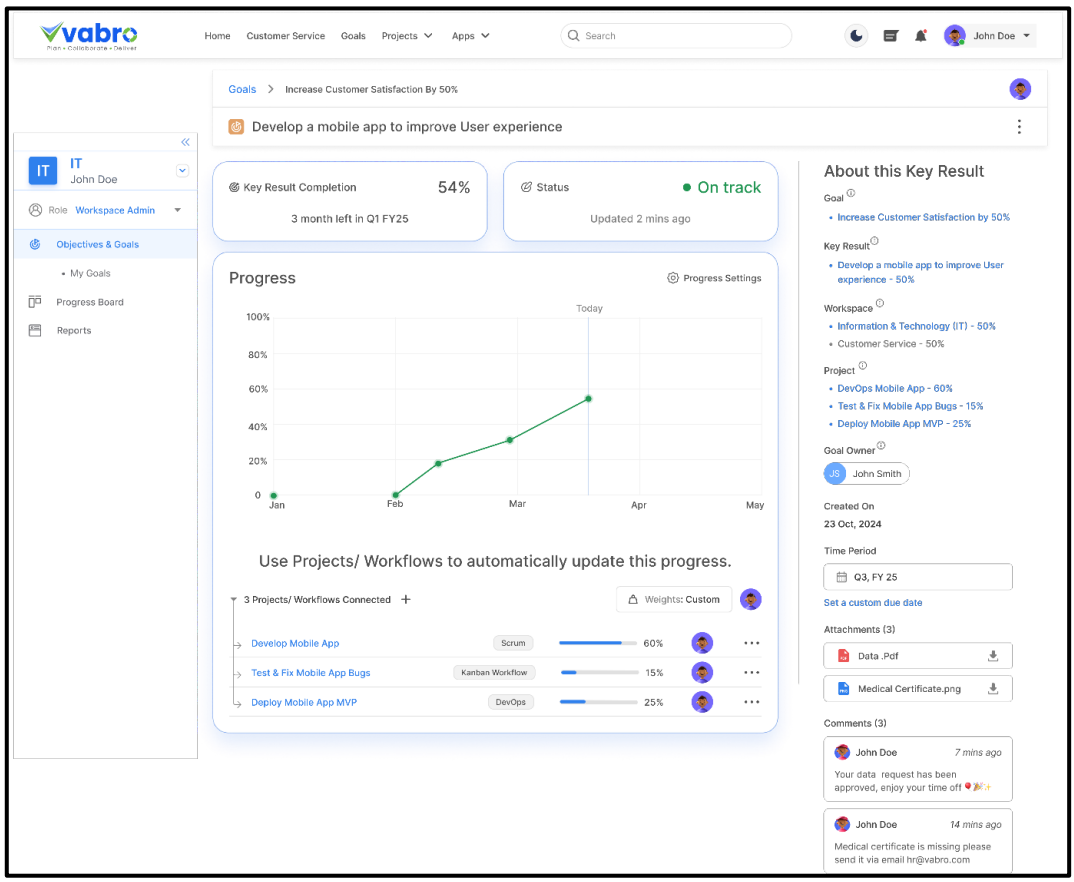

Figure A.13: Tracking OKRs in Kanban (Source: Vabro)

A.3.3 Using Kanban for Transparency in OKRs and Goals Alignment

Using Kanban for Transparency in OKRs and Goals Alignment involves:

- Visualizing Progress: The Kanban Board provides a clear view of ongoing Tasks, their priorities, and how they align with the organization's goals. When Tasks are directly linked to key results, teams gain better awareness of their contribution to larger objectives.

- Prioritizing Work: By placing high-impact Tasks at the top of the Kanban Workflows, teams can prioritize OKR-related work first. This focus ensures that resources are directed toward what matters most for achieving objectives.

A.3.4 Kanban WIP Limits to Support OKRs and Goals

Using WIP limits to support OKRs and organizational goals helps in:

- Reducing Overload: Limiting work-in-progress (WIP) on the Kanban Board helps teams avoid Task overload and maintain a steady pace toward key results. By focusing on fewer Tasks that contribute to OKRs, the team can improve both the quality and efficiency of their output.
- Encouraging Flow: When Tasks move more fluidly through the Kanban system, the team can better assess progress toward OKRs. WIP limits encourage consistent work toward objectives while minimizing bottlenecks.

A.3.5 Continuous Improvement (Kaizen) for Alignment with OKRs and Goals

In Kanban, aligning the effort of continuous improvement (Kaizen) with OKRs and goals is achieved through:

- Retrospectives: Regular retrospectives allow the team to assess progress toward OKRs and adjust their Kanban processes as needed. This practice fosters a continuous improvement (Kaizen) mindset, supporting iterative progress toward objectives.
- Process Tweaks: By analyzing Workflows patterns, teams can adjust WIP limits, re-prioritize Tasks, or streamline processes to better align with the organization's goals and improve overall performance against OKRs.

A.3.6 Integrating Feedback Loops for Enhanced Alignment with OKRs and Goals

In Kanban, the integration of feedback loops for enhanced alignment with OKRs and goals is achieved in the following ways:

- Data-driven Decisions: Kanban metrics, such as lead time, cycle time, and throughput, provide valuable data for tracking progress on OKRs. If a particular key result is lagging, this data can guide adjustments to resource allocation or process improvements.
- Frequent Check-Ins: Embedding regular feedback loops within the Kanban process allows the team to make small, informed adjustments to stay on track toward OKRs, quickly adapting to any changes in business needs.

A.3.7 Regular Review of OKRs and goals for Realignment

Regular Review of OKRs and Goals for Realignment involves:

- Quarterly OKR Revisions: Since OKRs are typically set on a quarterly basis, Kanban Boards should be adjusted periodically to reflect shifting priorities. When OKRs are reviewed, teams can add or modify Tasks to align with any new objectives or key results.
- Goal Realignment: As organizational objectives evolve, the Kanban Board should evolve as well. Teams should regularly review the alignment between the board's Tasks and the updated OKRs, ensuring that day-to-day work continues to contribute to long-term goals.

By combining the flexibility of Kanban with the goal-focused structure of OKRs, organizations can maintain a strong sense of purpose while adapting dynamically to changing demands. This alignment fosters a culture where both immediate priorities and long-term objectives are transparently connected and continuously pursued.

A.4 Lean Kanban

The Lean concept optimizes an organization's system to produce valuable results based on its resources, needs, and alternatives while reducing waste. Since these factors are dynamic and constantly evolving, a Lean organization evaluates the entire system rather than focusing only on individual components and continuously fine-tunes its processes. Lean's foundation asserts that reducing the length of each cycle (iteration) increases productivity by minimizing delays and aiding in early error detection. Consequently, shorter cycles reduce the total effort required to complete Tasks.

Kanban is designed to reduce idle time in the process of business value creation. The Kanban system determines what the process needs and when it needs it, using visual aids as a signaling system to guide future actions. It is closely associated with the design of pull systems and the concept of delivering just-in-time goods. Lean Kanban integrates the visualization methods defined by Kanban with Lean principles. Adopting Lean Kanban practices and principles brings several benefits to an organization, such as creating a manageable workload based on team capacity, reducing disruptions and delays by minimizing downtime due to errors, and fostering cross-alignment by building a culture of engaged workers. Overall, Lean Kanban helps achieve better process control through process improvement.

In a broad sense, Lean is a set of values and principles guiding successful product development, while Kanban is a process tool for applying these values and principles in practice. Lean Kanban combines these practices and tools to create value from product concept to delivery.

A.4.1 Core Values of Lean Kanban

The core values of Lean Kanban are as follows:

- **Continuous Improvement** Lean Kanban adopts the concept of Kaizen, rooted in the Japanese philosophy of business that emphasizes continuous improvement. "Kaizen" consists of two parts: "Kai," meaning an idea for change or an action to rectify something, and "Zen," meaning "good." This concept is based on the belief that there is always room for improvement in business, ultimately leading to the successful elimination of waste and excess.

- **Visualization of Work** A Kanban Board is a popular tool for implementing the Kanban methodology and increasing productivity. The board helps teams organize their work using cards (Kanban), each representing a different feature, and placed on the board. It aids in the visualization, control, and optimization of Workflows. Kanban Boards are flexible and can be customized to match the Workflows and associated needs.

- **Respect for People and Processes** Lean Kanban values each person and process within a business as essential contributors to the organization. Every idea has the potential to add to the company's success. Lean promotes an environment of recognition and respect, which is crucial for clear communication. This respect encourages people to share their opinions and suggestions, leading to potential improvements.

- **Limit Work in Progress** This value advocates for using buffers to smooth out variability in the effort required to complete a Task. The goal is to avoid overloading the system.
  The key element is limiting new Tasks based on the system's available capacity, keeping total work within predetermined WIP limits. Developers must maintain a smooth process flow, avoiding excessive Tasks in WIP. A new Task is only pulled when the current Task is completed.

- **Eliminate Waste and Target Zero Defects** Lean Kanban utilizes statistical quality control and an adaptive human-centric structure to keep team members motivated to achieve zero defects in their work.

- **Standardize Work and Manage Workflows** Lean Kanban emphasizes standardizing Workflows or processes to ensure consistency, quality, and efficiency in results. Managing Workflows involves monitoring and reporting each Task, focusing on the speed and smoothness of movement. Fast movement creates quick value, while smooth movement minimizes delays and makes the process more predictable. Developers following Kanban break down work into smaller chunks to complete Tasks faster and facilitate better Workflows.

- **Empower Teams and Encourage Long-Term Thinking** Lean Kanban prioritizes empowerment at all levels—individual, team, and organizational. Empowerment fosters improvement and sustained growth, encouraging long-term thinking focused on sustainable growth and development rather than short-term gains.

A.4.2 Lean Kanban Practices

The core practices of the Lean Kanban method are as follows:

Optimize the Whole

- Optimizing part of a system will eventually optimize the entire system. This includes focusing on the entire value stream, delivering complete products, and implementing long-term thinking throughout the organization. A value stream is a list of steps to create value for both the customer and the team. The value stream must be as realistic and detailed as necessary to visualize and understand the Workflows. It should also be able to adapt as the process and context change.

Eliminate Waste

- In the Toyota Production System (TPS), waste is termed "muda" and refers to anything in the system that does not add value to the customer. Visualizing the Workflows or process is essential for identifying and eliminating waste. Accurately describing the current value stream and articulating the desired value stream for the product cycle is critical, especially in the early stages, to prevent failure due to early errors. Waste can arise from building the wrong thing, failing to learn, or practices that impede the process.

Build in Quality

- Frequent defects indicate flaws in the overall process. After identifying the starting point in the value stream, the next step is to categorize work types, such as features, bugs, Tasks, and change requests. Improving quality involves:
- Determining Workflows by modeling the work rather than the workers and representing activities in the order they are performed.
- Breaking dependencies and designing the system to accommodate feature additions at any stage, using historical data and empirical techniques to anticipate demand and adjust the system.
- Ensuring final verification of the system is error-free.

Learn Constantly

- Lean Kanban assumes that nothing is perfect, and there is always room for improvement. Continuous learning is facilitated by:
- Developing a system that responds rapidly to change.

- Making process or Workflows tolerant of change.
- Clearly defining when and what changes are required, acknowledging the financial implications of decisions.
- Learning from mistakes and challenging preset standards to improve continuously.
- Using empirical techniques to reach conclusions, favoring quantitative over qualitative methods.

Engage Everyone

- Organizations gain a competitive edge through human resources, as insight, creativity, and intellect are scarce resources. To maximize these, organizations should:
- Encourage team autonomy.
- Promote specialization by providing challenges, constructive feedback, and growth opportunities.
- Engage individuals by showing the purpose of each Task and its role in the bigger picture, thereby boosting productivity.

REFERENCES

Airtable. (2025, January 29). Retrieved from Airtable: www.airtable.com

Asana. (2025, January 29). Retrieved from Asana: www.asana.com

Azure DevOps. (2025, January 29). Retrieved from Microsoft Azure DevOps: https://azure.microsoft.com/services/devops

Basecamp. (2025, January 29). Retrieved from Basecamp: https://basecamp.com

ClickUp. (2025, January 29). Retrieved from ClickUp: https://clickup.com

Jira. (2025, January 29). Retrieved from Atlassian Jira: https://www.atlassian.com/software/jira

Kanbanchi. (2025, January 29). Retrieved from Kanbanchi: https://www.kanbanchi.com

Monday.com. (2025, January 29). Retrieved from Monday.com: https://monday.com

Nifty. (2025, January 29). Retrieved from Nifty Technologies, Nifty: https://niftypm.com

Notion. (2025, January 29). Retrieved from Notion Labs, Notion: https://www.notion.so

Smartsheet. (2025, January 29). Retrieved from Smartsheet Inc. Smartsheet: https://www.smartsheet.com

Trello. (2025, January 29). Retrieved from Atlassian Trello: https://trello.com

Vabro. (2025, January 29). Retrieved from Vabro: https://www.vabro.ai

Workfront. (2025, January 29). Retrieved from Adobe Inc. Workfront: https://www.workfront.com

Wrike. (2025, January 29). Retrieved from Wrike Inc., Wrike: https://www.wrike.com

This Page is Intentionally Left Blank

GLOSSARY

Acceptance

Acceptance refers to the formal agreement that a deliverable or Task meets predefined criteria or standards. It often comes from a product owner or stakeholder and ensures that completed work fulfills expectations before being marked as done or delivered.

Acceptance/Rejection Criteria

Specific conditions that a Task or Work Item must meet to be considered complete or rejected. They guide development, ensure quality, and help teams maintain consistent standards in Kanban Workflows.

Accepted Deliverables

These are Completed Work Items that have passed all quality checks and have been formally approved by the relevant stakeholders. Accepted deliverables confirm that the product or service increment meets the acceptance criteria and is ready for release or use.

AI-enabled Digital Kanban Tools

Tools that enhance traditional Kanban systems by using artificial intelligence to automate Task management, predict delays, optimize Workflows, and provide data-driven insights, improving team efficiency, decision-making, and overall project visibility.

A/B Testing

An experimental approach that involves experimenting with two variations of a process, feature, or Workflows to determine which performs better. It supports continuous improvement by using real data to guide decisions and optimize team efficiency.

Active Work Time

This is the time during which actual work is performed on a Task, excluding delays or waiting periods. It is a critical component in calculating cycle time and understanding Workflows efficiency within the Kanban process.

Accepted Deliverables

Accepted Deliverables in Kanban refer to Work Items that meet all defined acceptance criteria and have been formally approved by the customer or stakeholder. They represent completed outcomes that fulfill quality standards, signaling the successful conclusion of the development or service process.

AI-enabled Digital Kanban Tool

An AI-enabled Kanban tool integrates artificial intelligence features like predictive analytics, automated Workflows suggestions, and anomaly detection. These tools enhance decision-making, streamline Task management, and improve forecasting within the Kanban system.

Analytics Dashboard

An Analytics Dashboard in Kanban is a visual interface displaying key metrics and data that help teams monitor Workflows performance. It may include charts like cumulative flow diagrams, lead time distributions, and throughput trends, enabling data-driven decisions and continuous process improvement.

Artifacts

Artifacts are visual or process-based elements used to support Workflows management. Examples include Kanban Board s, backlogs, and metrics charts. These elements help teams visualize, monitor, and continuously improve the process and delivery of value.

Agreed Metrics

Agreed Metrics in Kanban are performance indicators that teams and stakeholders collectively choose to monitor Workflows health and effectiveness. These may include lead time, throughput, and work in progress, supporting transparency, alignment, and continuous improvement through shared understanding of process performance.

Asana

Asana is a project management software commonly used with Kanban methodology. It allows teams to create Tasks, visualize Workflows on boards, assign responsibilities, and track progress, fostering improved collaboration and transparency.

Assigned

In a Kanban context, a Task is marked “assigned” when responsibility is delegated to a team member. Assigning helps clarify ownership, improve accountability, and ensure that Tasks move smoothly through the Workflows without confusion.

Automation

Automation in Kanban refers to using tools or scripts to perform routine Workflows activities, such as moving cards, sending alerts, or updating metrics. It reduces manual effort, improves consistency, and accelerates Task progression in the system.

Backlog Refinement

Also known as backlog grooming, this is the ongoing process of reviewing and updating the Kanban Backlog. It includes clarifying Tasks, prioritizing items, and breaking down large Tasks to ensure the board remains actionable and aligned with goals.

Basecamp

Basecamp is a project management tool that can support Kanban Workflows. While it’s less visually Kanban-centric than some tools, its features like Task lists and team collaboration still support Agile and Kanban practices effectively.

Blocker Clustering and Analysis Report

A report in Kanban that identifies and groups common causes of work stoppages. By analyzing these patterns, teams can address root issues, reduce delays, and improve overall flow efficiency and process reliability.

Board

In Kanban, the board is the central visualization of Workflows. It displays Work Items as cards across columns representing stages of the process. Boards can be physical or digital and provide visibility, accountability, and insight into work progress.

Burndown Chart

A visualization tool that tracks the amount of work remaining over time. It helps teams monitor progress, identify bottlenecks, and ensure Tasks are completed within expected timelines, supporting continuous delivery and flow efficiency.

Capacity Utilization Report

This report shows how much of a team's available capacity is being used. It helps determine workload distribution, identify bottlenecks, and ensure optimal resource use. In Kanban, it's a key tool for balancing flow and preventing overload.

Case for Kanban

A Case for Kanban outlines the rationale for adopting the Kanban Method within an organization or team. It typically includes expected benefits, existing Workflows challenges, and how Kanban principles can improve flow, efficiency, transparency, and adaptability to evolving customer needs.

ClickUp

ClickUp is a digital project management platform that supports Kanban-style boards. It enables visual Task tracking, status updates, and WIP limit settings, and is often used in software development, marketing, and operations environments.

Collaborative Leadership

This style of leadership emphasizes team participation, transparency, and shared decision-making. In Kanban, collaborative leadership helps create an environment where all team members feel empowered to contribute to improving the Workflows and organizational outcomes.

Control Chart

It is a statistical tool used to monitor cycle time and lead time over a period. It helps teams detect process variability, identify trends, and spot outliers, enabling data-driven decisions for improving Workflows consistency and predictability.

Committed

A Task is considered committed once it has moved from the backlog to the active Workflows, indicating that the team has agreed to complete it. This term signifies a shift in priority and focus within the Kanban process.

Completed Deliverables

Completed Deliverables in Kanban are Work Items that have passed through all Workflows stages and meet the team's definition of done. They represent finished outputs ready for release or use, signaling value delivery to the customer and progress toward project goals.

Cross-Team Syncs and Standups

Are recurring meetings where multiple dependent teams coordinate their efforts. These sessions help surface blockers, align priorities, resolve cross-functional issues, and ensure smooth handoffs. They enhance transparency, foster collaboration, and support continuous flow across interconnected Workflows.

Cumulative Flow Diagram (CFD)

A CFD is a graphical tool used in Kanban to visualize work in progress across different stages of the Workflows over time. It helps identify bottlenecks, monitor flow consistency, and understand how efficiently Tasks are progressing through the system.

Cycle Time

Cycle time is the duration it takes for a Task to move from the start of the Workflows to completion. It includes only active working time and is used to measure team efficiency, identify slow stages, and support continuous improvement.

Daily Standup

A short, focused team meeting typically held each day to discuss progress, blockers, and next steps. In Kanban, daily standups help teams review the board, identify flow disruptions, and coordinate Task assignments to keep work moving smoothly.

Definition of Done (DoD)

The DoD is a shared agreement among team members that defines when a Task or deliverable is considered complete. It ensures consistent quality and expectations, including testing, documentation, reviews, and other criteria before the Task is marked “done.”

Definition of Ready (DoR)

The DoR outlines the conditions a Task must meet before it can enter the Workflows. This helps ensure that Work Items are well-understood, properly scoped, and actionable before commitment, reducing delays and rework during execution.

Definition of Workflows (DoW) Criteria

Outlines the specific stages a Work Item must pass through from initiation to completion. It ensures consistency, clarity, and shared understanding across teams by defining entry and exit conditions for each stage, improving Workflows transparency and predictability.

Delivery Review Meeting

A recurring Kanban meeting to evaluate how effectively Work Items meet customer expectations. It focuses on reviewing value delivery, Workflows efficiency, and identifying areas for continuous improvement, ensuring feedback is integrated into future delivery cycles.

Dependencies and Integrations

Elements like APIs, external systems, or third-party services that influence Kanban Workflows. Identifying and managing them helps teams coordinate cross-functional efforts, minimize delays, and maintain smooth handoffs between systems during continuous delivery and integration.

Deployment Methods

Deployment Methods in Kanban refer to the strategies and practices used to release completed work into production or customer environments. These methods, such as continuous delivery or scheduled releases, aim to ensure smooth transitions, minimize risks, and maintain consistent value delivery.

DevOps

A practice combining development and operations to enhance collaboration, continuous integration, and delivery. Within Kanban, DevOps aligns Workflows automation, testing, and deployment, enabling faster feedback loops and reducing bottlenecks in delivering high-quality software or services.

Digital Kanban Board

A digital Kanban Board replicates the visual Workflows management of a physical board using software tools. It enables distributed teams to collaborate, track progress, apply WIP limits, automate status changes, and access historical metrics and reports remotely.

Dot Voting

A prioritization technique where team members use stickers or digital “dots” to vote on the most important or valuable Tasks. This visual consensus-building approach is often used during planning sessions or retrospectives to focus attention on key issues or ideas.

Efficiency

In Kanban, efficiency is the ratio of active work time to total time (including delays) in the process. Improving efficiency helps reduce lead time, deliver value faster, and better utilize team capacity by identifying and eliminating process waste.

Empirical Process Control

A core Kanban principle using real-time data and observation to guide decisions. Teams continuously measure metrics like cycle time or throughput, enabling transparent, adaptive process improvements that align with actual Workflows performance and delivery conditions.

Escalations

Escalations in Kanban refer to the process of raising attention to urgent issues, blockers, or risks that cannot be resolved at the current level of responsibility. Escalations ensure timely intervention by appropriate stakeholders, helping maintain Workflows continuity and preventing delays or quality compromises.

Escalation Workflows for Dependencies

A clearly defined process in Kanban for handling unresolved external or cross-team blockers. It outlines roles, timelines, and steps for resolution, maintaining delivery flow and minimizing the impact of dependency-related delays on project progress.

Existing Documentation

Existing Documentation in Kanban refers to the current records, manuals, or knowledge bases that support understanding of Workflows, policies, systems, and product requirements. It provides context for ongoing work, aids onboarding, ensures consistency, and supports informed decision-making across the team and stakeholders.

Existing Forms and Templates

Standardized documents used by Kanban Teams to log blockers, standard operating procedures, or incidents. These templates ensure consistent documentation, simplify audits, enhance communication, and support training, enabling smoother operations and structured Workflows management.

Existing Kanban Backlog

Existing Kanban Backlog refers to the collection of pending Work Items that have been identified but not yet started within a Kanban system. This backlog is continuously reviewed, prioritized, and refined to ensure alignment with customer needs and efficient Workflows initiation.

Existing Kanban Metrics

Existing Kanban Metrics are the current set of performance measurements tracked within a Kanban system, such as lead time, cycle time, throughput, and work in progress. These metrics provide insights into Workflows efficiency, support informed decision-making, and guide continuous improvement efforts.

Existing Kanban Reports

Predefined visual dashboards tracking key performance indicators like cycle time, throughput, or work in progress. These reports help teams assess performance, identify inefficiencies, and guide improvements, ensuring transparency and data-driven decision-making within the Kanban process.

Existing Kanban Workflows

Existing Kanban Workflows refers to the current sequence of steps and process policies through which Work Items flow in a Kanban system. It includes defined stages, work-in-progress limits, and handoff points, providing structure for managing Tasks, tracking progress, and identifying improvement areas.

Expert Guidance

Expert Guidance in Kanban refers to the insights, advice, or mentorship provided by experienced practitioners, coaches, or consultants to help teams implement, adapt, and improve Kanban practices. This guidance supports effective decision-making, accelerates learning, and fosters sustainable, value-driven process improvements.

Explicit Policies

These are clearly defined rules or agreements that guide how workflows through the system. Examples include WIP limits, Task assignment rules, or criteria for progressing between stages. Explicit policies help create clarity and consistency for all team members.

Feedback Loop

A recurring process that allows the team to reflect on performance and make adjustments. Examples in Kanban include retrospectives, review meetings, and flow-based metrics. Feedback loops support continuous improvement and adaptation to changing team or project needs.

Flow

Flow refers to the smooth, continuous progression of work through the system. Good flow means work moves steadily without blockages or delays. Kanban emphasizes optimizing flow by reducing WIP, managing queues, and addressing systemic inefficiencies.

Flow Efficiency

This metric compares the active working time to the total cycle time of a Task. Low flow efficiency indicates that work spends a lot of time waiting. Teams use this measure to identify blockers and improve the overall speed of delivery.

Forecasting

Forecasting in Kanban involves using historical data—such as lead time, throughput, or cycle time—to predict when future Tasks or projects will be completed. It supports better planning and expectation-setting for stakeholders without relying on fixed deadlines.

Forecasting Report

A Kanban tool that predicts future delivery timelines using historical performance data. It helps teams plan realistically, communicate timelines to stakeholders, and make informed decisions by simulating when Tasks or projects will likely be completed.

Forms

Forms in Kanban are standardized templates or documents used to capture, track, and communicate essential information about Work Items. They help ensure consistency, clarity, and alignment across teams by documenting details such as Task descriptions, acceptance criteria, deadlines, and dependencies throughout the Workflows.

Gantt Chart

Though not native to Kanban, Gantt charts are sometimes used alongside it for high-level planning. A Gantt chart visually represents scheduled Tasks over time, helping teams align Kanban Work Items with broader timelines or project milestones for stakeholder visibility.

Granularity

Granularity refers to the level of detail represented in Work Items. In Kanban, maintaining the appropriate level of Task granularity ensures that work is trackable, estimable, and manageable. Too coarse may delay visibility; too fine may create overhead.

Histograms

Graphical representations of cycle or lead time distributions in Kanban Workflows. These visual tools help teams detect variability, identify performance trends, and improve predictability by showing how long Tasks typically take from initiation to completion.

Identified Kanban Team

Identified Kanban Team refers to the group of individuals officially recognized as responsible for managing and executing work within a Kanban system. This team collaborates to visualize Workflows, limit work in progress, and continuously improve delivery by following Kanban principles and practices.

Impediment

An impediment is anything that blocks or slows down the progress of work. These can include resource shortages, unclear requirements, or external dependencies. Identifying and resolving impediments is critical to maintaining flow and avoiding delivery delays.

Improved Team Morale and Engagement

Improved Team Morale and Engagement in Kanban refers to the positive impact of visualized Workflows, clear policies, and continuous feedback on team satisfaction. By promoting autonomy, transparency, and collaboration, Kanban fosters a supportive environment that motivates individuals and strengthens overall team commitment and performance.

Indicators

Indicators are quantitative or qualitative metrics used to evaluate Workflows performance. These may include lead time, throughput, WIP, and cumulative flow. Indicators inform decisions, monitor progress, and guide continuous improvement within the Kanban system.

Iteration

Although Kanban does not rely on fixed-length iterations like Scrum, teams may still use iterations for planning, reporting, or review purposes. An iteration represents a time-boxed period for evaluating progress and reflecting on team performance.

Iterative Development

A Kanban principle promoting incremental changes through frequent feedback loops. Teams deliver small improvements continuously, learn from outcomes, and refine Workflows. This supports adaptability, customer responsiveness, and ongoing enhancement of both process efficiency and product quality over time.

Jira

Jira is a widely used software tool that supports Agile and Kanban Workflows. It provides digital boards, tracking features, and reporting capabilities. Teams use Jira to manage Tasks, monitor progress, and enforce WIP limits in distributed environments.

Just-in-Time (JIT)

JIT is a principle that supports pulling work into the system only when capacity becomes available. It minimizes waste, avoids overproduction, and ensures that work is handled efficiently based on actual demand and readiness.

Kanban Backlog

A dynamic collection of upcoming Work Items, organized and prioritized for future execution. The backlog evolves continuously based on customer needs, team capacity, and strategic goals, serving as the primary input source for Kanban planning and replenishment sessions.

Kanban Board

A visual management tool that displays work as it flows through stages (e.g., To Do, In Progress, Done). It's the core artifact of Kanban, offering real-time transparency, accountability, and coordination across individuals and teams.

Kanban Cadence

Kanban cadences are recurring meetings or check-ins that help structure team collaboration. Examples include daily standups, replenishment meetings, and retrospectives. These regular rhythms promote feedback, planning, and learning without relying on iteration-based cycles.

Kanban Manager

A leadership role responsible for implementing, maintaining, and improving Kanban Workflows. The manager ensures alignment with organizational goals, facilitates team adoption, monitors performance metrics, removes blockers, and promotes a culture of continuous improvement and visual Workflows management.

Kanban Method

A management approach rooted in Lean thinking that emphasizes visualizing work, limiting WIP, managing flow, and continuously improving. The Kanban Method enables teams to incrementally improve their systems and deliver higher value more predictably.

Kanban Release

A group of Completed Work Items delivered together to customers or stakeholders. In Kanban, releases are not tied to fixed sprints but occur when value is ready. This approach enhances agility, reduces cycle time, and supports continuous delivery.

Kanban System

A Kanban system consists of the board, Workflows policies, WIP limits, and roles that together create a pull-based method for managing work. It supports transparency, reduces multitasking, and enables performance improvements through data-driven insights.

Kanban Team Members

Individuals collaboratively responsible for managing and completing Workflows Tasks on a Kanban Board. Each member contributes to maintaining flow, limiting WIP, and identifying blockers. Their collaboration ensures transparency, timely delivery, and adherence to Kanban principles and practices.

Key Performance Indicators (KPIs)

Key Performance Indicators (KPIs) in Kanban are measurable values used to assess how effectively a team is achieving Workflows goals. Common KPIs include lead time, cycle time, throughput, and flow efficiency, helping teams evaluate performance, spot trends, and drive continuous improvement initiatives.

Lead Time

Lead time measures how long it takes for a Work Item to go from request to delivery. It includes both waiting and active processing time. Managing lead time helps teams become more predictable and responsive to stakeholder needs.

Lean Kanban

A methodology that combines Lean thinking with Kanban principles to reduce waste, improve efficiency, and maximize value delivery. It emphasizes visualizing work, limiting WIP, managing flow, and continuously improving processes to meet customer needs faster and more effectively.

Limit WIP (Work in Progress)

One of Kanban's core practices, limiting WIP helps prevent overloading the team and promotes faster delivery. By restricting the number of Tasks in each Workflows stage, teams focus on completing work rather than starting too much at once.

Line Graphs

Visual tools used in Kanban to display Workflows trends over time, such as cycle time, lead time, or throughput. They help teams track performance fluctuations, identify patterns, and make data-driven decisions to improve delivery consistency and predictability.

Little's Law

A mathematical principle used in Kanban to relate average throughput, cycle time, and WIP. It states: *Cycle Time = WIP / Throughput*. This law supports data-driven forecasting and helps optimize performance by balancing capacity and demand.

Metrics

In Kanban, metrics are used to measure performance, identify trends, and drive improvements. Common metrics include cycle time, lead time, throughput, and flow efficiency. These data points support evidence-based decision-making and continuous improvement within the Workflows.

Milestone

A milestone represents a significant event or achievement in a project timeline. While Kanban focuses on flow rather than deadlines, milestones help align Kanban work with business goals, releases, or external dependencies that require visibility and coordination.

Non-Value-Adding Time

Time during which a Task is not actively worked on or progressing. In Kanban, identifying and minimizing this time is critical to improving flow efficiency, reducing delays, and focusing team efforts on high-value, customer-impacting activities.

Objective Key Results (OKRs)

While not exclusive to Kanban, OKRs are goal-setting tools that define outcomes and measurable results. They can align team Kanban Workflows with strategic objectives, ensuring that Task execution supports the broader goals of the organization.

Organization or Workspace Admin

An Organization or Workspace Admin is essential for setting up and managing the organization and its workspaces when using a digital Kanban tool or SaaS product to implement Kanban.

Output

An output is the result of completed work within the Kanban system. Outputs can be features, reports, deliverables, or any item that has met the Definition of Done and passed quality checks, ready for stakeholder use or delivery.

Overburdening

Overburdening occurs when too much work is assigned or taken on at once, leading to stress, delays, and reduced quality. Kanban counters overburdening through WIP limits and visual signals that alert teams to capacity strain.

Performance Data

Performance Data in Kanban consists of quantitative information collected from Workflows activities, such as lead time, cycle time, throughput, and Work Item age. This data enables teams to monitor progress, identify trends, make informed decisions, and continuously improve their delivery processes.

Planning

Planning in Kanban is continuous and adaptive. Rather than relying on fixed sprints, Kanban uses just-in-time planning through cadences such as replenishment meetings. It aligns priorities with capacity and data, fostering more flexible and realistic planning cycles.

Planning or Replenishment Meeting

A Kanban cadence where the team selects new Tasks from the backlog to begin work on. It ensures that only prioritized, valuable work enters the system based on capacity, current WIP, and strategic business objectives.

Policies

Kanban policies are explicit agreements that define how work is handled. These may include WIP limits, entry/exit criteria for Workflows stages, or prioritization rules. Making policies visible and agreed upon ensures clarity, fairness, and smooth operations.

Process Improvement

A fundamental goal of Kanban, process improvement involves regularly inspecting Workflows performance, identifying inefficiencies or waste, and making incremental changes. Using data, feedback loops, and retrospectives, teams evolve their system toward better performance and outcomes.

Process Mapping Tools

Process Mapping Tools in Kanban are visual techniques used to document, analyze, and understand Workflows steps and interactions. These tools, such as value stream mapping or SIPOC diagrams, help teams identify inefficiencies, bottlenecks, and opportunities for improving flow and service delivery.

Product Backlog

In Kanban, the backlog represents a pool of potential Work Items. Unlike Scrum's time-boxed approach, Kanban uses continuous flow and pulls Tasks from the backlog based on capacity and prioritization, promoting a more fluid and demand-driven development process.

Prioritized Product Backlog

An organized list of Work Items ranked by business value and urgency. Managed by the Product Owner, this backlog feeds the Kanban system, ensuring that teams focus on the highest-priority Tasks that deliver meaningful outcomes to stakeholders.

Product Owner

The key stakeholder responsible for defining business needs, managing the prioritized backlog, and ensuring the Kanban Team delivers value. They collaborate closely with the team and customers, making sure each Task aligns with strategic goals and user requirements.

Prioritization Techniques

Prioritization Techniques in Kanban are methods used to determine the order in which Work Items should be addressed to maximize value and flow efficiency. Techniques like cost of delay, and class of service help teams make informed, transparent decisions aligned with business goals.

Pull System

A pull system is a core principle of Kanban where new work is initiated only when there is capacity to handle it. This contrasts with push systems and ensures that teams work at sustainable pace while focusing on flow.

Queue

A queue is where Tasks wait to be processed in the Workflows. Queues are necessary for managing flow but can also become bottlenecks if unmanaged. Kanban visualizes queues and encourages minimizing queue time to improve efficiency.

Queue Length

The number of Work Items waiting in a particular stage of the Kanban Workflows. Monitoring queue length helps teams identify bottlenecks, balance workload, and ensure smooth flow by managing how much work accumulates before being actively worked on.

Replenishment Meeting

A replenishment meeting is a regular cadence where teams decide which new Tasks to pull into the Workflows. This ensures that only valuable and ready work enters the system, maintaining prioritization and flow control.

Release Deliverables

The completed features or services deployed to customers as part of a Kanban release. These deliverables are typically released continuously or in batches, based on readiness, rather than at fixed intervals, supporting rapid and flexible value delivery.

Release Notes

Documentation that summarizes updates, enhancements, bug fixes, and new features included in a Kanban release. These notes provide transparency to stakeholders, track progress over time, and communicate changes that impact product functionality or user experience.

Release Plan

A Release Plan in Kanban outlines how and when completed deliverables will be deployed to customers or end-users. It aligns work completion with business needs, often based on flow metrics, ensuring timely, predictable releases without disrupting the continuous nature of the Kanban system.

Requirements

Requirements in Kanban are the documented needs, conditions, or capabilities that a Work Item must fulfill to deliver value. They are typically captured in a lightweight, flexible format and evolve through collaboration, ensuring alignment with customer expectations and supporting just-in-time planning and delivery.

Resolution for Issues and Blockers

Resolution for Issues and Blockers in Kanban involves identifying, analyzing, and removing obstacles that hinder Workflows progress. This process promotes smooth Task flow, minimizes delays, and supports continuous delivery by encouraging quick responses, collaboration, and root cause analysis to prevent recurrence of similar problems.

Retrospective

A retrospective is a feedback loop where teams reflect on what went well, what didn't, and how to improve. In Kanban, retrospectives are not tied to time-boxed iterations and can occur on-demand or on a scheduled cadence.

Retrospective Meeting

A regular Kanban cadence where the team reflects on recent work cycles to identify successes, pain points, and improvement opportunities. It fosters a culture of continuous improvement by using empirical feedback to enhance processes, communication, and collaboration.

Retrospective Tools

Retrospective Tools in Kanban are techniques and resources used during team reflections to analyze Workflows performance, identify issues, and generate improvement ideas. Tools like root cause analysis, feedback boards, and timeline reviews support continuous learning, collaboration, and process evolution over time.

Review

A review is a structured discussion where completed work is examined for quality, completeness, and alignment with goals. It offers a chance to gather feedback and assess the impact of the delivered items, helping teams validate value delivery.

Risk and Issue Review Meeting

A recurring Kanban meeting focused on identifying, analyzing, and mitigating risks and blockers affecting Workflows. Teams assess unresolved issues, dependencies, and external factors to reduce uncertainty, manage delays, and ensure continued flow and delivery reliability.

Root Cause Analysis

A structured problem-solving technique used in Kanban to identify the underlying causes of Workflows inefficiencies, recurring blockers, or quality issues. Addressing root causes instead of symptoms supports long-term improvements and helps maintain sustainable delivery performance.

ScrumBan

A hybrid framework combining Scrum's structure with Kanban's flexibility and flow principles. It allows teams to maintain Scrum rituals like sprints while adopting Kanban's visualization, WIP limits, and continuous delivery, offering a customized approach for different project or team needs.

Self-Organization

A Kanban principle where teams independently manage their Tasks and Workflows. Members take ownership, make decisions collaboratively, and continuously adapt processes to improve performance, empowering them to deliver value without relying on excessive management intervention or rigid command structures.

Service Delivery

Service delivery in Kanban focuses on fulfilling customer expectations through predictable and quality-driven Workflows. It emphasizes managing flow, reducing delays, and continuously improving processes to deliver value efficiently and reliably to end users or stakeholders.

Service-Level Agreements (SLAs)

Predefined timeframes for completing Tasks, often between dependent Kanban Teams or external partners. SLAs help manage expectations, maintain accountability, and guide prioritization by ensuring timely delivery across Workflows that depend on handoffs or shared responsibilities.

Stakeholders

Stakeholders in Kanban are individuals or groups with an interest in the outcomes of the Workflows or project. They may include customers, managers, team members, or external partners, and their feedback, expectations, and priorities influence decision-making, planning, and continuous improvement efforts.

Statistical Process Control (SPC)

A method in Kanban for tracking and analyzing Workflows variability using control charts. SPC helps detect anomalies, monitor process stability, and guide improvement efforts by highlighting whether fluctuations in metrics like cycle time are expected or unusual.

Software as a Service (SaaS)

SaaS refers to cloud-based applications accessed via the internet. Many Kanban tools operate as SaaS platforms, offering real-time collaboration, data storage, and scalability for distributed teams managing Workflows from anywhere.

Special Cause Variation

In process management, special cause variation represents unexpected or unpredictable changes that affect Workflows outcomes. Kanban systems monitor for such anomalies using metrics and charts to detect issues and adjust operations accordingly.

Sprint

While sprints are core to Scrum, they may be referenced in hybrid Kanban-Scrum environments. A sprint is a time-boxed development cycle, but in Kanban, work is continuous. Any sprint references typically reflect planning or reporting adaptations.

Stakeholder

A stakeholder is anyone with an interest in the output or progress of work—such as clients, end users, or business managers. In Kanban, engaging stakeholders through feedback loops ensures alignment, transparency, and responsiveness to needs.

Start Date

The start date is when a Task enters the active Workflows. This marks the beginning of cycle time tracking and helps teams measure how long work takes, understand throughput, and forecast delivery timelines.

Statistical Forecasting

A technique used to predict delivery outcomes based on past performance data such as throughput, lead time, or cycle time. Kanban Teams use statistical forecasting to improve planning accuracy and reduce reliance on estimates.

Sub-Task

A smaller actionable unit within a larger Task, often represented as a checklist item. In Kanban, breaking work into sub-Tasks provides clarity, supports better tracking of progress, and ensures thorough completion of all necessary components within a Workflows item.

Summary Tables

Tabular reports used in Kanban to compare Workflows metrics like cycle time, lead time, or throughput across teams or projects. These tables support cross-team analysis, performance benchmarking, and help identify areas for improvement in delivery speed and efficiency.

Swimlanes

Swimlanes are horizontal sections on a Kanban Board that group Tasks by category, team, or priority. They help segment work visually, track multiple streams, and organize responsibilities while maintaining clarity across the board.

System Thinking

A mindset that views Workflows as an interconnected whole rather than isolated parts. In Kanban, systems thinking helps teams optimize across the entire value stream, addressing root causes of issues and improving end-to-end flow.

Takt Time

The average time between the start of work on one item and the next, aligned with customer demand. In Kanban, takt time helps balance workload, ensure consistent output, and support the design of predictable, customer-focused Workflows.

Task

A Task is a unit of work represented by a card on the Kanban Board . Tasks vary in size and complexity but must be clearly defined, actionable, and prioritized to ensure steady progress and successful delivery.

Task Estimation Tools

Task Estimation Tools in Kanban are techniques or aids used to assess the relative size, complexity, or effort required for Work Items. Tools like affinity mapping, T-shirt sizing, or historical flow data help teams forecast delivery timelines without relying on fixed time-based estimates.

Task Group

A collection of related Tasks contributing to a common objective or deliverable. Task Groups help structure complex work into manageable units, allowing Kanban Teams to organize, prioritize, and track multiple related efforts while maintaining overall visibility and coordination.

Team Capacity

Team capacity refers to the amount of work a team can handle at a given time. It is used to set WIP limits, inform planning, and prevent overburdening. Understanding capacity helps balance demand with sustainable delivery pace.

Team Feedback

Team Feedback in Kanban refers to input from team members about Workflows, collaboration, and process effectiveness. Regular feedback sessions foster a culture of openness, support continuous improvement, and help identify obstacles or opportunities to enhance performance, efficiency, and team dynamics.

Team Selection Meeting

Team Selection Meeting in Kanban is a collaborative session where individuals are chosen to form or restructure a Kanban Team based on skills, roles, and Workflows needs. The meeting ensures alignment on responsibilities, fosters team cohesion, and sets the foundation for effective collaboration.

Throughput

Throughput measures the number of Work Items completed over a specific period. It is a key indicator of team performance and supports forecasting, capacity planning, and process improvement in the Kanban system.

Ticket

A ticket is another term for a Task or Work Item on a Kanban Board . It holds all relevant information—such as title, assignee, status, and attachments—and is moved through Workflows stages to represent progress.

Time in Process

This metric refers to the total time a Task spends in the Workflows, including both waiting and active time. Monitoring time in process helps identify inefficiencies and optimize performance across stages.

Trello

Trello is a popular Kanban-based project management tool known for its simplicity and visual boards. It allows users to create cards, customize Workflows, and collaborate across teams. Trello is widely used in Agile and non-technical environments.

Updated Kanban Backlog

A regularly refined list of pending work that reflects changing priorities, new requirements, and evolving stakeholder needs. Continuous backlog updates ensure the Kanban system remains aligned with strategic goals, optimizing the flow of value to customers.

Updated Kanban Metrics

Revised performance measurements based on the latest Workflows data, such as lead time, throughput, and WIP. These updated metrics help teams monitor progress, detect trends, and drive data-informed decisions to optimize Workflows performance and predictability.

Updated Kanban Workflows

Adjusted process structures designed to remove inefficiencies, respond to organizational changes, or improve team performance. Kanban Workflows are frequently reviewed and refined to enhance flow, eliminate waste, and ensure work is completed as effectively and quickly as possible.

User Story

A short, customer-focused description of a desired feature or outcome, typically framed from the end-user's perspective. In Kanban, user stories help define valuable Work Items, clarify expectations, and guide teams in delivering customer-centric results efficiently and incrementally.

Vabro

A Kanban-based visual management and process improvement platform designed to help teams visualize work, track metrics, and drive continuous improvement. It supports Lean practices through boards, WIP limits, flow analytics, and collaboration features that enhance operational efficiency and transparency.

Value-Adding Time

The portion of total cycle time during which a Task is actively worked on. In Kanban, increasing value-adding time and minimizing idle periods leads to higher flow efficiency, faster delivery, and better alignment with customer value and satisfaction.

Value-Based Prioritization

A strategy used in Kanban to rank Work Items based on the value they deliver to customers or the business. This prioritization ensures that limited resources are focused on the most impactful work, supporting faster, high-value outcomes and efficiency.

Value Stream

The value stream is the entire sequence of activities needed to deliver a product or service. Kanban visualizes and optimizes the value stream by identifying waste, improving flow, and increasing the speed and quality of value delivery.

Visual Management

Visual management involves using boards, charts, and other artifacts to make work visible. In Kanban, it enhances transparency, enables faster decision-making, and allows teams to identify problems, track flow, and communicate clearly at all times.

Visualization of Workflows

A Kanban principle that promotes making all stages of work visible through boards and cards. Workflows visualization enhances transparency, reveals bottlenecks, supports collaboration, and allows teams to monitor progress, enforce WIP limits, and improve flow predictability.

Visualization Tools

Charts, dashboards, and digital boards used in Kanban to display metrics like throughput, WIP, and cycle time. These tools support transparency, real-time tracking, and continuous improvement by providing actionable insights into team performance and Workflows health.

WIP (Work in Progress)

WIP refers to Tasks that are currently being worked on. Limiting WIP is a core Kanban practice that improves flow, reduces context switching, and prevents team overload by ensuring work is only pulled when there's capacity.

WIP Aging Charts

Visual reports that show how long Tasks have remained in progress. In Kanban, these charts help identify stagnant Work Items, predict delays, and prompt timely intervention to maintain a healthy, efficient flow and prevent work from becoming stale.

WIP Limit

A WIP limit is a cap on the number of items allowed in a specific Workflows stage at one time. It enforces focus, balances demand with capacity and improves the speed and predictability of delivery.

Work Assignment

Work Assignment in Kanban refers to how Tasks are selected and undertaken by team members, often using a pull-based approach. Instead of being assigned top-down, individuals choose Tasks based on priority, skill, and availability, promoting autonomy, flow efficiency, and balanced workload distribution.

Workflows

Workflows in Kanban is the sequence of steps a Task follows from initiation to completion. Visualizing and managing the Workflows helps teams ensure that value is delivered smoothly and efficiently with minimal delays.

Workflows Visualization Tools

Workflows Visualization Tools in Kanban are visual aids or software that display the flow of Work Items through various process stages. Tools like Kanban Board s and digital Task trackers enhance transparency, highlight bottlenecks, and support better collaboration, prioritization, and flow management across team.

INDEX

The Practical Implementation Guide for Managing Workflows using Kanban

The Kanban Body of Knowledge (*KBOK™ Guide*) offers guidelines for successfully implementing Kanban, a widely used Agile methodology for managing business workflows. Originally developed in manufacturing, Kanban is now applied across various industries and sectors, including software development, healthcare, education, human resource management, retail, sales and marketing, finance, and more. It works for organizations of all sizes, from small businesses to large enterprises.

The *KBOK™ Guide* is built on insights from thousands of workflows across industries, with significant input from the global Kanban community and the VMEdu® Global Authorized Training Partner Network, comprising over 2,000 companies in more than 50 countries. Its development was a collaborative effort involving experts and practitioners from diverse fields.

The *KBOK™ Guide* is a comprehensive yet easily accessible framework for managing workflows with Kanban. It includes practical examples of Kanban implementation using popular IT tools, helping readers apply the methodology in their organizations. The guide also covers how Kanban integrates with other Agile frameworks such as Scrum, DevOps, OKRs, and Lean. Recommendations about how Artificial Intelligence can be used to increase productivity in Kanban workflows are also included in the *KBOK™ Guide*.

The *KBOK™ Guide* serves as a resource for both experienced Kanban practitioners and professionals new to workflow management. It's also suitable for those with no prior Kanban experience. The widespread adoption of the *KBOK™ Guide* framework standardizes how Kanban is applied to workflows globally and significantly helps organizations improve their overall productivity and return on investment.

Kanbanstudy
Targeting success

ISBN 979-8-9898916-1-0
9 798989 891610