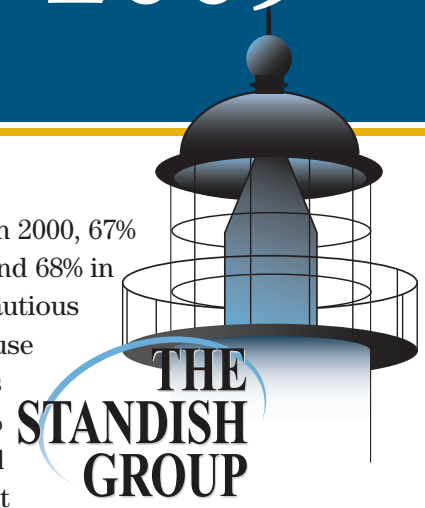


# CHAOS Summary 2009

## The 10 Laws of CHAOS



### INTRODUCTION

This year's results show a decrease in project success rates, with 32% of all projects succeeding (delivered on time, on budget, with required features and functions); 44% were challenged (late, over budget, and/or with less than the required features and functions); and 24% failed (cancelled prior to completion or delivered and never used). These numbers represent a downtick in the success rates from the previous study, as well as a significant increase in the number of failures. The low point in the last five study periods was 2000, in which 28% of the projects were successful; that same year 23% failed. This year's results represent the highest failure rate in over a decade.

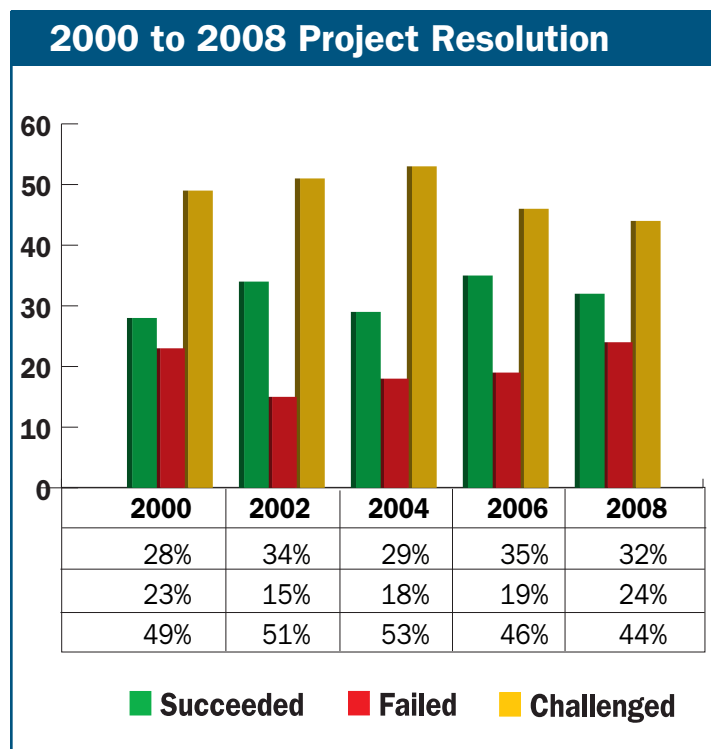
This year's figures also show a substantial increase in both cost and time overruns. Cost overruns increased from 47% in 2006 to 54% in 2008. Time overruns also have gone up, from 72% in 2006 to 79% in 2008. The high point in cost overruns was 2004 (84%). Features and functions developed stayed fairly steady, with 67% of specified requirements. . It

was 66% in 1998, 70% in 2000, 67% in 2002, 64% in 2004, and 68% in 2006. One must be cautious with this number because other Standish studies show only about 20% of the features and functions specified get used.

Size continues to matter, with 61% of successful projects costing less than \$750,000 in labor, and 19% of projects from \$750,000 to \$3 million were successful. Therefore, 80% of successful projects have labor costs under \$3 million. Projects costing less than \$750,000 in labor have a 71% chance they will be successful, while projects costing between \$750,000 and \$3 million have a 38% chance of being successful. Projects over \$10 million only have a 2% chance of coming in on time and on budget, and represent a statistical zero in the success column. Please note we normalize the labor cost to take into account geographic differences in pay grades. The normalized cost is the average of United States pay grades.

In looking at some demographic areas, government had a slight improvement in failures, while banking organizations had major increases. Health care is the only other segment that improved. All other segments had increases in failure. Success also plummeted for most segments, whereas government and manufacturing were the only segments that improved, but only by a slight margin. All in all the numbers looked grim.

The following two pages outline the current CHAOS Success Factors within the Laws of CHAOS.



# The 10 Laws of CHAOS



## 1. LAW OF THE TWO FACES

*Users are both your best and worst enemy.*

The Law of the Two Faces supports the first CHAOS Success Factor, User Involvement, and states that users are both your best friend and worst enemy. Project managers need to cultivate an ecosystem for users and user groups that enables them to explain the business process in detail to the IT organization, and those users should be trained to follow project management protocols. Successful projects include business-knowledgeable users with good communication skills. Challenged and failed projects typically include users with fair to poor communication skills.

## 2. CHEETAH'S LAW

*Swift decisions are typically better than long, drawn-out analysis.*

The cheetah is the fastest mammal on earth, with speeds up to 60 miles an hour. Cheetahs use this speed to catch their prey. It turns out that we have seen many examples where swift and decisive decisions have increased project success. As a result, Cheetah's Law states that swift decisions are typically better than long, drawn-out analysis. This law supports the second CHAOS Success Factor of Executive Support. Projects that have an active and responsive executive sponsor fare better than those left to hang alone without a champion.

## 3. LAW OF THE ROADS

*It does not matter which road everyone comes from as long as they end up in the same place.*

As Yogi Berra once said, "If you don't know where you are going, you might wind up someplace else." This statement rings so true when it comes to a project's business objectives. Thus, the Law of the Roads states that it does not matter which road everyone comes from as long as they end up in the same place. Clarity and focus are essential to a successful project. This third CHAOS law supports the Success Factor of Clear Business Objectives. Every stakeholder

will have his or her own agenda that needs to be fulfilled by the project. It only stands to reason that 10 stakeholders will equal 10 individual goals. This is a major issue because these variable needs will often conflict.

## 4. LAW OF THE FIVE DEADLY SINS

*You will encounter the Five Deadly Sins in all projects.*

The Law of the Five Deadly sins states you will encounter the Five Deadly Sins in all projects. The Five Deadly Sins are part of all project ecosystems, healthy and unhealthy. In

fact, a project cannot be successful without them. For example, every project needs to have an impatient visionary, which results in overambition—the first deadly sin. It is how you deal with each of these sins that will determine the success or failure of a project. This fourth law of CHAOS supports the Emotional Maturity Success Factor.

## 5. LAW OF THE LONG-TAILED MONSTER

*You will always build too much of what you don't need and not enough of what you do need.*

The Law of the Long-Tailed Monster states you will always build too much of what you don't need and not enough of what you do need. The great retailer, F.W. Woolworth, once said that 50 cents out of every dollar he spent on advertising was wasted. He went on to say that he wished he knew which 50 cents. That is the same problem with requirements: 50 percent of software features are not used or wasted, while other features are sorely missed. Over- and underbuilding applications represents the biggest form of software development waste. We think a silver bullet to solve the issue is optimization based on value. The fifth Law of CHAOS supports the Optimization Success Factor.

### The 10 Laws of CHAOS

1. Law of the Two Faces
2. Cheetah's Law
3. Law of the Roads
4. Law of the Five Deadly Sins
5. Law of the Long-Tailed Monster
6. Law of the Edible Elephant
7. Law of the Mad Hatter
8. Law of the Empty Chair
9. Panda's Law
10. Law of the Fools

# The 10 Laws of CHAOS



## 6. LAW OF THE EDIBLE ELEPHANT

*The only way to eat an elephant is one bite at a time.*

The Law of the Edible Elephant states that software should be built in small, iterative steps with small, focused teams (or, eat the elephant one bite at a time). You do so with small bites or stepping-stones. A stepping-stone is a small but significant deliverable. A stepping-stone activity allows for tangible inspection either visually or hands-on. Stepping-stones are keystones in the agile and iterative software development process that lead to more deliverables or indicate the project is not on the right track. Stepping-stones are powerful because they allow for rapid feedback, creation of feature velocity, and accelerated user training and acceptance. The sixth Law of CHAOS supports the Agile Process Success Factor.

## 7. LAW OF THE MAD HATTER

*Complexity causes confusion and cost.*

In days of old, people who made hats often ended up with mental illness. There are a number of theories why this happened, one being that ladies' custom hats at that time were very intricate and it took great pains to create and keep track of all the designs and permutations. It would create great distress for a woman to have a hat similar to another. Projects by their very nature are complex; it takes an empathetic organizational environment to understand the project management process in order for the team to simplify the project management practice. The Law of the Mad Hatter states that complexity causes confusion and cost. The seventh law of CHAOS is supported by the Project Management Expertise Success Factor.

## 8. LAW OF THE EMPTY CHAIR

*Your best person will leave at the worst possible time.*

Turnover is a fact of life. The longer a project goes on, the more likely a key person will leave. This could be a skilled developer or the executive sponsor. When this happens, it

can have devastating results and put the project in peril. The best method to combat such an event is to keep the project cycles short with continuous deliverables. The Law of the Empty Chair states that your best person will leave at the worst possible time. The eighth law of CHAOS supports the Skilled Resources Success Factor.

## 9. PANDA'S LAW

*Inaction is the purest form of failure.*

In our zoo workshops, the panda bear represents high risk and high reward. When participants are asked to focus on gain, the panda bear is always part of the solution. When participants are asked to focus on risk, the panda is always left out of the zoo. However, when they are asked to consider both risk and gain, the results are mixed. In real life few projects have true panda bears. But when they do come about, they need to be embraced and nurtured. Risk is part of every project, but unnecessary risk should be avoided. Panda's Law states that inaction is the purest form of failure. The ninth law of CHAOS supports the Execution Success Factor.

### CHAOS Success Factors

1. User Involvement
2. Executive Support
3. Clear Business Objectives
4. Emotional Maturity
5. Optimization
6. Agile Process
7. Project Management Expertise
8. Skilled Resources
9. Execution
10. Tools and infrastructure

## 10. LAW OF THE FOOLS

*A fool with a tool is still a fool*

Years ago in a focus group, one of the participants said, "A fool with a tool is still a fool." This gave rise to the Law of the Fools. It means having the right tool for the problem, for if every problem were a nail, every solution would be a hammer. However, it is not just having the right tools, but the skill to use them that makes all the difference in success and failure. Tools, infrastructure, and vendors make up a big part of the project management ecosystem. The Tools and Infrastructure Success Factor is supported by the 10th law of CHAOS.

## The 10 Laws of CHAOS

While some of the increases in failures can be attributed to canceled projects affected by the economy, we believe the main cause is more likely the lack of execution and focus and an increase in process, tools, and red tape. Only about 20% of a project's cost is for the software developed; the rest of the cost is in support of the project's business bureaucracy.

In this regard we have made some changes to the 10 Success Factors. First, we moved Emotional Maturity to the number four spot. We then split Agile Optimization into two factors: Optimization (now number five) and Agile Process (six). However, the major change is we deleted Financial Management and Formal Methodology and replaced them with Execution.

While Financial Management and Formal Methodology are important factors, they are currently too much of a good thing. Our fear is that we are now in an ever-increasing cycle: Success rates are bad, so let's put in more control; success rates are still bad, so more controls, and so on and so forth. We are in a state of paralysis through analysis. We need to break this cycle, stop putting in more controls, assess the current environment, put values on the efforts, lighten up, and streamline our execution.

### CHAOS DEMOGRAPHICS:

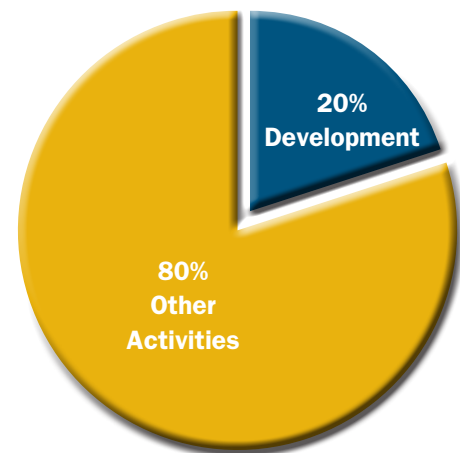
CHAOS results provide a global view of project statistics but do tend to have a heavier concentration on the United States and Europe. Fifty-eight percent (58%) of this year's respondents are U.S.-based, 24% are European, and the remaining 18% represent the rest of the world. Fifty-one percent (51%) of these companies are considered Fortune 1000-type companies; another 32% would be considered midrange; and 17% are in the small-range category. They span a diverse number of industries and organizations.

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