



Performance Excellence... Our Flight Plan

Martin Swarbrick

Vice President

Office of Business Excellence

Motorola, Inc.



Agenda



- Overview of Motorola & GEMS
- Developing a High Performing Enterprise
 - Developing a capable system framework
 - Developing and deploying strategy
 - Execute strategy through program management
 - Achieve strong business results through performance management
- Lessons Learned

Government & Enterprise Mobility Solutions



\$31B sales in '04

OFFICE OF THE CHAIRMAN

EDWARD J. ZANDER

CHAIRMAN AND CHIEF EXECUTIVE OFFICER



MOBILE DEVICES

GOVERNMENT & ENTERPRISE MOBILITY SOLUTIONS

NETWORKS

CONNECTED HOME

- \$6.2B sales in '04
- 7,100 global points of presence
- 27 million users worldwide



GREG BROWN

PRESIDENT

- 16 software & design centers
- 10 manufacturing / assembly / distribution locations
- 6 Call Centers
- 7 Training Centers

What We Stand For...



Our Values

- Constant Respect for People
- Uncompromising Integrity in Everything We Do

78 Years Strong!

78 Years of Innovation Transforming Ideas into Reality



							
1930	1940	1947	1950	1955	1955	1961	1963
First Practical and Affordable Automobile Radio by Galvin Manufacturing	First Handheld Two-Way Radio Handie-Talkie™	Golden View First TV Under \$200	First Coaxial Cable TV System (GI)	3-Amp Power Transistor	Handie-Talkie Radio Pager	First to Supply All Electronic Alternator System	First Rectangular Color TV Picture Tube
							
1996	1994	1991	1990	1983	1979	1974	1969
Telematics Emergency Messaging System	iDEN® Integrates Wireless, Data, and Messaging System Technology	Automotive Electronics Which Included Semiconductor Devices	First All-Digital HDTV System	First Portable Cellular Phone DynaTAC	First Motorola Computerized, Electronic Engine Control Modules (EEC III)	First Motorola Microprocessor MC6800	First Words from the Moon Replayed by Motorola Transponder
							
1996	1996	1996	1999	2000	2001	2002	2004
First Wearable Cellular Phone StarTAC®	TalkAbout® Two-Way Radio	SURFboard™ Cable Modems	PageWriter® 2000 Two-Way Pager	Timeport™ Digital Wireless Phone with Internet Capabilities	Accompli™ A6188 Phone with Touch Screen Display	Timeport Handset with Bluetooth Technology	MOTO RAZR V3

What We Do



Government & Public Safety



Rugged Devices



P25



Professional &
Commercial Radio
System Radio



TETRA

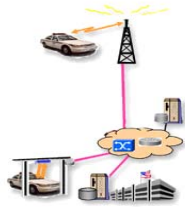


Enterprise

IP Wireless Networks, Software, Applications & Services



Application
solutions



Voice & Data
Network Services



Mesh-enabled
solutions



Automotive

Sample of Customers Worldwide



North America

- FBI
- State of Michigan
- U.S. Dept. of Defense
- L. A. Police Dept.
- U.S. Customs
- City of Chicago
- Hydro-Quebec, Canada
- Ford; DaimlerChrysler
- GM
- City of New York
- USPS; FedEx

Latin America

- Amazon State, Brazil
- Tachira, Venezuela
- Petroleos Mexicanos
- Colombia National Police

Europe, Middle-East and Africa

- mmO2 Airwave, UK
- London Underground
- C2000, Netherlands
- Telefonica, Spain
- Capetown Metro, South Africa
- State of Vatican City
- Lancashire, UK
- BMW

Asia-Pacific

- Beijing Light Rail
- Korea National Police
- Shanghai Police, China
- Korea High-Speed Rail
- Beijing Telecom
- Singapore Mass Rapid Transit

Key Success Factors

There are 3 fundamental reasons for GEMS success in maintaining our market leadership position in our Industry. They are:

- Customer Driven Excellence
- Operational Excellence
- Innovation Excellence





Evolving A High Performance System Must be an Organizational Priority



The tricky part is that . . .



- There is no cookie cutter recipe
- Each organization will require a unique approach to tune itself in order to be the best there is

A Commitment to the Baldrige Framework is . . .

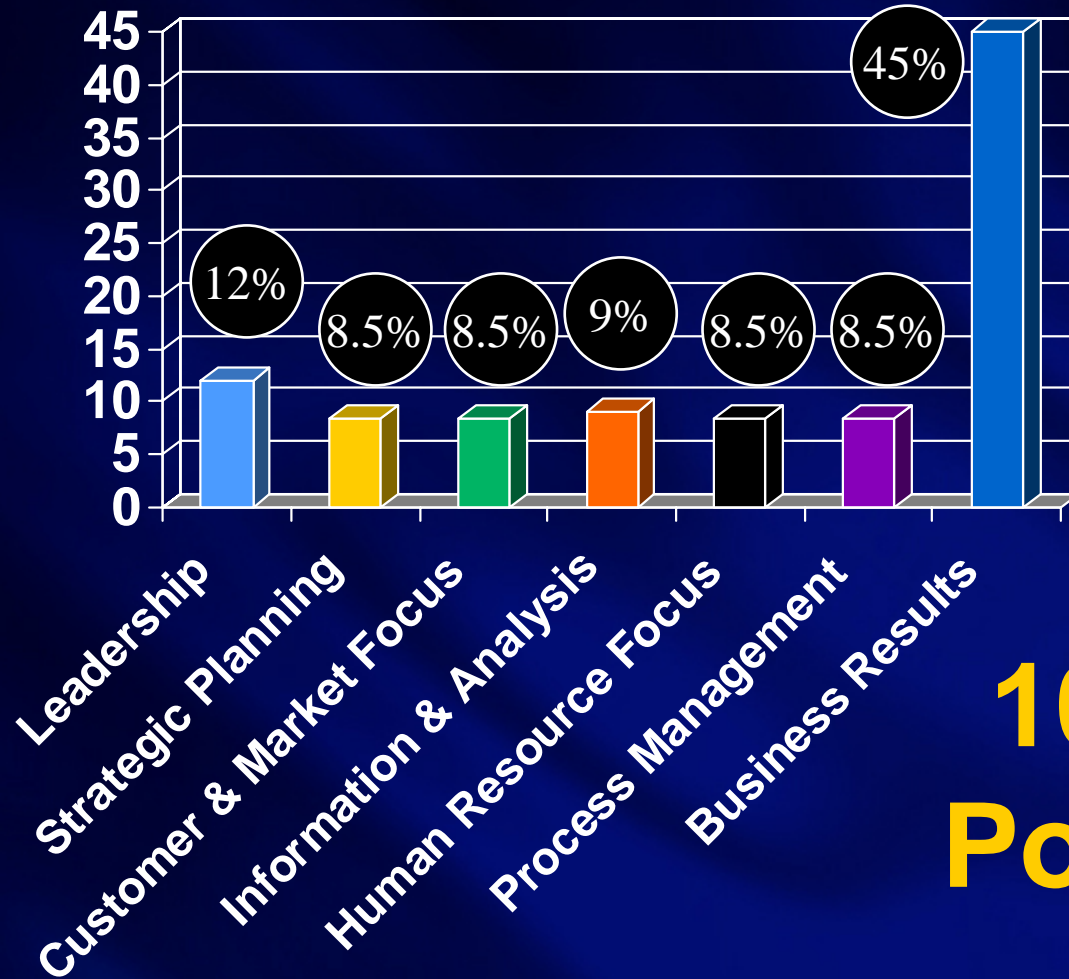


- A systems approach to developing a high performing organization
- The “glue” that links priorities between organizations and functions for mutual success
- An ongoing journey around continuous improvement
- About best-in-class processes and results

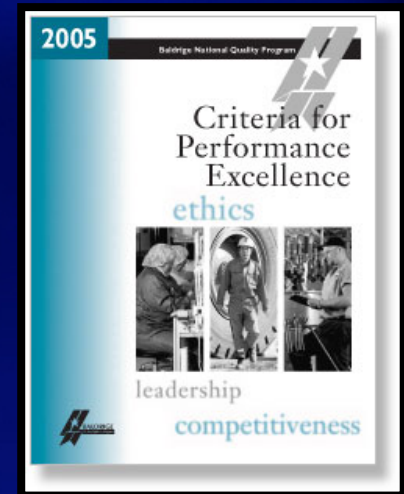
Baldrige Criteria Point Structure



Business Results Focused Criteria



1000 Points



What Will it Provide You?



- Balance
- Winning Success Factors
- Alignment & Congruency
- Right capabilities
- Learning Network
- Organizational Effectiveness

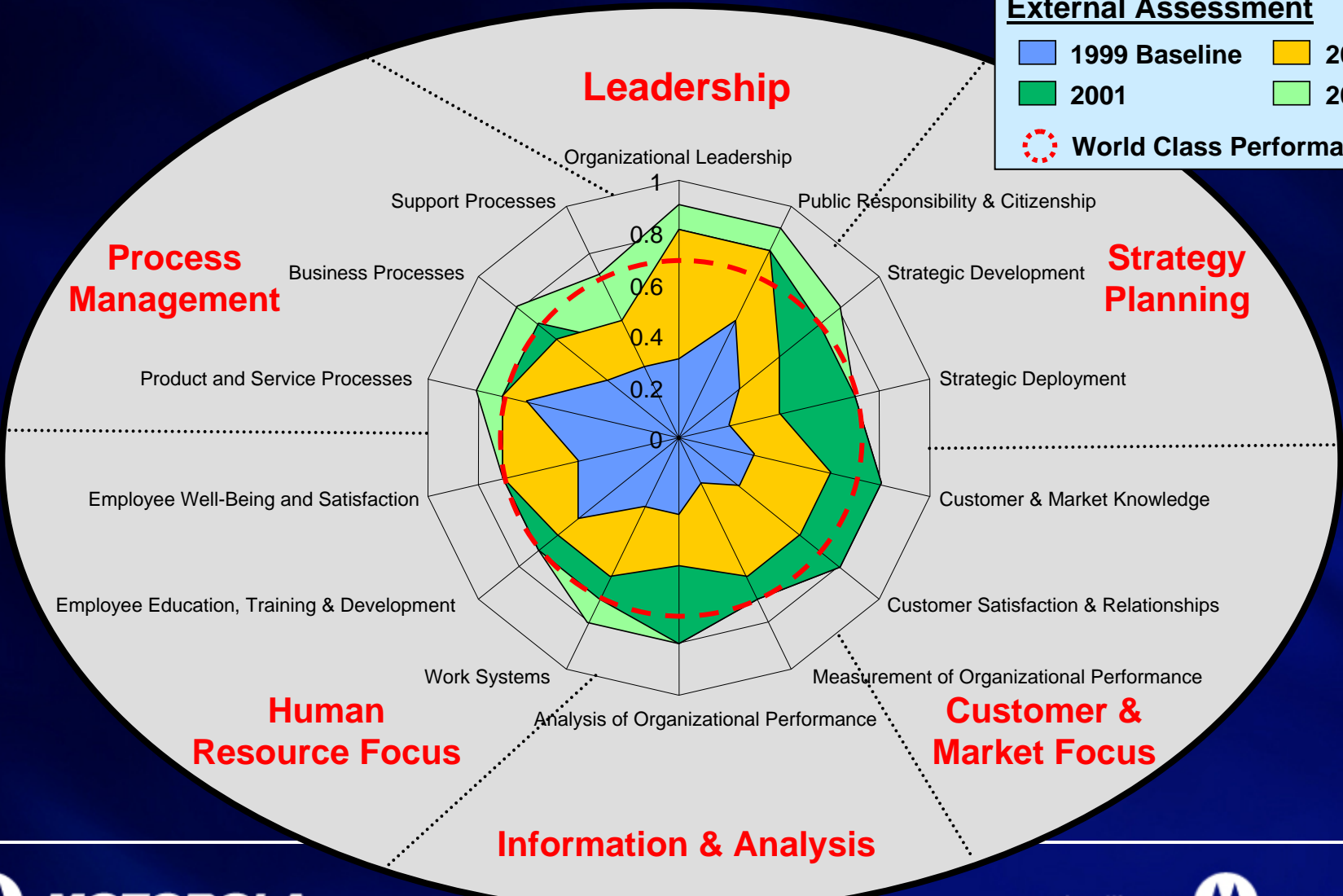
Continued Focus on a Disciplined Business Framework Enables Our Vision



External Assessment

1999 Baseline	2000
2001	2002-04

World Class Performance



Identifying What Are the Right Things To Do



Capable Business System Framework Development

Scorecards: Our Flight Plan

Strong Business Results Through Performance Management

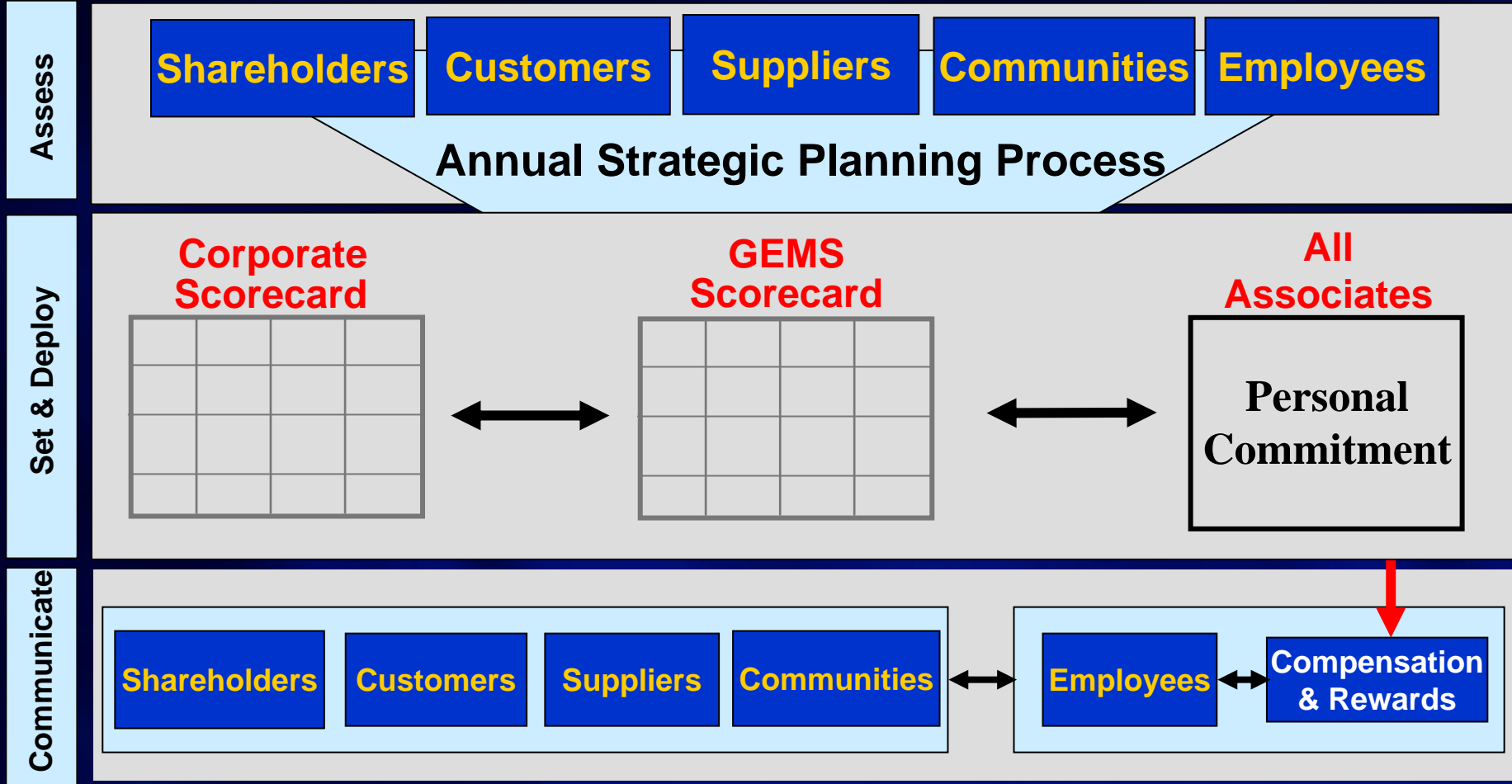
Strategy Development & Deployment

Strategy Execution Through Program Management

Leg#	TC	MC	MH	Altitude
3	344	329	329	Descent
TAS	GS	Leg Dst	Rem Dst	
104	104	12.51	0.34	
ETA	ETE	ATA	ATE	
0:38	0:8	0:0	0:0	
FuelBurn	FuelRem			
0.04	27.93			

Leadership

Creating & Balancing Value for Stakeholders

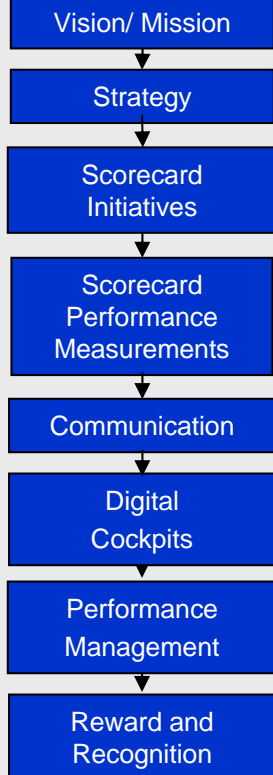


High Performance Dimensions



Stakeholder Requirements

ALIGN OBJECTIVES/GOALS



- Strategy Creates Performance Excellence Scorecard Initiatives
- Scorecards Cascaded Throughout The Organization
- Organizational & Individual Goals Aligned Through Personal Commitment
- Reward & Recognition Directly Linked To Scorecard Results

INTEGRATE PROCESSES & BUSINESSES



MOTOROLA

Government & Enterprise
Mobility Solutions

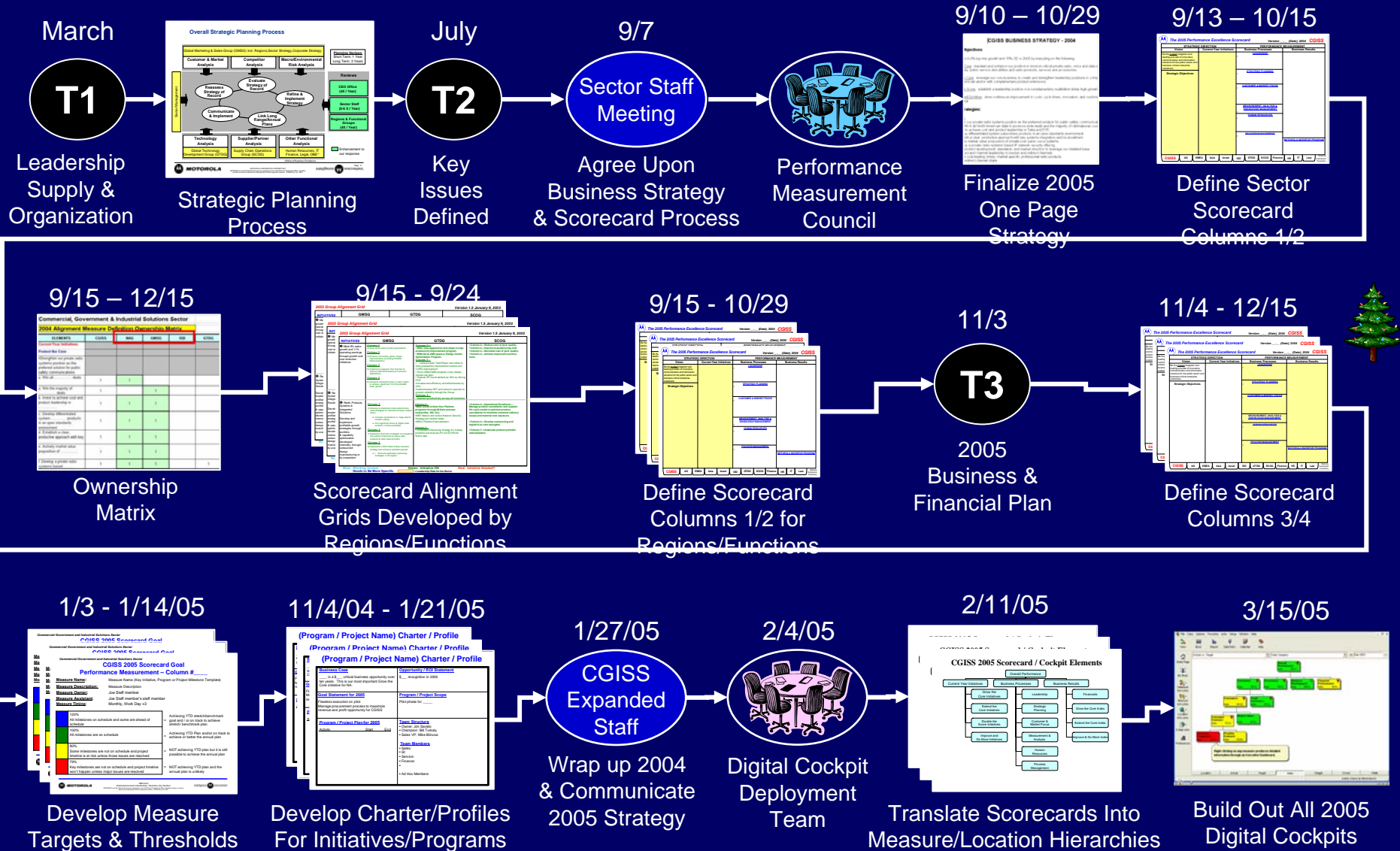
OPE & Motorola

intelligence



everywhere™

2005 Strategic Planning & Alignment Process



Performance Measurement Council



Regions/Functions

Sales & Marketing (Regions)

Businesses

Engineering

Supply Chain

Organizational
Performance
Planning

Support Functions

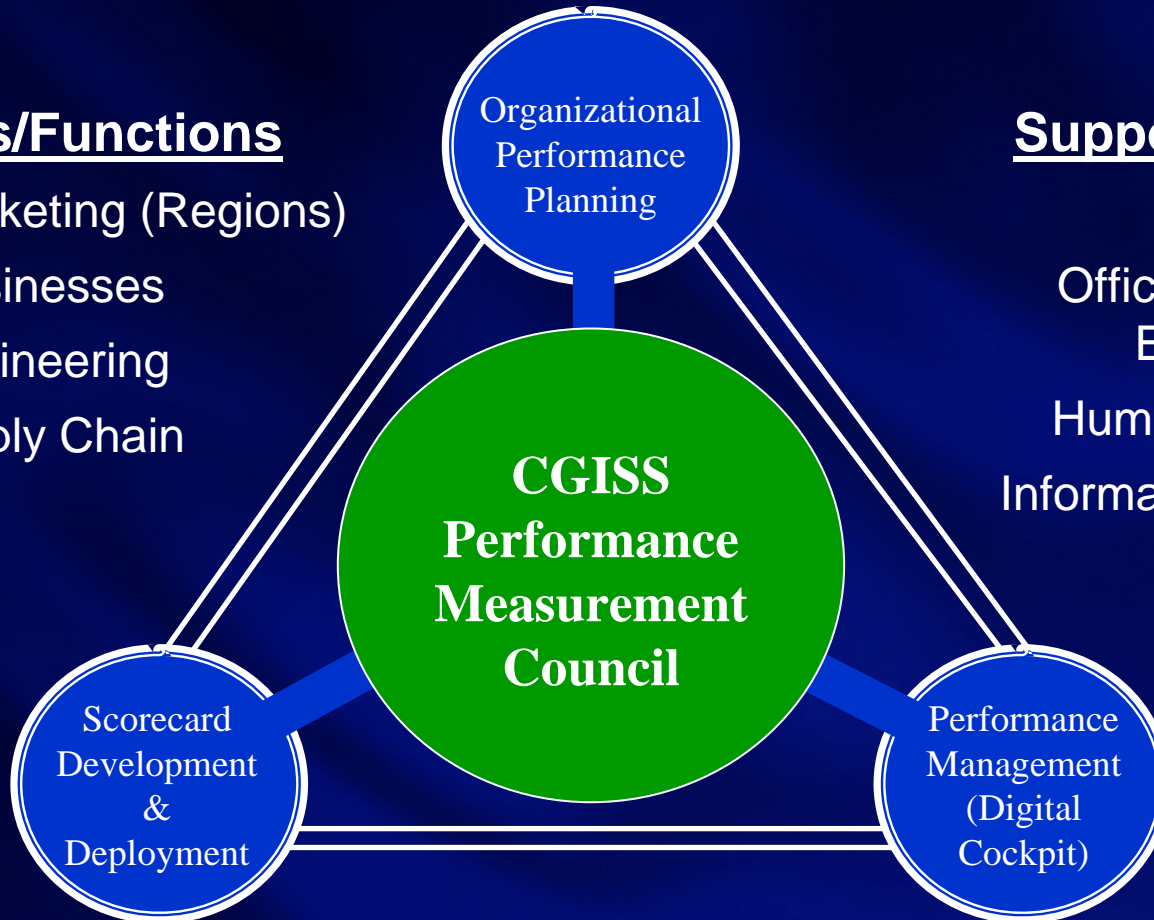
Finance

Office of Business
Excellence

Human Resources

Information Technology

Law



Our Scorecard



The Performance Excellence Scorecard

Strategic Direction		Performance Measurement	
<u>Vision</u>	<ul style="list-style-type: none"> •Grow the Core 	<ul style="list-style-type: none"> •Leadership 	<ul style="list-style-type: none"> •Financial Indicators
<u>Strategic Objectives</u> <ul style="list-style-type: none"> •Customers •Shareholders •Suppliers •Employees •Communities 	<ul style="list-style-type: none"> •Extend the Core •Double the Score •Improve & Do More 	<ul style="list-style-type: none"> •Strategic Planning •Customer & Market Focus •Information & Analysis •Human Resources •Process Management 	<ul style="list-style-type: none"> •Market Indicators •Customer Indicators •Innovation Indicators
3-5 Year Objectives	Current Year Initiatives	Process Goals	Business Results

Five Key Stakeholders

- Customers
- Shareholders
- Suppliers
- Employees
- Community



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Government & Enterprise
Mobility Solutions

OPE & Motorola

intelligence



everywhere™

Our Quarterly Communication Cascade



Corporate Earnings Release
"State of the Company"

GEMS Senior Leadership Meeting
"State of the Sector"

Group GM "State of the Group" and
Function VP "State of the Function"

Division GM "State of the Division" and
Function Director "State of the Function"

Town Halls

Performance Management Dialogues

Chat Sessions (monthly)
Department Meetings (monthly)

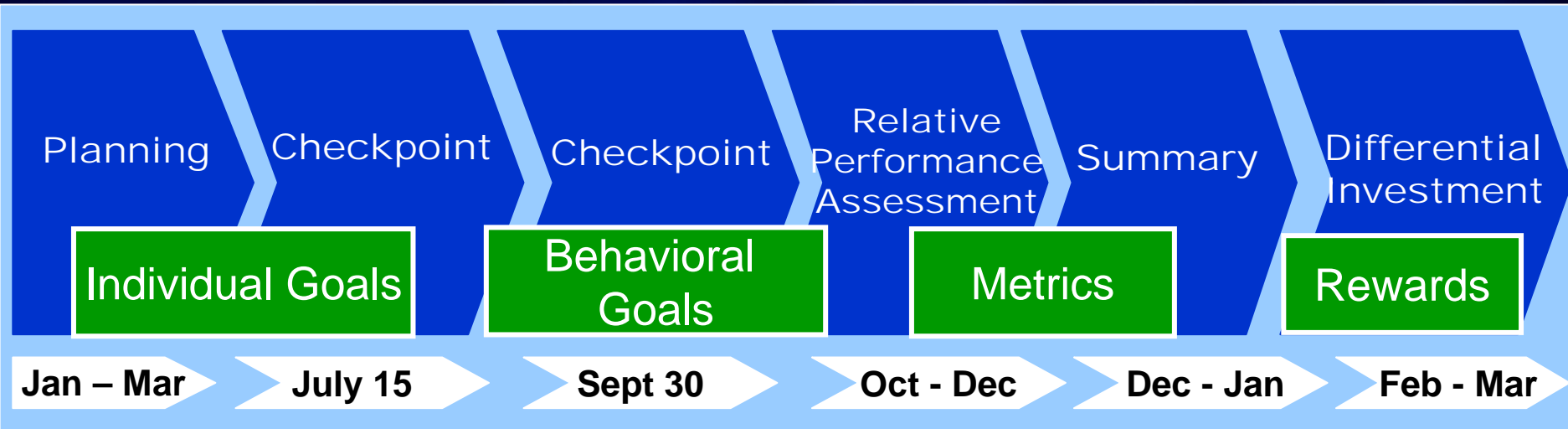
CEO Update (weekly)
One Motorola News (weekly)
GEMS Newsbriefs (weekly)
MBWA (weekly)

ceo.mot.com (daily)
Your manager (daily)

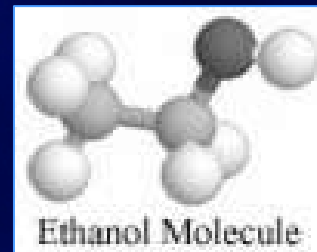
Individual Performance Management



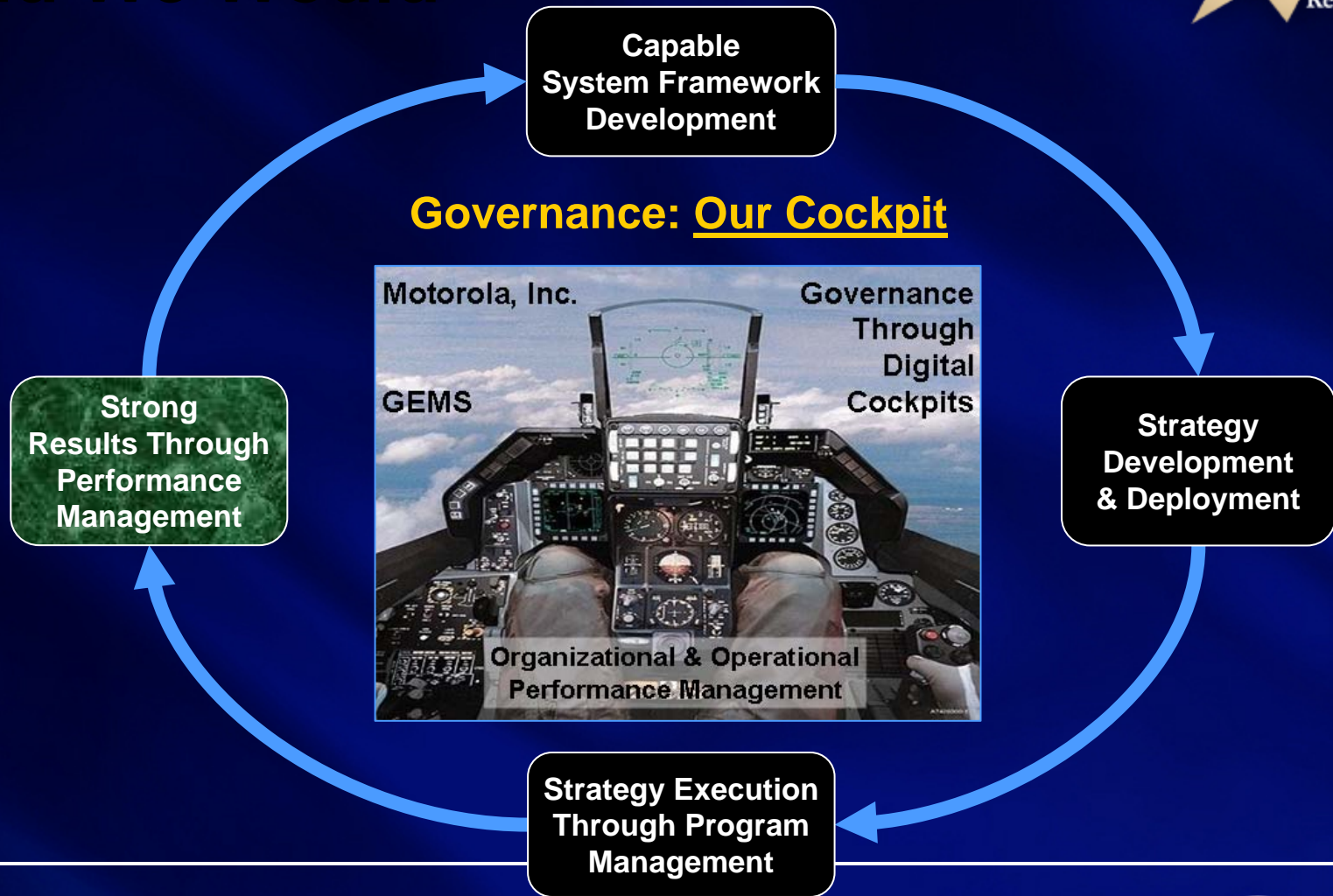
21,000 people make a **Personal Commitment**



Ensuring We Do the Right Things Right



Monitoring We Are Doing What We Said We Would



Critical Business Issue Today



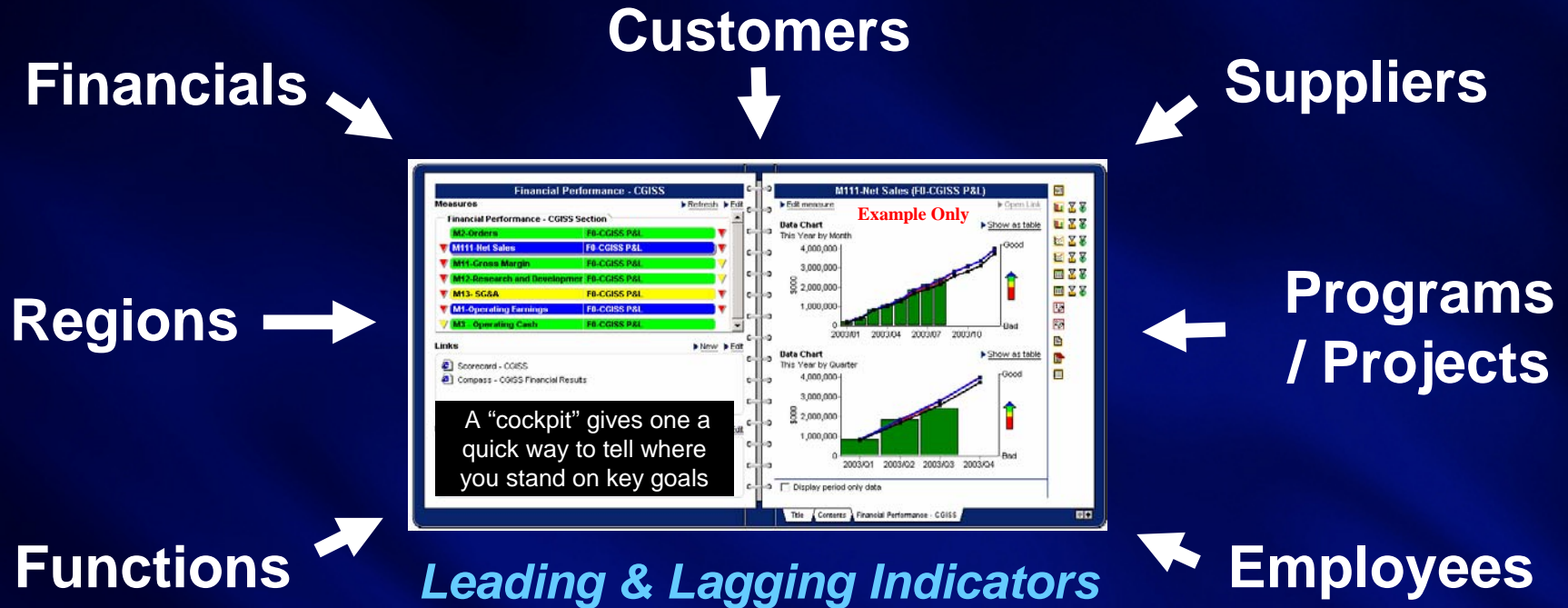
“Less than 10% of strategies effectively formulated are effectively executed.”

Fortune Magazine

A Performance Management system effectively bridges the gap between your strategy and its successful execution.

But remember: A Performance Management initiative develops over time - so don't wait until it's perfect to begin deployment!

Performance Management in Our Digital Cockpit



Governance



ALIGNMENT OF PRIORITIES

Organizations



Individuals



STAFF MEETINGS

OPERATION REVIEWS

BOARD OF DIRECTORS & ANALYST MEETINGS

T1, T2, T3 CORPORATE REVIEWS

CUSTOMER DELIVERED QUALITY REVIEWS

DIGITAL SIX SIGMA PROJECT REVIEWS

PORTFOLIO GOVERNANCE BOARD

Business Region Group Function

TECHNOLOGY REVIEWS

ETHICS COMMITTEE

STRATEGY REVIEWS

TALENT MANAGEMENT

Performance & Progress on Goals

Performance Excellence Scorecard



Performance Excellence Scorecard

Strategic Direction		Performance Measurement	
Vision	Current Year Initiatives	Business Processes	Business Results
Strategic Objectives			<div style="border: 2px solid red; padding: 10px; display: inline-block;"> Meet key engineering programs </div>
Corp.	GEMS	Group	Division

GEMS Review

Scorecard Business Results Summary – Non-Financials



● Achieving stretch/benchmark goal
 ● Achieving Plan
 ● Not achieving plan but annual possible
 ● Not achieving plan & annual unlikely
 ○ Not Due

Scorecard Items – Maintained in Digital Cockpit (PB Views) <http://digitalcockpit.mot.com/isapi/fwisapi.dll/tlogin>

Market Indicators

	YTD	2004	COMMENTS		YTD	2004	COMMENTS
▪ System Awards	●	●	▪	▪ Grass Roots Growth	●	●	▪
▪ Statewide Systems	●	●	▪	▪ Indirect Subscribers	●	●	▪

Customer Indicators

SATISFACTION

▪ T2B Survey Results	●	●	▪
▪ TB Survey Results	●	●	▪

RESPONSIVENESS

▪ Open in 60 Days	●	●	▪
▪ GCC/GTS Backlog	●	●	▪
▪ Technical Closed CT	●	●	▪

QUALITY

▪ Warranty % to Sales	●	●	▪
▪ Warranty Costs	●	●	▪
▪ COPQ (Savings)	●	●	▪
▪ DSS Projects	●	●	▪

NPI / Innovation

▪ Engineering Programs	●	●	▪
▪ Say Do Ratio	●	●	▪
▪ Patents	●	●	▪

Governance Through Digital Cockpits



Key Engineering Programs

Measures

Key Engineering Programs Section

- ASTRO Systems (CGISS)
- ASTRO Subscriber (CGISS)
 - Product "I" CGISS
 - XTS 5000 UHF Range 1 CGISS
 - ASTRO Spectra Plus VHF Range 1 CGISS
 - Millennium 700/800 CGISS
 - Millennium UHF Range 1 CGISS
 - Millennium VHF CGISS
 - HYPD Saber CGISS
 - XTS 5000 UHF Range 1 LP CGISS
 - R750 CGISS

Product "I" (CGISS)

[Edit measure](#) Example Only [Open Link](#) [Edit](#)

Description
Completed October 30, 2003, 139 days late.
Key engineering program measuring date variance from goal which is agreed to by the

Commentary
2003/12

Data Chart [Show as table](#)
This Year to Date by Month

Data Chart: This Year to Date by Month

Display period only data

Our "cockpit" gives us a quick way to tell where we stand on our key goals

Product "I" Project: One of 37 Projects

GTDC Key Projects for 2003

Ver 13.3 Apr 17, 2003



Overall Status		Senior Mgmt. Sponsor	Baseline Date	Scorecard Date	Previous Months Forecast	Forecast Date	2003 Revenue	M-Gate	PM
	<u>Astro Systems & Subscribers</u>								
	Product A	Brian Pohlman	Quarterly		On Track	On Track		M2	Todd Virgil
	Product B	Ted Kozlowski	13-Jun-03	13-Jun-03	13-Jun-03	13-Jun-03		M2	Ron Cruse
	Product C	Doug Hanson	30-Jan-04	30-Nov-03	3-Dec-03	3-Dec-03		M2	Judy Lavardiere
	Product D	Greg Townsend	14-Apr-03	14-Apr-03	14-Apr-03	14-Apr-03		M10	Bill Terpstra Dave Kizior
	Product E	Gary Antilla	13-Jun-03	13-Jun-03	13-Jun-03	13-Jun-03		M3	Bruce Jordan
	Product F	Gary Antilla	31-Mar-03	31-Mar-03	19-Mar-03	25-Mar-03		M3	Bob Imbrigiotta
	Product G	Gary Antilla	31-Mar-03	31-Mar-03	31-Mar-03	21-Mar-03		M3	Byron Smith
	Product H	Gary Antilla	13-Jun-03	13-Jun-03	13-Jun-03	13-Jun-03		M3	Miller Cook
	Product I	Gary Antilla	29-Sep-03	29-Sep-03	29-Sep-03	29-Sep-03		M3	Stephen Janke Ezra Shoet
	Product J	Gary Antilla	30-Sep-03	30-Sep-03	30-Sep-03	30-Sep-03		M3	Mike McAuliffe
	Product K	Gary Antilla	15-Oct-03	15-Oct-03	-	15-Oct-03		M3	Bob Imbrigiotta
	Product L	A. Credi	29-Jan-03	29-Jan-03	23-Jan-03	22-Jan-03		M3	Benny Peer

Product "I" M5 Status Example



ID	Requirement		Owner		Completion		
					Planned	Forecast	Actual
Rev 1.0	Product "I"						
M5	System Test Readiness				28-May-03		
M5.R1	Product/System						
SA--S	<i>New Product Release (NPR) Document is approved and released. Date of last approved revision:</i>	RP	Brand	Lisa P.	31-Mar-03	31-Mar-03	
M5.R1.0	Design Review Minutes EE		Dev Eng	Benny Pe'er	31-Jan-03	5-Feb-03	5-Feb-03
M5.R1.0	Design Review Minutes ME		Dev Eng		N/A		N/A
M5.R1.0	Design Review Minutes SW		S.Quinn		N/A		N/A
M5.R1.1	P4 proto BOM to 01 Status		Dev Eng	Dany A.	28-May-03	28-May-03	
M5.R1.2	Prototype ALT 13-Apr-03, ART 31-Jan-03, GIFT		Dev Eng	Benny Pe'er	13-Apr-03	13-Apr-03	
M5.R1.3	12M Test Specification 01		Dev Eng	Benny Pe'er	31-Jan-03	6-Feb-03	13-Feb-03
M5.R2	Documentation and Training						
M5.R2.0	Draft Training (service/sales) Documents available		WWLS	Greg Roth/Pinhas Yosef	28-May-03	28-May-03	
M5.R3	System test beds, test cases, tools and scripts						
SA--S	<i>A formal Alpha test has been conducted. The results have been adequately reviewed and all issues have been addressed. (Number of Units in Alpha Test Program: <u>TBD</u>)</i>	P	Moved to M4R7 Dev Eng	Benny Pe'er	Moved to M4	Moved to M4	Moved to M4
M5.R3.0	Test scripts/tools/manuals (firmware, system, factory) approved & under change control		Mfg	Hanna/Dany A.	8-Oct-02		8-Oct-02
M5.R3.1	Proto EME Product Safety Submission		Dev Eng	Benny Pe'er	Moved to M4	23-Jun-03	Moved to M4
M5.R3.2	FCC Type Approval package written & submitted		Dev Eng	Benny Pe'er	Moved to M4	6-Jul-03	Moved to M4
M5.R4	Manufacturing systems and processes						
SA--S	<i>Production capacity analysis is complete and sufficient capacity is available to meet forecast requirements.</i>	P	Mfg	Hanna/Dany A.	31-Mar-03	31-Mar-03	
SA--S	<i>A Manufacturing Design Review has been conducted. Date:</i>	P	Mfg	Hanna/Dany A.	2-Apr-03	2-Apr-03	
SA--S	<i>A Manufacturing Quality System (MQS) is available in place.</i>	P	Mfg	Hanna/Dany A.	31-Mar-03	31-Mar-03	
M5.R4.0	Proto builds and test reports issued (Proto 3)		Mfg	Dany A.	15-Apr-03	15-Apr-03	
M5.R4.1	Build Reports & Action Plans (Proto 3)		Mfg	Dany A.	29-Apr-03	29-Apr-03	
M5.R5	Sourcing						
M5.R5.0	Components Qualification Plan EE		Dev Eng	Benny Pe'er	20-Mar-03	20-Mar-03	20-Mar-03
M5.R5.1	Components Qualification Plan ME		Dev Eng	Avi Rozin	20-Mar-03	20-Mar-03	20-Mar-03
M5.R5.2	Suppliers Informed of volume production (VHF Unique Parts)		Materials	Dany A.	20-Apr-03	20-Apr-03	
M5.R6	Intellectual Property Review						
SA--S	Software copyright submitted and in place	P	SW		N/A		N/A
M5.R6.0	Trademark/Copyright/Patent Review		Brand		N/A		N/A
M5.R6.1	Patent Filing, Trademark/copyright registration		Brand Dev Eng		N/A		N/A

Product "I" Project Metrics Example



PROJECT METRICS

© Motorola, 2001
v2.1.1
Internal Use Only

Project Name:	Product "I"	Project Manager:	Benny Pe'er	Start Date:	23-Apr-02	Reporting Date:	23-Mar-03
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Cycle Time	Baseline	Goal	Plan	Fcst/Act	Var	Var %
Cycle Time: M10-M7 (days)			98	120	-22	0
Cycle Time: M7-M2 (days)	639	402	427	434	-7	0
X-Factor (M7-M2)	1.000	6.3095734	1.496	1.472	-4.838	-76.7%
X-Factor Dates (M7-M2)	28-Apr-04	05-Sep-03	30-Sep-03	29-Oct-03	-54	

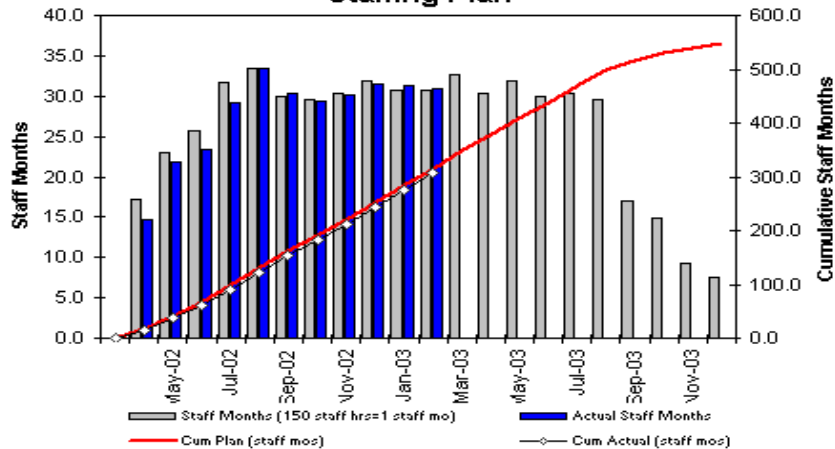
Schedule Performance	Value
Current Schedule Var.(days)	0
Current Schedule Var. (%)	0%
Slippage Factor	1.02

M Gate Process	M-10	M-9	M-8	M-7	M-6	M-5	M-4	M-3	M-2
Gate Completion: Baseline Plan	23-Apr-02	30-May-02	30-Jun-02	15-Jul-02	15-Nov-02	28-May-03	10-Aug-03	10-Oct-03	17-Oct-03
Gate Completion: Current Plan	23-Apr-02	30-May-02	30-Jun-02	30-Jul-02	15-Nov-02	28-May-03	10-Aug-03	20-Sep-03	30-Sep-03
Gate Completion: Fcst/Act.	23-Apr-02	30-May-02	30-Jun-02	21-Aug-02	15-Nov-02	28-May-03	10-Aug-03	29-Sep-03	29-Oct-03
Gate Completion: Variance (days)	0	0	0	-22	0	0	0	-9	-29
# Gate requirements	2	9	9	8	7	6	9	10	9
Requirements Complete	2	7	8	7	4	1	0	0	0
Not Applicable Requirements	0	2	1	1	3	1	0	0	0
Process Integrity (%)	100%	100%	100%	100%	100%	33%			

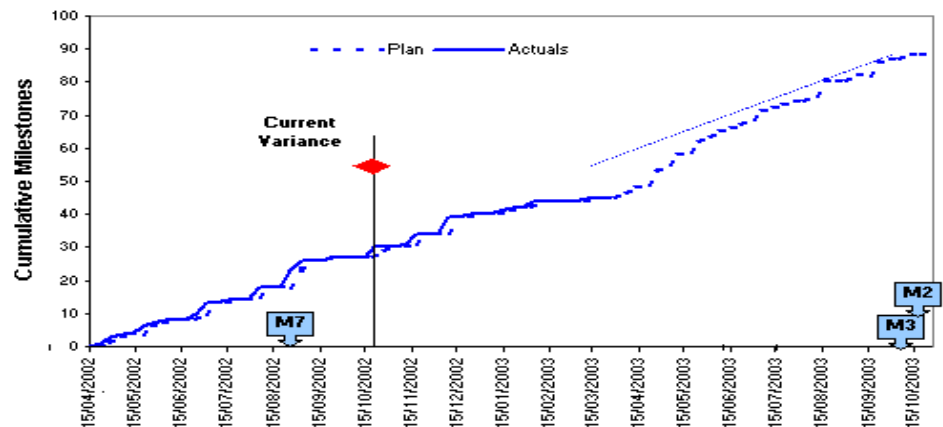
Scope Management	Baseline	Adds (+)	Deletes (-)	Changes
Product Scope (Features)				
Project Scope (Milestones)	88			

Milestone Performance			
Planned (Total)	88	Forecast (Total)	88
Planned (To Date)	45	Complete (To Date)	45
% Complete	51%	MPI	1.00

Staffing Plan



Milestone Performance



Product "I" Risk Chart



RISK IDENTIFICATION					RISK PLANNING		RISK TRACKING AND CONTROL	
DATE IDENTIFIED	RISK (IF [Situation] by [Date] then [Consequence])	ROOT CAUSE (Source)	IMPACT DISCUSSION (Consequences)	RPN	ACTION PLAN	OWNER	PLANNED / ACTUAL CLOSURE DATE	CURRENT STATUS/ PROGRESS
09-Feb-03	Unexpected HW issues may surface due to modifications made towards Proto 3.	(1) Requirement for IMR to meet 85dB at Standard mode requires redesign of all RX line-up. (2) Analysis showed that the current Proto 2 vintage needs a few modifications in order to meet all requirements.	Unexpected issues and consequent schedule slippage	24	Issue local Fast Proto and perform intensive and extensive testing. Add additional Proto build between the planned Proto 3 and PrePilot.	Benny Pe'er	07-Jul-03	Fast Proto for RX section was completed, initial tests showed substantial improvement compared to Proto 2. All critical parameters will be retested with next formal P3 vintage. Additional P4 Build is scheduled for June 16th
12-Apr-02	If the PA in Proto 3 will not reach the power efficiency, stability and heat dissipation capability, the Pre-pilot and pilot schedules will be impacted.	Specified PA efficiency vs PA junction temperature margin may be not enough	Schedule slippage	16	Validate power efficiency and stability as well as thermal test. Owning the responsibility for the Transmitter section as of Proto 3 to expedite design process.	Rami Abramowitz	22-May-02	Power efficiency and stability as well as thermal tests passed. EIA/ TIA cycling requirements and thermal sensor cuts back were met according to Spec. To retest with P3 vintage.

Business Results: Customer & Market



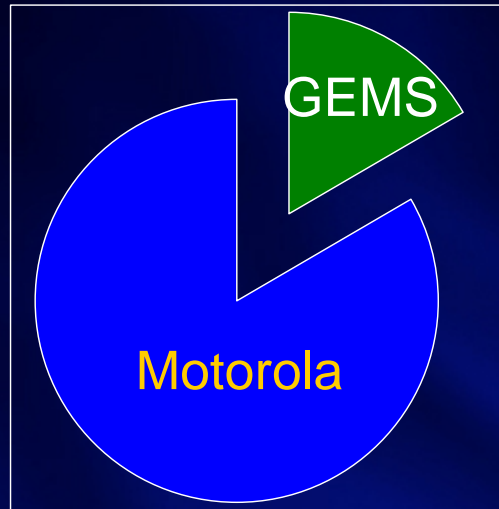
- High Customer satisfaction scores
 - In our largest market we are 49.6% Top Box and over 92.5% Top Two Box

- Strong Market share
 - > 2X of nearest competitor

2004 – GEMS is a Major Contributor!

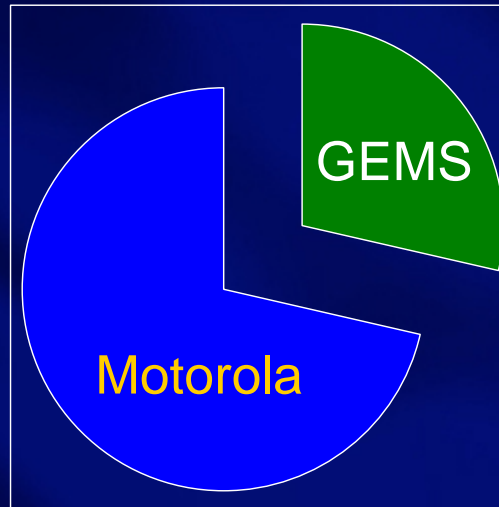


Sales:
Motorola \$31,323M



Sales:
GEMS \$6,250M (20%)

Operating Earnings:
Motorola \$2,200M



Operating Earnings:
GEMS \$884M (40%)

Stellar 2004 Results Through Execution

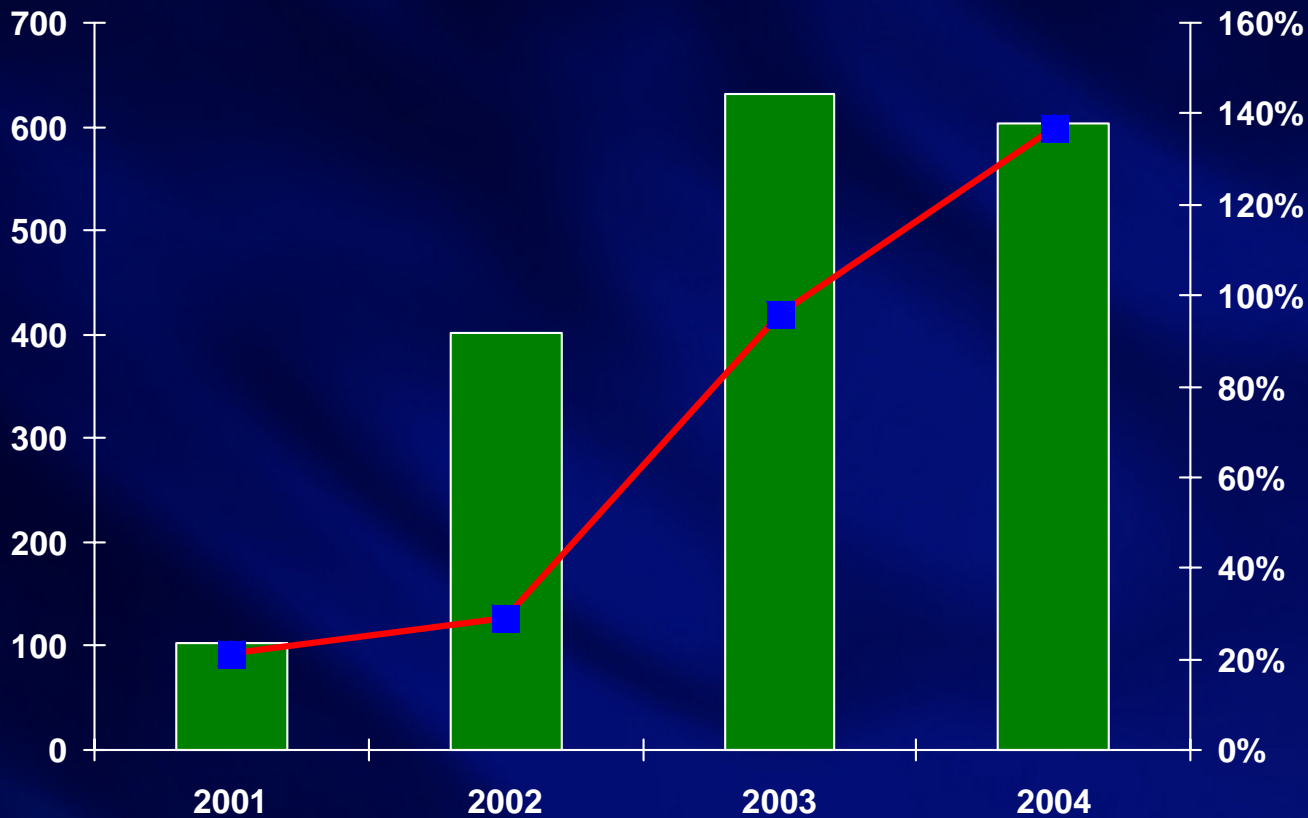
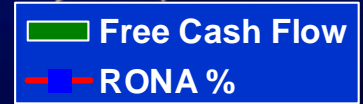


	<u>CGISS</u>		<u>Automotive</u>	
Orders	\$5,000M	21%	\$1,665M	12%
Sales	\$4,588M	11%	\$1,662M	15%
Operating Earnings	\$ 781M	32%	\$ 103M	3%
Operating Cash Flow	\$ 753M	7%	\$ 129M	16%

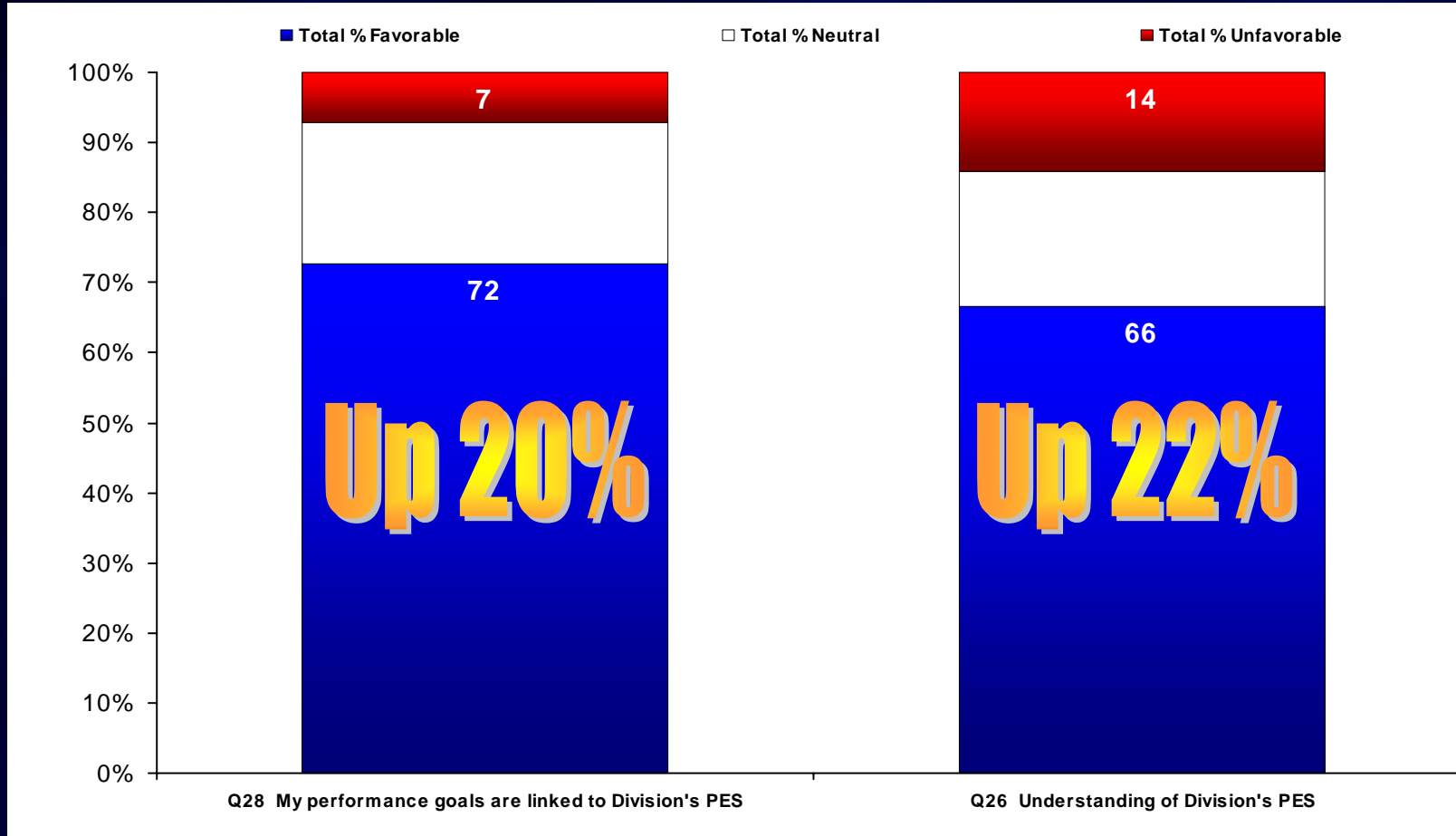
Strong Growth CGISS



Free Cash Flow & RONA % CGISS



Performance Excellence is Building Alignment



Key Lessons Learned: Strategy Execution



- The pursuit of becoming a high performing business to enable strategy execution is worth the effort
- Adopting a systems approach to your enterprise architecture is everything
- Goal alignment, congruency and ownership matters most
- Set stretch or reach out targets to inspire innovation
- Ensure strategy execution must become everyone's job
- Enablers
 - Leadership
 - Office of Business Excellence
 - Performance Measurement Council
 - Performance management capabilities

But Most Importantly . . .



- Instill Constructive Dissatisfaction & a Passion for Continuous Improvement in all we do
- Winning Always Raises Stakeholder Expectations!!



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Mobility Solutions

OPE & Motorola

intelligence



everywhere™



High performing organizations win!

