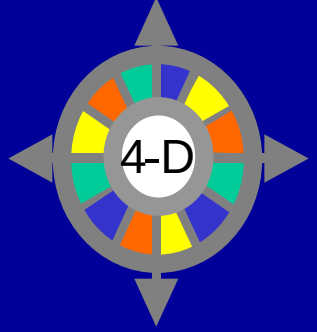
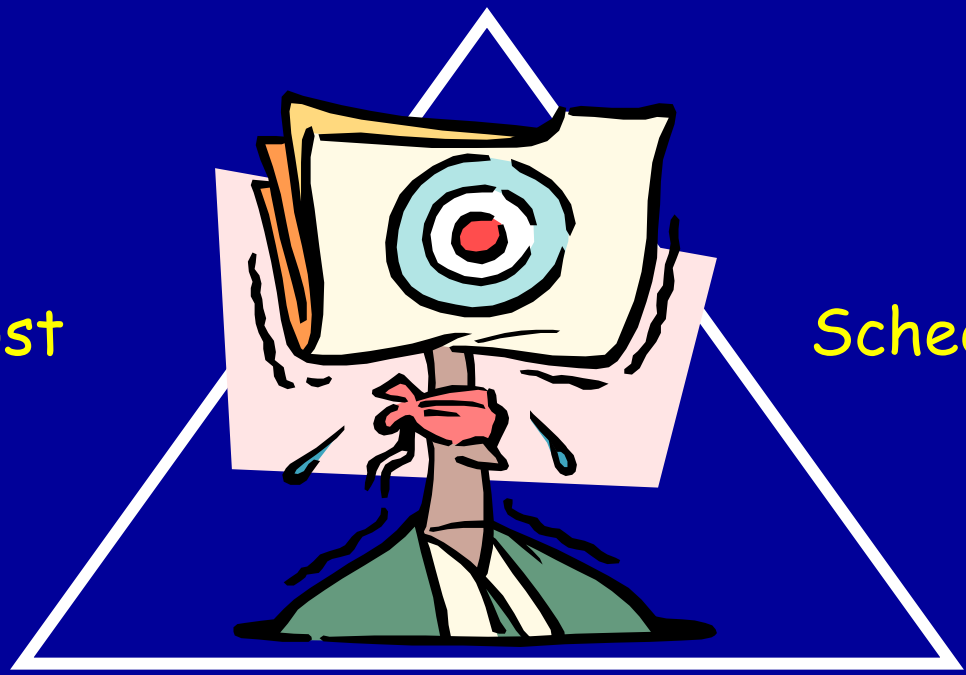


Leadership

Total Risk Management

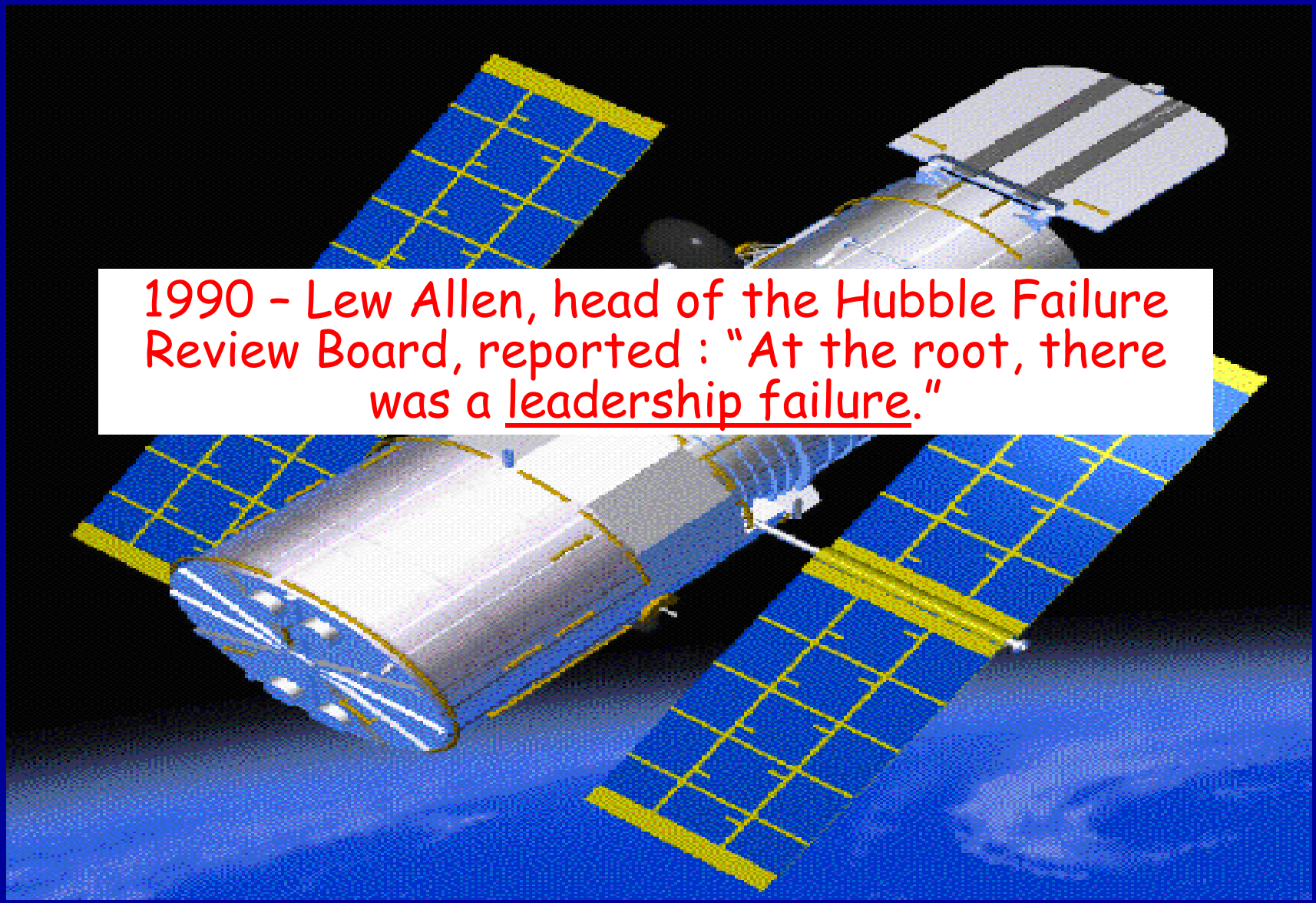


Do you want to know what's really going on in your Project?
And, be able to do something about behaviors that increase risk??

Today's Plan

- Take a look at major mishaps and the role of culture / social factors.
- Explore the building of a "risk-balanced" project.
  - Technical / programmatic risk.
  - Social Risk.
- Using the 4-D system to organize cultures.
  - What to measure
- The 12 "standard" factors.
  - Look at a few in depth.
- Show you some real data.
  - Cultures (addressed with workshop & consultation)
  - Leaders (addressed with coaching)
- Who the 4-D team is.
- The projects we are currently working with.

Hubble Review Board



1990 – Lew Allen, head of the Hubble Failure Review Board, reported : "At the root, there was a leadership failure."

Normalization of Deviance

"This book refutes conventional interpretations of the Challenger launch decision."

"The more significant question is why the NASA managers, who not only had all of the information on the eve of the launch, and were also warned against it, decided to proceed."

" … an incremental descent into poor judgment. Typified by a pattern in which signals of potential danger … were repeatedly normalized … at the <u>intersection of the social and technical</u> in the construction of risk."

" … the sociological explanation presented here is more frightening than the historically accepted presentations, for the <u>invisible and unacknowledged tend to remain undiagnosed and thereby elude remedy</u>."

From <u>The Challenger Launch Decision</u> by Diane Vaughan

Columbia Review Board

- Doug Osheroff – "At the moment, I'm in a state of depression," he said from his office at Stanford University."
- "Look, I think it's been clear for a long time that what has to change is not NASA's policies and procedures or management structure. I suppose they have to change as well, but it's culture," he said. "Culture is a very funny thing, of course. It is the way people intuitively behave to a situation."
- Board members and former NASA employees have pointed to attitudes of superiority, fear of retribution by lower-level employees, communications problems and strained relationships between key divisions of NASA as part of its difficult culture. Osheroff is also troubled that some managers who made crucial decisions during Columbia's flight seem unwilling to accept individual blame.

MARCIA DUNN, AP Aerospace Writer, August 1'03

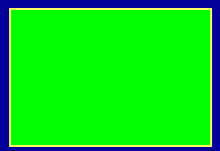
GAO Report -- 2002

In 2002, GAO issued a report criticizing NASA as having a "fundamental weakness" in the collection and sharing of lessons-learned Agency wide.

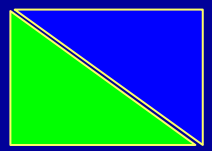
They included a table of "Reasons for Failure" from many perspectives.

Without making too much of it, let's look at this table and see if the causes are:

= Primarily Technical: Based in stuff we learned in engineering courses, etc.

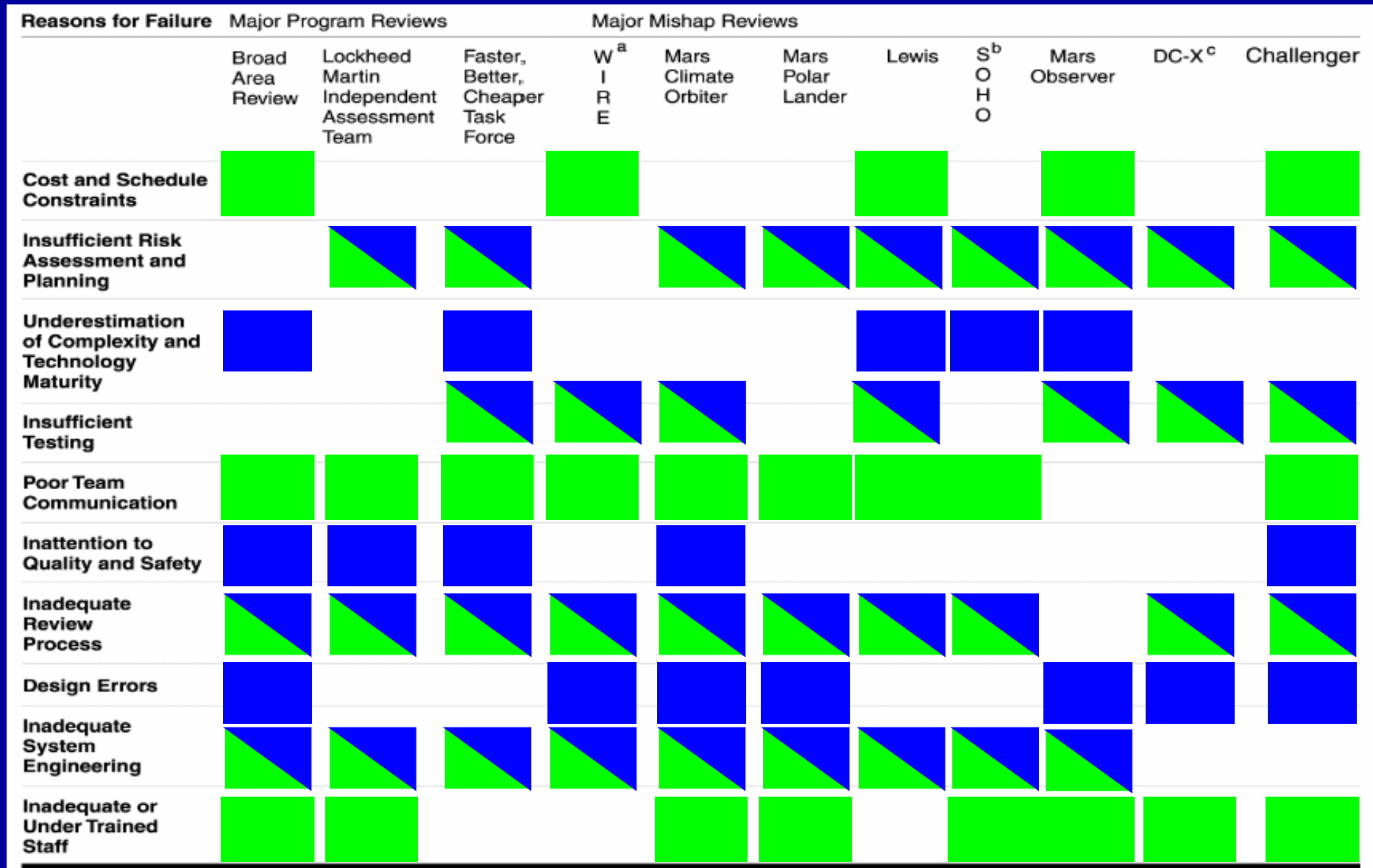


= Primarily Social: Driven by human interactions as in leadership and culture.



= A blend of both.

GAO Report -- 2002

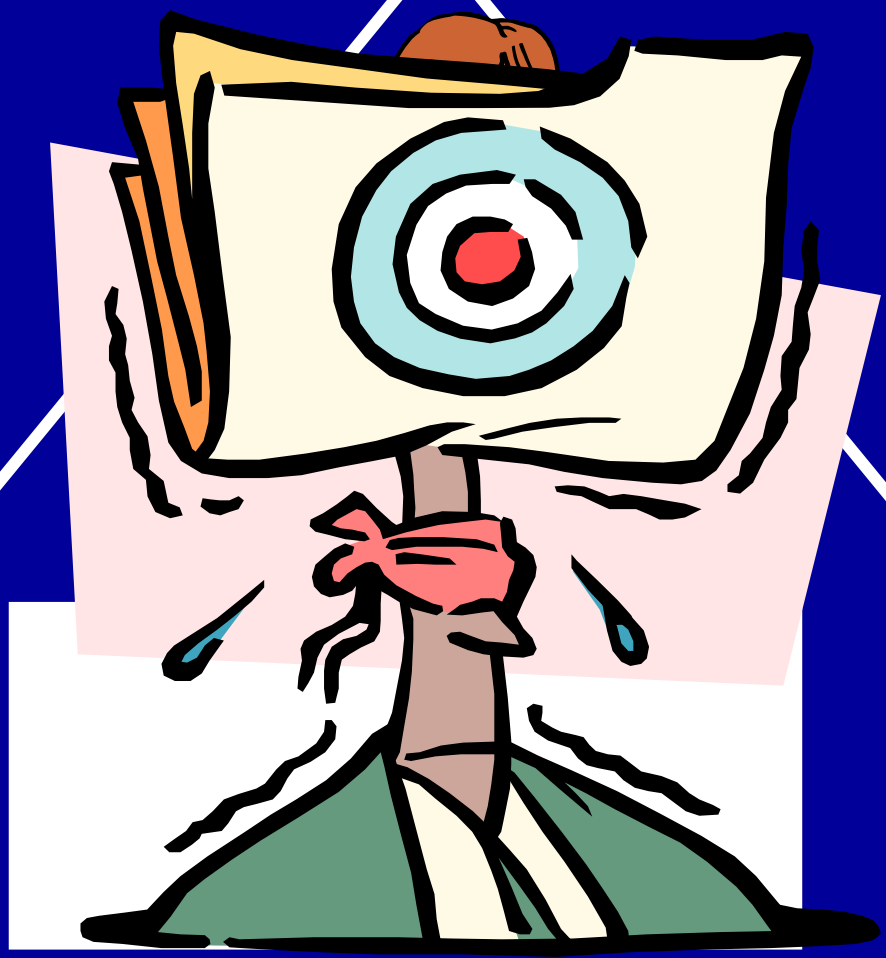


"Normal Projects"

- It's unfortunate that Review Boards never dig into what goes on in successful projects.
  - We suggest that if they did they would see many similar phenomena.
  - Other projects succeeded because they were "lucky," because there were successful "diving catches," because the stress / complexity was lower or,
    because the processes were better.
- And, because they had effective leaders, teamwork across the interfaces and efficient cultures.

Engineering at these levels is ambiguous and unruly.

Our View of Project Risk

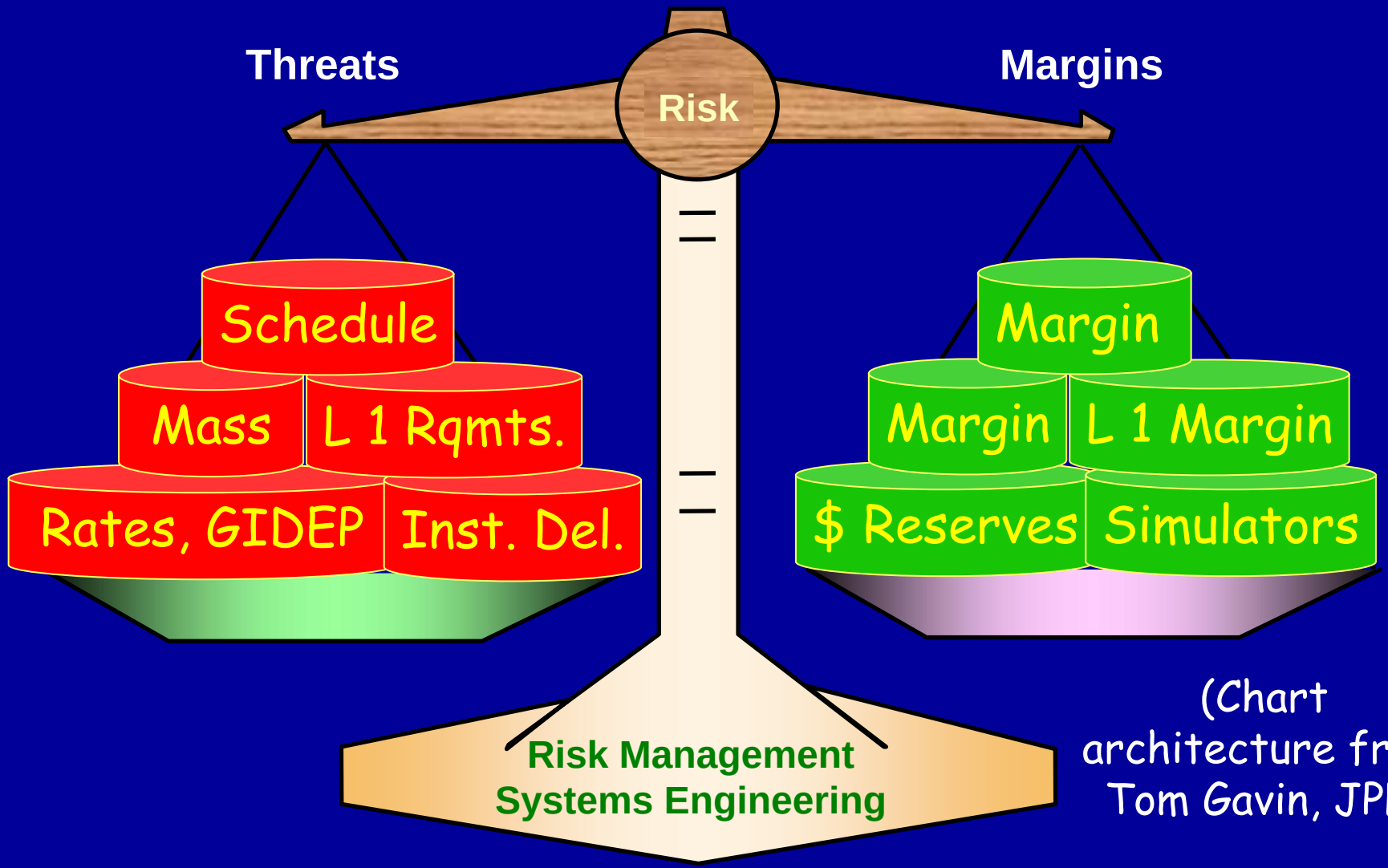


Cost

Schedule

Performance

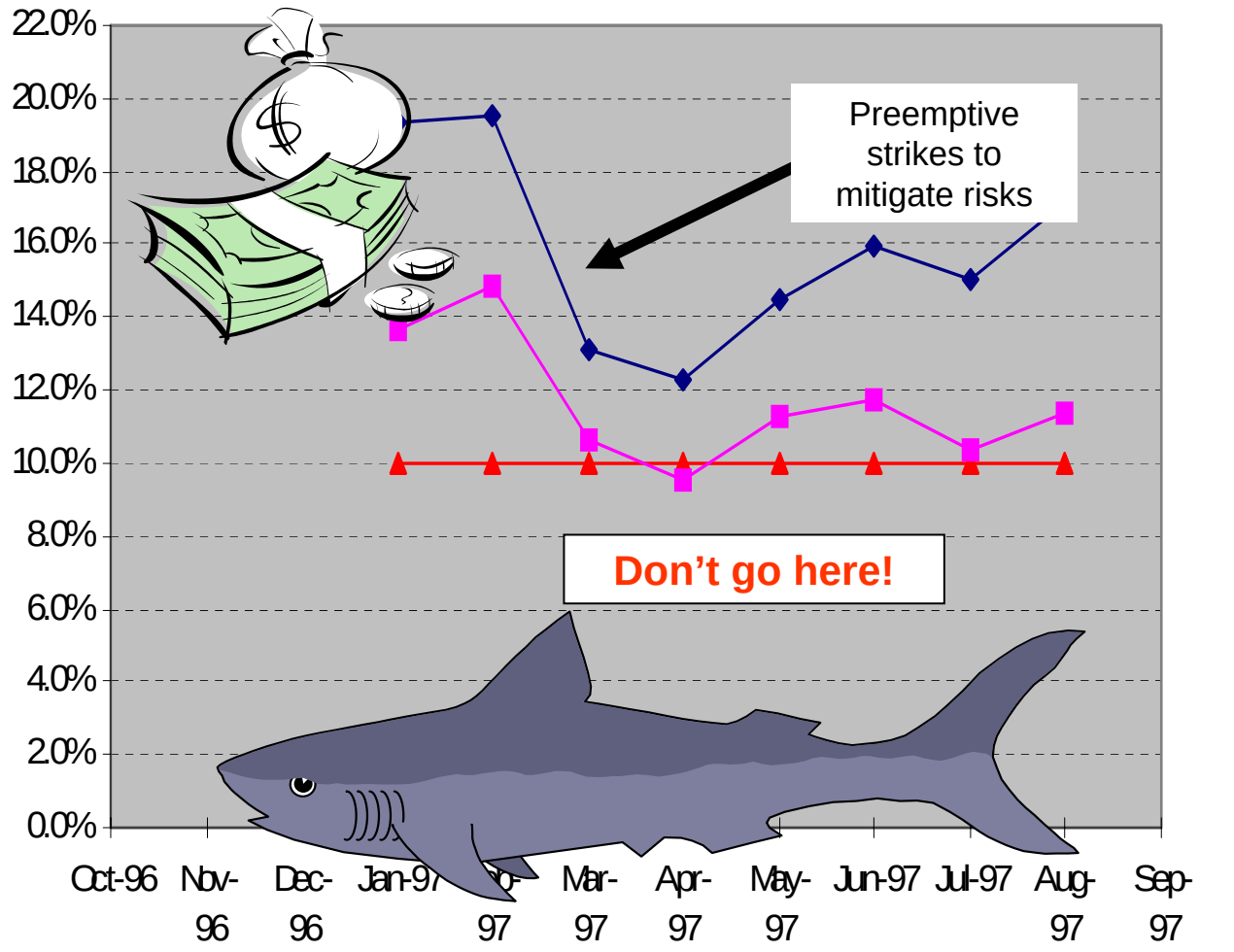
A Balanced Project



(Chart architecture from Tom Gavin, JPL)

Fundamental risk management – balance risks w/ margins.

Reserves for Risk Management



"Excess" Reserves

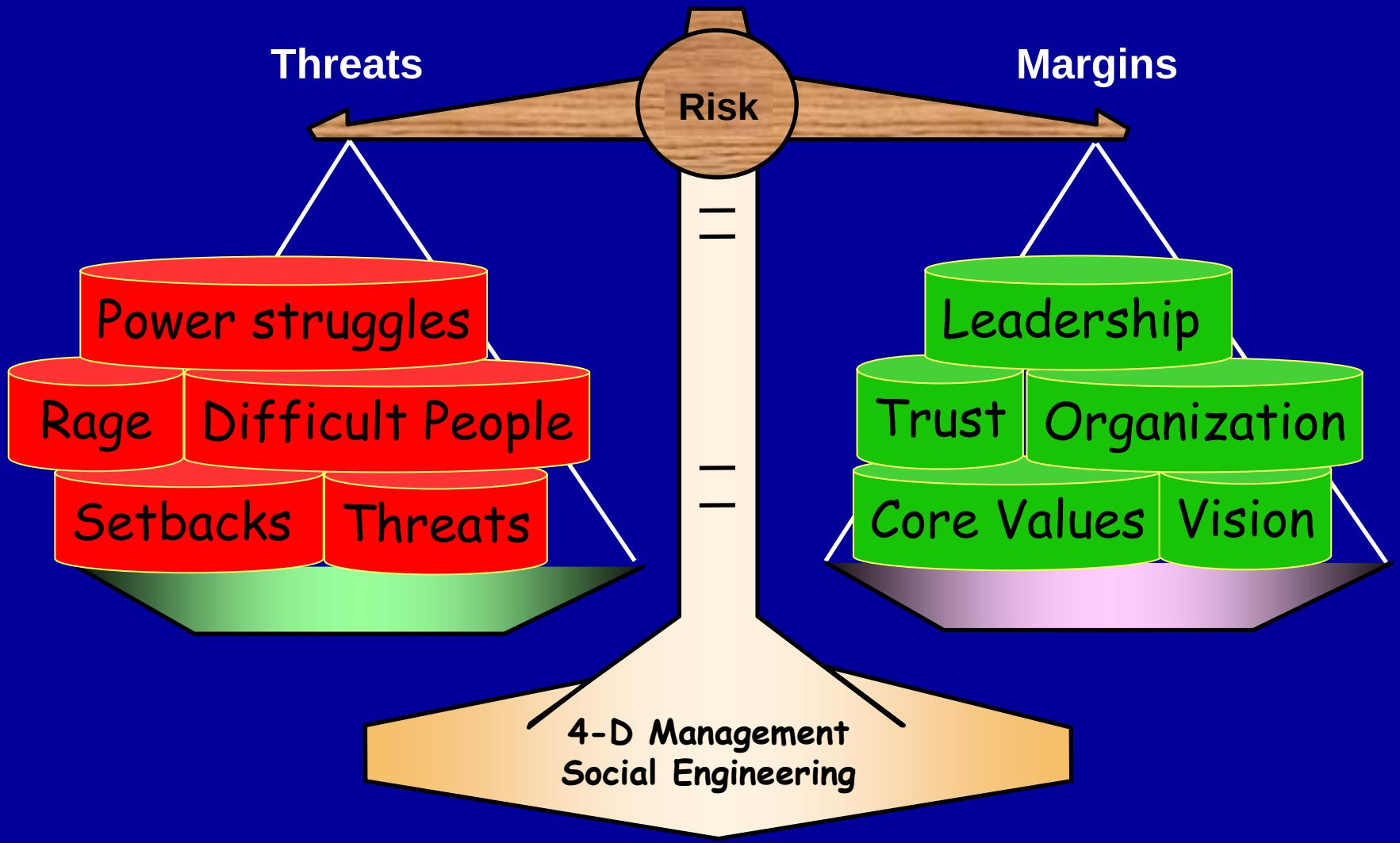
- Total Reserves
- 10% Reserves on Cost To Go Floor
- Reserves Less Soft Liens

(Chart from Jim Rose, JPL)

10% "floor" was set by mgt. staff according to their assessment of development risks.

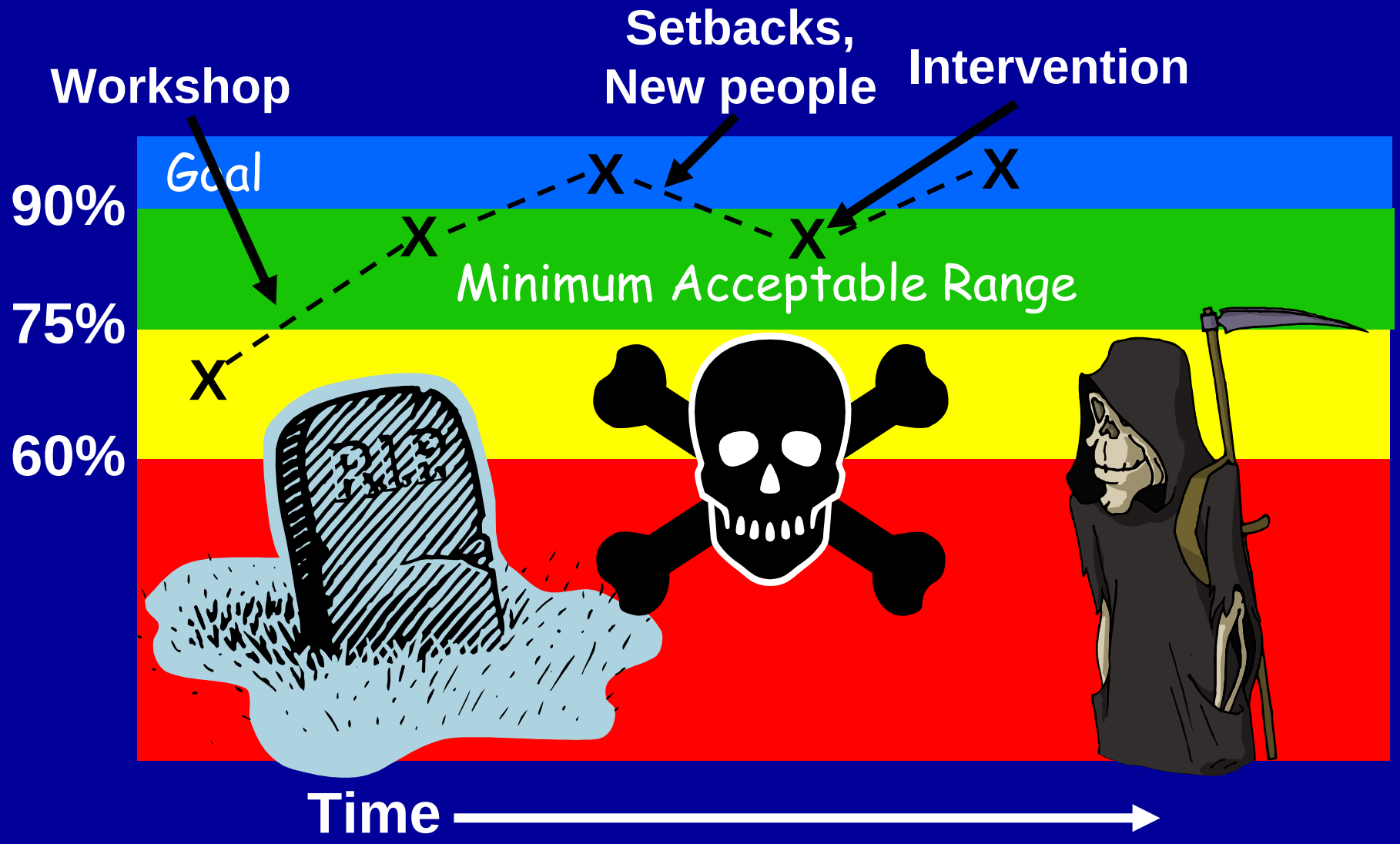
Fundamental risk management – appropriate use of margins.

A Balanced Project



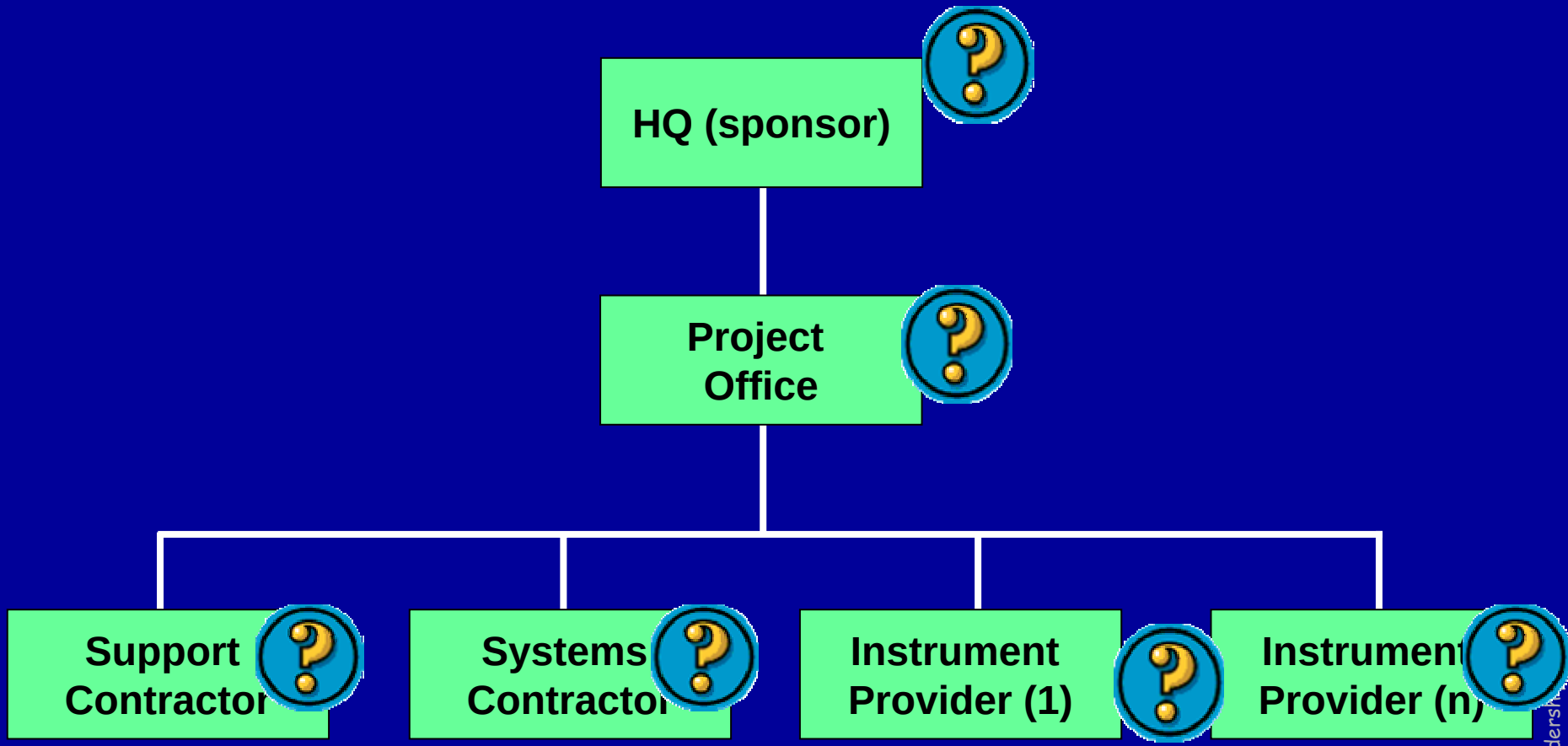
Social risk management – balance risks w/ reserves & margins.

Social Reserves Maintenance & Replenishment



Social risk management – sustain & replenish margins.

Culture / Interface Assessments



We measure the state of the culture of important organizations or what's happening at the interfaces.

Basic Organization into "Dimensions"

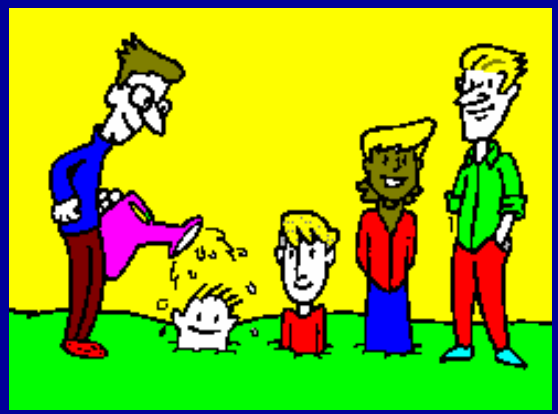
Relate / Include

Present

Direct / Organize

Personal

Logical



Access values / value

Possible

Vision / Invent

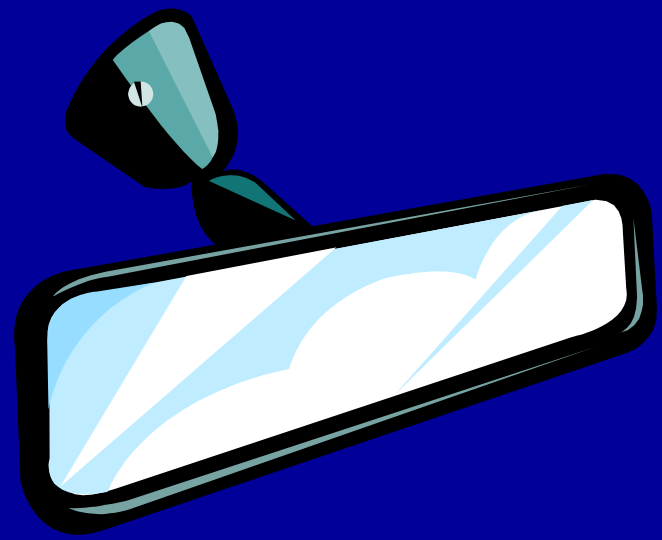
The 4-D organizing system is our foundation.

Culture - Leading Indicators

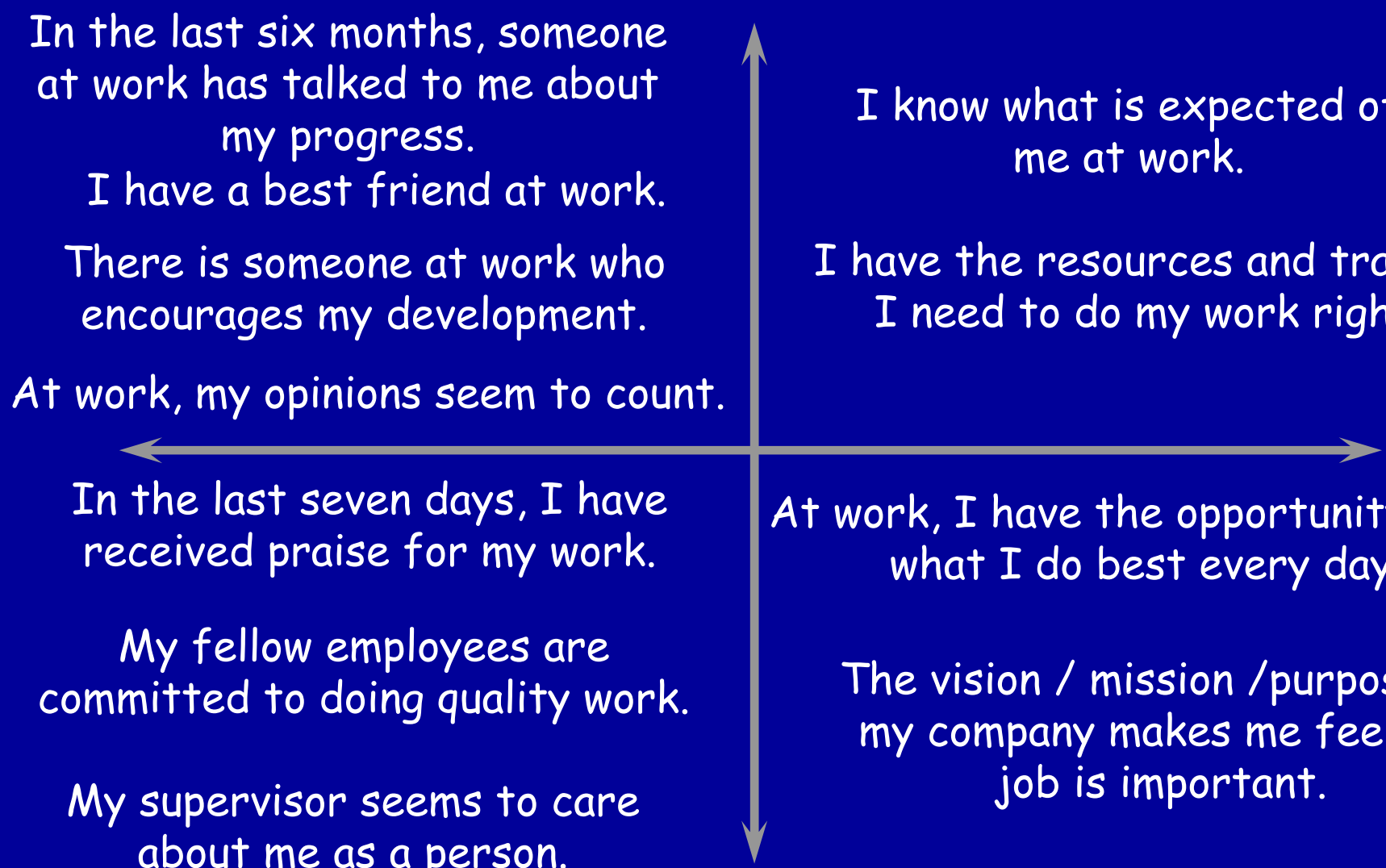
The Gallup Organization analyzed over a Million employee responses to identify the "Leading Indicators" that consistently correlate with high-performance including productivity, profitability, employee retention, and customer loyalty.

"Leading Indicators"

"Trailing Indicators"

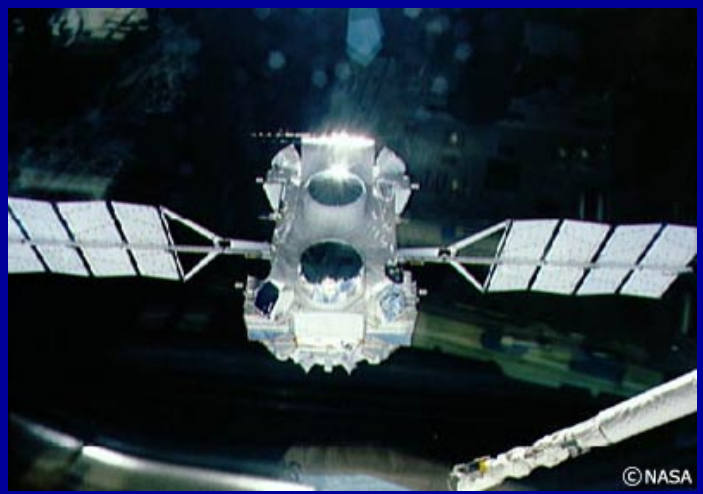


4-D Organization of Gallup's 12 Factors



CGRO

- The Compton Gamma Ray is described by many as their ultimate working experience.
  - At the 10th anniversary, person after person spoke of this.
- And, National Space Club Award.
- And, Goddard "Contractor of the year award."
- And, it completed on cost & schedule.
  - With some help from the "Challenger umbrella."
- And, it worked beautifully.



Terry Watson, the TRW ops manager described the environment.

CGRO*

Program leadership focused on teamwork and people in addition to …

Frequent face to face meetings at all locations, always allowing time for "after work" social events.

A "Can Do" attitude was inspired

Program management stayed "in touch" with the realities of the program … was kept up to date and well informed.

Lots of little things like patches, stickers, mugs, etc. to say "Thanks" to the team members.

Team members were given freedom to depart from "business as usual."

Talented and creative people were drawn to the program.

Many examples of innovation and productivity gains

An atmosphere of honesty, mutual trust & understanding prevailed.

*From Terry Watson –Ops manager

The "Standard" Culture Measures

Relating Dimension

Directing Dimension

The 12 Factors

1. Appreciate as a Habit?
2. Align with Noble Values?
3. Honor Others' Values?
4. Include Others?
5. Keep Agreements?
6. Truthfulness?
7. Uplift with Vision?
8. Encourage Creativity?
9. Technical Closure?
10. Resources to Succeed?
11. Roles & Accountability?
12. Drama States?

Valuing Dimension

Visioning Dimension

Factor 6 – Truthfulness

Will Schutz, in The Truth Option said, "Creating an atmosphere of truth is the one thing people seldom try -- yet it leads to energy and aliveness, freedom to change, and increases productivity in every aspect of living."

Truthfulness is the second component of trustworthiness. We all operate somewhere in the “spectrum of deception” – seldom outright lying and seldom being completely truthful.

The requirements for “truthfulness” include:

1. No “withheld” truths. (These are usually truths you should reveal, but don’t in order to avoid the emotional fallout.)
2. Speaking the “truth of your experience” including what you are feeling as in, “That idea is frightening to me.”

Mastery of “Truthfulness” requires:

A mindset of commitment to live in truthfulness, then:

- Telling your full truth respectfully and considerately, even (especially) when the “emotional fallout” is high.

Truthfulness – Assessment

My experience of how we (habitually) demonstrate truthfulness across the "ABC" Project is:

Blue	"Excellent" – No improvement is needed.
Green	"Good" – And, some improvement would be helpful.
Yellow	"Poor" – We really must improve.
Red	"Broken" – We must urgently and dramatically improve.
Don't know	

Please briefly explain your response including whether you are reporting on an organizational interface.

Comments

Factor 7 – Vision

Short, catchy "visions" can connect us with the higher purpose of our project. These can turn soldering techs into space explorers. They are often self-fulfilling prophecies.

- "Put a man on the moon and return him safely to Earth within the decade." – John Kennedy
- "Conscious expectation of the unexpected." – Hubble
- "NASA's role is to do the most audacious possible things in the most conservative possible way." – George Low

We at 4-D hold the vision that we can profoundly enhance flight project's success and fulfillment for those who work on them.

Flight projects are among the most demanding endeavors one can undertake. As stress mounts, visions of attractive future states are required to sustain the team.

<u>Mastery of "Vision" requires:</u>

A mindset of realistic optimism, then

- A short, uplifting vision (purpose) statement,
- And, when extreme effort is required of the team, showing them that the condition is transitory.

Factor 9 – Technical Closure

Hubble Review Board: “We just can’t understand why these good technical people weren't curious enough to investigate these questionable data.”

Columbia Review Board: Mr. O’Keefe then addressed, "Why did we think any level of damage would be acceptable?“ “NASA had evidently assumed that since the foam strikes were so frequent that they were benign …” Borrowing a phrase from Diane Vaughan's book, he called this the "normalization of deviance.”

Is your organization so stressed that there is no time to hunt down the root cause of technical anomalies?

<u>Mastery of “Technical Closure” requires:</u>

A mindset of curiosity and commitment to leave no technical issues open:

- Willingness to give priority to “outlier” issues, and
- To expend resources on them,
  - Being relentless until “root cause” has been verified, and
  - Acknowledging when you don’t know the answer

Factor 11 – Roles and Accountability

Projects are more productive when people's roles are clearly defined and understood. Confusion about roles and authority can lead to conflicts, inefficiency and turf battles.

And, people perform best when they know what they and others are accountable for and have the delegated authority.

Accountability and delegation go hand-in-hand. It's unethical to hold people accountable for more than the authority delegated to them. Management signals what they want to be held accountable for by the delegation that they withhold.

Mastery of "Roles, Delegation and Accountability" requires a mindset of commitment to organization, then:

- Defining people's roles,
- Appropriately delegating authority, and
- Holding people accountable with appropriate rewards or sanctions as their behaviors merit.

Factor 12 – Drama States

The author Scott Peck says: "Whenever we seek to avoid responsibility for our own behavior, we do so by attempting to give that responsibility to some other individual or organization or entity. But this means we then give away our power to that entity, be it 'fate' or 'society' or the government or our boss."

Mindsets we commonly use to give our power away are

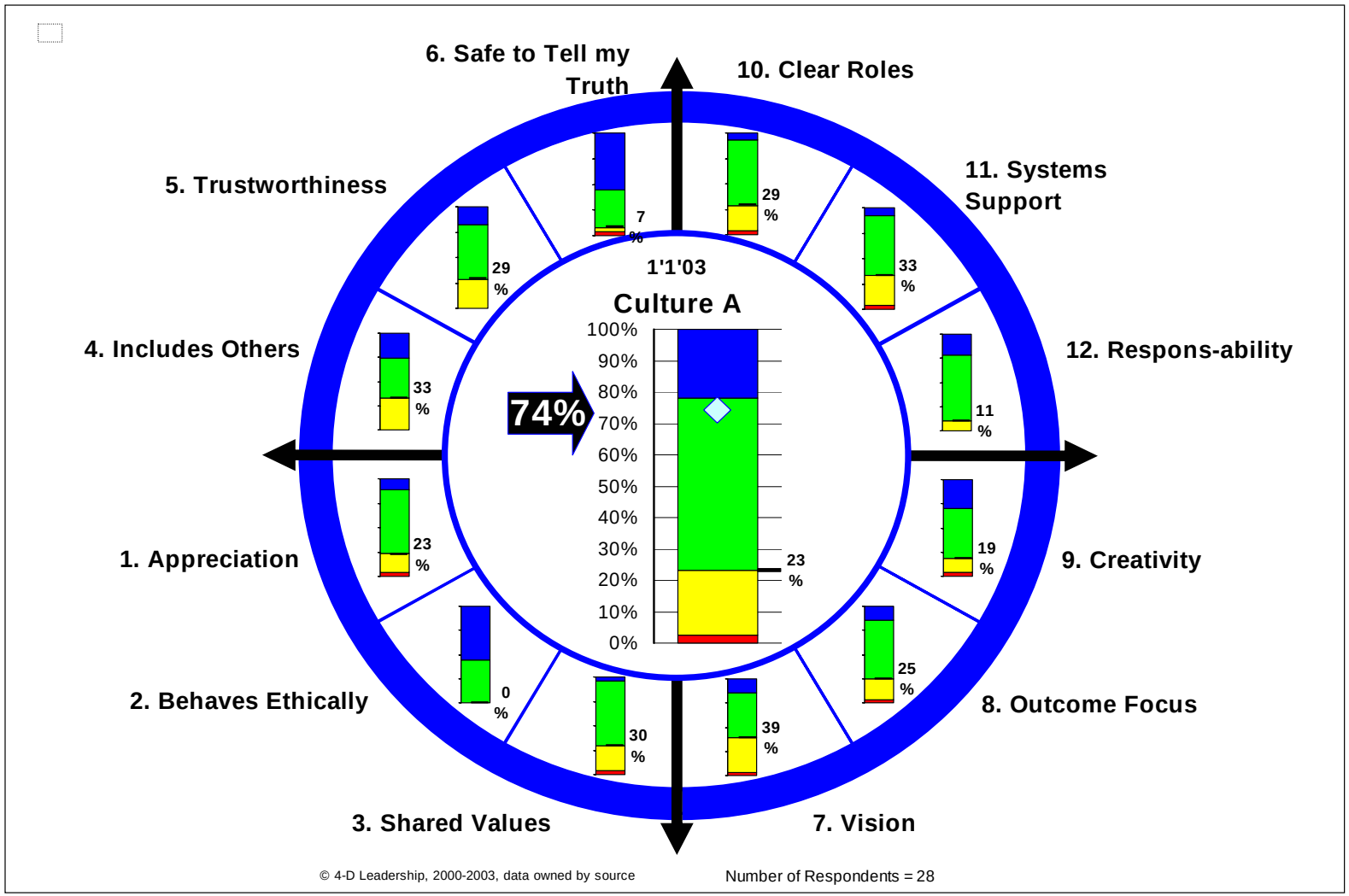
- The "Victim" – giving our power away by complaining.
- The "Blamer" – giving our power away by blaming others.
- The “Hero / Rescuer” – giving away our power by taking on work we shouldn’t.

These are “drama states,” self-generated melodramas. When we are blaming or complaining, we feel powerless. We thus lose our ability to respond – to be respons-able.

Mastery of “Respons-ability” requires a mindset with intolerance for:

- Complaining, Blaming, or Rescuing in themselves and others in the organization.

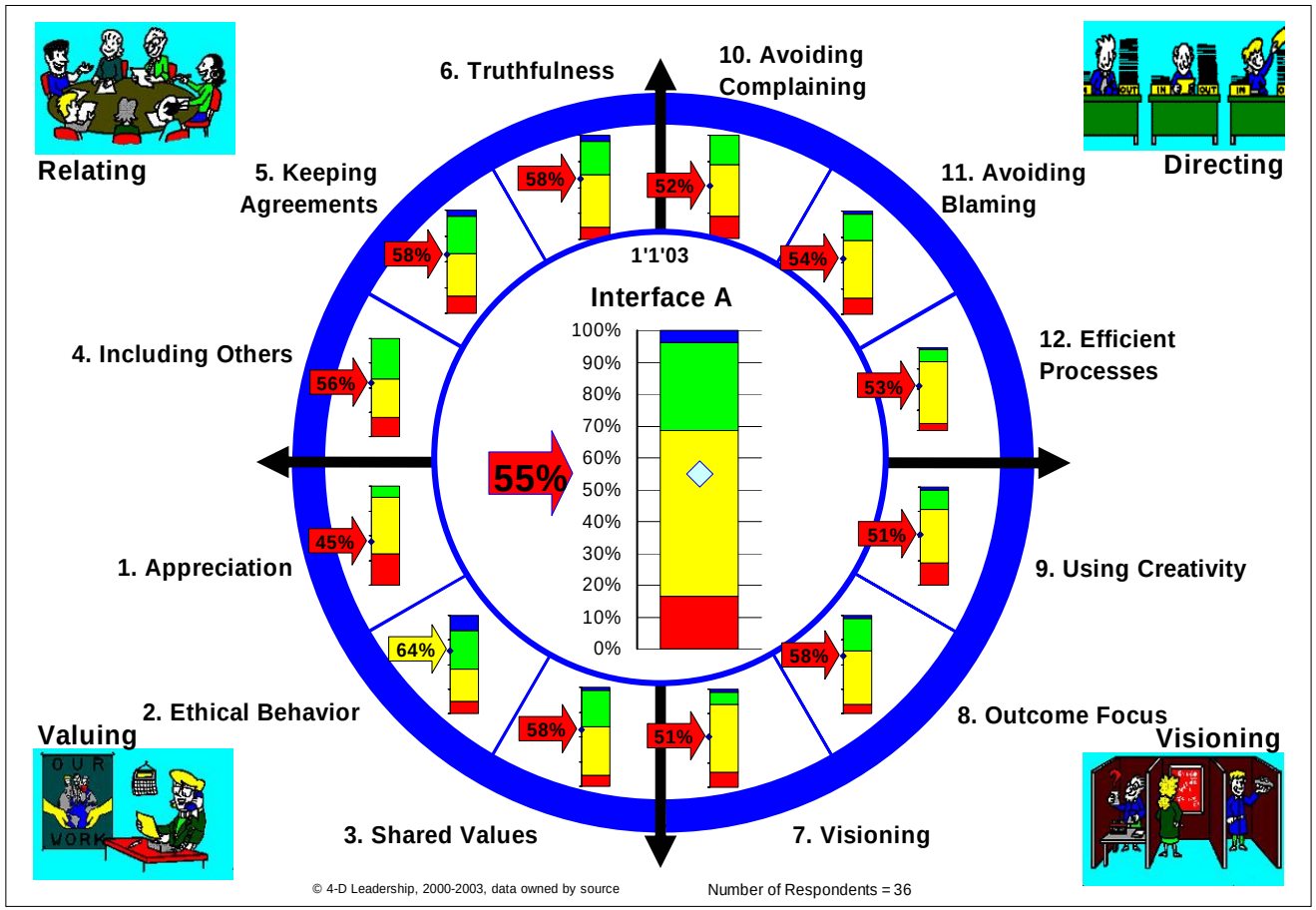
A NASA Project Culture



Slightly below minimum – workshop advised.

Project "X's" Contractor Interfaces

Scoring for e-Survey of Culture



Color Code for Averages: RED < 60% < YELLOW < 75% < GREEN < 90% < BLUE

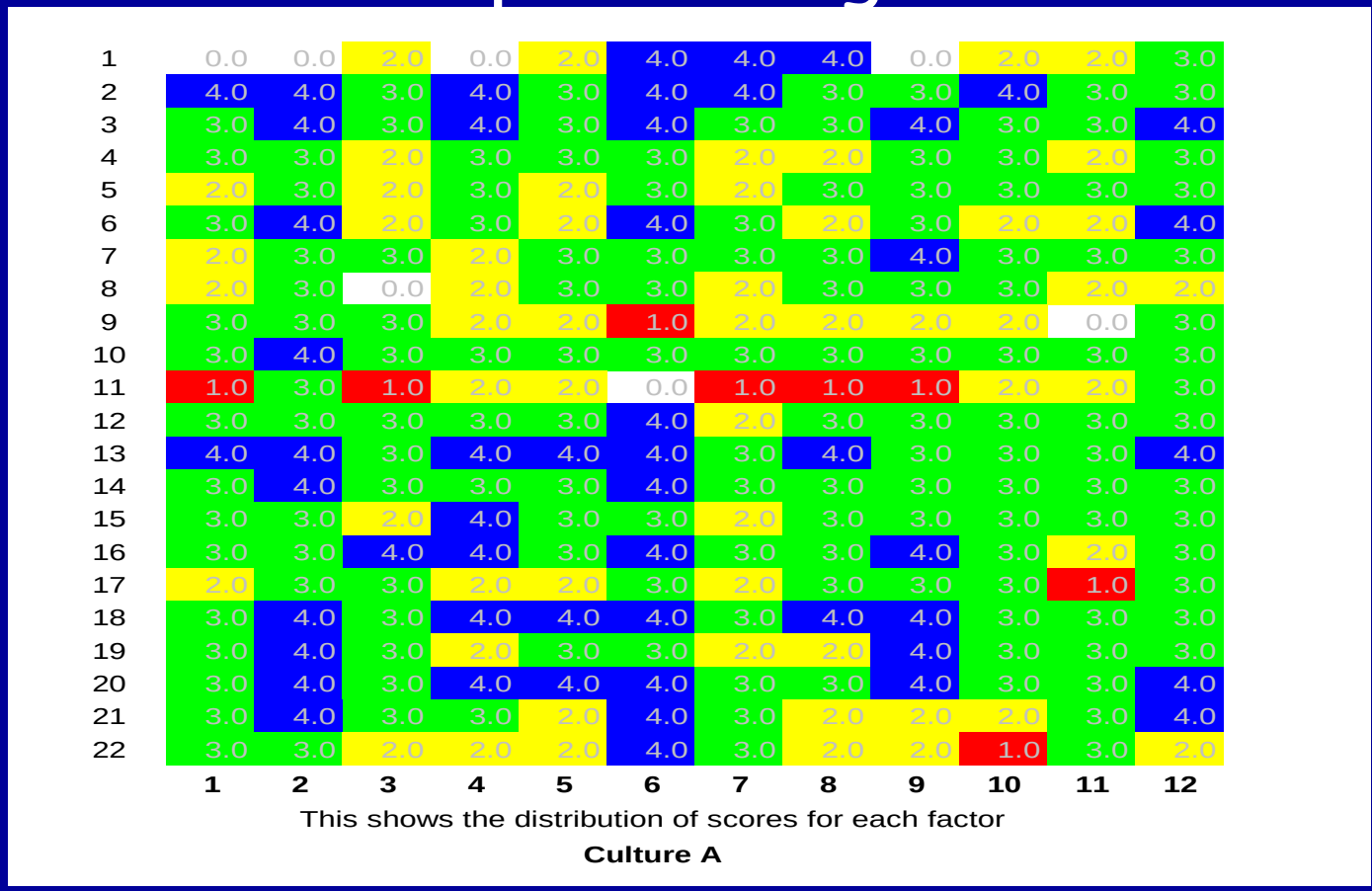
This project's contractor interfaces are "broken."
A workshop is planned.

Sample Comments - Appreciation

Appreciation:

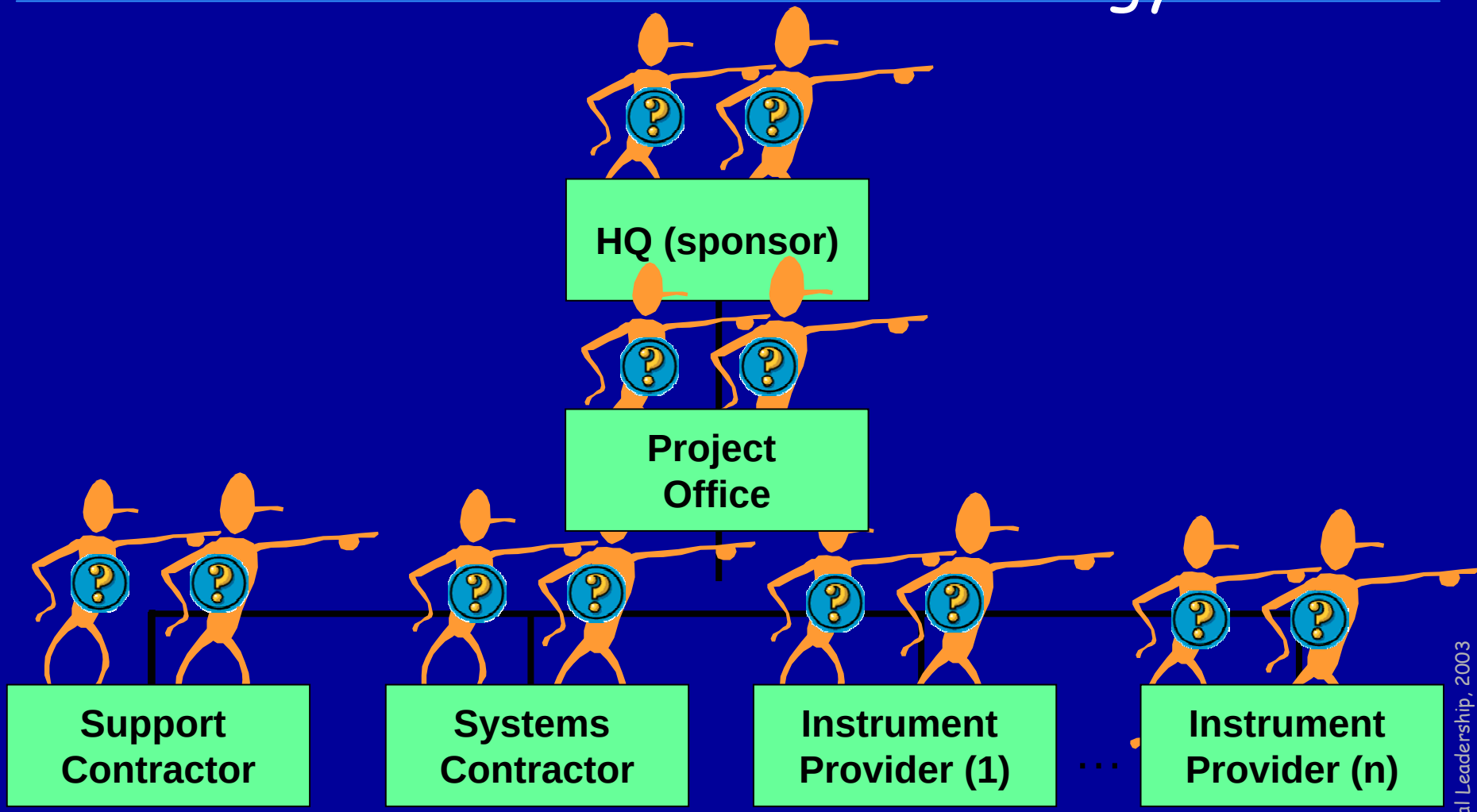
- *I personally feel valued, however there are certainly other team members who have contributed more than I have and have been overlooked.*
- *We have plenty of all hands meetings where the upper management quips how much they appreciate us and in the same breath tell us we are lacking and if we want the contract we have to work harder.*
- *One problem is that authentic appreciation isn't felt coming down from leadership. Authentic appreciation is felt from peer to peer and from immediate supervisor to employee, but from management, appreciation seems forced to try and foster a better chance to win, not as an expression of genuine feeling.*
- *The prime seldom offers any form of appreciation, genuine or otherwise.*
- *Used to be better, not enough time (or priority) now.*

Sample Histogram



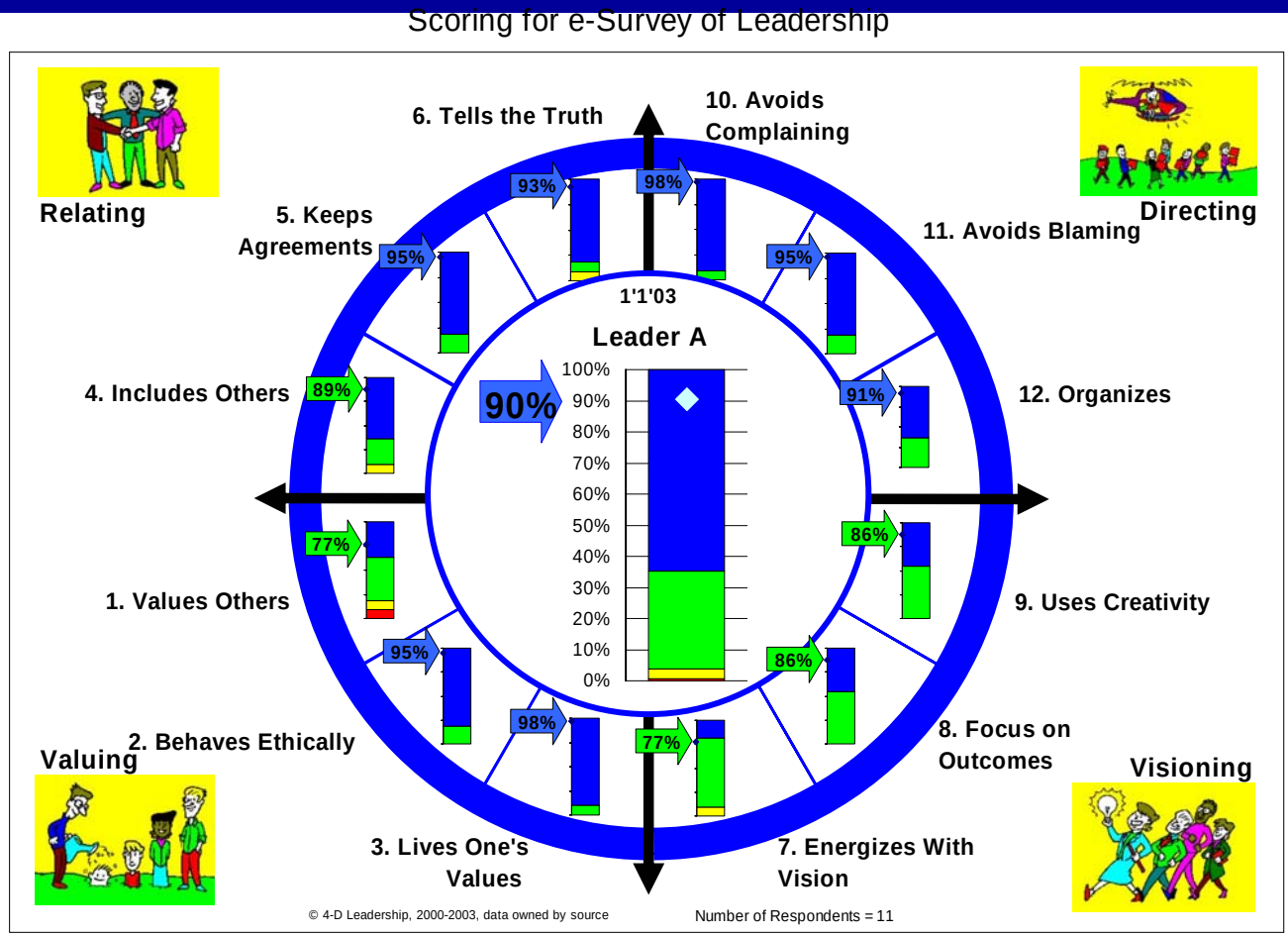
This histogram shows that everyone differentiated their scoring and there are no unthinking or "dishonest" responses.

Leader Assessment Strategy



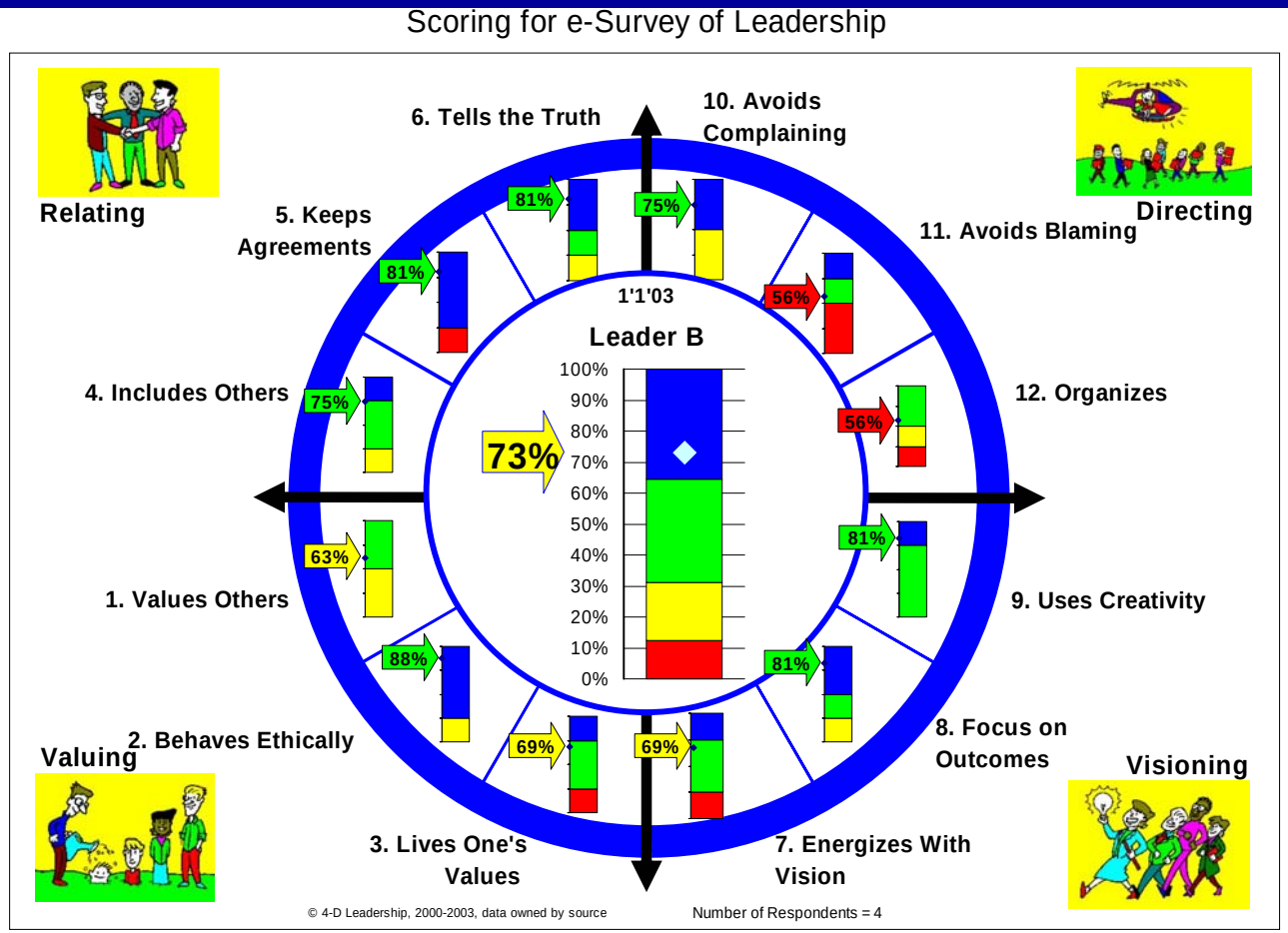
We measure all the important leaders.

Project "Y" – a Project Manager



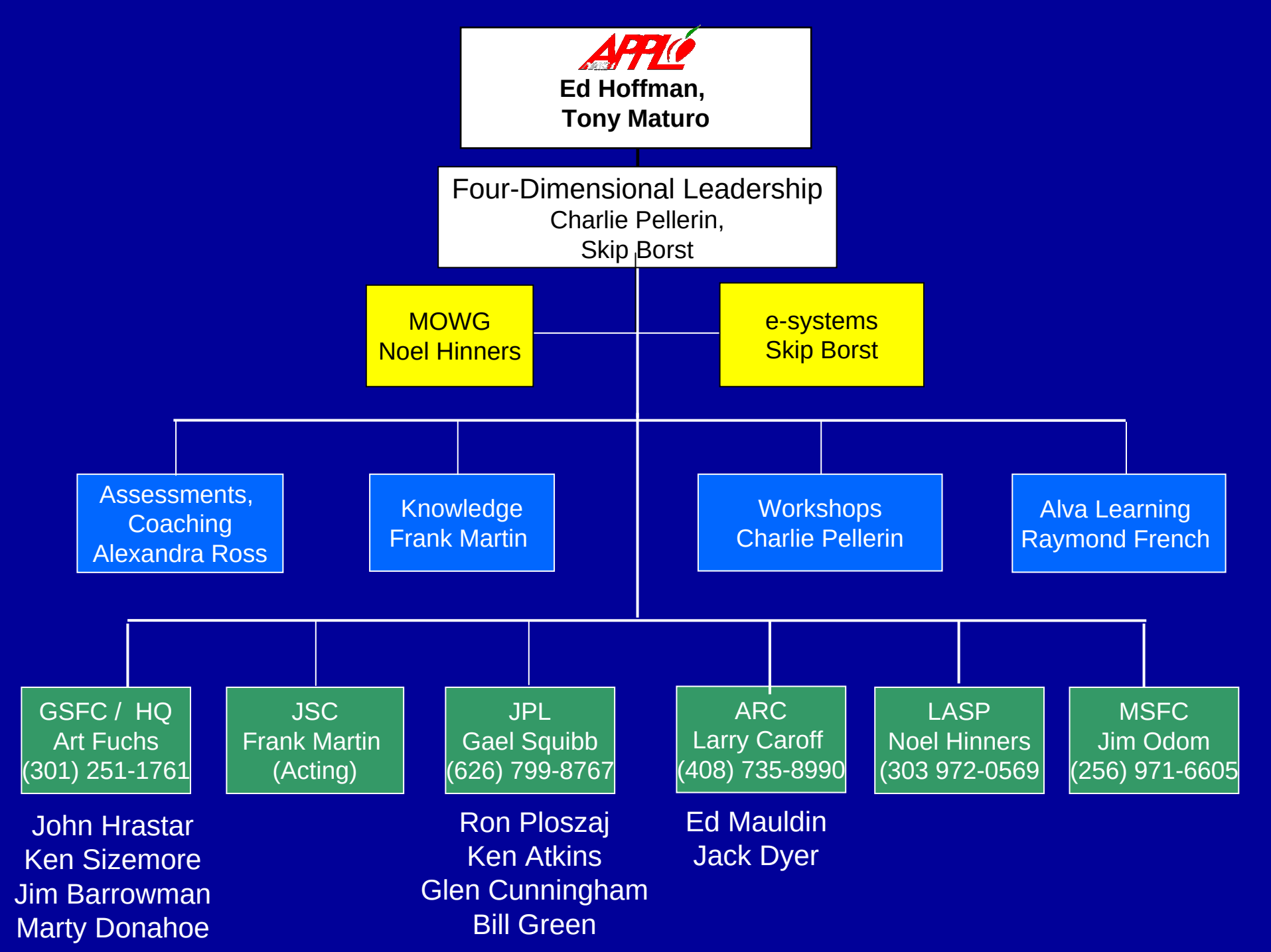
This project manager is a highly effective leader. No development required.

Project "Y" – another Project Manager



Color Code for Averages: RED < 60% < YELLOW < 75% < GREEN < 90% < BLUE

The project manager needs to be a more effective leader. Development is in process.


Ed Hoffman,
Tony Maturo
Four-Dimensional Leadership
Charlie Pellerin,
Skip Borst
MOWG
Noel Hinners
e-systems
Skip Borst
Assessments,
Coaching
Alexandra Ross
Knowledge
Frank Martin
Workshops
Charlie Pellerin
Alva Learning
Raymond French
GSFC / HQ
Art Fuchs
(301) 251-1761
JSC
Frank Martin
(Acting)
JPL
Gael Squibb
(626) 799-8767
ARC
Larry Caroff
(408) 735-8990
LASP
Noel Hinners
(303 972-0569
MSFC
Jim Odom
(256) 971-6605
John Hrastar
Ken Sizemore
Jim Barrowman
Marty Donahoe
Ron Ploszaj
Ken Atkins
Glen Cunningham
Bill Green
Ed Mauldin
Jack Dyer

The Current 4-D PEP Programs / Projects

- Goddard:
  - Aeronomy of Ice in the Mesosphere (AIM – with LASP)
  - Constellation-X (Con-X)
  - Gamma ray Large Area Space Telescope (GLAST)
  - James Webb Space Telescope (JWST)
  - Integrated Design Capability (IDC)
  - Laser Interferometer Space Antenna (LISA)
  - Solar-Terrestrial Relations Observatory (STEREO)
- JPL:
  - Kepler (with Ames)
  - Space Test-7 (with Stanford)
  - Mars Telesat (with Goddard)
  - Project Support Office
- MSFC
  - Gamma Ray Burst Monitor (GBM -- under GLAST)
  - Payload Operations Directorate (entered through PM)
- Headquarters:
  - Program Management (OSS, OES, OBPR)
  - Software Program Management (OSS)
- NASA "PM" participants.
  - Workshop, quarterly assessments & coaching.
- Northrop Grumman Space Technology (Not NASA – discussions in process)

Conclusions

- Social aspects of projects are important.
- We have reliable processes to:
  - Measure and enhance leaders (coaching).
  - Measure and enhance cultures (workshops & consulting).
- Thanks to APPL, we are working with over a dozen NASA projects.
  - With very promising results.