“Back to the Future”

John P. Casciano
Senior VP and Group Manager
Enterprise Security Solutions
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What We'll Discuss

- The changing face of the threats and vulnerabilities that face us
- A look at Nebraska, Omaha, and Offutt Air Force Base and their roles in the Information Age
- The need for "synergy" in the virtual environment of the Information Age

Threats and Vulnerabilities

- The International Political System is Changing
- Cold War
  - Superpower Competition
  - Bi-Polar Environment
  - Competing Economic and Ideological Systems
  - Deterrence
- Today
  - One Superpower: how relevant?
  - Multi-player Environment
  - Competing Ways of Life; economic basis
  - Deterrence probably Irrelevant

Threats and Vulnerabilities

- "First, Second and Third Waves"
  - Agrarian
  - Industrial
  - Information
- Differing means and centers of gravity for each
  - First: Land and Food
  - Second: People and the Means of Production
  - Third: Information and the Economy that it enables
- Inevitable overlap
- The people at this conference are key players
  - Whether we like it or not!

Threats

- Outsiders and Insiders
  - Mischief and Embarrassment
  - Threat to Enterprises
- Nation-states
  - Offense, Defense, and Exploitation
  - Military and Intelligence Services
- Groups with a “mission” or “cause”
  - Low cost of entry
  - Advantage with the offense
  - Foreign and Domestic

Vulnerabilities

- Well-known problems – Inadequate solutions
- Time to Market versus Security
- Return on Investment considerations
- People – Process –Technology balance
- The Virtuality of the Global Enterprise
- The “proper” role of government?

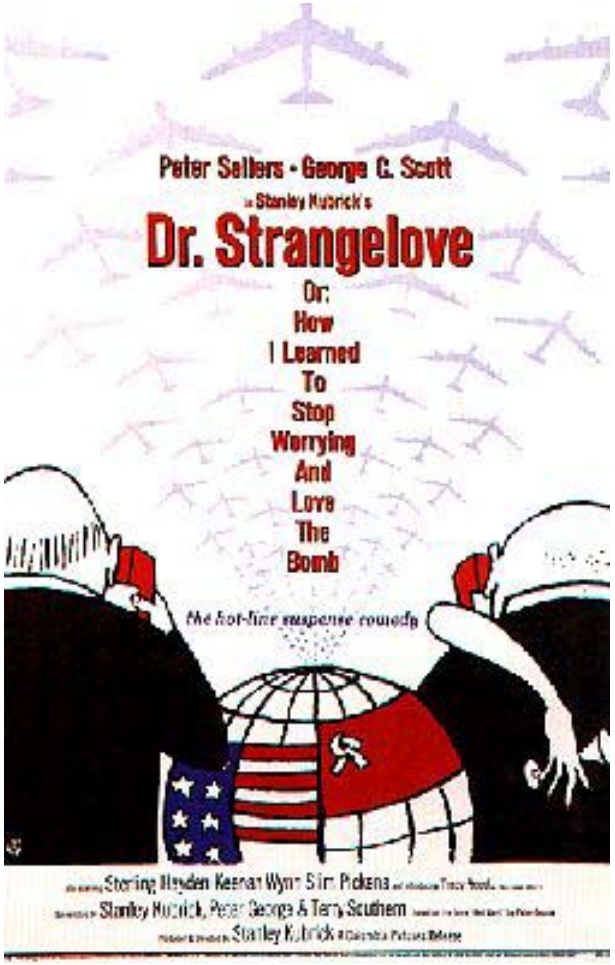
Threats and Vulnerabilities

"Seeing through a glass darkly"

- Military
- Government
- Private Sector

Nebraska, Omaha, and Offutt


HEADQUARTERS STRATEGIC AIR COMMAND
Peace
IS OUR
PROFESSION


Peter Sellers • George C. Scott
in Stanley Kubrick's
Dr. Strangelove
Or:
How
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the hot-line suspense comedy
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THE RED PHONE...
HIS MISTRESS...HER RIVAL...
HURLING HIM TO THE EDGE OF SPACE... FREEZING HER LOVE ON THE EDGE OF TIME!!
ROCK HUDSON
A GATHERING OF EAGLES
Eastman COLOR
ROD TAYLOR · MARY PEACH · BARRY SULLIVAN

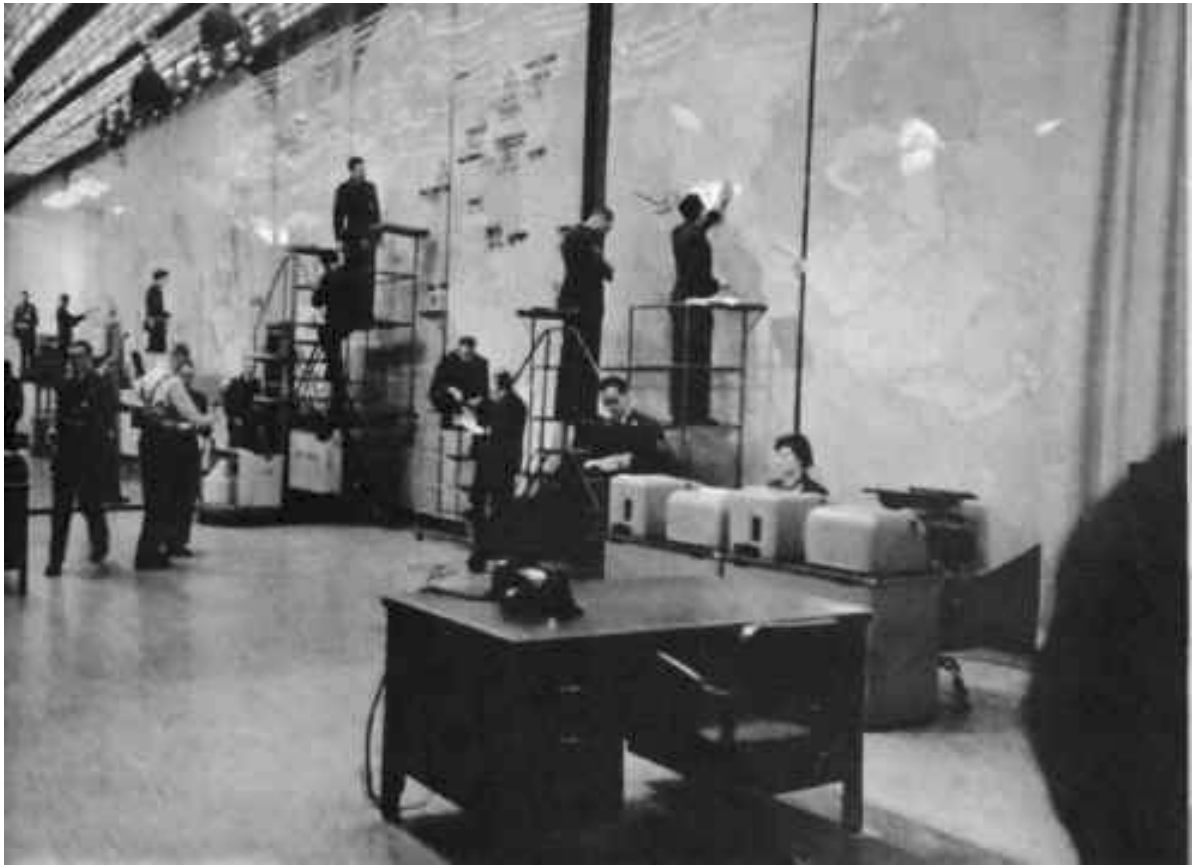

Bombs Away!
U. S.
AIR FORCE

Nebraska, Omaha, and Offutt

- Central Role during Cold War
  - Location
  - Infrastructure
  - Local Support
- Global Capabilities
  - Strategic Weapons
  - Intelligence, Surveillance and Reconnaissance
  - Command and Control
  - Communications
- A culture and an approach
  - Worldwide perspective
  - Understanding of “synergy”
  - Jointness

But It Didn't Just Happen!

- Followed a typical American approach
  - More weapons than targets
  - Cottage Industries
  - Disassociated planning
  - Waste and inefficiency
  - Politics
- Eventually, we found our way
  - SAC: 1946
  - Joint Strategic Target Planning Staff: 1961
  - Joint Strategic Connectivity Staff: 1980
- A steady evolution to figure it out



The Historical Analogy

- Nebraska, Omaha, and Offutt once again called to address 21st Century/Information Age/Third Wave threats and vulnerabilities
- United States Strategic Command: 1992
  - A culture and an approach
    - Worldwide perspective
    - Understanding of "synergy"
    - Jointness
- New Missions: 2002
  - Computer Network Operations (CNO)
  - Information Operations
- Gain, Exploit, Defend, Attack

The Historical Analogy

- Following a typical American approach
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- Eventually, we will find our way
- Admiral Ellis, General Goslin
  - Right People
  - Right Place
  - Right Time
- But this is only part of the equation

CyberSecurity Since 9-11

- Generally, more focus on physical effects of terrorism
  - Protection
  - Recovery
  - Reconstitution
- Government re-emphasis of CyberSecurity
  - GAO, OMB, and Congressional prodding
- Commercial sector treading water
  - Greatly impacted by economic slowdown
  - A search for converged physical and cyber solutions
- The Patriot Act … new/evolving powers
- **Role of the Department of Homeland Security**
  - Evolution of the "National Strategy"
  - Federal outreach … consensus building

Why Haven't Things Gotten Better Since 9-11?

- We are learning more about cyber threats and vulnerabilities
  - BUT, the "bar" keeps rising
- CyberSecurity is still not a priority for the "masses"
- Impacts are not understood, and potential threat is not believed … high "geek" factor
- Responsibility and accountability are diffuse
- Nothing really bad has happened yet--no deaths from a cyber attack
- CyberSecurity does not compete well for budget if the tradeoff is functionality

The National Strategy to Secure Cyber Space

- Thoughtful, well-conceived *consensus* document … but that's OK!
- A "Living Document"
  - Work in Progress
  - Sound familiar?
- CyberSecurity is not unlike other problems we have faced
  - "Bubbling up out of the Primordial Soup"
- Federal Government appears to be stepping up
  - Leadership and dollars
- State/Local will continue to have cash challenges
  - Need Federal help
- Civil/Industry Partnership will be a tedious, evolutionary process
  - Trust issues affect information sharing … Industry – Government and within Industries
  - Effect of Laws

Overview: The National Strategy to Secure Cyber Space

- A Case for Action: Threats and Vulnerabilities
- National Policy and Guiding Principles
- Highlights
  - Home User and Small Business
  - Large Enterprises
  - Critical Sectors
    - Federal
    - State and Local
    - Higher Education
    - Private Sector
  - National Priorities
  - Global
- Recommendations

The National Strategy to Secure Cyber Space: Threats and Vulnerabilities

- Recap of the "who," the "what," and the "what's possibly next"
- Themes
  - Increasing numbers, sophistication, severity, and cost
  - Economy is dependent on Cyber Space
    - A case for corporate investment?
  - A "Digital Disaster" a day … cascading effects
  - An ounce of prevention will reduce risks
  - It can be worse in the future
  - Need public-private partnership
  - Everyone must help secure Cyber Space
    - People, process, technology

The National Strategy to Secure Cyber Space: National Policy

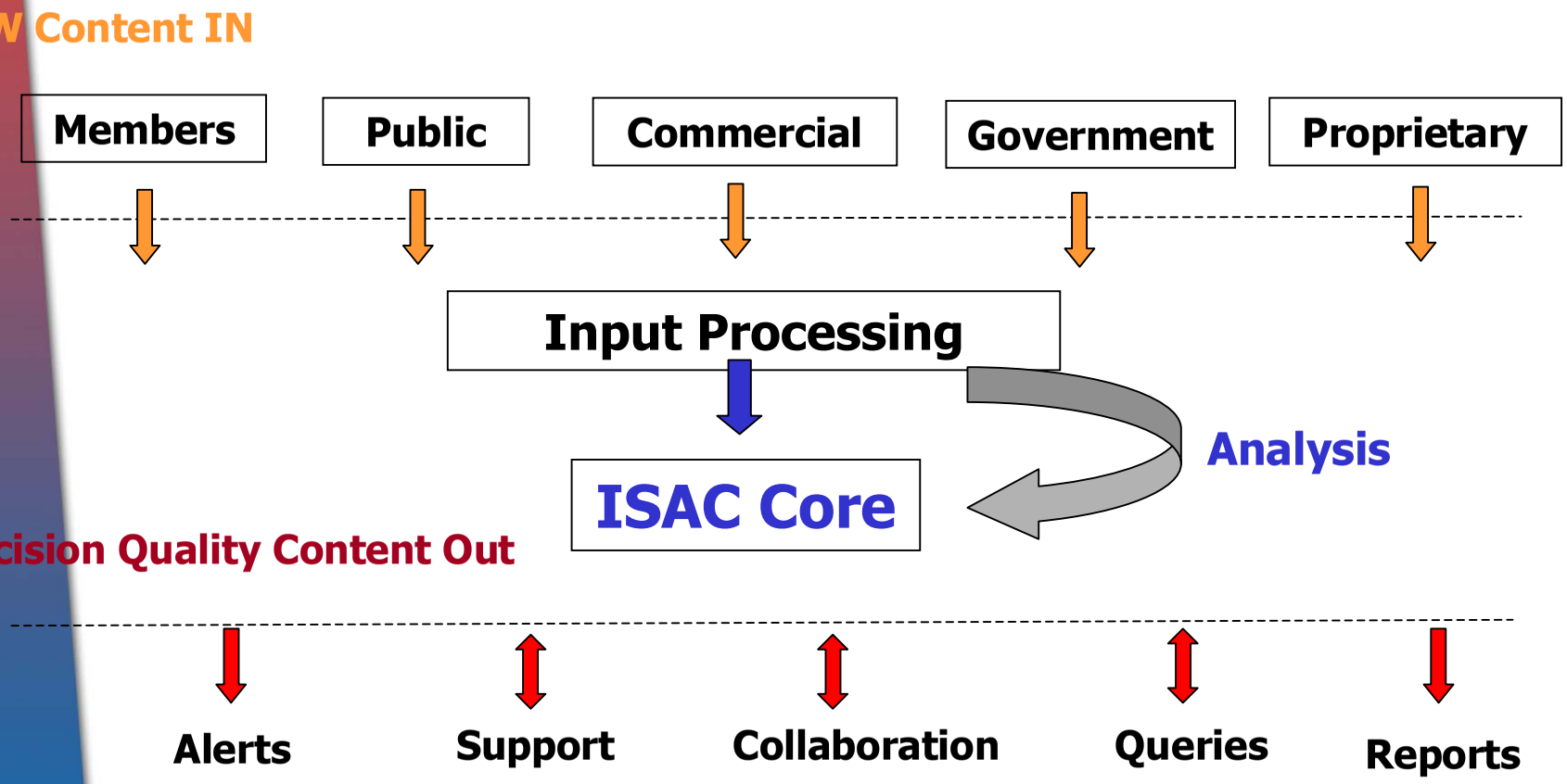
- The Federal government will perform key HLS and national security missions, and ensure the public health and safety
- State and Local governments will maintain order and deliver essential public services
- The Private Sector will ensure the orderly functioning of the economy and the delivery of essential infrastructure services

The National Strategy to Secure Cyber Space: Guiding Principles

- Embrace Public-Private Partnerships
- Avoid Regulation
- Safeguard Civil Liberties and Privacy
- Coordinate with Congress
- Cooperate with State and Local Governments
- Secure the parts of Cyber Space to achieve security of the whole
- Rapidly evolve security measures to stay ahead of changing technology/vulnerabilities
  - Can the “Defense” stay ahead of the “Offense?”
- Use the acquisition power of the federal government to prod industry on security

Some ISAC Examples

Information Sharing and Analysis (ISAC) Framework



Recent Events and Current Threats

- Slammer
  - Fastest spreading worm to date
  - Damage without malicious payload
  - 6 month old vulnerability
  - Implications...
- Bugbear B
- Lots of “Noise” in the last few weeks
- Heightened Terror Alert
- War with Iraq
  - State- and terrorist-sponsored cyber-attacks?
  - “Virtual Coalitions” of those opposed?
  - Individuals?

Prudent Steps for Security Managers to Take

- Place and keep on CEO agenda
- Reaffirm authorities and responsibilities
- Reinforce CyberSecurity Policies … all employees
- Check for known vulnerabilities
- Triage and implement patches
- Keep IDS and Antivirus applications current
- Review/update emergency and recovery plans
- Identify and plan for “calling in the Reserves”
- War-game and exercise defensive capabilities
- Monitor cyber and other intelligence sources
- Check “comms”

In Summary

- No alarms … but, conceivable multiple-attack scenarios against U.S. critical infrastructures--commercial and government targets:
  - Physical and cyber attacks combined and sequenced for maximum impacts
    - Human--public health/emergency services
    - Economic--threats to jobs and globalization
- Continuity of government operations - and our economic health - at risk if information infrastructures degrade seriously or fail:
  - The events on 9/11 revealed the extent that the U.S. depends on government at all levels for reassurance and support
  - Government services closest to people often have most vulnerable information infrastructures
  - Ability to make effective response, project U.S. forces, and support law enforcement could be jeopardized
  - Potential for loss or misuse of critical government resources

Challenges

- Coping with the "Third Wave"
  - National Security = Economic Security + Way of Life
  - Privacy Issues
- Tying the pieces together: Private – Public Partnership
  - Military
  - Civil: Federal, State, Local
  - Private Sector
- Time as the enemy
  - Awareness
  - Money: Public Funding
  - Commitment

Questions/Comments?