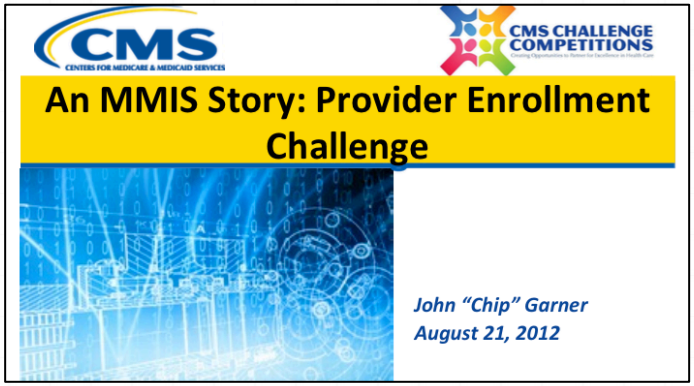
Medicaid Provider Screening Portal Challenge



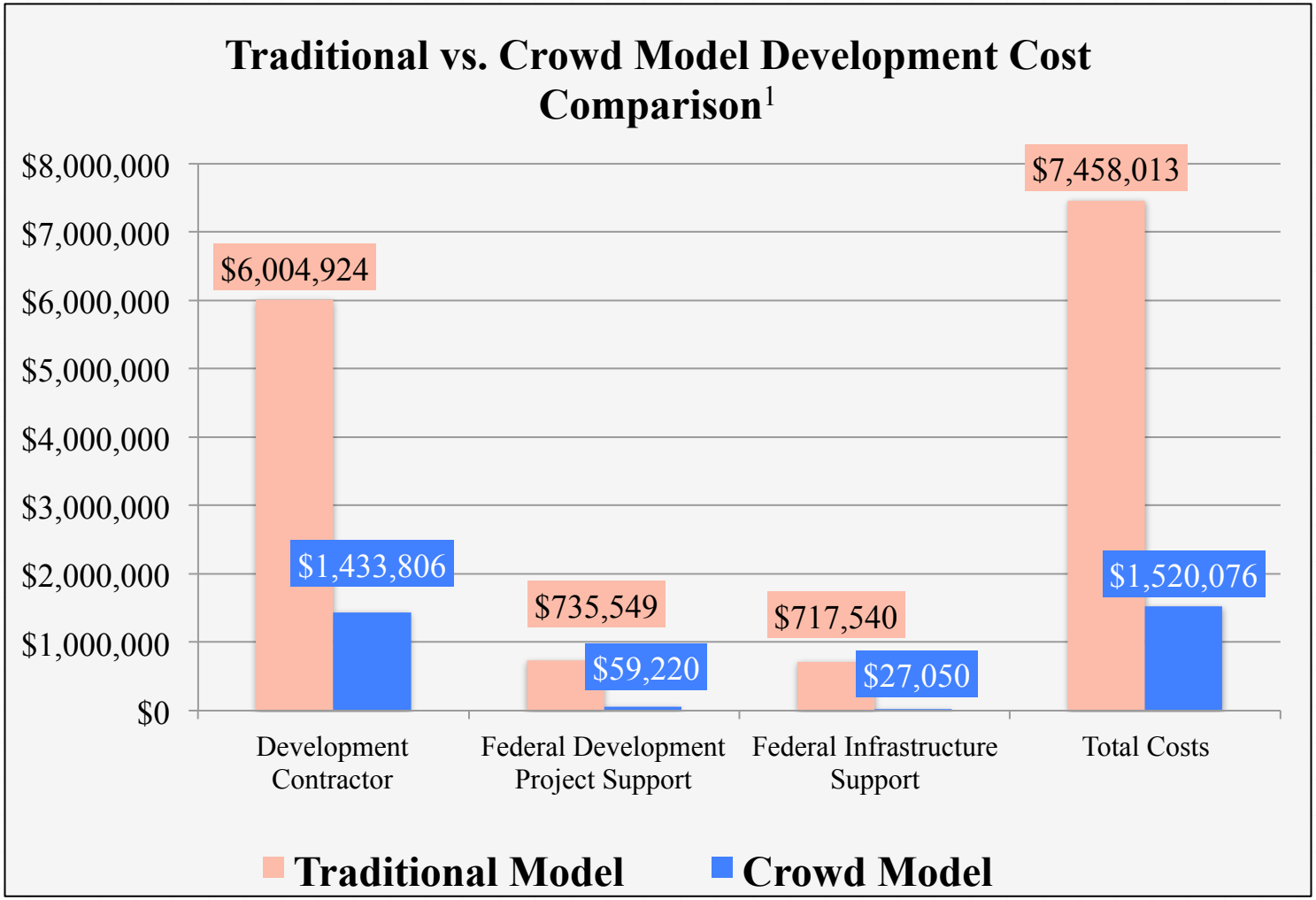
This project involved 124 challenges, and had 1638 registrants from 39 different countries.

The primary objective of the project improving capabilities for streamlining operations and screening providers to reduce fraud and abuse.

Specifically, the challenge outcome supports the development of a multi-state, multi-program provider screening application capable of risk scoring, credentialing validation, identify authentication, and sanction checks, while lowering burden on providers and reducing administrative and infrastructure expenses for states and federal programs. (http://www.topcoder.com/cms/medicaid-enrollment-portal/)

The Application is available for download and use on GitHub.com.
https://github.com/nasa/coeci-cms-mpsp

Cost Savings with Crowd Model vs. Traditional Model



Notes: 1) This graph is a specific example from the CMS Provider Enrollment module built for the state of Minnesota. Source: "CMS Provider Enrollment Challenge." Chip Garner and Anne Wood. September, 2013. "Appirio Testifies Before Congress – Crowdsourcing, Innovation and Prizes." April, 2014. "Tech Trends 2014 Inspiring Disruption." Deloitte University Press.

CMS
CENTERS FOR MEDICARE & MEDICAID SERVICES

CMS CHALLENGE COMPETITIONS
Creating Opportunities to Partner for Excellence in Health Care

An MMIS Story: Provider Enrollment Challenge

John "Chip" Garner

August 21, 2012

General Background

- Concept Name: Improving Medicaid Provider Screening through State Shared Services.
- Funding Sources: OMB Partnership Fund pilot monies. CMS and pilot States will provide funding based on the current 90/10 matching formula for regular MMIS implementation.
- Program Applicability: This solution is a component of the Medicaid Management Information System (MMIS) that each state currently builds and maintains separately.

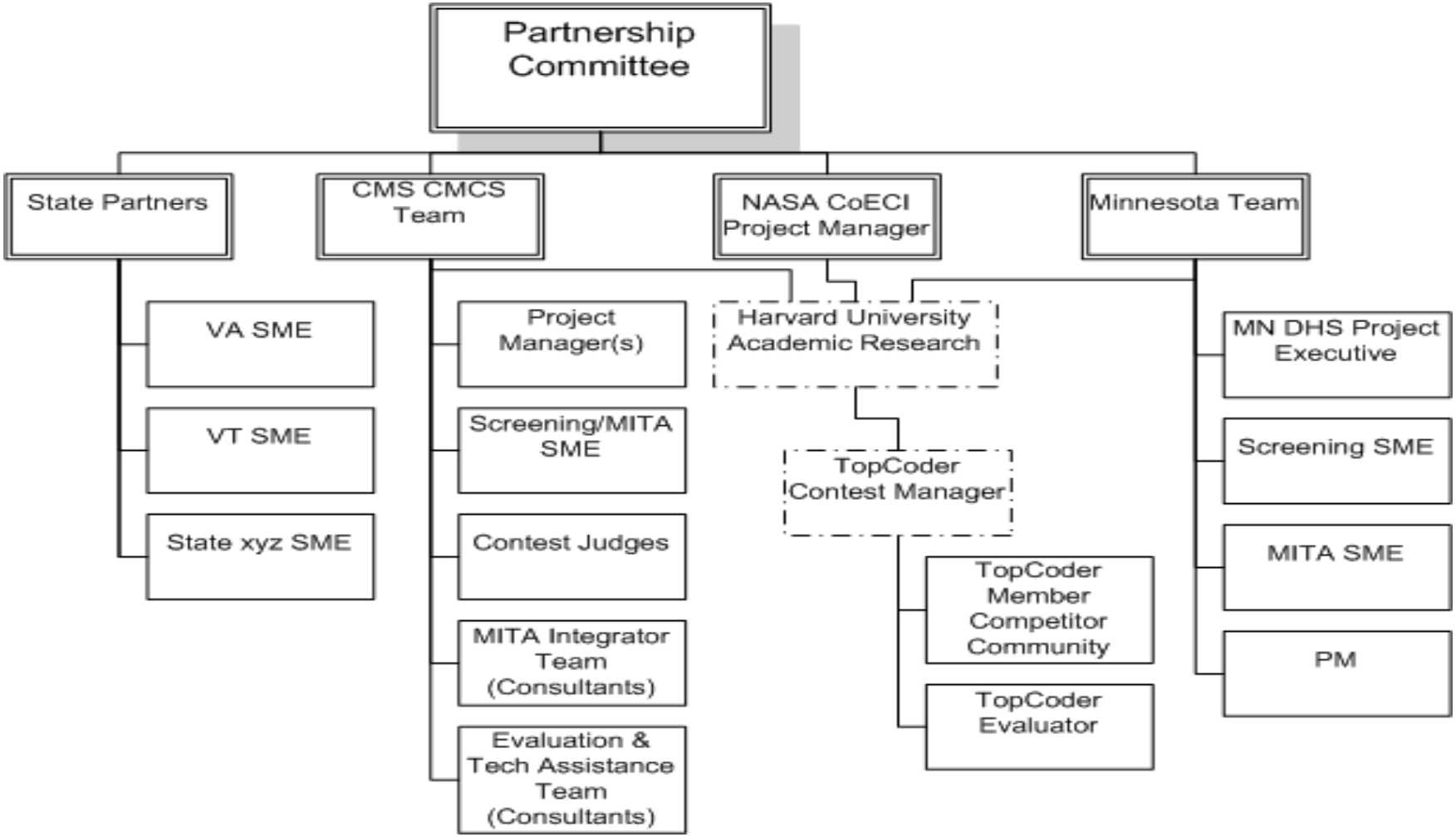
Project Goals

- What we hope to achieve:

  To produce and evaluate a prototype shared services solution for States to leverage in verifying Medicaid provider eligibility.

- Goals:
  - To test how open source technology can reduce costs and reduce time to implement new solutions in state programs.
  - To inform and drive the use of a shared services model for Medicaid MMIS initiatives as a MITA best practice for States to adopt as they update and modernize their systems.

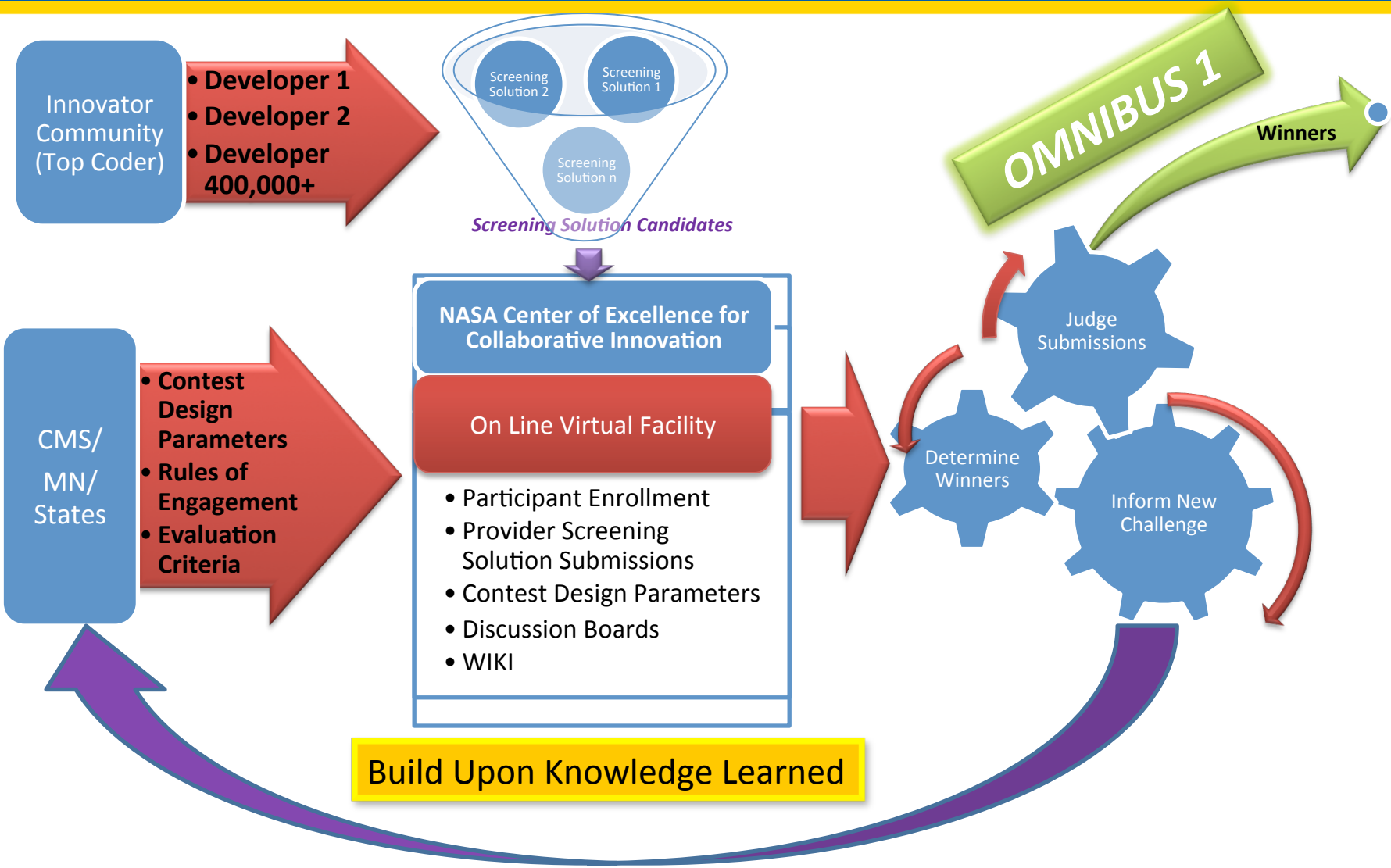
State Pilot Provider Screening Challenge Team



"Crowdsourcing"

- A distributed problem-solving and production model.
- Problems are broadcast to a group of solvers in the form of an open call for solutions.
- Users—also known as the crowd—submit solutions.
- Solutions are then owned by the entity that broadcast the problem in the first place.
- The contributor of the solution is, in some cases, compensated either monetarily, with prizes, or with recognition.
- May produce solutions from amateurs or volunteers working in their spare time, or from experts or small businesses which were unknown to the initiating organization.
- Benefits of crowdsourcing:
  - Can gather large numbers of solutions or information and that it is relatively inexpensive to obtain this work.
  - Users are motivated to contribute to crowdsourced tasks by both intrinsic motivations, such as social contact and passing the time, and by extrinsic motivations, such as financial gain.

How Do We Do This?



Omnibus Approach & Contest Types

- *Open and Directed Innovation Contests*
  - *Idea Generation*
  - *Conceptualization*
- *Creative Contests*
  - *Logo*
  - *Wireframes*
  - *Storyboards*
  - *Mobile Screen*
- *Software Contests*
  - *Software Specification*
  - *System Architecture*
  - *Module Architecture*
  - *Component Design*
  - *Component Development*
  - *User Interface Prototype*
  - *Assembly*
  - *Test Scenarios*
  - *Test Suites*
  - *Bug Hunts*
  - *Content Creation*

Metrics Summary:

~ 150 contests

~ 32 weeks

Software Contest Methodology

- **Applications are developed in a piecewise fashion (not delivered in a big bang).**
- **Applications are developed in an agile like fashion (as opposed to waterfall methodology).**
- **Features and functionality are specified, designed and delivered continuously in components modules.**
- **Every contest receives multiple submissions in pursuit of a fixed first place prize (second place prizes are also awarded).**
- **Every contest submission is evaluated and scored by a review board panel.**
- **First and second place results are provided to project stakeholders and to downstream contests.**

Judging & Evaluation Methodology

- **Evaluators review all contest submissions and record their assessments in a standardized scorecard.**
- **The scorecards are submitted to the CMS contest judges.**
- **The CMS contest judges determine the contest winners based on a standardized assessment of the evaluation factors being used to evaluate each prize contest.**
- **All contest submissions remain anonymous.**
- **Neither the evaluators nor the judges will know the identities of the individuals that submit their solutions.**

Ideas On Multi-State Participation

- **Capture state requirements in a feedback track running parallel to the critical development path for the project.**
- **Established a procedural framework for including other states:**
  - **Include participant states in status meetings.**
  - **Set schedule/procedure for incorporating feedback.**
  - **Establish a State Requirements committee that sets priority and non critical-path scheduling for incorporating state requirements.**
- **Possible Participants**
  - **This is a new business need, and every state will be a candidate consumer.**

State Engagement Model – Vanilla Flavor

- **State Engagement Model - States can assist with the Challenge effort by participating in specific roles such as:**
  - **Capturing Requirements/Evaluation Criteria**
  - **Outreach/Communication**
  - **Ensuring MITA Alignment**
  - **Assisting in Strategy development for MMIS integration**
  - **Providing expert assistance in developing a Road Map going forward**
  - **Performing Requirements Gap Analysis**
  - **Piloting Solution**
  - **Solution Evaluation**
  - **Outreach to MMIS vendors**

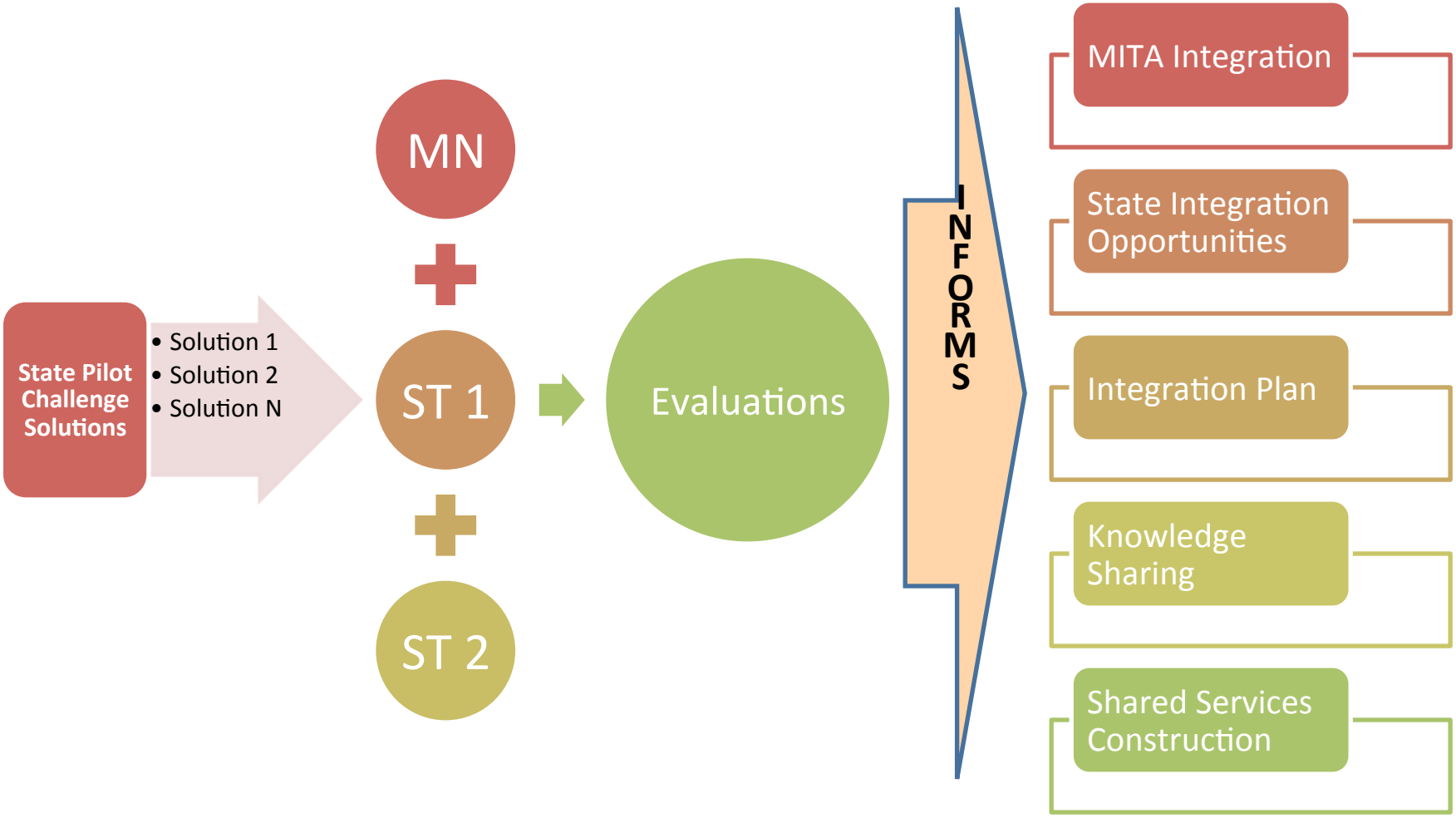
State Engagement Model – Sundae Edition

- **States can assist with the Challenge effort by participating in <u>Conceptualization Contests</u> that:**
  - **Document overviews, purposes, and affected user communities**
  - **Capture business tasks and rules, as well as technical, infrastructure and security requirements.**
- **Through these activities we would be better informed to:**
  - **Develop requirements that are critical to States.**
  - **Document "good-to-know" data to help guide the main project path.**
  - **Enumerate requirements for inclusion in the next version of the application.**
  - **Enumerate requirements that should be studied further.**

State Feedback Is Important!

- **We want to use feedback to avoid dead-end designs.**
- **We want to cherry-pick great ideas from a large pool of sources.**

Potential Downstream Value Proposition



Timeline

Initiation

- Completed Contract/IA Actions
- Initiated Project Plan
- Developed Draft Problem Statement & Evaluation Criteria
- Established MN Partnership

Challenge Foundation

- Contract/IA in Place
- Contract Startup Activities/Configured NASA Environment.
- Established Partnership Model
- Finalized Problem Statement & Evaluation Criteria

Challenge Execution

- Posted Challenge to Community
- Challenge Innovator Cycle Execution
- Innovator Community Developing Solutions

Challenge Award

- Evaluate Challenges
- Announce Challenge Winner(s)
- Determine Next Challenge Opportunity

Nov–Dec | Jan-March | March-Nov/Dec

Outcome Success Criteria

Platinum Outcome	• Initial solution set delivered is implemented and piloted successfully by innovator States, with short cycle time from winning the challenge to successful implementation. • Only minor tweaking of solution before full scale deployment. • For the most part, States can integrate into their IT infrastructures.
Gold Outcome	• Initial solution set delivered is implemented and piloted successfully by innovator States, though more expense and time to implement the solution than anticipated. • Subsequent challenge or development effort needed to solidify solution(s) before moving to full scale deployment. • For the most part, States can integrate into their IT infrastructures.
Silver Outcome	• Initial solution set(s) delivered require reframing of problem statement and evaluation criteria. • Follow up challenge required to develop solution and piloted successfully by innovator States. • Minor tweaking of solution may be needed before moving to full scale deployment. • For the most part, States can integrate into their IT infrastructures.
Bronze Outcome	• Any of the above scenarios, but only a few States are capable of integrating into their IT infrastructure.

Outcomes & Benefits

- Win/Win Scenarios Across the Board.
- All of the final work products from the contests and Challenge shall be available for States to use.

Lessons Learned To Date

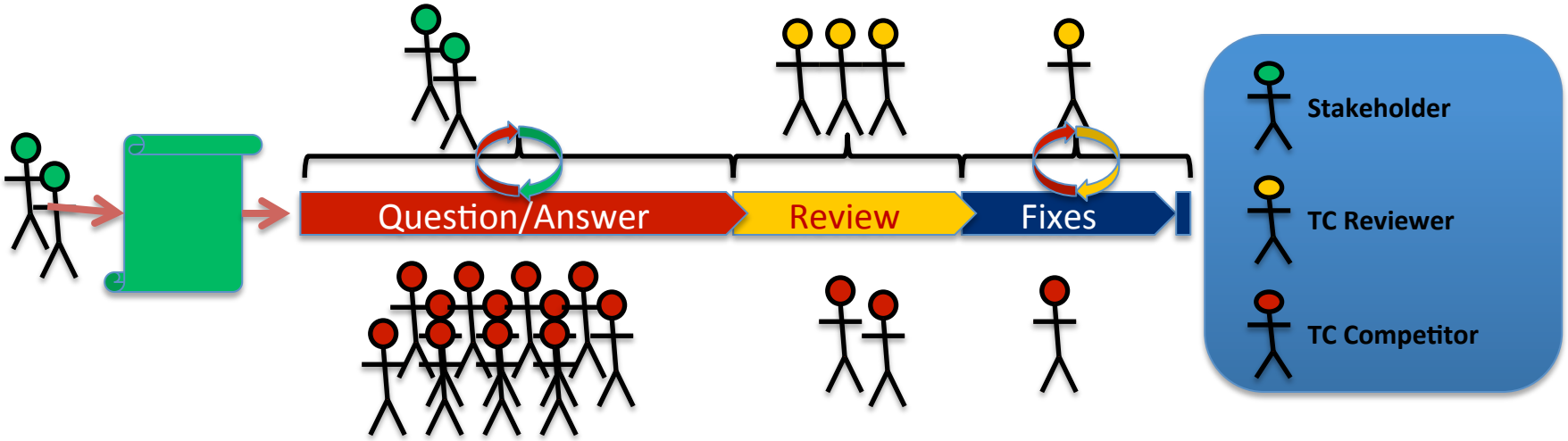
- New way of doing business - need to be open to new methodology.
- Do not do the work for the contestants.
- Don't be quick to jump to conclusions.
- Not everything must be perfect from contest to contest, each contest builds towards the ultimate end game.
- Unlike traditional approaches, there are many opportunities for refinement and enhancement along the way.

Open and Directed Innovation Contests

- ***Idea Generation***
  - Idea Generation contests ask the Community to provide ideas for solutions, applications, games, advice, analysis, etc in response to a given question. These are "open" innovation contests that are entirely subjective.
- ***Conceptualization***
  - Conceptualization is "Directed" innovation. In Conceptualization contests, competitors collaborate with clients in the project forums to help identify, organize, and document their needs and ideas, and produce a high-level Business Requirements Document. The Business Requirements Document identifies and describes the workflows and business rules an application should follow to accomplish one or more business goals. Submissions are reviewed by the TopCoder Member Review Board and rated for accuracy, clarity, and attention to detail, then presented to project stakeholders for feedback.

Conceptualization Contest Drill Down

- A "virtual JAD session" in contest format that produces a human-readable document with workflow, context and Use Case diagrams:
  - Document overview, purpose, user community
  - Capture business tasks and rules; technical, infrastructure and security requirements
- Typically, a 5-7 day question/answer dialog in an asynchronous online forum; total elapsed time is two calendar weeks.
- Stakeholder fills out a Questionnaire, competitor asks questions and fills out a template, reviewer evaluates submissions.



Contest Types – Creative

- ***Logo***
  - In Logo design contests, competitors are asked to design a professional logo for the client. The client first provides the information like colors preferred and concepts to be conveyed to the competitors. At the end of the contest client will choose the winning logo, and receive both .jpg/.png file and the source file(s).
- ***Wireframes***
  - Wireframe Competitions are designed to take the requirement documents inputs from the Specification Contest (or directly from the client) and create a "roadmap" of the working application. They do not demonstrate the look and feel of the website or application. The end result of a Wireframe competition is a fully navigable representation of all of the pages and interactions for the entire website or application as well as a visual sitemap. At the end of the contest, the project stakeholder will review and select the winning submissions.
- ***Storyboards***
  - Storyboard contests are launched to design the visual look and feel of the application that is to be developed. Competitors can use photo editing tools to make storyboards - usually Adobe Photoshop, Adobe Illustrator, Gimp, Paint.Net etc. Wireframes are usually used as reference for designing storyboards. At the end of the contest, the project stakeholder will review and select the winning submissions.
- ***Mobile Screen***
  - Mobile screen designs tend to have specific development requirements and restrictions that make the UI design unique. Mobile contests may focus on the best use of small space, specific source file requirements), and unique layout considerations (vertical and horizontal smart phone layouts, for example). At the end of the contest, the project stakeholder will review and select the winning submissions.

Contest Types - Software

- ***Software Specification***
  - A Software Requirements Specification (SRS) is a complete description of the behavior of the system to be developed. In Specification contests, competitors collaborate with winners of previous contests and TopCoder clients in the project forums to help finalize and enumerate the precise Application Requirement Specification for the new system. This includes data, user activities, and their relationship to any User Interface. To do this, Competitors will create Use Case diagrams to define scope and Activity diagrams to illustrate actions.
- ***System Architecture***
  - Architecture contests are launched to obtain the high-level of design for the system. The competitors take requirements (both written and visual), existing designs and code, as well as components from the software catalog in TopCoder to design systems or subsystems. After the contest, the high-level design documents will be presented to client for feedback and revision.
- ***Module Architecture***
  - Module-Level Architecture defines the lower-level technical design of an independent module of a larger application. As an example, "Checkout", "Shopping Cart", "Registration", and "Inventory Management" might each be a module of a retail commerce web application. The System Level Architecture is responsible for identifying and scoping these modules and will provide the common infrastructure shared between them. The Module-Level Architecture is responsible for defining the components and their interactions that will implement the requirements for the module.

Contest Types – Software (cont)

- ***Component Design***
  - TopCoder designs components for Java, .NET and other technologies as needed. In this Competition competitors the Component Contest Specification output of an Architecture contest, and detail its design for low level requirements and interfaces. The output of this contest is used as input to Component Development contests.
- ***Component Development***
  - The component development contest is to convert a component design, prepared by the designer and reviewed by the Design Review Board, into a functional component.
- ***User Interface Prototype***
  - UI Prototype Competitions are designed to take the graphics (UI storyboards) and information architecture (IA wireframes) of a web site or application and create a demonstration of the working application. Prototypes in this type of competition are created in HTML/CSS and are generally used as the input of the next phase of development, although some prototypes move directly into production (simple web sites, for example). Output may include a web site with CSS, Java Script, and HTML.
- ***Assembly***
  - Assembly contests are run to create high quality applications using completed components or create applications directly from requirements or architecture documents. The expected output of the kind of contest is the source code and deployment guide of the application.

Contest Types – Software (cont)

- ***Test Scenarios***
  - Test Scenario competitions use Requirements Specifications (includes Use Cases), Activity diagrams, and a QA Test Plan as input to create one or more written test scenarios for each QA Test Plan Item. Each scenario is written text describing: setup needed, pre-conditions, detailed scenario steps to complete the test, the expected result and post-conditions. Each scenario is also marked whether it can be automated or not.
- ***Test Suites***
  - Test Suites use the Requirements Specification, Activity diagrams, QA Test Plan, and the Test Scenarios to create automated scripts that can be executed during use in later competitions.
- ***Bug Hunts***
  - Bug hunts contests are to discover as many bugs as possible in recently developed or updated application. Competitors are encouraged to find bugs during the bug hunts contest. Whenever they find an issue, they will enter the bug description to a system naming JIRA. The first issue will be counted while the others are marked duplicates. At the end of the contest the member who submitted the most valid bugs will win. The client will expect a list of bugs as well as the descriptions after the competition.
- ***Content Creation***
  - Content contests are used to produce virtually any type of content. Unlike software contests such as Architecture, Component Development, etc., these contests are often non-technical in nature. The output varies depending on the requirements. For example, a contest may ask competitors to produce help documentation for a web site, write tutorials, write articles, create videos, translate content to other languages, improve merchandise descriptions in a product catalog, etc. The output of Content Creation contests is presented to project stakeholders for review and selection

NASA's Center of Excellence for Collaborative Innovation (CoECI) and the Harvard-NASA Tournament Lab - **The Future Is Now: Challenge-Driven Open Innovation in the Federal Government**

Lessons Learned

- The NASA Longeron Challenge; William Spetch, NASA ……p2
- The NITRD Big Data Challenge; Susanne Iaocono, NSF ……p5
- My Air, My Health; Denice Shaw, EPA ……p8
- The Medicaid Provider Portal Screening Challenge; John (Chip) Garner and Anne Wood, CMS ……p11
- The Tech Challenge for Atrocity Prevention; Maurice Kent and Mark Goldenbaum, USAID ……p17

The Medicaid Provider Portal Screening Challenge; John (Chip) Garner and Anne Wood, CMS

Interview Q&As

1. Please describe your challenge
   a. What was the challenge?
      To develop a multi-state, multi-program information technology (IT) application to better facilitate screening providers while at the same time lowering burden on providers and reducing administrative and infrastructure expenses for States and federal programs
   b. Why did you select a challenge to solve your problem?
      Historic approaches were inflexible, time consuming, and expensive. For this particular Challenge, we chose to employ a "Crowdsourcing" model to create our set of solutions, which is a distributed problem-solving and production model. The approach would produce solutions from amateurs or volunteers working in their spare time. Through this approach, our hope was to gather large numbers of solutions or information inexpensively. The "Challenge" approach would allow us to articulate a set of goals and objectives rather than specifying a particular approach or predicting, based on a proposal, which of the multiple competing approaches would produce the best business result. In the end, we would reward only for the solution or solutions that work best against our overall goals and objectives. Thus, we are not articulating a set of specifications but are allowing those competing for the prizes to articulate the value proposition and metrics by which they are demonstrating the superiority of their solution.
   c. What problem solving mechanisms had you already tried and for how long?
      The current market for Medicaid Management Information Systems (MMIS) consists largely of system solutions that are expensive and lack the capability to incorporate new and critical business requirements due to the following factors: Inflexible Application Architectures; Isolated Application Environments; Inflexible Legacy Database Environments; No True Enterprise Data Model; No Enterprise Reporting Strategy; Non Optimally Targeted Data Warehouse Solutions; and Large Vendor's Existing Footprint on the MMIS Industry. Through this challenge, we hoped to create an application that could be re-used by multiple states and address many of the problems in the current IT environment in state Medicaid systems.
   d. Were there other mechanisms you used to try to solve the problem first?
      Traditional monolithic MMIS approaches, which only perpetuated outdated practices and did not provide the value for the cost.
   e. What would have been the traditional method you would have used to achieve your goal?
      Basic contracting approach lifecycle.

2. Describe the internal approval process for running the challenge
   a. What did it take to gain approval?
      Divine intervention. It took as long to get our challenge running as it took to execute.
   b. How did you obtain funding?
      Funding from the Partnership Fund for Program Integrity Innovation was used to fund the

prizes, manage the project, provide technical assistance for implementing the solution, and integrate lessons learned into the Medicaid Information Technology Architecture (MITA). The Partnership funding also supported the evaluation of the pilot, comparing the (1) expected results or desired outcomes (2) the modeled results or outcomes from the Challenge competition and (3) the actual results from the Phase 1 test bed.

c. Were there any obstacles to running the challenge and how did you overcome them?
After overcoming the administrative barriers, the hardest hurdles were project management and defining scope.

3. What processes/operational procedures did you put in place to run the challenge?
Basic project management practices and execution. The Crowdsourcing vendor had a very good set of management and execution processes already in place.
   a. What resources did you use to execute? If possible, could you break it down into the following phases:
      i. Pre-Competition (e.g., problem definition and challenge design)
      Internal Federal staff with some key input from our state partner, Minnesota. We also consulted with the NASA team for lessons learned and best practices.
      ii. Competition (Launch & marketing, contest/challenge support)
      The Crowdsourcing vendor handled much of this for us. The crowd community was already in place. Another key was we were able to leverage the CoECI. We could not have run our Challenge without the help of the NASA team as well as it would have been impossible to execute our numerous contests without the CoECI infrastructure. Another key to our success was that the state of Minnesota partnered with CMS on the Challenge project and was not only an equal participant in all Challenge activities but also served in the role of "State Champion." Minnesota was key in helping CMS create an Advanced Planning Document (APD) template for other states to use and was an active partner in all Challenge activities, which included assisting in establishing the basic requirements for Challenge effort.
      iii. Evaluation (judging and selection of winners)
      There was both an initial technical evaluation and a final sign off. Submissions for contests must meet exact, enumerated requirements and thus can be scored according to their fidelity to those requirements. For this reason initial "crowd" Review Board Reviewers can perform the evaluation of these projects, and each Reviewer completes a lengthy scorecard, and the results of all reviewers are averaged to assign a score to a submission. Submitters can then appeal their scores during an Appeals phase, which follows review. Following review, the submission with the highest score progresses to the next phase. During the technical evaluation, the Reviewers frequently identify problems that must be resolved in order for the submission to be acceptable. Any such instances are aggregated into a final single fix-list. Following the Review phase, the project enters a Final Fix and Final Review phase that allows the submitter to correct errors, and for the lead reviewer to confirm the issues have been resolved. Upon completion of the review and finalization of the scorecards by the evaluators, the scorecards were submitted to CMS judges that had been appointed by CMS to select the winner(s) of prize competitions. The judges possessed specific knowledge of the subject matter and had recognized credentials and professional experience in areas or disciplines relevant to the prize competition. CMS employed a minimum of two (2) judges to serve on the judging panel that reviewed each competition. The judges confirmed the winner of the prize competition based on a standardized assessment of the

evaluation factors being used to evaluate each prize contest. All contest submissions remained anonymous. Neither the evaluators nor the judges knew the identities of the individuals that submitted their solutions

iv. Post-Competition (Solver verification and implementation)
We are just getting underway with our pilot now.

4. Describe the outcomes of the challenge:
   a. What product did you receive?
   We received a number of products, including IT artifacts, code components, checklists, and a host of others.
   b. What are you doing, or do you plan to do, with the result of the challenge?
   We are in the process of piloting the challenge products, employing fixes if necessary, updating the documentation, and working on how we could leverage this across more states. We also have a proposal into the Partnership Fund folks to extend our current 2 technology solution stack to 3 to ensure a broader coverage of states that might be able to leverage the solution.
   c. If the result was not what you expected, what factors contributed to the result?
   We could have built a tighter solution had we been able to employ more Fed resources in managing the project.
   d. Is there anything you learned, that you wish you had known before running the challenge?
   The level of Federal project management that would have been optimal to run the project more efficiently. There is also a level of system integration that we underestimated. Had we known, we would have engaged more resources in that discipline on the project.
   e. Would you run a challenge again?
   Without a doubt.

5. What value did you receive from the challenge(s)?
   Many lessons learned; quite a few re-usable artifacts and components; better understanding of the "crowd" and what types of projects work best; understanding of a crowdsourcing lifecycle; and a host of others.

6. What surprised you about the process?
   The pace. The level of project management and system integration required to successfully execute.

7. Now that you've done this, what is the level of buy-in within your organization?
   Hard to say because of the hurdles that I encountered from an administrative standpoint. Also, folks are more comfortable handling things over completely to a single contractor that does everything for them. For a crowdsourcing effort to succeed, the organization needs both a dedicated project manager and a contribution from some system engineering folk.
   a. How does this not become a one-off effort?
   Need to remove some of the obstacles we've documented as well as ensure folks know when to use a crowdsourcing type of effort and for which projects it is best suited.
   b. Can this become a routinized procurement strategy?
   Yes, but would need a focused effort from some folks that have lived the lifecycle as well as assistance from senior leadership to help foster adoption.

8. Any final comments?
   This was a great and highly informative project. The value earned from the project far surpassed the cost.

CoECI Workshop: Case Study Q&As

1. What was the driver for your challenge?
   This was in part because the group wanted to run a challenge to run a challenge, so we identified a problem that could fit the contest concept. The problem is really larger than just running a single challenge, though. It is a $4 billion industry using software code that is as old as 30-35 years old and is supported by equally antiquated processes. To re-platform the old process with new technology for all 51 jurisdictions is expensive and time intensive.

2. You're building a brand new system?
   Correct.

3. What's the scale of the system?
   It's built on one of the Acts of the ACA so it follows mandates to integrate with other systems. None of those systems had existing data connections, which required manual connections that proved to be a roadblock. The new system required a significant culture shift from manually entering data to automating data flows and processes. Data security added to the complexity of the problems in sharing data.

4. What was the cost comparison to determine benefit for using prize/challenge platforms?
   Regular procurement route would have cost close to $7 million compared to $1.5 million at most using challenge platforms.

5. Describe the project plan.
   The team had a set of requirements and an understanding that each state had a unique set of processes. An estimated 140 challenges were run, all on TopCoder, using a variety of challenge types. There was no black box set of requirements because needs really varied from state to state. As the project progressed, the states pushed back against a fully open source solution. The team was then able to work with the states to figure out what *could* work and to begin exploring the concept of potentially parallel solutions.

6. Can you give a sense of what the project life cycle was like?
   The team was looking at this from an Agile-like viewpoint and process but not implementing in an Agile-like environment. More buy-in from the states would have certainly been advantageous.

7. How is this different from the traditional method of contracting?
   The team spoke to this earlier in describing the approach of rebuilding the system every 3-5 years. Vendors were shocked to realize that a single system rather than 51 systems was a real consideration and possibility. The team finds as much value in what has been learned

and the change in mindset as in the technical outcome.

8. How is this the challenge process different from other procurement approaches?
   This was significantly less costly than the traditional contracting mechanism that may not have even resulted in an acceptable solution. The full set of charts is available from Chip Garner for anyone interested.

9. Could you create an IT monster garage to address needs?
   No, but if we were to have a state champion or support to help set up a shared environment then we would need to develop a governance model (how to develop code, other policies, etc). We'd need to ask these questions, including whether it's in the state's best interest (while considering the economics of the situation--- taking money away from the state when it could be used for other purposes). Theoretically, we could set up a shared environment with very sophisticated controls, but that would require the creation of infrastructures, roles and responsibilities, etc. first.

10. Could you talk about culture change piece? Did you develop solutions and then implement or did you change culture before the solutions were reached?
   While working just with Minnesota (one state), the state POC is driving their culture change. On our side, the team tries to drive our culture but it's an uphill battle because it can be difficult to see how it would translate into other groups' work environments. The culture change was distant from speakers, but because support for the culture change was being driven top-down by someone with high leadership authority, the team found the needed support and will be successful with implementation. For continued success, other possible consumers may want to wait for the proof before jumping on board. Sponsors/Challenge Owners must be active participants in the challenge process in order to glean a valued outcome. Realization of the full result requires the sponsors to be fully engaged.

CoECI Workshop: Panel Q&As

1. Describe the cost of the challenge you ran in terms of human resources.
   For the first 9-12 months, the project fell primarily on me [Chip] as a single resource. It took about nine months to get through the bureaucracy. My level of effort was probably 4-8 hours a week, off the clock. The team also had the support of a colleague for approximately 16-20 hours a week. The project would have benefited from more effort had it been available.

   a. How much time would you have spent if you could?
      This should have been a minimum of 1 1/2 people, full time, to work this project despite TopCoder's great job at running it from their side. A system integrator would have also been ideal. This could have greatly shortened the ideation phase by about a third. One lesson learned was that the documentation submitted wasn't what it could have been but this is likely because the documentation wasn't spelled out in the requirements. Documentation is very important from a Federal and State government perspective but the crowd did what the crowd knew in terms of documentation.

2. What was your process for judging the challenge responses you received?
   This team largely left the judging to the crowd, making extensive use of "bug hunts."

However, this approach didn't lend itself to a true evaluation so an independent evaluator was brought in. The team provided a framework to the evaluator as a general rubric. The evaluator then criticized the submissions from all angles. Weaknesses were then considered, such as security, in context of the overall requirements. In the example of security, the solution was a component of an already secure system so it was less of a weakness when considered in that context. This allowed the team to focus on the real weaknesses and move forward with another round of bug hunt challenges.

3. What value did you find in the challenge you ran?
   The value was largely in the ability to demonstrate to the organization that prize challenges are a legitimate means for solving problems when managed well as a project. This approach engaged as many people as possible via as many avenues as possible to bring the team to a new perspective on the issue. The process was also much more cost-effective than other approaches, even if the final solution was never implemented. The team was able to look at a submission and give the solver time to bring the submission up to a higher level without the change orders or additional funding required using traditional procurement approaches.

4. What surprised you most about the challenge process?
   The administrative and bureaucratic hurdles were significant.