



AN EFFECTIVE INTEGRITY MANAGEMENT SOLUTION BEGINS BEFORE IMPLEMENTATION

Five Best Practices For Success

Congratulations. You've invested in a technology solution to help you build the best integrity management program possible ... one that will ensure your product is taken to market as safely and cost effectively as possible.

The next step in the journey is to ensure the successful implementation of the solution you've chosen. Implementations can be challenging but there are steps you can take to minimize disruption and begin realizing value right away.

A technology implementation should be incremental, creating small successes and allowing you to grow functionality at a rate that fits your unique environment.

Rolling Implementations: The Best Fit for An Integrity Management Solution

There are many software implementation methodologies available. However, for a pipeline integrity management solution in a continuously evolving and changing industry, we recommend a rolling (or continuous) approach.

A rolling implementation, follows the [Agile development methodology](#), providing you with the ability to quickly realize value from your new integrity management solution.

For many of our clients, improved analytics is a key driver for choosing an integrity management solution. The need to extract value from data and perform analytics to support and drive decisions is no longer a desired state, it's a must. In today's environment, operators are charged with minimizing risk, meeting regulatory compliance standards, and operating efficiently.

Operators want to improve system performance, processes and procedures to increase the efficiency and accuracy of their reporting. The attributes of a rolling implementation play a key role in meeting these goals. The Agile development methodology has been used successfully for many years. It re-imagined the conventional Waterfall method for product development by basing its methodology around frequent deliverables, the use of cross-functional teams, and focused planning around strict timelines rather than strict specifications.

THE 12 PRINCIPLES OF AGILE¹

1. THE HIGHEST PRIORITY IS TO SATISFY THE CUSTOMER THROUGH EARLY AND CONTINUOUS DELIVERY OF VALUE.
2. HARNESS CHANGE, REGARDLESS OF THE STAGE OF IMPLEMENTATION, FOR THE CUSTOMER'S COMPETITIVE ADVANTAGE.
3. DELIVER WORKING SOFTWARE FREQUENTLY, FROM A COUPLE OF WEEKS TO A COUPLE OF MONTHS, WITH A PREFERENCE TO THE SHORTER TIMESCALE.
4. BUSINESS PEOPLE AND DEVELOPERS MUST WORK TOGETHER DAILY THROUGHOUT THE PROJECT.
5. BUILD A MOTIVATED PROJECT TEAM AND GIVE THEM THE ENVIRONMENT, SUPPORT AND TRUST THEY NEED, TO GET THE JOB DONE.
6. UTILIZE THE MOST EFFICIENT AND EFFECTIVE METHOD OF COMMUNICATION...FACE-TO-FACE CONVERSATION.
7. WORKING SOFTWARE IS THE PRIMARY MEASURE OF PROGRESS.
8. PROMOTE SUSTAINABLE DEVELOPMENT. THE SPONSORS, DEVELOPERS, AND USERS SHOULD BE ABLE TO MAINTAIN A CONSTANT PACE INDEFINITELY.
9. CONTINUOUS ATTENTION TO TECHNICAL EXCELLENCE AND GOOD DESIGN ENHANCES AGILITY.
10. SIMPLICITY - THE ART OF MAXIMIZING THE AMOUNT OF WORK NOT DONE - IS ESSENTIAL.
11. THE BEST ARCHITECTURES, REQUIREMENTS, AND DESIGNS EMERGE FROM SELF-ORGANIZING TEAMS.
12. REGULARLY REFLECT ON HOW TO BECOME MORE EFFECTIVE, THEN TUNE AND ADJUST TEAM BEHAVIOR ACCORDINGLY.

¹ Principles behind the Agile Manifesto, agilemanifesto.org/principles.html.

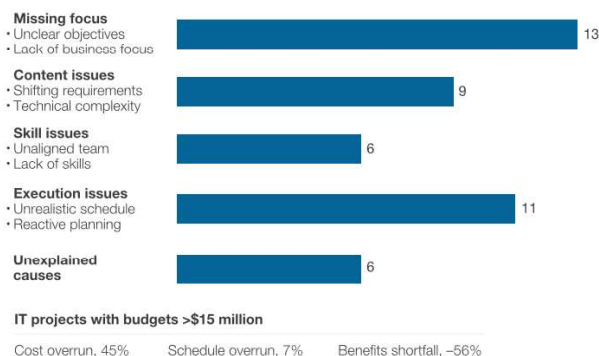
The Agile-inspired rolling implementation mitigates any number of implementation disruptions while positively affecting project timelines and creating small wins early. Frequent checkpoints allow organizations to be responsive to change, celebrate small successes, leverage momentum and quickly adjust to feedback and market conditions. In turn, these incremental successes create advocates in the organization who will support the technology and assist in the success throughout the rest of the implementation.

WHY TECHNOLOGY IMPLEMENTATIONS OFTEN FAIL

1. MISSING FOCUS. UNCLEAR OBJECTIVES AND / OR LACK OF BUSINESS FOCUS.
2. EXECUTION ISSUES. UNREALISTIC SCHEDULE AND REACTIVE PLANNING.
3. CONTENT ISSUES. SHIFTING REQUIREMENTS AND TECHNICAL COMPLEXITY.
4. SKILL ISSUES. UNALIGNED TEAM AND/OR LACK OF SKILLS.
5. UNEXPLAINED CAUSES.



Rough distribution by cause of the 45% of IT projects that experience cost overruns (for those with budgets >\$15 million in 2010 dollars), %



Source: McKinsey-Oxford study on reference-class forecasting for IT projects.

Successful implementations meet the business goals defined at the beginning of the project. They create little disruption across the organization and they are completed on time and on budget. On the other side, a failed software implementation is typically late, over budget, or does not meet all of its business objectives.

In a joint study completed by McKinsey & Company and the University of Oxford ² (where over 5,400 technology projects were analyzed comparing budgets, schedules, and predicted performance benefits with the actual costs and results) it was determined that 56 percent delivered less value than expected. A further 45 percent were over budget, 7 percent were over schedule and 17 percent of projects failed so badly, that they threatened the existence of the company.

These reasons and more have resulted in a negative perception of software implementations. Many of us have experienced first-hand the problems an improperly implemented solution can create. However, in an ever increasing digital environment, embracing technology is imperative. The good news is there are steps you can take to minimize the disruption and maximize the value.

² Michael Bloch, Sven Blumberg, and Jürgen Laartz. "Delivering Large-Scale IT Projects on Time, on Budget, and on Value." McKinsey & Company, www.mckinsey.com/business-functions/digital-mckinsey/our-insights/delivering-large-scale-it-projects-on-time-on-budget-and-on-value.

5 STEPS TO A SUCCESSFUL PIPELINE INTEGRITY MANAGEMENT SOLUTION IMPLEMENTATION

1. BUILD AN EFFECTIVE TEAM.
2. DEFINE DESIRED OUTCOMES.
3. MAKE IT PERSONAL FOR THE END USER.
4. CREATE TARGETED TRAINING.
5. CELEBRATE SUCCESS.

1 STEP 1: Build an effective team

Identify an Executive Sponsor early. For an integrity management implementation, this will likely be the leader responsible for your integrity management program. He or she will ensure buy-in across the organization including your senior leadership team. Executive sponsors must reinforce the importance of the change and the benefits gained through the use of the new technology. The Executive Sponsor ensures all leaders within the organization are communicating the vision and are committed to achieving the end state ... a critical component of the solution's success.

The team should also include local product champions. Often, new technologies brought into an organization may not initially appear to provide a positive change. Introducing a new technology will not succeed if user adoption is low. Negativity and misinformation can spread quickly. Include local champions on your team who can influence their peers and act as trusted representatives for questions, ongoing training and adoption.

Show your champions the advantages and intended outcomes of the new solution so that they can easily vocalize and demonstrate their support. Train the champions first and have them test drive the new technology ahead of the rest of the team. This process will help you refine the solution before it is rolled out across the organization.

A recent implementation team we participated on was comprised of representatives from engineering, pipeline integrity management, and IT. The client did a great job in choosing the right people. Everyone was excited about how the technology would help them do their jobs better and they came prepared to ensure the project succeeded. That excitement helped build trust throughout the organization and dispelled any resistance that was encountered.

Team continuity is also extremely important from the **technology vendor** side. Don't overlook this important detail when making your solution decision. Ensure the vendor is committed to team continuity. A strong relationship will grow amongst a team that works together from start to finish. Avoid changing team members whenever possible.

2

STEP 2: Define the desired outcome and goals

A successful technology project is not only about implementing the solution, it is about achieving an outcome. As Harvard Business School marketing professor Theodore Levitt put it “People don’t want to buy a quarter-inch drill. They want a quarter-inch hole!”⁴.

Before you start implementing the solution, make sure you have common agreement on the desired outcome(s) and end goals. Involve your end users to describe existing processes, challenges and problems. When common agreement is reached on the problem(s) and goals, you can begin to break down any resistance to change and get buy-in from all stakeholders.

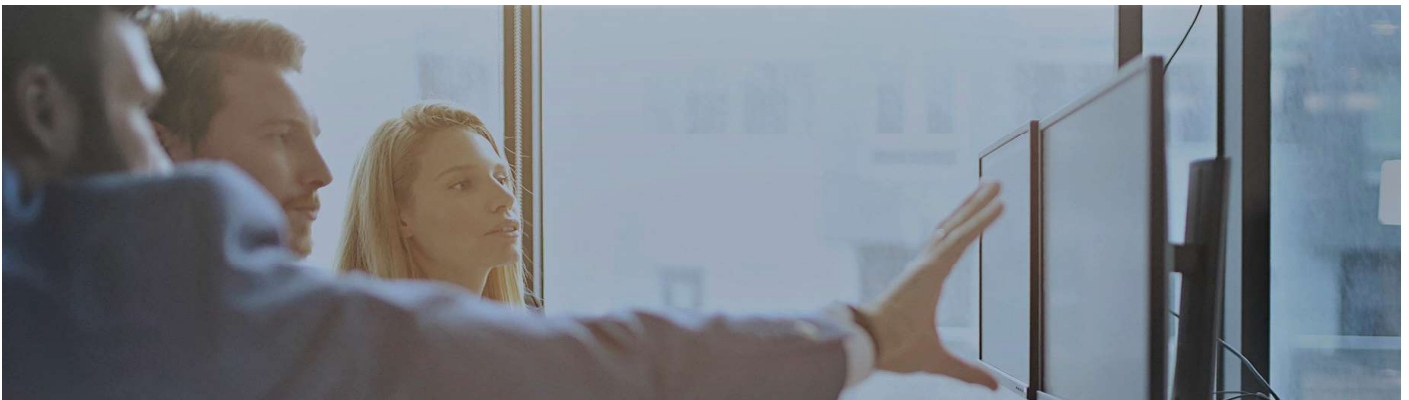
Review your future state and compare it to your current state. Perform a workflow assessment.

Determine what’s working, what needs improvement, and identify any waste (bottlenecks and non-value add activities). Technology is only one part of the equation. It is only as good as the processes and people it supports.

CHARACTERISTICS OF EFFECTIVE PROJECT CHAMPIONS

As noted in the Jeffrey K. Pinto and Dennis P. Slevin article in the Project Management Journal³, project champions come from many different positions within an organization and they exhibit the characteristic of going “above and beyond the call of duty”. Pinto and Slevin characterize the most common types of champions as the following:

1. **CREATIVE ORIGINATOR:**
AN ENGINEER, SCIENTIST, OR SIMILAR SUCH PERSON WHO IS THE SOURCE OF AND THE DRIVING FORCE BEHIND THE IDEA.
2. **ENTREPRENEUR:**
THE PERSON WHO ADOPTS THE IDEA AND ACTIVELY WORKS TO “SELL” THE PROJECT THROUGHOUT THE ORGANIZATION, EVENTUALLY PUSHING IT TO SUCCESS.
3. **“GODFATHER” OR SPONSOR:**
A SENIOR LEVEL MANAGER WHO DOES EVERYTHING POSSIBLE TO PROMOTE THE PROJECT, INCLUDING OBTAINING THE NEEDED RESOURCES, COACHING THE TEAM WHEN PROBLEMS ARISE, CALMING THE POLITICAL WATERS, AND PROTECTING THE PROJECT WHEN NECESSARY.
4. **PROJECT MANAGER:**
THE PROJECT LEADER WHO HANDLES THE OPERATIONAL PLANNING AND DAY-TO-DAY DETAILS.



³Pinto, J. K. & Slevin, D. P. (1989). The project champion: key to implementation success. Project Management Journal, 20(4), 15–20.

⁴Clayton M. Christensen, Scott Cook & Taddy Hall. “What Customers Want from Your Products.” HBS Working Knowledge, 16 Jan. 2006, hbswk.hbs.edu/item/what-customers-want-from-your-products.

One of the most important best practices we have discovered through conducting many implementations is that understanding workflows is crucial in determining the order in which products and functionality should be rolled out. This, in turn, affects speed to small wins.

3

STEP 3: Make it personal for the end user

Your team will want to know how the new technology is going to affect them. Be specific and provide live examples of current business processes and how the new technology will provide needed efficiencies and effectiveness going forward. Be open about how the new technology supports and aligns with business objectives. Involve key stakeholders and impacted team members early to get alignment. Through their participation in the development of the change, you will increase adoption and reduce resistance.



4

STEP 4: Create targeted training programs

No one wants to sit through general training sessions. Targeted training encourages people to learn how the new technology will work for their team and leads to more interactive and productive discussions.

Work with your technology vendor to provide training sessions for all levels and types of learners. This should include a range of learning materials and options such as documentation, live training and videos. Provide one-on-one training for those that require a personal experience as well as self-paced options.

A successful integrity management solution should make the job of ensuring safety easier, but only if it is being used to its full potential. A proactive training program will promote adoption of the new solution and should:

- Emphasize how the new technology benefits the individual
- Show how previous workflows are now executed within the new technology
- Start small and build the new technology into daily workflows as soon as possible
- Get your most influential employees on board early so they can help transition others
- Reward the employees who adopted the technology

As new people join your team, have a plan in place to bring them up to speed, whether you train them in-house or rely on your technology provider.

5 Step 5. Celebrate along the journey

Communication is critical for success. The team should meet regularly to review action items, and identify and manage any issues that may arise. As well, you'll want to check to see how the team ... as well as the end users they represent ... are adapting. Solicit feedback on what works and what does not, and make inflight adjustments to streamline the process or to make the initiative even better.

When a phase of the new technology has gone live, share the successes with the team. Many of our clients report that there is a strong familiarization and sense of community that results from participating in an implementation. Embrace it! Celebrate the milestone and show others in the organization how the technology is improving your company. As noted in Bill Carmody's article in Inc., "Celebrating your wins not only feels great

physically, but it reinforces the positive attitude and behavior you want to show up when you face a new challenge or opportunity"⁶. Bill further outlines three reasons why celebrating wins is so critically important :

1. The act of celebrating changes your physiology and strengthens your psychology.
2. Celebrating with colleagues and business partners tightens your network.
3. Your celebrations position you correctly as a winner and attracts more success.

Implementing new technology within an organization brings a unique set of challenges. With the right mindset, the right structures, and the right principles, the tactics above can help to significantly alleviate the disruption that can often arise and ensure your pipeline integrity management solution implementation is successful.



⁶Carmody, Bill. "3 Reasons Celebrating Your Many Accomplishments Is Critical To Your Success." Inc.com, Inc., www.inc.com/bill-carmody/3-reasons-celebrating-your-many-accomplishments-is-critical-to-your-success.html.



Dynamic Risk's technology and consulting services optimize risk-informed decision making to manage risk through an asset's entire life cycle. Our IRAS software models pipeline systems to proactively determine where they are most likely to fail and the corresponding consequences of unintended releases. From gathering systems, midstream pipelines, transmission pipelines, and distribution networks, we have software applications and in-house expertise to provide complete pipeline risk assessment, data management and compliance reporting.

Canadian Headquarters

Suite 1110, 333 – 11 Avenue SW
Calgary, Alberta, T2R 1L9
Phone: (403) 547-8638
Email: info@dynamicrisk.net

USA Headquarters

10001 Woodloch Forest Drive, Suite 250
The Woodlands, TX 77380
Phone: (832) 482-0606
Email: info@dynamicrisk.net

ABOUT US

Dynamic Risk's technology and consulting services optimize risk-informed decision-making to manage risk through an asset's entire life cycle. Our IRAS platform software models pipeline systems to proactively determine where they are most likely to fail and the corresponding consequences of unintended releases. From gathering systems, midstream pipelines, transmission pipelines, and distribution networks, we have software applications and in-house engineering expertise to provide complete pipeline risk assessment, data management, and compliance reporting.

Dynamic Risk is part of Previa, a fast-growing, innovative, and private industrial technology group focused on advanced diagnostic technologies to monitor the world's infrastructure health. The Group serves asset owners, large engineering firms, and service companies globally in markets such as Aerospace, Civil Infrastructure, Energy, Mining, Power Generation, and Rail. Via sensors, hardware, robotics, and software, Previa makes a safe and sustainable future possible, by pushing the limits of diagnostic technologies that preserve the integrity of our world's critical infrastructure and assets. More information can be found on the company's website: www.previa.com

