COMPLETE GUIDE TO PROJECT, PROGRAM AND PORTFOLIO MANAGEMENT WITH KANBAN

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Are you looking for a simple way to successfully manage your projects, programs, and portfolio?

Do you need a way to achieve your project objectives despite changes in customer requirements? Furthermore, do you want to achieve this without bureaucracy or any drastic change? Do you recognize that you need a shift to a more collaborative, proactive, and customer- and business-focused culture, but you don't know how to introduce this change?

This may all sound too good to be true. However, companies that use Kanban practices to manage their projects report greater all-round visibility of the status of work, increased predictability, and improved customer satisfaction. They also observe a change in the organizational culture towards greater collaboration, alignment, and customer orientation. Moreover, they admit to not wanting to regress to their old management habits. You can find the case studies of some of these companies on our website, www.berriprocess.com

After eight years of implementing project and portfolio management with Kanban, we decided to document the key concepts and steps to follow so that you can apply them successfully in your organization.

Several people with lots of experience in project and portfolio management and Kanban have reviewed the preliminary content of the guide. More specifically, I want to thank Dimitar Karaivanov, Juanje Alberdi, Javier Ferrer, Gabriela da Cunha, Brigitte Pfeifer-Schmöller, Thomas Grant, Ivaylo Gueorguiev, Laura Bachiller, Giuseppe Satriani, Javier Romero and Ana Jimeno Avi for their comments and recommendations.

With this level of expert input, I trust that this guide will be useful to you if you are managing one or several projects or leading a Project Management Office (PMO).

Become a more competent Manager.

Teodora Bozheva
CEO, Berriprocess Agility

CONTENT

1. PURPOSE OF THIS GUIDE

The purpose of this guide is to respond to the needs of organizations that manage projects, programs, and portfolios so that they can deliver value to their customers quickly and sustainably, as well as continually adapt and thrive in a changing context.

The guide introduces the Kanban principles and practices suitably adjusted to the specifics of project management. They have been validated in real-world contexts to facilitate the development and delivery of products and results, tangible or intangible, that meet both customer and user expectations as well as the business objectives of the organization.

This guide is intended for the following profiles and roles in an organization*:

- **Portfolio Managers** who ensure that the set of programs and projects they manage are focused on delivering on the organization's strategy.

- **Program Managers** whose responsibility is to ensure that each project that is part of the program or initiative delivers value at the right time and that projects are executed in a synchronized manner and aligned with business objectives.

- **Project Managers** whose work is focused on meeting the project objectives and satisfying the quality expectations of the products and services delivered with the resources available to them within the deadline and budget agreed with the customer.

- **Project team members** and anyone interested in knowing and applying the principles and practices of project management with Kanban.

* Adopting the definitions of PMI's PMBOK 6th edition and preliminary information about PMBOK 7 at the time of writing this guide.

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2. WHY MANAGE PROJECTS WITH KANBAN

Kanban will help you with your project, program, and portfolio management, if you experience one or more of the following groups of problems:

- **Lack of visibility of the real state and predictability of your projects**
  - Lack of means that facilitate the visualization of the current status of the work and the taking of appropriate actions quickly
  - Frequent change in priorities that affects the fulfillment of the project and program objectives
  - Slow and ineffective resolution of unforeseen events that put the project deadline and budget at risk
  - High and unbalanced workload that causes delays, rework, and extra costs
  - Difficulties in managing the process of defining requirements and/or ideas elaboration, as well as the project scope definition, especially when several stakeholders are involved

- **Difficulty in meeting changing customer requirements**
  - Inability to adapt and respond quickly to changes in customer requirements
  - Inability to adequately respond to changing demand and rapidly changing business and market environments
  - Unawareness of the level of completion of customer expectations or low customer satisfaction

- **Shortcomings in the functioning of the organization and the strategy deployment**
  - Lack of collaboration and ineffective or non-existent coordination between business areas, as well as between teams
  - Challenges in adopting an agile approach to work; lack of a management model that scales with a low level of bureaucracy
  - Lack of alignment between business strategy and project objectives

3. SUMMARY OF THE KANBAN METHOD FOR PROJECT ORGANIZATIONS

Kanban is a knowledge work management method based on the principles of Lean. As such, it is focused on delivering value and meeting customer needs and expectations. Customers are those who request products and/or services. And a *project* is a way to organize part of or the entire development of those customer requests.

The teams involved in a project use kanban boards to manage their work for that project. In Kanban the work that a team does to contribute to the project is considered a service. The network of boards of different teams through which the project work flows is the foundation of the value delivery system (in Kanban it is known as a *network of services*).
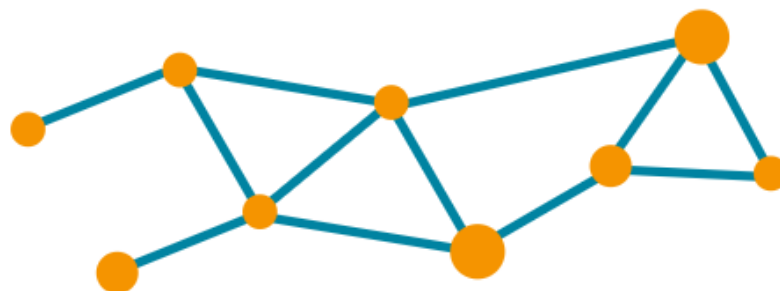
The organizations that use Kanban define *explicit policies* to *manage workflow* and make coherent decisions quickly and with consistent criteria. They also hold cadences (meetings and reviews) that provide the necessary *feedback* to ensure a continuous flow of information in the organization, as well as with customers, suppliers, and other stakeholders.

The same Kanban practices, appropriately tailored, are used to manage work at any level of the organization – in a team; between the teams involved in a project; between the projects that belong to a program; as well as at the portfolio level.

The kanban program and portfolio boards allow visualization of the roadmaps for the initiatives that the organization is carrying out, which in turn facilitates stakeholder communication and decision-making.

> **KANBAN GENERAL PRACTICES**
>
> 1. Visualize (with a kanban board)
> 2. Limit work in progress (WIP)
> 3. Manage flow
> 4. Make policies explicit
> 5. Implement feedback loops
> 6. Improve collaboratively, evolve experimentally

In other words, Kanban scales naturally and allows you to manage projects, programs, and portfolios without adding complexity or bureaucracy when designing the organizational solution.

The Kanban practices fit the needs of operations management too. Managing projects and operations using the same principles and general practices facilitates the development of the overall organizational agility.

In addition to bringing benefits to the management level, Kanban is also very helpful on the team level, where people are usually overloaded and struggle to meet the commitments of their organization. In particular:

- *Limiting the work in progress* to the real capacity of the team or business area, in addition to accelerating the flow of value, prevents the individuals from feeling overwhelmed or stressed.
- *Visualizing* work on kanban boards facilitates collaboration within and between teams. *Explicit policies* empower people and the team to make decisions. Altogether this creates the basis for the development of a person's professional knowledge and skills.

From a business perspective, Kanban makes it easier to identify waste in the process (defects, delays, overproduction, inventory) and increase its efficiency. Kanban introduces flow-related metrics that allow improving the predictability of products and services delivery.

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In a continually evolving environment, the business needs to respond quickly to changes in customer demand and expectations that occur throughout the project life cycle. These changes affect the products and services a business offers. The need to keep the business relevant can also lead to the need to adapt the functions of the organization. Kanban does not require, nor does it encourage radical changes in order to initiate such improvements. It is based on the principles *"start where you are"* and *seek improvement through evolutionary change, fostering leadership at each level of the organization.*

The general practice of Kanban, improve collaboratively, evolve experimentally, is the one that guides the actions of continuous improvement in project organizations.

Kanban practices strengthen the values of customer orientation, collaboration, respect, and alignment, among others. Combining Kanban practices and culture develops greater business outcomes.

> **CHANGE MANAGEMENT PRINCIPLES**
> 1. Start with what you do now
>   - Understanding current processes as actually practiced
>   - Respecting existing roles, responsibilities, and job titles
> 2. Gain agreement to pursue improvement through evolutionary change
> 3. Encourage acts of leadership at all levels

To find out more about Kanban, see The Official Kanban Guide by Kanban University. To learn how to get started and develop the agility and resilience of your organization with Kanban, use the Kanban Maturity Model: A Map to Organizational Agility, Resilience and Reinvention by David J Anderson and Teodora Bozheva.

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4. KEY PRINCIPLES AND PRACTICES OF PROJECT MANAGEMENT WITH KANBAN

PRINCIPLES OF PROJECT MANAGEMENT WITH KANBAN

The principles of project management with Kanban are applicable to any sector. They provide a holistic approach and guidance on the expected mindset and behaviors of people involved in projects, programs, and portfolios.

Visibility

Visualize all the work and information necessary to make consistent decisions at all levels of the organization.

Continuous and balanced flow of value

Create a continuous and balanced flow of results to effectively manage the mix of customer needs, priorities, risks, and the system's ability to deliver value.

Focus

Focus actions on customer needs, business purpose, and strategic priorities.

Feedback

Implement short feedback cycles both within the organization and with customers and the market.

Culture

Create a culture of transparency, collaboration, customer orientation, focus on purpose, accountability, and congruence.

KANBAN PRACTICES FOR SUCCESSFUL PROJECT MANAGEMENT

The following three groups of Kanban practices, appropriately tailored to the characteristics of the business, respond to the needs of successful project, program, and portfolio management, identified in point 2 of this guide.

Visualize processes and workflows

Visualize the process and workflow of projects, programs, and portfolios through a set of inter-connected kanban boards.

Use flow- and outcome-oriented metrics

Use relevant metrics to manage workflow and outcomes.

Establish feedback loops

Conduct a cadence of meetings and reviews that keep the organization aligned and focused on meeting customer needs and business objectives.

VISUALIZE PROCESSES AND WORKFLOWS

Visualize the process and workflow of projects, programs, and portfolios through a set of inter-connected kanban boards.

- **Team/business area level** – Provide real-time visibility into the status of work items or tasks that the team is doing to develop the project deliverables. Each ticket on the board represents a work item.
  Visualize the process (e.g. Requested – Selected – Development – Test – Done) and the decision-making policies and criteria to manage the work throughout the entire process. This facilitates the correct execution of the work and allows the team to identify and define improvements in the process.
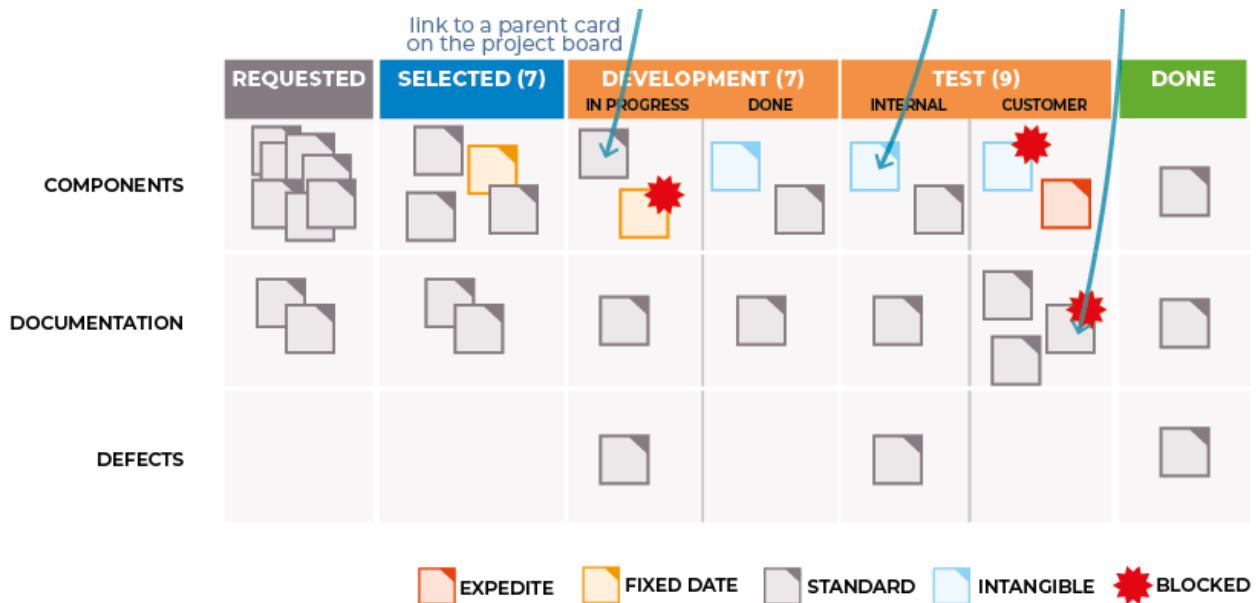
Visualize the type of work (e.g. Components, Documentation, Defects), its status in the process, and its priority (expedite, fixed date, standard, intangible). Indicate if it is blocked, the reason why it is blocked, and if it has dependencies on another work item or task.

Use avatars to see who is working on what so that the team can easily manage its workload. If the team does support and maintenance work for the products of already delivered projects, either use a separate board for this service, or a workflow or lane designated for this purpose on the team board.

> Your organization is unique. Design the boards that best respond to your information needs.

- **Project level** – Provide an overview of the status of project deliverables, blockages, risks, and priorities, allowing all the teams involved in the project to monitor their progress in real time and decide what to focus on now and what to do next.

If the product or project development process includes an ideation or requirements and scope definition stage (in Kanban known as upstream), map the corresponding steps to the kanban board design.

If you work in iterations, you can add columns for future iterations, e.g.

This way you can see the roadmap of your complete project.

- **Program level** – See the global status of the projects that belong to a program. Visualize the completion and dependencies between project roadmaps. Use any of the following two ways of visualizing project progress, (1) using workflow phases and (2) using a timeline, to conveniently focus stakeholder conversations on the actions they have to take to meet the objectives of all projects. This facilitates the resolution of issues related to suppliers or customers, as well as effective resource management in order to ensure a continuous and balanced workflow and to anticipate bottlenecks.
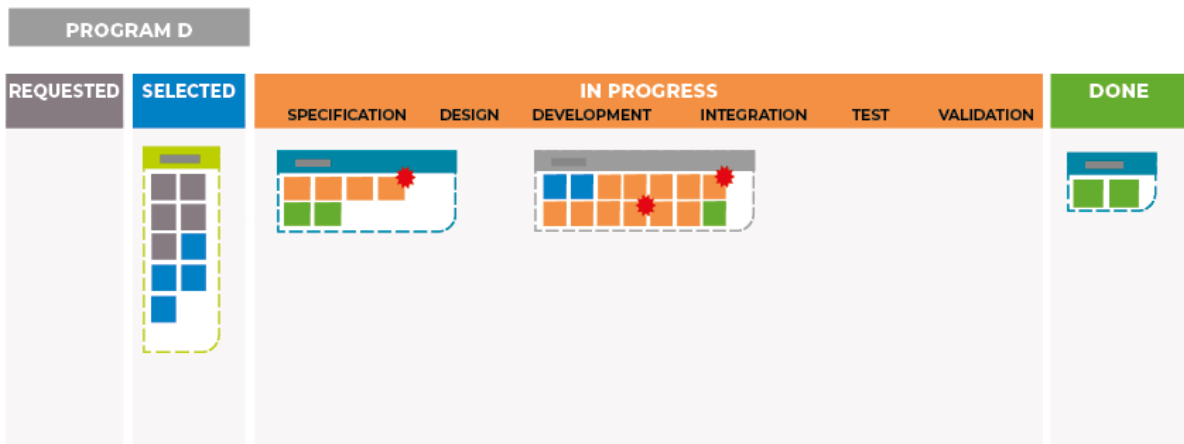
> You can view the project work on a separate board or as part of the program board. Electronic Kanban tools provide this visualization by filtering the program/initiative board. Viewing the work of a single project makes it easy to focus and quickly make the right decisions.

- **Portfolio level** – Provide an overview of the roadmaps and status of all programs and projects to facilitate the definition and review of strategic objectives and planning at the executive level.
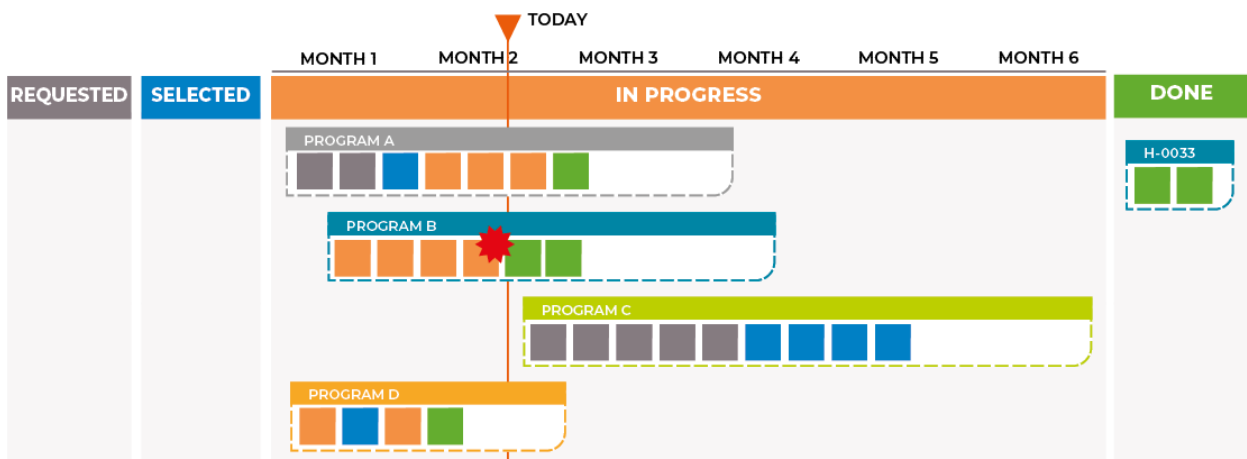
> Use the dependency links between the different levels of the kanban boards so that information about the status of a work item at the team level can be automatically propagated to the highest portfolio level.

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USE FLOW- AND OUTCOME-ORIENTED METRICS

Use relevant metrics to manage workflow and outcome.

Effective workflow management requires appropriate data. The two groups of metrics that facilitate decisions related to flow and outcomes are as follows:

- **Flow-related metrics:**
  - System lead time (the amount of time between committing to and delivering a work item)

  - Cycle time (the time that a work item spends in a column of the kanban board)

  - Customer lead time (time from receiving a customer request to delivering it)

  - Throughput (system capability; productivity)

  - Demand

  - Blockage time

  - Rework time

  - Flow efficiency (relationship between value creation time and system lead time)
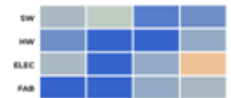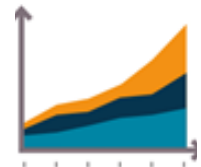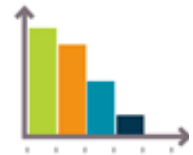
- **Agility, sustainability, and outcome-related metrics:**
  - KPIs (to measure and improve customer satisfaction)

  - Defects and rework (distribution by parameter as type, cause, etc.)

  - Transaction and coordination costs (costs of taking decisions and facilitating that this happens)

- Organizational health indicators (sustainability indicators from the internal point of view of the organization)

- Cost of delay

When selecting a tool for managing projects, programs, and portfolios with Kanban, make sure that it provides all the functionalities for managing work at all levels of your organization, as well as dependency management and data analysis. Evaluate its ease of customization and integration with the other management tools you use, such as ERP, CRM and project planning tools.
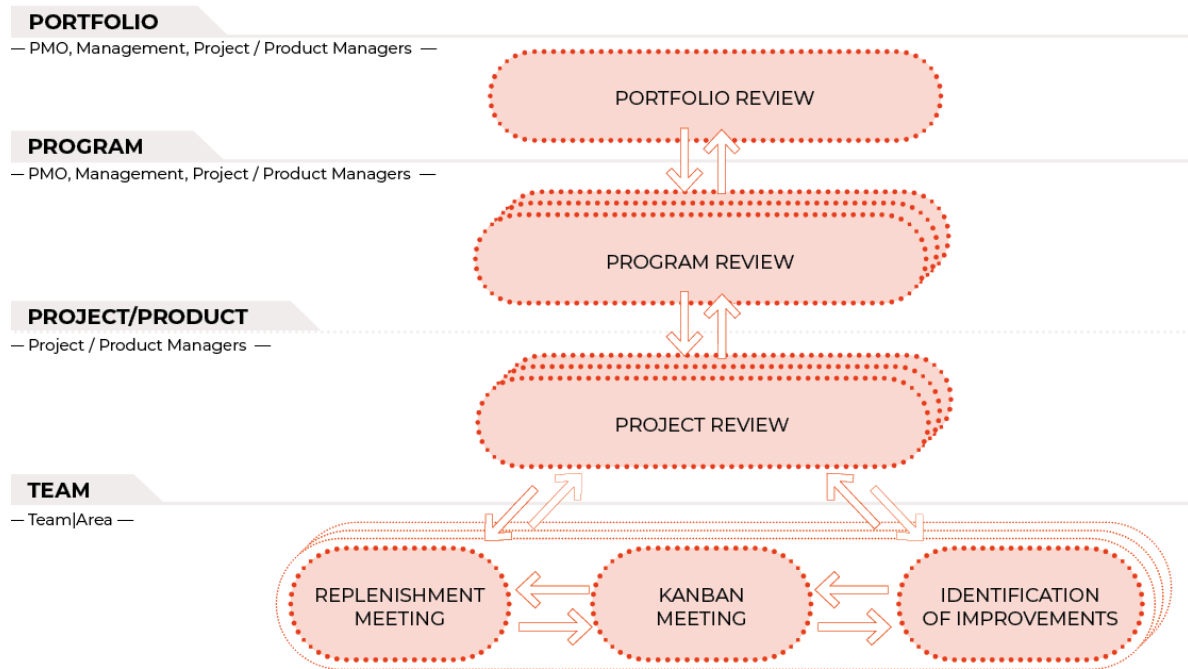
ESTABLISH FEEDBACK LOOPS

Conduct a cadence of meetings and reviews that keep the organization aligned and focused on meeting customer needs and business objectives.

The network of kanban boards visualizes the flow of project work, the process to conduct it, and the key information for its management, such as blockages, rework, dependencies, progress, pending work, congestion, etc.

The cadence of meetings and reviews ensures the flow of information and guidelines necessary to carry out projects successfully and meet both customer expectations and business objectives. They facilitate the synchronization and alignment of teams and projects in the organization.

Adjust the cadences to the needs of your organization.

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PORTFOLIO
— PMO, Management, Project / Product Managers —

PORTFOLIO REVIEW

PROGRAM
— PMO, Management, Project / Product Managers —

PROGRAM REVIEW

PROJECT/PRODUCT
— Project / Product Managers —

PROJECT REVIEW

TEAM
— Team|Area —

REPLENISHMENT MEETING — KANBAN MEETING — IDENTIFICATION OF IMPROVEMENTS

Each cadence has its particular purpose and guidelines.

- **Kanban meeting:** The team/business area discusses the issues that block the pace of work and decides what they are going to focus on that day (today). The important thing is to finish jobs before pulling new work into in progress, and to respect the policies. Keeping the workload at the established WIP limits (the level of the capacity of the team) is essential.

- **Replenishment meeting:** The team and the customer select work items to commit to starting before the next replenishment meeting. It is important to take into account the objectives of the project (scope, milestones, other expectations), the capacity of the system (throughput and lead time by type of work), the available capacity, and other additional information obtained at the project review (see below).

- **Performance review:** The important thing in this meeting is to review the performance of the system (team, business area). Analyze the defined indicators and take actions to improve, if necessary. The need to improve system performance could be caused by the requirements of the project, program, portfolio level, or by the customer. It can also come from the team itself or from a health indicator.

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- **Project review:** This meeting is to review the general status of the project and the risks to meet its objectives, to address issues that have arisen in the teams involved in the project, and blockages and dependencies that affect the project progress. Use data and facts to make decisions and take actions to adapt to and satisfy customer needs as well as to plan the work until the next review.

- **Program review:** This meeting is to review the completion of the objectives of all the projects that make part of the program and the associated risks. In it you will address issues related to dependencies between projects or shared resources, as well as issues related to customers and suppliers, and define actions to resolve impediments in the flow of multiple projects. Plan activities until the next program review and, if appropriate, align the actions with the decisions of the operations review meeting of your organization (a meeting out of the scope of this guide) as well.

- **Portfolio review:** This meeting reviews the completion of the objectives of all programs and the risks related to them. You will also decide how to distribute and manage the portfolio so that the strategic objectives of the organization can be achieved. Align the actions with the decisions made in the strategy review of your organization (a meeting not included in this guide).

# 5. HOW TO STEP-BY-STEP INTRODUCE PROJECT, PROGRAM, AND PORTFOLIO MANAGEMENT WITH KANBAN

Trying to introduce all the practices at once would be too challenging and could generate resistance. Use the evolutionary approach of the Kanban Maturity Model to involve the people of your organization in the upgrade of your project and product management processes, starting from where you are now.

The formula for evolutionary change is: *stressor – reflection mechanism – leadership.*

In other words, introduce a small normative change in current routines (stressor) to provoke reflection and a deeper understanding of the current process and situation. Use the generated ideas to foster the leadership towards better functioning and organizational outcomes.

The Kanban Maturity Model describes seven levels of organizational maturity. The essential ones, from a project management perspective, are maturity levels 1 to 4. Use the descriptions of the main project management activities provided at each level to define your expectations for each stage of your organizational evolution.
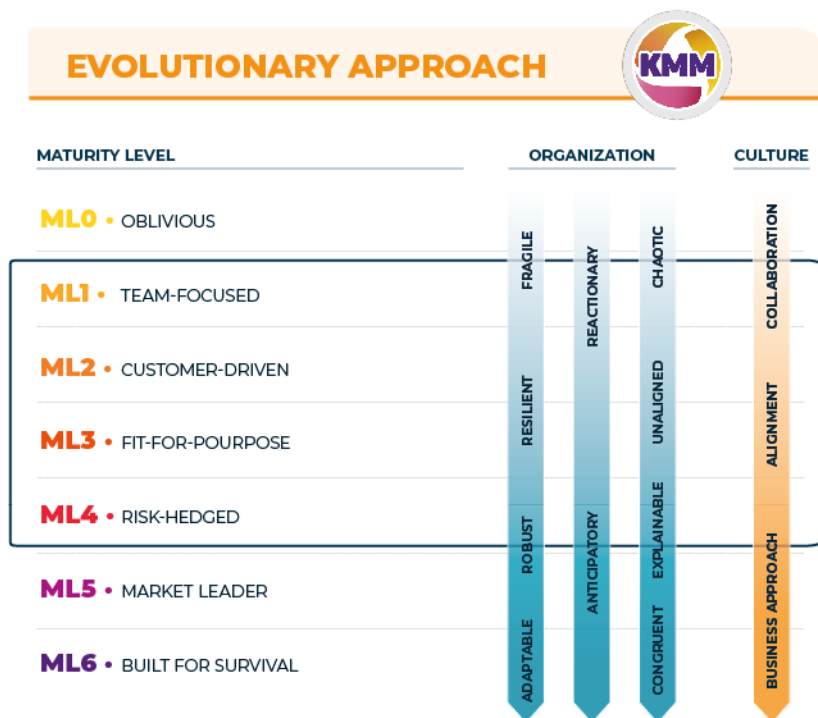
MATURITY LEVEL 1: TEAM-FOCUSED
Help teams work autonomously.

Use a team kanban board to create initial shared visibility and understanding of the work you do as a team for one or more projects, and how you do it.
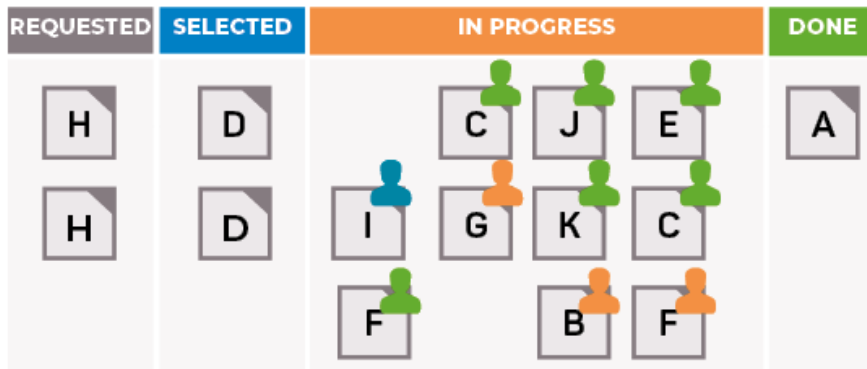
This way of working strengthens collaboration and knowledge sharing, and develops a joint understanding of the process. This involves defining initial policies for managing the work and decision-making criteria. As a result, the sense of teamwork increases, which in turn leads to better project results.
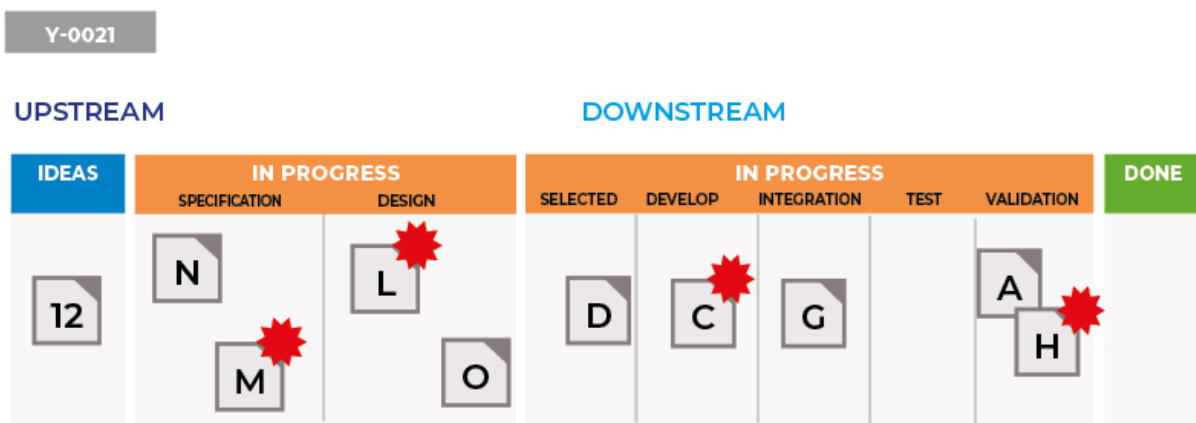
> Try going further and using a board with a similar design to visualize your work at the project level. Each card on it would represent a deliverable.

MATURITY LEVEL 2: CUSTOMER-DRIVEN

Make project work flow end-to-end.

Create a workflow at the team level, as well as through the entire value chain of a project involving multiple teams.

Define what types of work are done in the projects. Find out what is hindering the workflow, and what is your ability to produce the expected results. Use flow-related metrics to identify and adjust problematic policies and improve the achievement of project goals.


At this maturity level teams learn to better manage their workflow and deliver results faster. This increases their ability to adapt to changes in project circumstances. Visibility into the end-to-end project workflow, the project planning and review meeting, along with customer orientation and flow metrics, drive the definition of a consistent process.

The result is the greater satisfaction of both the involved teams and the customers, although there may still be some weaknesses in meeting customer expectations consistently.

MATURITY LEVEL 3: FIT-FOR-PURPOSE

Balance workflow at program level.

Balance the workflow across the multiple projects that belong to the program. Visualize and manage parent-child and peer-to-peer dependencies. Define and apply classes of service and criteria to select and initiate work requests. Use customer- and outcome-oriented KPIs to track performance improvement.
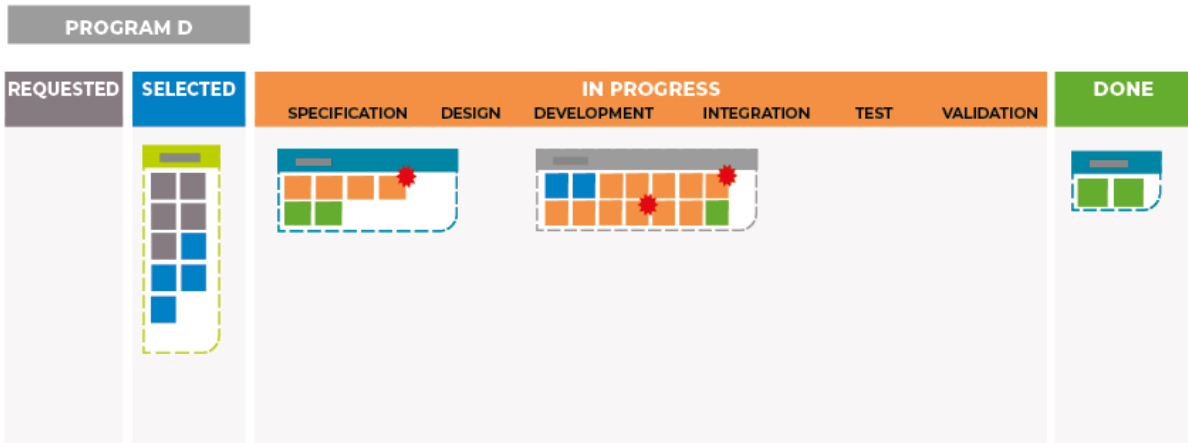
Reinforce the program review with evidence-based information and data on project risks, process capability, and customer feedback. Use the KPIs and flow-related metrics to identify opportunities for improvement in processes, and to take appropriate action.

The need to define prioritization policies at organizational level emerges. Use these to unify and align the organization around business objectives and to focus on meeting all customer expectations in a sustainable way. As a result, the entire organization gains in agility and resilience.

MATURITY LEVEL 4: RISK HEDGED

Improve flow efficiency and economic robustness.

Maturity level 4 reinforces the management of your projects with the use of predictive models to improve forecasting and increase flow efficiency through the elimination of waste in processes. This allows you to increase the profitability of projects and products, while keeping customer satisfaction high. You will improve risk management by adopting risk profiling practices and proactive risk hedging. Conducting the portfolio review more rigorously will help you increase the economic robustness of the business.

Project/Product delivery time forecast
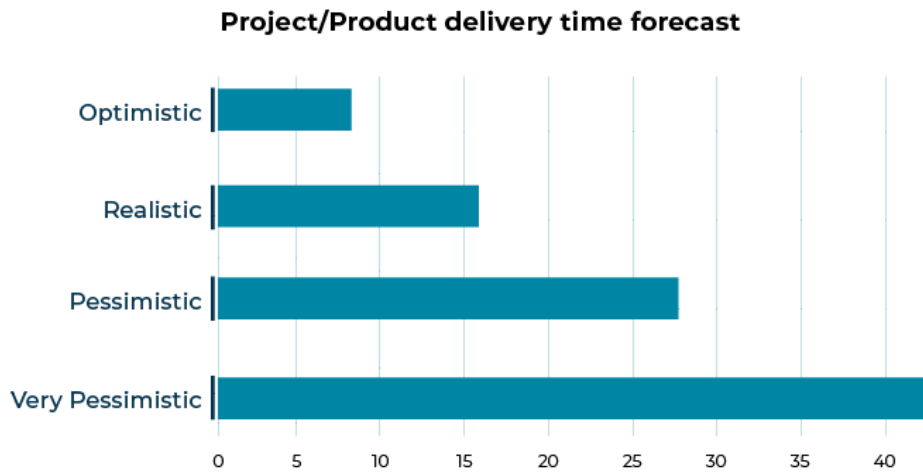
6. CONDUCTING OTHER PROJECT MANAGEMENT ACTIVITIES WITH KANBAN

Project management is a very broad discipline. Kanban is not going to replace it. However, Kanban practices help you to accomplish many of your project management activities faster, better, and with less bureaucracy. Kanban is particularly useful for conducting the following activities:

- **Work planning.** Using real data of system capacity and capability and predictive models to forecast delivery time allow you to plan with confidence.

- **Communication management.** Kanban boards continuously communicate work item status, team workload, workflow impediments, as well as risks at any level. Cadences streamline communication and align teams, projects, suppliers, and other stakeholders.

- **Risk management.** The analysis of flow-related data, the impact of blockers, dependencies, and reworks, provides a deeper understanding of the sources of delay and facilitates the definition of the right actions to address the risk of delays or low quality. The understanding of customer needs helps to establish a comprehensive, concrete, and coherent framework for decision-making and proactive risk management.

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- **Quality management.** Understanding the causes and impact of defects and other types of rework helps you take action to improve both product and service quality and flow efficiency.

- **Supplier management.** Visualizing supplier commitments on the team and project kanban boards provides quick feedback on issues related to their involvement. The regular meeting with suppliers ensures that their work is aligned with the project actions and progress.

- **Cost management**. Collecting effort and material costs for each work item facilitates the management of the project budget and expenses. Use historical data to estimate the budget for future projects and products.

MORE INFORMATION

You will find the following additional resources on our website, www.berriprocess.com

- Poster Project, Program, and Portfolio Management with Kanban
- Video about Project, Program, and Portfolio Management with Kanban
- Case studies of companies who manage their projects with Kanban

ABOUT TEODORA BOZHEVA

Teodora Bozheva is a founder and CEO of Berriprocess Agility. For more than 15 years she has been helping companies in different domains to level-up their project and service management and meet and exceed the expectations of their customers through Kanban.

In 2021 she received the "Kanban University Distinguished Fellow Award" for her contribution to the development of the Kanban Method and the creation of the Kanban Maturity Model. She is the co-author of the "Kanban Maturity Model" books with David J. Anderson.

ABOUT BERRIPROCESS AGILITY

Berriprocess Agility exists to help organizations to evolve continually by meeting their customer expectations and business objectives in a sustainable manner. To that end, they offer hands-on training in Kanban, project management with Kanban, and coaching.

Berriprocess Agility uses the Kanban Maturity Model, developed by David J. Anderson and Teodora Bozheva as a roadmap to develop organizational agility, resilience, and reinvention.

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