



Project Leadership



“A Shared Experience in
Viking Project Leadership”

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Viking Project 1968-1976

- Science Mission Driven
- “The Martian Landscape”
- Tim Mutch Story on how his Team captured landed images of Mars
- Probably was the first PI within a Large Science Mission
- Participated in every Viking decision during development, test and mission operations

Talking our way to Mars

- Significantly involved in the design of the imaging system
- Member of the Viking Lander Science Steering Committee
- Attended more than 400 meetings over the eight years prior to launch
- Travel became as routine way of life
- Sharing critical data became the mantra

Project Leadership

Generic

- Organize to Win
- Assign Performance Accountability
- Effective Communications
- Controlling the Project
- Develop Alternate Plans
- The Golden Rule
- Ethics & Trust
- Creating Customer Value
- Lessons Learned

Viking

- Teamed with JPL
- Held Team Off-site Meeting
- First Project to use ADS
- Monday Technical Staff Meeting
- Had a list of 150 cost offsets
- Insisted on holding all reserves
- Image created at the top
- Mission Success was our motto
- Lunar Orbiter was our guide

Viking - Organize to Win

- Got a clear understanding of Science Objectives
- Remembered the past, assessed the present and applied first class methods of Systems Engineering Leadership
- Developed a strong bond with the other Centers and Contractors
- Respected that people make things happen and selected the best to implement each experiment and hardware and software design element
- Spent time giving each team member clear assignments
- Got an early understanding of all tasks
- Our first decisions on team assignments were not always right---did not hesitate to make changes
- We found it was better to train outstanding people into new areas than to accept marginal people with some skills

Viking-Organize to Win (cont'd)

- Made sure everyone carried a share of the load
- Watched for overlapping assignments
- Established an early meeting where each team member describes their assigned responsibilities
 - fixed duplications
 - repaired holes
 - settled interfaces
 - built the team for high performance
 - focused on science objectives
- Changed the assignments to fit the challenge
- Remembered to establish effective communication channels

Viking - Assign Performance Accountability

- Made sure all team members understood the mission objectives
- Became process oriented
 - made sure process matches product or services
 - assigned ownership to every task
- Promoted open communications
 - became a good listener
 - created a communication and reporting network
 - encouraged the strong
 - supported the marginal
 - replaced the non-performer

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Viking - Assigned Performance Accountability (cont'd)

- Set Baselines and Metrics—assessed frequently
- Created parameters to measure performance to plan
- Made all activities visible to the team
- Made sure team accepted established plans
- Remembered to plan the work and then work the plan
- Took corrective actions to make or change plans
- Talked to all participants
- Had a willingness to change plans that were not working

Viking - Assigned Performance Accountability

- Every task and process had an owner with full accountability
 - Science objectives. cost, schedule, performance and risk management
- Praised success openly
- Criticized privately
- Provided guidance publicly
- Allowed peer pressure to stimulate achievement
- Celebrated interim victories as a team

Viking - Effective Communications

- Understood that good leaders are good communicators
- Operated on a “No Surprises” Philosophy
- Established parameters to be measured and goals to be achieved
- Did not get lost in trivia
- Made all plans, problems and successes visible
- Always Talked about the What? And the Why?
- Made decisions to affect performance and mission success
- Applied sufficient pressure or heat to get performance
- Knew when we had solved the problem and move on to the next major issue

Viking - Effective Communications (cont'd)

- Had frequent meetings
- Became good listeners
- Operated on a “No Surprises” philosophy
- Rewarded people for bringing critical problems for resolution – stayed action oriented
- Got feedback - communicated
- Reassigned non-performing people
- Were prepared to finish the task with or without a non-performer
- Celebrated successful corrections to critical problems

Viking - Controlling the Project

- Established adequate reserves in schedule, cost and technical performance
- Were willing to modify implementation plans that retain scientific objectives
- Developed alternate performance plans
- Made individual team members responsible and accountable for performance
- Had a problem oriented review system
 - paid attention to details
 - made sure all conclusions are supported by analysis or test
 - utilized outside help (made effective use of SRB)
- Tested what we fly---flew what we tested
- Had a real time communications system to control the work and complete the project on schedule

Viking - Developing Alternate Plans

- Prepared for change
- Looked for alternative ways to accomplish the task
- Remembered the goal is more important than the process
- Trained team members to be goal oriented and to think about being part of a high performance team
- Were ready to implement alternatives
- A back-up plan was our best insurance for success



Golden Rule

- The leader that holds the gold --Rules
- If you want to lead instead of follow, make sure you control the resources that:
 - allowed for change
 - implemented alternative plans
 - restored margin
 - rewarded the team



Ethics & Trust

- Set a positive standard of conduct for the team
- Treat all participants on the project fairly and with dignity
- Create an atmosphere of trust and loyalty
- Trust will result in confidence
- Confidence will lead to high performance

Viking - Creating Customer Value

- Our objectives is understanding the value to the:
 - Nation
 - NASA
 - Scientific Community
 - The project team
- Determined the drivers in the project that create value
- Prioritized decisions to optimize project success and value satisfaction
- Made sure that every project review sustains a clear value chain to all stakeholders

Viking - Lessons Learned

- Never lose your capacity for enthusiasm
- Never lose your capacity for indignation
- Never judge or classify people too quickly: First assume that she or he is good
- Never be impressed with wealth or thrown by poverty
- If you can not be generous when it is hard to be, you will not when it is easy
- The greatest builder of confidence is the ability to do something, almost anything, well

Viking - Lessons Learned (cont'd)

- When the confidence comes, then strive for humility; you are not as good as all that
- And the way to become truly useful is to seek the best that other brains have to offer. Use them to supplement your own, and be prepared to give credit to them when they have helped
- The greatest tragedies in work and personal events stem from misunderstanding
- Answer---Communicate