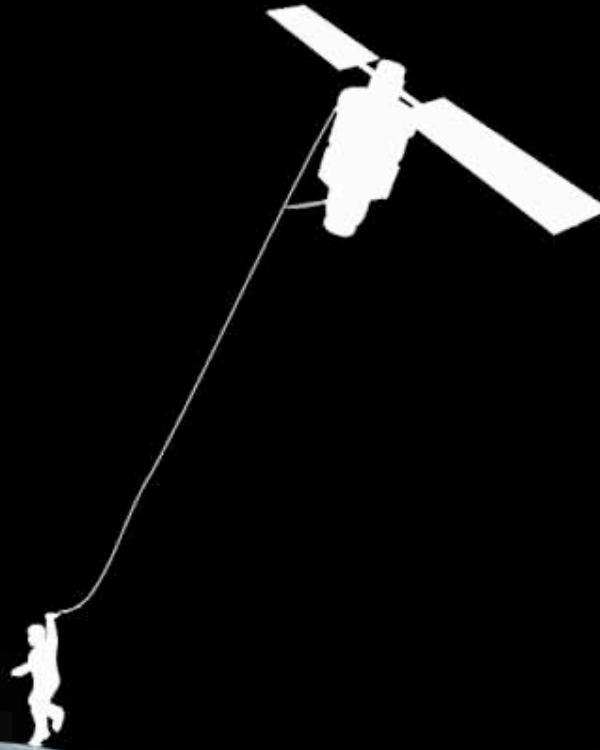




# participatory exploration

nicholas skytland

NASA Academy of Program/Project and Engineering Leadership  
Masters Forum 17





## Covered Today

Participatory Exploration

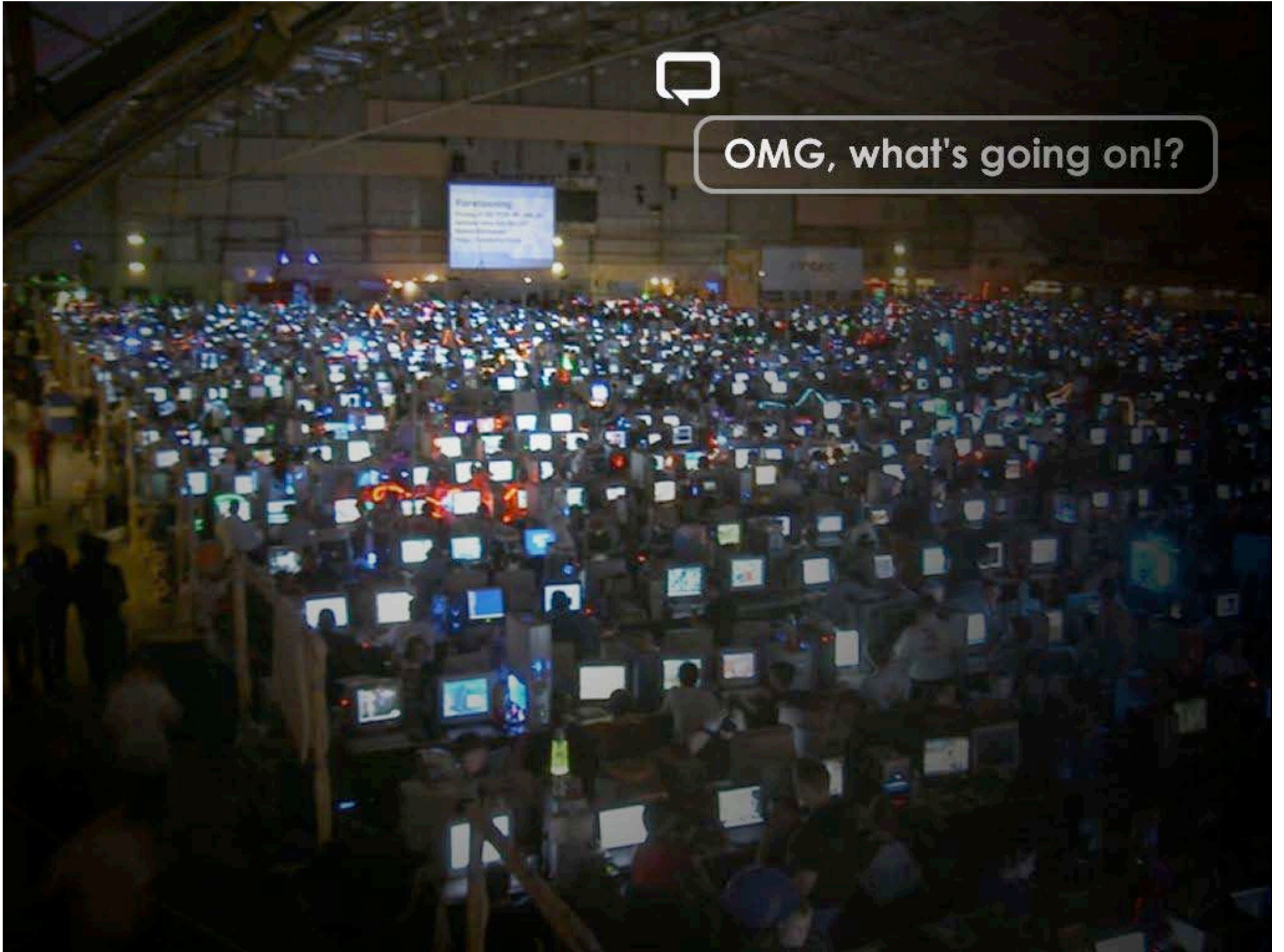
User Contribution Systems

Benefits to NASA

Implementation @ NASA



OMG, what's going on!?



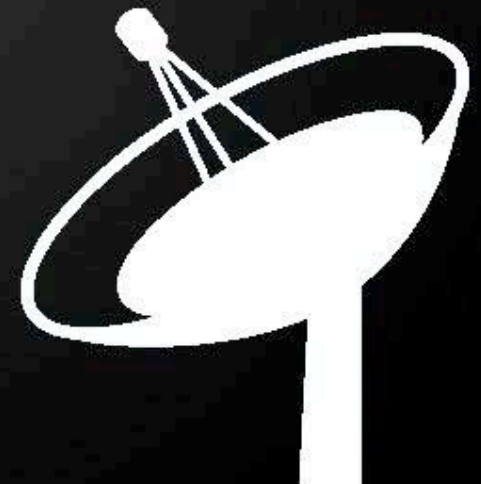
There's been a lot of talk about: **participation**

There's been a lot of talk about: **collaboration**

There's been a lot of talk about: **innovation**

There's been a lot of talk about: **exploration**

**And for good reason...**





**\* There has been a shift \***

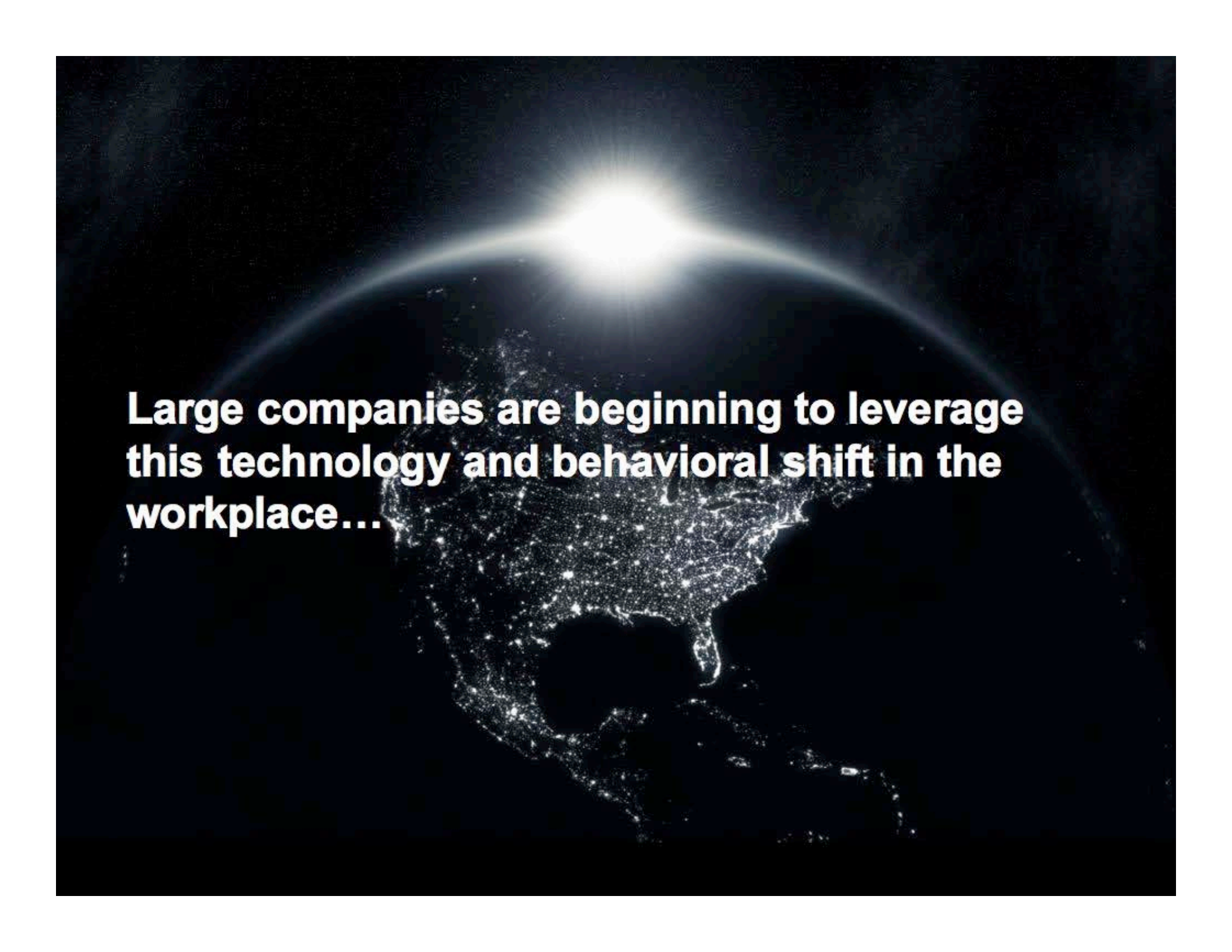
# passive



# active


A composite image of Earth from space. The top half shows the bright sun rising over the horizon, creating a lens flare effect. The bottom half shows the Earth's surface, with city lights glowing across the continents, particularly concentrated in North America and Europe. The text is overlaid on the center of the image.

**Social networks are no longer the product,  
they are the feature.**



**Large companies are beginning to leverage this technology and behavioral shift in the workplace...**



A black and white photograph of Earth from space. The sun is rising over the horizon, creating a bright glow and lens flare. The Earth's surface is visible, with city lights at night illuminating the continents. The text is overlaid on the image.

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External collaboration plays a key role in nearly 50 percent of P&G's products. We've collaborated with outside partners for generations but the importance of these alliances has never been greater.

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- A.G. Lafley

Chairman of the Board and Chief Executive Officer

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- Desktops and Laptops
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- Enterprise
- Environment
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- IdeaStorm
- Inspiron products
- Laptop Power
- Laptops
- Latitude products
- Linux
- Monitors and Displays
- New Product Ideas
- Operating Systems
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- Precision Workstations
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Sort By: **Popular Ideas** Recent Ideas Top Ideas Comments

**270** **Dell should indicate how long it takes to charge a battery from 0% to 100%.**  
By wdrfice Oct 21, 2008  
When I configure a notebook PC, when I get to the battery page, I get something like this:  
6 cell, 29 Whr  
9 cell, 56 Whr  
Now that hardly gives me any information that is actually useful to me. I want Dell to indicate how long a 100% charge will last based on the notebook configurator (although that is covered already in another idea), but I also want Dell to indicate how long it takes to charge the battery FROM 0% TO 100%.  
Comments: 3  
Categories: Dell Web Site Laptop Power

**120** **Please let us edit our comments and ideas.**  
By badblood 12-34 PM  
We used to have the possibility to edit our ideas and comments, to refine them, or make corrections. Now we can't and that's a loss. Please enable us to do this again.  
Comments: 14  
Categories: IdeaStorm

**63450** **Provide Linux Drivers for all your Hardware**  
By georgz Feb 15, 2007  
I don't care whether the OS is pre-installed or not, I want all the hardware to be totally supported in the Linux kernel without mucking around. I currently have a Dell M1210 and I wish the modern would work, just in case I need it. The web cam would work, just in case I need it. At least the Intel wireless card is totally supported. Thanks in advance!  
**DELL Status Update**  
Drivers are available for Linux to make some but not all hardware work. We continue to work with our partners to provide for better hardware support. See more specifics from john\_h.  
Comments: 188  
Categories: Linux  
Status: In Progress

**90** **Make the idea viewing area a little bigger**  
By badblood 12-18 PM  
Some part of me likes the new goth look of ideastorm, but another thinks the idea writing and viewing area is too small. It would be nice if you move that enormous list of categories to the right under the other status boxes.  
Comments: 29  
Categories: IdeaStorm

**90** **Create a Mark All As Read link**  
By mkmaster78 9:29 AM  
I came in today to see over 90 New Recent Replies, but I do not want to go over each and every one, I don't have the time. What would be greatly appreciated is if a check box next to each comment could be placed and then some link that says Mark All Selected as (Read/Unread/etc) or at least a link that can mark all as read.  
Comments: 8  
Categories: IdeaStorm

**2650** **Mini 9 netbook Ubuntu price must be cheaper than XP price with same config**  
By ubondel Sep 4, 2008  
OK, not more free Dell marketing but think we are stupid or just focus on how to add

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**General Stats**

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- Promoted 613,898 times
- Posted 80,657 comments

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**Status**

- All
- Already Offered
- Implemented
- In Progress
- Partially Implemented
- Reviewed
- Under Review

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- **A Day in the Life of Alex Sander: Driving in the Fast Lane at Landon Care Products**  
Key topics: Personality and emotions, managing star performers, managing difficult people, 360-degree performance evaluation
- **Engstrom Auto Mirror Plant: Motivating in Good Times and Bad**  
Key topics: Employee motivation, incentives, human resources management
- **TerraCog Global Positioning Systems: Conflict and Communication on Project Aerial**  
Key topics: Intergroup conflict, managing communication, group processes, group structure
- **Thomas Green: Power, Office Politics, and a Career in Crisis**  
Key topics: Power and influence, organizational politics, conflict management, managing your boss
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Key topics: Job satisfaction, employee retention, job design, labor relations

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Amy C. Edmonson, Michael A. Roberto, and Richard M.J. Bohmer

In this video clip, Professor Michael

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*"This collaboration with SAP marks an important milestone for us as we expand our expertise in Computer Science and Information Technology. By bringing together InnoCente's prize based innovation marketplace and the SAP Global Ecosystem, we're raising the bar on how enterprise organizations leverage and contribute to open innovation via the Web."*  
- InnoCente CEO, Dwayne Spradlin.

[Read the recent press release](#) or visit the new [SAP Pavilion](#) and view the latest Challenges.

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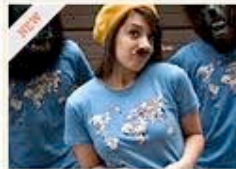
Only \$18 Colorblind by Mathias Lopes



From \$18 The Northern Black-capped Gnatcatcher by Brock Davis



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**Today we are going to talk about applying  
this shift to the NASA mission. *We call it...***

# " Participatory Exploration "





***"I think there are many people who would love to learn of a way they could help advance our efforts to explore space on a faster schedule."***

***- <http://www.jplspacefoundation.com/blog/index.blog/1831601/raising-money-for-space-activities/>***




**‘Participatory Exploration’** provides a mechanism for the public to collaborate with NASA. Two-way communication enables the public to engage with NASA in a productive way, resulting in creative ideas and potential innovation.

*“The plan shall identify opportunities to leverage technologies in NASA’s Constellation systems that deliver a rich, multi-media experience to the public, and that facilitate participation by the public, the private sector, nongovernmental organizations, and international partners.”*

**According to H.R. 6063 - Sec. 407...**

*“The plan shall identify opportunities to leverage technologies in NASA’s Constellation systems that deliver a rich, multi-media experience to the public, and that **facilitate participation** by the public, the private sector, nongovernmental organizations, and international partners.”*



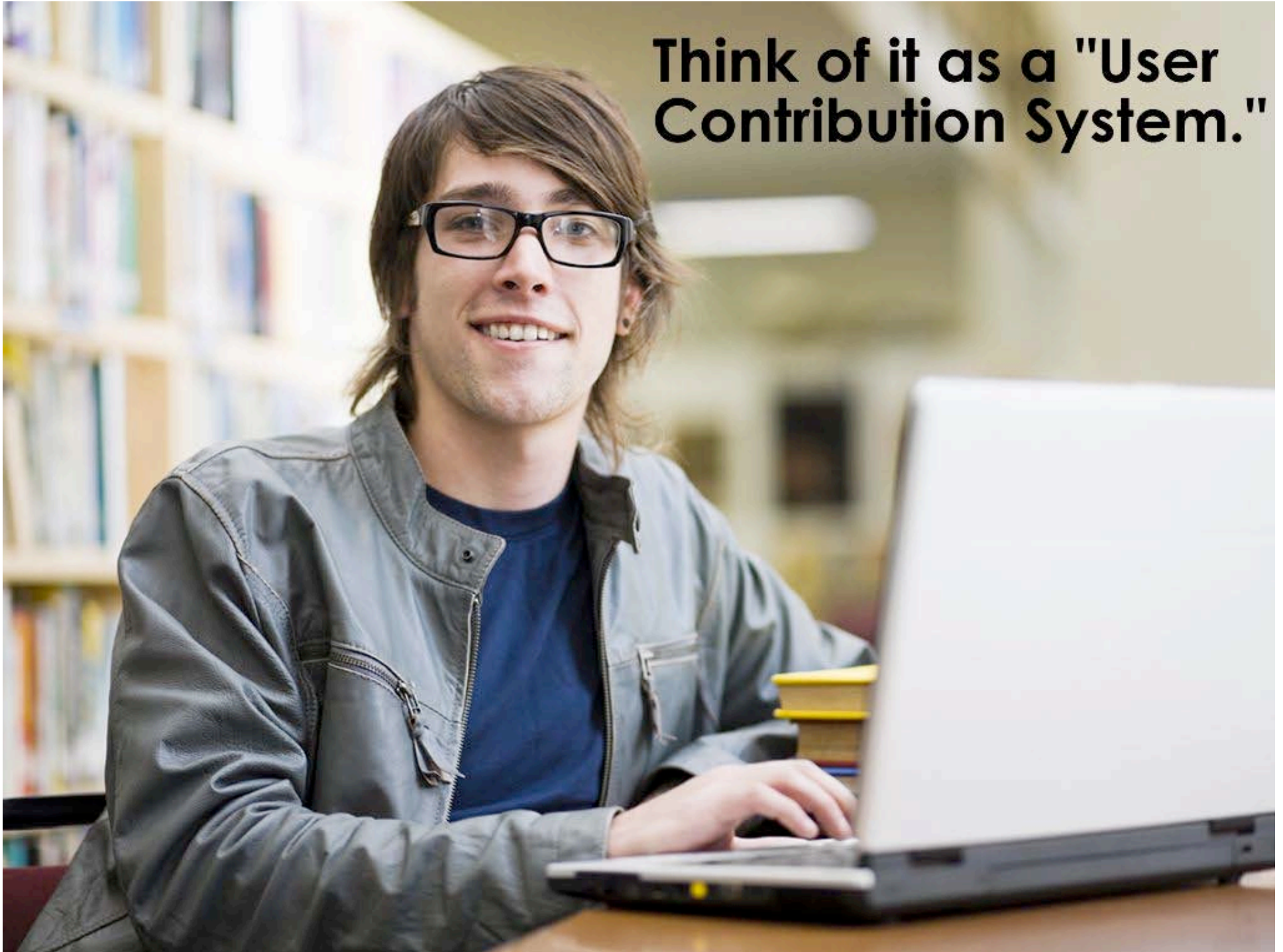
**Lets focus on "facilitate partipation."**



Including engineers, scientists, researchers, average employees, or even those with no previous connection to the space industry.



**Think of it as a "User  
Contribution System."**





## <Business Trend>

“Every day, millions of people make all kinds of voluntary contributions to companies around the world. User contribution systems are fueling some of the worlds' fast-growing and most competitively advantaged organizations - in some case, revolutionizing the core business model of those organizations.” (HBR, October 2008)

# Strategy Formulation

**Opportunities**  
Provide focus and direction

**Platform**  
Defines standards and practices;  
lowers cost of participation

**Participants**  
Adopt and enhance platform;  
provide feedback; fill in gaps



Traditionally, we talk about our mission, develop our own platforms, and turn away participants and talent.

We never have enough resources to do the job and are often turn away willing participants.

The platform is the method, often internet-based, by which contributions are aggregated and automatically converted into something useful to others.



This doesn't mean we all need to go off and build one big internet site for NASA that every project needs to use.

Exactly! This may look different per program or project.

The key is that such a system creates value to the organization as a consequence of the value it delivers to its users.

Consider these popular websites





The participants contribution can be **active** (work, expertise, information) or **passive** and **even unknowing** (behavioral data that is gathered automatically during transaction or an activity).

Each utilize different levels of participation:

**General Consumer**

**Novice Contributor**

**Subject Matter Expert**



**Enhanced communication**



**Enhanced communication**

**Multiple perspectives to solve a problem**



**Enhanced communication**

**Multiple perspectives to solve a problem**

**Education & public outreach**



**Enhanced communication**

**Multiple perspectives to solve a problem**

**Education & public outreach**

**Employee support**



**Enhanced communication**

**Multiple perspectives to solve a problem**

**Education & public outreach**

**Employee support**

**Capital resources**



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**Design and development**



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**Innovation**



**Enhanced communication**

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**Design and development**

**Innovation**

**Production**





**Enhanced communication**

**Multiple perspectives to solve a problem**

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**Capital resources**

**Design and development**

**Innovation**

**Production**

**Partnership**



**Enhanced communication**

**Multiple perspectives to solve a problem**

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**Employee support**

**Capital resources**

**Design and development**

**Innovation**

**Production**

**Partnership**

**Societal impact**



**Enhanced communication**

**Multiple perspectives to solve a problem**

**Education & public outreach**

**Employee support**

**Capital resources**

**Design and development**

**Innovation**

**Production**

**Partnership**

**Societal impact**

**Recruitment**



**Enhanced communication**

**Multiple perspectives to solve a problem**

**Education & public outreach**

**Employee support**

**Capital resources**

**Design and development**

**Innovation**

**Production**

**Partnership**

**Societal impact**

**Recruitment**

**Large return on investment**



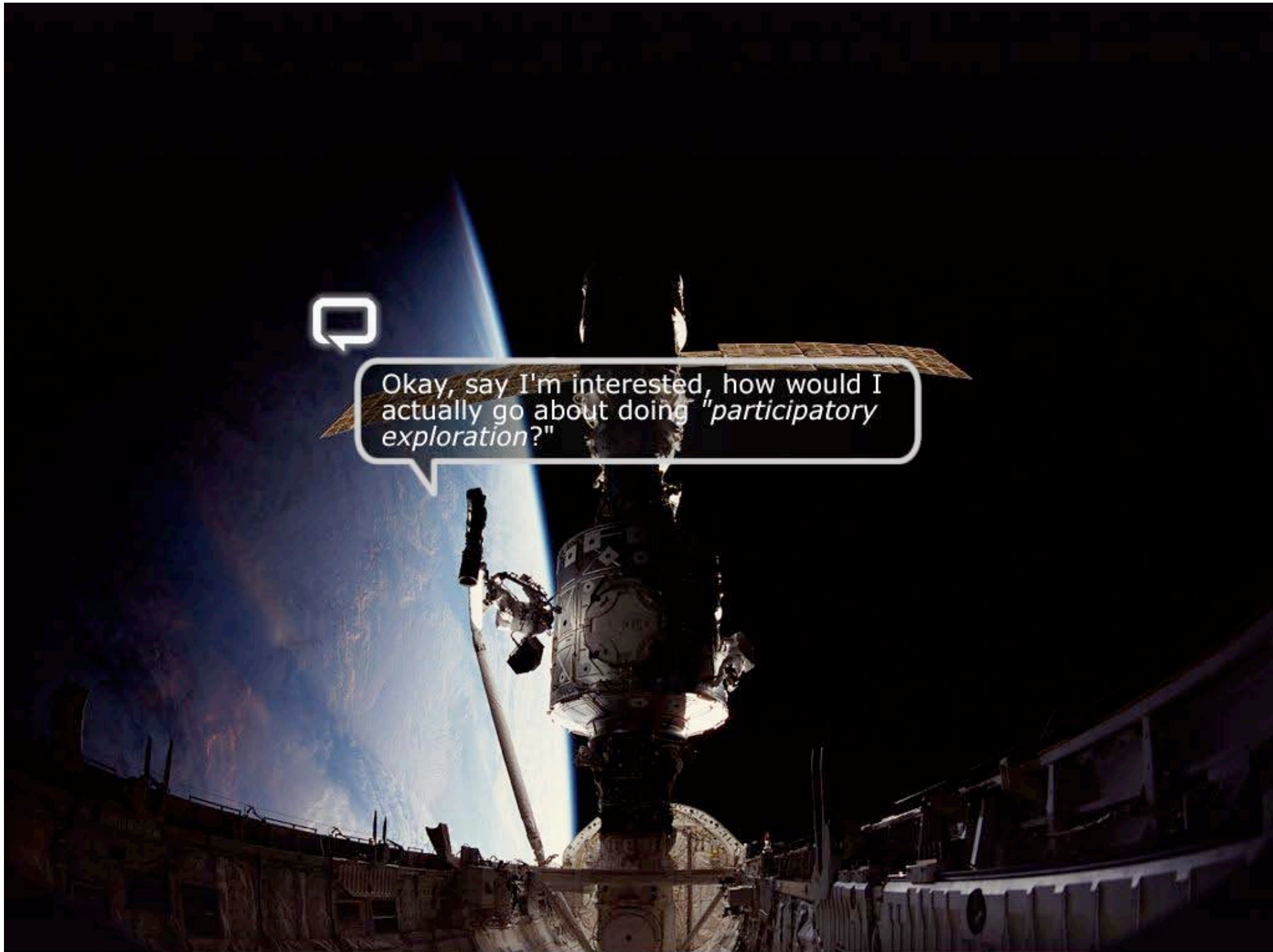
<case study>

SETI@home is a scientific experiment that uses Internet-connected computers in the Search for Extraterrestrial Intelligence (SETI). You can participate by running a free program that downloads and analyzes radio telescope data. SETI@home is not something you do, but something you're interested in. You want to keep updated with it and feeds, less about participating, more about having interest in it.





Okay, say I'm interested, how would I actually go about doing "*participatory exploration*?"



# Implementation Questions

What is really important to the “participants” and how do we leverage their interests?

Are we missing opportunities?

A lot of projects that could be interactive, aren't - how do we bridge that gap?

How do we defragment the online space communities in an accessible and collaborative way?

How do you aggregate community easily between using multiple online tools/services?

How can we enable increased participation?

**The challenge for NASA is two fold:**

- 1) We must learn how to spot opportunities for creating value from user contributions and
- 2) In acting on these opportunities, we must overcome the natural organizational resistance to the idea of relinquishing control to people outside the organization.



# 1. Self Evaluation

List the opportunities that you need to address then ask a group of "participants" which ones are most intriguing to them.



Just because you think it's an interesting problem doesn't mean they will.

They will not participate unless they have an inherent interest in what you are doing.

**Tip: Know your audience; focus on creators, "true makers" and people passionate about getting involved**

## 2. Existing Resources

Use your existing resource to jump-start the project. You have an advantage that you already have people who need this project anyway - work with them.



Some new contribution systems face a chicken-or-egg problem - that is, they're empty and useless until folks begin contributing to them, but few visitors will be attracted to something that is empty and useless.

### 3. Leverage Internal Talent

Expect contribution systems to emerge from those who use them the most. Often, this may be your youngest employee. Let enthusiasts and young employees provide ideas and leadership. Plus, they are often looking for a way to "participate" on a bigger level anyway. Seek them out.

**Tip: Don't be redundant, use existing technology**

## 4. Nurture Small Experiments

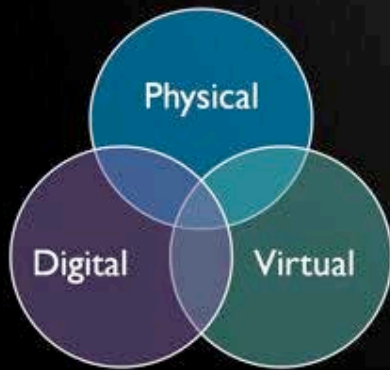
Encourage "unofficial" experiments. Challenge employees to create contribution systems that they are passionate about, without requiring them to get clearance from management. Experiments with small batches of employees.



Communicate the value of the lessons learned so others benefit.

## 5. Prototypes

If "building" a contribution system, develop prototypes.



**Tip: Provide offline components**



## 6. "Vote" Early

Get experiments into the hands of real users as soon as possible. Let participants have a "vote" early in the process. Minimize lengthy analysis, powerpoint presentations, or frequent reviews.

**Tip: The website functionality should tie into the users existing online behavior**

## 7. It's OKAY to fail

Protect experiments from a mature organizations natural control instincts. Failing is part of the process.




A mature organizations' natural reaction is to want to kill the experiment from the start.

## 8. Organizational Buy-in

Seek organizational buy-in only after you've had some success. The ultimate goal is to have innovation in user contribution to become embedded in the organizations normal processes, but you'll most likely struggle to shift mindset until you can point to a successful experiment or two.

**Tip: Connect communities, rather than replace them**

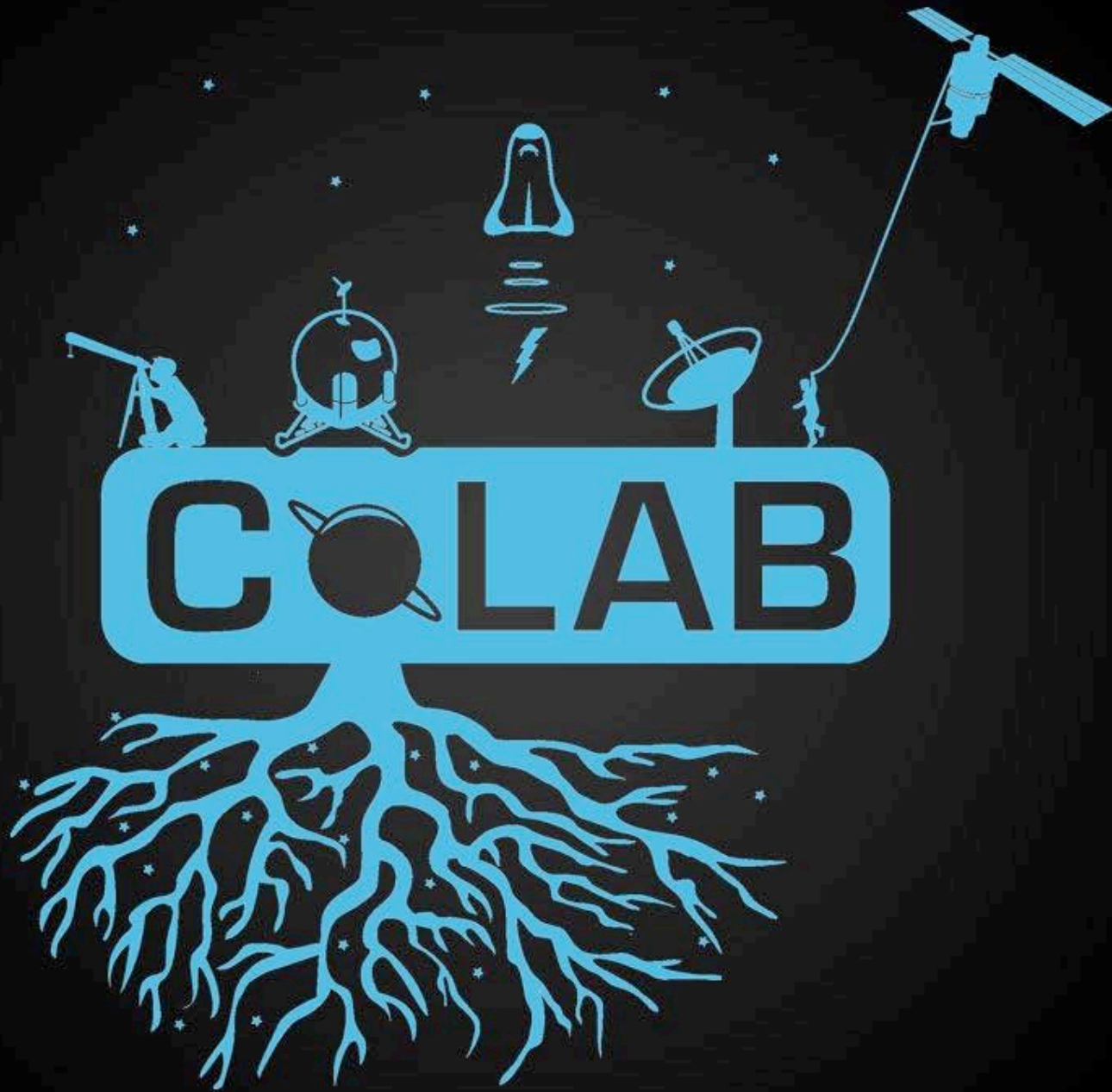


This organizational buy-in will help to ease the process for other projects to adopt similar methodologies.

<case study>

Not much more than 10 years ago, Astrobiology was a buzz word converging multiple disciplines in the search for life off Earth. Today through the SMD funded astrobiology institute run out of the NASA Ames, the virtual institute has 17 teams funded by NASA and an additional six international partners. With over 800 active graduate students and researches, this community has been able to keep an extremely low overhead by using publicly available technology to communicate and collaborate.









participatory exploration

