A large circular window with a metallic, multi-layered frame. Through the window, a vast, reddish-brown desert landscape is visible, resembling Mars. The terrain is rocky and sandy, with a bright sun or moon in the sky. The background of the slide is a dark, textured surface.

Evolución de mi carrera de ingeniero en Silicon Valley

ROBO GENIUS FEST 2018

San Mateo Atenco, México

Andres Martinez | Program Executive, Advanced Exploration Systems | 6 de junio 2018

Unplanned Journey to NASA



COLLEGE OF ENGINEERING
CAL POLY POMONA



1990



1990



1997



2001



2003



2006



2007



Unplanned Journey to NASA

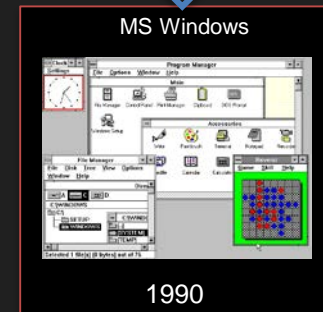
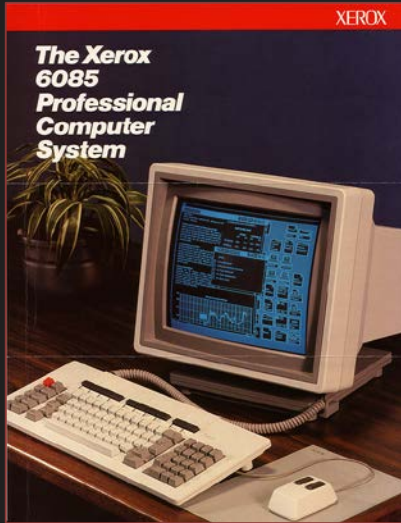


Silicon Valley... My Xerox PARC Experience!



- Xerox Corporation – 1990

- ✓ Member of Engineering Staff – Electrical Engineer
- ✓ Software Engineer



- Graphical User Interface (GUI)
- Windows
- Mouse
- Xerox Network Services
- Laser Printer
- Office Suite of Applications
- Ethernet
- Object Oriented Programming

1972

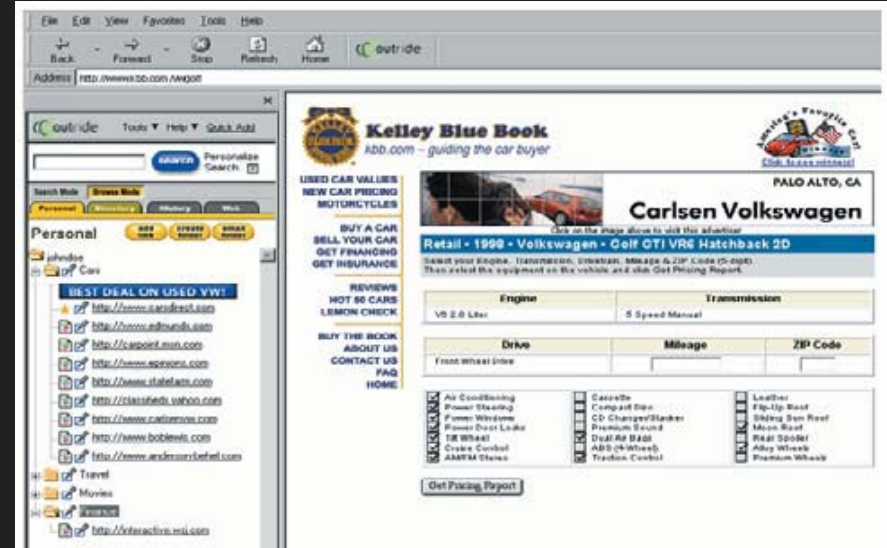
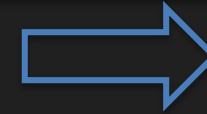


The Silicon Valley Internet Start-up Experience...

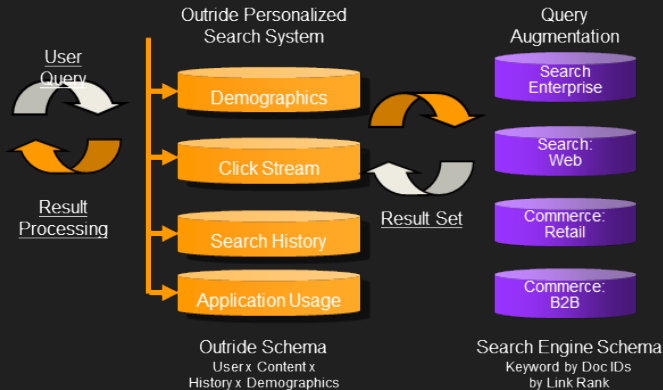


- **Outside, Inc. – 1999 - 2001**

- ✓ Co-founder – Vice President of Engineering
- ✓ A Xerox PARC spinoff
- ✓ Project team spun off (7 scientists, and 2 engineers) to start up new company
- ✓ Raised funding through Venture Capitalists (VCs)
- ✓ Built company of staff of 50 engineers
- ✓ Established Data Center Co-location
- ✓ Negotiated major deals to establish “new company” infrastructure and partnerships



Contextualized Client Interface

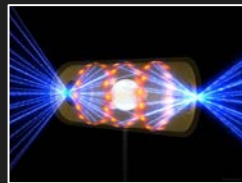
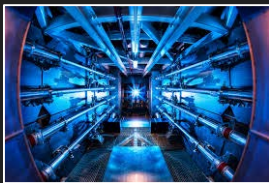


Company Sold to Google in 2001



- **Lawrence Livermore National Lab.**

- ✓ Responsible for developing and supporting applications used to operate and maintain nuclear systems
- ✓ Led a major, 3 year, multi-million dollar to manage maintenance activities of a nuclear reactor.





- **Motorola, Inc.**

- ✓ Director, Engineering Program Management
- ✓ Research and development of new technologies
- ✓ All engineering deliverables – from requirements, through design, development, and quality assurance
- ✓ Marketing, customer support, partner integration, 3rd Party Development, and 2nd Generation Cost Reduction
- ✓ The engineering team consisted of staff (~500) from multiple Motorola organizations in 12 geographies across the world (Russia, India, Taiwan, China, Israel, and multiple sites in the U.S.A.), and several vendors (Microsoft, Adobe, etc...)



- High-def, quad-tuner (CableCARD and OTA)
- Whole-home DVR/DMA with support for Internet-delivered content
- Hardware supported transcode to enable content transfer to mobile phones.



Motorola reinvents the television experience.





Joseph S. Ames

NACA

Langley

Ames

Lewis

Dryden

NASA

1915

1939

1940

1946

1958



NASA Centers and Installations





Ames Research Center

- Occupants:
 - ~1130 civil servants; ~2,100 contractors; 1,650 tenants
 - 855 summer students in 2016
- FY2016 Budget: ~\$915M (including reimbursable/EUL)
- ~1,900 acres (400 acres security perimeter); 5M building ft²
- Airfield: ~9,000 and 8,000 ft runways

Small Spacecraft Technology Program

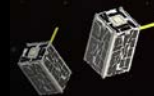
PTD

Novel CubeSat Technology Demonstrations



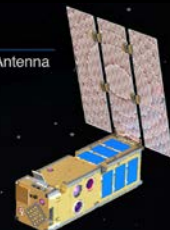
Nodes

Autonomously Configured In-Space Network



ISARA

High Data Rate Reflectarray Antenna



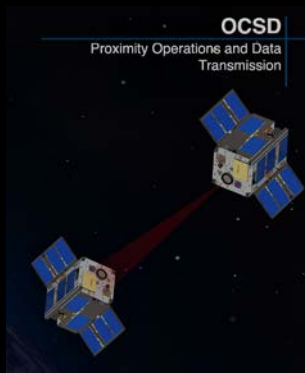
CPOD

Rendezvous, Proximity Operations and Docking



OCSD

Proximity Operations and Data Transmission

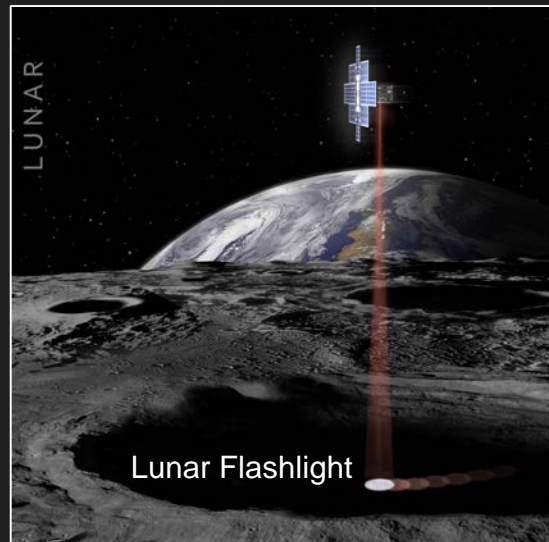




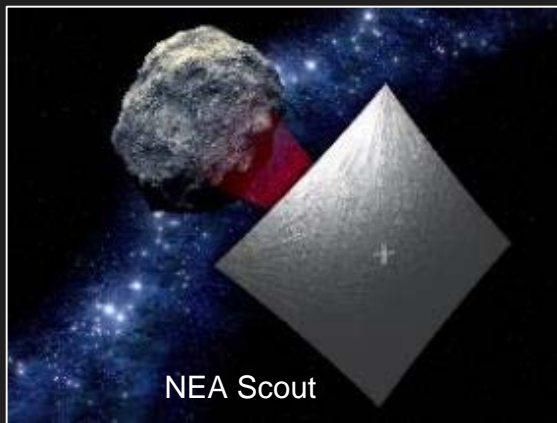
LunIR



Lunar IceCube



Lunar Flashlight



NEA Scout



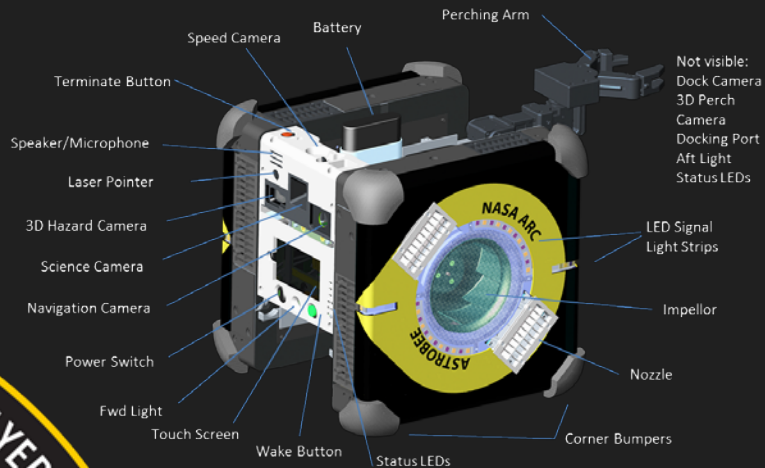
BioSentinel



Astrobee... Next Generation Free Flyer Robot



11+ years aboard ISS



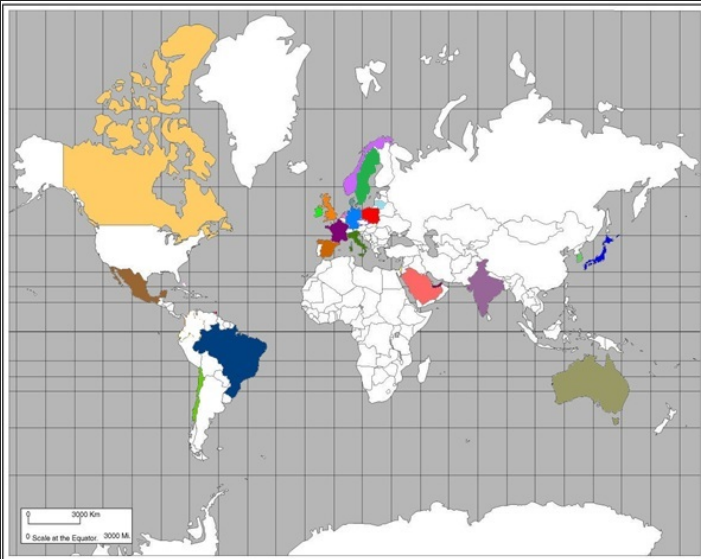
Late 2018 on ISS



International Partnerships

Interns/ Visiting Researchers

Australia, Brazil, Denmark, France, Japan, India, Ireland, Israel, Italy, **Mexico**, Norway, Peru, Poland, Spain, Korea, UAE, UK

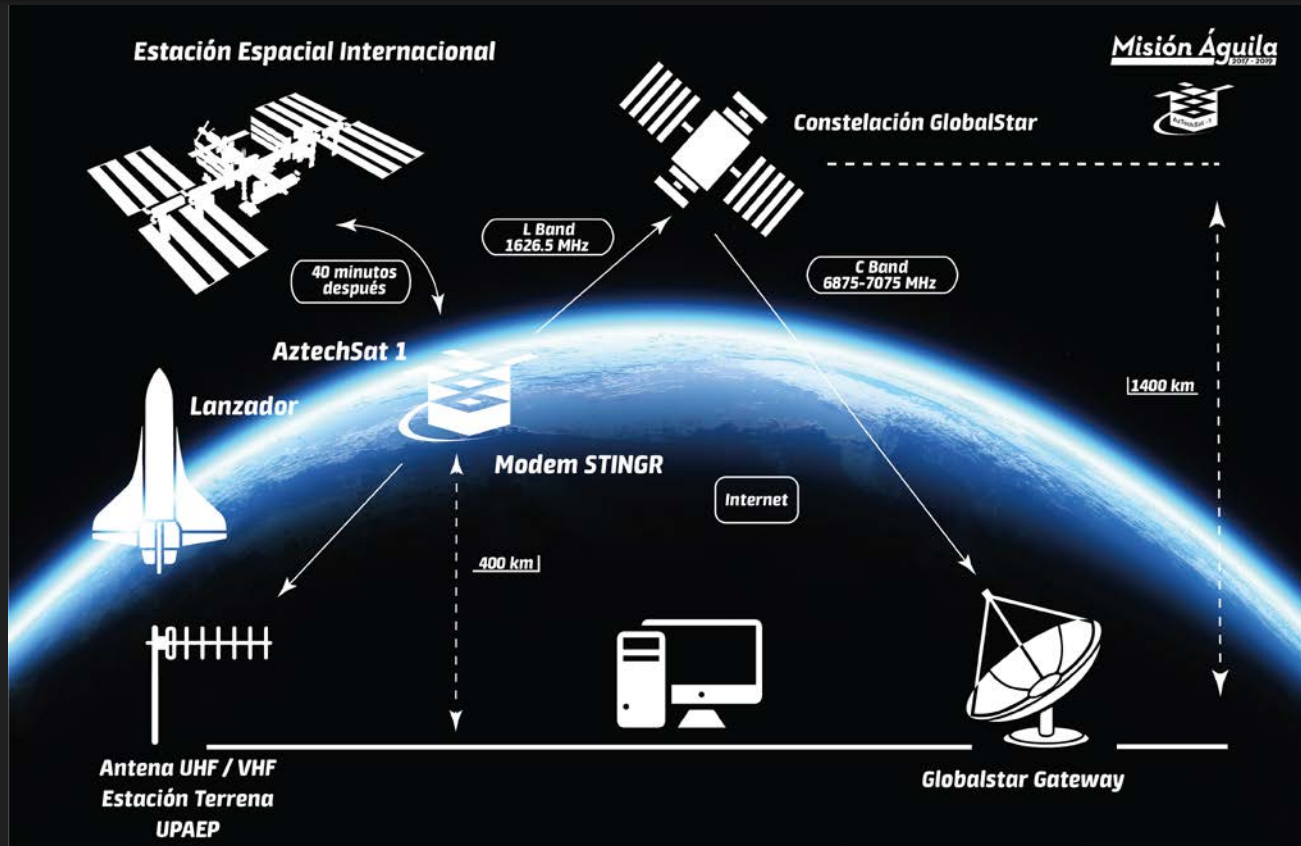


Technical Collaboration

Canada, Chile, France, Germany, Italy, Japan, Lithuania, **Mexico**, Netherlands, Norway, Saudi Arabia, Sweden, Spain, Trinidad & Tobago, UK



AztechSat-1 - NASA – AEM Collaboration





28 years in SV and have worked in the private sector and public sector, in two fortune 100 companies, two federal government agencies, and co-founded an Internet company

In college I learned the value of setting Goals and Objectives and Follow through

Early learned the importance of Teamwork

That Work Ethic has the same Value as your Skills, Knowledge and Abilities

That it's okay not to know everything... but to develop a plan and be proactive to acquire the required knowledge

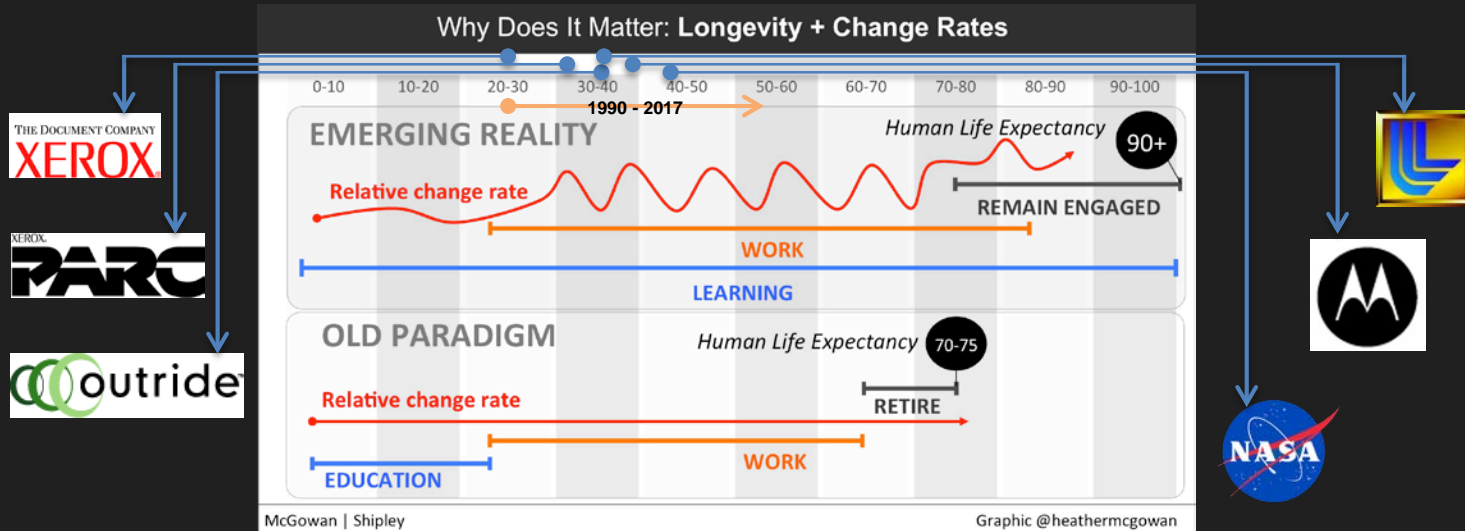
That it's okay to take risk responsibly

That there much to learn from both Failure and Success

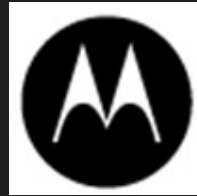
The importance of defining your own career path and creating your own opportunities

That you have to feel that you have the "Best Job in the World" and if you don't, than do something about it.

Lessons Learned... So Far!



So far, that's my evolving engineering career... !



"We are all faced with a series of great opportunities *brilliantly* disguised as *impossible* situations." - Charles R. Swindol

"Luck is what happens when *preparation* meets *opportunity*"

- Seneca quotes (Roman philosopher, mid-1st century AD)

Questions?



