



Space and Naval Warfare Systems Center Atlantic

Mr. Christopher Miller
Technical Director

14 September 2010

5th Generation Of Computing

1970s

1980s

1990s

Today

2010+

Monolithic

Client-Server

Web

Service Oriented Architecture

Services



A Personal Technology Perspective ...



Commodore 64

- **Memory:** 64 kB RAM + 20 kB ROM
- **Graphics:** 320 × 200, 16 colors
- **CPU:** 1.02 MHz
- **Cost:** \$595.00



Apple iPhone 3Gs

- **Memory:** 256 MB eDRAM
- **Graphics:** 320 × 480, 144 colors
- **CPU:** 833mhz
- **Cost:** \$199.00

The Challenge is Different

Past

- ▼ Know adversary
- ▼ Defined threat
- ▼ Limited technology
- ▼ Known operations
- ▼ Focused data
- ▼ Limited functional sensors
- ▼ Known partners
- ▼ Small Community Of Interest



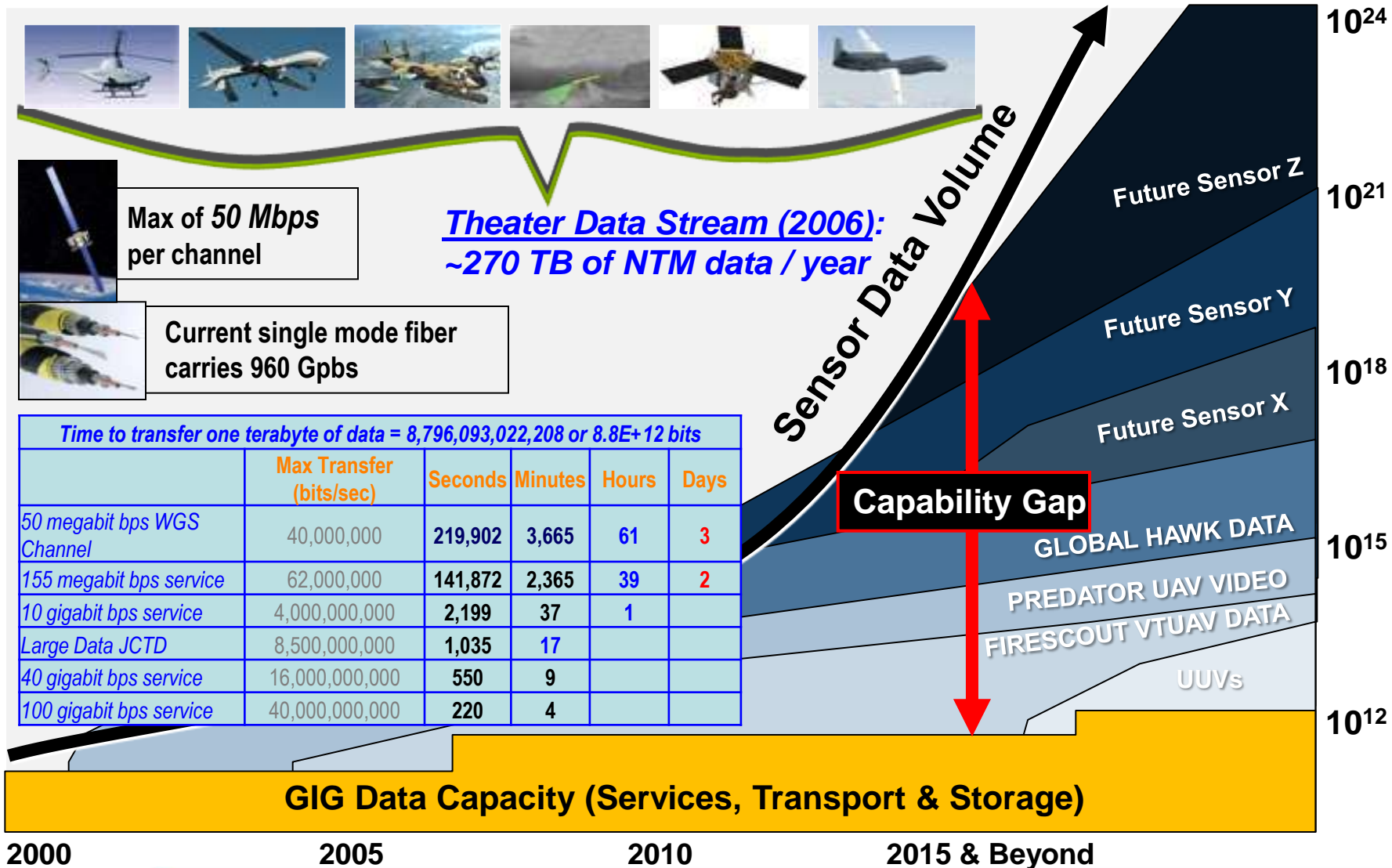
Present

- ▼ Multiple adversaries
- ▼ Dynamic threat
- ▼ Innovative technology
- ▼ Dynamic operations
- ▼ Multi source data (overload)
- ▼ Unlimited sensors
- ▼ Changing partners
- ▼ Large Community of Interest

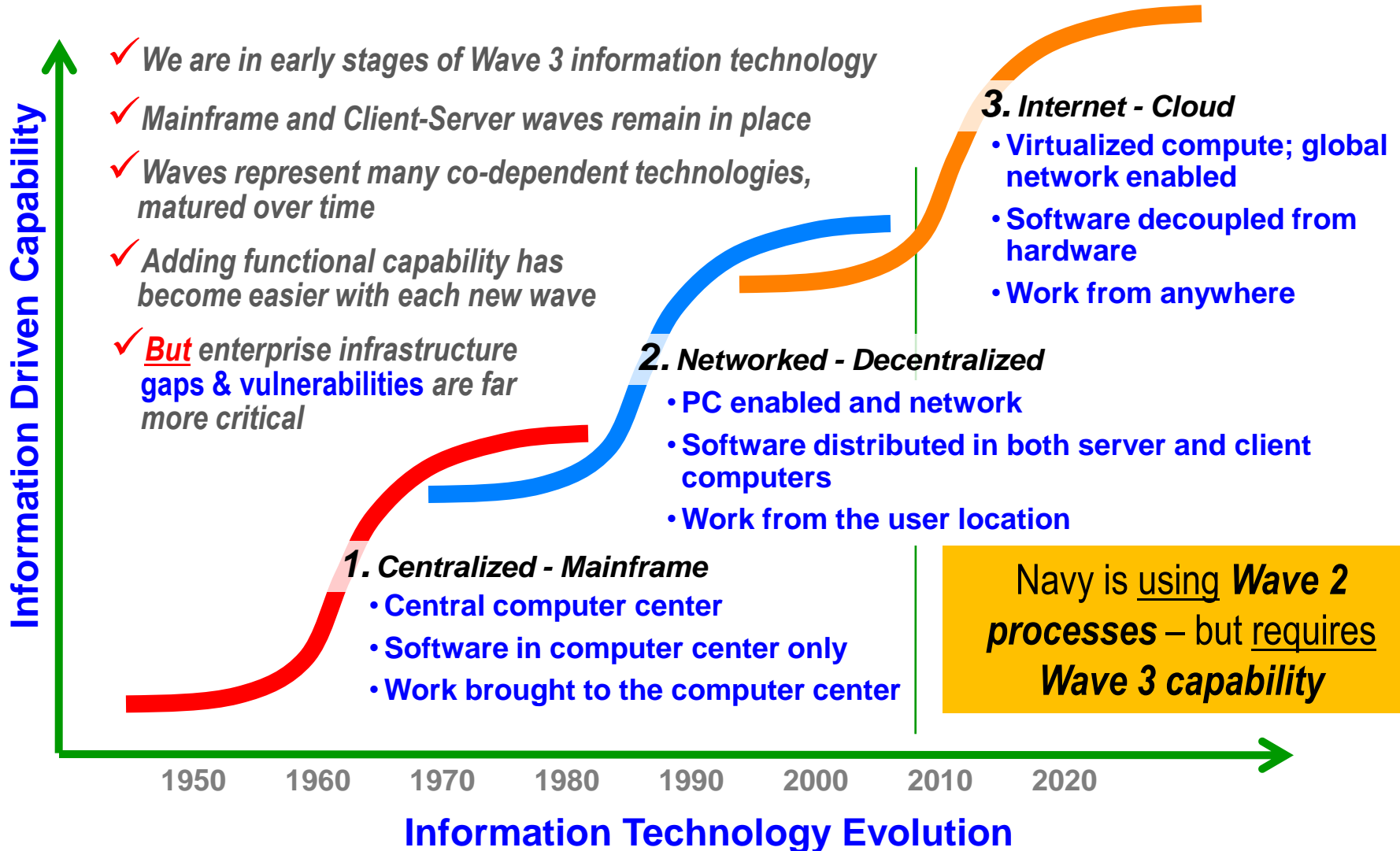


Information Dominance Challenge

Exponential Data Growth Outpaces Infrastructure



Information Dominance ~~Opportunity~~ **Dilemma**



On the Radar

“Our technological advantage is a key to America's military dominance . . .”

President Obama (May 2009)



“The U.S. cannot take its current dominance for granted and needs to invest in the programs, platforms, and personnel that will ensure that dominance's persistence.”

Secretary of Defense Gates (Jan 2009)

Times Square bomb plot

Faisal Shahzad, 30, was arrested Monday night as he prepared to fly to Dubai and then on to Pakistan.



The failed bombing is "another sobering reminder of the times in which we live," - *President Obama (May 2010)*

Cyberspace and Social Media gives Terrorist/Militant Groups a “Second Wind”



Terrorist Mastermind taught hacking and bomb-making online



Inspired terrorist attacks against the U.S. in cyberspace



Propaganda and recruitment Hero on the Web for failed attempt to blow up NW Flight 253

“ To make the case for this growth at a time of economic and fiscal duress requires the Defense Department to make every dollar count -- to fundamentally change the way we do business ”

-Secretary of Defense Gates (Aug 2010)

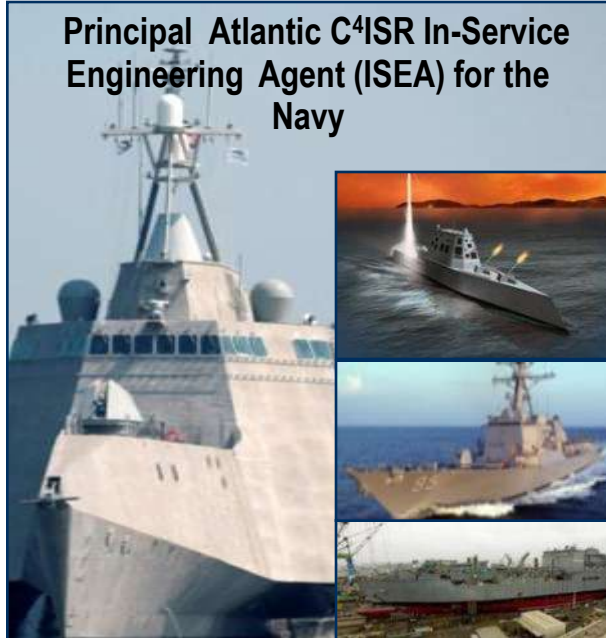
What We Do

▼ Delivering secure, integrated, and innovative C⁴ISR & IT capability

- Aligning, acquiring, and integrating technologies to customer requirements
- Speed to engineered capability
- Rapid prototyping



- Air Traffic Control (ATC) Center of Excellence
- All USN / USMC shore-based ATC
- National Airspace System Modernization



- Global command and control operations



- More than 1000 Internet cafés deployed, enabling the joint forces to stay connected to loved ones



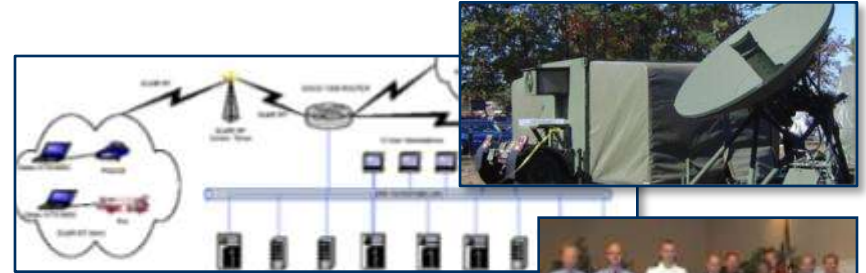
- Over 16,000 MRAPs & 7,000 M-ATVs integrated with C⁴ISR and IT capability

We Deliver ...

▼ Seven Forward Looking Portfolios

1. Decision Superiority
2. Information Dominance
3. Business and Force Support
4. Transport & Computing Infrastructure
5. Integrated Cyber Operations
6. Production, Installation & ISEA
7. Discovery and Invention

For Today and Tomorrow



**Innovative
Secure
Agile**



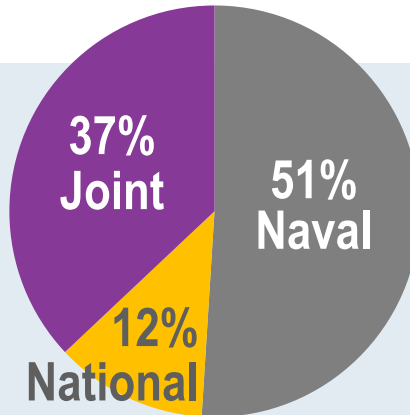
**Integrated
Responsive**



We Work For...

- ▼ Navy
- ▼ Joint Warfighter
- ▼ National
- ▼ Coalition

**Total obligation authority FY09
\$5.0 Billion**



- | | | |
|---|--|--|
| <ul style="list-style-type: none"> ▪ Navy ▪ Marine Corps ▪ Army ▪ Air Force ▪ Dept. of Defense | <ul style="list-style-type: none"> ▪ Dept. of State ▪ Dept. of Veterans Affairs ▪ Dept. of Justice ▪ Dept. of Treasury ▪ Dept. of Homeland Security | <ul style="list-style-type: none"> ▪ Federal Aviation Admin. ▪ National Science Foundation ▪ Unified Combatant Commands |
|---|--|--|



Providing quality full-service systems engineering and acquisition to rapidly deploy capabilities.



Deployable ATC (USCENTAF)



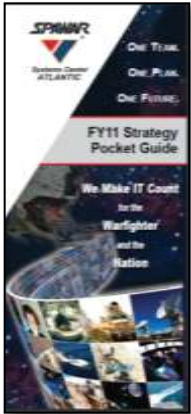
JOC in Stuttgart (EUCOM)



Mobile Ashore Support Terminal (MAST)



Strategic Plan



VISION

Make IT Count for the Warfighter and the Nation

MISSION

Rapidly deliver and support solutions that enable information dominance for our Naval, Joint, National, and Coalition Warfighters

VALUES

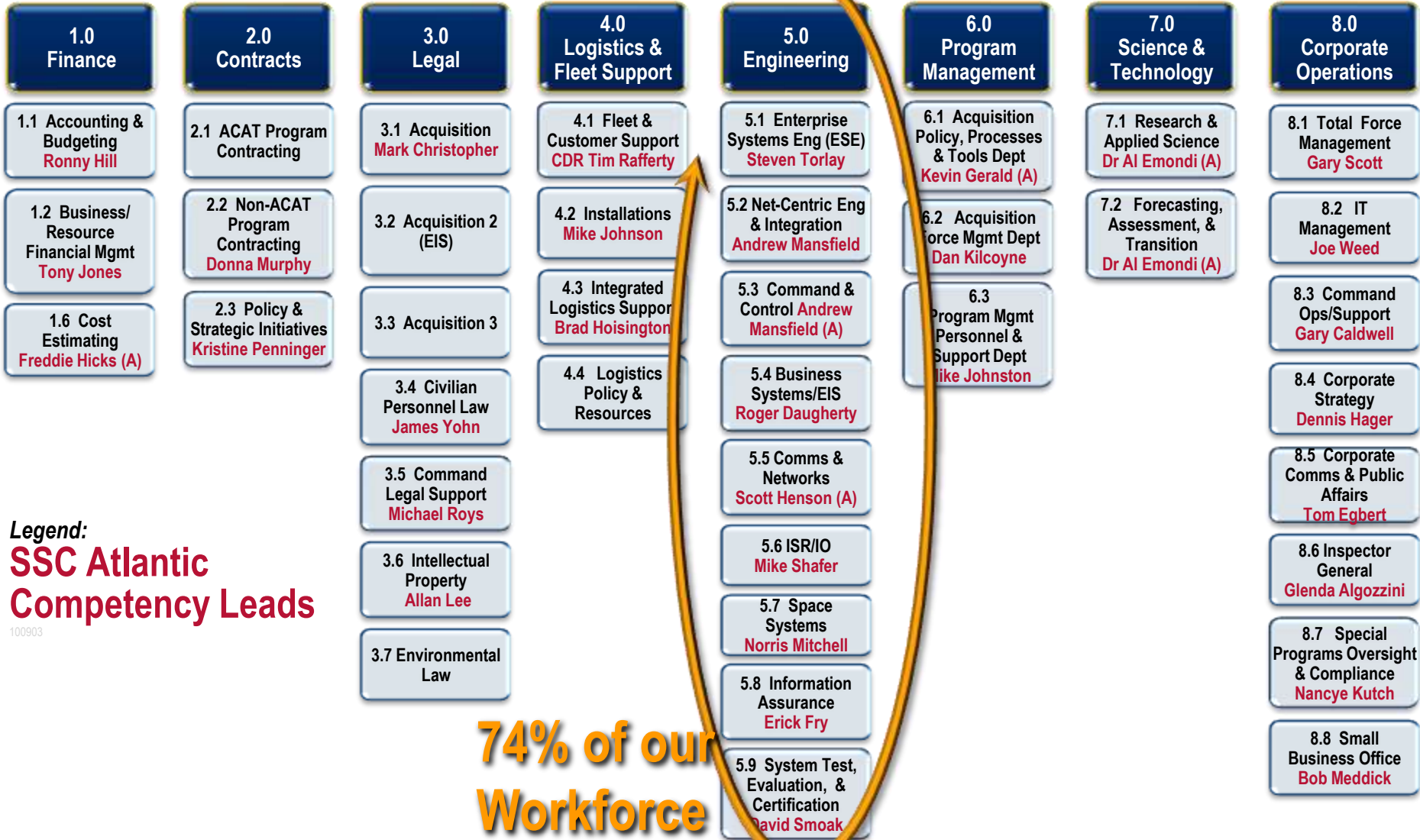
- Service to our country
- Excellence and credibility
- Responsiveness and accountability
- Diversity and teaming
- Transparency in the way we conduct our business

3,400 Civil Service Employees
120 Military Personnel
9,000 Industry Partners



ONE TEAM. ONE PLAN. ONE FUTURE.

Competency Aligned Organization



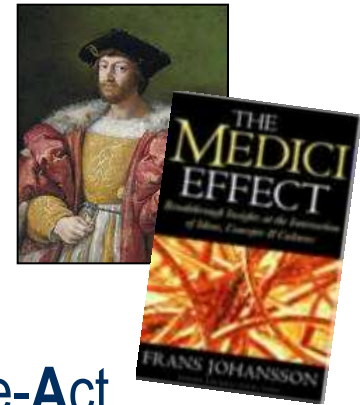
Legend:
SSC Atlantic
Competency Leads

100903

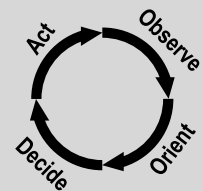
74% of our Workforce

Why are We Doing CAO?

- ▼ It is actually Competency Aligned Organization / Integrated Product Teams (IPTs)
 - IPTs are the intersection of our people & tasking
 - Apply collective abilities, talents and strengths in an integrated fashion
- ▼ “The Medici Effect”
- ▼ “The OODA Loop” - cycle of **Observe-Orient-Decide-Act**
 - An entity that can process this cycle quickly, observing and reacting to unfolding events more rapidly than an opponent, can thereby "get inside" the opponent's decision cycle and gain the advantage



Col John Boyd
USAF



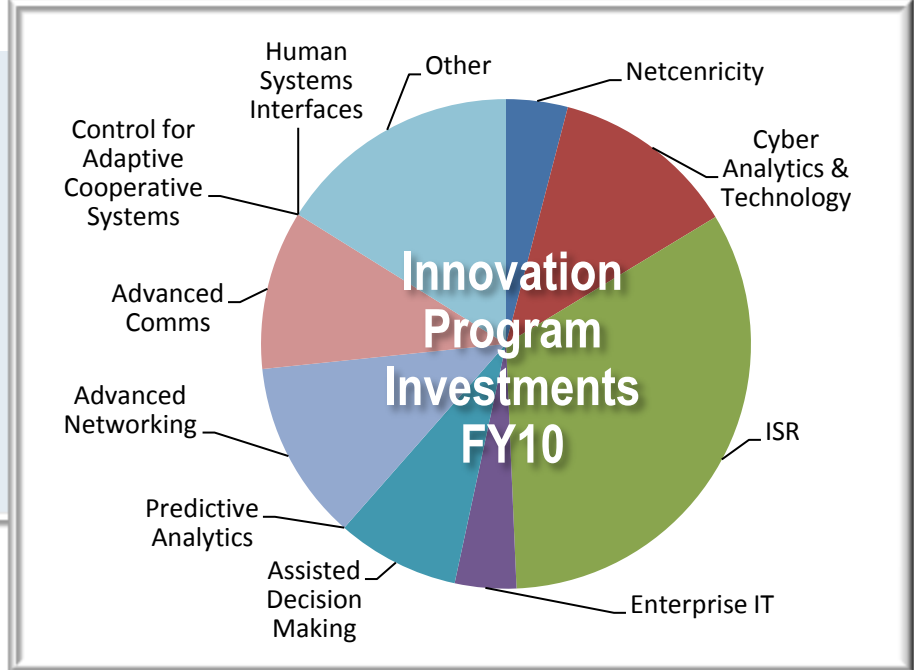
In short, we are doing this for increased innovation, speed and agility for our customers.

Innovation @ SSC Atlantic

Tactical Investment in Knowledge and Internal Basic & Applied Research

TIKI BAR

“Tiki Bar” is a streamlined approach to quickly fund new ideas in basic and applied research



FY10 Areas of Internal Investment

- Cyber Attack
- Cyber Exploitation
- Cyber Security
- Intelligent Agents
- Processing Architectures
- Automated SIGINT
- Signals Analysis
- Efficient Energy Systems
- Data Fusion
- Data Fusion
- UxS
- Advanced Sensors
- Hyperspace Visualization
- Data Modeling
- Artificial Intelligence
- Network performance
- Enterprise Architectures
- Human Systems Interfaces

“Remote Access Baud Buster Interface Technology (RABBIT)”

Examples

NI Bootstraps: 0 1 2 ... B-1

Rotating Broadcast / Fixed Reservation Slots: 0 1 2 3 4 5 6 ... N-1

ODMA "Frame" (1 sec)

Possible spectrum measurement opportunities

Dead time

Freq. #1
Freq. #2
Freq. #3

“Sensing Using Cognitive Radio Architectures”

S&T Aligned With Core Competencies Targeted at Future Challenges and Opportunities

Opportunities and Tools



E-Commerce Tool

<https://e-commerce.sscno.nmci.navy.mil>



SeaPort – e

<http://www.seaport.navy.mil>

Competency	Data	Competitive	Sole Source	Seaport	SB Set Aside	Pending	Grand Total
0.0 - Command Wide	Sum	\$250,000,000				\$150,000,000	\$400,000,000
	Count	1				1	2
5.3 - Command and Control	Sum	\$3,378,820,000	\$141,676,169	\$155,800,000	\$273,000,000	\$344,142,500	\$4,293,438,669
	Count	11	12	7	2	3	35
5.4 - Business Systems / EIS	Sum	\$1,306,900,000	\$87,677,035	\$72,060,000	\$225,000,000	\$350,500,000	\$2,042,137,035
	Count	11	6	4	1	3	25
5.5 - Communications and Networks	Sum	\$2,619,989,942	\$252,977,900	\$119,600,000		\$872,000,000	\$3,864,567,842
	Count	15	9	7		5	36
5.6 - ISR/IO	Sum	\$2,488,600,000	\$80,158,133	\$143,280,713			\$2,712,038,846
	Count	15	12	2			29
5.8 - Information Assurance	Sum	\$2,549,000,000		\$30,900,000		\$7,000,000	\$2,586,900,000
	Count	4		2		2	8
6.0 - Program and Project Management	Sum	\$95,000,000	\$75,000,000	\$20,000,000		\$1,641,500,000	\$1,831,500,000
	Count	1	2	1		2	6
7.0 - Science and Technology	Sum	\$30,000,000					\$30,000,000
	Count	1					1
8.0 - Corporate Operations	Sum		\$29,000,000	\$56,909,000		\$3,490,000	\$89,399,000
	Count		3	2		1	6
Total Sum		\$12,718,309,942	\$666,489,237	\$598,549,713	\$498,000,000	\$3,368,632,500	\$17,849,981,392
Total Count		59	44	25	3	17	148

Procurement Actions in Progress (by competency)

\$17,849,981,392 Total Sum
148 Total Count

Strategic Advantage

