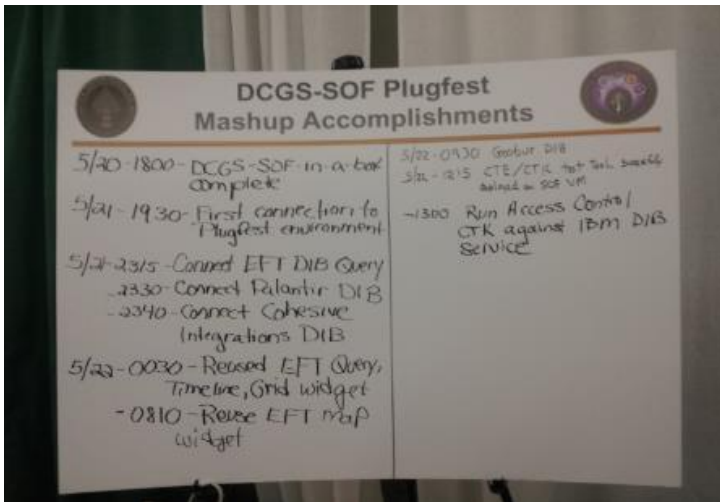


Innovative Use of Competitions to Help Solve Warfighter Problems

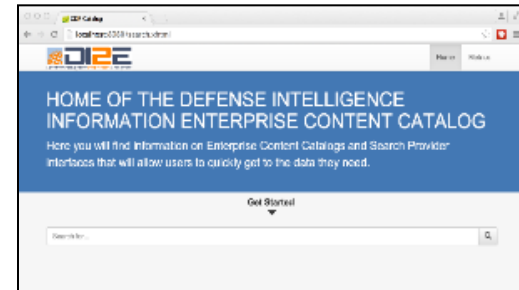
Mrs. Susan Kapr
DI2E Enterprise Focus Team
LNO To DCGS-SOF
Booz | Allen | Hamilton
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Email: kapr_susan@bah.com

2013: Interns quickly create interoperable app from Technical Profiles

2014: Hackathon, SOF style



2015: Winner!
Operation Enterprise Discovery



DI2E Plugfest Mashup: OUSD(I) mandated demonstration event designed to increase interoperability through sharing/reuse of specs, services, software and data



The Warfighter needs quick turn
(under 20 minutes)
image, text, audio or video
translation summaries (gists)
from anywhere in the world
at any time




- Isim:
- Bu gunun tarihi (Hicri):.....Bu gunun tarihi (MS)
- Takma ad/ Baska ad:
- Baba adi:
- Buyukbaba adi:
- Soyadi :
- Baba meslegi:
- Aile uyesinin sayisi:
- Yas:
- Medeni hali:
- Ulke:
- Meslek:
- Adres:.....Ulke:.....Sehir:.....Sokak:.....

Aling shayks ang iyong pinapakinggan o binabasa lagi?
Aling shayks o morong dignitaryo ang iyong kilala?
Nakaimbento ka na ba or nakapagsaliksik ng kahit ano?
Libangan o pampalipas oras na gawain?
Ano pang wika ang iyong ginagamit at sa anong antas?
Seilite... Pagbasa...Pagsulat
Ano ang iyong kagalingan sa wikang ito?
Hindi kagalingan...Magaling...Napakagaling

وطلب في البداية على يد الطواقم الهندسة عن صناديق في ارض الشرق الواقعة اوتقان، فاستدعت قواد من
المنطقة الغربية والشمالية الغربية، واما المبدأ الثاني فكان با اعني العمل الذي في ارض الشرق الشمالية ؟
- لماذا لا نستجيب للتحدي ومع العلم اننا اننا كانت هذه الدعوى من وجه الطائفة الشيعية ؟
- لماذا يتعاملون بما وقع عليكم يا اهل السنة من فتح العظم ويظلموا التجار؟
- وايضا لا يفتح التحقيق في مفسدات مثل قواد من العارفين في السموات، ومن قواد يتم بدم بارد
في الطرقات وتكرار محضتهم دعاهم، على يد هذه الطائفة الشيعية الطاغية والارهابية في البلاد؟
- وايضا لا يتحدث من قبل اهل السنة في السامع من اهل... مع انهم الاثم يصفح بذلك
اليوم ويختمه بدم نجس من ايدى المقاومة الشيعية البربرية؟
- وايضا لا تترك حيلوك الالهيات الكاذبة، التي لم ياجاب عن ايدى حاصر من الجيش عليها
في
وقراف حرب الشيعية ؟
- وايضا لا يحارب النظام العلوي عن جرائه الكثرة في لبنان وسوريا؟

- Image translation
 - Identifying handwritten characters in images is extremely difficult
 - Machine ICR/IWR technology is immature
- No Gist standard
- Solutions
 - Stove-piped
 - Use text as an input
- No Gold data
- Enterprise (Cloud) Language Translation services don't exist
- Quality translations for all languages still require humans
- Massive language transitions going on

- **DI2E Operation Upshot Mashup**
 - Government/Industry Team
 - Kick off and scenario review 14-15 March, Tampa
 - 9 Partners + 3 Contributors + 2 COCOMs + 11 Weeks
 - Demonstration 1-2 June, George Mason University
 - Demonstration 7 June, SOFWERX, Tampa, FL
 - Customer feedback
- **Mil-OSS SOFIC Operation Upshot Hackathon**
 - Competition and demonstration 21-22 May
 - Use same Customer's problem to showcase out-of-the-box thinking

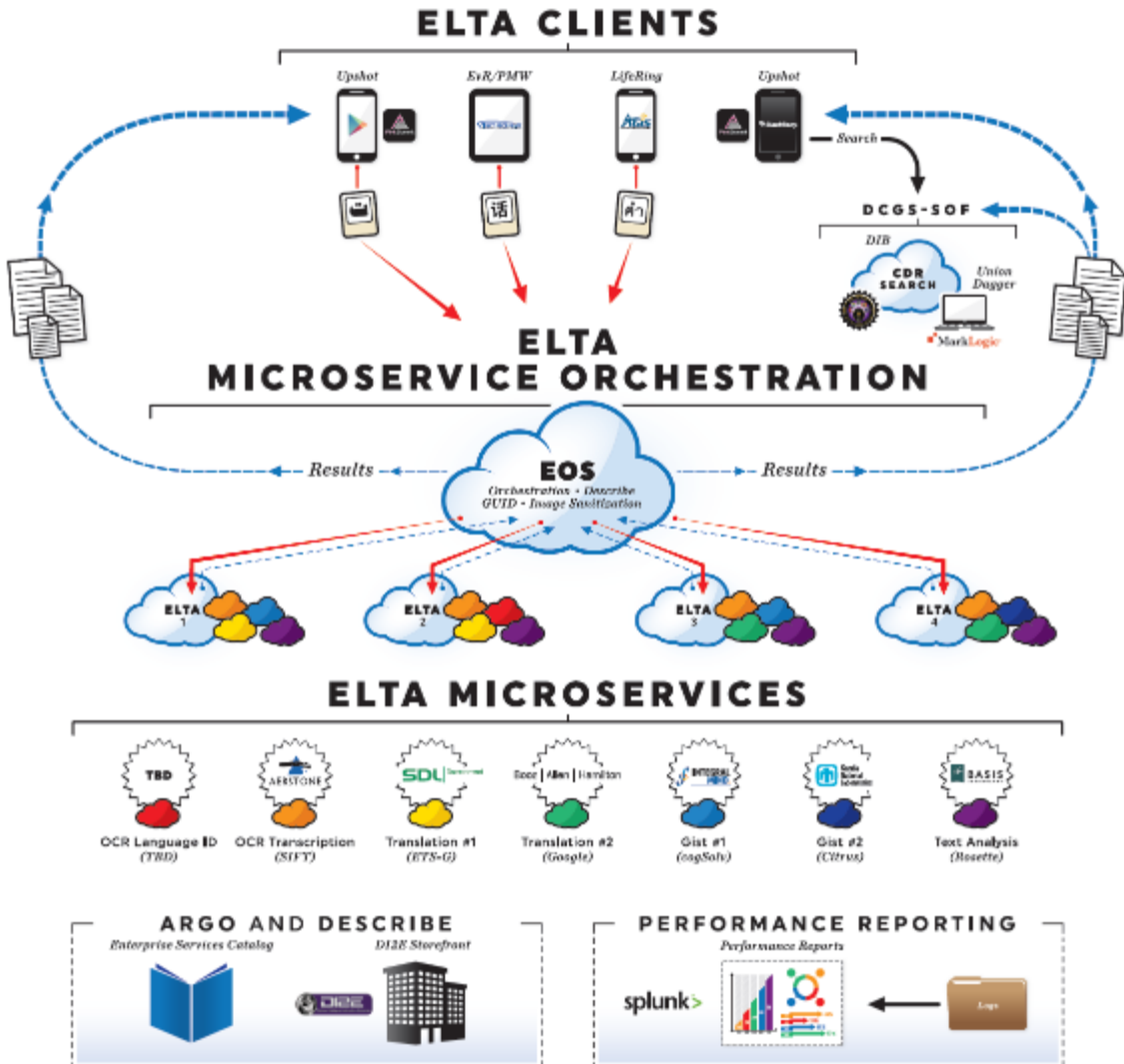
- Find a User that has a problem
- Create a Vision 
- Create a distributed architecture that supports the Vision
- Create a scenario that demonstrates a small slice of the Vision
- Look for demonstration partners and cloud environment
- Kick-off
- 8-12 weeks of prototyping
- Demonstrate scenario to Customers at Event
- Reflect and decide next steps

Background	Needs	Vision	Value	Success
<p>Background</p> <p>1. The current system is outdated and does not meet the requirements of the user.</p> <p>2. The user has identified a need for a new system that can handle large amounts of data and provide real-time analysis.</p> <p>3. The user has a budget of \$1 million and a timeline of 12 months.</p>	<p>Needs</p> <p>1. The system must be able to handle large amounts of data.</p> <p>2. The system must provide real-time analysis.</p> <p>3. The system must be easy to use and integrate with existing systems.</p>	<p>Vision</p> <p>1. A new system that can handle large amounts of data and provide real-time analysis.</p> <p>2. The system will be easy to use and integrate with existing systems.</p>	<p>Value</p> <p>1. The system will provide a significant increase in efficiency and productivity.</p> <p>2. The system will reduce the risk of data loss and improve security.</p>	<p>Success</p> <p>1. The system is delivered on time and within budget.</p> <p>2. The user is satisfied with the system and its performance.</p>
Vital Description	Stakeholders	Trial Partners	Key Metrics	Strategy
<p>Vital Description</p> <p>1. The system will be a cloud-based application.</p> <p>2. The system will be developed using a microservices architecture.</p> <p>3. The system will be tested using a continuous integration and deployment pipeline.</p>	<p>Stakeholders</p> <p>1. The user.</p> <p>2. The development team.</p> <p>3. The testing team.</p>	<p>Trial Partners</p> <p>1. The user.</p> <p>2. The development team.</p> <p>3. The testing team.</p>	<p>Key Metrics</p> <p>1. System uptime.</p> <p>2. System performance.</p> <p>3. User satisfaction.</p>	<p>Strategy</p> <p>1. Develop a minimum viable product (MVP) and release it to the user.</p> <p>2. Gather feedback from the user and iterate on the product.</p> <p>3. Scale the product to a larger audience.</p>
Proposed Costs	<p>Proposed Costs</p> <p>1. Development: \$500,000</p> <p>2. Testing: \$100,000</p> <p>3. Deployment: \$50,000</p> <p>4. Maintenance: \$100,000</p>	<p>Contributors</p> <p>1. The user.</p> <p>2. The development team.</p> <p>3. The testing team.</p>	<p>OKCs/OKS</p> <p>1. The user.</p> <p>2. The development team.</p> <p>3. The testing team.</p>	

SSE Mission – ELTA Thread

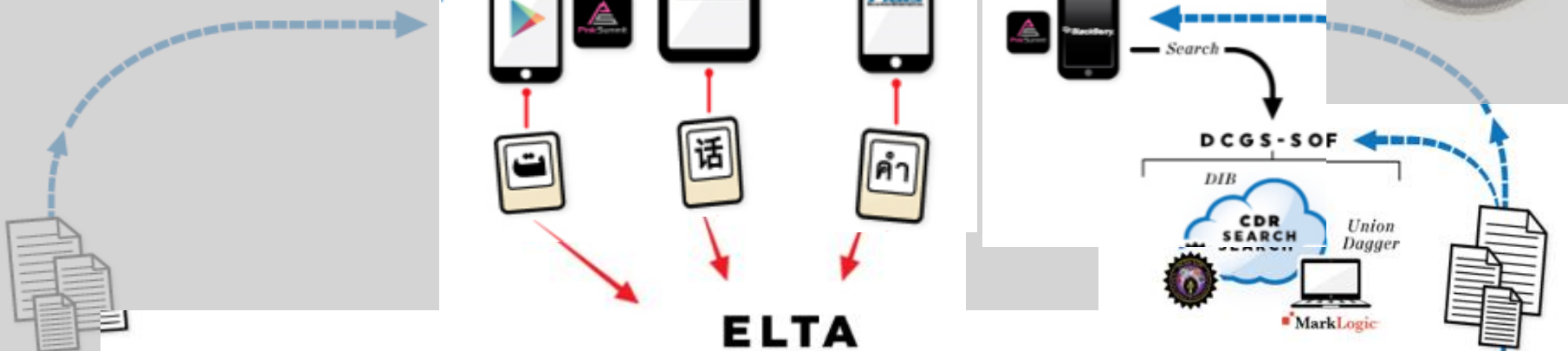
<p>Background</p> <p>(U) SSE Missions consist of a related series of activities at a sensitive site to exploit personnel, documents, electronic data, and material through the power of globally synchronized Identity Intelligence Fusion (IIF) analysis. Biometrics, forensics, documents, and media are exploited to enable IIF in support of interagency operations to influence or support actions against state and non-state adversaries in global campaigns.</p>	<p>Needs</p> <p>SSE personnel need quick summary (gist) translation of cell phone pictures of foreign language documents, audio or video in order to improve the situational awareness of potential threats and quickly identify potential adversaries</p>	<p>Vision</p> <p>SSE personnel can quickly determine adversarial status or potential threats by timely receipt of translation gists of cell phone pictures of documents, audio or video obtained during an SSE Mission</p>	<p>Value</p> <p>Improvement in the speed SSE personnel receive translations will reduce the time it takes to identify potential adversaries and identify potential imminent threats</p>	<p>Success</p> <ul style="list-style-type: none"> • Decrease in translation response time • Increase in translation responses per request • Increase in number of identified adversaries • Increase in number of identified imminent threats
<p>Trial Description</p> <p>The purpose of this Enterprise Mission Trial is to demonstrate implementation of Enterprise Language Translation and Analysis (ELTA) services to a standardized API as well as utilization of ELTA services to provide quick summary (gist) translation of cell phone pictures of foreign language documents.</p>	<p>Stakeholders</p> <p>Patron:</p> <ul style="list-style-type: none"> • OUSD(I) DIZE <p>Sponsor:</p> <ul style="list-style-type: none"> • DCGS-SOF <p>Customers:</p> <ul style="list-style-type: none"> • SOCOM – multiple orgs 	<p>Trial Partners</p> <ul style="list-style-type: none"> • Sandia Labs • Pink Summit • Basis Technology • MarkLogic • Integral Mind • Booz Allen Hamilton • Splunk • AGIS • SDLGovernment • Aerstone Labs • Vistronix 	<p>Key Metrics</p> <ul style="list-style-type: none"> • Client application <ul style="list-style-type: none"> ○ # requests sent ○ # responses per request ○ Response time per request ○ # and type of errors per service • ELTA Web service <ul style="list-style-type: none"> ○ # requests received ○ # requests by EDMI ○ # and type of errors ○ Response time • Enterprise reporting <ul style="list-style-type: none"> ○ # devices used (over time and accumulated) ○ # requests made by devices ○ # requests by ELTA service ○ # responses by ELTA service ○ #/type errors by ELTA service 	<p>Strategy</p> <ul style="list-style-type: none"> • Identify User and problem • Create Vision • Create architecture that supports the Vision • Create scenario that demonstrates small slice of Vision • Look for partners • Kick-off • 8-12 weeks Prototyping • Demonstrate scenario at Event • Reflect • Decide next steps
<p>Proposed Costs</p> <p><u>Mission Trial:</u></p> <ul style="list-style-type: none"> • Trial cloud environment: EFT • Trial venue: OUSD(I) • Prototyping and implementation: Vendors, DIZE Framework, EFT 		<p><u>ELTA implementation costs:</u></p> <ul style="list-style-type: none"> • TBD <p>Contributors</p> <ul style="list-style-type: none"> • Mil-OSS • SOFWERX • Mitre <p>COCOMs</p> <ul style="list-style-type: none"> • USSOCOM • USCENTCOM 		

- Scalable, adaptable, distributed Architecture
- Deliver language translation/gisting services to the warfighter from anywhere in the world at any time
 - Threshold: 20 minutes
- Cloud of Enterprise Language Translation and Analysis (ELTA) services
 - ELTA services utilize microservice orchestration
 - Applications utilize ELTA services
- Sharing/Reuse DI2E specs, software, services and data
- Track application and service performance
- Automated enterprise service discovery and description

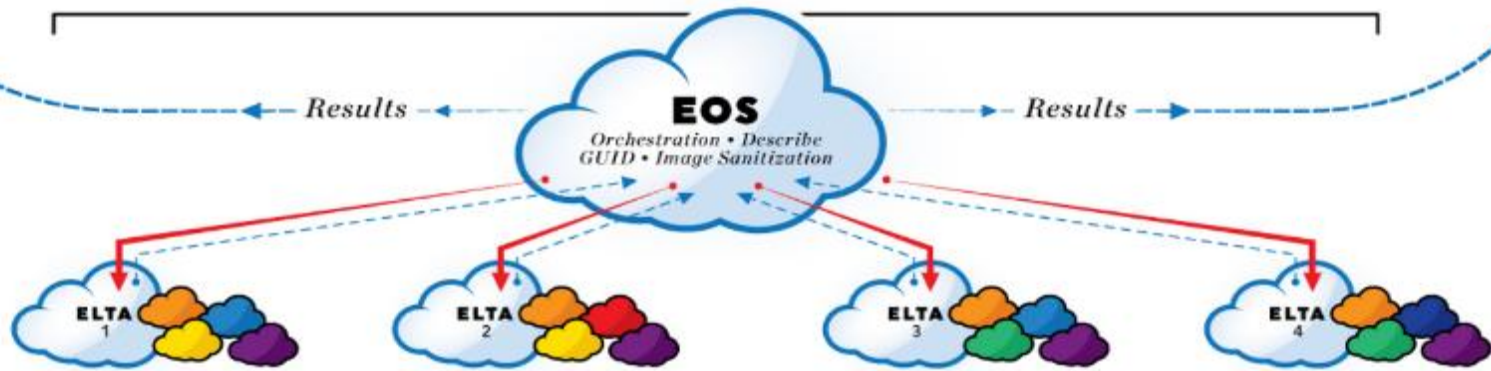


11 Partners + 3 Contributors + 2 COCOMS + 11 Weeks = Operationally Relevant Enterprise Language Translation and Analysis (ELTA) Services, Microservices and Applications

- Scalable, distributed cloud of ELTA services
- ELTA Microservice orchestration
 - OCR Language ID
 - OCR Transcription
 - Language Translation
 - Text analysis
 - Gisting/Document Topics
- 2 ELTA services
- 3 ELTA applications
- ELTA performance reporting
- DIB search and discovery
- Union Dagger
- Argo and Describe
- GUID



ELTA MICROSERVICE ORCHESTRATION



ARGO AND DESCRIBE

Enterprise Services Catalog *DIE Storefront*




PERFORMANCE REPORTING

Performance Reports



RESEARCH



Anything Goes!



Vetted Crowdsourcing



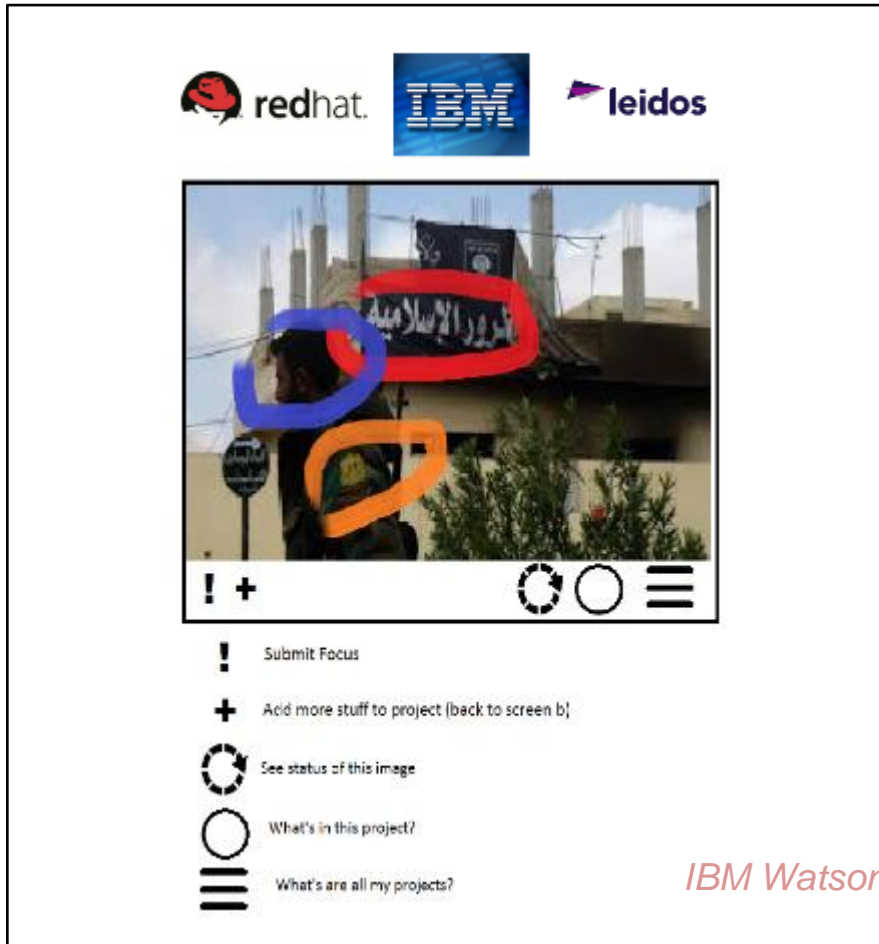
Commercial Crowdsourcing








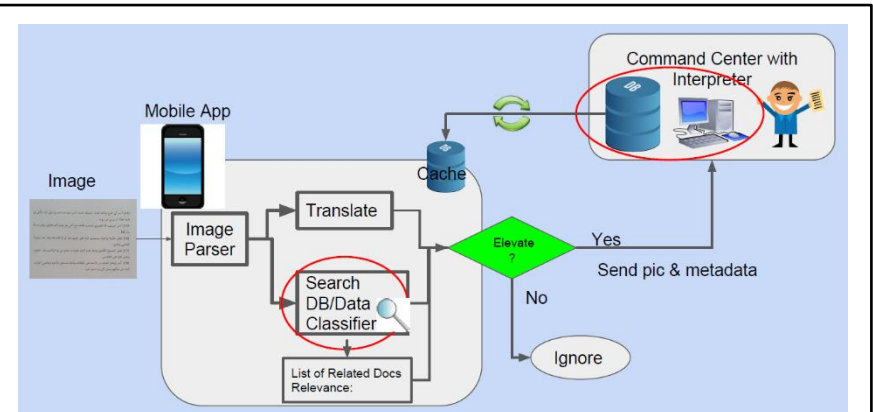
Machine Learning

Tampa SOFWERX Team: *Upshot*

Dayton Wright Brothers Institute Team: *Found in Translation*



 Submit Focus
 Add more stuff to project (back to screen b)
 See status of this image
 What's in this project?
 What's are all my projects?



Presented an end-to-end solution with options for Image Parsing, Data classification and decision making:

- Google Search concept to find related documents
- Neural Network techniques
- Machine Learning techniques

Winner!

IBM Watson used in both

<http://upshot.strikingly.com/>

- Identifying problems to use in these events
- Forming and leading teams of Industry/Academic/Government volunteers
- Using team collaboration to create a microservices architecture and document service APIs
- Iterative prototyping, test and validation process
- Demonstrating results
- Acquisition challenges moving from innovation to operations

Questions?



2016: Winner!