

### Creating A Collaboration Strategy out of Chaos

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#### JPL is part of NASA and Caltech



Jet Propulsion Laboratory California Institute of Technology

- Federally-funded Research and Development Center (FFRDC)
- University Operated (Caltech)
- \$1.65B Business Base
- 5,000 Employees
- 167 Acres (includes 12 acres leased for parking)
- 139 Buildings; 36 Trailers
- 673,000 Net Square Feet of Office Space
- 906,000 Net Square Feet of Non-Office Space (e.g., Labs)



#### JPL's mission for NASA is *robotic* space exploration



Jet Propulsion Laboratory California Institute of Technology

- Mars •
- Solar system
- **Exoplanets** •
- **Astrophysics** •
- **Earth Science**

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Interplanetary network

#### 19 Spacecraft and 10 Instruments Across the Solar System and Beyond



Jet Propulsion Laboratory California Institute of Technology



Two Voyagers (1977)



Cassini (1997)



ACRIMSAT (1999)



QuickSCAT (1999)



Mars Odyssey (2001)



Mars Reconnaissance Orbiter (2005)



Juno (2011)



Jason 2 (2008)



**GRACE (2002)** 



**Opportunity (2003)** 



**NEOWISE (2009)** 



Aquarius (2011)





Curiosity (2011) Instruments:



NuSTAR (2012)



OCO-2 (2014)

Planetary

• MARSIS

(2003)



Spitzer (2003)



• Diviner

(2004)

• MIRO

(2004)



Earth Sci	ence					
• MISR	AIRS	• TES	MLS	<ul> <li>ASTER</li> </ul>	<ul> <li>OPALS</li> </ul>	<ul> <li>RapidScat</li> </ul>
(1999)	(2002)	(2004)	(2004)	(2009)	(2014)	(2014)



# **Interesting Times**

- Chaotic
- Cyber Security Incidents
- Information and data from everywhere
- Tools Apps Capacity
- Big Data and Analytics Opportunities
- Behaviors Expectations Choices
- New Workforce Expectations
- Changing Customer Relationship







**Workflow / Process** 



# An Example





# Mobile Video Collaboration

# Robotic Mobile [PLers









#### think data first Apps Mobility Devices Consumer Personal Driven IT Productivity Data Sharing Collaboration Conferencing Orgs **Missions** Individuals Teams NASA University International Super Partners Public JPL Partners

Workflow / Process



#### Video Conferencing











### COLLABORATIVE WORKSPACES

#### Collaborations

#### With Teams, External Entities, Customers











### TECHNOLOGY APPROACH

# A COLLABORATION IDEA

- Create "Virtual" Company
- New infrastructure
- Directory / Authentication
- Add Services
- Add Applications
- Add Collaboration Tools



#### Steps to Collaboration Platform

- Partnership formed early in project formulation phase
- IT rep is a member of the project, fully aware of project drivers, objectives and issues
- Collaboration driven by need to produce usable tools on schedule
- Products designed to accommodate institutional usage should adoption increase



## DEPLOYMENT ARCHITECTURE



### CONCLUSION

- Develop a Digital Strategy
- Think Data First
- Prototype New Ways to Work
- It is no longer what we do but how we do it
- Embrace the "Chaotic Architecture"

### Thank You!

