Equipping Teams to Accelerate Business Process Improvements: Case Studies in Change Management at DC Water

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ABSTRACT

Utilities must adapt to modern challenges, but most change efforts fail. DC Water sought to identify cost savings opportunities for its aging infrastructure; learn tools that would increase successful adoption of change; and build a community of practice across the organization. Building from a facilitated workshop to apply change management tools to a critical capital investment, DC Water identified dozens of cost savings ideas and launched four additional case studies. Surveys indicate the workshop and resulting efforts were successful in enhancing collaboration and trust across the utility. Intentional focus on the human factors of change increases the likelihood of success and fosters employee engagement and commitment.

INTRODUCTION

DC Water maintains a pipe network with a median age of approximately 80 years. Additionally, we are building EPA mandated infrastructure to mitigate combined sewer overflows. As a result, consumer rates have doubled over the last ten years and are estimated to increase by 70% within the next decade (DC Water, 2019). Faced with increased investment needs, rising rate pressures, and a host of strategic and organizational transformations, DC Water, like many organizations, operates within a constant state of change. However, changes to a system that provide service as fundamental as clean and safe drinking water may be especially challenging. Regulatory pressures, necessary capital investments, and other factors can reinforce the status quo and strengthen resistance to change (National Association for Clean Water Agencies, Water Environment Federation, and Water Environment and Reuse Foundation, 2013). Given the vital nature of our services and the high stakes of our change initiatives, failure is not an option.

An organizational assessment conducted in the fall of 2018 revealed a committed and motivated workforce. However, this workforce operates largely in informal silos within the formal organizational structure. In addition to the decreased collaboration related to siloed organizations, and the external hurdles, staff engagement surveys indicate cultural challenges, such has lack of trust and engagement. Collectively, these challenges prevent a common understanding of risk, tradeoffs, and shared ownership of outcomes. DC Water, recognizing the critically of the change efforts that lie ahead and the potential impact of the cultural challenges on this change, sought to proactively pursue efforts that would lead to successful change efforts.

Change is difficult in nearly all organizations and sound technical approaches to change are frequently insufficient (Latham, 2016). Studies indicate that approximately 70% of change initiatives fail (Nohria & Beer, 2000). Another study revealed that initiatives with no or poor change management strategies have only a 15% chance of success. However, the likelihood of success more than doubled when ‘fair’ change strategies were executed. Initiatives with

'excellent' change management strategies were six times more likely to be successful (Prosci, 2018). Specifically, addressing the human side of change and changed behavior is when real change occurs (Latham, 2016).

Armed with these insights, DC Water pursued a systematic approach to plan and implement change management strategies for new business practices and initiatives. In service to our new strategic plan, *The Blueprint*, DC Water's objectives were to:

1. Identify cost savings and business process improvement opportunities to address the cost of the aging infrastructure.
2. Identify and pilot new tools for increasing collaboration and managing the human side of change.
3. Grow and replicate the practice across the organization.

METHODOLOGY

Demonstrating and replicating standardized approaches to collaborative and efficient business processes began with the selection of change management tools and an initial change initiative to pilot. We identified the GE Change Acceleration Process (CAP) as a practiced and proven method to improve change outcomes (see Figure 1). CAP follows a systematic approach to change and utilizes tools that are adaptable to the specific needs of an initiative, while emphasizing human behaviors and practices as crucial elements to success. Next, we selected trained facilitators including Pam Porath of Willowpath Consulting to lead the workshop. With the facilitator's assistance, we chose the replacement of small diameter water mains (SDWM) as the focus for the workshop. SDWM was chosen because, although routine, it requires collaboration across multiple departments and is a high-profile, customer-focused capital investment for DC Water. Furthermore, our replacement costs exceed those of neighboring jurisdictions.

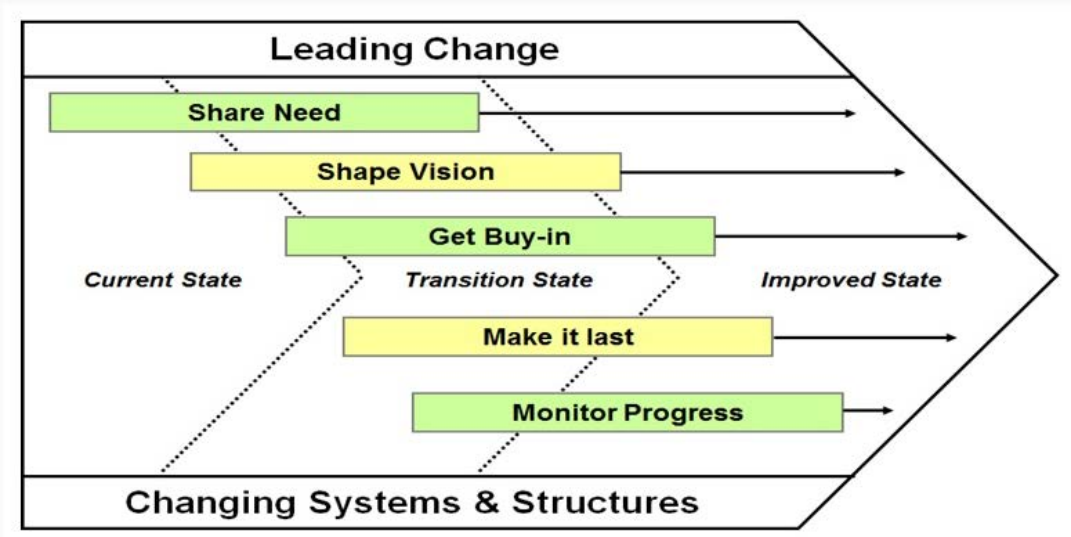

Figure 1. Overview of the CAP Process (Source: Six Sigma Institute 2020)

Next, we executed a strategically planned three-day workshop, where participants learned and applied the CAP tools to the SDWM challenge.

Identifying participants and obtaining support from leadership was crucial to building a successful workshop. First, we leveraged the insight of a respected leader within the SDWM process to identify critical participants across all relevant processes for selecting, designing, and executing the replacements. Among these, we identified those with capacity to serve as change leaders of any new action items that resulted from the workshop. Next, we included change leaders from other departments in a "train-the-trainer capacity." These individuals would lead future, non-SDWM projects elsewhere in the organization. We also identified an experienced organizational development and change management leader to help facilitate small group conversation; foster collaboration; and help shape future change. Finally, we pursued support from leadership by validating the list of participants with each Executive Vice President. We requested adjusted workloads to allow participants to work uninterrupted for three days at the off-site workshop. Additional participants from their respective departments were included as requested. Twenty-two participants were selected.

Another element of organizing the workshop was ensuring a common understanding of the state of SDWM and other change efforts at DC Water. Two weeks before the workshop, each participant was interviewed by a facilitator. The facilitators asked approximately two dozen standardized questions, using the Likert Scale, to obtain current views on collaboration and execution for SDWM projects. Participants without a direct connection to SDWM were asked to respond to the same questions on other ongoing or past change efforts at DC Water. Quantitative responses, common themes, and select quotations were compiled and introduced to the group at the beginning of the workshop to describe a common baseline of perspectives across the organization. The findings were generally consistent with our prior employee engagement surveys indicating a lack of collaboration across departments.

During the workshop, participants were divided into four interdisciplinary teams. They were introduced to and applied the CAP tools to the SDWM project. As the workshop advanced, four cost-saving opportunities were identified, and change strategies developed. At the conclusion, each group delivered short elevator pitches to the CEO and key executive leadership, including a request to pursue the resulting projects.

Following the workshop, direction for each of the projects was established; a SharePoint site was created to house the change tools; and follow up communication was executed. The Executive Vice President of Performance thanked participants for their contributions and reinforced executive leadership's approval, commitment and support for continuing each of the identified projects. Finally, DC Water leadership conveyed the expectation that participants would continue to use the CAP tools on other projects moving forward. Additionally, the results of the workshop and tools were evaluated through a series of surveys and questionnaires. The evaluation assessed changes in behavior, skills, and attitudes; as well as continued use of the tools.

RESULTS

Through the workshop and subsequent efforts, DC Water obtained results across each of its key objectives.

Identify Cost Savings and Business Process Improvement Opportunities to Address the Cost of the Aging Infrastructure

The workshop resulted in ideas, enthusiasm, and momentum to reduce costs and strengthen SDWM processes at DC Water. During initial brainstorming, participants identified approximately three dozen ideas. After voting to identify the opportunities with the most cost/benefit potential, four projects were selected:

- Enhance the procurement process
- Improve the relationship between DC Water and the District Department of Transportation (DDOT)
- Establish 'cradle to grave' project management
- Coordinate mapping and prioritization with local gas and electric utilities to share costs of opening roads and minimizing disruption to residents

Teams used the CAP tools to create a mission statement; vision; and goals and objectives for each project (see Figure 2). They went on to use the additional CAP tools to create an action plan, stakeholder analysis, and communication plan. With the support of leadership to continue projects after the workshop, each team refreshed and refined their proposals. The two teams focused on external relationships with DDOT and sister utilities merged into a single team under a single executive sponsor. This effort, along with the procurement process, are described in more detail as case studies in the next section. The project management team disbanded due to other ongoing efforts to establish an Enterprise Program Management Office at DC Water.

Figure 2. Mission, Vision, Goals and Objectives of Workshop Projects

Identify and Pilot New Tools for Increasing Collaboration and Managing the Human Side of Change.

DC Water successfully introduced more than a dozen new tools for managing change; many of which were adopted into continued use (see Appendix 1 for the list of tools as well as their

purpose and a brief description). The tools are intended to be used “a la carte,” without a defined sequence and as needed for individual projects.

Effectiveness of the workshop was evaluated using level 1, 2, and 3 of the Kirkpatrick Model of Training Evaluation (see figure 3). Level one evaluation showed that 90% of participants found the workshop to be very (4 rating) or extremely (5 rating) effective (on a scale of one to five) (see figure 4). 46% of the participants indicated that they planned on using one or more of the tools in the first 30 days after the workshop. ‘Backward Imaging’ and ‘In and Out of the Frame’ were the tools reported to be the most likely to be used; while the ‘Personal Transition Model’ and ’15 Word Statement’ were reported to be the least likely to be used.

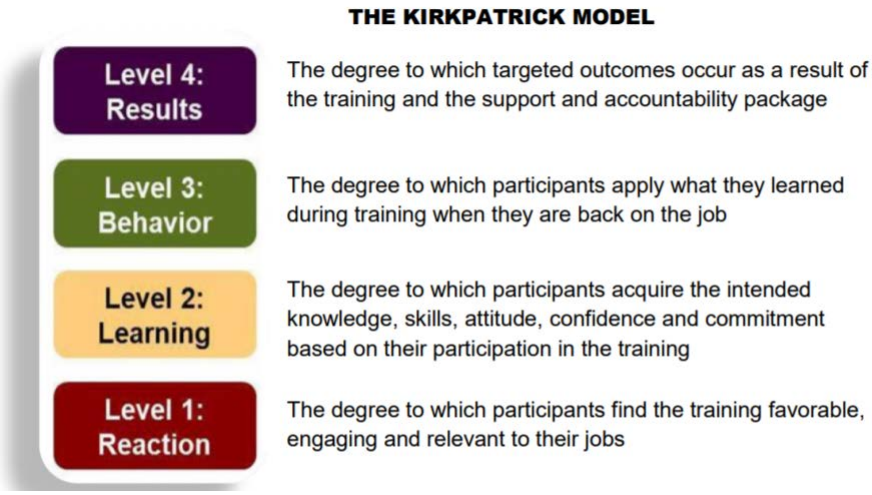

Figure 3. Overview of the Kirkpatrick Model (Source: Kirkpatrick Partners, 2019)

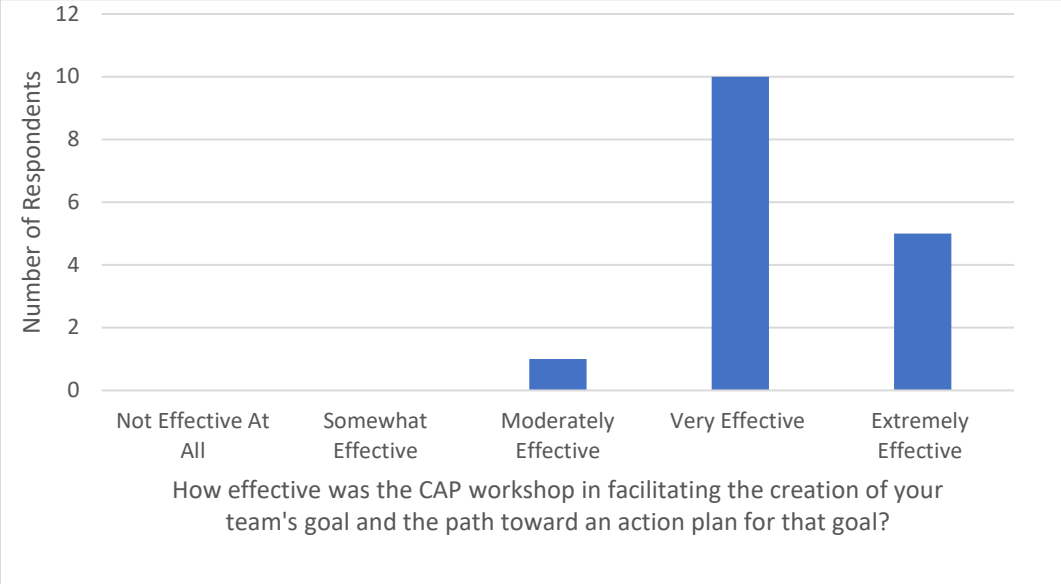

Figure 4. Selected results of CAP workshop effectiveness

Level two evaluation showed that participants' attitudes and beliefs related to the change management strategies had improved. In post-workshop surveys, respondents identified the following as key points they learned in the workshop:

- "the value of bringing different perspectives to the table,"
- "multidisciplinary teams are key,"
- focusing on human behaviors is crucial, with one participant noting that "projects and solutions stagnate due to people's acceptance or rejection, … and the human factor is underestimated."

Finally, level three evaluated use over time and penetration into day-to-day activities ("make it last" in the CAP model) (see figure 1). To evaluate the staying power in day-to-day behaviors we conducted pulse surveys weekly. Roughly half of respondents continued to use at least one of the CAP tools in the two months following the workshop.

Grow and Replicate the Practice across the Organization

DC Water was successful in establishing a community of practice across all functions at of the organization. That community of practice is using the change management tools in multiple projects in addition to SDWM. These change projects include succession planning, lead service lines, improving the relationship with DDOT, qualified projects list, and enhancing procurement. Four of those additional case studies were launched by participants in the workshop and are discussed below.

<u>Succession Development Pilot</u>

As part of DC Water's 2019 Strategic Plan, an organizational succession plan was developed and piloted. The objective of the pilot was to reduce operational inefficiency caused by vacancies in key positions; increase internal promotions; and the retention of organizational knowledge.

Using methodology and tools identified in the CAP workshop, DC Water held a focus group to 1) understand our current state, 2) utilize shared organizational knowledge, 3) create collaboration and shared vision, and 4) align industry best practices with the specific needs and challenges of DC Water. Over the course of two four-hour sessions, 28 participants from all levels and all functions of the Authority, worked in small groups, using CAP tools for brainstorming, scoping, identifying stakeholders, and creating action and influence strategies.

The workshop and use of the change management tools resulted in four deliverables:

1. Strengths, Weaknesses, Opportunities, and Threats analysis
2. List of common challenges/needs
3. Insight into potential hurdles to success
4. action items/projects including: manager training and development; increasing visibility; creating trust and buy-in; and career ladders

The approach and tools used exceeded the expected outcomes of the focus group. Most notably, the exercise validated the need and value of this and other human capital initiatives; and demonstrated alignment and interdependence of those initiatives. Moreover, the use of the tools increased collaboration and buy-in.

The pilot has concluded, and the evaluation of the program completed. The results of the program evaluation and the information generated from the focus group have been used to create a proposal for phase two of the program.

Improved partnership with DDOT

Two of the projects identified during the CAP workshop were related to DDOT. One of the projects was targeted at improving the mapping of underground utilities. The other was focused on eliminating double (or triple) excavations and public roadway disruptions. Rather than run two groups in parallel with many of the same individuals at DDOT, the teams decided to join into one group and focus on a single DDOT effort.

To focus the efforts of the combined project, the team chose tools focused on leading change and shaping the vision, including: Project Selection-Brainstorming, Project Selection-Weighted voting, In and Out of frame, and 15-word Statement in the first post-workshop session. During brainstorming the team identified a couple dozen projects (many of which were repeats from the original workshop) and three projects received most votes. After some discussion, the team agreed to focus on the single project with the most votes. The chosen project included creating a capital funded project, focused on partnering with sister utilities, to construct all buried utilities in a coordinated way preceding pavement restoration done by DDOT. This allows all utilities to reduce their cost of surface restoration. After choosing a single project to pursue as a team, we decided to meet again to focus on tools for shaping the vision: Threat / Opportunity Matrix, Three D's, Backward Imaging, and More of / Less of.

After completing those tools, the team identified actions for team members to create a capital funded project dedicated to a construction approach partnered with DDOT and our sister utilities. This project is intended to proceed outside the team as a traditional capital project. Team members were also tasked with identifying several blocks where all utilities were in poor condition making it easier to sell a partnered approach to all utilities. As of this writing, candidate roadway sections have been identified and DC Water has created a capital project, A Memorandum of Understand (MOU) has not yet been finalized between the different organizations.

Once those action items were complete, the project yielded a capital funded design/construction project that would function in our traditional project management systems. The team met its objective, and even though construction won't be realized for several years. Now that a capital project has been funded, the team did not feel the need to continue meeting because our traditional processes will carry the process to completion.

Qualified Product List

This project was very different than the DDOT project from a change management perspective. Whereas the DDOT project was an invention of the team, the Qualified Product List (QPL) was predefined. The team came together with express direction from the executive team to create and implement the QPL.

The QPL is part of a broader effort to reduce construction cost of SDWM. DC Water wants to create a QPL of products that are 1) installed on many DC Water projects, 2) have no deviation from project to project, and 3) are listed in our Standard Specifications. Certain model number fire hydrants, small diameter valves, and other similar appurtenances would make up most products in the QPL. Because these products are readily accepted in the submittal phase, but still require a full submittal process, DC Water sees an opportunity for improved efficiency in the submittal process. The QPL, once implemented, would allow contractors to order certain materials (from the QPL) immediately after submitting, instead of waiting for DC Water approval. Because DC Water has already approved these products (in the QPL), there is little risk of receiving an unwanted product. Contractors can place orders sooner and Because DC Water does not have to review the same detailed submittals for every project, saving significant hours of labor.

Because this project was defined for the team, there was no need to use the project selection tools. Many executive change directives are stated as simple commands, "make 'X' happen," with limited specific details. The details are often delegated to the team to define and execute. To clarify the potential benefits of the project, we chose to start with "Backward Imaging" and "More Of / Less Of". These tools allowed us to return to the executive sponsor and obtain concurrence on items the team felt were in or out of scope.

As of the writing of this paper, this effort is ongoing; the QPL has not yet been published. The QPL procedures have been drafted and a preliminary list of products has been drafted. However, the team has encountered resistance to change from several key stakeholders. As a result, the team is currently focusing on 'TPC, Stakeholder Analysis, and Influence Strategy."

Procurement

One of the SDWM change efforts identified in the workshop was to improve the procurement process, which included the following possibilities to be evaluated:

- pre-purchasing ductile iron pipe direct from the manufacturer/distributor,
- increasing the pool of bidders/vendors,
- continued use of Class 56 DIP or switch to PVC, HDPE, other,
- trenchless technologies which are not being widely used on watermain projects, and
- conducting a benchmark with similar utilities to identify practices we can improve.

Because these were all preliminary evaluations to determine if a proposed change warranted an evaluation with a higher level of effort, we did not use many of the change management tools from the workshop.

The efforts executed by the change team yielded two new contractors who bid on SDWM projects, a partnering meeting with a neighboring utility, more broadly sharing key lessons learned about a trenchless pilot we conducted, a broader understanding of some of the challenge our ROCIP program placed on bidders, and more broadly sharing a small benchmark comparison that had already been completed.

DISCUSSION

DC Water was successful in meeting its key objectives to identify cost savings opportunities, demonstrate tools for collaboration and change management, and grow the practice across the organization. The use of SDWM as the workshop topic created a real-world example and generated actionable ideas to enhance processes and reduce costs. On SDWM projects and secondary efforts, DC Water demonstrated increased trust and collaboration across teams and departments, generated momentum for change management, and highlighted the need to focus on human behaviors. Throughout the workshop and subsequent case studies, several key elements were identified has having a significant impact each effort.

Visioning

Visioning is a key component of the CAP tools, but DC Water failed to ultimately establish and communicate a vision for the outcomes of the CAP workshop. Although teams enthusiastically presented to Executive leadership, who were pleased with results, it was unclear to many if the presentations and recommendations were classroom exercises or truly intended for DC Water's implementation. Because leadership signaled strong support to advancing implementation; clear next steps and roles and responsibilities were needed. Management approved each participant's attendance of the workshop, but not necessarily an ongoing commitment. The unclear direction and communication significantly hindered teams' efforts to solidify and enact their recommendations following the workshop.

Sponsorship

Senior leaders were supportive of use of the change management tools and the initial workshop. However, participants and their leaders were unclear of the expected outcomes and expectations both during and after the workshops. We failed to identify new sponsors for each of the projects, leading to lack of clarity and conflicting priorities. This ultimately stalled opportunities to expand several of the projects beyond the pilot group.

Participants

Individuals from all levels and from across the organization were selected to participate in each of the case studies. Having representation from across the authority increased the effectiveness of the tools by ensuring relevant, but often overlooked, stakeholders were heard. Thus, groupthink was reduced, and DC Water benefited from dozens of strong ideas to improve SDWM processes. In addition, participants indicated several positive outcomes from working in cross functional teams, including 1) increased trust and buy-in, 2) increased collaboration, 3) increased engagement and feeling of value, and 4) willingness to commit time and effort in the initiative/project.

The workshop was limited in size to manage discussion. However, information provided from other employees indicated that lack of transparency in selection of workshop participants created frustration from individuals that were not included. This outcome could undermine the efforts to increase trust and buy-in.

Timing

We struggled with timing on the use of tools during and after the workshop. With so many tools at a user's disposal and the ambition to apply too many in too short of a period of time, application of the tools were often rushed and efforts hindered. Timing was an issue for the Succession Development pilot, where 20% of participants were lost during the second session. A single session may have ultimately been more effective.

Socialization

There was no pre-communicated expectation that participants would use the tools after the workshop and report back. While a Microsoft Teams group was created for the program participants to share the CAP tools and for facilitators to provide updates on the outcomes of the group, lack of socialization likely limited utilization of this site. As a result, individuals that were most likely to use the tools already had change management experience. Additionally, challenges resulting from lack of visioning and sponsorship stalled training efforts that were expected to anchor behaviors in participants and expand knowledge and utilization across the authority.

Evaluation

Evaluating the use and effectiveness of the tools after the pilot workshop proved difficult. Only a small number of participants completed post-workshop surveys making level two and three evaluation difficult. Thus, only cursory evaluation at each level was possible. A pre-assessment would have proved beneficial in measuring changes in knowledge, behavior, and skills. Increased responses for post-workshop surveys would have produced more robust assessment of the pilots return on investment.

CONCLUSION

In the face of increased costs, decreased consumption, aging infrastructure, and other challenges, utilities must adapt. Sound technical solutions are insufficient to yield lasting change, as status quo behaviors and cultures are typically stronger forces. Overcoming resistance requires intentional planning focused on the human side of change. Equipping teams to accelerate business process improvements increases the likelihood of success of individual efforts; and building a community of practice further increases collaboration and trust across the organization.

APPENDIX 1: CHANGE MANAGEMENT TOOLS

Tool	Purpose	Description & Comments
Project Selection-Brainstorm	Collect all ideas using common best practices for brainstorming.	Particularly helpful in supporting future buy-in because each participant knows their ideas were included in the conversation.
Project Selection-Weighted Voting	Identify the proposed project the group will focus on with its finite resources.	Each participant has a set number of votes and places their votes on one or more projects. This requires some grouping of brainstorm ideas that are very similar. This tool is particularly helpful in focusing group efforts and increasing buy-in from team members whose preferred project(s) are not selected. The process is broadly seen as fair and the result is seen as a group decision.
In and Out of Frame	Create a visual of elements in or out of scope (frame).	Each team member writes specific ideas or actions related to the project on post-it and places the post-it on a poster. The poster has a picture of a frame and the post-it is placed inside, outside, or on the frame. This tool helps to prevent scope creep.
15-word Statement	Test for alignment. Develop a purpose statement.	This exercise starts with each individual writing key words on a post-it that belong in a purpose statement. Then the small group comes together to write a combined 15-word purpose statement for the project. This tool provides a useful roadmap as the project continues and is particularly helpful at reminding team members why they are in a team or at a particular meeting.
Threat / Opportunity Matrix	Frame the need for change in terms of threats and opportunities.	The group fills in a two-by-two matrix with “threats if we do” and “threats if we don’t” on one axis and “long term” and “short-term” on the other axis. This tool is particularly good at identifying motivating factors that keep the team moving forward when change becomes difficult. It also helps the team discover how to communicate the need for change (ie: the status quo will lead to unsatisfactory result).
Three D’s	Build evidence to support the change based on 1) data, 2) demonstration, and 3) demand.	For each of the three D’s, you answer the questions “how can I prove it? or “what proof do I have?” and "what proof do I need?”. This usually results in an action item to find a few more examples of similar projects, either successful or not.

Backward Imaging	Further future vision of possibilities and smaller changes needed to support project.	Like a “premortem” but instead of imaging failure and the predictive source of future failure, the team imagines what you would see if the project were wildly successful. The team answers such questions as “what would the newspaper headline read?” or "what would the company newsletter read?”
More of / Less of	Identify changes needed for the project to be successful.	The team identifies anything they would see “more of” or “less of” if the project is successful. This allows the team to identify smaller, specific actions that are needed.
Personal Transitions	Help team members empathize with impacts of change.	Team members discuss previous change efforts they were a part of. The team discusses how they felt during previous change: positive / negative, started by them / imposed upon them, etc.
TPC (Sources of Resistance)	Identify sources of resistance to the project.	TPC stands for Technical, Political, and Cultural. The team identifies sources of resistance in each of those categories and possible strategies for managing each source of resistance. An interesting note: the sources that prevent change are rarely technical but usually on the human side of change.
Stakeholder Analysis	Analyze current and needed support from key stakeholders.	The team builds a matrix with key stakeholders down the side and the following five descriptors across the top: strongly opposed, opposed, neutral, supports, strongly supports. For each stakeholder an ‘x’ is placed under the descriptor matching their current level of support. An ‘o’ is placed under the descriptor the support needed for success.
Influence Strategy	Develop strategies to influence stakeholders needing to provide more support per the Stakeholder Analysis.	Using the stakeholder list from the previous tool the team answers the following questions for each stakeholder whose support for the project needs to strengthen: what is the desired new behavior from the stakeholder, what is the stakeholders’ concern/issue, what are potential win/win’s, and what can the team do to influence the stakeholder to shift their support.
CAP Profile	Monitor progress.	Plot a chart with the six phases of change on the x-axis and a scale from 1 to 100 on the y-axis. Each participant marks the team’s performance in each of the six phases on the chart. This tool is useful to define areas where additional efforts may be needed.
Communication Planning	Create a plan to share the project information.	Sharing relevant information in relevant parts of the organization using multiple media, sources, and occasions.

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