

HOW NASA BUILDS TEAMS

Mission Critical Soft Skills for Scientists, Engineers, and Project Teams

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CHARLES PELLERIN is the former director of NASA's Astrophysics Division where he was responsible for one of the largest scientific programs in history with an annual budget of \$750 million. Dr. Pellerin, a graduate of Drexel University and Catholic University of America, holds a PhD in astrophysics and has served previously as professor of leadership in the University of Colorado at Boulder's business school. In addition to being involved in the launch of more than a dozen satellites, Dr. Pellerin led the team which successfully repaired the Hubble Space Telescope when it was discovered in 1990 the Hubble had been launched with a flawed mirror. Dr. Pellerin was appointed Associate Deputy Administrator of NASA (the highest non-political level in the government) and has been awarded two Outstanding Leadership Medals by NASA, an honor bestowed on less than 50 people (including astronauts) during NASA's history. Dr. Pellerin left NASA to teach and then to form his own leadership consulting firm.

The Web site for this book is at www.4-dsystems.com.

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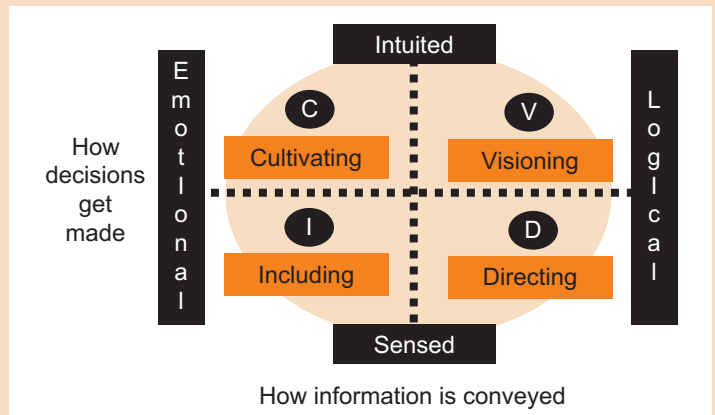
MAIN IDEA

Every successful organization needs high performance teams in order to compete and succeed. Yet the technical people who often make up these teams don't generally respond well to the traditional "touchy-feel" style of team building activities – they're not the kind of people who like sitting around campfires in the middle of nowhere singing *Koombiya* and toasting marshmallows. If you're trying to build a team of scientists and engineers, a different approach is needed.

NASA recognized this problem in the early-1990s. The catalyst for this was the launch of the Hubble Space Telescope in 1990 with a flawed mirror. In the aftermath of this very public debacle, NASA formed another team to mount a space repair mission which was ultimately highly successful. This second team used the "4-D Team Building Process" shown at right.

In 2001, NASA extended the 4-D System right across the board. As of late-2009, more than 500 NASA project and engineering teams involving more than 2,700 scientists have used this process. The results have been impressive with most teams moving from below-average performance levels to consistent above-average performance.

It makes sense to learn from NASA's mistakes and its successes in equal measure. Integrate the 4-D System into the way you build and manage teams.



1, The basics of the 4-D system Page 2

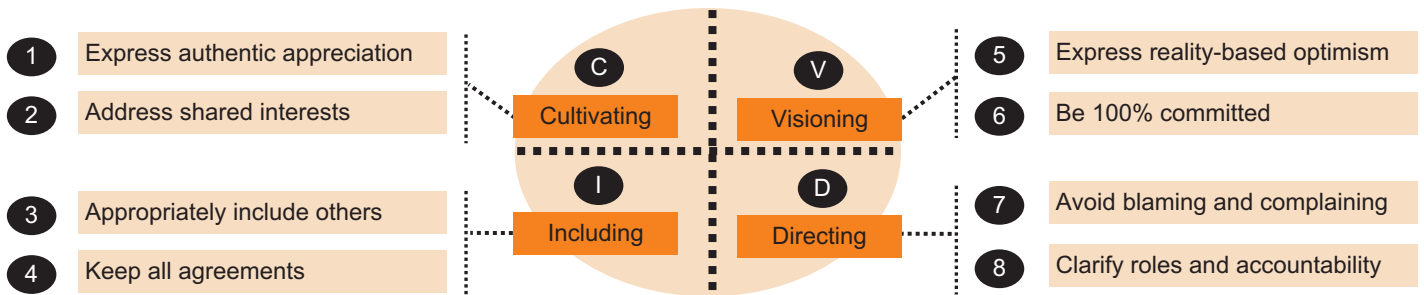
The 4-D system simplifies leadership into the four dimensions you must address and balance to be an effective leader:

1. Cultivating – you have to make everyone feel appreciated.
2. Including – you must make people's opinions count.
3. Visioning – you have to think about possible futures.
4. Directing – you have to take action to make things happen.

Not only can 4-D be used to build good leaders but it is also a solid team-building process. It measures the key driver of team performance – the social context.

2. How NASA uses the 4-D System Page 3

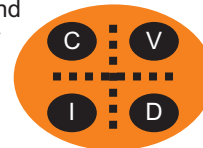
There are eight behaviors (two in each dimension) which can and should be measured:



By systematically establishing a baseline of performance and then regularly measuring ongoing performance in each of these behaviors, more than 500 NASA teams showed systematic improvements.

3. Basic 4-D diagnostic tools Page 4

The real value of the 4-D System is it allows you to match the innate personalities and strengths of those on your team with the tasks required. You can also measure your team's prevailing culture and see how it matches up with the culture of your primary customer. The 4-D System is a good way to mesh projects, teams and customers together well.



4. How to use 4-D to shift context for your teams Pages 5 - 8

To make the most of the 4-D system, you should be proactive in trying to improve your own individual performance on the eight behaviors specified. Similarly, if you're called to act as a team leader, you can and should use these eight behaviors to improve your team's social context. The more you enhance the social context of your team, the better its performance will become.

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