

Guide for Kanban for Complexity™ (Kanplexity™) - an addendum to the *Guide for Kanban the Flow Strategy™*

September 2019

Developed and sustained by John Coleman on behalf of Orderly Disruption Limited

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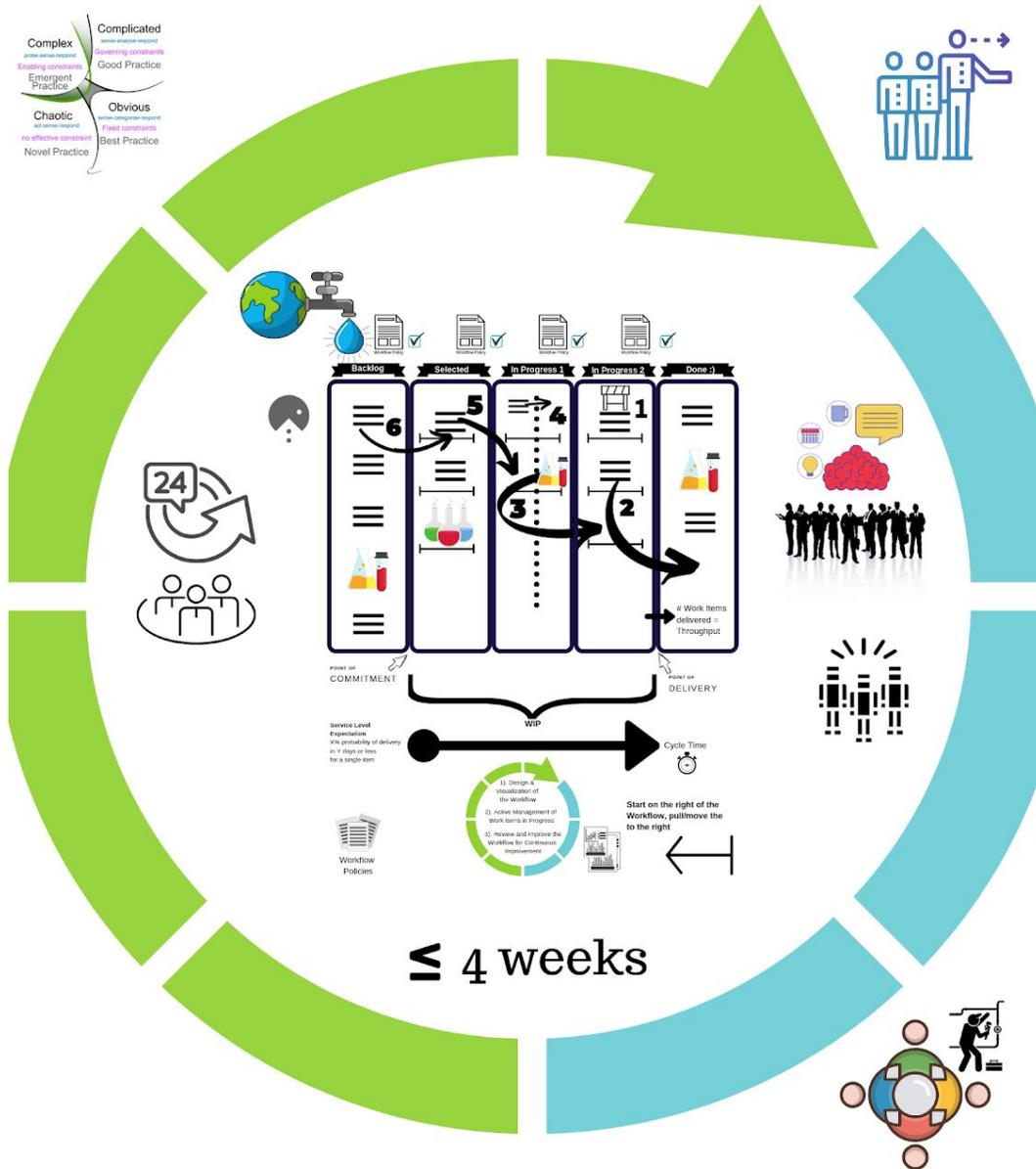
Cognitive Edge. (2019). Cynefin as of St Davids Day 2019 (1 of 5) - Cognitive Edge. [online] Available at: <https://cognitive-edge.com/blog/cynefin-as-of-st-davids-day-2019/> [Accessed 23 Mar. 2019].



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Kanban for Complexity™ (Kanplexity™)



1 - 4 week Rhythmic Cycle

Cynefin image (Cognitive Edge, 2019, 2)

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Background

Some teams of knowledge workers work primarily on complex problems and they're looking for another option.

Purpose

The flow-based perspective of *Kanban for Complexity*[™] (also known as Kanplexity[™]) can enhance and complement what you do now, and help the movement towards a new *Direction of Travel*. Teams and Servants will benefit from *Kanban for Complexity*[™] if they're willing to use *Cynefin*[™] *Sense Making*, embrace uncertainty, actively manage WIP, and avoid local optimization.

Kanban for Complexity[™] is designed to support the *Cynefin*[™] *Sense Making Framework*'s complicated (domain of experts) & complex (domain of emergence) domains for knowledge work. It has been tested so far on several types of knowledge work including the natural sciences, oil & gas, telecommunications, marketing, and banking. *Kanban for Complexity*[™] has Rhythmic Cycles. Some people prefer to call them "sprints", we prefer the term Rhythmic Cycle. The essence of Kanplexity[™] is small diverse (Syed, 2019) self-managing cross-discipline cross-functional Teams learning closely, empirically, frequently & respectfully from customers, end-users, and stakeholders in fast feedback loops governed in Rhythmic Cycles. Kanplexity[™] has two roles, *Team(s)* and *Servant(s)*. Kanplexity[™] has a *Direction of Travel* and a *Workflow*. It has five events, the Rhythmic Cycle, (optional) Rhythmic Replenishment, Daily Kanban, Rhythmic Impact Review, and Rhythmic Retrospective. It supports discovery & delivery, and it attempts to avoid the Innovator's Dilemma (Christensen, 1997) through disruptive innovation, as well as sustaining innovation.

The Harvard Business Review paper *A Leader's Framework for Decision Making* by [David J. Snowden, and Mary E. Boone](#) (Snowden, Boone, 2019, 2) featured the *Cynefin*[™] *Sense Making Framework*. It is fast becoming the standard definition of complexity for knowledge work. In that paper, quoted directly with permission:

A complex system has the following characteristics:

- *It involves large numbers of interacting elements.*
- *The interactions are nonlinear, and minor changes can produce disproportionately major consequences.*

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- *The system is dynamic, the whole is greater than the sum of its parts, and solutions can't be imposed; rather, they arise from the circumstances. This is frequently referred to as emergence.*
- *The system has a history, and the past is integrated with the present; the elements evolve with one another and with the environment, and evolution is irreversible.*
- *Though a complex system may, in retrospect, appear to be ordered and predictable, hindsight does not lead to foresight because the external conditions and systems constantly change.*
- *Unlike in ordered systems (where the system constrains the agents), or chaotic systems (where there are no constraints), in a complex system, the agents and the system constrain one another, especially over time. This means that we cannot forecast or predict what will happen.*

Direction of Travel

A Direction of Travel is required, which is clear to people on *Teams*, *Servants* and stakeholders. To that end, the *Direction of Travel* is revisited during Rhythmic Impact Reviews.

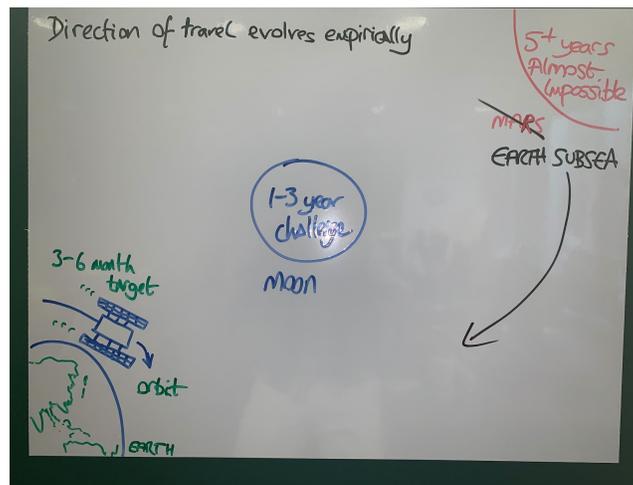


(Cognitive Edge, 2019, 2)

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KanPlexity™ has no Rhythmic Cycle goal; this is to avoid excessive focus on the short term, possibly losing sight of the prize, particularly when dealing with deep complexity. KanPlexity™ only has a Direction of Travel (Snowden, 2019, 1), and it empirically evolves/pivots.

It's ok to have multiple time horizons on the Direction of Travel, ideally 3-6 month target (metaphorically getting into orbit), 1-3 years challenge (metaphorically getting to the dark side of the moon), 5+ years almost impossible (metaphorically a human landing on Mars at the time of writing). In the example below, it seems we were aiming for a human trip to Mars. Then we pivoted to explore Earth's as yet undiscovered sub-sea instead all the while removing our plastic hangover.



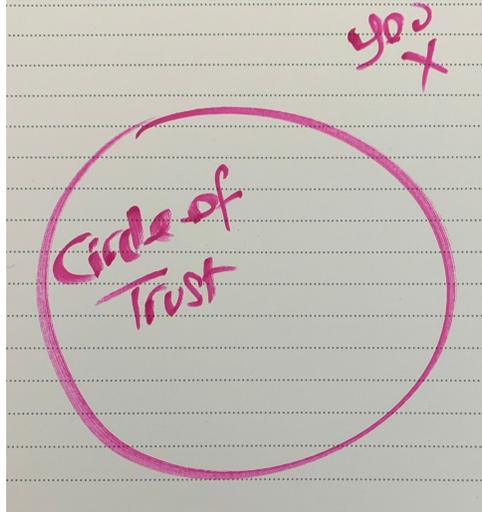
Roles

Kanban for Complexity™ has no roles other than Team and Servant. The Team and its Servants must commit to the antithesis of the Five Dysfunctions of a Team (Lencioni, 2019). The five dysfunctions of a team include:

- absence of trust
- fear of conflict
- lack of commitment
- inability to hold each other accountable
- Inattention to (collective) results

Essentially, the Team needs to overcome the five dysfunctions of a team (Lencioni, P., 2013).

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Some people may recognize the “circle of trust” conversation between Robert de Niro and Ben Stiller in “Meet the Parents”.

Team

A 21st-century Team in the face of complexity is diverse (Syed, 2019), self-managing, cross-discipline, cross-functional, and multi-learning. It is small enough to be fed by two pizzas or less. Members of a Kanban team can be added or removed at any time to protect flow.

The Team members must be clear in its Workflow Policies about who (usually more than one person) owns each of the following, in consultation with all other Team members:

- Owning the Direction of Travel creation, re-alignment, evolution
- If working on a product - understand where the product is in the product lifecycle (Moon, 2005) or understand that product life cycles don't exist (Christensen, 1997)
- If a corporate (this guide is open for use by non-profits and governments also), understand where we are in the corporate lifecycle (Adizes, 2015)
- Pruning the Backlog every Rhythmic Cycle
- Redesign of Kanban Board to adapt to this Volatile Uncertain Complex and Ambiguous (VUCA) world (YouTube, 2019, 3) daily to optimize for complexity and to improve signaling, without tinkering
- Every Rhythmic Cycle or more frequently:
 - facilitation of Rhythmic Replenishment,
 - facilitation of Rhythmic Impact Review,
 - facilitation of Rhythmic Retrospective,
 - review of the Workflow Policies

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- execution & communications of Monte Carlo (Magennis, 2011) probabilistic forecast simulations to assist with expectations management, notwithstanding massive health warnings about complexity, uncertainty & risk, and the quality of current flow as a base for such forecasts

The Team must commit to its Workflow Policies.

Servant

Examples of Servant include change agent, coach, product manager, manager, mentor, leader, executive. The list is not comprehensively exhaustive.

A Servant understands that within the Complicated domain, there is a possibility for experts to become limited in their own thinking/egos..... Sometimes a group of experts is unable to act before what they perceive as adequate analysis of the problem, also known as ‘analysis paralysis’.

As Dave Snowden put it...

“Leaders who try to impose order in a Complex context will fail, but those who set the stage, step back a bit, allow patterns to emerge and determine which ones are desirable will succeed. They will discern many opportunities for innovation, creativity, and new business models.”

“In the Chaotic domain, ... A leader must first act to establish order, then sense where stability is present and where it is absent, and then respond by working to transform the situation from Chaos to Complex, where the identification of emerging patterns can both help prevent future crises and discern new opportunities... Consultative leadership styles tend to fail in this domain as there is no time for input. Charismatic and direct leadership is required (Snowden, 2019, 1)”.

Humans do not stay in chaos for long usually, we usually deal with different shades of complexity.

Traits, characteristics, behaviors

A servant’s words should match her actions, and when that happens we have sincerity. A servant should have a “good moral compass”. For example, she:

- gets more technically minded, so she understands the issues & risks fully

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- genuinely tries to help resolve issues, and doesn't push issues back down to teams to solve
- uses her influence for constructive interventions
- doesn't punish people for making one-off mistakes while preaching about people needing to have an open mindset

Without ethics, agility becomes just another fad with no genuine intent to improve or change, just an intent to say the right thing at the right time in the right place and carry on the merry-go-round.

It doesn't end there. In addition, a servant should:

- From a societal point of view:
 - Avoid monopolization of the value agenda to customer, end-user, and knowledge value
 - Make a stand, make a difference
 - Look for the smallest things we can change, e.g., when traveling, avoid flying the wrong way to reduce carbon footprint despite the temptation of smoother / quicker / cheaper passage
 - Promote an organizational sense of purpose that is less about quarterly results and money, and is more about inspiring people
- From a behavioral point of view:
 - Situationally apply altruistic behavior, analytical behavior, and assertive behavior; optionally, utilize Goleman's six leadership styles situationally (Goleman, 2000)
 - Encourage honest communication and sharing of failures
 - Provide Viral Change (Herrero, 2019) inspired backstage leadership. Encourage positive habits without drawing attention to negative habits
 - Understand "When a measure becomes a target, it ceases to be a good measure"
 - Protect the Team, defend the Team, support the Team
 - Go See, and really see (Ballé and Ballé, 2011). Servants spend up to 80% of their time helping to fix problems with only 20% of their time in meetings. Servants who are "back-to-back" 80% of their time are not *Servants* by definition, at least not yet
- From a systems point of view:
 - Understand that when a system is over-simplified it runs the risk of going into chaos catastrophically
 - Avoid increased WIP as a result of local sub-optimization, known as the "bullwhip effect" (Johnson, 2019) or from a Team point of view

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- Promote self-managing, self-designing multi-learning teams
- Promote equitable pay/rewards, fit for purpose 40-year career paths (2-3 year dead-end career paths are to be avoided)
- Promote fit for purpose funding of work
- Promote an appropriate balance of long term, stable teams and dynamic re-teaming
- Promote mentoring, coaching
- Set barriers, e.g., 5 golden rules
- Manage stakeholders and/or be a helpful stakeholder
- Use professional coaching and/or a multiple-time-horizon direction-of-travel coaching style, e.g., Toyota Improvement & Coaching Kata
- Avoid over-playing any stance, e.g., the coaching stance
- Support swarming
- Embrace “slack time”, and support multi-learning in slack time
- Recognize when the Team(s) is ready to eliminate the notion of a Backlog and move beyond *Kanban for Complexity*. For example, maybe go back to conversation & confirmation (2 of the revisited 3 Cs - card, conversation, confirmation - maybe we don’t need cards anymore? (Jeffries, 2019))
- From an organizational point of view:
 - Prevent “impediment boomerangs” (credit to Ben Maynard) & tenaciously demonstrate lack of tolerance for long-lived impediments
 - Avoid the kind of delayering that only results in more of a gap in pay/rewards between Teams and executive leadership (HBS Working Knowledge, 2019)
 - Go on a journey through Scrum.org’s 5 steps of 21st-century-executive-leadership (Coleman, 2019)
 - Encourage narrative on a never-ending relentless hunt for unintended consequences, either positive or negative
- From a large group facilitation point of view:
 - Consider the use of techniques to improve large group discussions, e.g., Liberating Structures, Open Space (Openspaceworld.org, 2019), Innovation Games (Hohmann, 2019)
 - Considers the use of Agendashift™ (Burrows, 2019, 1), partly due to its background in Kanban and Cynefin™, partly due to its useful templates & workshop designs
- From an overall people point of view:
 - Understand that sometimes a “do more, faster” mindset isn’t actually how people want to work in the first place. In a survey of American knowledge workers conducted by Dropbox, 61% say they want to “slow down to get things right,” while only 41%* say they want to “go fast to achieve more.” (Taylor et al., 2019)

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- Understand that knowledge workers work best first when they get paid enough, and then attain mastery, purpose, and autonomy (Pink, 2018)
- Trust Teams and attend Rhythmic Impact Reviews.
- Demonstrate compassion for people (Bloom, 2016)

It is a journey. Be humble. Seek help.

Embrace Cynefin™ Sense-Making

Servant(s) and Team(s) members should embrace Cynefin™ Sense-Making and:

- Promote Future Backwards (Cognitive Edge, 2019, 5) and Ritual Dissent (Cognitive Edge, 2019, 3) workshops
- Check-in on re-alignment by the *Team(s)* with the *Direction of Travel* every Rhythmic Cycle
- Defend the Direction of Travel, amend as needed
- In the Disorder domain, think “hang on a second, which domain is this problem in, and therefore what is the best course of action?”
- In the Chaotic domain:
 - Provide action-oriented leadership by example
 - Perform triage, and act
 - A leader must first act to establish order, then sense where stability is present and where it is absent, and then respond by working to transform the situation from Chaos to Complex
- In the Complex domain:
 - (optionally) Encourage self-designing Teams (Less.works, 2019)
 - Manage the starting conditions and monitor for emergence
 - Provide leadership on the Direction of Travel, and clearly communicate it to all concerned regularly
 - Embrace uncertainty
 - Support probes, having amplification & dampening strategies ready for each probe
- In the Complicated domain, theories are stable with relatively high confidence, therefore
 - Encourage Team self-management (Less.works, 2019)
 - Ask the *Team* who the right experts are, get the right experts together, give them space or
 - Give more time for analysis

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- In the Obvious domain, encourage the *Team* to use pre-canned solutions

Additional Measures and Analytics for complexity

Consider the use of SenseMaker® (Cognitive Edge, 2019, 4) capture of the narrative. Failing that, get suggestions from key stakeholders using Marshall Goldsmith Feedforward technique (Marshallgoldsmith.com, 2019)

Flow-Based Events

The Rhythmic Cycle

A Rhythmic Cycle (“cycle” for short) is a regular “heartbeat” that is ≤ 4 weeks. It is decoupled from the discovery/delivery cadence. A Rhythmic Cycle contains (optional) Rhythmic Replenishment, the Daily Kanban, the work itself, the Rhythmic Impact Review, and the Rhythmic Retrospective. The events in a Rhythmic Cycle can work as feedback loops for inspecting flow measures, and can also act as a feedback loop for inspecting the Kanban for Complexity™ implementation. No commitments are made for complex discovery/delivery work. It is what it is; welcome to deep complexity. Kanban for Complexity™ can help with the attainment of fixed dates but does not support commitments to fixed date, fixed scope, fixed cost or commitments of any kind. Team and Servants must accept this price for using Kanban for Complexity. Stakeholders, Servants, and Teams need to be on rhythm to reduce complexity.

Rhythmic Replenishment

Replenishment uses flow measures as an aid. For example, use historical Throughput to understand the Team's capacity for the next Rhythmic Cycle. A Team's SLE might influence the work planned for the first days of the Rhythmic Cycle, notwithstanding complexity.

Timebox ranges from 1 hour for a 1-week Rhythmic Cycle to 4 hours for 4 weeks. The Team decides who attends. This event is optional. Run it “as needed” for maximum flexibility, informed by the Kanban measures & analytics.

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Daily Kanban

A flow-based Daily Kanban focuses on ensuring the Team is doing everything it can to maintain the flow of learning towards the Direction of Travel every day. The meeting itself takes place around the Kanban Board and focuses on where the Flow is lacking and on what actions the Team can take to improve Flow.

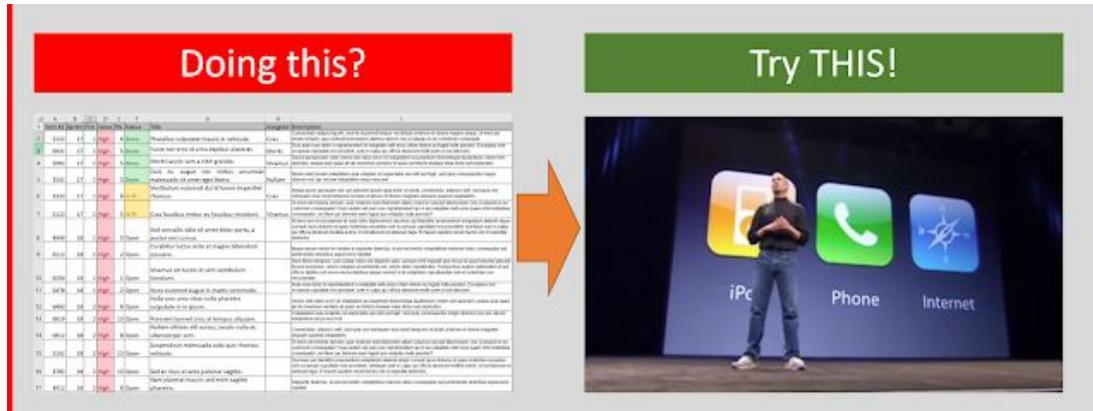
Some additional things to consider during a Daily Kanban are as follows:

- Which Cynefin™ domain(s) are we in? And if complex:
 - How “safe to fail” do we feel today?
 - What probe do we need to amplify today?
 - What probe do we need to dampen today?
- Work Items that are blocked and what can the Team do to get them unblocked?
- What is the Relative Work Item Age of each Work Item in WIP?
- Work items have violated or are about to violate their SLE, and what can the Team do to get those Work Items completed?
- Are there any things that may impact the Team's ability to complete work today that is not represented on the Kanban Board?
- Should we swarm on particular Work Items?

Timebox is 15 minutes, same time, same place, every day. The entire Team attends. Check out Ask Kanban for more Daily Kanban questions (Wovchko, 2019, 1). The Daily Kanban can also be referred to as the Daily Standup.

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Rhythmic Impact Review



(Küsters, 2019)

(YouTube, 2019, 2)

The intent of the Rhythmic Impact Review

As a user of your product/service/offering/research/experiment, I want to know about the latest changes so that I can decide whether I like them.

Tips:

- Talk about the customer and the customer needs in terms of the product/service/offering/research/experiment!
- Forbid the use of ticket information during the Review.
- Forbid the use of presentation software during the Review.
- Customer / end-user statements in the Review should lead to an updated Backlog or a clear “No” answer
- Hand the product/service/offering/research/experiment to the user and see what happens.
- Focus on essentials, keep the Review as short as possible.
- Tell a compelling story:
 1. What is the customer / end-user problem you tackled?
 2. What is the pain the customer / end-user has had?
 3. What is the solution you provide?
 4. How does the customer / end-user benefit from your solution?

And then - let the customer / end-user do the talking!

(Küsters, 2019, with permission)

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The Rhythmic Impact Review is an event with stakeholders every Rhythmic Cycle (or more frequently) on a regular military-like rhythm to avoid entropy. Quality must be fit for purpose, whilst avoiding technical debt (Alliance, Letouzey and Whelan, 2019) or failure-demand (Seddon, 2019). At this event, stakeholders (including Servants, partners, customers, end-users) collectively review what the *Team* considers to be “Done”, having already been reviewed during the Rhythmic Cycle with the Work Item customers & end-users.

Inspecting Kanban flow measures as part of the Impact Review creates opportunities for new conversations about monitoring progress towards a Direction of Travel, notwithstanding massive health warnings for complexity & risk. When the Team discusses possible target and delivery dates, a review of Throughput and Monte Carlo forecasts might provide some additional information. A review of the Team’s SLE might cause the Team to revise the Backlog. For complexity, Monte Carlo Probabilistic Forecasts and SLEs need to come with stiff ‘health warnings’. Market insights and customer/end-user/stakeholder feedback are discussed. The outcome of a Rhythmic Impact Review is an updated Backlog. Even if work takes longer than one Rhythmic Cycle to deliver, every Rhythmic Impact Review should have something real for stakeholders, customers & end-users to give feedback on. When people feel that the work is technical and they don’t understand it, the Team and its Servants have lost a key opportunity for feedback. Respect stakeholders, customers & end-users. There should always be something real for stakeholders to give feedback on.

Timebox ranges from 1 hour for a 1-week Rhythmic Cycle to 4 hours for 4 weeks. The Team decides who attends.

Rhythmic Retrospective

A Rhythmic Retrospective is an opportunity to inspect the Team itself, and it adds the inspection of flow measures and charts to help determine what improvements the Team can make to its processes. The Team also reviews and improves the definition of Workflow to optimize the flow in the next Rhythmic Cycle.

Timebox ranges from 1 hour for a 1-week Rhythmic Cycle to 4 hours for 4 weeks. Servants must ensure psychological safety.

Retrospective opportunities need not coincide within the boundaries of a Rhythmic Cycle. They can occur “just in time”. Correspondingly, changes to a team’s definition of Workflow may happen at any time, however, as these changes will have a material impact on how the Team

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performs, changes made during the regular cadence provided by the Retrospective event will reduce complexity, reduce tinkering, and improve transparency.

Improvement actions should occur within the Retrospective timebox; let's be very selective about adding "shoulds" for the Team to implement improvements during the next cycle, and at the same time let's avoid cynicism by making small improvements within every retrospective. The *Team* decides who attends.

Endnote

Regardless of whether *Kanban for Complexity*[™] seems like the right fit in theory for a context, *Kanban for Complexity*[™] should only be used by people who fully embrace *Kanban for Complexity*. Respect "No". While some Teams can operate purely from principles, a lack of rules tends to lead to entropy. "Standards are set not by what we preach, but by what we tolerate" (Babin, Willink, 2015). To attain the full benefits of *Kanban for Complexity*[™], please follow this addendum in its entirety.

Please send clear reports of mistakes/suggestions to info@ace.works.

Compatible online learning is available on HUGE.IO for Kanban (Wovchko, 2019, 2), and Cognitive Edge for Cynefin[™] (Snowden, 2019, 3). Consider the use of AskKanban (Wovchko, 2019, 1). ActionableAgile provides great Kanban analytic tools (Vacanti, 2019). Troy Magennis's Throughput Forecaster has a cool feature; it considers delivery risk in its forecasts (Magennis, 2019). These tools worked well for the author. With all tools, the tool is only as good as the data that goes into it.

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Please send specific and clear reports of mistakes/suggestions in this guide and suggestions to info@ace.works. Thank you.

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History and Acknowledgments

The now-famous HBR paper on Cynefin™ refers to 10 years of work prior to 2007.

A debt of gratitude is owed to all those practitioners who have in the past contributed to make Cynefin™ the gold standard for complexity in knowledge work.

Appendix

Multi-team (> 2 teams on one product) context

- Make best efforts to reduce the number of people & Teams so scaling is not required
- Use a single Backlog with a single owner for a single product/service/Job-to-Be-Done/research-pool/probe-pool
- Use a mixed-methods approach. Make best efforts to encourage Teams to use methods (or none) that fit their beliefs
- Use an overall end-to-end workflow to optimize flow, to give end-to-end system visibility, and manage against the “bullwhip effect” (Johnson, 2019) as cited in the Beer Game (YouTube, 2019, 1) in the Fifth Discipline (Senge and Senge, 1990)
- Teams might need a strategy for dedicated help, e.g., SMEs who don’t want to play Kanban but the Team needs their help, e.g., treating the work of those SMEs as dependencies
- The team might need managers & leaders to change the system
- Embrace Beyond Budgeting’s (Beyond Budgeting Institute, 2019) 12 principles - consider un-intended consequences from the financing-of-work, career-paths & reward-systems. “Delaying” without considering potential unintended consequences is likely to lead to suboptimal performance (HBS Working Knowledge, 2019). Experimentation with career paths and rewards systems is key
- Coordinating roles were ok for complicatedness but not for 21st-century complexity (McChrystal et al., 2015). Kanplexity™ is designed for philosophies that de-emphasize
 1. Projects (except if they feed the one Backlog for Team(s))
 2. Team-Output-Owner / Team-Product-Owner roles (James, 2019) and
 3. coordinating roles such as “agile project manager” or coordinating “scrum master” or “project manager” or “program manager”

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- Scrum.org's *Nexus* (Scrum.org, 2019, 2) pattern and the *Large Scale Scrum* (Vodde and Larman, 2019) philosophy are not bad starts; even if they were designed for Scrum, both patterns assist with organization designs
- Use [Scrum.org](https://www.scrum.org/)'s *Evidence Based Management* (Scrum.org, 2019, 1). The right measures will depend on your Direction of Travel

For example, measure & track per Rhythmic Cycle / month the outcomes delivered, stakeholder (customer, end-user, employee, supplier-ecosystem) impact, the number of Work Items delivered, 85th percentile cycle time from "selected" to "in use", throughput "selected" to "in use", relative work item age, (perhaps qualitatively) leadership, feel, # "boomerang impediments" (impediments that came back). If no measures are trending improvements, consider additional measures of key practices

- Consider the Kanban Maturity Model (Anderson and Bozheva, 2018)
- Uncertainty must be embraced
- Long term blockers must not be tolerated, especially the ones we accepted for months or years as part of "normal" work-life

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