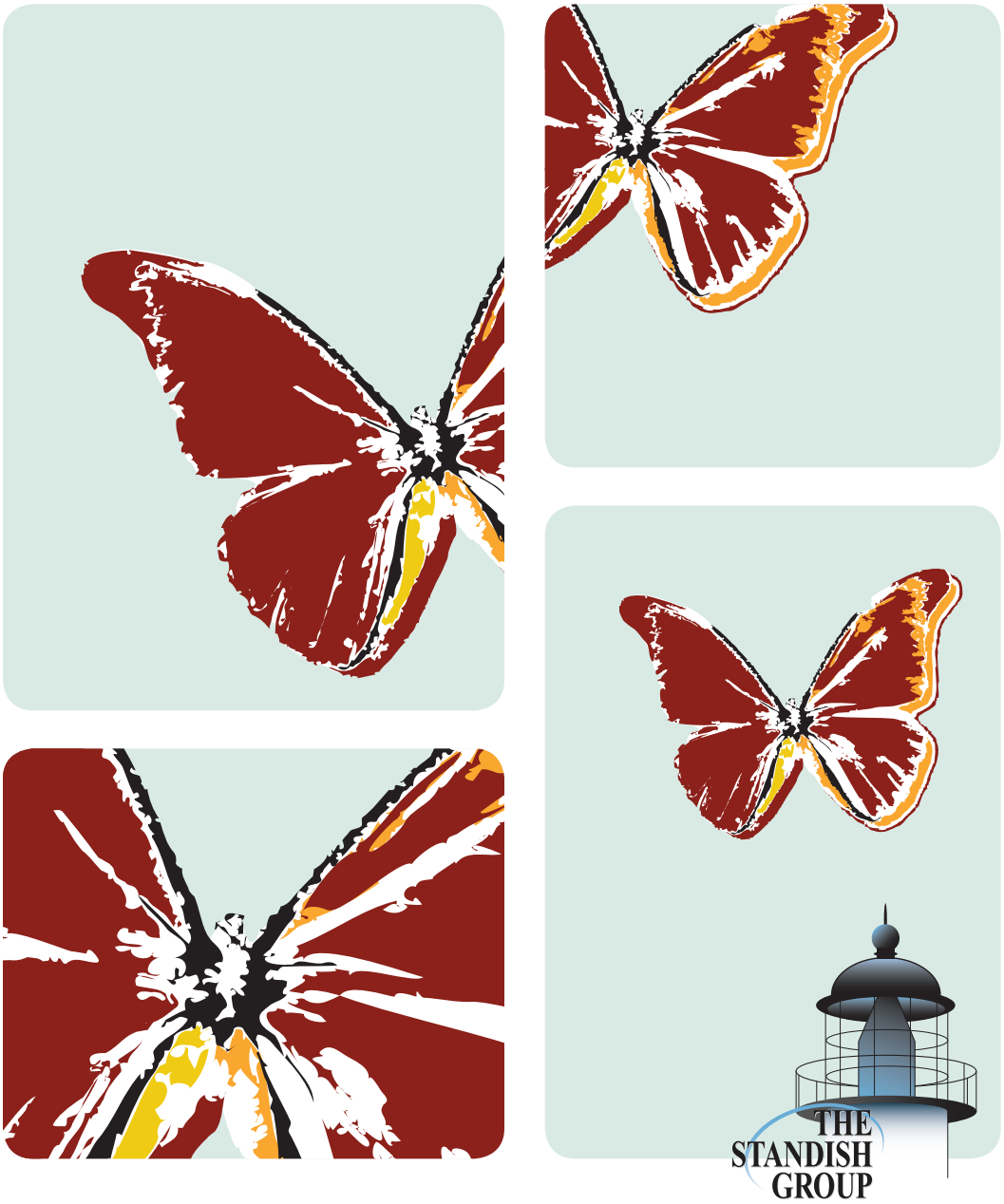

CHAOS MANIFESTO 2013

Think Big, Act Small

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PREFACE

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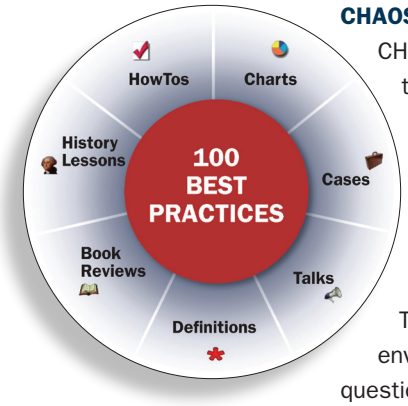


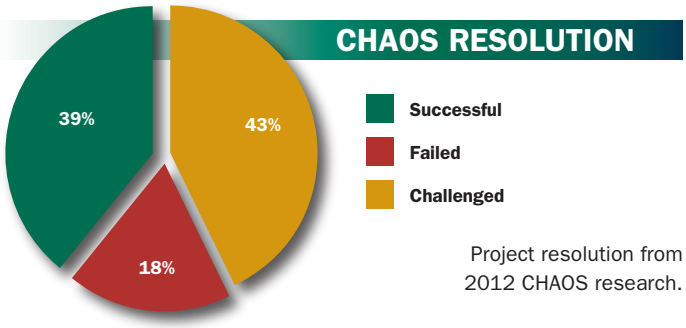
CHAOS Manifesto 2013: Think Big, Act Small is a subset of the online version of the CHAOS Chronicles, known as the CHAOS Knowledge Center (CKC). This version of the **CHAOS Manifesto** focuses on small projects and is based on the CKC version 40-12. The online CHAOS Chronicles contains 100 Best Practice Points and 300 practice elements. CHAOS Chronicles is a work in progress, and new research is added and updated every month along with other supporting features. Currently there are more than 900 charts in the CKC. This report is broken into 12 main sections. Sections 2 to 11 cover the CHAOS Success Factors for Small Projects.

The Standish Group has been collecting case information on real-life IT environments and software development projects since 1985. We get many questions about how we populate the CHAOS database. First, you should understand we are analysts and advisors, not data collectors. Second, each piece of data and every project is reviewed thoroughly by an analyst before it goes in the database. Third, we have a standard and nonstandard list of questions to determine the accuracy of the data given to us that goes into the database. Fourth, nothing is taken at face value and everything is questioned. Fifth, we have been rebuilding the CHAOS database starting in June 2012 to create a standard format. The new database will be used to present the current data analytics.

CHAOS Manifesto is based on the collection of project case information on real-life IT environments and software projects. This version and past versions have used eight different instruments in the collection of this information, which includes project profiles, project tracking, individual project surveys, case interviews, general surveys, project postmortems, and other instruments. CHAOS research encompasses 18 years of data on why projects succeed or fail, representing more than 90,000 completed IT projects. However, for our new database we eliminated cases from 1994 though 2002, since they did not match the current requirements for analysis. The new database has just under 50,000 projects.

CHAOS DEMOGRAPHICS: CHAOS results provide a global view of project statistics but do tend to have a heavier concentration on the United States and Europe. For each reporting period, about 60% of the projects are U.S. based, 25% are European, and the remaining 15% represent the rest of the world. A little more than half of the companies are considered Fortune 1000-type companies; another 30% would be considered midrange; and 20% are in the small-range category. They span a diverse number of vertical industries and organizations. Participants are made up of a variety of CIOs, VPs, directors, and PMO project managers.

INTRODUCTION



Project resolution from 2012 CHAOS research.

The 2012 CHAOS results show another increase in project success rates, with 39% of all projects succeeding (delivered on time, on budget, with required features and functions); 43% were challenged (late, over budget, and/or with less than the required features and functions); and 18% failed (cancelled prior to completion or delivered and never used). These numbers represent an uptick in the success rates from the previous study, as well as a decrease in the number of failures. The low point in the last five study periods was 2004, in which only 29% of the projects were successful. This year's results represent a high watermark for success rates in the history of CHAOS research.

The increase in success is a result of several factors, including looking at the entire project environment of processes, methods, skills, costs, tools, decisions, optimization, internal and external influences, and team chemistry. Advances in the understanding of the skills needed to be a good executive sponsor have proved to be very valuable for increasing success rates. Increases in project management as a profession and trained project management professionals can be tied directly to increases in success rates. In addition, we have seen an increase in the number of smaller projects and agile projects. Further, we have seen a decrease in waterfall projects. However, success does not come without a cost. It has come with an increase in project overhead, along with a reduction in value and innovation.

The use of project health checks, retrospectives, dashboards, and tracking systems provides for an early warning system so corrective actions can be taken. More than 90% of organizations perform some type of project postmortems or closeout retrospectives. Most organizations are finding that these end-of-project reviews are helpful for improving their next project and their general project practices. However, very few organizations capture this information in standard electronic format, and many times the information is lost or forgotten. It is one of the reasons we see initial project improvement, and then find that organizations backslide into old bad habits. Eternal vigilance is the price of success. This is the purpose behind The Standish Group's Project Service Advisory (PSA).

The single most important advancement to improve project success rates is the increase in competency of the executive sponsor. In our opinion, the executive sponsor is the owner of the project. As owner of the project, this person has the full weight and responsibility for the success or failure of the project squarely on his or her shoulders. The role of an executive sponsor is not so much chief executive officer, but more "chief enabling officer." As chief enabling officer, the executive sponsor's job is to make sure he or she provides the support, resources, and guidance to allow the project team to be successful. This is the reason for our Executive Sponsor Appraisal (ESA).

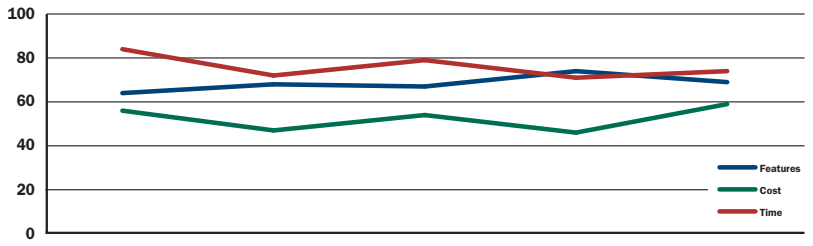
RESOLUTION

	2004	2006	2008	2010	2012
Successful	29%	35%	32%	37%	39%
Failed	18%	19%	24%	21%	18%
Challenged	53%	46%	44%	42%	43%

Project resolution results from CHAOS research for years 2004 to 2012.

OVERRUNS AND FEATURES

Time and cost overruns, plus percentage of features delivered from CHAOS research for the years 2004 to 2012.



	2004	2006	2008	2010	2012
TIME	84%	72%	79%	71%	74%
COST	56%	47%	54%	46%	59%
FEATURES	64%	68%	67%	74%	69%

Determining the relationship of project overruns to features delivered is an analytical process. An analyst reviews each challenged project. This year's figures show a slight increase in both cost and time overruns. Cost overruns increased from 56% in 2004 to 59% in 2012. Time overruns also have gone up, from 71% in 2010 to 74% in 2012. The high point in time overruns was 2004 (84%). Features and functions developed went down, with 74% of specified requirements completed in 2010, dropping to 69% in 2012. We think this could be a good sign as organizations spend more time focusing on high-value requirements versus completing 100% of the requirements.

Our analysis suggests that 20% of features are used often and 50% of features are hardly ever or never used. The gray area is about 30%, where features and functions get used sometimes or infrequently. The task of requirements gathering, selecting, and implementing is the most difficult in developing custom applications. In summary, there is no doubt that focusing on the 20% of the features that give you 80% of the value will maximize the investment in software development and improve overall user satisfaction. After all, there is never enough time or money to do everything. The natural expectation is for executives and stakeholders to want it all and want it all now. Therefore, reducing scope and not doing 100% of the features and functions is not only a valid strategy, but a prudent one.

Very few large projects perform well to the project management triple constraints of cost, time, and scope. In contrast to small projects, which have more than a 70% chance of success, a large project has virtually no chance of coming in on time, on budget, and within scope, which is The Standish Group definition of a successful project. Large projects have twice the chance of being late, over budget, and missing critical features than their smaller project counterparts. A large project is more than 10 times more likely to fail outright, meaning it will be cancelled or will not be used because it outlived its useful life prior to implementation.

It is very clear that reducing scope and breaking up large projects are difficult tasks. However, the rewards and benefits are quickly evident when the organization starts to receive value early in the project cycle. We, the writers, also have come to believe that there is no need for large projects, and that any IT project can be broken into a series of small projects that could also be done in parallel if necessary. One should not confuse breaking down projects into milestones, phases, critical paths, and activities as small projects. Delivery of concrete and usable results demarks a successful completed project. Small projects deliver a valuable result that is actually used to create a return on investment (ROI). This is the purpose for the Standish OptiMix Solution and Clinic.

FACTORS OF SUCCESS FOR SMALL PROJECTS

The current 2013 Factors of Success in the CKC are unchanged from 2012. We have developed a special version of the Factors of Success for Small Projects using our new CHAOS database and analytic tools. The small project version of the Factors of Success also has executive sponsorship as the number one factor, but the prioritization of some of the other factors shifts.

Factors of Success	Points
Executive management support	20
User involvement	15
Optimization	15
Skilled resources	13
Project management expertise	12
Agile process	10
Clear business objectives	6
Emotional maturity	5
Execution	3
Tools and infrastructure	1

Executive Management Support: The most important person in the project is the executive sponsor. The executive sponsor is ultimately responsible for the success and failure of the project. We give executive sponsorship 20 small project success points.

User Involvement: CHAOS research clearly shows that projects that lack user involvement perform poorly. User participation has a major effect on project resolution large or small; in fact, we give it 15% of our small project success points.

Optimization: Is in the third spot for small projects. If we defined optimization as a project with a small labor content and fast delivery, it could be number one. Size and complexity trump all other factors. Optimization gets 15 small project success points.

Skilled Resources: In the fourth position and with 13 small project success points, it may seem that skilled resources gets no respect, but that is not true. A project is made up of people, and success is on their shoulders. This is especially true for small projects.

Project Management Expertise: We might also call it process management expertise. In any case, it is essential to controlling the progression of small projects and the collaboration of the stakeholders and team members. Project management expertise accounts for 12 small project success points out of 100.

Agile Process: Embodies the small project philosophy. The agile process directly addresses user involvement, executive support, and the other success factors. We give the agile process 10 small project success points.

Clear Business Objectives: A less important ingredient for small projects than larger projects. Still, the small project should have a business objective, though it might be less clear. Even so, all projects should align the organization's goals and strategy, which is why it has 6 of the small project success points.

Emotional Maturity: Covers the emotional state of the project environment. Projects get resolved within the ecosystem; a healthy ecosystem produces more successful projects. Emotional maturity accounts for 5 small project success points.

Execution: Is the process that governs and controls the project. Much of this factor focuses on financial controls and procedures. We give execution 3 small project success points.

Tools and Infrastructure: They can help a project succeed, but like any tool they can also hurt. Organizations must be extremely careful not to rely too much on tools for a project's success. We give this factor only 1 small project success point.

The first five success factors focus on the execution of small project skills, and provide the greatest benefit for success. The first three success factors account for 50% of the points while all five account for three-quarters of the points. The last five success factors help, but provide the least benefit for success, with a total of 25 points out of 100. The Standish Group further breaks down the success factors into points and assigns fractions of the scores to each of these points. The main body of this report outlines the CHAOS 100 Best Practices for Small Projects or what we call Success Points for Small Projects.

THINK BIG, ACT SMALL

The New York City Automated Payroll (NYCAP) System started in 1999 and was declared completed in 2011. The budget and original estimate was $66 million. When the project was declared completed, the total cost was an astounding $360-plus million, or 5.5 times the original budget. The NYCAP project was one of many large troubled projects in the New York City government around this time. Another project was the CityTime project, which had a budget of $63 million over five years, but ultimately cost $700 million over 10 years. In reaction to these projects' challenges, the NYC Council passed an ordinance that any IT project that exceeded the budget by more than 10% must report to the City Council.

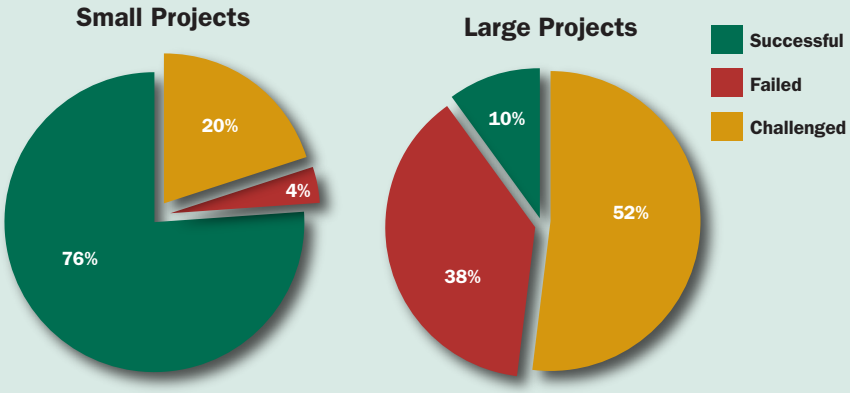
While there were many reasons why these NYC projects failed to perform as planned, oversight was not one of them. However, the NYC Council's reaction to these project management failures was typical, predictable, and disappointing. It was disappointing because adding more layers of bureaucracy on top of an overbloated process will make future projects more complicated, more expensive, and more challenging. The Standish Group has categorically stated with much conviction—backed by intense research—that the secret to project success is to strongly recommend and enforce limits on size and complexity. These two factors trump all others factors. Considering size and complexity as the major success factors has led us to some very interesting conclusions and challenges.

It is critical to break down large projects into a sequence of smaller ones, prioritized on direct business value, and install stable, full-time, cross-functional teams that execute these projects following a disciplined agile and optimization approach. Organizations that have adopted this approach have seen major project improvement and their project investments have increased. More and more companies are recognizing that a small project optimization solution is highly effective. The quick solution is to just say no to large projects, but the more sensible answer is to adopt a small project strategy. Many companies routinely deliver software at half the cost and less than half the defects with this strategy.

Projects too often get too big to succeed. CIOs and information technology executives are constantly being called on to do more for less. The real key to success is doing less for less. The key to doing less for less is splitting large projects into a sequence of small ones by using optimization; the Standish OptiMix is an example of an optimization tool. Optimization can save your company, your project, your budget, and your job. Throughout the **CHAOS Manifesto 2013** we will attempt to show you how you can optimize your projects successfully.

CHAOS RESOLUTION BY LARGE AND SMALL PROJECTS

Project resolution for the calendar year 2012 in the new CHAOS database. Small projects are defined as projects with less than $1 million in labor content and large projects are considered projects with more than $10 million in labor content.



SUCCESS FACTOR ONE: EXECUTIVE MANAGEMENT SUPPORT

All projects need to have a committed executive sponsor or product owner who supports the project and takes responsibility for the outcome. Lesson One in the CHAOS Knowledge Center (CKC) outlines the skills and the responsibilities of the executive sponsor. Executive management support is also the first Factor of Success for Small Projects. Our Executive Sponsor Appraisal tests these skills. Small projects allow a new or inexperienced executive sponsor to gain expertise while not burdening his or her main job function. Here, the CHAOS 10 Success Points for Executive Support are modified for small projects.

The nice thing about small projects is they don't require high-powered executive sponsors—they should be reserved for transformational and large projects. Small projects need a skilled and engaged executive, but the executive could be a midlevel manager—or in the case of agile, a product owner—who is enthusiastic about the success of the small project. However, if a high-powered executive sponsor adopts a small project as his or her pet project, all the more power to the team.

In addition to not needing a high-powered executive sponsor, the executive sponsor does not require a detailed project plan because the tasks and schedules are fairly straightforward and well known. There is little need for critical path analysis since there is generally only one or two paths. A basic statement of work coupled with a concise problem, goal, and vision statement should suffice as the project plan. There should be a concise progress board and a weekly memo that the executive sponsor reviews.

With small projects, negotiation should be kept to a minimum. Standard contracts, or better yet just memos of understanding, should be used to get the project going. You do not want to spend more time and money on negotiating the project than ***doing*** the project. Detailed business plans are really unnecessary for small projects. A one- to two-page vision statement with the values of the project is all that should be required to fund, approve, or reject a small project.

Kill switches are always recommended to prevent runaway projects. Small projects often have a natural kill switch, which is the end of the funding. For many small projects, a single kill switch might be appropriate.

SKILL LEVEL OF THE EXECUTIVE SPONSOR

	Highly Skilled	Skilled	Moderately Skilled	Poorly Skilled
In understanding what inspires the project team	11%	62%	18%	9%
In celebrating large and small accomplishments	9%	47%	27%	16%
In recognizing team member contribution – big and small	8%	59%	17%	16%
In rewarding someone of outstanding effort	12%	59%	8%	21%
In giving a celebration party	6%	44%	27%	22%

Respondents were asked to rate their IT management's skill in influencing and educating the project executive sponsors on the listed skills.

10 CHAOS SUCCESS POINTS FOR EXECUTIVE MANAGEMENT SUPPORT FOR SMALL PROJECTS

Point 1: Simple Vision

With small projects, the vision may be part of a large program, and therefore the simple vision should be communicated in the context of how the small project fits into the large program. The executive sponsor will then need to work on building a consensus among the stakeholders and tying their understanding of the small project back to the vision statement of the larger program.

Point 2: Commitment

It is always hard to get commitments and time from executives. Small projects provide for a reduced commitment of time and effort. Small projects also have more defined objectives that the executive sponsor can champion. Further, it is easier for the executive sponsor to pave the way for success by recruiting other supporters and neutralizing distracters because of the reduced visibility of the smaller project.

Point 3: Blink

The larger the project, the more decisions that have to be made. The Standish Group rule of thumb is 1.5 decisions for every $1,000 in labor cost. A million-dollar project will have 1,500 decisions, while a $10 million project will have 15,000. The executive sponsor will be required to participate in about 20% of these decisions. The difference is 300 decisions versus 3,000 decisions.

Point 4: Velocity

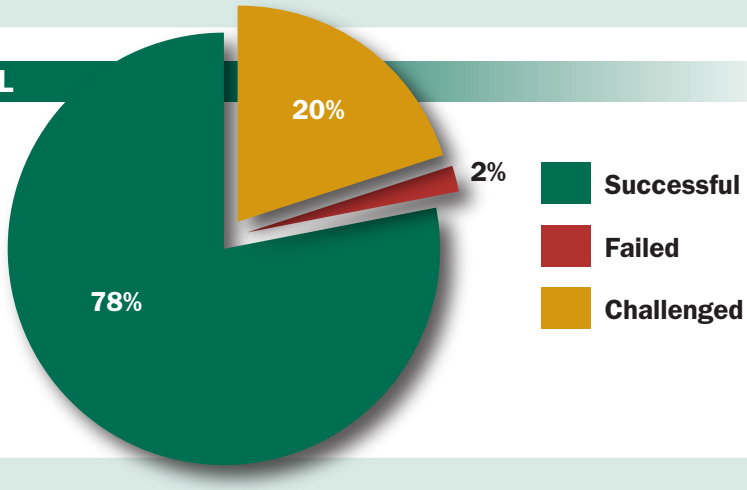
A steppingstone activity allows for tangible inspection either visually or hands-on. The steppingstone method is the key factor in creating and maintaining decision velocity. Executive sponsors who can see both progress and output help the team make the other 80% of the decisions in a more concrete and rapid fashion.

Point 5: Education

Our research clearly shows that projects where the executive sponsor has a fair to poor understanding of the project management process fall into both the challenged and failed categories. Those projects with executive sponsors who have a high to moderate understanding do much better. Small projects provide the organization with the ability to reduce processes and governance, thus improving the executive sponsor understanding.

RESOLUTION BY GOAL

The chart shows the resolution of small projects with goals that match the corporate strategy.



SKILL LEVEL OF THE EXECUTIVE

	Very Important	Important	Somewhat Important	Not Important
General skills	1%	46%	34%	19%
Time commitment	14%	47%	28%	11%
Vision and inspiration	17%	48%	19%	16%
Decision-making	40%	41%	9%	10%
Motivation	19%	56%	14%	11%

CIOs were asked to rate the importance of capturing postmortem information on the executive sponsor's skills.

Point 6: Measurements

Executive sponsors need an easy and visual way to measure progress. Successful project completion is contingent upon reaching specified goals. The closer the goal, the easier it is to reach. In football the goalposts are 100 yards apart. All the players and fans can see the goalposts and note how progress is measured. Small projects have similar attributes.

Point 7: Negotiate

The scope defines the boundaries of the project, such as the business functions and organizations impacted, as well as the constraints, such as deadlines, budget ceilings, and other assumptions. Negotiation between team members, stakeholders, and the executive sponsor on scope is a major part of all projects. It takes a skilled executive sponsor to negotiate scope for small projects.

Point 8: The Plan

The smaller the project, the smaller the plan and the easier it is for the executive sponsor to absorb. The executive plan should include an overview of the solution as well as list all the major parts. Each part should be written using precise words that express the true meaning of the solution. It should have diagrams or pictures illustrating how the parts fit together. The expected cost, ROI, and time to successful completion should be included as part of the solution summary.

Point 9: Kill Switch

The purpose of a kill switch is to prevent death-march projects, which are all too common. With a death-march project, no one, including the executive sponsor, has the courage to stop it. Small projects have a built-in kill switch, and because they are small the impact of stopping them is much less to the organization. Like all projects, small projects need to have business triggers, technical triggers, and investment triggers.

Point 10: Celebrate

It's important to celebrate success. The executive sponsor should cultivate an atmosphere of accomplishment and focus on execution. Celebration allows the executive sponsor to reward accomplishment and behavior that will advance the progress of the project. When a goal is reached it is a good time to praise accomplishments. Small projects give the executive sponsor more opportunities to celebrate.

EXECUTIVE SPONSOR APPRAISAL

In 2012, we launched a new research center dedicated to the advancement and understanding of the role of the executive sponsor within IT projects. This center will provide focus on this particular subject. Our first item for this new center is the **Executive Sponsor Appraisal.** The ESA measures and reports on 50 skills over 15 different proficiencies. The major parts of the Executive Sponsor Appraisal are database, question delivery and display, analyst engine, and reporting.

Database: Questions and appraisals. Questions consist of the habit or skill name, narrative of the skill, and the question itself, plus the value score, difficulty score, and influence score. There are currently 50 entries in the question table. Standish advisors update the question table as needed.

Question Delivery and Display: A process that helps guide the respondent while guarding against biased answers. Once a participant or participants sign on to the appraisal, a questionnaire is dynamically and randomly generated. The questions are displayed one at a time with the title, narrative, and question. The person then selects their skill level from very skilled to poorly skilled.

Analyst Engine: Takes the appraisal data and measures it both in terms of raw scores and benchmarks. The Standish Group created 15 measurements, including agility and flexibility, change management, communication astuteness, and resolution promptness. Each of the 50 questions is mapped against these measurements both for skill level and benchmark.

Report: Has four parts. The first page header has the name of participant, date of the appraisal, overall rank such as above or below average, and overall skill level. The second part of the first page is a table with 15 measurements, each with the skill level and benchmark rank. The second page lists the three most important skills with the narrative to increase the executive sponsor's score. The third page lists the three easiest skills with the narrative to increase the executive sponsor's score. The fourth page lists the three skills with the narrative that IT can use to help increase the executive sponsor's score.

ESA REPORT EXAMPLE

This is an excerpt from an Executive Sponsor Appraisal report.

Measurements	Skill Level	Benchmark
Agility and flexibility	Moderately skilled	Below average
Change management	Moderately skilled	Above average
Clear business objectives	Moderately skilled	Average
Communication astuteness	Skilled	Top 20%
Emotional maturity	Poorly skilled	Bottom 20%
Governance	Moderately skilled	Average
Leverage resources	Skilled	Above average
Making decisions	Moderately skilled	Above average
Measurement insight	Skilled	Above average
Process insight	Highly skilled	Top 20%
Resolution promptness	Moderately skilled	Average
Resource insight	Highly skilled	Top 20%
Stakeholder motivation	Moderately skilled	Average
Team motivation	Poorly skilled	Below average
Value insight	Poorly skilled	Bottom 20%
Overall	**Moderately skilled**	**Average**

Projects are performed to build products and solutions for people to use. We call these people our users. Lesson Two in the CHAOS Knowledge Center outlines the skills and the responsibilities of the users and project team as they cooperate to build a new product or solution. Small projects allow a less strict or burdensome approach in dealing with users and users groups, as outlined in the CKC. Here, the CHAOS 10 Success Points for User Involvement are modified for small projects.

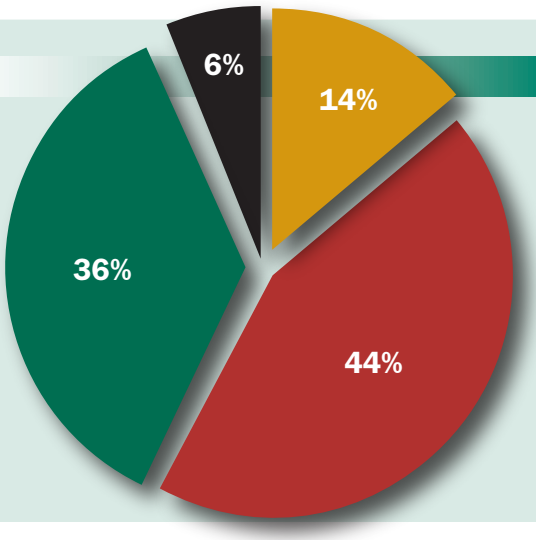
Have you identified the users of the project and established the value of the project output for them? Lesson Two outlines the general best practices of dealing with users. Focusing on the real user needs is one of the most important factors in the overall success of a project. With some small projects, such as a white paper or video, the executive sponsor could also be the primary user. Part of the vision and problem statement should provide assurance that the project team understands the users' needs.

Evangelists are real luxuries for small projects. That does not mean you do not want people to talk well of the project, but it adds another burden to recruit and train people to act as salespeople for the project. However, more research in what the users' real needs are might be required to reduce the scope of the project to make sure it fits into the labor cost target.

A project team that is tuned into the users' needs and can understand their real problems has a major positive effect on a successful outcome. However, our research indicates that as a group, project managers have only moderate skills to manage users and their expectations. Small projects overcome this lack of skills because they have a short duration with concrete outcomes.

Executive sponsors also lack the skills to understand the users and encourage their participation. Small projects help the executive sponsor improve his or her understanding of users' needs and encourage their participation. One of the biggest weaknesses of the project team is failure to create and maintain a platform for clear communications. Small projects reduce the scope of the communications, thus improving communications. In general, small projects are good for user involvement.

TRADE-OFFS



IT executives were asked to rate the difficulty of their IT project workforce in mastering the project management skill of working with users on features and functions trade-offs.

10 CHAOS SUCCESS POINTS FOR USER INVOLVEMENT IN SMALL PROJECTS

Point 1: Identification

Small projects make it easier to find and coordinate subject matter experts since the scope is much narrower. The larger the project, the broader and more critical is the requirement for subject matter expertise. Often users from different departments and internal organizations will disagree or have conflicting agendas. The best users to be involved in a small project are those who are knowledgeable about their areas, and the smaller the area the more knowledgeable the users will be.

Point 2: Rapport

It is easier to establish a quality user relationship with a small project team. A quality relationship begins with creating a cooperative environment with mutually agreeable ground rules for effective teamwork. Some agile methods, such as Extreme Programming (XP), have users embedded into the team to improve cooperation. This cooperation builds a rapport with the rest of the team members and provides for mutual empathy. Empathy is the bedrock of rapport.

Point 3: Soapbox

Having a common communication platform increases decision speed. Speed is the time between issues and resolutions, or what we call decision latency. Decision latency for small projects is vastly different than for larger projects. For example, with XP users are embedded into the development process, which is a key ingredient for success. What makes this technique so powerful is that the communication line between the developers and the users is very short; it is a direct link.

Point 4: Outcomes

The natural product of small projects is that outcomes are delivered sooner rather than later. In addition, within small projects you can have steppingstones. Steppingstones are small but significant deliverables. They provide tangible inspection and allow the user to see progress, which makes them more likely to provide the effort and time to make it to the next steppingstone.

IDENTIFICATION OF THE USER

IT executives were asked to rate and rank the difficulty of their IT project workforce in mastering the project management skill of identification of the user.

	Very Difficult	Difficult	Somewhat Difficult	Not Difficult	Rank
Proper user identification	5%	22%	37%	36%	2.9
Recognizing user subject matter expertise	15%	21%	42%	22%	2.9
Recognizing the user's desire for project participation	15%	11%	58%	16%	2.3
Recognizing the user's availability for project participation	11%	25%	29%	35%	2.0

POSTMORTEM USER INVOLVEMENT

	Highly Important	Important	Somewhat Important	Not Important
General participation	23%	49%	18%	10%
Communications	28%	51%	9%	12%
Feedback and input	42%	49%	2%	7%
Consensus building	10%	41%	31%	18%
Rapport	7%	41%	47%	5%

IT executives were asked to rate the importance of capturing postmortem information on user involvement.

Point 5: Schooling

Schooling is the teaching, learning, and transfer of information to and from the project team and to and from the users. It is a two-way highway. The reason small projects have greater success is because the road is shorter with fewer exit ramps. Generally, in small projects there are fewer things to transfer to fewer people, yet it allows for greater creativity and breakthrough solutions.

Point 6: Consensus

Small projects do require lots of trade-offs since the scope is narrower. Therefore, there has to be a consensus on the 20% of the features and functions that provide the greatest value. Our OptiMix solution was designed for this very event. OptiMix helps select features and functions based on cost, risk, value, goal, and capability.

Point 7: Evangelist

Transformational projects that have users or user groups who zealously evangelize and disseminate the project's value throughout the organization score better in Standish research project evaluations than those that do not. In essence, evangelism, a form of marketing, is a very intense style of communication. However, you can get away with not having an evangelist for small projects.

Point 8: Primary Research

Small projects may require more primary research, not less, since you want to make sure you focus on the high-value items. This is especially true if the users of the products are large and diversified. In primary research, the study should include both qualitative and quantitative elements. Interviews give you a qualitative view and surveys provide a quantitative view.

Point 9: Respect

It is easier to keep your promises with small projects. Keeping your promises shows respect for how you value the stakeholders' opinion of you. Keeping promises establishes your integrity and trust. If your stakeholders trust you to do what you say you will do, then they are more likely to follow your advice.

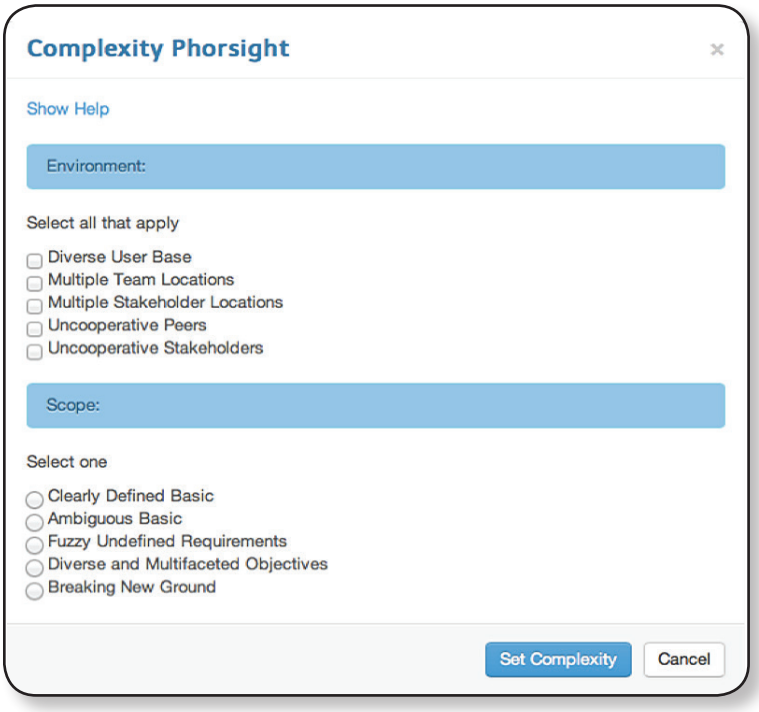
Point 10: Tuned In

Empathy is the ability to understand stakeholders' emotions and feelings. Small projects offer the project team greater ability to gain empathy. Project teams that can not only walk in the users' shoes, but also feel the ground beneath their feet will be tuned in.

PHORSIGHT

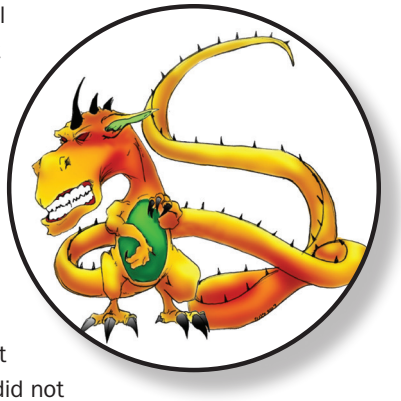
In the November 2012 DARTS (Demand Assessment Requirements Tracking Survey), we asked 300 CIOs, "What does complexity mean for you in a project context?" Sixty-three percent said it means how complicated the project is, while another 31% said it means the level of uncertainty for the project to succeed. Two-thirds of the organizations said they develop appraisals for at least a few of their projects. However, complexity, like beauty, is in the eye of the beholder. In our size-complexity matrix, we provide some guidance on how to measure complexity over a five-segment range, from very complex to very easy.

The OptiMix tool uses the same range for the complexity constraint column, from very complex to very easy. In the drop-down window the user selects the appropriate value label for the project or function. A new feature for the OptiMix is a function we call "Phorsight." Much like an eye doctor will use a phoropter, Phorsight is the process of seeing the project or requirement through different lenses. The OptiMix user answers the 10 Phorsight questions, and then the OptiMix solution provides the value label. For example, one of the questions asks if the project is breaking new ground. Another question asks if there is a diverse set of user objectives.



Phorsight is also used for the value, goal, and capability constraints. In the value constraints are cost savings and revenue enhancements. The goal constraint asks the same questions two different ways. One set of questions asks the user to rate the projects. The other set asks the user to rank the projects. Questions include, Does the project match the corporate business plan? The capability constraint looks at skills and experiences with questions such as, Is there a high use of standard products and tools? and How many years of experience in use of the tools? The user can always override the value Phorsight inserts into a column by selecting a value from the drop-down box.

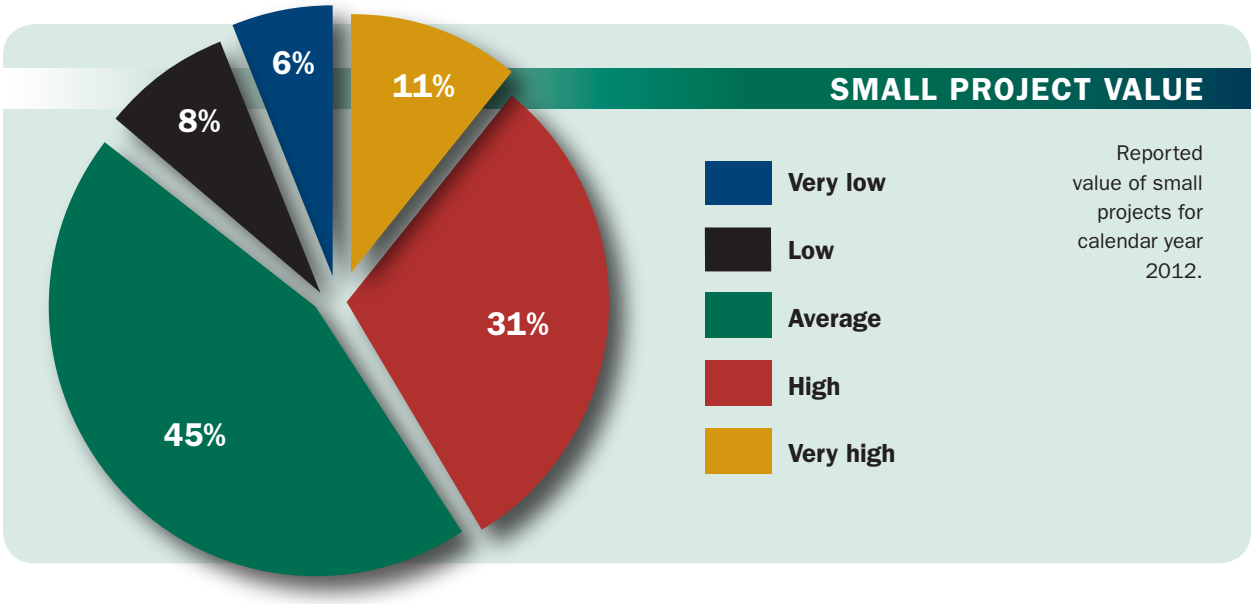
The four constraints used by Phorsight to guide the users are subjective principles. While much time and money is spent on developing internal ROI scenarios or the value constraint, they are very often wrong. Therefore, it is frequently a waste of time and money to develop ROIs for a given project. Instead, we suggest you use Phorsight as your primary method. With this constraint, The Standish Group has developed standard value over the range. These ranges are used to calculate the ROI on the set of projects within a case. The complexity constraint calculates the dollars at risk for a set of projects within a case. Behind the complexity constraint we have developed risk algorithms that were derived from the CHAOS database.



The essence of small projects is small scope. The Standish Group defines a small project as one that has a total labor cost of less than $1 million. We do not count equipment or software in the size calculation of the project. The European Union defines a small project as having a total cost of 250,000 euros. This seems to be a reasonable size range. How you define small projects will define the makeup of your portfolio. Lesson Five in the CHAOS Knowledge Center outlines the skills and the responsibilities of optimizing scope. Here, the CHAOS 10 Success Points for Optimizing Scope are modified for small projects.

Size does make a difference and small projects have a high success rate. We looked underneath our raw numbers to identify organizations with both the highest success rate and value creation. We examined both what they did and what they did not do. Many of the organizations that enjoyed the greatest value from their projects used an agile approach. We also believe that most projects can be broken down into small projects, since 20% of features and functions provide 80% of the value. Therefore, increasing the use of small projects will increase the overall value of your organization's portfolio while decreasing overall cost, overhead, and frustration.

Detailed risk analysis and risk register are unneeded burdens for small projects. Small projects by themselves are risky, but this is because they generally are focused on accomplishing something new and unknown. Therefore, it is difficult to assess risk other than the general obvious risk of personnel and task issues. There should be a clear and optimized scope of the project. Lesson Five in the CKC provides a framework for optimizing scope. The online form should be able to be used to total the deliverables and services to be provided from the small project. A statement of project scope includes a list of deliverables. All time and cost estimates are based on the scope of the project.



10 CHAOS SUCCESS POINTS FOR OPTIMIZING SCOPE FOR SMALL PROJECTS

Point 1: Scope

Scope defines a small project. The key to managing scope and keeping it small is to create a priority process. Have a benefit statement for each feature and function, including cost, ROI, and risk. Each feature and function should be given a priority based against the other features and functions. However, keep in mind that managing scope is a never-ending task.

Point 2: Accurate Estimates

Creating accurate estimates for a project is difficult, but easier for small projects. One of the major benefits of small projects is collecting a historical database. This database provides two important tools: role models and rapid feedback. Profiling the current project against other past projects to isolate costs is tricky and difficult at best, but this approach is much better than many of the alternatives.

Point 3: Optimal Team

Think SEAL Team Six. S is for specialized for the project at hand. E is for exceptional. Since you only have six people make them the best. A is for assortment. Make sure the team has a diversity of experiences that fit the project. L is for love. The team should love what they do and be excited about the projects that they get assigned. The optimal team size is six.

Point 4: Expectations

It is much easier to set and manage expectations for small projects since the scope is kept to a minimum. Expectations in a project context might be the cost, time, or quality of an outcome. Expectations may include certain features promised or tasks completed. Disappointment is the negative difference between an expectation and reality. Satisfaction is the positive difference between an expectation and reality.

CONTAINING PROJECT SCOPE

IT executives were asked to rate and rank the difficulty of their IT project workforce in mastering the project management skill of containing project scope.

	Very Difficult	Difficult	Somewhat Difficult	Not Difficult	Rank
Containing project scope in general	19%	53%	27%	1%	2.8
Containing scope through top-down design	14%	35%	42%	9%	2.5
Containing scope through delivering in chewable chunks	21%	22%	36%	21%	2.5
Containing scope by measuring feature-function benefits	21%	20%	56%	3%	2.2

	Very Important	Important	Somewhat Important	Not Important
General estimates	12%	55%	23%	10%
Team size	11%	16%	56%	17%
Expectations	43%	39%	8%	10%
Risk mitigation	43%	31%	16%	10%
Feature prioritization	41%	33%	13%	13%

IT executives were asked to rate the importance of capturing postmortem information in dealing with scope management.

Point 5: Butterfly Effect

Small projects make a big impact. The reason they make a big impact is because they get completed, implemented, and used. Small projects also pave the way for more small projects that get implemented and used. They create an environment of success that breeds more success. However, the challenge is to make sure that the organization does not get overconfident and move away from small projects to take on larger projects.

Point 6: Continuous Delivery

Small projects promote the continuous delivery of functionality. The nice thing is that when new functionality arrives in small doses the users do not need to learn a lot of new features at one time. The big advantage of this approach versus doing releases is you will know right where the problem lies and you should be able to improve the overall quality.

Point 7: Goal Focus

Small projects let you focus on a goal and not multiple goals that often trouble large projects. In the OptiMix solution we use a five-point system to rank and rate functions and features against the goal of the small project. We use a balance feature to measure each of the features and functions against one another. This allows you to focus on the high-value features and functions within the scope that are close to meeting the goal.

Point 8: Mitigating Risk

Each major feature and function within the scope of a small project should be rated, ranked, and balanced for risk. In the OptiMix we use a five-point system to rank and rate features for risk. We use a balance feature to measure each of the features and functions against one another. This allows to you to focus on the high-value features and functions within the small scope that have the least risk.

Point 9: Yield

Each major feature and function within the scope of a small project should be rated, ranked, and balanced for value. In the OptiMix we use a five-point system to rank and rate features for value. We use a balance feature to measure each of the features and functions against one another. This allows you to focus on the features and functions within the small scope that have the highest value.

Point 10: Panda Bears

The reason the logo for OptiMix is a panda bear is because panda bears, in the context of project management, represent requirements that have both a high risk and a high yield. We have extended this to include goal and capability. Each major feature and function within the scope of a small project should be rated, ranked, and balanced for value, risk, goal, and capability. The true optimization feature of OptiMix allows you to optimize for these four constraints together.

Optimization Results Charts

Cost	4,130
Gain	1,806
Risk	908
Payback Period (Years)	2.3

Items to Do

(total: 7)

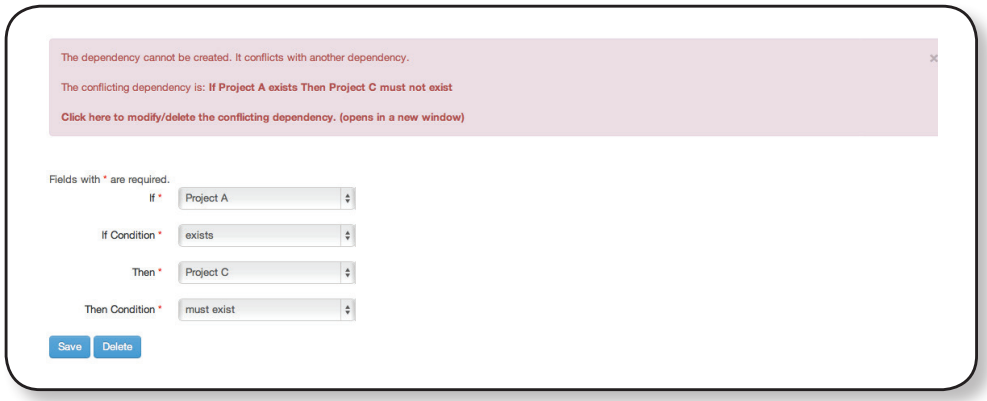
Item Name	Value	Complexity	Status	Goal	Capability	Cost (000)	Labor Cost %
Project C	Very High	Average Complexity	Not Mandatory	Close	Competent	500	100
Project B	Average	Average Complexity	Not Mandatory	Distant	Competent	900	100
Project I	Average	Very Easy	Not Mandatory	Loose	Unskillful	880	100
Project H	High	Complex	Not Mandatory	Loose	Talented	550	100
Project J	Average	Very Complex	Not Mandatory	Loose	Gifted	700	100
Project D	High	Average Complexity	Not Mandatory	Close	Competent	250	100
Project E	Low	Easy	Not Mandatory	Vague	Able	350	100

Items to Not Do

(total: 3)

Item Name	Value	Complexity	Status	Goal	Capability	Cost (000)	Labor Cost %
Project G	Low	Complex	Not Mandatory	Loose	Talented	250	100
Project A	High	Average Complexity	Not Mandatory	Precise	Competent	1000	100
Project F	Very Low	Easy	Not Mandatory	Vague	Able	750	100

This graphic above is the output of a project case with 10 requirements (features and functions) and a budget of $1 million The project case was optimized for maximum gain with calculated risk The cost of all features and functions is more than $2 million. The graphic below shows what happens when you have a conflicting dependence.

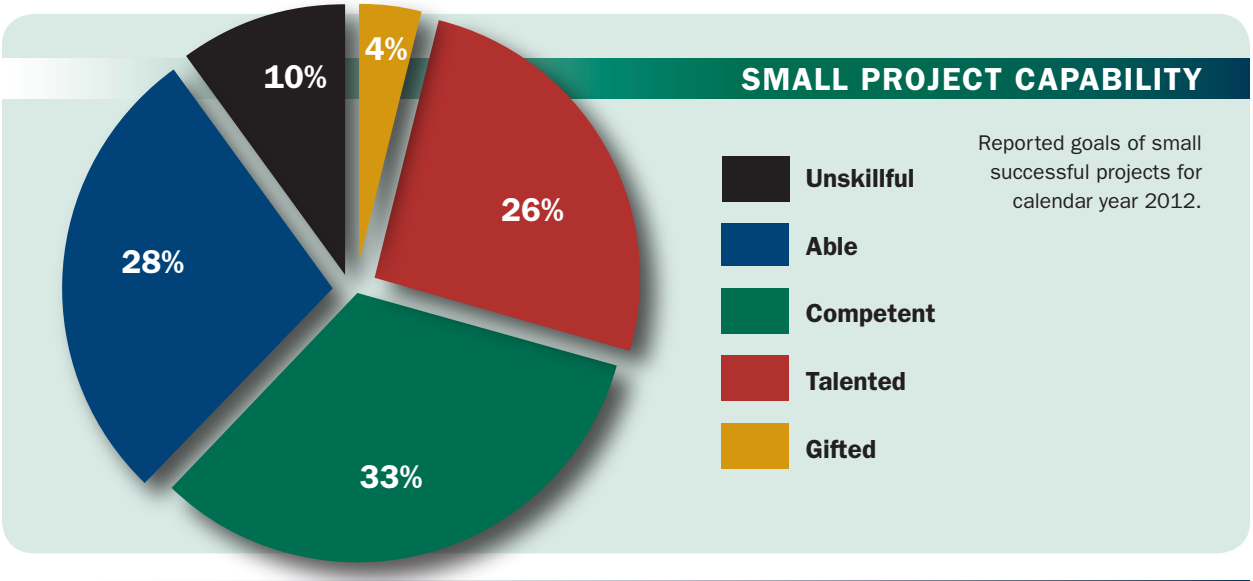


Having skilled resources for a project means having the right people doing the right things at the right time. Factor Four in this manifesto examines the need to have a skilled project team and the capability to deploy these resources for small projects. Lesson Eight in the CHAOS Knowledge Center outlines and explains the needed skills and the responsibilities for assembling skilled resources. Here, the CHAOS 10 Success Points of Skilled Resources are modified for small projects.

Competency is the quality of being adequately or well qualified to perform the tasks and assignments dictated by the project requirements. Capability is having the right level of skills necessary to perform the work to complete the project activities within the specified times and schedules. It is also the ability to demonstrate these qualifications to provide confidence in the other project participants. While using personnel of average proficiency is normal, organizations are sometimes reluctant to pay a premium for a highly proficient resource. Having a highly proficient resource philosophy can return large benefits. Getting senior management's commitment to the project by arranging the appropriate and highly proficient resources is one of the more important roles of a project manager and the team.

The Standish Group has long recommended small teams. Therefore, having highly proficient members not only increases the chances of success, but leads to optimal costs. However, managers have to consider team diversity, being careful to avoid the superstar syndrome, which can lead to noncooperative behavior and destructive chemistry. If managers detect superstar syndrome they need to make appropriate changes quickly. If managed well, the team could be labeled "elite" and adopt a higher professional standard. This will lead to even greater proficiency. This will also make it attractive to become and stay part of the team.

The teams should also be wary of the mythical resource phenomenon, in which adding members to the team to increase production actually has the opposite effect, making the team less proficient. The best way to show management that its money will be well spent by using highly proficient resources is to ask for a proof of concept and show results early. A project with clear objectives, strongly committed stakeholders, a good project manager, and a good plan overlaid on proficient resources has a good chance of success.



10 CHAOS SUCCESS POINTS FOR SKILLED RESOURCES FOR SMALL PROJECTS

Point 1: Competency

It is essential for small projects that the team's skills match the project's requirements. To ensure a competent staff, the project or process master must understand the project. The project manager should know the range of activities to be undertaken in the project and be able to match skills with those activities. Certainly the project will need a variety of resources, possibly a project executive, an administrator, technical resources, and testers.

Point 2: Position

The experimental Project Execution Tool (PET) is a match tool we developed based on our experience with many of our stock exchange clients. The tool collects profiles of workers and small projects. PET then matches the two profiles against the highest priority small project and presents the results to the manager of the program or portfolio.

Point 3: Motivation

Small projects have built-in motivation. The greatest motivation of all time is the sense of accomplishment and belief that your efforts have meaning and value. Steppingstones provide a method to dole out incentives as the project progresses. A requirements document could be used as a roadmap for an incentive plan. Deliverables should be small enough to be attainable and used as markers to encourage the team to move the project along.

Point 4: Togetherness

In the XP process developers work in pairs. Often these pairs move around to help create and spread expertise and to generate a sense of a greater team. It is also healthy to periodically evaluate how well team members are working together. Communication is the key to success with any team, and team building requires the active participation and communication with every team member.

Point 5: Training

Ongoing staff training can benefit current projects and contribute to the pool of skills available for future projects. Staff development is a major issue for many IT executives and application development managers. Of particular concern is the training and competency in the never-ending flood of new technology and current technology upgrades. Training should meet several objectives; for example, the skills taught need to be utilized on current projects.

TEAM CAPABILITY

IT executives were asked to rate and rank the difficulty of their IT project workforce in mastering the project management skill of selecting competent and well-trained team members.

	Very Difficult	Difficult	Somewhat Difficult	Not Difficult	Rank
Building and maintaining a balanced team	6%	46%	48%	0%	2.9
Matching resource skills with demand skills	7%	40%	49%	4%	2.7
Structuring a mentoring program to increase confidence	12%	31%	48%	9%	2.4
Selecting competent and well-trained team members	8%	34%	52%	6%	2.0

POSTMORTEM SKILLED RESOURCES

	Very Important	Important	Somewhat Important	Not Important
General competency	22%	48%	16%	14%
Team chemistry	7%	49%	31%	13%
Training and education	22%	36%	36%	6%
Turnover and depth	12%	21%	47%	20%
Problem solving	41%	41%	8%	10%

IT executives were asked to rate the importance of capturing postmortem information on skilled resources.

Point 6: Mentoring

Small projects offer many opportunities for mentoring; for example, developers can be paired to work with team members on the project process. Good mentoring can improve project success rates. The role of the mentor encompasses friendly advisors, coaches, and teachers who are entrusted with the education and development of entire organizations. They possess advanced, or expert, knowledge in a particular field, and can expose organizations to new ideas and important trends in industry best practices.

Point 7: Chemistry

It is especially important to have good chemistry with small projects. Chemistry is hard to define, never mind manage. It is one of those things that you know when you have it, and it's painfully obvious when you do not have it. Building and maintaining team chemistry is an ongoing process, which should include participation from the team. Good chemistry starts with each member having a clear understanding of his or her roles and responsibilities.

Point 8: Toxic

A toxic person can be deadly for the productivity of a small team. The project team should not let the toxic problem worsen because it is unpleasant to talk about their concerns openly and candidly. If you have a toxic person on your team you must take action. There are only a few things you can do to alleviate the problem: Transfer the person to another team or job, confront the issue head-on, or change your attitude.

Point 9: Turnover

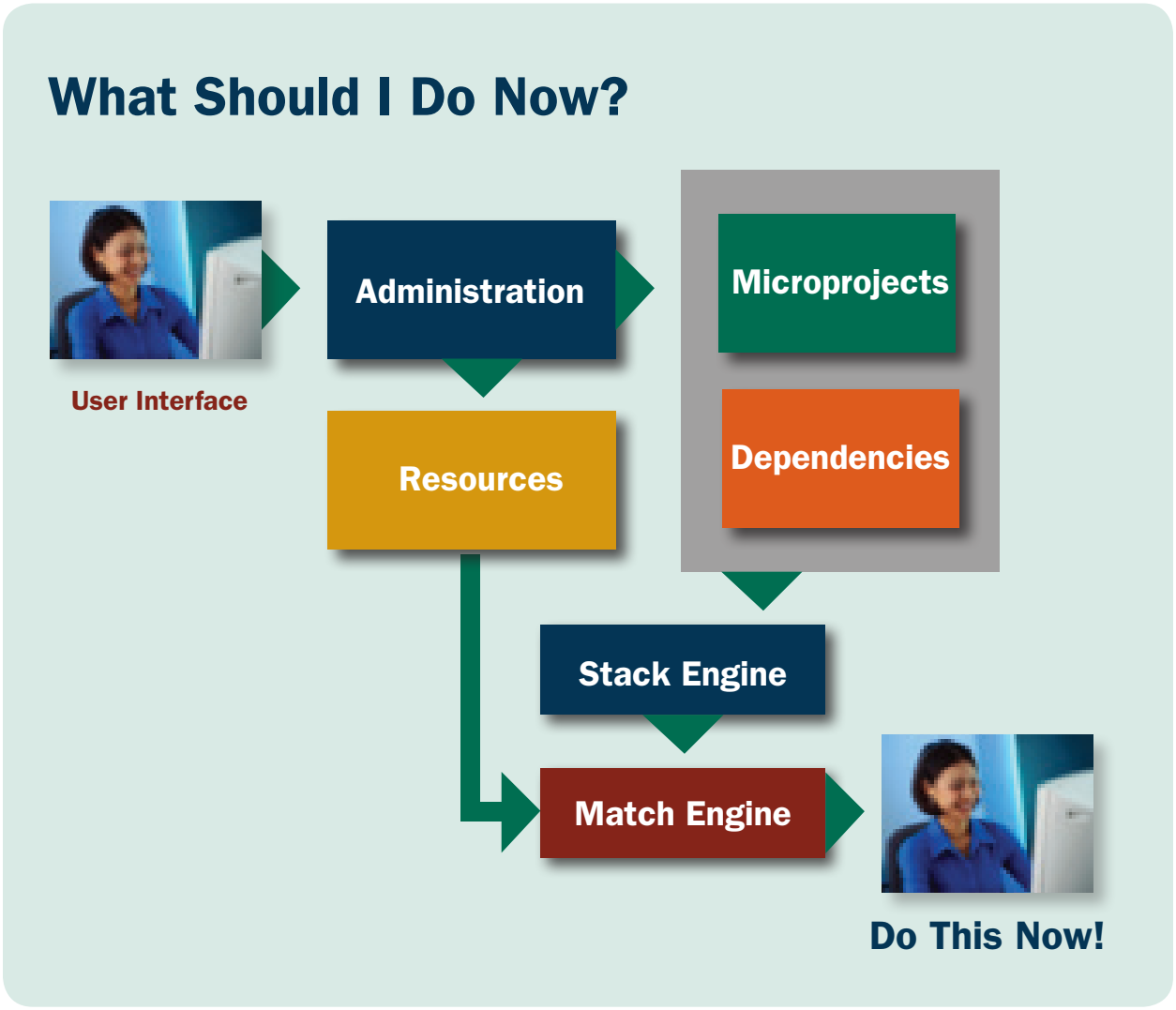
There is good news and bad news on turnover for small projects. Turnover can wreak havoc with a project. Loss of critical talent can delay the project for weeks or even months. However, with small projects it is easier to keep a team intact because of the short duration. The faster the project gets resolved, the less likely the team will turn over. Time is the enemy of all projects, and speed is your defense.

Point 10: Hot Groups

The United States special operations military unit known as SEAL Team Six carried out an operation code-named Operation Neptune Spear. SEAL Team Six flew their stealth helicopters undercover and landed just outside a Pakistan compound inhabited by Osama Bin Laden, the mastermind behind the World Trade Center attacks. This elite team killed Bin Laden and carried his body back to the U.S. Navy for confirmation.

MATCH ENGINE

You can optimize six different ways using OptiMix to create a work stack. These optimization techniques are: maximize value, minimize risk, maximize value with a calculated risk, goals, capabilities, and what we call “true.” The true method creates the work stack based on all the other five methods combined. The stack is arranged in the order of priority. In our experimental PET (project execution tool) project we added a match engine to Optimix. The match engine extends OptiMix by creating a resource database and then matching the best small projects with the best available resources.



Experience, seasoned, and talented project managers can handle multiple small projects. Therefore, handling lots of small projects is not a big burden for project managers. On the other hand, you might consider moving the project manager function *inside* small projects. This is our recommendation as part of an overall small project strategy. This recommendation comes straight from the agile process. With agile methodology it is more about mastering the process. In fact, with the agile methodologies a process master handles many of the program manager functions. For readability and consistency we are going to denote project managers and process masters as PMs.

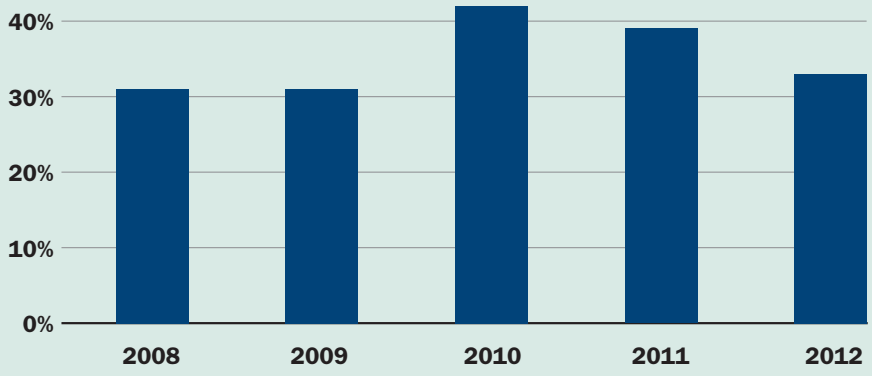
Lesson Seven in the CHAOS Knowledge Center outlines and explains the needed skills and the responsibilities of the PM. Here, the CHAOS 10 Success Points of PM Expertise are modified for small projects.

The real key to being a good PM is to take a complex process and make it simple and executable. Projects follow a natural progression. The PM's job is to administer this progression to a successful resolution. The Standish Group research clearly shows that projects that have the leadership and judgment of a talented PM and an organization that supports its PM will fare much better than those that do not have such capability and posture in place.

However, we have to caution you about going too far. Take, for example, centralized governments like the United States and the United Kingdom. Both have dismal project track records yet high levels of project management competency. The New England Puritans believed in moderation in everything, and that goes to the heart of the project management process. Having the ability to pass judgment on issues under consideration and reach a firm decision are vital project management skills. Throughout the course of a project there are hundreds of decision points. Bad choices can lead to increased time and expense or outright failure. On the other hand, good choices can bring a project in on time and within or under budget.

Projects need managers with good judgment and strong decision-making skills to succeed. Good judgment is an innate skill that can only be improved by education and experience. A project manager either has good judgment or does not. The Standish Group has a number of PM assessment and appraisal services to test the skills of a PM. One of these services is a PM Bonding appraisal that asks 25 questions. The outcome is a four-page report.

PMI CERTIFICATION



Shown is the percentage of organizations that require their project managers to have PMI certification or the equivalent.

10 CHAOS SUCCESS POINTS FOR PM EXPERTISE FOR SMALL PROJECTS

Point 1: Basic

The PM should have basic project or process management skills. In small projects the PM should be embedded into the team and be the keeper of the process. The PM should have other duties within the project in addition to keeping track of progress. Many of these key skills involve indispensable management proficiencies such as good judgment, diplomacy, and time management.

Point 2: Executive Bonds

Certainly the relationship between the PM and the executive sponsor is much different in agile techniques. Small projects could benefit from using these same techniques even if they do not use an agile process. The first thing the PM and the executive sponsor should do is to conduct an interview with each other. The purpose of the interview is to find out how compatible you are and to assess each other's skills, experience, and philosophy.

Point 3: Details

An effective PM knows how to organize and manage the details. This includes the basic mechanical skills of planning, tracking, and controlling. It also includes executing the plan, reviewing steppingstones and tasks, and managing requirements changes or functions to arrive at the final specified goal.

Point 4: Leadership

A good PM shows leadership by keeping the main goal in focus, and is able to think analytically. A good PM recognizes the potential of team members and leads the team on the project down to the detail level. He or she should lead upwards as well by advising management and stakeholders as to the risks, successes, and scope creep related to accepted changes in function.

Point 5: Connections

Even for small projects the PM must be able to establish and maintain connections. Connections are defined as the multiple favorable interactions that a PM must maintain in order to bring a project to a successful resolution. Viewed another way, connections are the stops on the journey that require communication. Such stakeholder communication allows you to continue on the journey to portray success in the face of constant change.

EXECUTIVE SPONSOR BONDING

IT executives were asked to rate the difficulty of their IT project workforce in mastering the project management skill of bonding with the executive sponsor.

	Very Difficult	Difficult	Somewhat Difficult	Not Difficult	Rank
Providing measurements to the executive sponsor	31%	15%	44%	10%	2.8
Generally connecting with the executive sponsor	9%	39%	23%	29%	2.5
Responding to executive sponsor issues	12%	24%	28%	36%	2.4
Communicating with the executive sponsor	6%	26%	36%	32%	2.3

POSTMORTEM PM EXPERTISE

	Very Important	Important	Somewhat Important	Not Important
General leadership	27%	49%	14%	10%
Executive bonding	14%	29%	39%	18%
Stakeholder connections	29%	41%	12%	18%
Progress tracking	35%	47%	8%	10%
Business understanding	27%	64%	7%	2%

IT executives were asked to rate the importance of capturing postmortem information on PM expertise.

Point 6: Ownership

The executive sponsor or product owner says what to do, but the PM owns the process of how to do it. It's especially important for small projects to foster the sense of pride and accomplishment that comes with ownership of a project. Ownership for the PM is taking the responsibility of making sure that all tasks are done, and done well.

Point 7: Bad News Bearers

Inside of small projects bad news travels fast, perhaps even faster than usual because of the size. One of the biggest reasons bad news is not accepted well is because it goes against what a person believes to be true. The later bad news is presented, the harder it is to overcome embellished and ingrained beliefs. Most people will not just discard what they believe to be true unless they have good reasons.

Point 8: Business Understanding

A good grasp of the business operations improves critical communication and translation among software designers, developers, users, and executive sponsors. A PM needs to be able to envision project components and how the parts incorporate into the business as a whole. The PM needs to have a view of the project resources, how those resources come together, and how to help the business.

Point 9: Judgment

Calvin Coolidge, 30th President of United States, enjoyed a habit of making good judgments throughout his life. Coolidge once said knowledge comes, but wisdom lingers. It may not be difficult to store up in the mind a vast quantity of information within a comparatively short time, but the ability to form judgments requires the severe discipline of hard work and the tempering heat of experience and maturity.

Point 10: Seasoned

Failure is the best teacher. A PM with previous failed and challenged projects could well be the best candidate for the next important project. Mistakes teach us a great deal if we can accept them as learning experiences. These experiences will help a PM learn how to control his or her resources and know what project details could be trouble if not corrected in time.

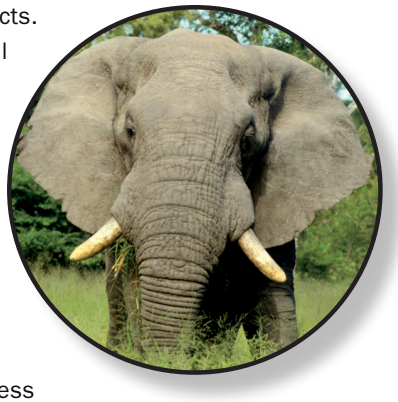
SINGLE PROJECT APPRAISAL REPORT EXAMPLE

PM expertise represents a total of 6 possible success points or possible score. The average of the projects in the CHAOS database matching your new payment system profile is 4.16. This is your benchmark or CHAOS score. The score for your PM expertise for the new payment system case came in above the average at 5.01 or IBEX score.

Our analysis suggests there is not a lot of room for improvement in this area, so the organization would not boost its chances of success by putting much effort into this skill for this project. PM expertise includes the basic project management skills as outlined in PMI's PMBOK. The ante for project management expertise is qualified PMPs. However, it goes beyond the skills of the PM to the organizational environment. The environment must recognize and give authority to the project manager's skill and expertise. Project managers must be able to manage down, across, and up throughout the life of the project.

Questions	Possible Score	CHAOS Score	IBEX Score
1. Rate the project manager's ability to execute PM techniques.	0.60	0.47	0.46
2. Rate the project manager's executive bonding skills.	0.60	0.42	0.49
3. Rate the project manager's skills in keeping track of details.	0.60	0.46	0.50
4. Rate the project manager's leadership skills.	0.60	0.43	0.48
5. Rate the project manager's ability in establishing and maintaining stakeholder connections.	0.60	0.42	0.54
6. Rate the project manager's skills in fostering the sense of ownership, pride, and accomplishment.	0.60	0.40	0.45
7. Rate the project team's skill in rapidly communicating and dealing with bad news.	0.60	0.34	0.57
8. Rate the project manager's ability to grasp basic business skills.	0.60	0.40	0.52
9. Rate the project manager's ability to pass judgment on issues under consideration and reach a firm decision.	0.60	0.42	0.49
10. Rate the project manager's experience.	0.60	0.40	0.51
Total	**6.00**	**4.16**	**5.01**

NOTE: This is an excerpt from a Single Project Appraisal (SPA) report on the results of our PM expertise analysis for a project larger than $1 million in labor cost. We changed both the company and project names for confidentiality. IBEX is the fictitious company and payment system is the fictitious project.



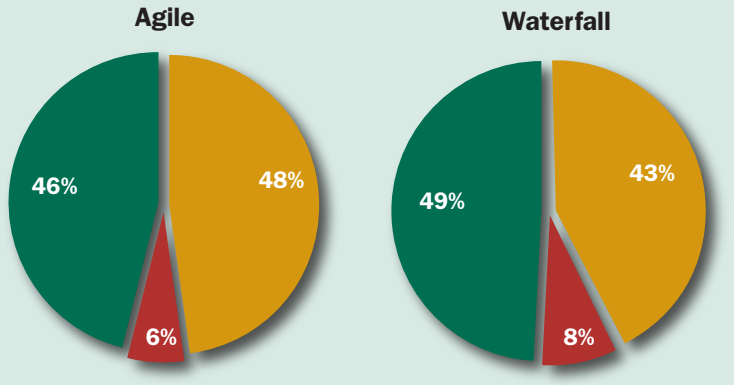
Size of a project trumps methodology. The agile process benefits from small projects. Overall, small projects have a better success rate than agile projects and waterfall projects when you include other types. In the last 10 years, 45% of agile projects were less than $1 million in labor cost. In contrast, only 14% of waterfall projects were less than $1 million in labor cost. Head to head, small, agile, and waterfall projects have almost the same success and failure rates. Lesson Six in the CHAOS Knowledge Center outlines the skills and the responsibilities of the agile process. Here, the CHAOS 10 Success Points for the Agile Process are modified for small projects.

The agile process is now perceived as the universal remedy for software development project failure. One of the biggest reasons is because the agile process makes it easier to do small projects. The agile process also makes it easier to break up larger projects into a series of smaller projects. The secret is the trial and error and delivery of the iterative process. Software should be built in small, iterative steps with small, focused teams. The project team delivers functionality in small bites or steppingstones. A steppingstone, also known as an iteration, is a small but significant deliverable. A steppingstone activity allows for tangible inspection, either visually or hands-on.

Steppingstones are key drivers for the success of the agile and iterative software development process. Steppingstones can be implemented in waterfall and other methodologies, but agile methodologies have a built-in process to deliver steppingstones. Steppingstones lead to more deliverables or indicate the project is not on the right track. Steppingstones are powerful because they allow for rapid feedback, creation of feature velocity, and accelerated user training and acceptance. The agile process does this by using standard time intervals, or time boxes. Time boxing sets deadlines and establishes a fixed amount of time in which to complete a steppingstone or iteration.

Project initiatives that are rigid run the greatest risk of dissolution. This is why the waterfall method generally runs into trouble. A good project management methodology builds in interaction among team members as well as with the user community, and an agile process improves this interaction. Quickness and velocity are vital to an agile process, and that encompasses feedback. However, a major advantage of the agile process is the closeness of the executive sponsor, or in agile terms, the owner. The owner's role is to own the responsibility for the resolution of the project.

AGILE V. WATERFALL SMALL PROJECTS



The charts show success rates for small software development projects using modern languages, methods, and tools, from 2003 to 2012.

10 CHAOS SUCCESS POINTS FOR THE AGILE PROCESS FOR SMALL PROJECTS

Point 1: Iterative

The iterative development style is the ultimate in small projects. Basically, iterative development consists of a series of tiny projects, or what we call steppingstones. In the early '90s, Standish Group published the iterative development process; since then, iterative has become the basic foundation of multiple agile types of methodologies. The basic elements in the iterative process are conversations, development with test, and deployment.

Point 2: Steppingstones

A steppingstone is a small but significant deliverable or an agile iteration. A steppingstone activity allows for tangible inspection, either visually or hands-on. Steppingstones are easy because you can see them. They are key to the iterative software development process because they either lead to more deliverables or indicate the project is not on the right track. Steppingstones are powerful because they allow for rapid feedback, creation of feature velocity, and accelerated user training and acceptance.

Point 3: Time Boxing

Big teams, long time frames, and complex requirements continue to lead to more failures. Google manages projects with limited time. This is very much along the lines of our "Recipe for Success" and there is no better example of success than Google. Small teams of five to six people, small time frames of five to six months, and a limited and/or discrete function all lead to higher success rates.

Point 4: Elastic

Consensus through conversation is one of the hallmarks of the agile process. There is no tool, template, or guidebook that can replace the human aspect of a project. A project is a team effort and requires a consensual mode of adaptable thought, especially from the project team heads. Persistent interaction with the people and the processes involved in the project is extremely important.

Point 5: Interaction

A good project management methodology includes interaction among team members as well as the user community. The agile process has built-in interactions, such as stand-up meetings, story conversations, demonstrations, and retrospectives. Interaction is a mutual exchange between the project team and stakeholders. The agile process also provides for the mutual and reciprocal accomplishment exchange within the project team that includes plans, steppingstones, test scripts, technical advice, feedback, change requests, and other action items.

ITERATIVE PROCESS

IT executives were asked to rate and rank in order of importance the skills needed for the iterative development process.

	Highly Important	Important	Somewhat Important	Not Important	Rank
Managing the iterative process	45%	49%	6%	0%	3.3
Delivering story development and test	8%	59%	32%	1%	2.3
Using story conversations for requirements	6%	47%	39%	8%	2.2
Deploying story features	14%	53%	32%	1%	2.1

POSTMORTEM AGILE PROCESS

	Very Important	Important	Somewhat Important	Not Important
Iterative process	8%	41%	27%	24%
Steppingstones	20%	34%	19%	27%
TIme boxing	8%	30%	39%	23%
Rapid feedback	29%	20%	22%	29%
Merciless pruning	4%	24%	39%	33%

IT executives were asked to rate the importance of capturing postmortem information about the agile process.

Point 6: Agile Style

You need to create your own agile style. There are two ways to do so. First, you can simply adopt a pure methodology from one of the standard types. This is the fastest, safest, and easiest way since it has gone through much iteration and changes. On the other hand, maybe a standard methodology does not fit into your environment. So the second approach is to take the parts you like from each standard methodology and even add your own things. We did that with our Innovation Center concept.

Point 7: Rapid Feedback

Quickness and velocity are vital to an agile process that encompasses feedback. It should be rapid. It is a fact of life that you can only digest small bits of information at one time. This fits perfectly into the agile process. In order to do this you must set up a structure that everyone understands and is easily implemented, and that only looks at small accomplishments such as steppingstones.

Point 8: Retrospective

Knowing how to execute and get value from retrospectives can provide short- and long-term improvement. After each steppingstone and/or microproject the team should take a little time to look back on what things went right, what things went wrong, and what changes need to be made for the next iteration or microproject. These meetings are inward-focused feedback versus external rapid feedback. The meeting should be short and structured, with a facilitator.

Point 9: Merciless Pruning

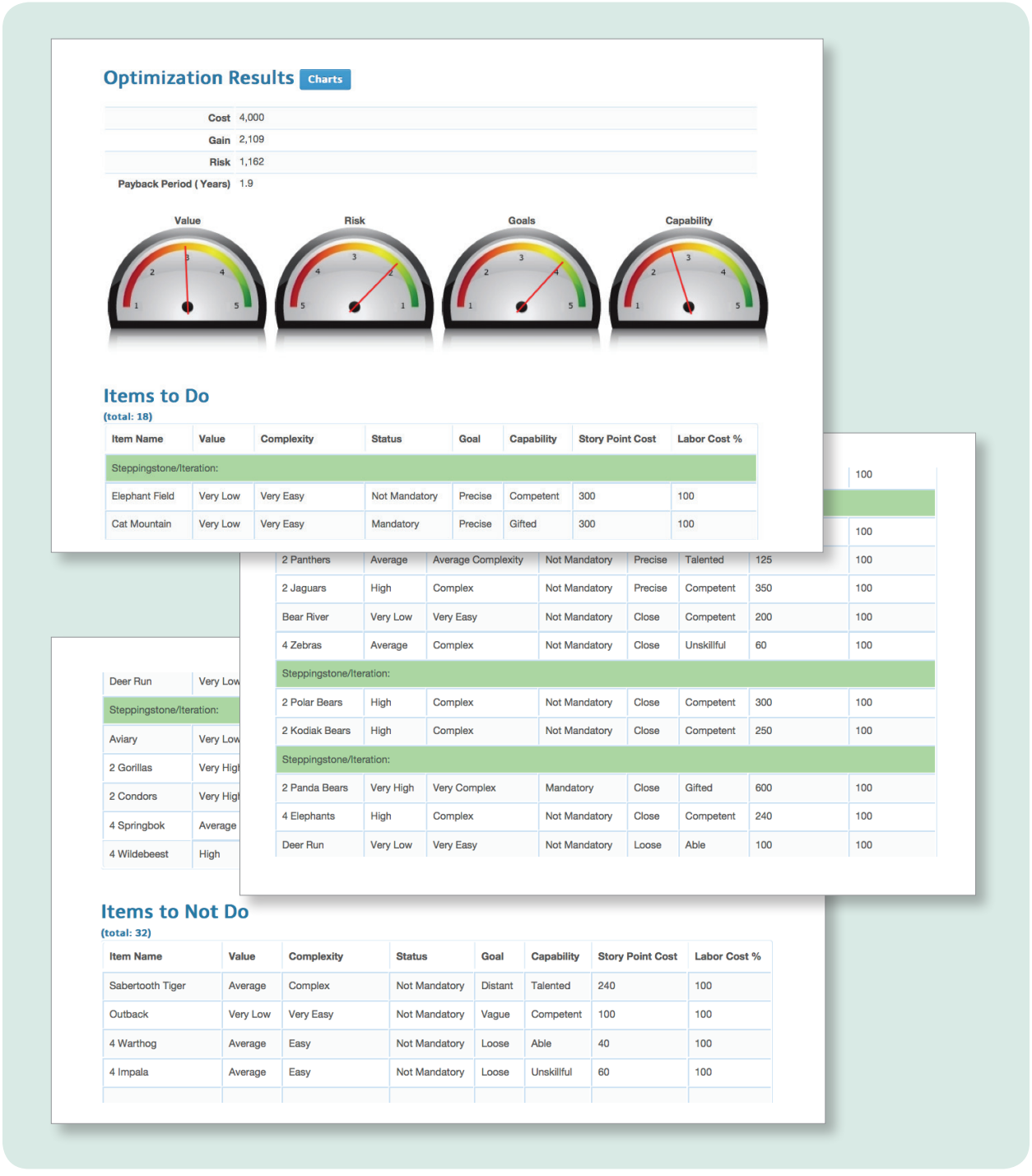
Before development begins is the cheapest place to cut out duplication and low-value features and functions. This calls for merciless pruning. The fact is, only 20% of built features and functions get used, so cutting requirements in half and then half again will get us closer to full utilization. What you are really doing is refactoring specifications so they are cleaner and easier to develop and implement.

Point 10: Pipeline

The *Liberty* ship was a 440-foot merchant ship that would bring supplies, equipment, and troops to the front during World War II. The first ships took about eight months to complete. This was too much time, because supplies were desperately needed to maintain the war effort. Then the shipbuilders instituted a pipelining system. Once this system got going it was possible to launch three ships a day. One ship was completed from start to finish in less than a work week.

OptiMix has several features that help out in the agile process and allow you to keep projects small. First, you can optimize for requirements and make sure that the project does not go over $1 million in labor cost. As you progress through the project you can use this feature to continue to hone the requirements by adding or subtracting features and functions so that you never go over budget. Second, you can optimize for microprojects; in agile terminology this is often called a release. Here you would use steppingstones. Third, you can optimize for steppingstones. Here you would use story cards. You can optimize for cost, value, risk, goals, capabilities, and true. You can consider timing and exclusion/inclusion constraints.

The following graphic shows the output of a steppingstone case using story cards, with a total budget of 5,000 story card points and 400 points per steppingstone/iteration:



SUCCESS FACTOR SEVEN: CLEAR BUSINESS OBJECTIVES

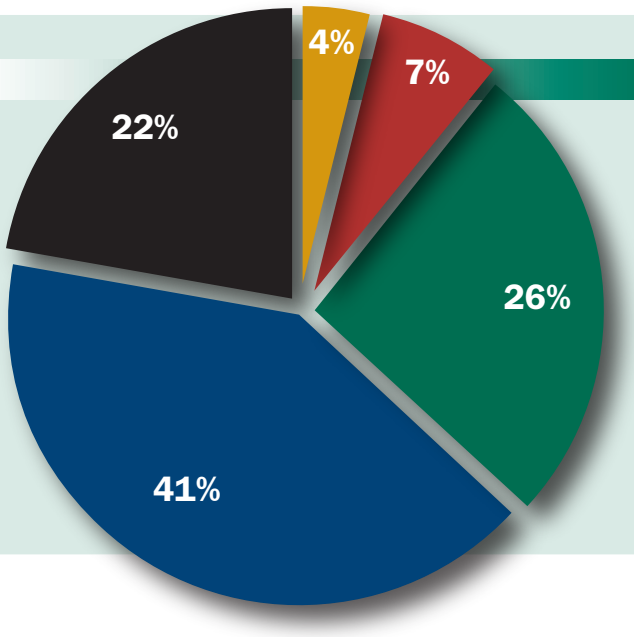
Clarity and focus are essential for most successful projects. However, small projects can have a little more ambiguity and risk since they have a very short life cycle. They also do not need to be as closely aligned to the corporate strategy since they can be somewhat experimental. Every stakeholder will have his or her own agenda that needs to be fulfilled by the project. Therefore, the larger the project, the more agendas there are. Lesson Three in the CHAOS Knowledge Center outlines the skills and the responsibilities of clear business objectives. Here, the CHAOS 10 Success Points for Clear Business Objectives are modified for small projects.

For small projects you need to have a concise vision, problem statement, and statement of work. However, the key to small projects is being concise and highly focused. Peer reviews delay small projects. Time is money, and peer reviews increase cost and effort. Peer reviews are best used in the gating process, such as moving from requirements to development. Since small projects have fewer gates or no gates, the peer process has little to no value.

Formal status meetings are fine, but they do not need to be formal. The agile process uses a daily standup meeting that acts as a status meeting. These standup meetings also display storyboards and burndown charts for all to see and review. We suggest a lightweight weekly online status form to be filled out by the project leader or process master and approved by the executive sponsor or product owner.

It is evident that there is correlation between too much governance and complete autonomy in project success and challenges. A lean approach focuses on the high-value items while maintaining individual innovation without overburdening the organization. For project environments, the key is to strike the right balance between governance and autonomy while having clear business objectives. The lag time between ideas and execution can cause organizations to be less responsive and to lose their competitive edge.

SMALL PROJECT GOAL



The chart shows reported goals of small, successful projects for calendar year 2012.

10 CHAOS SUCCESS POINTS FOR CLEAR BUSINESS OBJECTIVES FOR SMALL PROJECTS

Point 1: Same Page

Larger projects often do not have a common goal. In fact, most of the time they have conflicting goals. Divergence of goals can cause the project to overrun its budget and schedule, or even prevent successful completion. It is easier to focus on a single and common goal using a small project philosophy. This mutual focus and common goal will keep the project on course and allow the stakeholders to be kept on the same page and the same direction.

Point 2: Elevator Pitch

An elevator pitch is a luxury for small projects. The effort to develop and communicate a good elevator pitch for small projects is not a beneficial use of resources. A simple statement of the purpose of the project should be more than enough for a small project. However, you should be able to explain the small project in 10 words or less.

Point 3: Big Picture

For a small project, it is good to understand how it fits into a larger program that then fits in the big picture. However, a small project does not have the same rigorous scrutiny that a larger project needs to have when considering it within the context of the big picture. On the other hand, the project team should have a common understanding of how the project can advance the overall goals of the organization.

Point 4: Speed

Small projects have built-in speed, otherwise they would not be small. There is a need for speed, for time is the enemy of all projects. By focusing on the elements of the project that provide the highest benefit with regard to the organization's business focal point, you create a speedy return on investment. You also eliminate features and functions that are more contextual in nature.

Point 5: Yardstick

Small projects provide concrete evidence of progress. Concrete means the work is done. It is a complete task or set of activities. The Project Management Institute (PMI) has determined that no task should be larger than 80 hours. In the Extreme Programming method, work is broken into weekly events. In both cases, the elements are easy to manage and track. For anyone who has to monitor progress, these events are manageable.

SAME PAGE

IT executives were asked to rate and rank the difficulty of their IT project workforce in mastering the project management skill of being on the same page.

	Very Difficult	Difficult	Somewhat Difficult	Not Difficult	Rank
Managing conflicting goals	13%	51%	34%	2%	2.7
Providing a mutual focus	16%	19%	51%	14%	2.5
Communicating a shared business understanding	11%	40%	39%	10%	2.4
Keeping everyone on the same page	19%	41%	27%	13%	2.3

	Very Important	Important	Somewhat Important	Not Important
General clarity of goal	26%	55%	13%	6%
Consensus of goal	16%	36%	39%	9%
Stakeholder understanding	47%	30%	13%	10%
Clarity of the project plan	29%	39%	23%	9%
Value measurements	17%	43%	23%	17%

IT executives were asked to rate the importance of capturing postmortem information on clear business objectives.

Point 6: Return on Investment

The value from a project investment does not provide a return until a solution is implemented. One of the biggest benefits from small projects is the return on value is sooner rather than later. So not only does a small project have a much greater chance of success, and therefore you will get a return, but you will get that return quicker.

Point 7: Collaboration

Even for small projects, collaboration starts with listening to the stakeholders. Randy Fujishin, author of *Creating Effective Group: The Art of Small Group Communication,* has created a technique called SOAR, for Seek, Observe, Ask, and Relate. He suggests that you actively seek out what people are thinking, then observe their reaction, ask questions, and relate what you heard from them to connect to the wider group.

Point 8: Peer Review

Peer reviews are another one of those events that drive up cost and time for small projects. It is a luxury that should be avoided and used only for larger projects. However, the project team should seek out and review similar small projects to study any problems encountered so they might avoid them.

Point 9: Too Many Cooks

A six-person IBM team set out to create the Practitioner Support Network. The team built the database and network that comprised all the resources, manuals, databases, service reps, consultants, and engineers in six months. As new problems occurred, the consultants would create problem identification and a solution path. The next time a consultant encountered the same problem, the system would direct him or her to that case and the accompanying solution. IBM's payback and return on investment was less than one year.

Point 10: Black Tie

The key to a formal process is having the right amount of formality. Too little and the project gets derailed; too much and the project gets bogged down by the bureaucracy. There are lots of small project formal processes and methods, such as the agile process. With the agile process the requirements document is replaced by user stories and the project plan is variable.

COLLABORATE ON DECISIONS

Small projects are all about speed, but you still collaborate on important decisions. A decision pipeline is a method to allow the right people at the right time to make decisions quickly and easily. It is also a method to engage more people in the decision process. The Standish Group Dezider product is an example of a decision pipeline. The Dezider is a single-purpose application to help you make and account for decisions. It is a real-time information decision support solution that connects you to your co-workers, stakeholders, peers, superiors, friends, and family as an aid in making decisions. Decisions need to flow quickly for projects to be successful. There are thousands of decisions that have to be made during the life of a project.

Clarity: of the issue is the most important objective in coming to a decision. An issue that is fuzzy or is not well understood is interpreted by people differently, and therefore is often reversed or flawed. It is the most difficult of all project problems, and many project teams are not very skilled at providing clear issue statements.

Timing: is the second most important issue item. Delays in decision making cause delays in the project. Even minor decisions with minor delays will cause frustration for the team members.

Goal: is setting a target for both timing and participation. It is important that each decision is made at the right level with the people who have the right roles and responsibilities.

DEZIDER ANSWER TYPES

Dezider has five answer types: **direct, private conversation, yes/no, multiple choice,** and **star rating.**

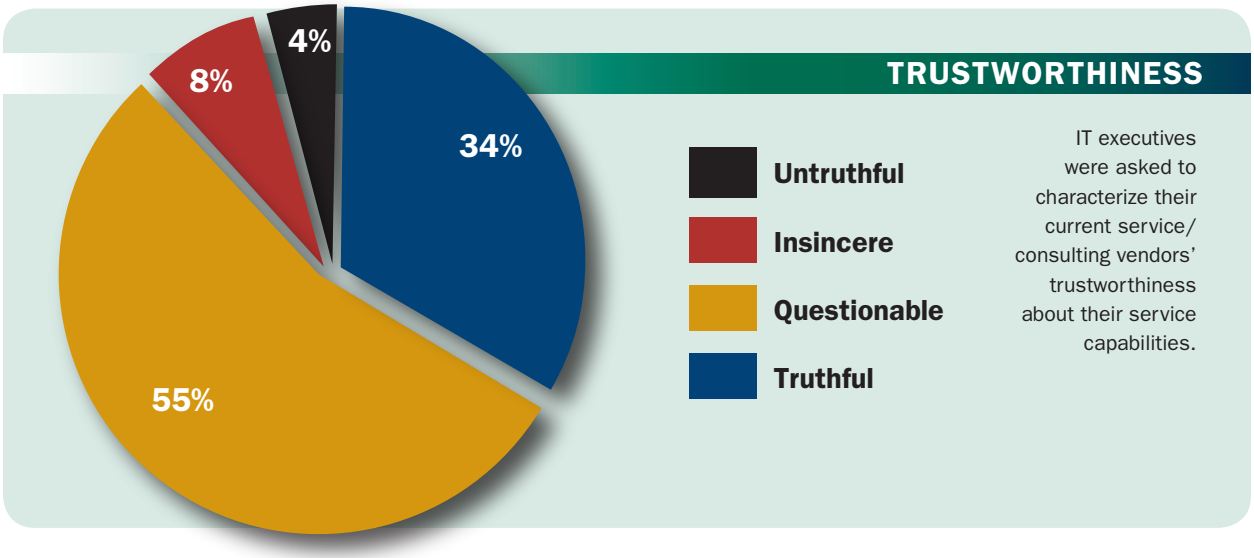
1) **Direct** is letting your group know your decision without discussion or feedback.
2) **Private conversation** is an open-ended general discussion looking for feedback, discussion, and comments.
3) **Yes/no** provides a vote on an issue as well as a forum for comments and feedback.
4) **Multiple choice** provides the respondent with up to 10 choices and four selections. Multiple choice also provides for feedback and comments.
5) **Star rating** provides the ability to rate an item from 1 to 5. Star rating also allows for comments and feedback.

Emotional maturity is having the skills to be self-aware, socially aware, self-managed, and to manage relationships. These are all important skills for a small project team and their stakeholders. When these skills are lacking in small projects they often manifest as the Five Deadly Sins as outlined in the CHAOS Knowledge Center. Emotional maturity starts and ends with managing not only the real project's outcome, but the perceived project's outcome. Lesson Four in the CHAOS Knowledge Center outlines and explains the needed skills and the responsibilities of emotional maturity. Here, the CHAOS 10 Success Points for Emotional Maturity are modified for small projects.

For small projects, deep investigation of the project team is too much of a burden, but a few references and past project reviews could provide some comfort or cause to reject the project. It is a good idea to assess the emotional maturity of the project team. You can use the emotional maturity appraisal system to assess your team's emotional maturity. The Standish Group has identified the 30 skills needed for emotional maturity. This appraisal measures and reports on these 30 skills. The major parts of the emotional maturity appraisal system are the same as the executive sponsor appraisal, which are database, question delivery and display, analyst engine, and reporting.

Steering committees and meetings are generally made up of high-powered, expensive staff members. Attendance at steering committee meetings for small projects could cost more than the project itself. In addition, generally very few major decisions will be adjudicated during these meetings. Lack of interest will soon cause the meetings to be poorly attended. That doesn't mean the executives do not care about the results of small projects, it is that they just want a more efficient mechanism for making decisions and reporting. To paraphrase Ronald Reagan, you trust your team but verify the results. An online weekly status report or burndown charts might be all you need for small projects.

The focus of our book, *The Public Execution of Miss Scarlet,* resulted from a CHAOS University Retreat in 2005 on the Five Deadly Sins. The workshop and the retreat are very similar to the workshops that are being conducted by Standish Group today. The book is fictional in nature, but it drives home the points that the Five Deadly Sins (emotional immaturity) are inherent in nearly every project, and if you look closely enough, in nearly every organization.



10 CHAOS SUCCESS POINTS FOR EMOTIONAL MATURITY FOR SMALL PROJECTS

Point 1: Overambition

It is hard to have overambition when doing small projects. The contained scope of small projects brings focus to high-value items and prevents overambition. Normal ambition is good, and we need it for small projects as well as large projects. Small projects funnel ambition to accomplish some useful goal. As the great philosopher and CIO Gordon Divitt says, "Success is getting it done."

Point 2: Arrogance

Arrogance could be a bigger problem for small projects because of the small size of the team. Arrogance is the unwarranted, overbearing pride evidenced by a superior manner toward superiors, peers, and inferiors. Arrogance also correlates with intelligence and creativity. The line between confidence and arrogance is very blurry. It is very important for you to know when a person has crossed the line from self-confidence into arrogance.

Point 3: Ignorance

Small projects allow you to more easily create an environment that allows for clear and concise communication and education. You are able to eliminate unnecessary verbiage and focus on the important issues. You can create a decision process that allows for quick resolution. You can make it multilevel so that many of the decisions get done at the lower levels and only the important business decisions get moved up the executive management chain.

Point 4: Abstinence

In his book, *How to Run a Successful Meeting in Half the Time,* Milo O. Frank suggests one of the best ways to reduce meeting time is not to have one in the first place. This would also clearly reduce abstinence. The author suggests you consider other ways to communicate, because people hate meetings and especially unproductive ones.

Point 5: Fraudulence

Fraudulence should never be tolerated. In small projects it is harder to hide from the real facts. Management should provide ethical guidance and require all personnel and stakeholders involved with the project to participate in ethics training. The ethical policies should be well documented and distributed. They should be ingrained in the corporate culture. Users, stakeholders, and project teams must adhere and agree to a code of standards.

MASTERING OVERCOMING ARROGANCE

IT executives were asked to rate and rank the difficulty of their IT project workforce in mastering the project management skill of overcoming arrogance.

	Very Difficult	Difficult	Somewhat Difficult	Not Difficult	Rank
Building consensus	19%	30%	48%	3%	2.8
Maintaining stakeholder concurrency	9%	39%	44%	8%	2.7
Overcoming arrogance	1%	30%	31%	38%	2.3
Setting contingencies	7%	43%	37%	13%	2.2

POSTMORTEM ON EMOTIONAL MATURITY

	Very Important	Important	Somewhat Important	Not Important
Overambition	31%	19%	33%	17%
Arrogance	13%	20%	55%	12%
Ignorance	21%	36%	24%	19%
Abstinence	4%	34%	43%	19%
Fraudulence	31%	14%	33%	22%

IT executives were asked to rate and rank the importance of capturing postmortem information on emotional maturity.

Point 6: Community

If your small program philosophy is a series of related small projects, then it is a good idea to create a community around the program. Here you would establish a common value and benefit from a small project program that is used as a motivation device to help create and maintain a vibrant community. Then define that common purpose and objective of the community with achievable and realistic measurements.

Point 7: Honor

It is honorable to fight the right fight in the right way as long as you stick with your management values. The fight *against* large projects and *for* small projects is the right contest. Make fighting for small projects aboveboard and transparent. Fight for the approval and sponsorship of the executive management. Fight to improve the organization and do not fight about organizational politics. In other words, fight with honor.

Point 8: Awareness

In today's wired world, filtering information is a greater barrier to awareness than not enough communications. Focus on creating and maintaining awareness that is relevant. The actions needed to create and maintain a sense of awareness include designing a communication system that provides the right information to the right levels at the right time, reducing information overload. Information must have the right level of detail.

Point 9: Objective

During the 1932 presidential campaign (Hoover versus Roosevelt), Lorena Hickok's job was to cover Eleanor Roosevelt for the Associated Press. Hickok would report on events and issues as she saw them without spin or slant from Roosevelt campaign people. Such a relationship between politics and press was even rare at that time. After the election, the Roosevelts turned from promises to work to repair the economy. Because of her friendship with Mrs. Roosevelt that developed during the campaign, Hickok felt she could no longer be objective in her reporting, so she resigned from the Associated Press.

Point 10: Superior

Starbucks has five principles that make the business successful. These five principles are: 1) Make it your own; 2) Everything matters; 3) Surprise and delight; 4) Embrace resistance; and 5) Leave your mark. Many of us at The Standish Group are frequent customers of Starbucks and can attest to these five principles in action. What is truly amazing is how they have been able to scale and maintain these principles across the globe.

RAPID PERFORMANCE MEASUREMENT REPORT EXAMPLE

Emotional maturity represents a total of 12 success points or possible score. The average score of the organizations in the CHAOS database matching your project profile is 7.85. This is your RPM benchmark or CHAOS score. Your RPM score for emotional maturity is 4.53.

Emotional maturity is the ability and capacity to perceive, assess, manage, and direct the emotions and actions of the project stakeholders. It is always good to make improvements to any of the CHAOS success factors. However, the lack of emotional maturity has a real negative effect on the project environment. There is much vulnerability in this area for IBEX, and therefore improvements will greatly change the chances of success. The organization should have a keen respect for the importance of emotional maturity and work to improve your skills in this area.

Questions	Possible Score	CHAOS Score	IBEX Score
1. Rate the project team's skill in overcoming overambition for this project.	1.20	0.72	0.43
2. Rate the project team's skill in overcoming arrogance for this project.	1.20	0.59	0.31
3. Rate the project team's skill in overcoming ignorance for this project.	1.20	0.77	0.39
4. Rate the project team's skill in overcoming abstinence for this project.	1.20	0.74	0.31
5. Rate the project team's skill in overcoming fraudulence for this project.	1.20	0.93	0.52
6. Rate your skills in creating and maintaining community within this project.	1.20	0.71	0.57
7. Rate your skills in creating and maintaining honor and pride within this project.	1.20	0.91	0.42
8. Rate your skills in creating and maintaining awareness within this project.	1.20	0.78	0.51
9. Rate your skills in objectivity and transparency within this project.	1.20	0.83	0.42
10. Rate your skills in promoting excellence for this project.	12.00	0.88	0.65
Total	**6.00**	**7.85**	**4.53**

NOTE: This is an excerpt from a Rapid Performance Measurement (RPM) report on the results of our emotional maturity analysis. We changed the company name for confidentiality. International Banking Exchange (IBEX) is our fictitious company we use for examples.

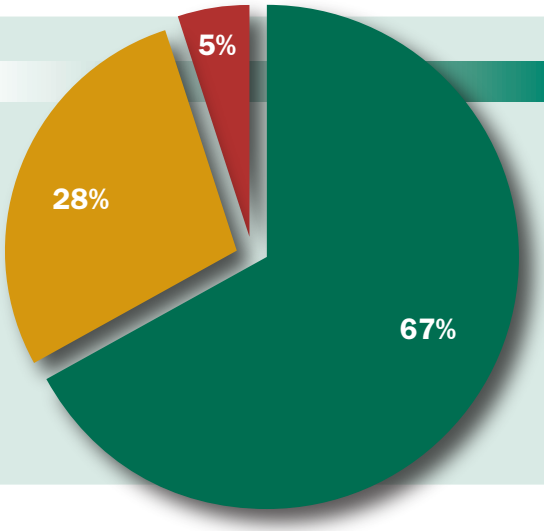
Execution is the act of taking a project to completion based upon a plan. In general, it is easier to bring a small project to completion than a large one. It is even easier when you combine small projects with financial management and a formal methodology. When you add a project team's leadership skills and project management experience, then it is even easier to create a positive outcome. The idea is the project team provides guidance and promotes progress. Lesson Nine in the CHAOS Knowledge Center outlines the skills and the responsibilities of execution. Here, the CHAOS 10 Success Points for Execution are modified for small projects.

Small projects provide the opportunity for a team to get out of its comfort zone and take on more risk. All too often, methodology gets in the way of progress and is structured to keep the project team in a comfort zone. On the other hand, knowing the project is risky helps with predictability. Having a predictable process allows the organization to know when and what is being delivered, or even that there is a high likelihood the project will fail because the team is pushing the envelope. Knowing well in advance that the project is going to be late, deficient, and cancelled allows the organization time to make adjustments and rearrange plans.

Small projects allow you to cost-effectively execute set-based concurrent engineering. With set-based engineering, multiple teams advance the technology and generally come up with different innovations and a variety of options. The organization then chooses the best solution or the best parts from multiple solutions to form a single solution. This is especially useful for high-value/high-risk efforts that have an opportunity to radically change an organization's product or service, or what Standish Group identifies as the "panda bears." Set-based concurrent engineering presents the opportunity to reduce the chance of outright failure on risky endeavors because you have multiple opportunities to complete the projects. Apple does this type of engineering on most of their innovations.

Even with small projects you need to set expectations and clearly state how the team is being measured. The project team needs to know and agree to what is being expected from them and how they are being measured. If the goal is too low, the organization is wasting valuable resources. If the goal is too high, team frustration sets in and causes conflicts. The expectation must be attainable and reasonable given a set of skills and resources. Incentives could increase the likelihood of success and set in motion the situation to exceed expectations. It is always better for the project team to meet or exceed stakeholder expectations.

SMALL TEAMS



The chart shows project resolution for teams with four to six members for calendar year 2012.

10 CHAOS SUCCESS POINTS FOR EXECUTION OF SMALL PROJECTS

Point 1: Rules

Even card games have rules and there is no difference for small projects. Rules are established standards, guidelines, or regulations. A successful program requires the clear articulation of important rules, such as what activities are necessary, how they should be performed, and what resources are needed. Thus, rules serve as the fundamental tools of any project, especially to align the IT objectives with the overall business goals and strategies.

Point 2: Problem Statement

Every project, even a small one, needs to have a problem statement. A complete problem statement with which the stakeholder community can identify will have the following attributes: 1) The problem statement should be written in business terms and be tied to a business process. 2) The problem statement should have a definition of the business problem. 3) The problem statement should address root causes and not just symptoms of the problem.

Point 3: Formal Requirements

Executing on requirements management is the process of identifying, documenting, communicating, tracking, and managing project requirements, as well as changes to those requirements. Even for small projects this is not a single point in time occurrence, but rather it must be an ongoing process that stays in lockstep with the development process, especially iterative agile development. Requirements need to be thought of as living organisms that change as the project evolves.

Point 4: Breakeven

Consider a project for an automated self-service order processing system, the justification for which was based on increased sales. Some of the savings might be lower phone costs, less person-power required to take orders, fewer orders to enter, or even the elimination of a physical plant. Another savings might be the cost of printing, postage, and advertising, since much of the outbound marketing will be over the Internet.

Point 5: Change

Change management is all about setting realistic expectations. The importance of this critical factor cannot be understated. There is nothing that can cause a misalignment between expectations and deliverables more quickly than a failure to manage change. It is even more important for small projects to have a formal change management process. A single change can disrupt a short time box or the direction of a project, leading to disappointment.

FIRST PRINCIPLES

IT executives were asked to rate the difficulty of their IT project workforce to master the project management skill of the first principles.

	Very Difficult	Difficult	Somewhat Difficult	Not Difficult
Measuring progress against the vision	19%	23%	49%	9%
Providing project predictability	13%	39%	48%	0%
Setting expectations of team measurements	12%	10%	69%	9%
Getting the team to own the resolution	13%	23%	42%	22%

	Very Important	Important	Somewhat Important	Not Important
General predictability	19%	46%	21%	14%
Decision-making	29%	60%	5%	6%
Rules and vocabulary	6%	24%	54%	16%
Requirements management	42%	41%	11%	6%
Change management	51%	39%	4%	6%

IT executives were asked to rate the importance of capturing postmortem information on project execution.

Point 6: Connecting the Dots

Small projects make it easier to have a single vision. However, the vision is seen through the prism of the individual team member and stakeholder. Through analogies, common vocabulary, and trends stakeholders come to a common vision. Analogies help people relate what they know to elements of the project. A common vocabulary helps everyone speak and listen in a single voice. And trends help people see value in the project.

Point 7: Decision Pipeline

James Surowiecki's book, *The Wisdom of Crowds,* promotes the idea that you can use group thinking to make decisions that are often better than expert opinions. We, of course, agree with this method. Wisdom of crowds has been the premise for The Standish Group since our inception. It is also the premise behind the Dezider, a decision pipeline solution that helps a small project get big results.

Point 8: Net Value Analysis

You must optimize gain and mitigate risk to effectively manage net value for small projects. Start with the minimum requirements that provide the most gain with the least risk to form a project baseline. The baseline ROI for your project is the cost/gain. You must change your thinking regarding what you call requirements. Consider them as options and assign a cost, gain, and risk to each of them. Then decide their value.

Point 9: First Principles

The vision has to be from the top down, because you always have to come back to the reason you are doing the project in the first place. This starts from first principles—the most important goals. The three elements that make up the first principles are: predictability, set expectations, and solution ownership. These principles then become metrics and are measurable, and that leads to processes that can be predictive and quantified.

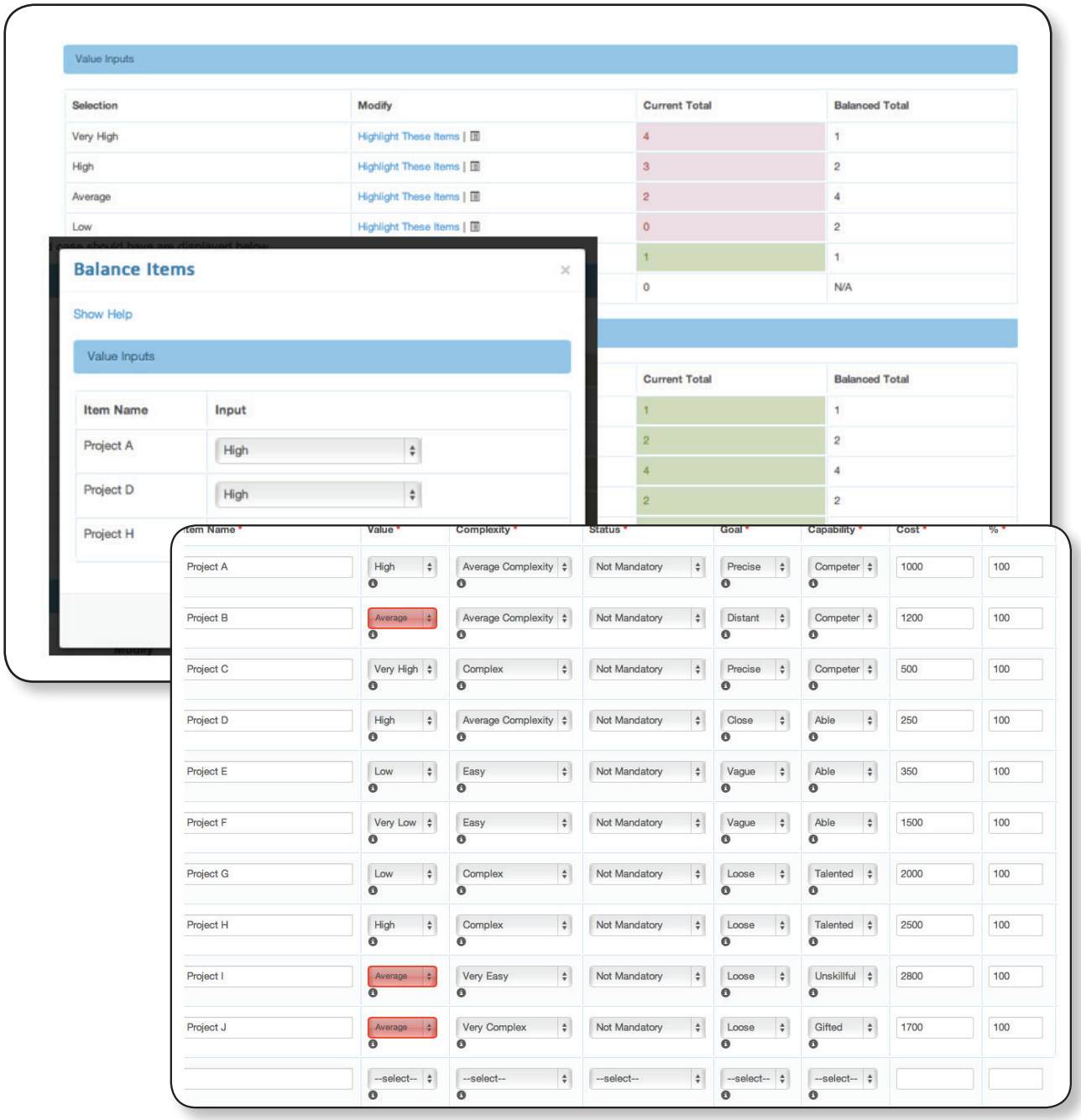
Point 10: Lipstick

Return on investment and value assessments can take a long time to create. In the end they are generally little more than an educated guess. Our approach is to assess value from high to low. We have collected data on thousands of projects and assigned average value weights. We use this research to create the value assignment in the OptiMix. This is not only good enough for small projects, but for all projects.

RELATIVITY

Relativity is the process of measuring each of the projects or requirements within an OptiMix case against each other. In a balanced case, each of the four major constraints will have a normal distribution. For our normal distribution we use 10% at the extreme end, 20% in the middle areas, and 40% for center. Each of the major constraints has five choices that follow the distribution model. For example, the value constraints use very high value, high value, average value, low value, and very low value. An item can have one of five types of complexity ratings, from very complex to very easy. Goal and capability have similar ranges. The following graph shows the balance screens from the OptiMix.

BALANCE SCREENS

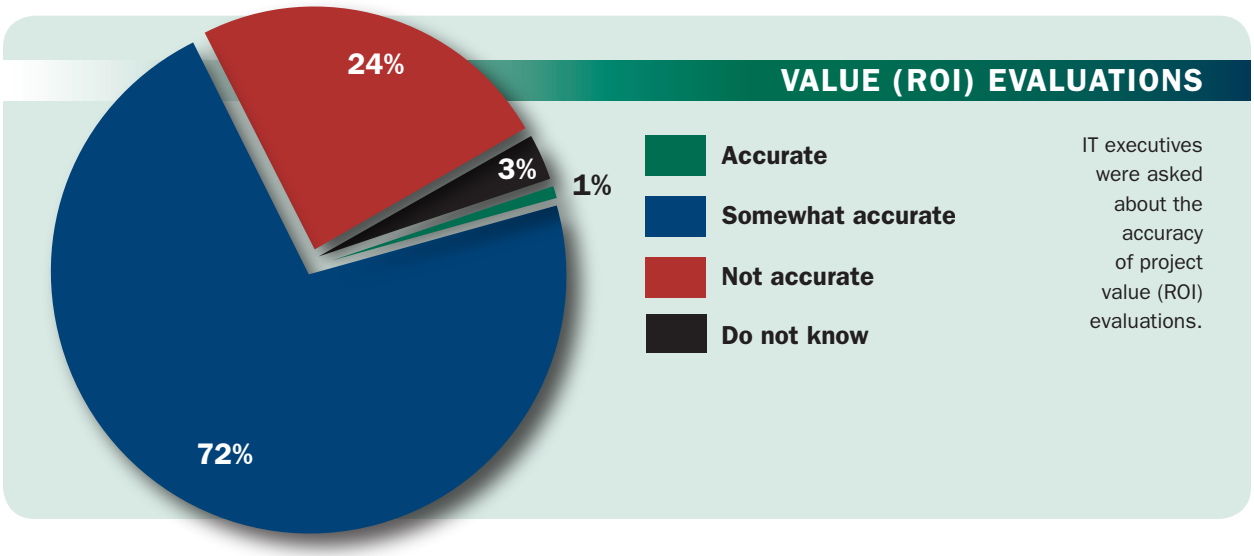


When it comes to tools and infrastructure for small projects, less is more. Fewer project management tools and fewer infrastructure options help small projects get done faster, with less cost and better quality. One of the major problems with tools is that organizations become dependent on them and are slaves to the tools rather than using their own judgment and experience. This can often lead to disappointment. Tools should provide aid to helping projects succeed. Lesson Ten in the CHAOS Knowledge Center outlines the skills and the responsibilities of tools and infrastructure. Here, the CHAOS 10 Success Points for Tools and Infrastructure are modified for small projects.

Arguably the most important items in this lesson are a standard infrastructure and development process for small projects. With a standard infrastructure and development process, there are a limited number of IT components throughout the organization to increase education, competency, and familiarity. The standard products and methods must meet the needs of the application and business process, so an organization may have multiple sets of components and processes for different types of activities. Still, it is very important to keep options to a minimum and look for ways to standardize and reduce the number of options. Using cloud-based services is one way to try solutions that may help move projects forward without committing fully to one direction.

One major consideration when moving from a large project philosophy to the small project approach is the explosion in the number of projects. An organization that wants to limit project size from $2 million to $500,000 will have four times the number of projects. An organization that is used to having 50 projects a year could have 500 projects overnight. Therefore, you do need some simple portfolio and resource management tools, like the OptiMix.

Experimenting helps organizations achieve optimization. Optimization products, like our OptiMix, offer an iterative knowledge management experience. The experience is gained by doing alternative what-ifs. This process allows the organization to play with budgets, project features, constraints, and other factors. Optimization can be used to set a project in motion based on the position within the stack of items and provide rapid feedback on the execution of those items. Optimization aids in the planning and decision process of which items to budget and execute. It also helps when budgets get cut or costs need to be reduced. Optimization maximizes the value of your portfolio of investments.



10 CHAOS SUCCESS POINTS FOR TOOLS AND INFRASTRUCTURE FOR SMALL PROJECTS

Point 1: Resource Management

Small projects may create an additional burden for resource management. Resource management is the efficient and effective deployment of an organization's resources when and where they are needed. Resource management is the ability to match demands with available resources or supply within the financial and operational boundaries. The ability to identify how changes in resource allocation will affect critical paths before they are undertaken could improve project success rates. This was the purpose behind the PET project as shown on page 20.

Point 2: Demand Management

Demand management is the capture of requests and the prioritization of stakeholder requirements. Such demands may include new requirements, features, functions, operational constraints, regulatory requirements, technical enhancements, technical constraints, and all other demands. Demand management is the ability to match available resources with demands within the established financial and operational boundaries. This is the idea behind both the OptiMix stack function and the Standish Innovation Center.

Point 3: No Use of Enterprise Project Management

The theory behind enterprise project management is the management and coordination of all of an organization's projects, programs, and related activities. This sounds good in theory, but not in practice. Our research has found many issues with these types of solutions. For example, such projects generally cost more; they have higher failure rates, long completion times, and frustrated stakeholders. Using them with a small project philosophy only magnifies these issues.

Point 4: Portfolio Management

If you are going to use a small project philosophy then managing your project portfolio is a must. The purpose of portfolio management is to balance cost, risk, gain, focus, and capability to maximize return on investment. However, most portfolio management systems are overkill for small projects. If you only have 25 to 30 active projects then a spreadsheet will work fine. However, if you have more than 30 projects you need a solution like OptiMIx.

Point 5: Financial Management

Financial management is the skill to estimate and manage the financial resources of a project or group of projects. Small projects are both easier to estimate and to manage financially. However, we have taken a different approach in our Innovation Center, where you do not estimate or budget projects. We call it breadbasket budgeting, and the idea is to fund activities, not projects (please see page 48).

OPTIMIZATION TOOL SKILLS

IT executives were asked to rate and rank the importance of their IT project workforce in mastering PM optimization tool skills.

	Very Important	Important	Somewhat Important	Not Important	Rank
Selection of important projects for the portfolio	38%	42%	16%	4%	3.0
Selection of important features within a project	36%	56%	8%	0%	2.8
Filtering out non-important features within a project	22%	65%	13%	0%	2.2
Filtering out non-important projects for the portfolio	21%	53%	18%	8%	2.0

	Very Important	Important	Somewhat Important	Not Important
Tracking progress	31%	32%	24%	13%
Quality control	29%	31%	32%	8%
Portfolio management	6%	35%	45%	14%
Vendor management	10%	29%	43%	18%
Optimization	16%	42%	28%	14%

IT executives were asked to rate the importance of capturing postmortem information on the use of tools.

Point 6: Software Quality

Generally, small projects offer the organization a higher-quality output since the time between creation and use is much less. This short time latency provides a better feedback system to make corrections and fix bugs. The agile process has built-in quality and is test-driven, which help both small and larger projects. One hour of testing during a steppingstone is equal to 24 hours of testing after the project is complete.

Point 7: Standardized Software Infrastructure

Small projects require a standard software infrastructure. You do not want the project teams to be concerned about what platforms to use for building and implementing their solutions. The vertically specified components will include such products as server operating systems, database, and middleware. There are also horizontal standard infrastructure components, such as a management system, storage solutions, and network appliances.

Point 8: Standard Development Environment

Like a standardized software infrastructure, a standard development environment is a must for a small project philosophy. A standard development environment basically means having a common process or set of processes that provide the framework for how software gets done. This environmental framework outlines the key components and activities that should be followed to complete a software development project. A standard development environment process should be both repeatable and measurable.

Point 9: Vendors

Many vendors do not like small projects and often will try to build up requirements. However, there are vendors and local firms that use an agile process for small projects. If your organization wants to adopt a small project philosophy and still use outside vendors then you should consider these types of consultants and seek them out.

Point 10: Case Optimization

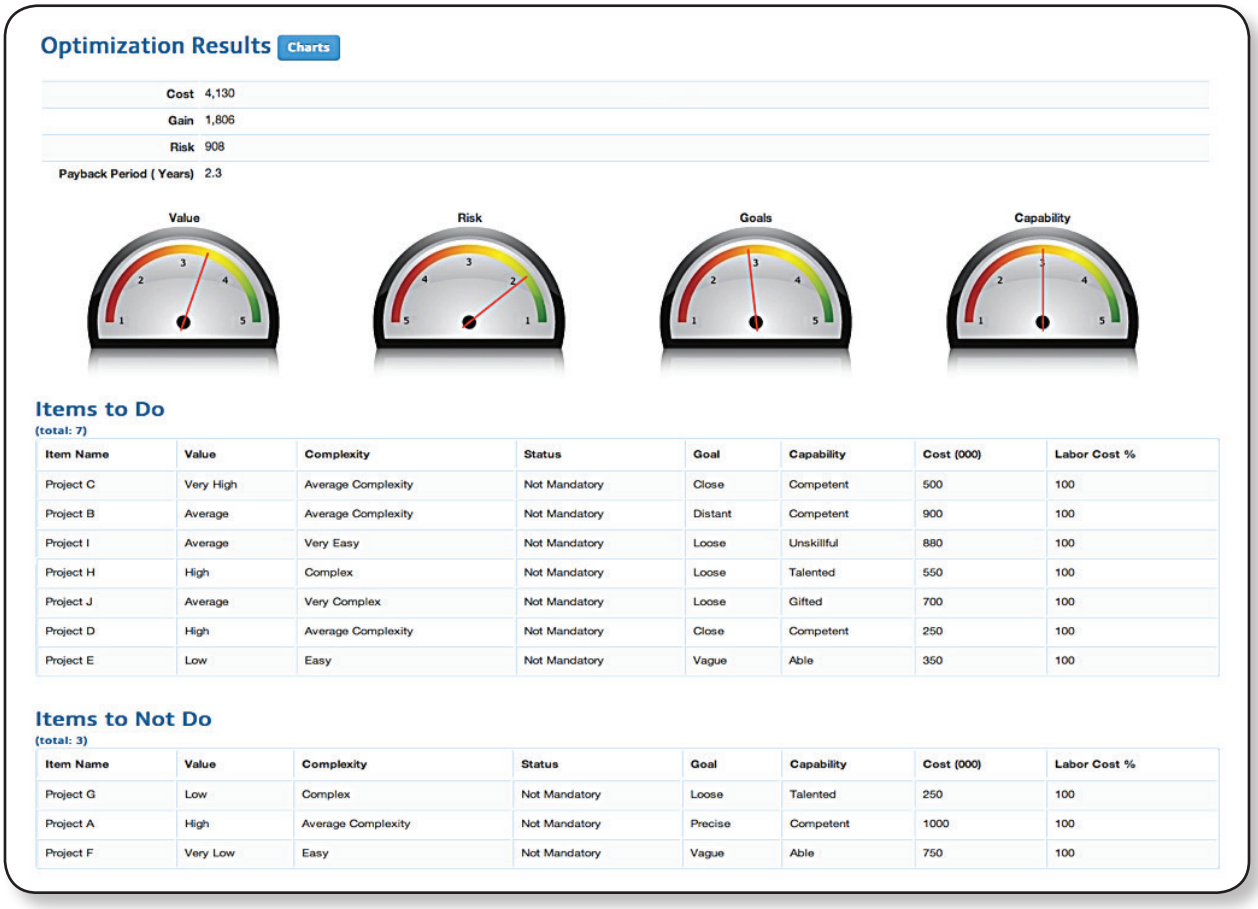
The theory of constraints is the basic premise behind our patented OptiMix formula. By understanding the constraints of each feature and function, scope can be changed by priorities for the maximum return or minimal risk. OptiMix uses the patented process of converting logical constraints into linear constraints. Such a process allows you to optimize products based on dependencies. The key to the approach is relativity and research. In terms of relativity, the ROI and risk assessments are based on the comparison to the items in the optimization case. Our balance feature ensures proper distribution across the case.

PROJECT PORTFOLIO OPTIMIZATION

The problem with portfolio management is that it is hard and error-prone. It also is not easily optimized. Calculating costs, albeit difficult, is understood. Calculating return on investment is less understood and much more difficult. It can take months to create valid ROI, and more than 75% of IT executives claim their organization is not good at doing it. Risk is even more important and difficult to assess. Ninety-four percent of IT executives believe risk assessment is an important function. Yet, the majority of organizations claim they are moderately to poorly skilled in the area of risk assessment. What is generally understood is the relationship between items. For example, one item being of higher value or lower value, or the same item being more complex or easier.

The Standish OptiMix is a secure, 100% web-based Software-as-a-Service (SaaS) application deployed on-demand at a carrier-grade hosting facility. The OptiMix product has been designed to greatly simplify the ROI and risk assessment for optimization purposes. The ROI assessment uses a five-option select box process, ranging from very high value to very low value. The risk assessment also uses a five-option select box, ranging from very complex to very easy items. This method sets simple values, making it very easy and effective. More importantly, people are more likely to enter the information because it takes so little time and is straightforward. The key to the approach is relativity and research.

Relativity means the ROI and risk assessments are based on the comparison to the items in the optimization case. Our balance = features ensures proper distribution across the case. Research means for each level, for both ROI and risk, there is a corresponding default based on our extensive primary research. The graph shows OptiMix output of a program or portfolio of 10 projects. The total cost of all 10 projects is $6 million, while the total budget is $4 million. We have optimized for maximum gain with a calculated risk.



Optimization Results Charts

Cost	4,130
Gain	1,806
Risk	908
Payback Period (Years)	2.3

Value Risk Goals Capability

Items to Do
(total: 7)

Item Name	Value	Complexity	Status	Goal	Capability	Cost (000)	Labor Cost %
Project C	Very High	Average Complexity	Not Mandatory	Close	Competent	500	100
Project B	Average	Average Complexity	Not Mandatory	Distant	Competent	900	100
Project I	Average	Very Easy	Not Mandatory	Loose	Unskillful	880	100
Project H	High	Complex	Not Mandatory	Loose	Talented	550	100
Project J	Average	Very Complex	Not Mandatory	Loose	Gifted	700	100
Project D	High	Average Complexity	Not Mandatory	Close	Competent	250	100
Project E	Low	Easy	Not Mandatory	Vague	Able	350	100

Items to Not Do
(total: 3)

Item Name	Value	Complexity	Status	Goal	Capability	Cost (000)	Labor Cost %
Project G	Low	Complex	Not Mandatory	Loose	Talented	250	100
Project A	High	Average Complexity	Not Mandatory	Precise	Competent	1000	100
Project F	Very Low	Easy	Not Mandatory	Vague	Able	750	100

IN SUMMARY

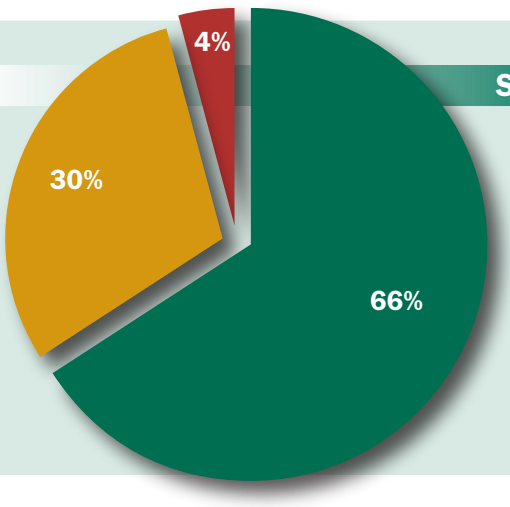
Very few large projects perform well to the project management triple constraints of cost, time, and scope. In contrast to small projects, which have a greater than 70% chance of performing well, a large project has virtually no chance of coming in on time, on budget, and within scope, which is The Standish Group's definition of a successful project. A large project has twice the chance of being late, over budget, and missing critical features than its smaller project counterparts. A large project is more than 10 times more likely to fail outright, meaning it will be cancelled or will not be used because it outlived its useful life prior to implementation.

It is very clear that reducing scope and breaking up large projects into smaller ones are difficult tasks. However, the rewards and benefits are quickly evident when the organization starts to receive value early in the project cycle. The Standish Group has also come to believe that there is not a need for large projects, and that any IT project can be a series of small projects that can be done in parallel if necessary. One should not confuse breaking down projects into milestones, phases, critical paths, and activities as small projects. Delivery of concrete and usable results demarks a successfully completed project.

We do get a lot of pushback when we say that any project can be broken up into small projects. Many IT and project management professionals claim that large projects are a must for organizations such as financial and government. However, these claims are more of a belief rather than experience or fact. The Standish Group has looked at a number of identical projects with the exact same requirements and has many examples. We have 50 examples just in the federally funded initiatives surrounding the implementation of the Statewide Automated Child Welfare Information Systems (SACWIS). The cost of these projects ranged from just over $1 million to well over $200 million.

The SACWIC project goal was to serve the needs of children. The basic requirement was to access accurate and detailed information related to cases more easily and in a timely manner. Florida's work on this project began in 1990 with a plan for completion in 1998. The original cost estimate was $32 million. The final cost was more than $230 million and it went live the summer of 2005. The state had 109 people on the project team. As if this weren't bad enough, the state paid for three IBM consultants to run the project. These consultants were responsible for performing the following three jobs: project manager, project architect, and project analyst! Just the salary alone for these three IBM consultants was budgeted at $1.8 million per year.

SMALL PROJECT RESOLUTION IN BANKING



The chart shows small project resolution in the banking industry, from 2003 to 2012. A small project is a project with less than $1 million in labor cost.

In contrast, the State of Minnesota began its SACWIS project in 1999 with eight people. They concentrated on creating a standard infrastructure for collecting data and relied heavily on user involvement to minimize requirements and focus on the essential ones. They used no consultants, but instead found vendors that would partner with them when additional skills were required. Phase One was completed in seven months and Phase Two was completed by mid-year 2000. The state spent $1.1 million. The State of Florida created a much larger scope and spent 230% more than the State of Minnesota, which optimized the requirements. Each of these systems is basically performing the same function.

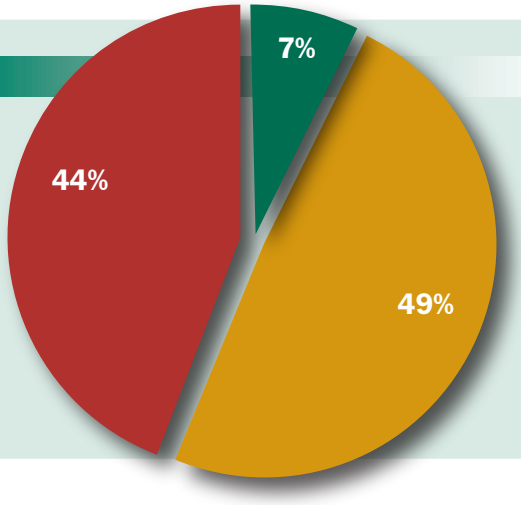
Minnesota is not unique. In 2005, the FBI pulled the plug on the Virtual Case File system after six years and $170 million. The FBI restarted the project as Sentinel and did not do too much better for the first four years. The FBI Sentinel project was approximately 15% complete after four years with 400 people with $405 million spent. A small team of 15 engineers in the FBI building basement finished the remaining 85% in less than a year. This small team used the agile process of small iterations of solid work. The success of this strategy in large government projects is astounding and clearly demonstrates the power of small projects.

The issue of small projects versus large projects is self-inflicted and mostly comes down to corporate culture and project management process. Large projects get visibility, and executive sponsors gain status from the visibility. For many, a large project with large staffs denotes power and prestige. Self-inflicted problems include the budget process of getting a project funded, which is often arduous and complicated. The overhead of starting a small project is often more costly than doing the project. The overhead of tracking and managing a small project is often five to 10 times the cost of creating the output of the project. In addition, the cost to roll out a small project can be more than the cost of the project. Having a small project philosophy can easily overcome these self-inflicted difficulties.

The answer for many firms is to combine projects into a few large projects. The organization will then prioritize and optimize these few large projects. This process also increases their complexity. In our opinion, this is the wrong thing to do because this process increases risk and cost and reduces value. Our approach is to reduce the size and complexity by either starting all projects small or breaking up large projects into small projects. In starting small projects the team focuses on the minimal acceptable product. This should provide 80% of the benefit a large project would produce at a fraction of the cost.

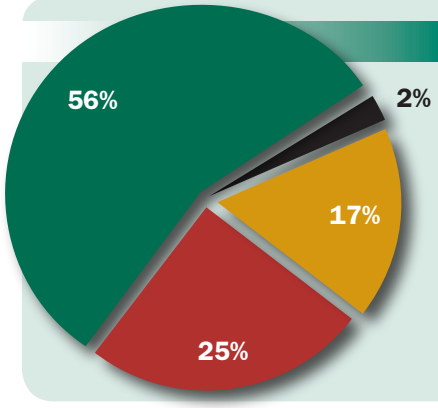
LARGE PROJECT RESOLUTION IN BANKING

The chart shows large project resolution in the banking industry, from 2003 to 2012. A large project is a project with more than $10 million in labor costs.



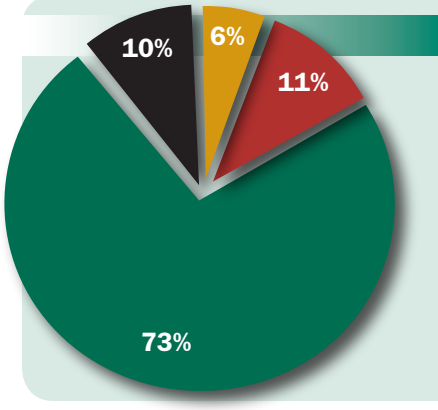
Maybe you are not ready to take the full leap to a small project philosophy. Maybe you just do not believe it will work in your organization. Therefore, you might want to consider an Innovation Center as your underlying platform. The Innovation Center might be funded as a small project budget and set aside. In the beginning, department budgets might not be charged to encourage use of the Innovation Center. Raytheon Integrated Defense Systems did just that by starting an Innovation Center for high-speed code generation based on an agile process. The managers claimed very high productivity numbers over multiple integrated platforms. The Raytheon Innovation Center managers reported that one of their projects was delivered in a year and a half with 13 people compared to three years of 20 people for similar projects. There is currently a queue of IT developers in Raytheon who want to be assigned to the Innovation Center.

PROJECT VALUE



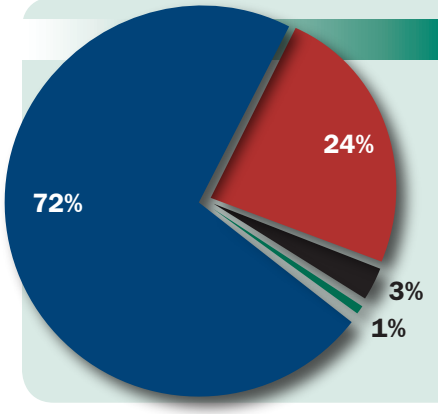
IT executives were asked how often they create a value evaluation, such as return on investment (ROI), for proposed projects.

VALUE REASSESSMENT



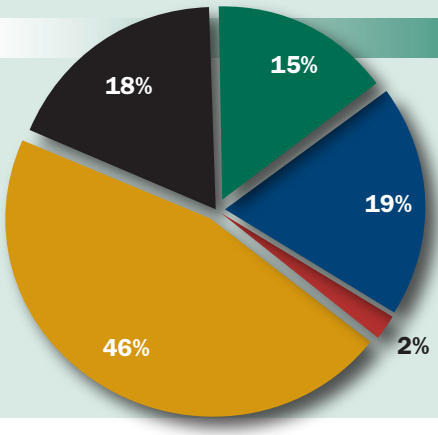
IT executives were asked how often they reassess or change the value evaluation during the life of a project.

VALUE ACCURACY



IT executives were asked how accurate the value evaluation is.

POST-PROJECT VALUE EVALUATION



IT executives were asked how long after a project has been completed, implemented, and is being used to gain value, do they generally evaluate the stated value to see if the project met its value goals.

INNOVATION CENTER

The Standish Group has spent many years on the evaluation and assessment of operational and development centers throughout the world. Our research leads us to believe that the optimal development center should have at least 25 people, but no more than 75. Of course this is a guideline, not a rule. There are four basic tenets of our vision of the Software Innovation Center. The first tenet is that software ideas and projects are done in levels. The second tenet is that there are no project budgets or estimates; funding is by level only. The third tenet is that each level is optimized. And fourth, iteration is the underlying methodology.

1. Levels: There are four levels in the Innovation Center that create and drive what we call the Innovation Funnel process. This process is also referred to as phases, phase-gate, and stage-gate. Each of the funnel levels has a particular activity. A project moves down the funnel through these activities. At each level a committee decides which projects go to the next level and which projects remain at the current level.

2. Breadbasket budget: This is funding used for a common purpose. Breadbasket budgets are used to fund common activities versus specific projects, products, or features. The purpose is to segment the budget to allow activities for business opportunity, discovery, or specifications without having to commit to a particular project or projects. In this regard multiple activities can occur in parallel and the best opportunities are moved forward.

3. Optimization: This is a solution to prioritize projects and requirements quickly and easily. The four constraints of optimization are: capability, focus, risk, and value. The constraints are then measured over the budget. Other constraints are introduced, such as timing and conflict. The results of the solution provide a direction for the optimal portfolio.

4. Agile process: This process is based on iterative development, where requirements and solutions evolve through collaboration among self-organizing, cross-functional teams. The agile process encourages frequent inspection and adaptation, teamwork, self-organization, and personal accountability. The agile process allows for rapid delivery. In theory, it hopes to align development closer to the users' needs by continuous collaboration and delivery of a concrete product.

INNOVATION FUNNEL

Shown is The Standish Group's Innovation Center using an Innovation Funnel concept.