Driver D
Knowledge Management

To achieve equity at scale, learning leaders treat the development of knowledge as an ongoing cycle whose explicit function is to solve both novel and entrenched organizational challenges. They manage knowledge by developing processes and systems that answer the question: How will this knowledge be used? To achieve this vision, learning leaders need knowledge-management practices that harness individual and collective learning to bring forward the organization's expertise when meeting the needs of every student, family, and community. No longer conceived of as a technical venture focused on processing and storing massive amounts of data and information, knowledge management is seen by learning leaders as the outcome of deliberate and collaborative strategic choices.

An effective knowledge-management strategy begins with the goal: application of knowledge to advance high-quality, equitable service provision. Working backward from the system's ambitious goals, learning leaders set, maintain, and enact the vision for how the data and information generated in learning spaces turns into knowledge that can be used to achieve organizational goals.

The knowledge-management framework described in this section offers learning leaders a way to organize Drivers A to C—learning strategies, measurement, and stakeholder engagement—into a set of practices and routines that allow your organization to use a vital resource, knowledge, to accelerate progress toward its vision.

This framework is grounded in a key equity principle: All knowledge is democratic. Learning leaders decentralize knowledge ownership. They engage all stakeholders, particularly those closest to the work, in the generation, consolidation, sharing, and application of knowledge. All stakeholders—including staff, students, parents, and community members—have the opportunity to not only give input but also meaningfully contribute to decisions about which ideas are worth capturing and scaling. Democratic participation strengthens knowledge generation and builds buy-in and capacity for knowledge application, yielding better and more efficient outcomes.
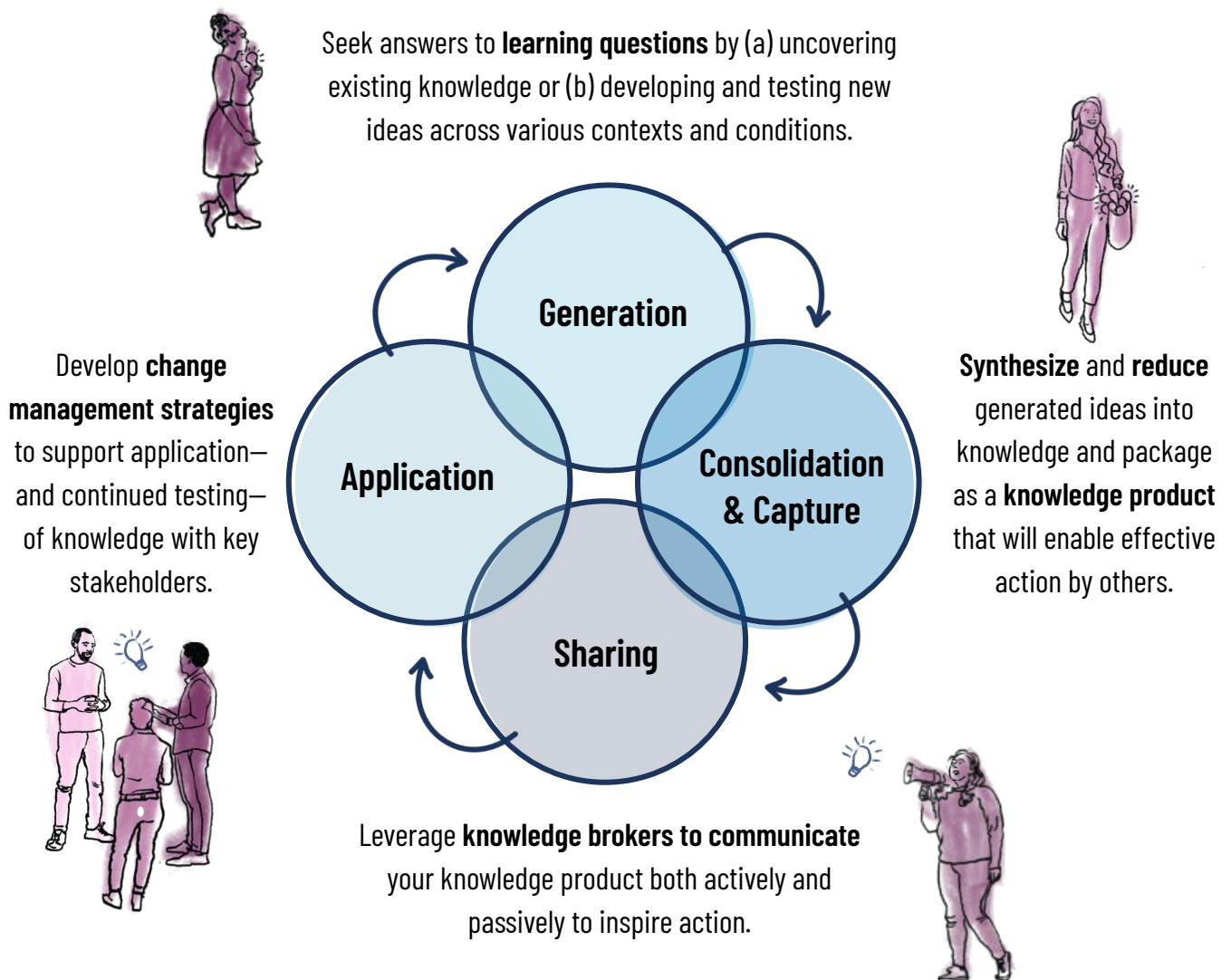
To get started:

1 | Adapt and apply the knowledge-management framework

2 | Architect a comprehensive knowledge-management system

3 | Cultivate a culture that supports knowledge management

1 Adapt and apply the knowledge-management framework

Knowledge management is the set of processes used to create, organize, share, and use knowledge in an organization. Learning leaders use a knowledge-management framework[1] consisting of four interconnected phases to make use of learning at all levels in order to continually improve.

THE KNOWLEDGE MANAGEMENT CYCLE

Seek answers to **learning questions** by (a) uncovering existing knowledge or (b) developing and testing new ideas across various contexts and conditions.

Develop **change management strategies** to support application—and continued testing—of knowledge with key stakeholders.

Synthesize and **reduce** generated ideas into knowledge and package as a **knowledge product** that will enable effective action by others.

Generation

Consolidation & Capture

Application

Sharing

Leverage **knowledge brokers to communicate** your knowledge product both actively and passively to inspire action.

Foundational to this knowledge management framework are two key conditions:

Learning and improvement are constant

Learning leaders architect their system to continually generate knowledge—actionable solutions to immediate and persistent challenges. They understand that knowledge development is an ongoing process without a conclusive terminal stage when ideas are finalized. Each application of knowledge is an opportunity for refinement to meet the needs of a student, a context, or a moment. Making every stage of learning explicit and transparent is critical to this process.

Knowledge is democratic

Learning leaders engage the entire community in the generation and application of knowledge. This model rejects the notion that expertise is centralized and contained to singular individuals, departments, and roles. In doing so, it is designed with the expectation of full participation from all layers of the organization.

Knowledge Generation

Learning leaders design structures and routines to support continual problem-solving across all levels of the organization. In the practice of examining and solving problems, learning leaders develop and support routines to adopt or adapt research-based practices for known challenges and experiment to find solutions for novel challenges.

Done systematically, these practices yield abundant data and information. Though so commonplace they are often overlooked, this generative work is the first step in a knowledge-management strategy. Decisions made here affect the ability to capture, spread, and eventually apply knowledge down the road.

Learning leaders prioritize what data to collect and how it will be used, and they allocate resources accordingly. They work with stakeholders to be sure the data and the data collection process are useful and integrated into the day-to-day work. The process of prioritizing data collection may reduce quantity, but the higher-quality data will allow learning leaders to more efficiently transform data into knowledge through consolidation.

Knowledge Consolidation & Capture

Data and information are the raw materials of knowledge. Often faced with an abundance of both, learning leaders convert data and information to knowledge through consolidation routines. These processes yield actionable information captured in artifacts that can be shared with the stakeholders who will put the knowledge to use. The frequency and rigor of these consolidation and capture routines depend largely on context.

CONSOLIDATION routines summarize, synthesize, and reduce data and information.

Knowledge-generation activities (e.g., root cause analysis, inquiry cycles) yield a huge amount of data. Consolidation processes support learning leaders as they sift through and compare data, elevate the most exciting and relevant information, and prepare to share those ideas with others.

During consolidation, learning leaders typically toggle between three distinct analytical practices: **summary**, **synthesis**, and **reduction**.

- **SUMMARY routines identify and make explicit the most promising information from local efforts.**

  During summary routines, all members of the learning organization look across and evaluate their own local data, identifying insights most worthy of sharing with others and summarizing this information in a format that enables communication with others. Key questions that guide summary routines are:

  - What have I learned that is worth sharing?
  - How do I know it is worth sharing? What evidence do I have?
  - What has shifted my understanding of the problem of practice and the process of improvement?
  - Who could help me further test and refine these ideas?
  - How can I communicate this information with others?

- **SYNTHESIS routines compare and put together emerging information to surface new learnings.**

  Over time, synthesis routines help learning leaders aggregate learning to understand whether promising ideas are durable. Learning leaders use these routines to make meaning of the information emerging across contexts (e.g., individuals, teams, sites). Key questions that guide synthesis routines are:

  - What have we learned that is worth sharing? How do we know it is worth sharing?
  - If we compare our data, what trends or new ideas emerge?
  - How strong is the evidence to support our ideas?
  - Who could help us test and refine these ideas?
  - How can we communicate this learning?

- **REDUCTION routines identify well-supported insights and prepare them for broader spread and scale.**

  Reduction processes require learning leaders to evaluate information, determine which ideas have been successfully tested under various contexts, and identify those most ripe for spread and scale. The core questions that guide reduction routines are:

  - What ideas have we generated that are strongly supported by our data and that we can elevate to knowledge?
  - What ideas are promising but still in need of refinement?
  - Who would benefit from these ideas and for what purpose? How can we communicate our ideas to them?

  The reduction phase is critical in ensuring that the bar for what is considered knowledge is standardized and actively maintained across the organization.

Learning leaders encourage others to view consolidation routines as cyclical processes that may not always end in knowledge. Depending on the answers to the questions above, members of the learning community may decide that nothing rises to the level of knowledge and return to the knowledge generation phase of the process.

CAPTURE routines ready knowledge for communication

Capture routines articulate knowledge so it can be communicated with and applied by others. Many organizations rely on formal, written codification via tools like change packages and other summary documents without consideration of who their stakeholders are and what they should do with the document.

Learning leaders capture knowledge through knowledge products[2]—artifacts (e.g., story, report, illustration)—designed specifically with the expectation of action by the targeted stakeholder group (e.g., school leadership team).

Knowledge products should include actionable next steps and identify required resources, including time and stakeholder bandwidth. Examples include these change idea summary tools developed by the CORE Districts' Breakthrough Success Community and High Tech High's *Unboxed* podcast series and its CARPE network's change packages.

Knowledge Sharing

To achieve equity at scale and reach their ambitious aims, learning leaders ensure promising, well-vetted knowledge is spread within and beyond their own boundaries. This can be a daunting task, especially when the responsibility of spread is centralized or limited to a few people. Learning leaders navigate ideological and logistical boundaries to ensure that knowledge spreads effectively, shuttling information among internal teams, pushing knowledge out to the field, and mediating among decision-makers and ground-level stakeholders. They also enlist and support knowledge brokers to support the spread of learning.

Knowledge brokers[3] leverage their relationships to promote reciprocal learning and knowledge exchange between stakeholder groups within and beyond the organization. The concept of brokerage rests on the idea that people are more likely to engage with a new body of knowledge when it is (a) communicated to them by a person they trust (e.g., coaches, school leaders) and (b) appropriately contextualized.

Knowledge Application

Application is arguably the most important phase of knowledge management. Supporting others to act on the knowledge developed is the purpose and culmination of each prior step: generating, consolidating, capturing, and sharing.

But this is also the most challenging phase of the knowledge-management system and one that is often underdeveloped or unattended. Effective learning leaders start with this phase in mind when designing and supporting a knowledge-management system. They design these systems around the answer to the question, "What needs to be done to address the problem, and who needs to do it?"

Learning organizations constantly attend to the first part of that question. Effective structures and routines support ongoing problem-solving and, if done properly, the capture and sharing of solutions. But for stakeholders to truly adopt or adapt these solutions—or act in some other function—the second part of the question needs to be answered. Who needs to do it?

Learning leaders consider:
- What motivates this stakeholder to act?
- What resources do they need to act (people, time, money, and knowledge)?
- What obstacles do they face? Are those obstacles surmountable?
- What other conditions need to be in place for them to act?

Addressing these questions requires change management.

The sum of these questions paints a different and often complex picture for each stakeholder. Learning leaders strategically design a change strategy to address the needs of each stakeholder. Designing such varied and complex strategies can be a full-time job and often overwhelms leaders and those they lead, causing stasis or maintenance of the status quo. To help manage the change process, leaders consider a few categories of action that might be taken as a result of sharing knowledge:

- **Act on the knowledge itself**
  Knowledge products contain information about how to execute a change idea and about where the idea worked and for whom. The stakeholders who are the direct beneficiaries of that information will take the knowledge product and put it into practice. They may need explicit instruction, capacity building, and the resources needed to implement the change idea. These stakeholders perpetuate the cycle of knowledge again as generators of a new cycle of knowledge.

- **Provide resources and remove obstacles**
  Stakeholders who hold the resources to make a change idea need to be convinced that the idea has merit and aligns with their interests. Learning leaders communicate regularly with these stakeholders, work to understand their contexts, provide resources needed to adopt the change idea, and remove constraints where possible.

- **Build buy-in**

  Not all stakeholders will need to immediately put knowledge into practice. Some stakeholders are important to engage as a means of building buy-in and long-term support for the change idea. These stakeholders may advocate for the change idea once they have an understanding of its benefits and the full range of resources that are needed to implement the idea.

Achieve Atlanta used a change-management strategy to help activate the knowledge developed in their organization and encourage action among district officials and other partners toward achieving a shared goal. Using a change-management template, they identified the state of each stakeholder and group, the action the stakeholder needed to take to meet the goals, and what they and their partners needed to do to support the stakeholder. They revisited this strategy regularly to track the change-management process and make modifications as necessary.

Reflect and Act

As a leader, how do you support the development and application of knowledge in your organization?

- How does your organization define "knowledge"?

- Do you have a shared definition?

- Does that definition align with the four knowledge-management steps (generation, consolidation and capture, sharing, and application) outlined earlier in this section?

- Does your organization consistently engage in all four steps? If not, what barriers have prevented you from doing so?

2 Architect a comprehensive knowledge-management system

With a strong understanding of each phase and the key characteristics, learning leaders design and refine the processes and routines that make up the knowledge-management system. Many components of the system may already be in place. Usually these include the learning spaces where knowledge generation happens (e.g., short-cycle testing routines) and the repositories that store captured knowledge. The challenge facing most learning leaders is how to create a comprehensive system that links the knowledge-management phases so that the improved knowledge of each individual and organization is applied consistently.

To architect a comprehensive knowledge-management system, learning leaders revisit the overall structure of their system, ensuring it is set up like a dynamic network and coordinated learning community. They minimize silos and organize individuals in teams and clusters that are bridged through high- and low-density ties that support knowledge spread and application. They also devise processes to detect and act on deficiencies in their existing knowledge-management systems and to embed knowledge-management routines and structures into daily operation.

The cycles of a mature knowledge-management system look like waves when captured in a process map, with each knowledge-generation activity followed by aligned consolidation, capture, sharing, and application processes. Full and linked knowledge-management "waves" accelerate improvements at scale.

Read more to see how a well-architected knowledge-management system:

- Aligns knowledge to organizational priorities

- Identifies and supports knowledge brokers

- Captures and packages knowledge to command attention

GENERATION

CONSOLIDATION & CAPTURE

SHARING

APPLICATION
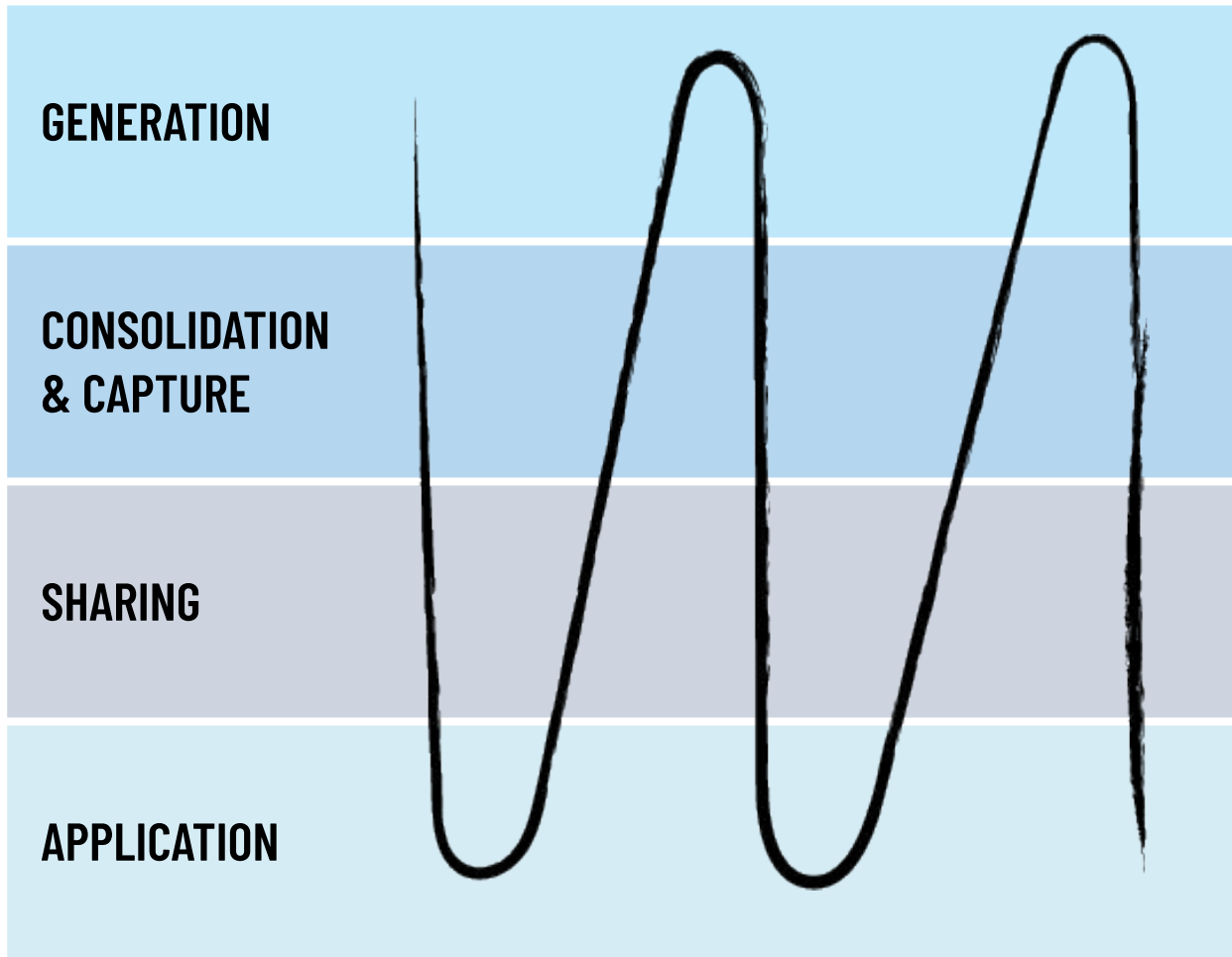
A process map, like the one depicted here, can be useful in identifying existing structures in each phase of the knowledge-management cycle and, perhaps more important, in identifying where gaps exist that prevent the cycle from being completed.

Align knowledge to organizational priorities

GENERATION	→
CONSOLIDATION & CAPTURE	
SHARING	
APPLICATION	
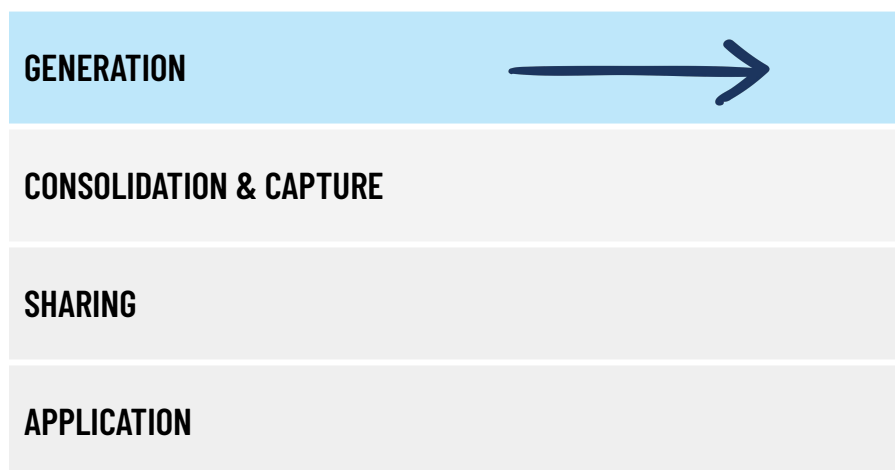
Learning leaders create structures that make clear what constitutes success. Without these structures, systems lack strong routines to methodically capture, share, and apply generated knowledge.

To learn as a collective, learning leaders use explicit standards to determine which knowledge is worthy of refinement, capture, and eventually scale. Learning leaders facilitate collaborative processes to co-develop and codify these simple standards, including those aimed at assessing whether equity principles are well-represented in the practices the organization promotes. These standards establish a shared

understanding of what success looks like and allow knowledge generators to sift through volumes of information to identify the gems that emerge.

In this process, learning leaders are transparent about the problems the organization and the field are trying to solve and prioritize solutions to those issues. That is not to say that learning leaders should not pursue solutions to other problems. But time and attention are limited resources, so learning leaders prioritize capturing, sharing, and applying knowledge that aligns with organizational and field-level priorities.

Identify and support knowledge brokers

Learning leaders support routines that share spreading tasks with other members of the learning community, often through formal or informal knowledge broker roles. Without these roles and routes, learning leaders and their partners generate knowledge and capture it, but the knowledge ends up in an unused repository and improvement toward the final goal is stymied.

GENERATION
CONSOLIDATION & CAPTURE
SHARING
APPLICATION
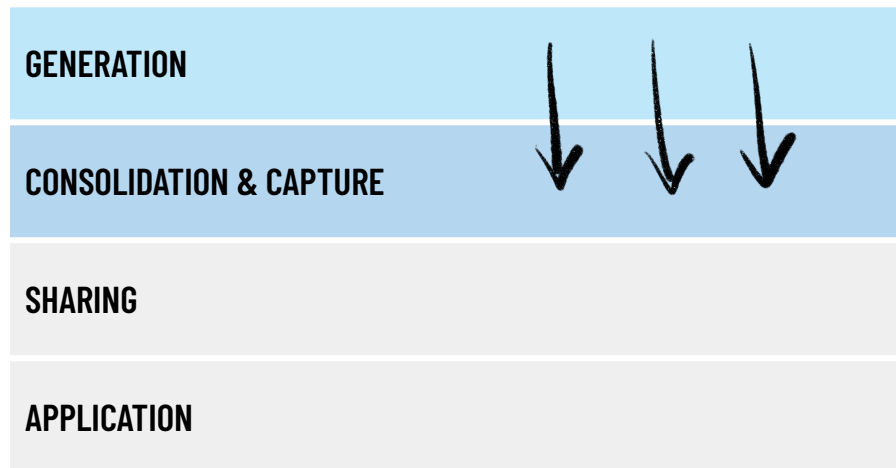
Learning community members may be well-suited to this work if they:

- have been involved in the ground-level work to generate, test, and adapt promising practices and are, therefore, well-positioned to communicate the nuance of these learnings to others;

- have active professional relationships with the practitioners and stakeholders who might benefit from learnings and can broaden the organization's reach; and

- are embedded within the external institutions to which knowledge is being spread and can offer insight into culture and context so that learnings can be translated for maximum impact.

Mature spread strategies (a) leverage knowledge brokers in their own spheres of influence and (b) develop explicit norms, processes, and supports that guide the execution of brokerage responsibilities.

Additionally, learning leaders seek ways to simplify the work of knowledge brokers and reduce the barriers they face by supporting creative, low-lift ways of communicating knowledge. Organizations tend to inflate the importance of written codification in capture routines, setting an unreasonable expectation that everyone will comprehensively record all information and store it in shared repositories. Knowledge brokers ensure that the spread of knowledge is a dynamic social endeavor that uses active methods of communication like elevator pitches, storytelling, and video or audio summaries.

Capture and package knowledge to command attention

To effectively synthesize generated information, learning leaders need reliable, comparable data. Once synthesized, learning leaders need those data to be packaged in ways that motivate their use. Without these capture routines, leaders and their partners generate knowledge but move to sharing without consolidating and capturing critical context or implementation information, often leading to disappointing application.

| GENERATION |
| CONSOLIDATION & CAPTURE |
| SHARING |
| APPLICATION |
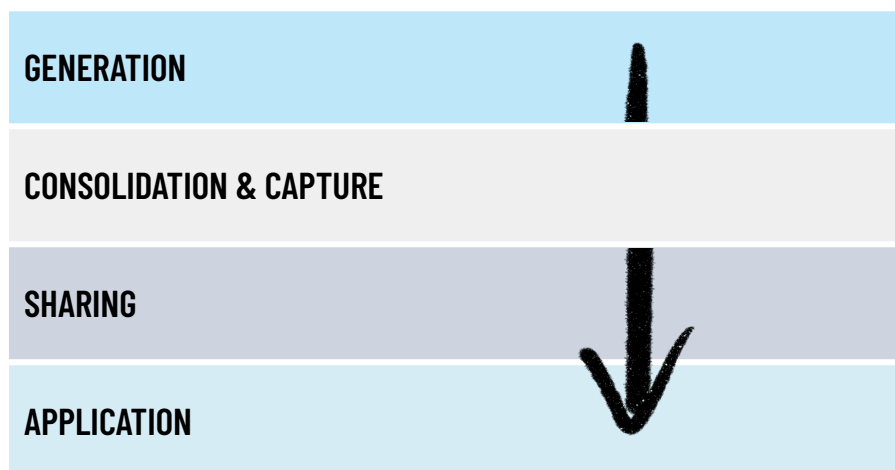
To support synthesis, learning leaders set simple, shared success measures. These measures need not be complex to provide useful information. In fact, picking straightforward metrics increases the likelihood that the individuals and teams testing the ideas will keep up with tracking their data.

They also centralize data aggregation and display, often creating a dashboard, and encourage peer accountability. Data dashboards do not have to be sophisticated to be effective. Using familiar tools (e.g., Google Sheets) will result in more efficient onboarding and increase the likelihood of use.

Reflect and Act

Map your knowledge-management system by identifying one or more knowledge application goals and then <u>developing a process map</u> to:

- articulate a blueprint for knowledge management;

- identify strengths and potential gaps or breakdowns in the existing or planned knowledge-management system; and

- recognize areas where additional supports, tools, and templates will be needed to engage in effective knowledge-management practices.

With a clear sense of existing structures across all phases of the knowledge-management framework, reflect on the strengths in the system and any gaps that might exist. Keeping in mind that the goal is to create a coherent and comprehensive knowledge-management strategy that helps the organization move toward shared goals, answer the following questions:

- After mapping, what parts of the knowledge-management cycle are not being attended to?

  - Why do those gaps exist?

  - What new activities, supports, or tools are needed to mitigate gaps in the cycle?

- Which stakeholder groups need to be engaged at which stages of the cycle?

- What support and resources do those groups need?

3 Cultivate a culture that supports democratic knowledge management

Designing and implementing the infrastructure to move knowledge through a system so that it advances more equitable outcomes is critical, but it cannot be sustained without a set of shared conditions and organizational commitments.

Establish and revisit a shared definition of knowledge

Learning leaders define *knowledge* as actionable information[4] that requires interpretation, meaning-making, rigor, and most important, application. Therefore, knowledge goes beyond beautifully visualized data charts or even implications deduced from data. It requires a tested answer or action that can be applied, often in many varying contexts.

Because learning routines can differ even within organizations, learning leaders and their communities will approach knowledge differently. Learning leaders use the following questions to define what constitutes knowledge in their own organizations:

- **What does success look like?**

  Commonly understood and accepted measures are an essential element of the knowledge development process. Both process and outcome measures are essential in understanding what is and is not working in an organization. Having a clear understanding, across the organization, of what it means for an idea to be successful can make the process of consolidating vast amounts of data and information into something actionable—something that solves problems for the organization—much easier.

- **What questions are you trying to answer?**

  Organizations constantly generate data, but not all data lead to knowledge about how to achieve aims. What problems are being solved? Who experiences those problems? What questions must be answered to make progress? Answering these questions reduces the amount of information generated and prioritizes generated knowledge.

- **Who needs to act on the knowledge provided?**

  If knowledge is not relevant and actionable to those stakeholders, then it is mere information.

Learning leaders continually improve knowledge cycles, including by gathering feedback from community members about the shared definition of knowledge. Do the standards hold? Are there conditions during any or all phases that cause community members to reconsider standards of success? Being transparent about the strength of the definition of knowledge and the efficacy of the cycles will strengthen buy-in to the process and create stronger knowledge products down the road.

Support rigorous and democratic processes

Learning leaders commit to democratic principles. They actively engage diverse stakeholders in the practice of learning, and in doing so they ensure that knowledge identification is the responsibility of every community member. This commitment to democratizing knowledge differs from other organizational structures in that it rejects the notion that knowledge belongs to those with positional authority or recognized expertise. A robust knowledge-management cycle can uncover tacit knowledge from those closest to the work and encourage innovation and buy-in to the development of novel solutions.

Embracing and supporting democratic processes—including, and perhaps especially, the identification of what is considered knowledge—can be challenging. These processes (e.g., consolidation and capture) can be messy and time consuming. Learning leaders reject the cultural pull to pursue simple solutions that are supported by anecdote or intuition rather than the rigor of a knowledge-management process. They also accept that the outcome of these cycles may be many fewer known solutions and instead a constant commitment to experimentation that yields important information but not actionable knowledge.

Reflect and Act

Learning leaders ensure the strength of knowledge-management processes through the support and preservation of democratic processes and a commonly understood definition of knowledge.

- When do members of your community feel equally valued in the knowledge generation, consolidation and capture, sharing, and application routines? When do they not?

- To what extent do members of your community share a definition of knowledge? Are there different standards for what constitutes success? If so, why?

Endnotes

1. A number of knowledge-management frameworks conceive of knowledge management as a process (e.g.,.*Knowledge management: Systems and processes*, 2nd ed., by I. Becerra-Fernandez & R. Sabherwal, 2010, Routledge. Copyright 2010 by Routledge.

2. Information and Knowledge Management. *(2009). Monitoring and evaluation in knowledge management for development. Information and Knowledge Management. Manila, Philippines. Talisayon, S.D.*

3. Long, J. C., Cunningham, F. C., & Braithwaite, J. (2013). Bridges, brokers and boundary spanners in collaborative networks: a systematic review. *BMC Health Services Research*, *13*, 1-13.

4. O'Dell, C., & Grayson, C. J., Jr. (1998). If only we knew what we know: identification and transfer of internal best practices. *California Management Review, 40*(3), 154–174..

Access additional resources, case studies, and more at
www.LeadingThroughLearning.org

∞ **CPRL** | **Center** for **Public**
Research and **Leadership**

♛ COLUMBIA UNIVERSITY
IN THE CITY OF NEW YORK