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UNDERSTANDING AND IMPROVING KNOWLEDGE MANAGEMENT SYSTEMS IN DEVELOPMENT

microREPORT #170

JUNE 2011

This publication was prepared by Colleen Duncan of Engineers Without Borders for ACDI/VOCA with funding from USAID under the Accelerated Microenterprise Advancement Project (AMAP) Knowledge and Practice II task order.

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I. INTRODUCTION

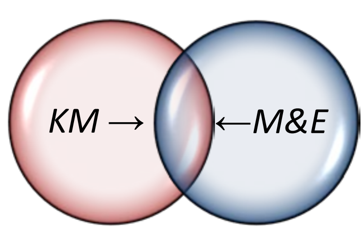
Given the dynamic, uncertain and complex nature of working within market systems, quickly understanding, analyzing and communicating situations and adapting activities based on a strong flow of relevant information is critical. This is the foundation of a good knowledge management (KM) system and is critical to successful market facilitation. You might say, "We are already doing monitoring and evaluation. What is KM, and how does it differ from what we're already doing?" This is a good question that will be explored in the following pages.

Effective and relevant monitoring and evaluation (M&E) systems and KM systems are complementary, and both are required for project success. M&E is the practice of capturing and evaluating data related to project operations and outcomes. Often in a project, M&E is defined in it most narrow terms of capturing a predefined set of data that is required for accountability and transparency purposes. It describes the project's activities and how those have or have not translated into pre-determined outcomes. This is important, but remains insufficient to truly understand or work within a dynamic environment such as an emerging market. Projects should apply a much broader understanding of M&E that allows for uncertainty in the project environment and within project activities themselves. This requires rethinking how projects capture, value and use information, and implies the need for a combination of effective KM with good M&E.

In order to make rapid, evidence-based decisions that are required to improve a project's effectiveness, a project must not only organize the mechanisms (tools and methods) to capture and evaluate data, but also the operating processes, procedures and values that drive project learning and decision making priorities. KM is the process of integrating how the data collected and evaluated is understood and adopted. The implications of KM on M&E are substantial as it requires both to use the broadest interpretation of what data to capture and how to evaluate information and interpret situations. Beyond success stories and traditional indicator-driven M&E, KM and good M&E require rapid feedback on opportunities and challenges, successes and failures from the field, as well as keen observational skills and a range of mechanisms to capture and assess information. It requires on-going flows of information that move beyond formal periodic reports to include phone calls, field visits, staff exchanges, ad hoc rapid assessments, targeted evaluations, etc.

M&E and KM are interconnected and a project requires both to navigate the dynamics of an emerging market and foster improved performance of the overall market system. Good M&E will not be effective without a set of managerial practices in place that creates a supportive organizational culture of information sharing, learning and performance driven decision making which are provided by an effective KM system. KM would also be ineffective without high quality, broad based flows of data and information that provide contextualized evidence for decisions.

Figure 1: Aligning KM and M&E is Critical to Project Performance



Quite simply, KM is the collection of processes and management tools that organizations use to gather, analyze and channel information into its decision making.[1] Most often, this means developing an organizational culture or operating environment that supports the codification of different types of knowledge for others to use to make better decisions based on best practices, lessons learned and opportunities. While information technology (IT) can help facilitate knowledge management, KM is much more than an IT system and includes both tangible and intangible elements of information processes.

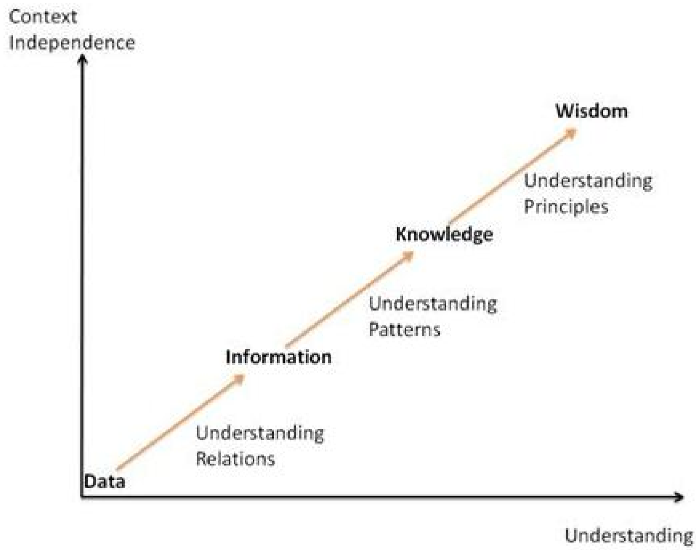
KM is a standard management practice used in adaptive and customer-driven industries and organizations, such as management consultancies and IT firms. It focuses on organizational learning at all levels for on-going performance improvements. The process of improving KM is more of an art than a science: There is no formula to follow, only best practice guidelines. To help you in the process of improving KM, we will share a framework to use when thinking about KM, the implications for M&E, and a compiled list of proven do's and don'ts taken from observations from the field and best practice in complementary knowledge-based industries. This resource is intended to help you and your organization improve the effectiveness of your projects by better managing complex information flows.

[1] There is no universal definition of knowledge management, just as there is no agreement as to what constitutes knowledge. See http://www.cio.com/article/40343/Knowledge_Management_Definition_and_Solutions?page=1#1

II. WHAT IS KNOWLEDGE?

Although there is no agreed upon definition of knowledge as it pertains to a situation or an individual, in general, we can think of knowledge as a progression of understanding as depicted by Bellinger[2] (see figure 2).

Figure 2: Data, Information, Knowledge, and Wisdom



When looking at Bellinger's visual representation of the transition from data to wisdom, it becomes clear that M&E supports the process of KM, but that there is more involved to managing information and knowledge than the data alone and certainly more than is first visible through observation. Knowledge requires the collection and refinement of cumulative information over time. It is for this reason that responsive project teams tend to have strong KM systems—they are able to build on each other's information and generate improved and refined knowledge.

[2] Gene Bellinger (2004) "Data, Information, Knowledge, and Wisdom"

III. KNOWLEDGE MANAGEMENT FRAMEWORK

The following is a framework that highlights the essential elements of KM and how they relate to an organization's implementation of simple or complex change objectives within a project. As KM is dependent on M&E (and M&E with KM to affect project performance), M&E systems and metrics will be discussed within this framework.

Each element of KM can be evaluated on a spectrum of practice. Projects may operate further to the right or left, depending on the project approach. However many market facilitation projects that work with complexity have experienced larger and faster success when adopting approaches on the right.

A. INFORMATION AND KNOWLEDGE – WHAT DO YOU NEED TO KNOW? WHICH INFORMATION DO YOU VALUE?

People require good, relevant and timely information and knowledge in their lives and projects in order to make better decisions and take appropriate action. This takes the form of tacit information (things that you inherently know or learn as a result of your observations and experiences) and explicit information (data that are easily captured, measured and recorded). Project-related decision making requires information about the effectiveness of interventions, the desired behavior changes that the interventions aim to bring about, and the secondary effects of these changes on the market system. The relative value of different kinds of information will depend on the desired change. In general, a project that understands it is operating in a dynamic and complex system will choose to design flexible processes that accommodate this dynamism and will gather a broader spread of information and knowledge to support this flexibility.

B. CAPTURE – HOW ARE YOU GATHERING AND COLLECTING THIS INFORMATION?

Once the type and value of the information has been determined, processes and tools to gather and collect it will be required. For a limited amount of simple data, basic data and information capture tools such as reports, standard metrics, bi-yearly surveys and databases will suffice. However, within a dynamic and complex system, multiple nuanced and rapid information mechanisms will be required. Such mechanisms supplement the basic tools with learning events, workshops, practical trainings, staff-to-staff exchanges, phone calls, industry progress and visioning meetings, online forums, rapid assessments, short/targeted questionnaires, environmental scanning, etc.

C. ANALYSIS – WHAT ARE YOU FINDING AND ASSESSING FROM THIS INFORMATION?

Data and information on their own are not actionable without a process to refine and analyze them, drawing out the relationships and trends from which knowledge is derived. Tools and processes to analyze data and information range from simple templates and report writing to the more complex process of assessing and matching explicit and tacit information to draw conclusions about a change process. On the basis of such analysis, projects can reallocate resources to maximize impact.

Templates and Reports based on explicit information	Assessing and matching explicit and tacit information, turning it into knowledge

D. COMMUNICATION – WHAT INFORMATION OR KNOWLEDGE ARE YOU SHARING? HOW?

The type of information and methods of communicating it matter. If the information is focused and the theory of change is linear, fewer communication channels will be required. However, for complex changes or emerging systems (like a market), valuable information and signals will be coming from many sources. Being able to communicate concise information and knowledge in a timely manner through multiple channels (both formal and informal, written and verbal) within the organization and externally will be essential to making accurate and informed decisions. Reducing hierarchy, or the influence of the hierarchy, will be instrumental in supporting effective communication.

Limited, simple communication channels	Multiple communication channels and mechanisms between multiple people

E. MANAGEMENT – HOW ARE YOU MANAGING THE FLOW OF KNOWLEDGE?

The flow of knowledge—from the initial valuation through its capture, analysis, communication and use—must be managed in order to be effective and useful. Managers play a significant role in establishing the organizational culture that enables (or disables) KM on their teams. By determining the investment in staff capacity to generate, capture, analyze and communicate knowledge and by managing the resources available for KM, managers establish the value of this knowledge, and hence the incentives for improved decision-making.

Directive and prescriptive management	Flexible and adaptive management, performance based on learning

IV. ALIGNING M&E AND KNOWLEDGE MANAGEMENT

Not all projects will require intensive knowledge management processes and systems. However, projects applying a market facilitation approach and/or operating in a complex and dynamic environment undoubtedly will. Table 1 juxtaposes M&E without KM used by most projects, with an aligned KM and M&E system. Most areas of analysis are directly related to management practices, demonstrating that KM is a function of effective management in complex and dynamic systems.

Table 1: Exploring how to Align M&E and Knowledge Management

Area of Analysis	M&E without KM	M&E and KM Aligned
Information capture, analysis and communication *What are staff monitoring, analyzing and communicating? How?*	• **Data-based** • **Explicit information is reported** This system is well suited for collecting data on outputs (e.g., number of loans dispersed to businesses, number of farmers engaged in business) and their links to anticipated project outcomes. Information capture is guided by pre-defined indicators based on the causal model. Data is often gathered by field staff interviews with farmers or businesses they are working with directly, or through government extension agents when available. Information is captured in regular and periodic reporting in uniform templates for ease of use and comparison between parts of the project or multiple projects. Staff conduct the basic analysis of the data collected in order to determine if the project is progressing towards the pre-defined goals and outcomes. This is then communicated to managers and donors through reports, presentations and templates. The turn-around time of feedback in this system can be substantial, given the amount of information and analysis involved.	• **Question-based** • **Tacit and explicit information is captured and communicated** A knowledge-based system is focused on gathering tacit and explicit information based on a hypothesis of change often called a causal model, results framework or logic model. It captures information about different opportunities, interventions, the state of the industry, etc., and interprets them in the context of its hypothesis. It involves regular and pro-active staff assessments of the effectiveness of project interventions and understanding why something is or is not happening. The purpose is to improve activities, ideas or hypotheses to improve performance. This includes an assessment of the indicators used by the project, but supplements this information with tacit and experiential knowledge based on the causal model. It is focused on understanding the root causes of behavior, social and industry changes. Learning is defined by the market system changes and what is being gathered, communicated and assessed is continuously evolving. Information is captured and communicated in reports, learning notes, phone calls, field visits and exchanges, etc. *E.g.: What am I seeing? What does that mean for the business? The industry? The community? What do I*

		need to do to take advantage of this opportunity? Will this lead to sustainable changes? Why/why not? This provides a quick turn-around time on information and trends in order to make project-level adjustments in implementation.
Primary use *Who uses this information? For what purpose?*	Information is used by project management or a donor on a monthly, quarterly or yearly basis to account for funding and time spent and/or to provide a periodic review of project progress against the pre-set indicators and objectives of the project. It is useful for evaluating the performance of an intervention or project strategy or approach, but poses challenges in facilitating rapid decision making in implementation.	Project staff (field staff and management) collect, analyze and share information on an on-going basis. A robust knowledge management system includes ongoing monitoring and periodic evaluations in order to assess the impact of the project while also creating the systems for rapid learning and feedback. This learning is used by all staff to adapt implementation and thinking about intervention strategies.
Purpose of monitoring *What is the purpose of the collected information?*	M&E systems are designed to increase transparency and accountability for the project's activities, funding and time. It ensures that the project is adhering to donor reporting requirements. As such, this is particularly relevant and interesting to donors or project coordinators. If feedback to field staff is limited or not provided in a timely manner, field staff will struggle to use this information to improve their decision making, and activities.	Fundamental to KM is the goal of using informal and formal communication channels to improve project activities and performance in a timely manner. This information is used to question key project and strategy assumptions and to adjust activities accordingly. The goal is to enable all staff to learn from their experiences and generate new ideas. This includes collecting data for the M&E systems and reporting to management and donors, but staff learning and communication is not limited to these channels.
Tools/systems *What tools and systems are being used to capture, analyze and communicate information? To whom?*	• **Data- and report-based** M&E systems are data-based. They use templates, forms, databases and staff time to collect, input and analyze this data. Communication is largely reliant on written reports submitted on a monthly, quarterly or yearly basis. These are submitted to management and donors, but are often slow to return to field staff. Given that the purpose is to assess the effectiveness of a project or intervention, baseline surveys, mid-term- and final-project evaluations are commissioned to gauge the impact of the project. These are structured to capture what the project is doing and the direct results from such actions. Generally, they are not	• **Diverse** An effective KM system uses a range of tools and methods to share tacit and explicit information and to build empathy and understanding about the social and business shifts underway. (This is sometimes referred to as an M&E toolbox.) These include, but are not limited to, written reports and learning notes, field staff-to-staff learning exchanges, regular field visits by managers, staff exchanges to head office, discussion or online forums, phone calls, etc. The turnaround of information is fast, allowing field staff and project managers to make quick decisions and adjust their behavior or activities to improve project and industry performance. Good management, adept at operating in fluctuating and ambiguous

<table>
<tr><td></td><td>designed to track broader systemic change.</td><td>situations, is required to support, enable and guide this exchange to ensure improved project performance.</td></tr>
<tr><td>Field staff involvement

How is field staff integrated in the process? What is their role? How does this affect their performance?</td><td>Field staff involvement can be viewed and categorized through several dimensions:

<table><tr><td>Data collection:</td><td>High</td></tr><tr><td>Analysis:</td><td>Low to medium</td></tr><tr><td>Resource allocation:</td><td>Low to medium</td></tr><tr><td>Decision making:</td><td>Low to medium</td></tr><tr><td>Strategy development & adjustment:</td><td>Low to medium</td></tr></table>
Given that the purpose of an M&E system is to report to an external audience about pre-defined indicators of success, field staff spends a significant amount of time collecting data and writing reports. This data and information is sent to management and on to donors with generally poor feedback mechanisms to field staff.

Field staff's performance is generally evaluated on their ability to collect and transmit data as opposed to seeking, analyzing and using their learning, information and knowledge.</td><td>Field staff involvement can be viewed and categorized through several dimensions:

<table><tr><td>Data collection:</td><td>High</td></tr><tr><td>Analysis:</td><td>Medium to high</td></tr><tr><td>Resource allocation:</td><td>Medium to high</td></tr><tr><td>Decision making:</td><td>Medium to high</td></tr><tr><td>Strategy development & adjustment:</td><td>Medium to high</td></tr></table>
In a functional KM system, field staff is required to observe, collect, analysis and communicate what they are seeing on a regular basis in formal and informal learning channels. This includes data collection for the relevant M&E systems, but it also includes the collection and articulation of anecdotes, ideas, successes and failures, explicit and tacit information.

Field staff is encouraged to seek out opportunities for sharing this information through learning-based staff-to-staff exchanges, phone calls, quick learning notes, online forums, etc. Their performance is evaluated on this basis (see below).</td></tr>
<tr><td>Staff performance

How is staff evaluated? How do they perceive their performance evaluation?</td><td>Field staff performance is based on their ability to report on achieving targets to their managers and colleagues in a timely manner.</td><td>Field staff performance is based on the ability to learn, analyze and communicate data, tacit and explicit information and anecdotes from their work as well as translating this learning into project achievements. Staff should be able to speak to the specifics of a situation and the connection to a broader picture of systemic improvements. Performance is judged by staff's ability to learn, innovate, build industry relationships and generate a sense of ownership within their partners. It is about learning, but also about being able to facilitate systemic changes.</td></tr>
<tr><td>Organizational culture of learning

What is the state</td><td>• Limited

Positive information is welcomed and success stories are celebrated. However, staff shies away from sharing what is not working</td><td>• Intensive

Given the focus on learning, innovating and adapting, all staff are encouraged to share all information—both positive and negative. Staff</td></tr>
</table>

of the organizational culture? What is the impact on the project and staff?	for fear of repercussions. The focus is on activities accomplished. Failures are not reported; they do not fit with a focus on indicators and progress towards anticipated outcomes. Hierarchy and unidirectional communication within the organization is maintained and supported by the reporting system. Field staff receives commands and performance is based on the ability of staff to react to these demands, generally in a report. The organization reacts to the needs of the donor, but will face challenges in staff motivation, commitment, learning and innovation, which will adversely affect staff performance and the project's ultimate impact.	must feel confident that they will not be punished for sharing negative findings, but that they will be genuinely encouraged to learn from what they are observing to improve project performance. Failures, setbacks, opportunities and successes are seen as part of a learning, purpose-driven process. New information is met with a genuine curiosity to understand why something happened/changed and the implications for the industry and the project. Staff is frequently given opportunities to lead an idea or share their learning. Investment in staff capacity is supported, rewarded and encouraged. Management and staff operate as a team with high organizational and personal empathy.

V. 5 DO'S AND DON'TS OF KNOWLEDGE MANAGEMENT

Here are some proven Do's and Don'ts for establishing good KM practices.

DO:

1) Create an effective operating culture—one where questions and adjusting activities based on directed learning is encouraged. One challenge of managing a market facilitation project is finding the right balance between providing direction and strategy and ensuring there is enough flexibility and ownership for teams to take informed action. This requires both skill on the part of the manager and trust in the capacity and judgment of the field team. Clearly defining performance expectations and goals at the beginning of the relationship enables all staff (managers and field staff) to refer back to these to guide their activities and learning. It enables an open conversation about what matters to both parties and the vision of the project, which in turn helps create an effective operating culture of targeted learning and adapting.

Try: Initially, you will need to provide more guidance for your team to know what to look for, share and analyze. Create a vision and generate buy-in from your staff. Use supporting visual tools, like the manageable steps[3] exercises, to illustrate the changes you and the team hope to see over time. Pose the following questions for your team:

a) What changes are we hoping to see within the next month? Next year? Next five years?
b) What is currently working in the sector? Why?
c) What is not working? Why?
d) What does this learning/insight mean for us as a project and a team?

Framing the direction of change and asking these five questions can help guide the analysis and improvement process. Finally, give staff the mandate to adjust their activities based on what they are learning and achieving. Reward and correct performance based on this.

2) Make knowledge management part of everyone's job. Better information can lead to better decisions at all levels, and information can be collected on an on-going basis by all members of staff. This good practice can be supported by structured processes to remind staff of the importance of sharing knowledge and by an open operating culture which values and promotes targeted sharing and learning for improved project performance.

Try: Nominate (or have staff nominate) a KM leader with the mandate to check the pulse of the organization, pilot innovative tools and create the formal processes and systems to communicate information between staff and projects, support M&E staff and field staff, and work with managers to incentivize performance based on learning. To avoid sidelining KM to one person or department, make sure that all staff members understand that ensuring free-flowing communication is a part of everyone's jobs, and that strong learning systems and participation will lead to improved personal and project performance. Facilitate a discussion on the topic, "What is knowledge management and why is it important for us?" Help staff answer the question, "What does this mean for me on a day-to-day basis?" One project re-branded their M&E activities as a "Learning Loop" in order to clarify the concept and to establish a distinct mindset shift from a narrow understanding of M&E (reporting for accountability) to a process that assists them in their day-to-day work and their ability to be effective market facilitators.

3) Share information in different ways (in addition to reporting). As discussed above, written reports are important and useful, but they only capture some of the wealth of information from your team, and are ultimately

[3] Refer to forthcoming *Manageable Steps for Complex Change* guide.

limited to the written skills and interest of staff and the incentives created by management. Other tools or systems might capture unexpected and invaluable information that reporting misses.

Try: Invest in and encourage staff to do the following to ensure the wealth of information from your team is being considered: phone calls, staff-to-staff learning exchange, learning contests (best learning of the month), team meetings focused around the status and improvement of the industry, etc. Once your team has used different methods, get feedback to see what works best and how you can improve. Have staff determine the resource requirements and skills needed to support their learning and personal development.

4) **Reward information sharing.** Strong KM practices will evolve as the team learns what works and what does not work with regard to information collection, analysis, communication and use. Introduce small incentives to encourage your team to share information that they may otherwise feel unable to. One project had field staff nominate a learning notes review committee that selected a winner each month. This winner was rewarded with a set amount of free airtime to increase their communication further.

5) **Be patient, persistent and consistent**. Strong learning and KM systems take time to develop. Your team will likely take time to learn new ways of operating, and you may need to try a number of different tactics to help them along the way. Furthermore, management messaging (the unwritten behavior patterns that managers have that define what they really think is important) must be consistent. If you say "learning is important" then be prepared to put your support, time and funding behind it. Be persistent and 'walk the talk' (align what you say with your actions). Although this may require more management time and effort initially, the ultimate effect on the clarity of vision and commitment from staff, not to mention the impact on your operating culture, will be dramatic and rewarding. The initial effort will generally translate to greater efficiency and decreased staff turnover, saving staff and management time to focus on achieving results.

DON'T:

1) **Rely only on the indicators required by M&E reporting for donors.** As previously mentioned, traditional M&E data and indicators are required, but the information provided from these channels is insufficient to improve day-to-day staff and project performance.

Instead: Take the time to co-create with your staff a set of industry-level milestones and a clear view of the change process you anticipate, so staff can interpret and place things they see outside of the project context in the industry as a whole. This co-creation process ensures that staff does not see these milestones as an alternative or additional set of project-specific M&E indicators. The key is for all staff to understand and internalize the change process so they are constantly looking for signs of change within local actors. This will improve performance and ensure that staff is not locked into a narrow set of activities and metrics that lose meaning and relevance over time.

2) **Assume your staff will adopt new practices immediately and/or rely too heavily on workshops.** The best learning and information sharing takes place when everyone involved is committed and able to share, analyze and build on tangible and relevant information. Relying solely on workshops for training will be insufficient to create the type of behavior change needed.

Instead: Workshops coupled with on-the-job training (i.e., testing new skills in the project context and providing immediate feedback) and coaching will help your team enhance their knowledge and skills quickly. Relevant and appropriate performance incentives based on learning and communication will catalyze the process. Remember to adjust on-going training based on the needs of your team, and brainstorm with staff about what those learning and skills needs are. They are likely best placed to tell you what would make them more effective at their work and will feel more ownership over the learning process.

3) Forget to give feedback to and receive feedback from your staff. One of the most common frustrations voiced by field teams is that they do not know what happens with the data and information they send to management. For example, field staff may not know whether reports they submit are read, and this uncertainty provides little motivation for writing the next report. Although this is a standard good practice that makes people feel like valued members of a team, it is easy to forget when deadlines approach and as you get busy. Decisions might be made based on this information, but the person who supplied the information will rarely be aware of how they contributed to project improvements.

Instead: Make a commitment to your team that you will provide feedback within a specific period of time (e.g., 1-2 weeks) and stick to it! Your feedback does not have to fill volumes, but even a simple acknowledgement of receipt can make a big difference. This will encourage staff to continue sharing what they are learning as they will see that the information is indeed valuable, read and acted upon.

Don't forget to create changes based on this feedback. Often, staff within the project see and believe that the project could be doing better or that the team could be working more effectively, but they hesitate or refuse to give feedback as they do not believe that changes will be made. Take note of the feedback you give and coach staff to make changes in response to this feedback. Listen to the feedback you get, acknowledge it and act on it appropriately.

4) Forget to walk the talk (align what you say with your actions). KM is a fundamental part of effective management practice. As a manager, getting staff to buy-in to the project vision and creating a culture of learning will be key to success for your team and project. Do not say "learning is important" and then emphasize that you need those reports; the message being communicated is that data and reports actually are the most important.

Try: Share your learning for the month (that shows both progress and setbacks) to model the behavior you want to promote. Publicly acknowledge improvements in staff learning and how activities have changed as a result of new information. Create incentive systems and provide different tools for staff to use to improve their communication and the performance of the project. Publicly set individual learning and feedback goals and check back in on them; reward those who reached their goals. Check in with other managers of market facilitation projects to see what is working or not working in their organization. Remember, you are on a constant learning path too! Feel free to invite staff along with you as you learn and improve together.

5) Forget to check in on staff perceptions and organizational culture. Introducing a new operating culture can be unnerving for staff, and if they are used to a different, more directed system, staff may be apprehensive to share their challenges openly.

Instead: Focus on creating a safe environment where staff can provide feedback on how they feel about the changes. Allow them to provide anonymous feedback on how comfortable they are with new learning tools and with sharing positive and negative information. Online surveys can be created for free (if staff have easy access to internet) or you can use an external source (e.g., intern, volunteer, advisor) to help you take a periodic pulse-check on your team, organization, performance and progress.