
What's Tougher – Transformation or Rocket Science?

Precision Strike Summer PEO Forum

**Rick Baily
The Boeing Company**

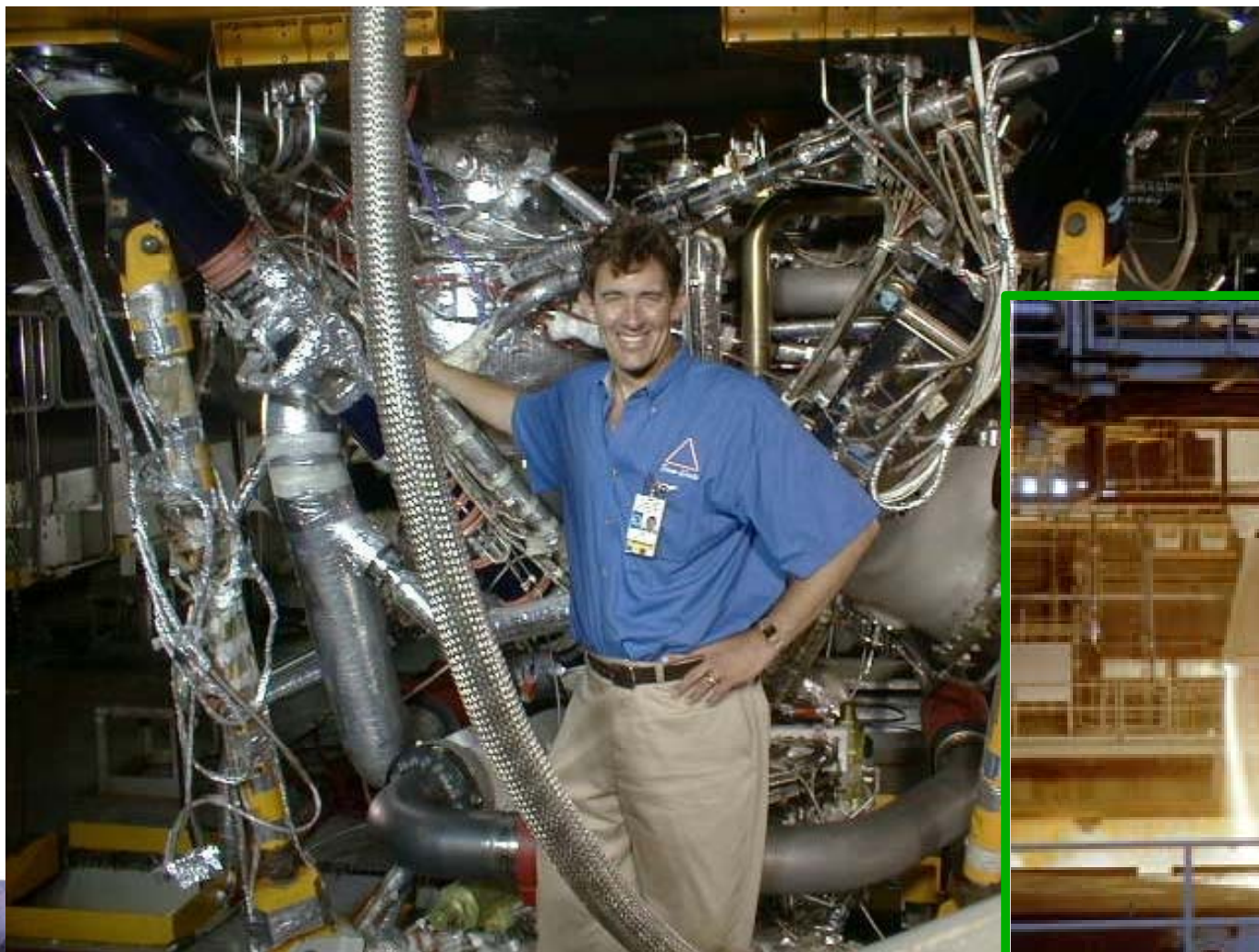


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 **BOEING**

Just to give you confidence that I might be able to tell.....



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What Cost More To Develop?

RS-68



4.7 Years
\$500M

Rocketdyne



7 Years
\$750M

Source: AIAA Publication 2002-4324

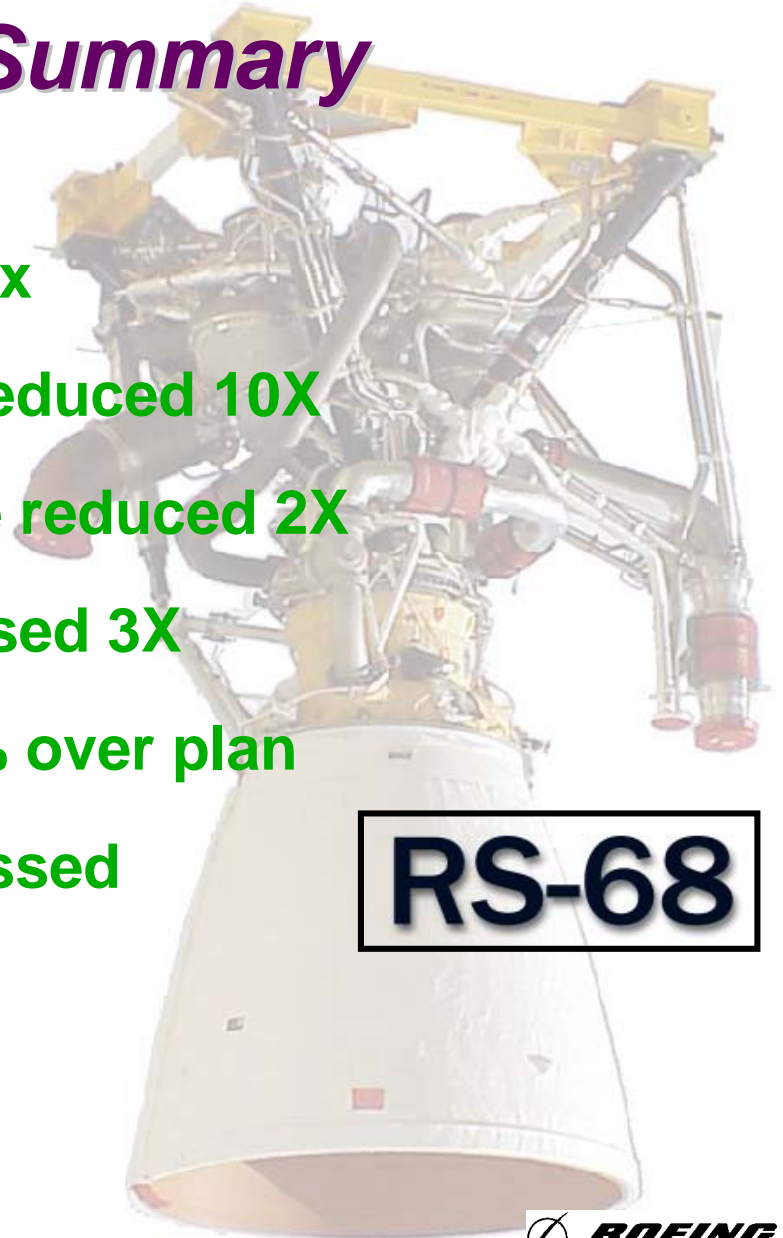


CP2-6-P003-3.ppt
RS-68 Success Story-B1-043mm



RS-68 Summary

- Development costs reduced 5x
- Variable development costs reduced 10X
- Development / Cert cycle time reduced 2X
- Required engine tests decreased 3X
- Payload-to-orbit increased 2% over plan
- Design reliability goals surpassed
- Recurring cost reduced 14X



Solving Tomorrow's Problems Today

- What we want to get from “this NCO stuff”
- Network centric operations
 - What it isn't
 - What's going on now – and what we've learned
 - How it could apply to Precision Strike and transformational leadership
- What it's going to take to pull it off

“Start With The End In Mind”

- **Shared situational awareness**
- **Speed and agility of “Battle Command”**
- **Dynamic “Battle Execution”**

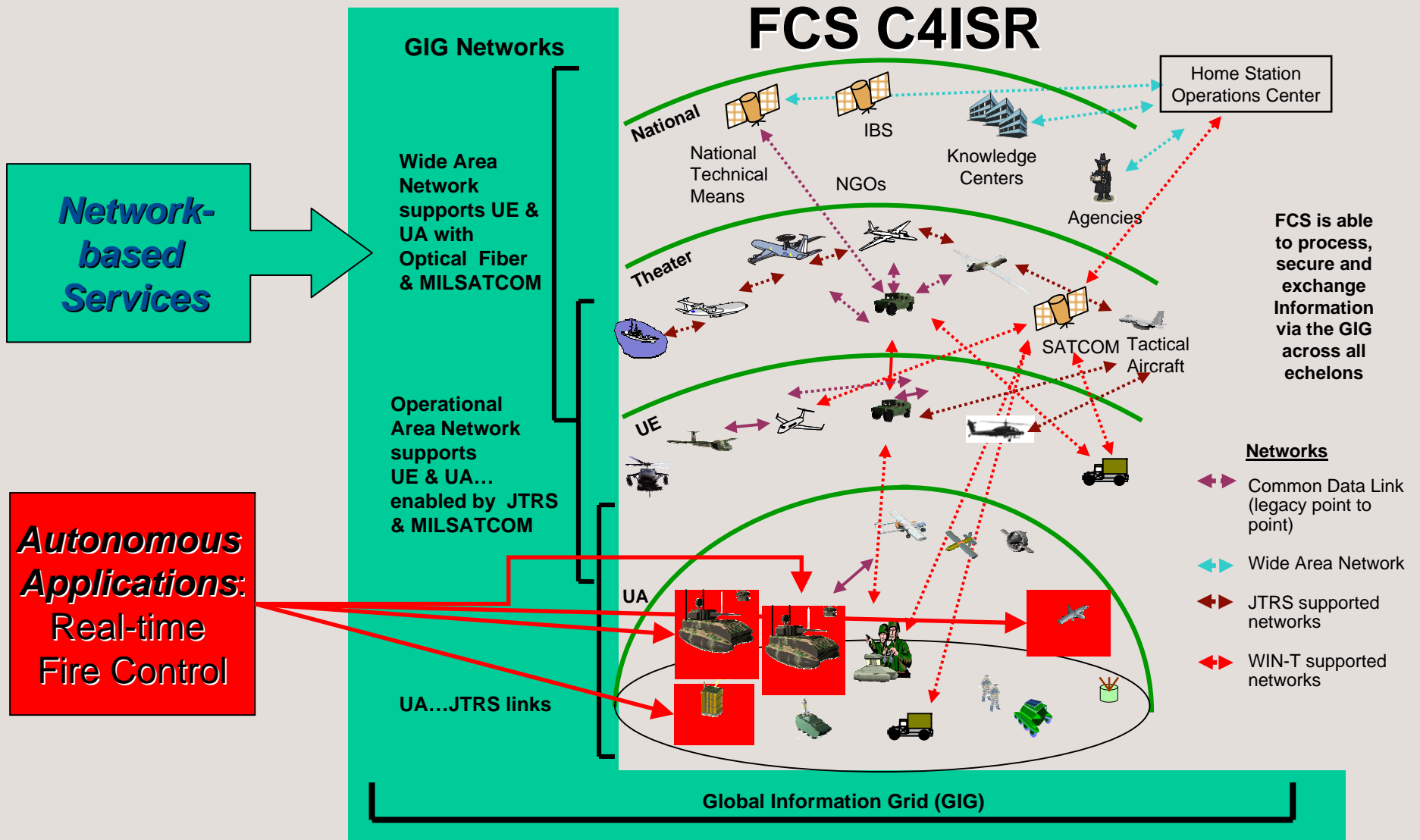


NCO Cornerstones To Make It Work

- **“Everybody in the network”**
 - **GIG, with mobile, ad-hoc network to tactical level**
- **The right data (when it’s needed)**
 - **Persistent ISR, with reach to multi-INT sources**
- **Turn data into information**
 - **Multi-source data fusion; collaboration**
- **Use information to make good decisions**
 - **Decision aids, intelligent agents, COA generators, ...**
- **Dynamic execution!**
 - **Joint, integrated BMC2/Support/Training**

"A Balance of Data Distribution"

FCS C4ISR



FCS is able to process, secure and exchange Information via the GIG across all echelons

The Network Isn't.....



Your old phone system

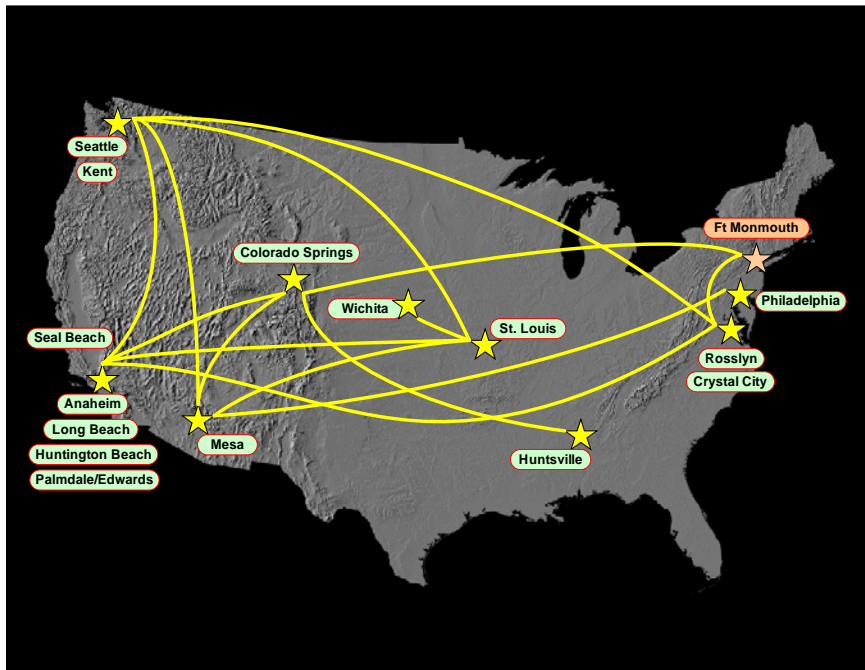
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Current Experience Example

Fixed and Mobile Networks



Boeing LABNET – real time collaborative simulations

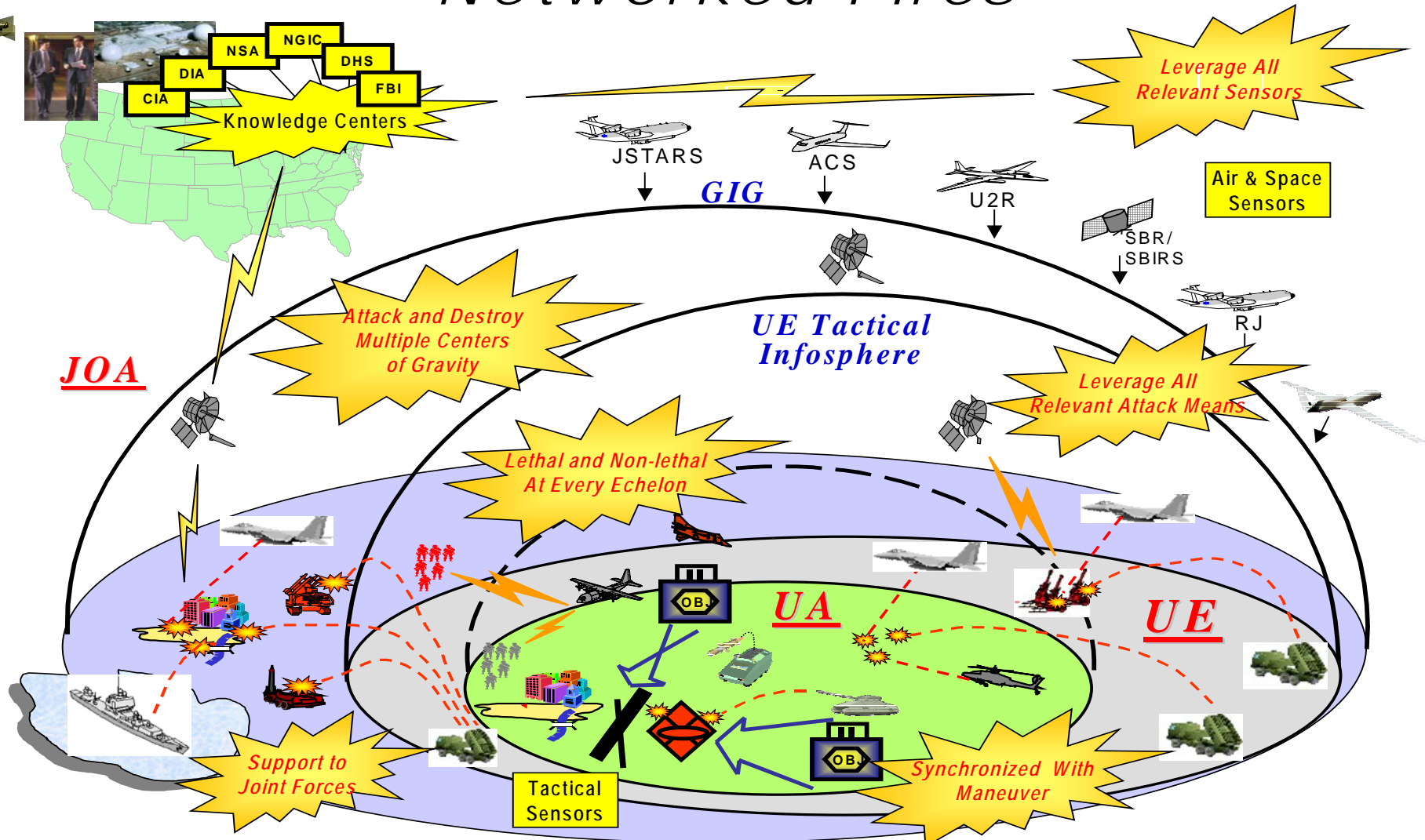


Mobile, ad-hoc network demonstration

***Harsh mobile tactical warfighting environment
not like fixed infrastructure – requires different solutions***

Finish Decisively utilize Cooperative Engagements

Networked Fires



"Approved for Public Release, Distribution Unlimited, Case #42244"

Implication for Precision Strike

- **Networks connecting ever increasing number of systems/nodes**
- **Seamless integration from strategic to tactical enables situational awareness, but will severely load network**
- **Information quality-of-service management essential for bandwidth-limited “point of spear” tactical environment**



Space to mud – Precision Strike will employ broad network with strategic to tactical response needs

Turning Data to Information Isn't.....



*Monkey
business*

Current Experience Example Program Management Information Systems


FAB-T


Family of Advanced Beyond Line-of-Sight Terminals

My FIRM
Program
Tools

Program > Program Executive Metrics Dashboard

Menu

[Action Items](#)

















[Calendar](#)

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[Metrics Dashboard](#)

Program Executive Metrics Dashboard

Program Highlights	Boeing PM Assessment:  11/02/2002	Technical Accomplishments:  11/04/2002	Outside Influences on Program:  11/03/2002	Help Needed:  11/05/2002
Program Execution	Organization:  11/04/2002	Schedules:  11/03/2002	Requirements Management:  11/05/2002	Supplier Management:  11/01/2002
Managing the Program	Weekly Earned Value:  11/04/2002	Risks:  11/05/2002	TPMs:  11/04/2002	Independent Reviews:  11/02/2002
Management Actions	Corrective Actions Status:  11/03/2002	Communications:  11/04/2002	Initiatives & Special Topics:  11/01/2002	Other Metrics as Assigned:  11/02/2002

About the Program:

No program information at this time.

Program News:

No news at this time.

Upcoming Events:

No upcoming events at this time.

Recommended Links:

No links at this time.

Implication for Precision Strike

<u><i>Today</i></u>	<u><i>Tomorrow</i></u>
• Voice	Digital data
• Voice	Digital imagery
• Manual input	Machine-to-machine
	Networked fires
• Incomplete data	} Single integrated operational picture
• Multiple sources	
• Non-fused	
• Incompatible data links	

Decision aiding will be valuable tool for helping warfighters handle tremendous amounts of data

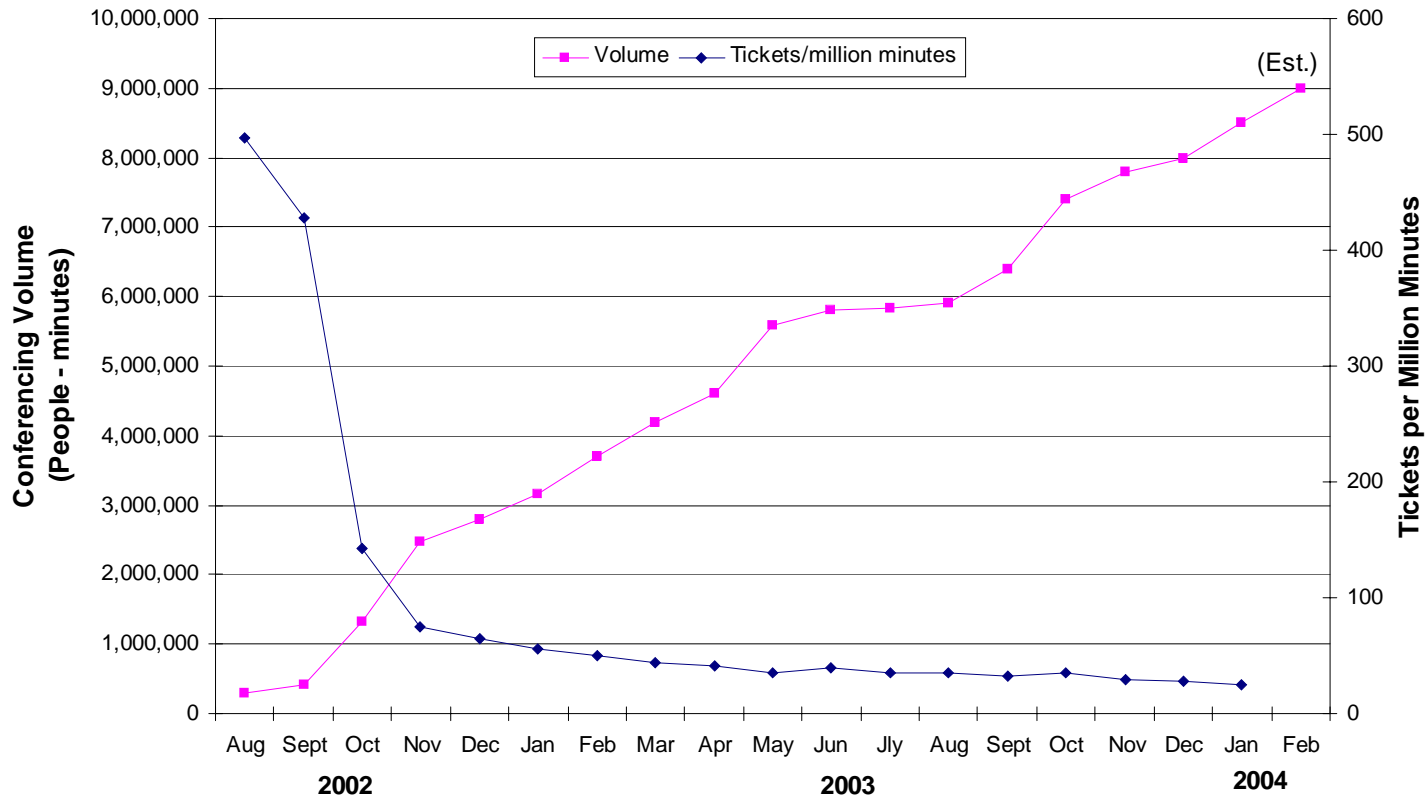
Collaboration Isn't.....



***Two against
one***

Current Experience Example WebEx Use

Boeing WebEx Usage vs. Problem Rate



***More stakeholders involved and more often –
but, has not cut out travel or “face-to-face”***



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Current Experience Example

Advanced Collaborative Environment (ACE)

- Team “project” folders
- Digital Product Description (3D viewers)
- Simulation portal
- Document management and control
- Approval workflows
- Host management information system

FCS ACE Portal - Microsoft Internet Explorer provided by PTC

File Edit View Favorites Tools Help

Address

Google Search Web Search Site News Page Info Up Highlight

FCS PROGRAM VISION: "ONE TEAM...EQUIPPING OUR JOINT WARFIGHTERS WITH THE WORLD'S BEST CAPABILITY"

Future Combat Systems
Advanced Collaborative Environment

ACE HOME

PROGRAM INFO LSI HOMES GOV'T IPT HOMES APPLICATIONS TOOLS USER HELP

The FCS Program

ACE HOTLINE
To report a problem, please call the Boeing Central Service Response Center (CSRC).
Within the Puget Sound region, call (425)234-0911.
Outside the Puget Sound region, call (888)469-0911.
When you call in, take option 2 (for computing software) and then take option 4 (other applications). When a support person answers, mention that you are experiencing an FCS ACE problem.

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PROJECTLINK EDUCATION
Not only is ProjectLink used as a project's Document Management, it can also be used as a tool to manage or to facilitate Project Execution.
Posted Title
03/04/2003 ACE ProjectLink Project Management Features
03/04/2003 Tutorial Instructions

WHAT'S NEW?
Posted Title
06/13/2003 06/13/03 Updated FDS SDD LSI Organization Charts and RAA
06/09/2003 OTD Lessons Learned Request
05/13/2003 Concept & Technology Development Brief
06/13/2003 FDS LSI Implementing Boeing PMBP in SDD
06/16/2003 General Shinseki's Farewell Ceremony Remarks
05/23/2003 NEW FCS Concept Vehicle Drawings
06/13/2003 Program Calendar Now Available to FCS Community
06/04/2003 Staffing Status
06/02/2003 Work Release Order Initial Issue

NAVIGATION
Program Library
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M/S B Bluebook
General Search
General Search Tips

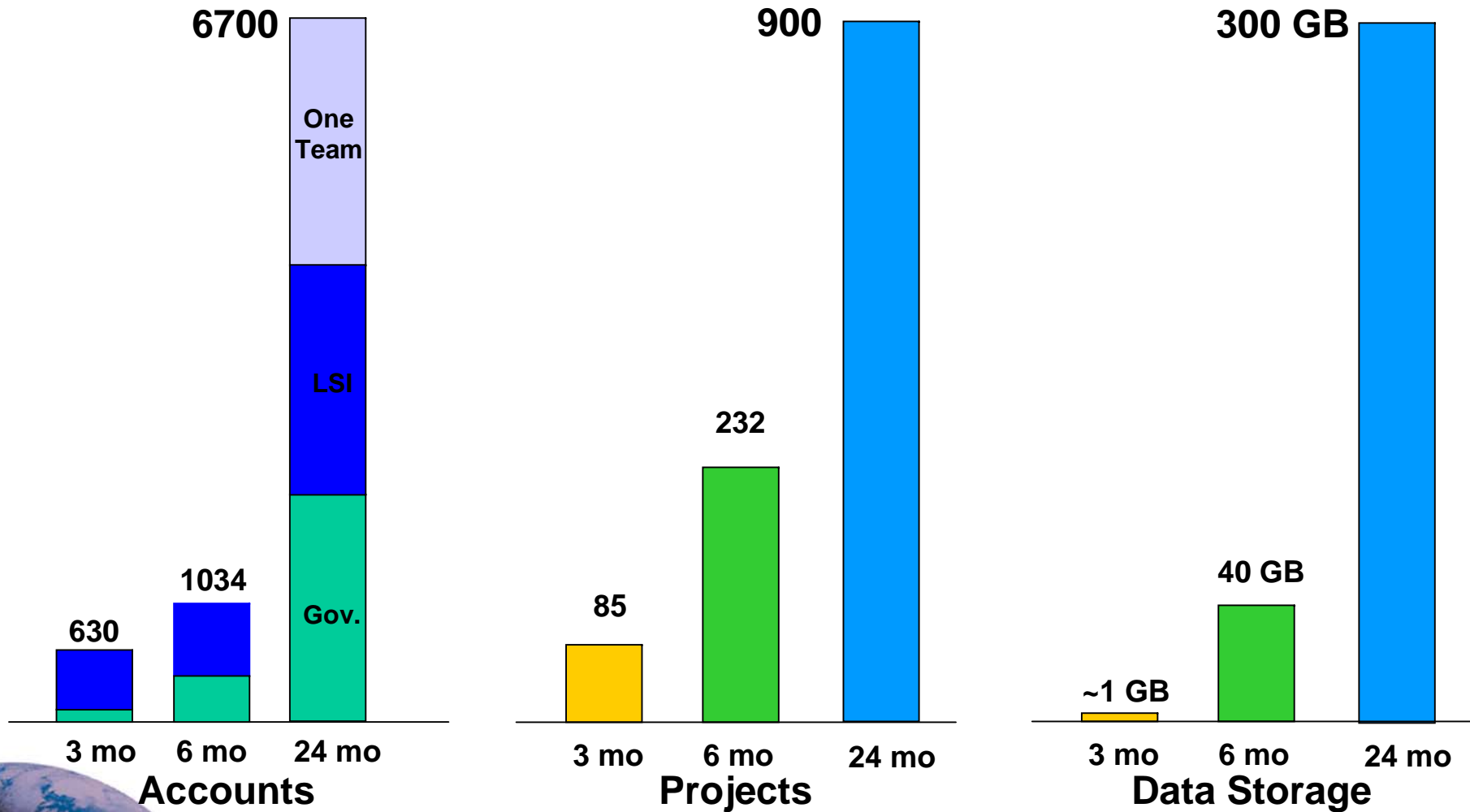
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06/12/2003 July FCS Leadership Calendar
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06/12/2003 Monthly Calendar
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06/12/2003 Weekly Calendar

FDS SDD PHASE RFP
Click here to access your assigned packages

Start MSN M... Employment... Yahoo... Inbox... Suppliers RE: Su... FCS A... Internet 1:11 PM

Current Experience Example

Advanced Collaborative Environment (ACE)



Implication for Precision Strike

- **Develop system of systems in collaborative environment**
 - Warfighter directly involved
 - Learn as you go
- **Plan for layered collaboration approach with Joint Forces (depth of capability)**

*If collaboration environment is effective,
people will use it – the word gets out*

Dynamic decision making and dynamic employment Isn't.....



A BOGSAT

(Bunch of guys sitting around talking) 21

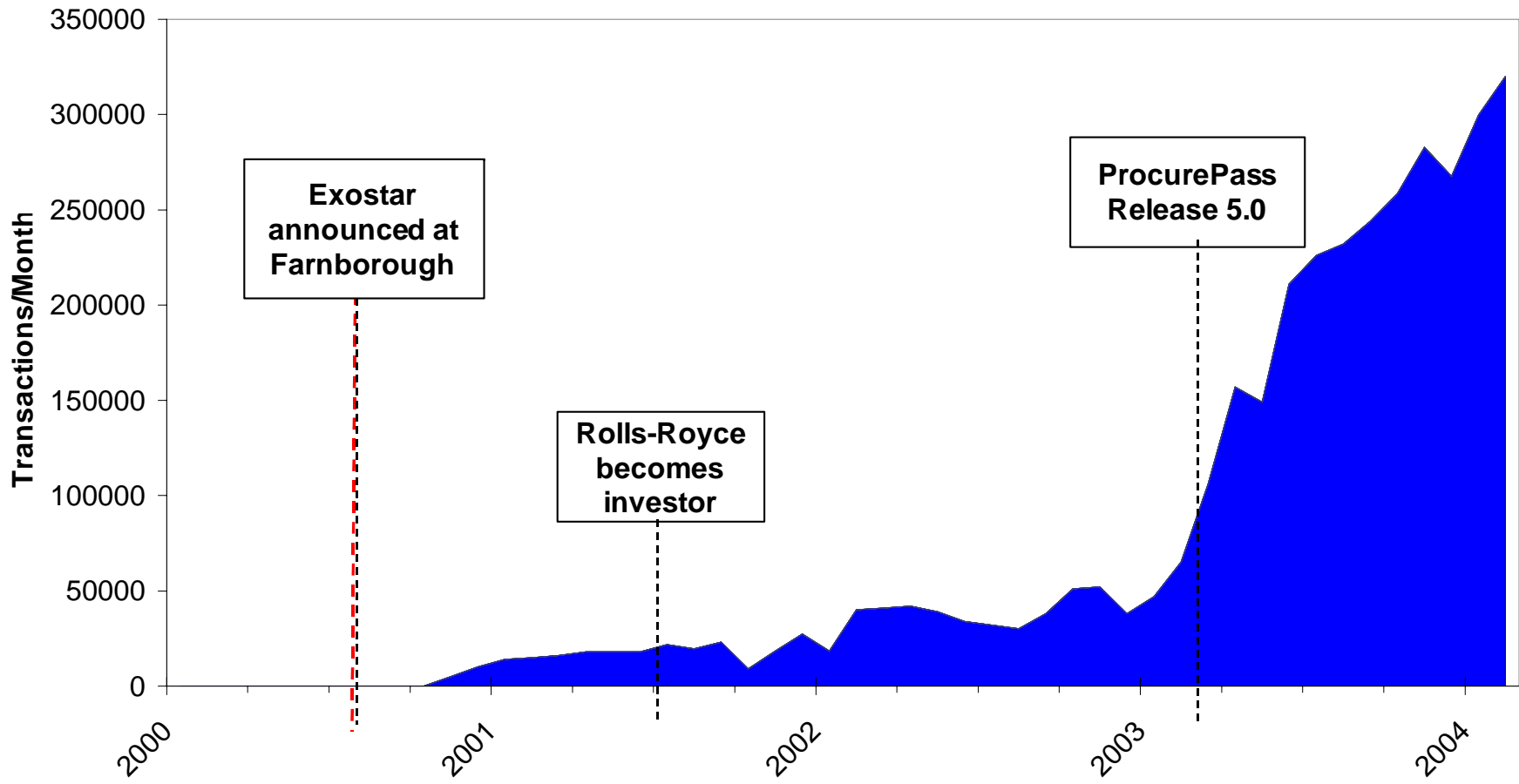
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Current Experience Example

Exostar e-based Supply Chain Management

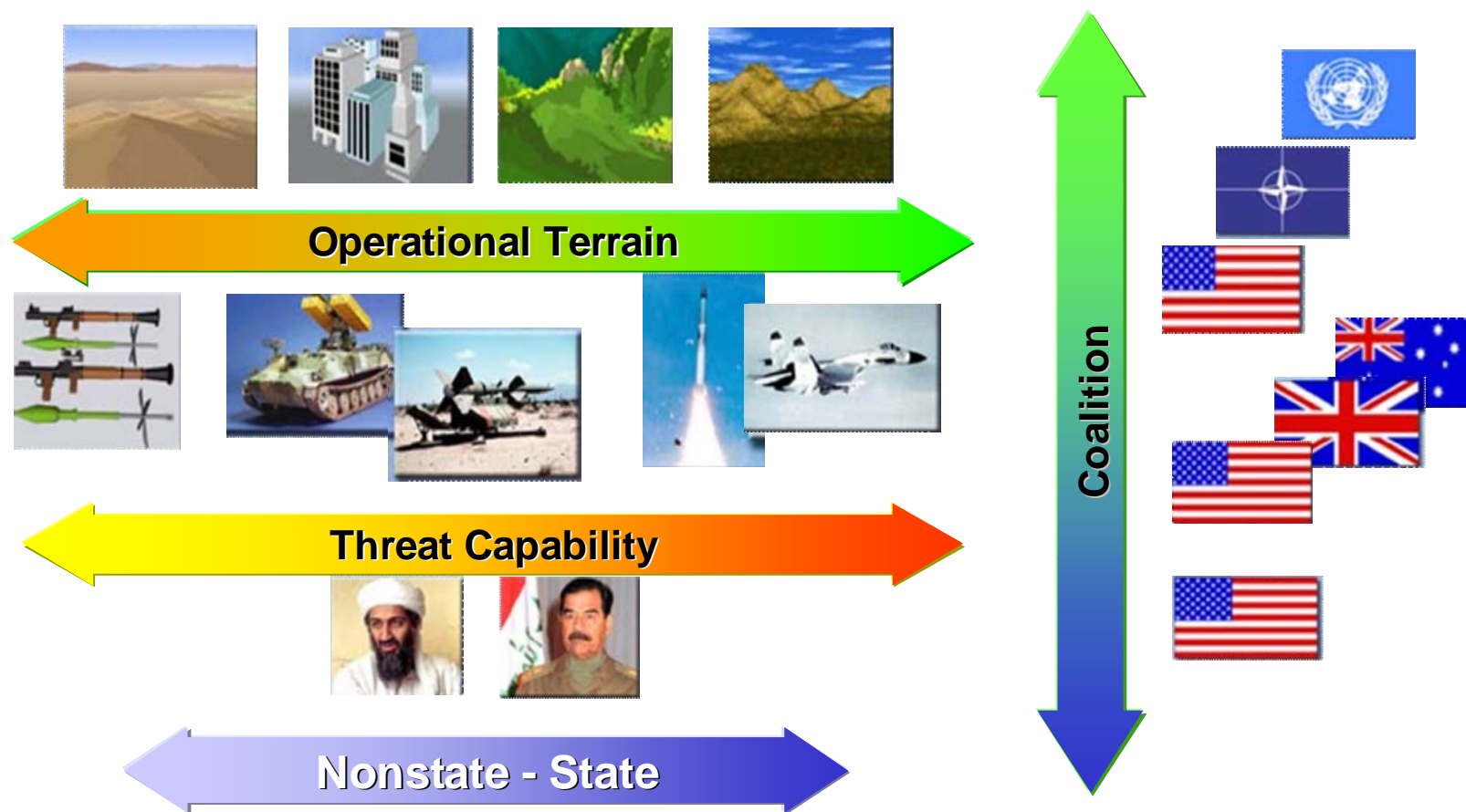


Over 6,000 partners conducting >300,000 transactions per month



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Implication for Precision Strike



Joint effects based operations will require assessing a full spectrum of options

What's It Going To Take?

- **Cultural change**
 - Environment of sharing data/information
 - New levels of collaboration
 - Develop trust in decision aiding tools
- **System of Systems approach**
 - Look for solution with bigger picture viewpoint
 - Provide interoperability
 - Rely on interdependence (horizontally integrate)

Warfighter-focused approach needed or technology may accentuate current state, not move it forward

So What's Tougher?



***It's going to take Transformational Leadership
to create Transformational Change***

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