July 25. 2014

Thomas Wheeler
Chairman
Federal Communications Commission
445 12th Street
Washington, D.C. 20554

RE: Docket 09-109

Dear Mr. Wheeler,

We believe the transition to a new Number Portability Administration Center (NPAC) operator is a colossal task. The enormity of the effort has been grossly underestimated and the risks severely minimized. We also believe the anticipated savings will not be realized and costs will escalate out of sight. It is our expert opinion and prediction that the project will suffer great delays, higher costs, and stakeholder frustration. In the end there is a very high likelihood the project will fail and be canceled. In the meantime, innovation will be stifled and a once vibrant competitive environment will suffocate.

The Standish Group is the world-leading independent research organization of software project performance. We are also experts in the total cost of ownership for transaction processing systems.

60 State Street, Suite 700 ◆ Boston, MA 02109 ◆ 508-760-3600

Recently we were retained by Neustar, which currently operates the Number Portability Administration Center, to appraise the likelihood of another organization being able to successfully develop and operate a new NPAC. This appraisal, which is based on the current application running in the NPAC, was published in our research paper titled "Big Bang Boom." Please see the report enclosed.

Neustar requested we look deeper into the transition process and known methods of migrations. We then solicited the opinion of 20 senior information technology professionals to comment and provide feedback on the "Big Bang Boom" paper and known migration methods in our weekly radio program, CHAOS Tuesday. This was an 8-week series titled "Why Do Large Projects Fail?" You can listen to this series by going to www.chaostuesday.com.

Our research did not stop with the radio programs. We created two webinars. The first webinar presented the current state of the transition and timeline. We solicited feedback on this webinar and the transition. The results of this feedback were then presented in the second webinar with comments from two high-level telecommunication executives. Mr. Wheeler, you can view both webinars with our survey results by going to www.standishgroup.com and clicking on the NPAC webinar banners. For your convenience, we have attached copies of the slides used in the second webinar with the results of the survey.

One of our major concerns with a new NPAC operator is if they will have the resources to build and operate a new NPAC. This was a difficult task 17 years ago when the expectation was lower and requirements were much simpler. Even then, the highly skilled Perot Systems failed to produce a satisfactory product. The other skilled vendor, Lockheed-Martin, had major challenges in developing the current NPAC. In fact, it was so challenging and unrewarding they spun the operation out into the current independent organization, Neustar. Neustar also struggled to bring the service up to the current state where you can walk out of the mobile telephone store within a few minutes versus hours or days.

Our opinion is based on current known project management methods and techniques. However, we have not been privy to evaluate the challenging bidder's project plans and operating environment since we do not have access to them. They may have a proprietary method that is unfamiliar to us to accomplish this difficult project. We are available to appraise their project plan and techniques. Our resources may help you in your due diligence in selecting the NPAC operator.

Mr. Wheeler, please feel free to call me if you have any questions at 508-760-3600, Ex 20. We are an independent and neutral resource and would be more than happy to assist in your due diligence.

Sincerely,

James Johnson

James H. Johnson
Chairman

Customer Acquisition and Network Routing in Jeopardy

Industry leaders describe impact of LNP transition on industry operations

Jim Johnson, CEO, The Standish Group

Dick LeFave, Independent IT Consultant

Jerry James, Founder, Jerry James & Associates LLC

THE STANDISH GROUP

- Management Advisory Firm since 1985
- World leader in Project Failure Research
- International & Domestic Clients
- End-Users & Vendors
- Headquartered in Boston
- Primary Research Based

WE WORK WITH:

Our Speakers

Dick LeFave
Independent IT Consultant and former CIO, Sprint

Dick founded a technology consulting company in Connecticut focused on information strategy and execution based on over 35 years of IT experience with over 20 years as a CIO.

Jerry James
Founder Jerry James & Associates LLC and former CEO of COMPTEL

Jerry James, Founder, Jerry James & Associates, a management consulting firm established in 2005 has provided professional services to investors, senior management teams and emerging businesses in the communication, oil and gas, medical and other industries.

NPAC is Core to Customer Acquisition and Correct Network Routing

NPAC is the U.S.'s routing registry with real-time connectivity to all fixed line, wireless, and IP networks

SUBSCRIBER ACQUISITION

$40 Billion in wireless subscriber revenue each year

NETWORK ROUTING AND RATING

- 5 billion authoritative routing and addressing attributes
- 100,000 new phone numbers activated every day

PUBLIC SAFETY

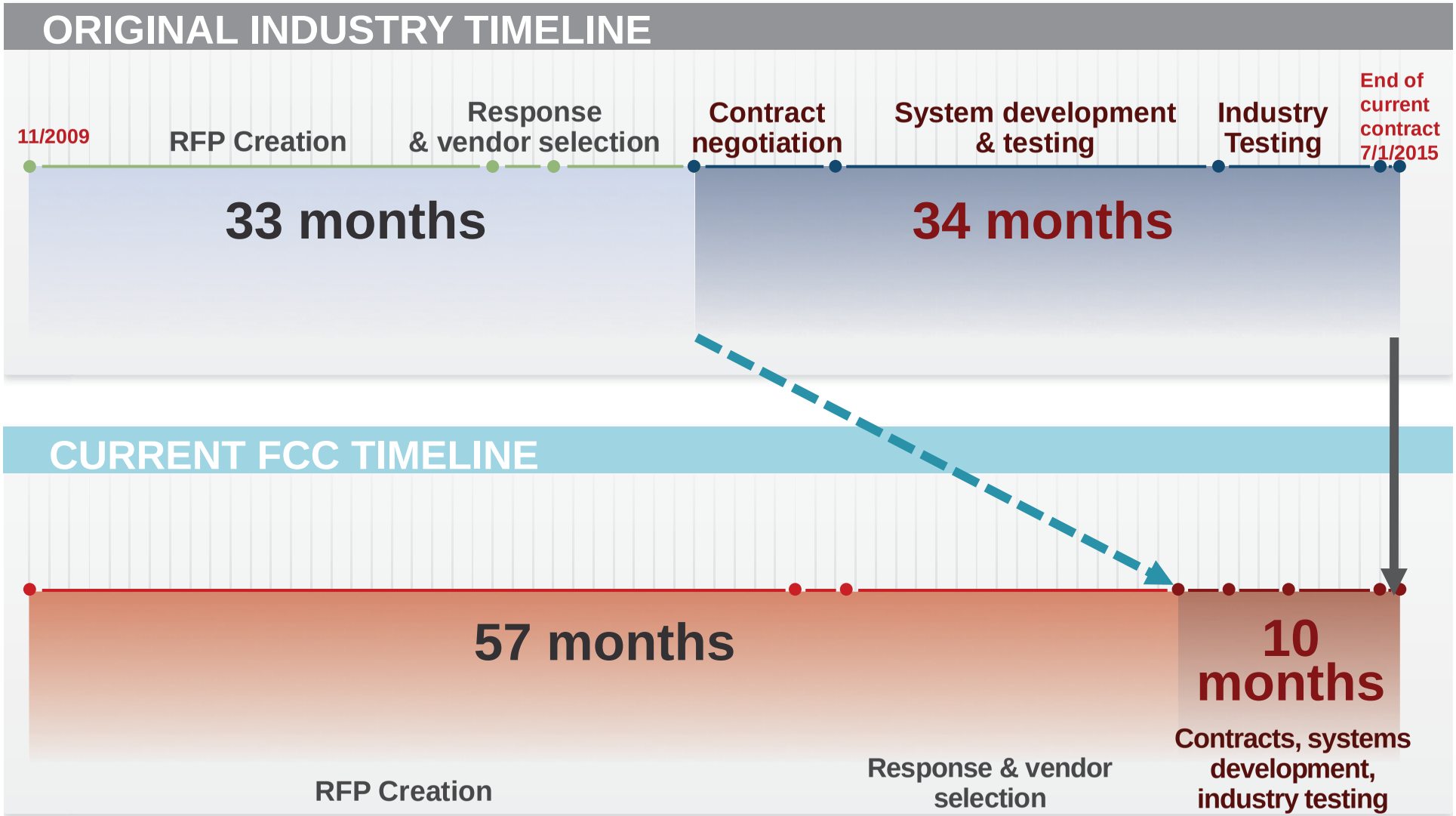
- Disaster Recovery & Network Emergency Preparedness
- Law Enforcement

NPAC Project Assessment

Methodology | Project Characteristics | Analogies

Estimated New NPAC Project Resolution

Timeline

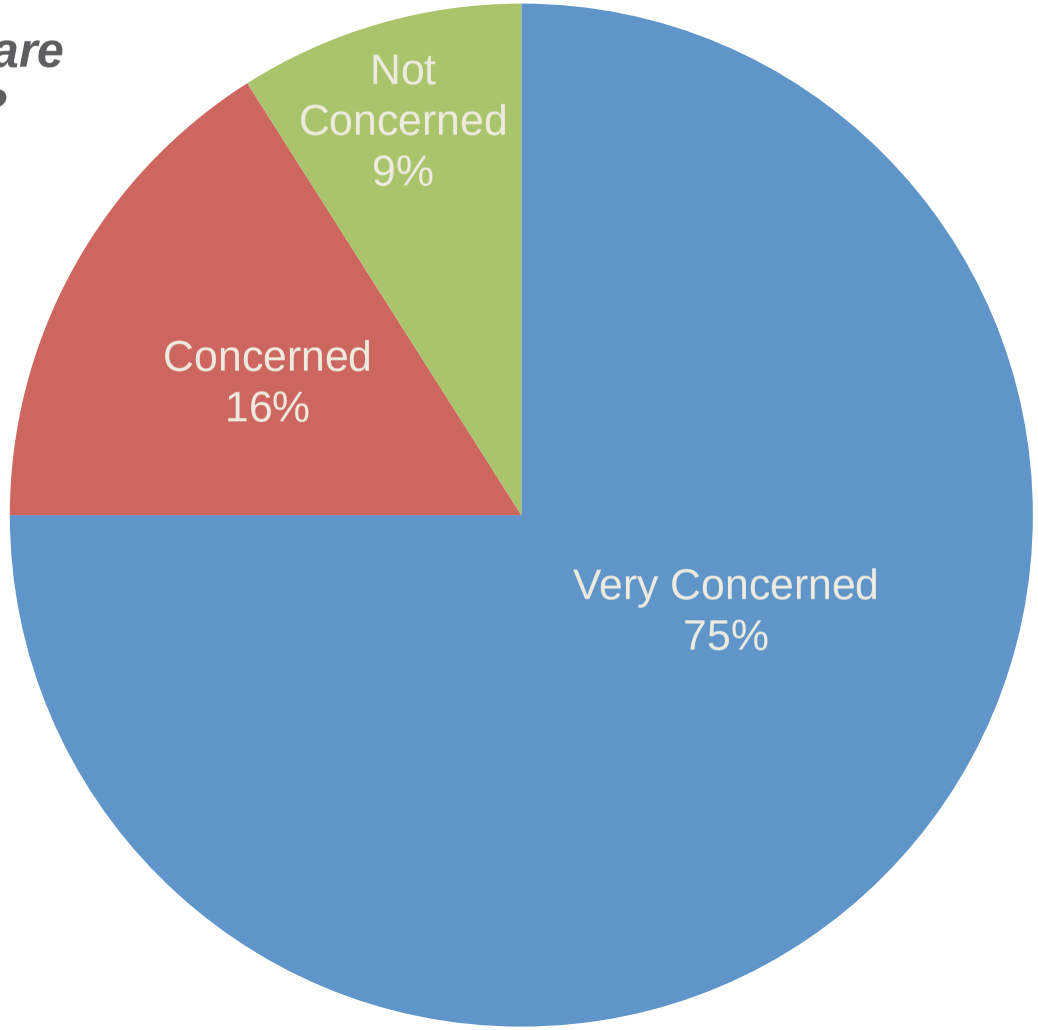

ORIGINAL INDUSTRY TIMELINE
11/2009
RFP Creation
Response & vendor selection
Contract negotiation
System development & testing
Industry Testing
End of current contract 7/1/2015
33 months
34 months
CURRENT FCC TIMELINE
57 months
10 months
RFP Creation
Response & vendor selection
Contracts, systems development, industry testing

Can this be done in 10 months?

Survey Question -***How concerned are you about the transition timeline?***

Survey Response Comment

"To successfully convert 5,000 vendors in less than one year is next to impossible."

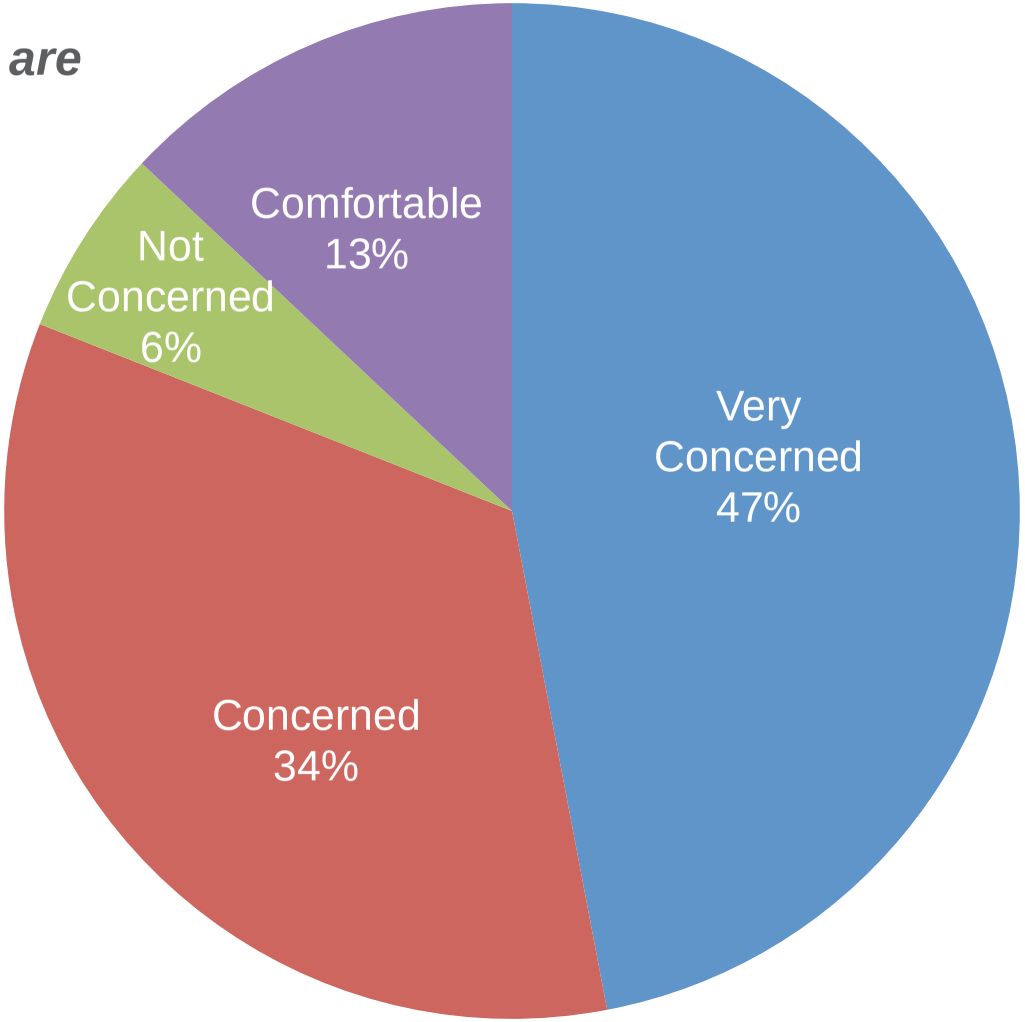


What could go wrong?

Survey Question - ***How concerned are you about accountability and governance?***

Survey Response Comment

"With over 40 years in the business of delivering large projects, I am very concerned with the timeline and the accountability and governance of this project."

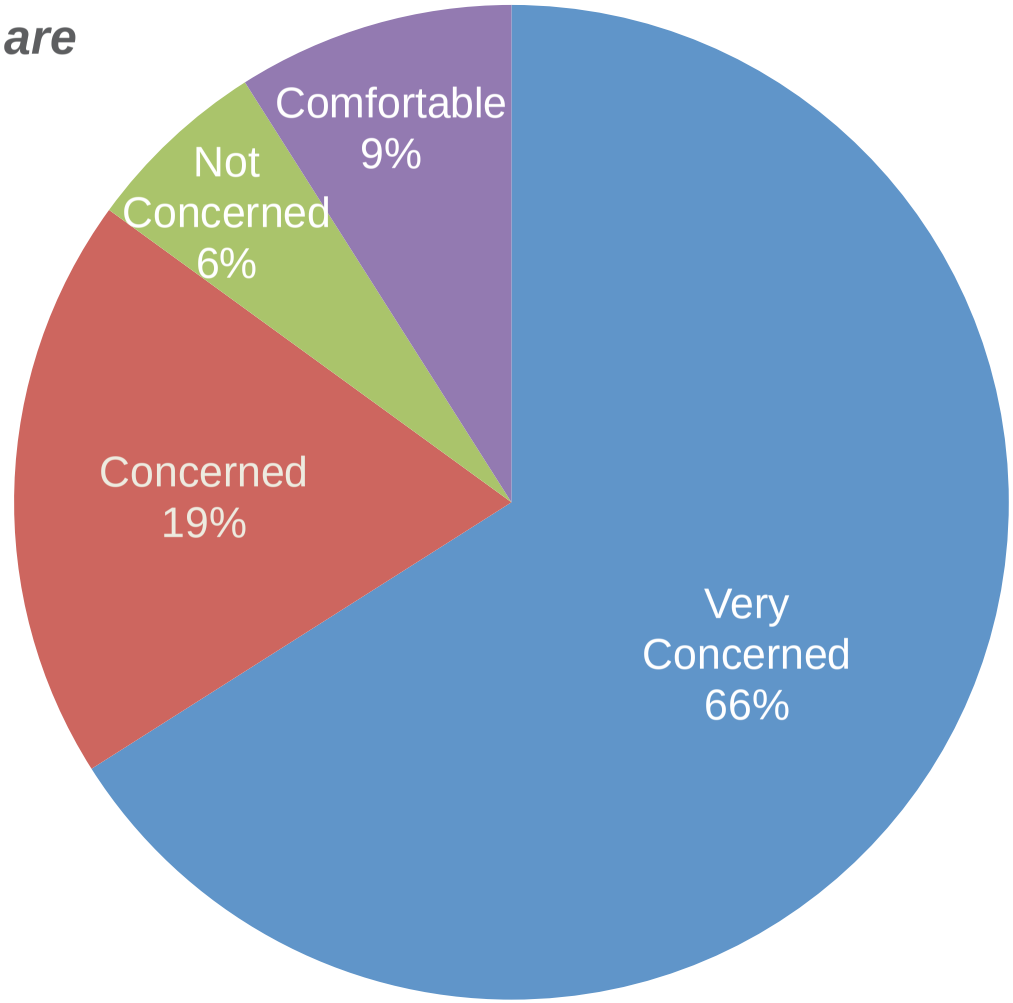


What is the cost to the industry and who is going to pay?

Survey Question - ***How concerned are you about the cost of migration?***

Survey Response Comment

"This transition will be overly costly in my opinion with no real benefit to the network, carriers and most importantly to consumers."

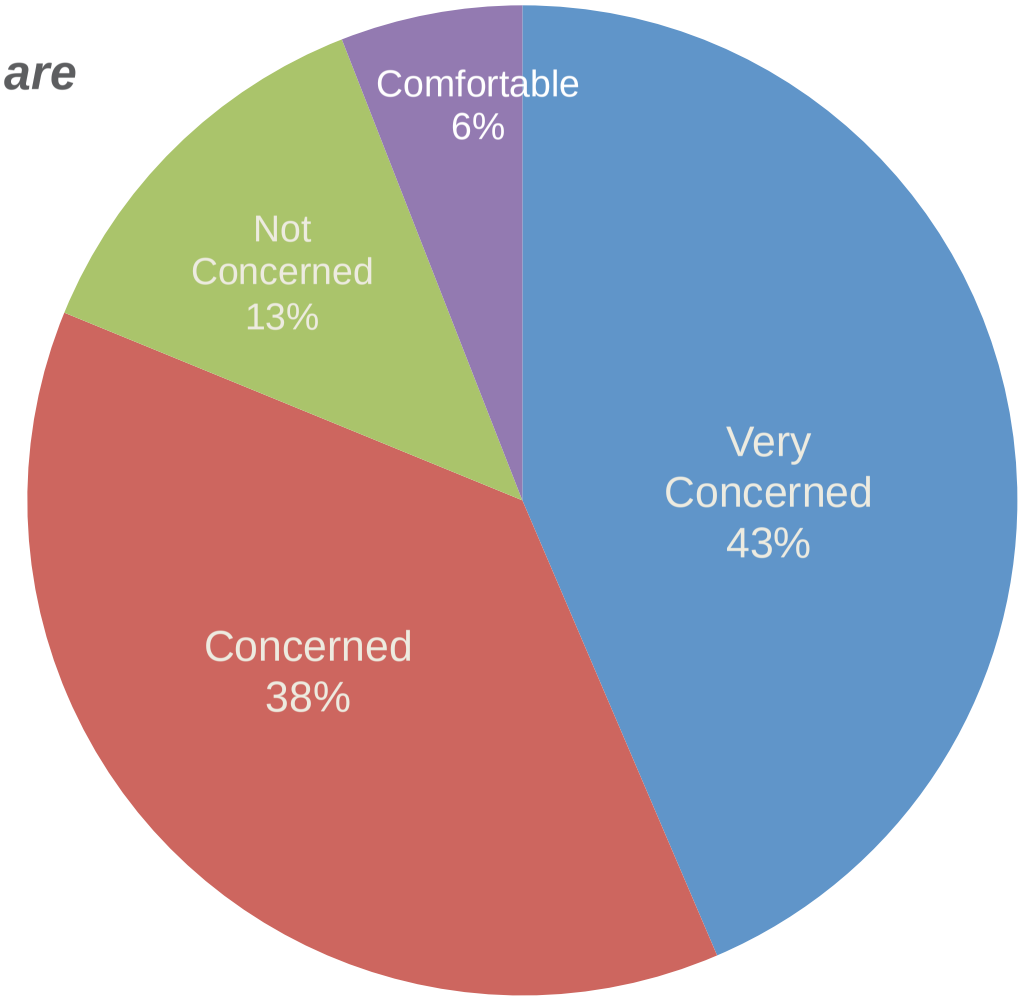


Will the new service just replicate current functionality?

Survey Question - ***How concerned are you about service gaps?***

Survey Response Comment

"There is not enough time to ensure that all functionality is tested and proven to work. The current vendor has spent decades to make the process fool proof for the consumer."

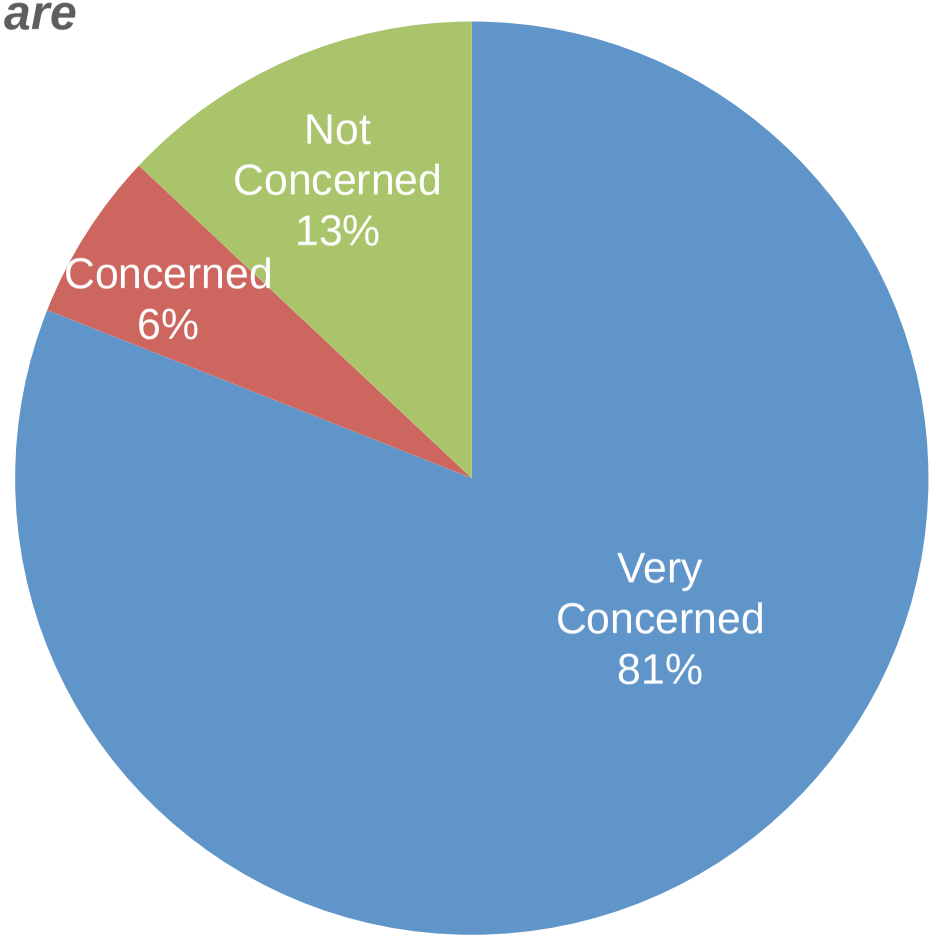


Could timing of the transition impact other industry initiatives e.g. PSTN to IP?

Survey Question - ***How concerned are you about the impact on future innovations?***

Survey Response Comment

"It concerns me that after all the scaling and optimizing Neustar has done over the years the FCC would even consider transitioning the service to another provider. The risk, cost and impact to smaller players in the market does not support the rules of competition. I am very concerned."

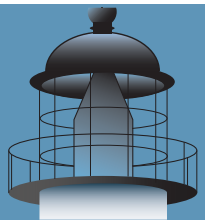


Who could be impacted by a badly executed transition?

Learn More and Get Involved

- File comments and questions with the FCC (docket 09-109)- close date 7/25
- Contribute at www.standishgroup.com/fcc
  - Anonymous comments
  - Pull down menus
  - Vote of elements

BIG BANG BOOM

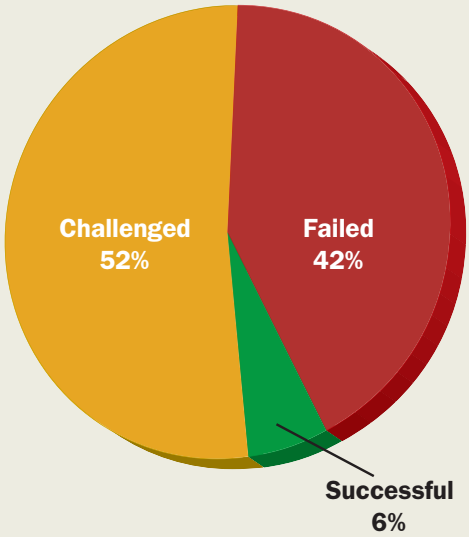


The original Big Bang theory is the prevailing cosmological model that describes the early development of the universe. A Big Bang theory for software and information technology projects is that everything needs to come together at once to have a working solution that is universal to all stakeholders. The major attribute of a Big Bang is that all functionality must be delivered on a certain date. The purpose of this research note is to consider the Big Bang theory using a potential large project to highlight our capability of a Pre-project Appraisal.

In this research report we compare a proposed project to start up a new Number Portability Administration Center (NPAC) to other large projects within the CHAOS database. The NPAC provides a vital service to the public by allowing telephone and mobile users to keep their telephone numbers when changing carriers or locations.

This research report showcases two of our standard ValueCHECK Pre-project Appraisals for a possible proposed new vendor to replace the current vendor, Neustar (neustar.biz), as prescribed by Federal Communications Commission (FCC) rules. The FCC and telecom industry are currently considering proposals for the next contract term. This event is an opening bidding process and is a perfect opportunity to showcase our ValueCHECK Pre-project Appraisal and comment on the Big Bang approach.

RESOLUTION OF LARGE SOFTWARE PROJECTS



The above chart shows the resolution of very large software projects from 2003 to 2012 within the CHAOS database. Successful projects are on time, on budget, and have a satisfactory implementation. Challenged projects are over budget, late, and/or have an unsatisfactory implementation. Failed projects are projects that were either canceled prior to completion or not used after implementation.

A new NPAC will require delivery of the software and all the other services and operations to be done in a Big Bang, since stakeholders will expect and demand the same functionality and level of service that Neustar is currently supporting. This report contains excerpts from other Standish research studies that support this appraisal. The Standish Group found that a proposed new NPAC vendor and environment would have many similarities to large telecom systems such as size, complexity, number of diverse stakeholders, many connected subsystems, need for intense testing, and a hard completion date, also known as a "Big Bang."

An alternative project approach is the iterative cycle. With this approach, functionality is delivered in small iterations. Small groups adopt functionality and their feedback is used to build more functionality. 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 agile methodologies such as Scrum. Amazon, eBay, WebEx, and Google used this approach to build their products and organizations. Start-up companies all over the world work on what is known as "minimal acceptable product" to launch their new companies

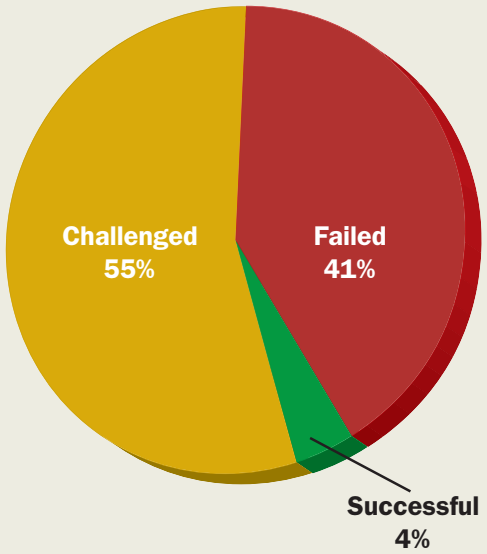
In fact, when Neustar built the first NPAC, the project was a Big Bang type, even though it was much smaller in scope and Neustar was not free of challenges. Over the last 17 years Neustar has not only delivered new functionality, but also optimized both the new functionality and the level of service to meet the needs of the industry. By Neustar adopting a more iterative style of development and delivery the telecom industry has increased the value of their investment. A new NPAC vendor will need to go through this process all at once, resulting in a true Big Bang implementation.

NEW NPAC PROJECT RESOLUTION

The Standish Group benchmarking shows that a project to recreate the current Number Portability Administration Center (NPAC) Service would be measured against the largest projects within the CHAOS database. In general, this segment has the highest rate of failure of all projects, with just a 6% chance the project will come in on time and within budget.

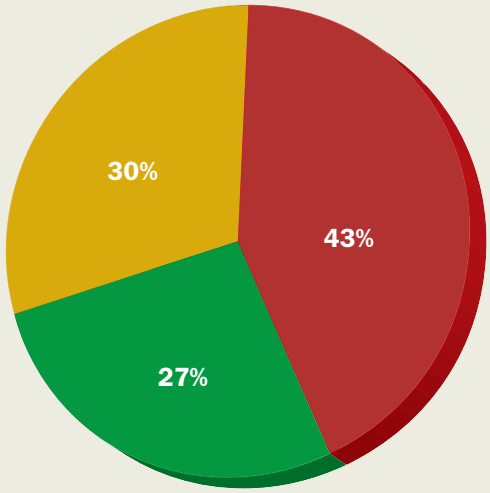
While size is an important factor in calculating the chances of success, there are 25 other project attributes that form the project profile. Complexity is the second most important factor. There are a dozen attributes that contribute to complexity, including the number of stakeholders. Type of development is another major factor in calculating the chances of success, and includes methodologies, staff skills, tools, and delivery. Delivery is key here, since a new service vendor will not have the ability to phase in functionality and services, but rather would require a "Big Bang" delivery. Industry is the fourth major factor, which also includes environmental considerations. The last major factor is the application, and here we measure similar types of applications. These four additional factors of success – complexity, type of development, industry, and application – modify the likelihood of an on-time delivery from 6% down to 4%.

ESTIMATED NEW NPAC PROJECT RESOLUTION



The above chart shows the resolution of more than 100 similar projects in the CHAOS database that matched to a new NPAC vendor and project.

NPAC TIME OVERRUNS



The above chart shows time overruns of a new NPAC project based on similar projects within the CHAOS database. Using these numbers, The Standish Group estimates that on average the time would double; i.e., a two-year project would take four years.

- 20-50%
- 51-100%
- Over 100%

OVERRUNS

In addition, we must consider the type of rollout, such as a single major release versus an iterative-style rollout. This project, with a tight time frame and a single major release, or "Big Bang" approach, puts additional pressure on its success. The research shows that there is a 39% chance the project will cost more than twice the current estimate. While cost overruns for a new vendor is less of a consideration for the stakeholders since it has little financial impact, time overruns could have a major effect on both cost and operational efficiency of the telecommunications providers. Our research indicates that there is a high likelihood that the project will take twice the normal time to complete. If this happens the vendor could fail in a similar manner to Perot Systems in 1997. And there is added pressure at this time, since the time to start and complete a much bigger initial project has been greatly compressed. It is highly likely a new vendor would need to cut out steps and efforts, such as comprehensive testing, to reduce cost and time. In essence, to be successful a new vendor would need to recreate 17 years of systems development and services within 15 months.

The standard ValueCHECK Pre-project Appraisal has seven major parts: 1) project overview; 2) predictable resolution; 3) cost and time overruns; 4) return on value; 5) common success factors from successful projects within the results set; 6) common stress factors from challenged and failed projects within the results set; and 7) observations. All these parts are included in the ValueCHECK Pre-project Appraisal and formed the underlying foundation of the NPAC evaluation.

COMMON SUCCESS FACTORS

While there were few similar projects in the CHAOS database that were successful, those that were successful had some common traits. First, they had a highly skilled executive sponsor with virtually complete responsibility who inspired the project team and stakeholders. The executive sponsor would celebrate accomplishments throughout the project to maintain a highly efficient team. The Standish Group has outlined 50 skills needed to be a good executive sponsor in our *Executive Sponsor Research Report*. Second, they had highly engaged users who thoroughly knew their subject matter. Third, the project team overcame overambition by focusing on high-value items and did not get caught up in providing low-value items for the sake of political appeasement. The project team made the difficult cuts of functionality. Fourth, they had a good elevator pitch. Last, the successful organizations were skilled at the attributes of emotional maturity, which included quick decision making and cooperative peers who worked together toward the same goals and objectives. The telecommunications industry will need to coalesce around identifying one executive sponsor (from companies with very diverse interests – very hard to do) and spend considerable time with a new vendor to make this even a challenged project.

EXECUTIVE SPONSOR

	HIGHLY SKILLED	POORLY SKILLED
Successful	60%	27%
Challenged	28%	43%
Failed	12%	30%

The above table shows the resolution of similar projects within the CHAOS database that had a highly skilled executive sponsor versus those that had a poorly skilled executive sponsor.

EMOTIONAL MATURITY SKILLS

	SUCCESSFUL	FAILED
Highly Skilled & Skilled	61%	29%
Moderately & Poorly Skilled	19%	71%

The above table shows the resolution of large projects within the CHAOS database of organizations that were highly skilled at emotional maturity versus those that were poorly skilled.

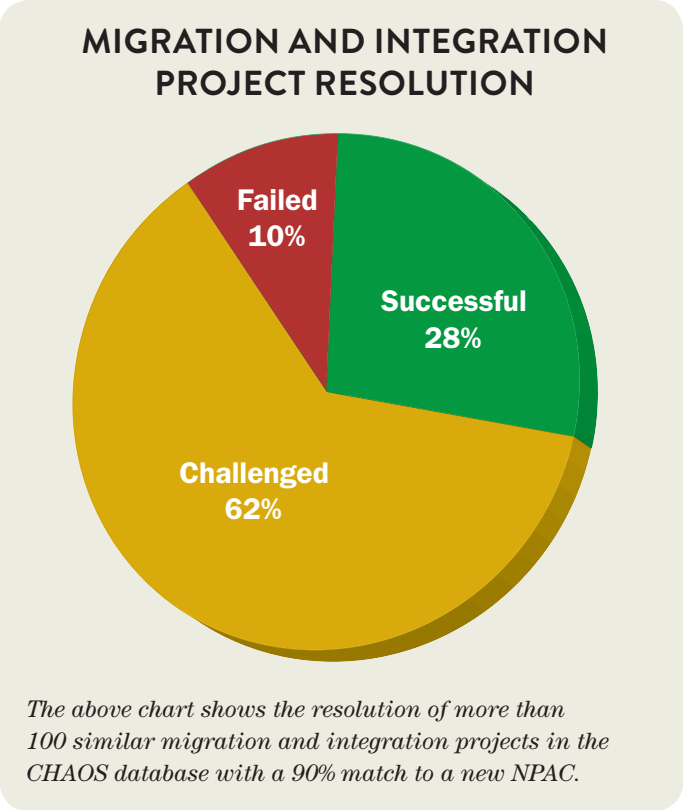
COMMON STRESS FACTORS

There were many more both challenged and failed projects to consider, therefore there was a more diverse set of stress factors. One factor that was very common is optimal team size. Many of the organizations had large teams. Second, the project teams did not manage or optimize scope, which in this case is moot since the scope is well defined and mandatory. Third, users were not engaged and those who were did not know their subject matter. Many of the project teams did not involve the users and demonstrations were held sparingly. Fourth, many of the organizations had poor emotional maturity skills. The Standish Group has outlined 50 skills organizations need to achieve emotional maturity. These skills include managing expectations, gaining consensus, and reflective listening. These 50 skills are outlined in our *Emotional Maturity Research Report*. Last, many of the projects were the "Big Bang" type and did not use an iterative process.

> **"Executive sponsors need to provide inspiration to the project team and stakeholders. They are in a position to influence and help move the team forward to the ultimate project goals. Their inspiration will be infectious and their enthusiasm will inspire the project team."**
>
> *-The Standish Group's Executive Sponsor Research Report*

NPAC PROVIDER MIGRATION AND INTEGRATION PROJECT RESOLUTION

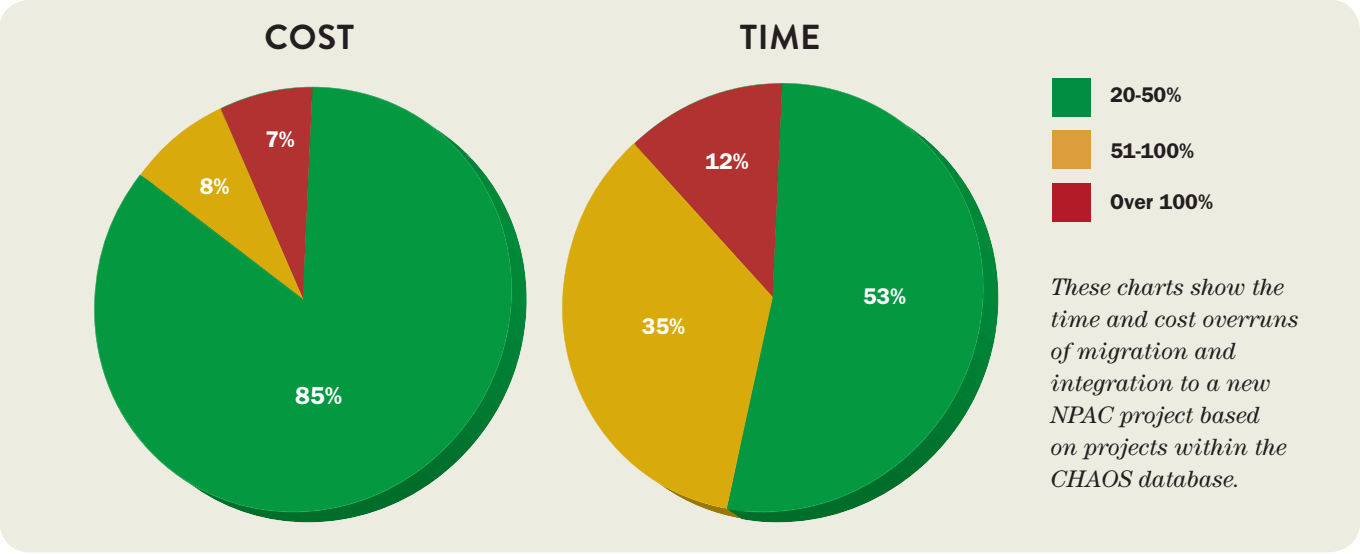
Neustar estimates that the industry will have to execute multiple projects to migrate a minimum of 80 unique systems to a new NPAC vendor. The Standish Group estimates the cost of these small projects, including system integration and user acceptance testing (UAT), to average $2 million per project. For these individual projects the success rate is 28% with only a 10% chance of failure. This means that eight of the customers will either cause the new NPAC to be delayed while they restart the project or they will not participate in the service. It is clear that over 60% of the customers will have service delays and struggle with the migration and integration. Any company that is not ready for transition will stop or delay all companies from being able to use the new NPAC vendor. In addition, the new NPAC vendor will need to build or acquire a number of supporting and interoperable systems such as billing, customer support, issue tracking, etc. These systems need to be in place to provide the level of service that the industry is currently enjoying. In other words, besides the core NPAC service, there are a large number of small projects that all have to come together to make this a successful project. The sheer number of small projects that need to be integrated will cause delays and even failures of the larger project.



The above chart shows the resolution of more than 100 similar migration and integration projects in the CHAOS database with a 90% match to a new NPAC.

OVERRUNS

The Big Bang rollout of the NPAC puts additional pressure on the success of migration and integration projects. This work cannot fully begin until the NPAC (and all associated support systems) is built, tested, and operational in production. What we have is 80 small follow-on Big Bang projects. Our estimate is that 62% will be challenged, or 50 unique systems will be late and over budget. Eighty-five percent will be over budget by only 20% to 50%. However, time is more important than budget, since time delays hold up all the rest of the organizations. Our research shows that 26 systems will be delayed by 20% to 50%. In other words, a three-month project will turn into a four- to five-month project. This shows that 17 of the systems will have a time overrun between 51% and 100%. In other words, these projects will turn into five- to six-month projects. This shows that six of the systems will have time overruns over 100%. If we add in the eight unique systems that failed, it means 14 will not be ready to participate in the rollout when the new NPAC is ready to launch.



These charts show the time and cost overruns of migration and integration to a new NPAC project based on projects within the CHAOS database.

COMMON SUCCESS FACTORS

There were many successful projects in our database that matched the migration and integration profile. One of the most prevalent success factors affecting this outcome is a highly competent technical team member. This is a very important factor for projects of this type and style, since they rely heavily on people who know the new system, know the technology, and know how the existing interfaces and databases work. Second, the project manager had basic PM skills and encouraged a sense of ownership for team members. Third, the project team used prototypes with lots of user feedback. Fourth, progress tracking was transparent with minimal use of project management tools, processes, and governance. Last, executive sponsors were inspiring. In other words, for success you need: 1) A highly skilled executive sponsor; 2) A highly competent team; 3) A good project manager; 4) Prototypes with fast user feedback; and 5) Transparent progress tracking.

CAPABILITY

	SUCCESSFUL	FAILED
Above Average	38%	29%
Average	46%	48%
Below Average	16%	23%

The above table shows the skill level of project teams for successful and failed projects within the CHAOS database for this set of projects that match the migration and integration profile.

DECISION MAKING

	SUCCESSFUL	STRESSED
Swift	12%	4%
Calculated	71%	41%
Protracted	17%	55%

The above table shows the decision-making characteristics of organizations that had successful projects and those that had challenged or failed (stressed) projects within the results set.

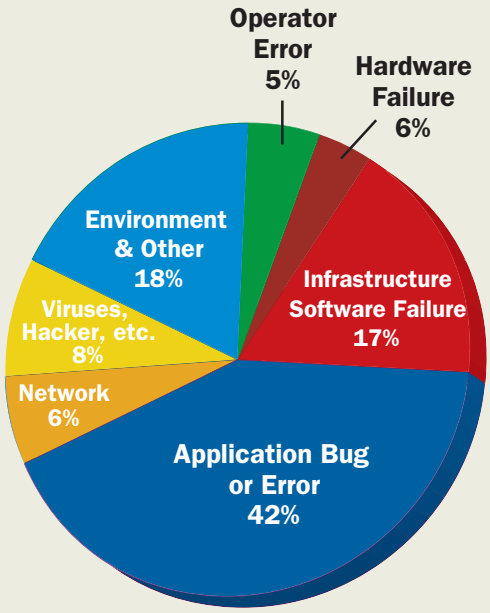
COMMON STRESS FACTORS

The most common stress factor for the profiled projects was delayed issue resolutions. In general, the project teams made slow decisions and the executive sponsor did not distribute decision power to team members. In general, the latency between issue and decision caused the project to overrun both cost and time. In some cases, it caused the project to fail. Second, the project teams did not focus on goal optimization. Third, the project teams were not very flexible. Fourth, the project teams over promised and added features at the last minute. Fifth, the project teams did not understand the impact of major design changes.

CAUSES OF DOWNTIME

Software bugs are far more prevalent than hardware errors. In fact, software failures account for more downtime costs than hardware failures by a ratio of more than 3-to-1. It is also true that software bugs account for far more actual downtime than hardware failures. Yet many companies spend a great deal of money and time on hardware quality, but spend little time and money to ensure software quality. Even for those companies that do devote considerable resources to inspect their code, the effort is so complex that errors are still inevitable. That said, quality hardware is relatively easy to implement, whereas quality software is at best difficult to implement. In fact, companies that do not spend the time and money up front to correct bugs end up paying for it in downtime and corrective efforts after the code is released. The worst case is the loss of customers or revenue.

CAUSES OF DOWNTIME



The above chart shows application bugs to be the leading cause of downtime from Standish Group's 20 years of primary research.

USER ACCEPTANCE TESTING

Standish Group's research shows that coding errors and programming bugs cause the vast majority of all application outages, well above hardware, network, and database failures. On the other hand, quality assurance is frequently the first area that is cut back when deadlines are missed. This, of course, increases the problem. An error caught within the development process is from 100 times cheaper to correct than a bug found during operation. However, in this case early detection is in the hands and costs of the new NPAC vendor. Later detection and costs are passed to the telecommunications provider. User acceptance testing (UAT) is the last quality control function after unit testing, code inspection, and system testing. The cost of UAT varies by many factors such as size, complexity, industry, and strategic importance. Our research shows a reasonable range is between 2% to 40% of the project budget. The Standish Group puts a new NPAC system into the highest size and complexity zone, which puts the cost of UAT at 40% of the project. This estimate conforms to the $2 million for 80 unique systems as described on page 4 of this research paper. Therefore, the vendor will pay about 10% of the project in QA costs and the telecommunications industry will pay 40% of the project in QA costs.

ALL PROJECTS & ORGANIZATIONS

UAT % OF IT PROJECT BUDGET						
		COMPLEXITY				
		C1	C2	C3	C4	Overall
SIZE	S1	2%	4%	8%	10%	6%
	S2	3%	7%	15%	25%	13%
	S3	4%	11%	25%	35%	19%
	S4	5%	16%	35%	40%	24%
Overall		4%	10%	21%	28%	15%

The table shows the general percentage of cost/time/effort expended by the organization in relationship to the project budget.

THE RULE OF TEN

Our research indicates the general Rule of Ten. This rule states: You will find 90% of the defects in unit testing and code inspection and they will cost 10 times less to fix than fixing them in system testing. You will find 9% of the defects in system testing and they will cost 10 times less to fix than fixing them during UAT. You will find .9% of the defects in UAT and they will cost 10 times less to fix than fixing them in production. In a skilled QA process only one-tenth of 1% of defects will escape into production. In other words, the sooner you find a defect and fix it, the cheaper the cost per defect. This assumes that you pass through the entire quality path. If you skip a step on the path you pay the price. There is just no way you can have perfect software. Automated tools and inspection services can and do reduce defects and cost, but nothing replaces users trying out and using the application. A new NPAC vendor has to ultimately fix software bugs; however, the impact of a bug would be borne by the telecommunications companies in the cost of downtime such as customer service and manual processes. A single bug in the New York Stock Exchange Trading System cost the security industry $64 billion for just a few minutes of downtime. This trading system had been in production for several years before the bug surfaced to cause the outage.

RULE OF TEN				
	Defects	Defects Found	Cost to Fix/Detect	Cost
UNIT TESTING & INSPECTION	15,000	13,500	$100	$1,350,000
SYSTEM TESTING	1,500	1,350	$1,000	$1,350,000
UAT	150	135	$10,000	$1,350,000
PRODUCTION	15	14	$100,000	$1,400,000
Total Cost of 500,000 lines of code				**$5,450,000**

The above table shows the defect rate and cost for 500,000 lines of code (estimated number of lines in the current NPAC) using the Rule of Ten with a 90% detection effective rate.

COST OF QUALITY

It has become the general IT industry practice to reduce the cost of quality. Many well-known large IT providers make their customers become their quality control department. Many users and customers have grown to accept poor quality as a cost of doing business. An example of an organization that provides good quality to its customers is a large online book and general merchandise organization. It has a habit of releasing new functionality almost daily. It also practices the Rule of Ten, but goes one step further. When the company releases functionality it does so in a circle of users. As it gets feedback from those users it fixes defects and then widens the circle until the company is satisfied with quality. At that point in time the company releases the function to its general user base. If you skip a step on the path of the Rule of Ten or reduce the effectiveness of quality, you pay the price in production. The problem is this approach is not available to a new NPAC vendor. A new NPAC vendor needs to release the entire scope and functionality all at once to every telecommunications provider. The Standish Group has seen many examples of projects that skimp on the quality effort and go into production too early because of a firm "Big Bang" date, which then causes major problems. The Standish Group estimates that just a 10% drop in QA effort by a new NPAC vendor could increase the cost of downtime to the telecommunications industry by almost eightfold. It is just a fact of life that as money and time run out the quality efforts are reduced.

RULE OF TEN				
	Defects	Defects Found	Cost to Fix/Detect	Cost
UNIT TESTING & INSPECTION	15,000	12,000	$100	$1,200,000
SYSTEM TESTING	3,000	2,400	$1,000	$2,400,000
UAT	600	480	$10,000	$4,800,000
PRODUCTION	120	108	$100,000	$10,800,000
Total Cost of 500,000 lines of code				**$19,200,000**

The table shows the defect rate and cost for 500,000 lines of code using UAT in the Rule of Ten, but reducing the detection effective rate by only 10%. In this case we find 80% of the defects not 90%.

TRUE COST OF A PROJECT

The Standish Group has done significant research toward understanding the true cost of a project. There are often many unplanned impacts on the final actual costs of a project. Much of this research is contained in our white paper, "The True Costs of a Project," published in 2012. The term "hidden costs" refers to costs that are frequently overlooked or underestimated when planning the initial budget for the effort. This can often be attributed to a failure to calculate labor costs for activities that are included in the plan. The "True Costs" study found that user, executive, and vendor meetings were the second largest factor in costs (23%), eclipsed only by software development. This highlights user and executive interaction activities as key factors in driving hidden costs.

MAJOR PROJECT COST ITEMS

Major Items	% of True Costs
Project Analysis and Design	18%
Software Development	32%
Executive, User, and Vendor Meetings	23%
Project Management Support	12%
Quality and Inspection	10%
Other	6%

The above table shows the major project cost items from "The True Costs of a Project" white paper.

EXCLUDED ACTIVITIES

Activity	% of Inclusion
Executive Management Support	14%
User Input and Feedback	23%
Status Meetings	37%
Education Development and Training	42%
Post-Implementation Support (3 months)	51%
Project Management	79%

The above table is a result of our "True Cost of a Project" study that shows the rarity of properly budgeting for these costs.

HIDDEN COSTS

Our research has shown that on average, planned costs amount to only two-thirds of the eventual actual budget. Using this model, one could expect that the actual costs incurred by each of the telecommunications providers would be approximately $3 million up from $2 million on average. An examination of the key success and stress factors for this type of project shows that various incarnations of user and executive involvement are present as both positive and negative factors – increased user/executive interaction helps; decreased user/executive interaction hurts. Unfortunately, this characteristic is rife with opportunities for hidden costs, as the labor time for the executive/user community is a prime area often overlooked in budgeting. It should be noted that this is a difficult task even inside organizations that are focused on singular goals and objectives. Telecommunications industry participants, which are competitors and have divergent objectives, will need to collaborate. This effort will require additional time and cost to achieve.

USER INVOLVEMENT

A new NPAC service provider will need to understand the requirements from the user point of view. The provider will not be able to take the specification and build a new system. Such an approach is a recipe for disaster. The Standish Group believes finding and engaging the right users to participate in the project is one of the most important details for a successful project. The project needs users who have the business knowledge, the wish to provide effort, and the time to participate. It was lack of user involvement that caused the large-scale federal government virtual fence project to fail. We already saw that user involvement is 23% of the true cost of a project. The telecommunications industry must be ready to put forth this effort to help a new NPAC service provider build a new system.

MAJOR PROJECT COST ITEMS

	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

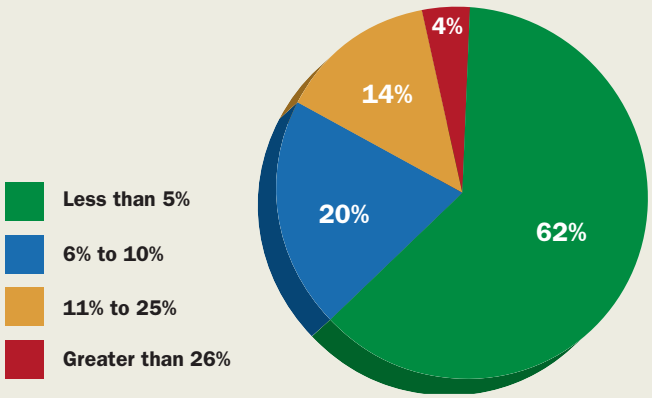
IT executives were asked to rate and rank the difficulty of their IT project workforce in mastering the project management skill of identification of the user.

EXECUTIVE MANAGEMENT SUPPORT

The Standish Group has spent considerable effort to understand the effect the executive has on the outcome of a project. We dedicated the *CHAOS Manifesto 2012: The Year of the Executive Sponsor* to understand the efforts and skills needed to be an effective executive sponsor. We have concluded the executive sponsor should be the most important person involved with a project and is ultimately responsible for its success or failure. As we presented in the *CHAOS Manifesto 2012* report: In a recent engagement we were asked to examine four different methods for upgrading a critical system. With one of the methods, the executive sponsor estimated he would spend a third of his time on this project. While a raw cost of time would be expensive, the real cost is the loss of opportunity that he drove. This cost exceeded the budget of the entire project. This could very well be the case for a new NPAC system with much of the executive time being spent overseeing and managing the project.

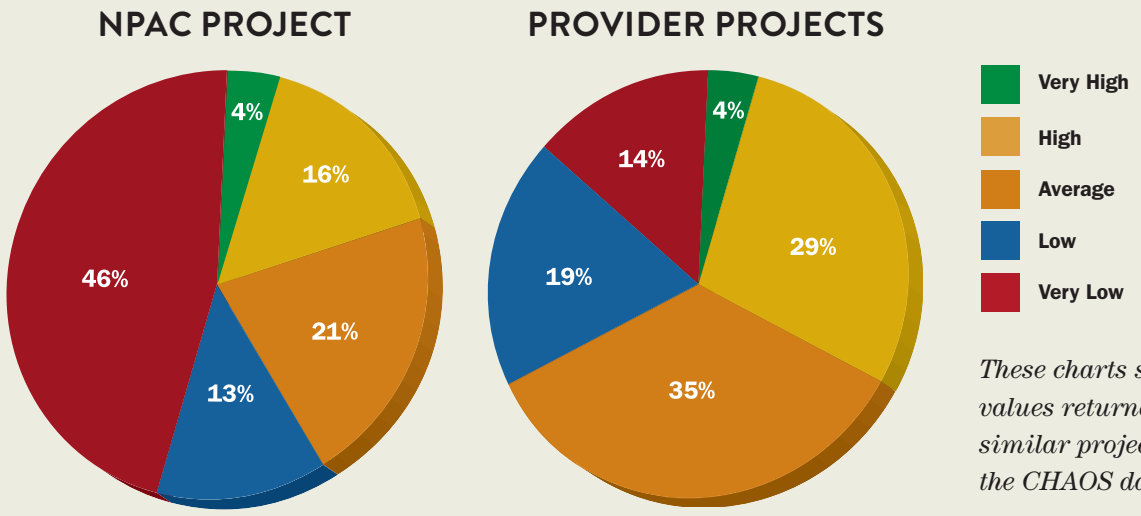
SENIOR EXECUTIVE TIME

IT executives were asked the total maximum percentage of time a senior executive can devote to the executive sponsor role, over all projects and programs. Senior executives can spend about 7% of their time on project activities. Of course, it is expected that senior executives will work longer hours, so the average per week would be 60 hours or about 4 hours per week on projects.



RETURN ON VALUE

Our standard definition directly from the CHAOS Knowledge Center states: Return on investment (ROI) is a performance measurement used to evaluate the efficiency of a project investment and to compare that project to various other projects. To calculate ROI, take the return of a project and divide by the cost of the project; the result is expressed as a percentage or a ratio. If a project does not have a positive ROI, or if there are other projects with a higher ROI, then the project should not be undertaken. Therefore, it is imperative to measure the return of monies and effort spent as compared to other efforts within the industry and other organizations. Since money is not always a good indicator of value with applications for health and safety, we coded our CHAOS projects with value metrics from very low value to very high value.



These charts show the values returned for similar projects within the CHAOS database.

While the cost to replace Neustar is the responsibility of the new vendor there is a major cost to the telecommunications industry. This cost includes the $2 million not including hidden costs for the 80 unique systems that will be required to migrate and integrate the new system with their applications. This totals $160 million if everything works the first time with no delays. On the other hand, the industry will need to spend some money on new procedures and training, and this could total another $100 million. There are other costs such as management oversight, legal, and accounting that could be in the range of $25 to $50 million. Therefore, The Standish Group estimates the telecommunications industry as a whole will need to spend optimistically $300 million to replace the current Neustar service with a new NPAC vendor. In total, it is more likely the cost will be between $500 and $600 million if we include items such as the cost of downtime, lost transactions, additional customer service, and other costs associated with going to a new industry vendor. Since there is no added functionality or benefits, the sole benefit is a reduction in fees. Industry norms indicate that a three-year payback is necessary to take on any project. Some organizations demand a shorter period for payback. Given the size of the industry investment, the multifaceted effort, and problematic timing, our investment simulator does not produce a payback either within a three-year period or the five-year contract period.

In general, a successful start-up is unlikely because it needs three major factors to succeed that might not be possible to achieve given the parameters of this project. These three factors are a highly skilled executive sponsor, highly engaged users, and a focus on high-value items. For this project, a highly skilled executive sponsor would have to command the authority and speak for the interests of 2,500 different companies – often with competing interests – making this success factor difficult to realize. The users of NPAC are spread out across the telecommunications industry, and only a select few of them have been engaged in the selection process, making a transition more difficult due to the low ownership. The specifications for the platform are 100% fixed, not subject to trade-offs or value judgments absent a highly charged political process.

OPPORTUNITY LOST

The Standish Group does not see any real value in replacing Neustar with a new NPAC vendor except for possible cost savings. Cost savings usually is not a good reason to replace a specialized mission-critical service. Cost savings is more fruitful for commodity services and products. It is our opinion that a change in vendors will be more likely to cause increased costs and no savings. However, the bigger question is lost opportunities. A new NPAC vendor will cause the industry to lose three major opportunities.

The first major opportunity is the $300 to $600 million migration costs that could be used for additional investments in new telephone equipment, customer capabilities, and any number of products and services with a high return on investment. This is a huge loss of strategic focus to leverage existing operations.

The second is any savings that a new Neustar contract would offer. During the last five years Neustar has been optimizing its operation for both increased service levels and productivity. It is conceivable that Neustar could reduce its fees again. Such savings would go right to the bottom line without any risk, effort, or investment. These additional savings could be used for further investments in new telephone equipment, customer capabilities, and any number of products and services with a high return on investment, for lower risk.

The third lost opportunity might be the most important. While a new vendor is creating a new NPAC, this NPAC will be in the same functionality state as the current NPAC. The current NPAC has to be in a static or frozen condition for transition to work at all. Any changes will cause even further delay. The industry will lose momentum from several years of stagnation during the transition period. Innovation is the lifeblood of any industry. The telecommunications industry is fueled by invention and a change in the NPAC vendor could stifle that innovation.

ADDITIONAL RESOURCES AND RESEARCH

There are several research reports cited or utilized within this research report. These reports are:

- CHAOS Manifesto 2012: The Year of the Executive Sponsor
- CHAOS Manifesto 2013: Think Big, Act Small
- Emotional Maturity Research Report
- Executive Sponsor Research Report
- The Rule of Ten
- The State of Readiness
- The True Cost of a Project

CHAOS Tuesday

All of these reports are available to CHAOS University Members and some can be purchased separately in our online store at standishgroup.com. Many of the subjects within this report are subjects of CHAOS Tuesday, our Internet radio program. These shows include:

CHAOS Tuesday #29: User Acceptance Testing

CHAOS Tuesday #16: Gaining Consensus

CHAOS Tuesday #15: The Good Sponsor

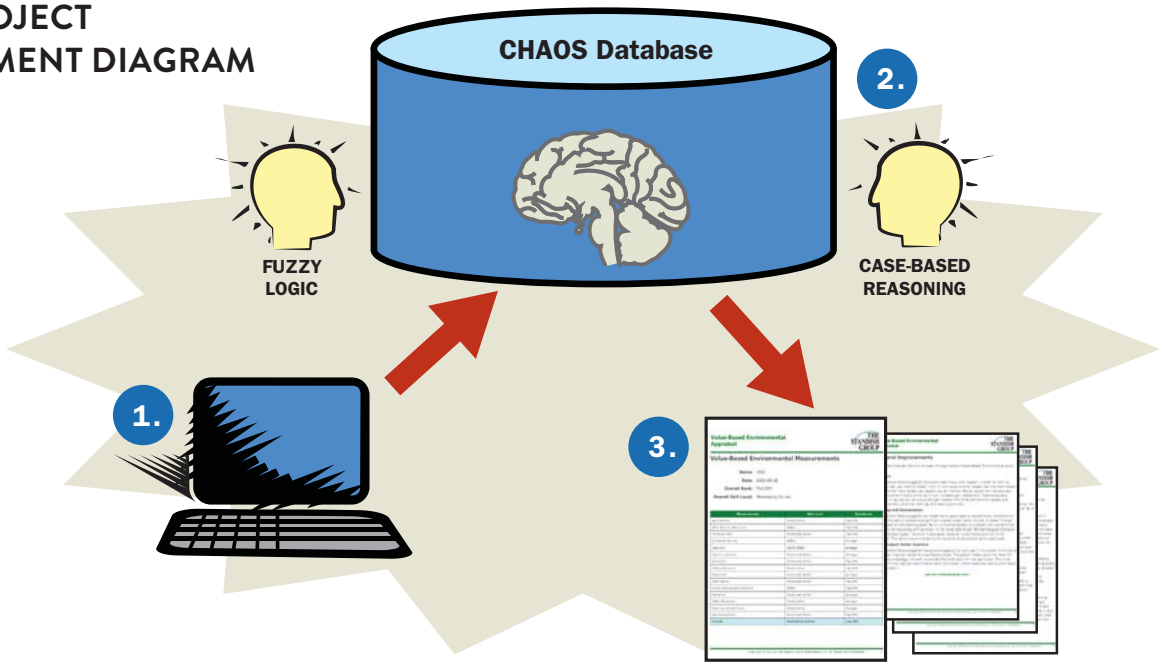
CHAOS Tuesday #14: Trade-offs

RESEARCH PROCESS

The Standish Group has been collecting project performance data in the form of cases for the last 20 years. Over these two decades we have looked at 100,000 projects ranging from small projects to multibillion-dollar projects. In the first 10 years we used many different types of instruments and various degrees of data collection for almost 50,000 projects. These formative years provided the foundation for a more comprehensive, yet more focused set of instruments for the next 10 years. Since 2003 we have used a more standard method of collecting project cases that allows us to create a single database of 50,000 projects with multiple methods of access and analysis. It is this new database that we used to form our opinions as to the success or failure of a new NPAC project.

In addition to building the CHAOS database, The Standish Group has been advancing its state-of-the-art case-based reasoning technology. This unique wisdom engine matches the profile of the NPAC system and migration project over the many attributes of projects within the CHAOS database. We use a 5-point, 5-scale match to select projects from the database to be used in the results set. The first step in our process is to build a profile of the NPAC project. In this case we built two profiles, one for the core application, Number Portability Administration Center (NPAC), and one for telecommunications provider migration and integration projects. Using case-based reasoning and nearest neighbor technology, we extracted cases to be used in the results set.

PRE-PROJECT ASSESSMENT DIAGRAM



The results set provided the basic resolutions of successful, challenged, and failed projects. The results also provided the average overruns, value return numbers, success factors, and stress factors. Standish Advisors carefully reviewed the results and the cases in the results set, made adjustments, and modified the profile until they were satisfied that the results matched the two projects. The resolutions, overruns, and success and stress factors are discussed on pages 1 through 5. The value return numbers are discussed on pages 10 to 11.

There are more than 25 different attributes that we collect in the project profile. These attributes include the method of creation and implementation, as well as the number of different people, departments, executives, users, and others who would be involved and have use of the project. The business application is considered. We consider the project environment as well as the scope of the project. In many of our pre-project analyses we consider the level of competency; in this case we used an above average competency rating. We consider the industry. We take into account the project methodology such as agile versus waterfall and Big Bang versus an iterative rollout. In this case we used both a waterfall method and a Big Bang rollout since there is a hard completion date, and a required functionality that is stated up front. In summary, the process is: Step 1: Create a project profile; Step 2: Match the profile against the database; Step 3: Standish Advisor performs the analysis and writes the report; and Step 4: A written report is delivered to the client.