

BEST PRACTICES—KICK STARTING AGILE METHODS IN A TRADITIONAL ORGANIZATION

- **Be patient & wait.** One of the most important best practices when adopting agile methods is to be patient and wait. Any idea worthwhile will succeed in spite of your personal efforts (vice versa, any bad idea will fail and soon be forgotten in spite of your best efforts). The worst thing you can do is to become impatient, jump from organization to organization, or simply give up hope and move on to a new idea (especially if the old one doesn't catch on quickly). Organizational change involves human psychology, deeply-held personal beliefs, fierce resistance-to-change, takes a long time, and doesn't come overnight. Any idea worthwhile takes about 10 years to reach public consciousness, 20 years to reach practice, and 30 to 40 years to become dogma (or readily accepted fact). Agile methods have been going strong for 20 years (so they are coming to a theater near you very soon and they will overtake you in your current role, position, and project, whether you are ready or not). Resistance at this stage is futile and you will be assimilated into the Agile Borg (whether you like it or not). The best thing you can do is be ready.
- **Become the agile expert.** With the inevitability of agile methods, now is a good time to become known as the agile expert or champion in your traditional organization. Traditional methods based on linear, waterfall, project plan, systems engineering, and requirements-driven principles have been going strong since about 1960 (and are at the 65 year mark). This is both good and bad for traditionalists (i.e., one—these ideas are well-accepted as fact, and, two—people are ready for something new). Many traditionalists are slowly coming over to agile methods (and are aggressively seeking subject matter experts, coaches, mentors, and personal confidants they can trust to help them better understand agile concepts). This is your opportunity to step-in and be the bridge to the 21st century for traditionalists from the 20th century. The best way to quickly get up to speed is to attend a few agile meet-up talks to get the general idea, get some just-in-time training and certification on-the-cheap, surf the Internet for key ideas, and read a couple of key agile books (i.e., there are over 300 books, thousands of articles, and millions of Internet blogs, websites, whitepapers, and briefs). Slideshare has a lot of free informational briefs and YouTube has a ton of GREAT 5-minute videos. Latch onto a key mentor or two who can provide some key insights, but stay open to multiple perspectives (because there are many views). Some people view agile methods as simple step-by-step recipes that must be followed religiously, others view agile methods as novel project and portfolio management paradigms, and others view it as more of a personal worldview that must manifest itself as innate personal behaviors (vs. explicit methodologies, practices, tools, and artifacts).
- **Offer briefs & training.** One of the best ways to learn and master any topic is to explicitly articulate it in conversations, briefs, talks, and tutorials. Read a book, download a presentation, view a YouTube or other conference video, or get some just-in-time training. Then, turn right around and offer a talk at one of dozens of meet-ups, organizational brownbags, your own department or project, or some other peer organization. Some people feel they can learn by simply listening, reading, or being a fly-on-the-wall. However, psychologists have now come to the realization that the only way to learn is to talk about a subject as though you understand it (and the learning will come through conversations, feedback, practice, and correction). Don't be afraid to get feedback, have someone challenge you, or have someone suggest some alternative ideas. This is when the true learning and expertise comes in. The only way to spread the word, especially to traditionalists, is for them to hear the ideas (from you). They will never become agilists if no one takes the time to explain the ideas. Don't get turned off if your audience seems unresponsive, doesn't seem to take any immediate action, falls asleep, laughs at your ideas, or even directly challenges or contradicts you. People learn, whether they look unresponsive or challenge you. Many of the hundreds of agile books were written by fierce opponents to agile methods, who eventually came around. It usually takes about one or two years for someone to take action on a new idea AFTER they've first become aware of it. However, they can't become aware if you don't speak.
- **Provide formal training & certification.** Provide some formal training and certification for key staff members like project managers and developers. Everyone needs some time away from the office for some fun. A lot of organizations will send their developers to conferences for a few thousand dollars as a reward for their hard work every year. Most people would value some formal training and certification instead, especially if the trainer provides some evidence such as a certificate. This is the type of information people like to put on their business cards, resumes, blogs, websites, and cubicle walls. Most agile training can be done in one or two days for around US \$1,000, which is pretty cheap (in comparison to a conference after airline, hotel, fees, meals, and other miscellaneous expenses). Many training firms will offer bulk rates and you can negotiate the cost of a two-day training and certification course to around US \$600 to \$700 per person. Many professional organizations like local Project Management Institute (PMI) and International Council on Systems Engineering (INCOSE) chapters negotiate deep discounts on training and certification for their members, and acquire prices in the range of \$200 to \$400 per person. It's one thing to wish to do agile methods, read a book, or teach yourself about agile methods, which can be a powerful and often-underrated approach to learning and applying something new. However, getting formal training for key personnel can be an even more powerful technique for ensuring your organization adopts a new paradigm like agile methods. Today's audiences want to learn an entirely new paradigm in a single day for \$400, come in late, take a long lunch, leave early, have plenty of hands-on exercises, and leave with a certification as well. Modern trainers are like fast food restaurants and can deliver on all of these contemporary expectations. Many modern agile trainers can meet most of these expectations in about 4 hours (instead of all day). Don't be cheap and don't skip on the training and certification, because this is a key (often missing) success factor.
- **Set up formal tools & development environments.** While expecting people to use agile methods without formal training and certification can be a bit of a challenge, an even bigger challenge is to try to roll out agile methods without formal tools. This is a problem with both traditional and agile methods as well. Often times, we'll spend the money to hire solid professionals and even spend a lot of money trying to develop a system right the first time (instead of just cobbling one together on the fly). However, we won't provide the team with an information technology infrastructure like computers, networks, productivity tools, project management software, computer aided software engineering modeling tools, programming environments, automated test suites, database management tools, collaboration tools, and other types of basic, but critical middleware. Up to 60% or 70% of today's projects are comprised of geographically distributed teams. We'll make the project management team local with state-of-the-art computers, networks, and project management tools. However, 80% of the team may be in a foreign country to take

advantage of the low wages, but we won't provide an office building, air conditioning, computers, networks, productivity tools, development environments, and other essential needs. This is akin to making bricks without straw. I guess it's human nature to ask people to do the impossible without providing them with the fundamental tools to succeed. Worse yet, we want developers to start right away and deliver the first iteration of working software in a week or two without a formal development environment. That is, we don't provide any room in the schedule to set one up. Developers are often burdened with selecting and buying the tools as they interpret, analyze, understand, and implement requirements (and validate code). Well, something has to give, and often it's the latter part (i.e., validating the code). Then we wonder why agile teams may accumulate such a large defect backlog (i.e., technical debt). Do you really want to succeed with agile methods? Then take some time to allow the development team to identify their tool needs, select tools, get them, and set them up. Sometimes this is called "Iteration 0." This is a critical success factor. Teams that use automated testing tools like Junit, build and integration servers, continuous delivery and deployment servers, static analyzers, security analyzers, GUI analyzers, and other validation tools work 150 times faster than traditional and even agile teams that do not have time to select, set up, and use automated development environments. This is a critical success factor to agile methods and even organizational change. Watch out, however, because traditional tool vendors will be happy to sell you multi-million dollar tool suites. Worse yet, developers may be tempted to ask for millions of dollars worth of agile tools. However, 80% to 90% of automated tools now exist as free and open source software, and some vendors will even provide their development environments at little or no cost to ensure "vendor-lock." This is sure to sour the budget, if you have to convince decision makers to invest millions of dollars in over-engineered commercial tools. Your developers will never use over 90% of the features and functions of most commercial tools. They'll be better off downloading open source development tools and environments, with minimal essential features. You'll be able to develop and deliver needed customer functions faster at a fraction of the cost and achieve a higher return on investment much quicker. Give people time to get basic, needed tools.

- **Start a monthly brownbag.** A common way to spread agile ideas is to start a monthly brownbag meeting. These used to be known as communities of practice (CoPs). They sort of fell out of vogue, because they take some effort to organize, speakers were very difficult to find, and people simply lost interest in a topic. However, today, they are kicking into high gear, as new technologies, ideas, tools, and practices are exploding on to the global scene. Remember, there are seven billion people on the planet, three billion are interacting with one another on the Internet every day, and new ideas are being created all of the time. People are getting excited about new ideas, more and more people are mastering briefing skills, people want to express their ideas and beliefs, and the availability of brownbag speakers has never been greater. Encourage your project or department staff members to speak at your events, but don't be surprised if most of the speakers come from other organizations, departments, projects, and even outside organizations, because familiarity-breeds-contempt, and people tend to be a little shy and competitive about interacting with one another within a highly-cohesive group. Cross pollinating ideas through brownbag sessions is a very productive way of infusing new best practices into organizations at just the right time (on-the-cheap).
- **Be courageous.** At some point, you have to have courage, confidence, and just plain stubborn resolve when infusing agile methods, practices, ideas, and tools into traditional organizations. Suggest the use of an agile method, practice, tool, or behavior at the team, project, portfolio, enterprise, or even community or industry level. The best way to get started is simply to use the practices and behaviors in your daily traditional tasks. If someone asks you to perform a short task, form a small team of two or three people, document a few requirements, develop a backlog, prioritize them, and begin working them off one at a time. Get some feedback on your products and services, look for ways to improve your quality and customer satisfaction, and develop something of great mission or business value ASAP on a shoe-string budget. You don't need to use a formal agile methodology to exercise key agile behaviors and get immediate benefits. Be open minded, keep your options open, and look for opportunities to infuse agile best practices including agile vision statements, roadmaps, requirements, backlogs, design practices, teaming, testing, and even acquisition practices. Agile behaviors apply to entrepreneurialism, startups, strategic planning, business development, human resources, and a host of enterprise functions. Be prepared to exploit agile behaviors in whatever situation you are in. Agile principles came from fields of economics and manufacturing before they were applied to information technology projects, and are applied to education, church planting and administration, and even parenting today.
- **Try it on a legacy project.** Be courageous, opportunistic, and apply agile methods on a project no one wants to touch. Often times, people want to apply agile methods on a Greenfield project, something new, or some bold new enterprise transformation or flagship acquisition, program, project, or system. Those are the easy ones to sell, because everyone wants to pour new wine into new wineskins (although any new venture is replete with its own set of adoption challenges). However, few people want to touch a legacy system. Remember, 90% of acquisitions and systems are legacy assets. That is, they were probably created 10 or 20 years ago, they are critical to organizational functioning and stability, people depend on them, and people are afraid to replace them. They are generally outdated, based on obsolete technologies, constantly crash when you need them the most, and probably need to be fixed or replaced ASAP. This is your opportunity to be courageous, take initiative, and apply agile methods, practices, tools, technologies, ideas, and behaviors. While all of the people with Type A personalities are getting assigned to the new projects, someone with less power and status may want to cut their teeth reengineering a mission critical legacy system. The best way to learn is just-do-it. You may break it at first, get everyone upset, and sweat a little bit, but in the end, the only way to master agile methods is to jump into the deep end of the pool and learn to swim. You don't need an IT guru or expert to succeed. Assemble a small team of mediocre performers. There is wisdom in teams and you'll be surprised how much ordinary people really know. The knowledge, experience, motivation, and innovation of the "collective" will surprise you. Fix, reengineer, refactor, and formally test a legacy system and you'll be a hero (or at least feel like one). Over 70% of legacy code is dead code. So, your first major contribution will be to identify, fix, and update the needed code and throw out the bad, unneeded code. Chances are, it's the unnecessary dead code (waste or muda) that causes legacy systems to crash anyway.
- **Rescue a firm, fixed-price contract.** Oftentimes you are NOT given a choice of an agile Greenfield project, but directed to support a traditional project that is in dire trouble. This is the essence of traditionalism (i.e., bad requirements, over-budget, behind schedule, dissatisfied customer, and general panic and mayhem). This is when your organization needs you the most. People with Type A personalities will avoid late and over-budget fixed-price projects like the plague. This is when the firm

shuffles all of the mediocre introverts into action. This is your opportunity to shine. Remember 70% to 90% of requirements are wrong or not needed. This is your opportunity to capitalize upon agile principles. Quickly identify the highest priority customer needs, develop a backlog, jot the top 10 or 20 requirements on a whiteboard, form a small team, and agree to implement, test, and deliver the requirements one-at-a-time AS A TEAM. Simply check off the requirements as you're done, build some momentum, and confidence, and be prepared to surprise yourself how fast you can get these requirements done. You'll sweat a little, panic a little, lose a little sleep, and have to come in a little early. However, you'll begin to see the light at the end of the tunnel after successfully implementing a few requirements. You'll quickly develop an operational framework and demonstrate a working system in a few days and weeks. Your customer will be instantly pleased to see some working code for a change instead of a mountain of documentation, all of the specifications and project plans will become instant paperweights used to prop open the doors and eventually discarded completely, and you may even succeed if the stars align. The worst case is that your customer will chastise your organization for not implementing 100% of the requirements and move on (or they'll allow you to continue your new methodological paradigm to continue making progress). More senior agilists who have better trust and credibility may even suggest re-planning a short agile project at this stage to get the highest priority customer needs done.

- **Try a few pilot projects.** By now you've picked up and practiced a few ideas, or perhaps you are extraordinary, bold, and especially courageous. Simply start using agile methods on two or three pilot projects. Some people feel you need a formal plan, charter, team, and budget to get pilot projects going. Maybe you feel you need someone to SELL the idea of a few agile pilots to senior decision makers. Well, maybe this is true. Some people specialize in putting together a plan and communicating to people who control budgets that they have a low-risk rational timeline for accomplishing something new. However, this doesn't have to be anything more than a 2 to 3 page white paper, a short briefing, and a single meeting with key decision makers. The real progress is from finding people who can walk the walk. That is, there is a need for people who can talk-the-talk to decision makers (and then there's a need for people who have a reputation for rolling up their sleeves and getting-r-done). It's not unusual for a pilot plan to suggest 6, 9, 12, 15, or 18 month timelines for an extended agile pilot. However, a hard-nosed pragmatist can roll the ideas out in a matter of months. Show the git-r-done people your plan, convince them to take ownership, get out of their way, and they'll simply apply agile methods successfully in about 30, 60, or 90 days (and yield results beyond your wildest expectations). Often times, the biggest obstacle to success is your own limitations, which is why you need people who can simply get the job done without a lot of fanfare. Remember, it's the behaviors that are most important.
- **Convert your testing group.** Sometimes testing groups are good audiences for implementing agile practices. Enterprise methodology groups, especially in larger organizations, tend to be chock full of die-hard traditionalists who will fight agilists tooth and nail. They feel it is their manifest destiny to defend the use of traditional methods with baseless accusations like agile methods are a deliver-it-now-and-fix-it-later methodology, they're fast but result in low quality and reliability, they're the approach you use when you don't want to create any documentation, and they don't scale to serious mission critical projects. Have you seen the statistics on traditional projects? Over 70% of traditional projects fail, their productivity is either stopped or progressing at a snail's pace because of over-allocated personnel resources performing too many competing objectives, they are over-budget and behind schedule, and their performance and quality is deplorable (IF they are lucky enough to deliver any working code at all). Let the traditionalists pout for a little while longer, because they'll soon retire or be replaced with someone who can walk-the-walk instead of talking-the-talk. Testing groups are sometimes better aligned with agile methods, practices, principles, ideas, and behaviors. Testing groups are moving away from traditional manual product evaluation methods towards the use of automated tools and testing suites more and more. Most of the good testing tools, practices, and ideas come from the agile community in the form of Junit, build tools, continuous integration servers, acceptance testing, GUI testing, security testing, and other forms of evaluating non-functional requirements. Sometimes it's the exact opposite, the methodology groups are pushing agile methods and the certification and accreditation groups are clinging to traditional practices. You have to go with the flow and implement agile methods where you can (but chances are you may gain inroads with the testing group, particularly the test practitioners vs. the test policy makers who most likely control the traditional methodology groups).
- **Hire agile project champions.** One of the best ways to convert an organization with a die-hard traditional culture is simply to hire agile experts from the outside. This is especially true if they are hired into key decision making roles like chief executive officers, chief information officers, chief technology officers, information technology directors, senior managers, department heads, project managers, and technical leads. The higher the rank assigned to the agile expert, the further reaching their influence will span. It may be futile to hire one agile programmer into a 100 person project or department and expect that person to convert the whole group. Similarly, it may even be futile to hire a chief technology officer to influence an entire organization chock full of traditional project managers, engineers, programmers, and traditional support groups like testing, configuration management, and quality assurance. While it is a traditional belief that one key executive can single-handedly change an organizational culture, there is also evidence that a single executive may be completely ignored by the workforce if the executive's beliefs differ from the norm to a great degree. This is especially true in Western organizations where fierce individualism and even empowerment explicitly or implicitly exists. Technical people, especially engineers, physicists, and other scientists, are often a project of one. That is, they bring their own training, skills, belief system, and stubborn resolve to the project. Individualistic expectations and behaviors can work for or against you. If the engineer is an agilist, they'll do what they know is right, in spite of traditional policies and culture. If the engineer is traditionalist, then you're in for a long ride. The bottom line is that more and more large traditional organizations are becoming agile organizations by hiring executives with agile worldviews, expectations, skills, beliefs, authority, courage, fortitude, resources, and resolve. No one said it would be easy.
- **Use formal agile change management.** The old way of infusing the use of agile methods was to simply start doing it from the bottom up one person, team, and project at a time. Conversely, another tried and true approach is the top-down, big-bang integration (i.e., convince an executive to get behind it and start burning everyone at the stake until they exhibit the new desired behavior, be it traditional or agile). The NEW way of infusing agile methods is to use formal change management techniques. This usually involves hiring an external auditor to assess the organization's culture against some predefined criteria, take their temperature, determine their strengths and weaknesses, and tailor a roadmap, strategy, and tactical implementation plan for a

agile rollout. Traditional project management, systems engineering, and other IT methodologies are their own worst enemies, because they come replete with dozens of manuals, each with thousands of pages, and have dozens of recommended processes, hundreds of individual practices and artifacts, and thousands of criteria. So, based on mathematical queuing theory, using thousands of traditional criteria will simple FREEZE the organization, cost millions of dollars, take decades, and could even cause the organization to go bankrupt. Agile methods on the other hand, only have a few practices and artifacts, and the temptation to use top-down, big bang rollout of agile methods is really high. Just how much challenge can five practice, five artifact methodologies really be? Well, organizational psychologists have known for decades that even the slightest perturbation to the organizational culture can have devastating effects, cause immediate rioting and attrition, and bring productivity to a screeching halt. Change the color of a form from white to pink, add a field, or ask someone to provide a short one-paragraph description of a project, and you can cause havoc like throwing a small pebble into a smooth pond. Throw in a thousand pound traditional method and you can destroy the pond completely. Throw a rock or a brick into the pond like agile methods, and you will certainly cause quite a stir. Therefore, progressive agilists realize that even small scale agile methods must be implemented gradually. They'll take your temperature, decide which practices, principles, and ideas are congruent with your organization's culture and needs, and devise an incremental change strategy for rolling out methods over an extended period of time. Formal training helps out quite a bit, support from a top-level executive, placement of agile experts in key positions, piloting, and even replacing traditionalists may help quite a bit. Don't expect overnight results and don't be a jerk, but be courageous, forthright, and don't give people years to get on board. Set performance goals and timelines, and empower people to take ownership for agile success. Agile is not a silver bullet and improved paradigms are sure to emerge soon.

- **Hire a few consultants, coaches, & mentors.** Oftentimes, familiarity breeds contempt. You can be the most knowledgeable person on agile methods, but you may have no credibility in your own organization's eyes. You could be one of introverts or passive-aggressive types with no formal power and status (i.e., you don't have a Type A personality and you just don't have a knack for taking names and kicking butt). You read all of the books, get all of the training, and become the world's greatest agile expert, but the old adage often proves true, "a prophet is without honor in his or her own country or hometown." Sometimes an organization just needs to get some outside objective advice in order to believe and act upon it. That's why we go to the doctor, so the doctor can tell us to "take two pills and call him or her in the morning." The same holds true for agile consultants, coaches, and members. There was a time when management consultants were "persona non grata" (i.e., just a bunch of carpet baggers without any real education, training, expertise, talent, or training, who charged too much, and would cut and run at the first sign of trouble). Well those days are over. Hiring external consultants is the norm, they have several graduate degrees, numerous certifications, thousands of hours worth of training, decades of experience, and have cut their teeth on the hardest projects with the most stubborn and demanding customers. Don't make the mistake of hiring twenty-five US \$500 an hour consultants. That's just waste and they'll quickly drain your budget, enthusiasm, and success. Instead, bring in a professional consultant every two or three months for a few hours or a day. This consultant can facilitate a project retrospective with your team, spot the biggest problems and solutions, generate a quick diagnostic report, and email it to a decision maker and the team the same day. They're external, objective, experts, and credible. Some occasional advice can improve the overall performance of the team by 10 to 100 times, with the right advice. It doesn't take much of an investment to get dramatic gains from external experts. Some consultants will even offer a few pro bono (free) consulting hours to establish longer term relationships. Use these services when you can, but don't exploit well meaning consultants who need to make a living too.
- **Transition acquisition group.** Acquisition groups, especially in the public sector, are sort of the last bastion of traditionalism in the world. Traditional principles are cast-in-stone among acquisition, procurement, contracting, legal, and other regulatory oversight functions. They want to carve requirements in stone in the form of statements of work, requests for proposal, contract deliverable requirements lists, and top level specifications. Remember, 70% to 90% of requirements are wrong or not even needed. Furthermore, acquisition groups will throw these useless documents over-the-wall, refuse to communicate with suppliers out of a misguided sense of self-worth, Gnosticism, and ethical conduct, and then measure the supplier's performance to death using earned value management, cost and schedule performance indices, and other useless traditional measures. None of these measures will prove very useful and the requirements are wrong or unneeded, so tracing the bad requirements to cost and schedule performance is a fruitless exercise. Furthermore, acquisition organizations may even fine a supplier millions of dollars for not using EVM, satisfying CPI and SPI goals, or simply failing to deliver the bad and unneeded requirements. The solution lies in breaking down some of these barriers, reducing the scope and size of acquisitions, having the buyer and supplier work together as ONE TEAM, developing a list of high priority needs, and implementing and validating the capabilities one at a time. There needs to be an expectation of communications, collaboration, risk sharing, openness, transparency, creativity, and emergence, as the true, tacit requirements emerge over time. The biggest success factor will be in reducing the scope and size, which are risk factors causing over 70% of traditional acquisitions to fail, and breaking down the barriers to communication caused by one group becoming too powerful. The buyer group can become too powerful and haughty punishing the supplier for failing to implement bad requirements and deliver associated functions. Vice versa, the supplier group can become too powerful forcing a small acquisition team to accept a substantially compromised solution. Both civilian and military sectors have issued formal recommendations, policies, and guidelines to shepherd acquisition functions to apply agile behaviors. International standards and industry guidelines also exist for this purpose. However, the acquisition community and professionals are locked into the use traditional behaviors that directly undermine performance. Remember, it takes about 10 years for an idea to be heard, 20 years for an idea to be practiced, and 30 to 40 years for it to be accepted as fact. This is the current state of the acquisition community (i.e., they are at the 40 to 60 year mark). Agile acquisition guidance is only a few months old, most acquisition organizations, groups, and individuals have not even heard of agile principles. We have long way to go. Chances are that testers, developers, project managers, decision makers, and executives believe in agile methods and are using them (or will use them soon). The problem is that acquisition professionals are bringing up the rear, are probably a roadblock to the use of agile principles, and need a lot of your help. You must be aware of this disparity and be ready to help. Acquisition organizations are the last bastion of fierce industrial-age traditionalism on the planet. Help!