North Korea: Cyber Power

Understanding Cyber

Epochs of Society

"Know Thy Enemy"

EVOLUTION OF US CYBER

HISTORY OF NORTH KOREAN CYBER

What Do We Do In Cyberspace?

"Hermit Kingdom"

Undersea cables

North Korea Cyber Locations

Cyber Power Rankings

Case Studies

2000's DDOS Attacks ROK
2011 Nonghyup Bank
2011 Korea Univ Email Accounts
2013 DarkSeoul Malware
2014 Sony Pictures
2014 ROK Nuclear Power Plant
2016 IP and Data theft
2017 Wannacry

Wanncry 2017

WANNACRY OUTBREAK

Sony Pictures 2014

Hydro Nuclear Plant 2014

Chinese View

"Joint Campaign Information Operations"

"Through the comprehensive implementation of electronic warfare and computer network warfare that is

and can carry out an overall damage or breakdown of the enemy's information system."

网电一体战

Understanding Cyber

Understanding Cyber

What do we do in cyberspace?

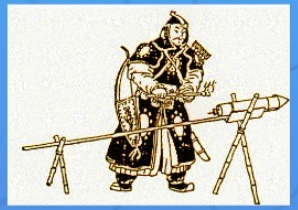
Understanding Cyber

What do we do in cyberspace?

How can we use cyberspace to pursue political objectives?

Epochs of Society

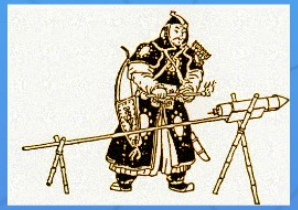
Agrarian Age



"Know Thy Enemy"

Epochs of Society

Agrarian Age

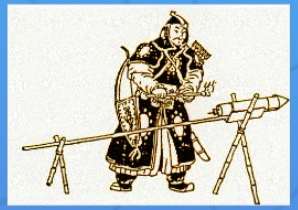


Industrial Age

"Know Thy Enemy"

Epochs of Society

Agrarian Age



Industrial Age

Information Age

"Know Thy Enemy"

Epochs of Society

Agrarian Age

Firearm

Industrial Age

Information Age

"Know Thy Enemy"

Epochs of Society

Agrarian Age

Firearm

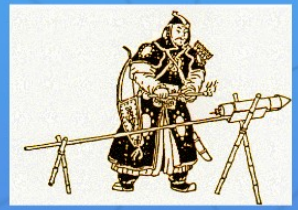
Industrial Age

Mechanized

Information Age

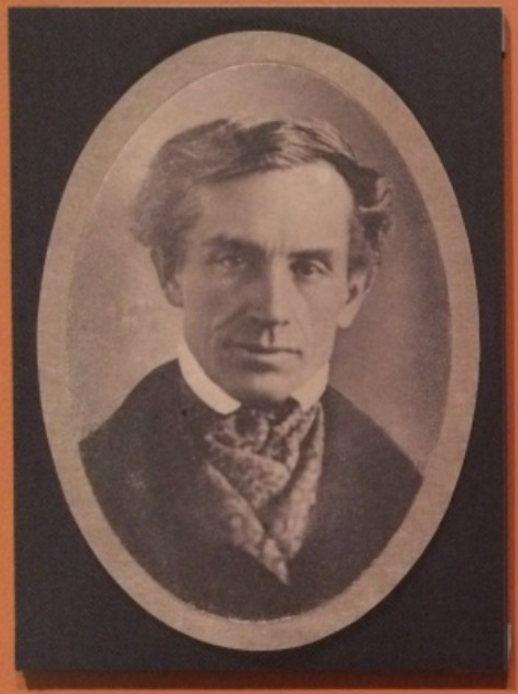
"Know Thy Enemy"

Epochs of Society

Agrarian Age	Industrial Age	Information Age
		
Firearm	*Mechanized*	Informationized

"Know Thy Enemy"

EVOLUTION OF US CYBER



Samuel Morse

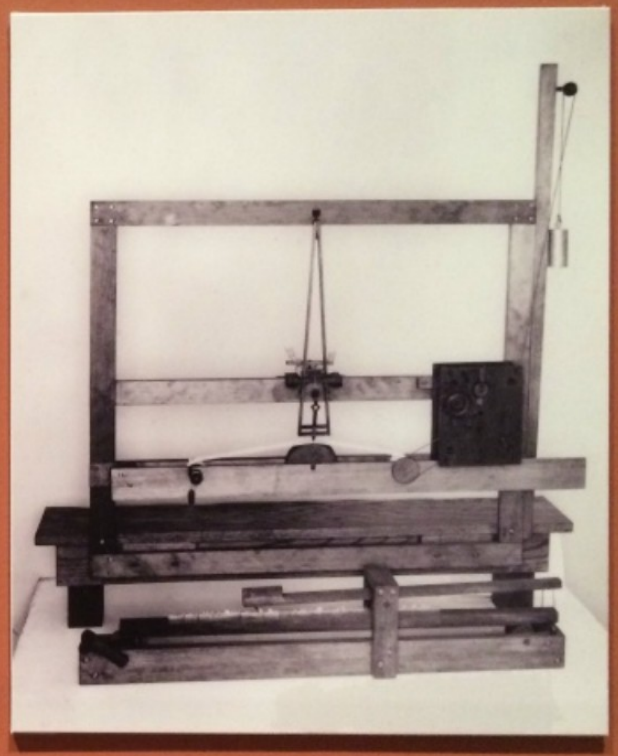
Artist Samuel Morse apparently learned of his wife's death too late to attend her funeral, inspiring him to create a new, faster communications tool. We remember Morse today as inventor of the telegraph.

Louis-Jacques-Mandé Daguerre (1787–1851), *Portrait of Samuel F. B. Morse (1791–1872)*, 1840
Reproduction
Archives of American Art, Smithsonian Institution

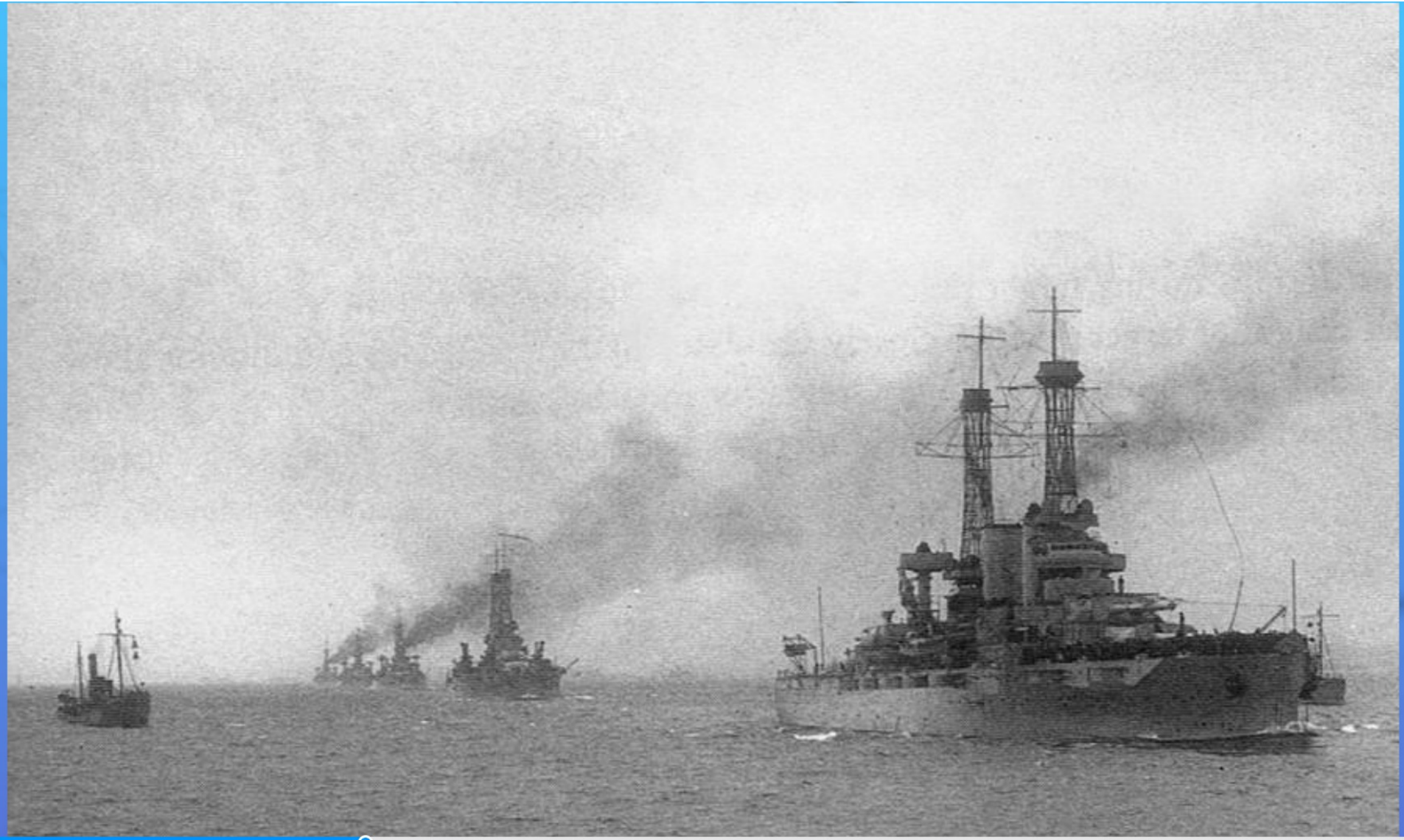
Morse Code

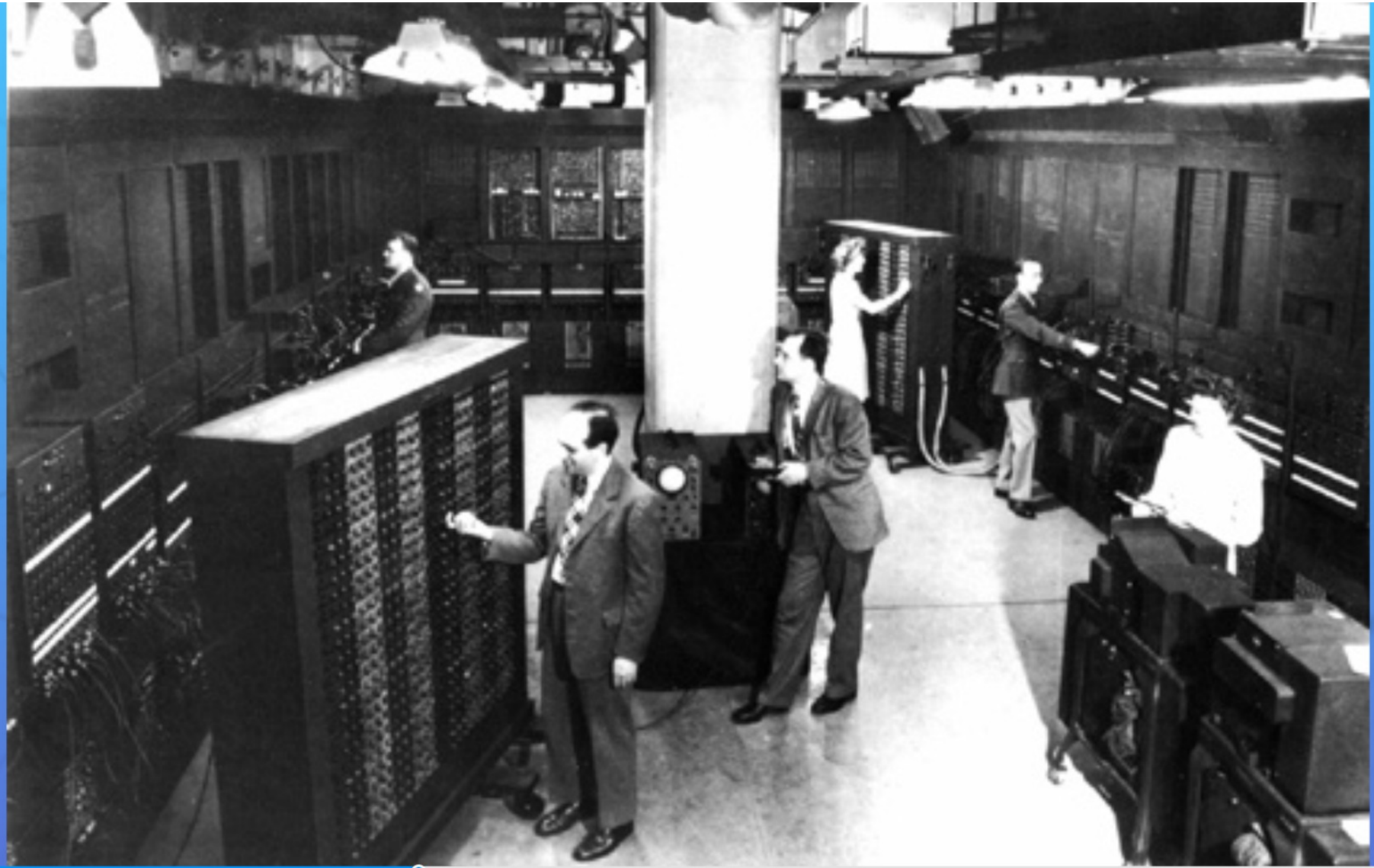
A telegraph transmits electric pulses. But how do you convert those pulses into words? Samuel Morse devised a code—expanded by colleague Alfred Vail—in which patterns of long or short pulses (dots and dashes) represent letters. Morse code is a cousin of computer coding: a way of translating information into a form that a machine can process.

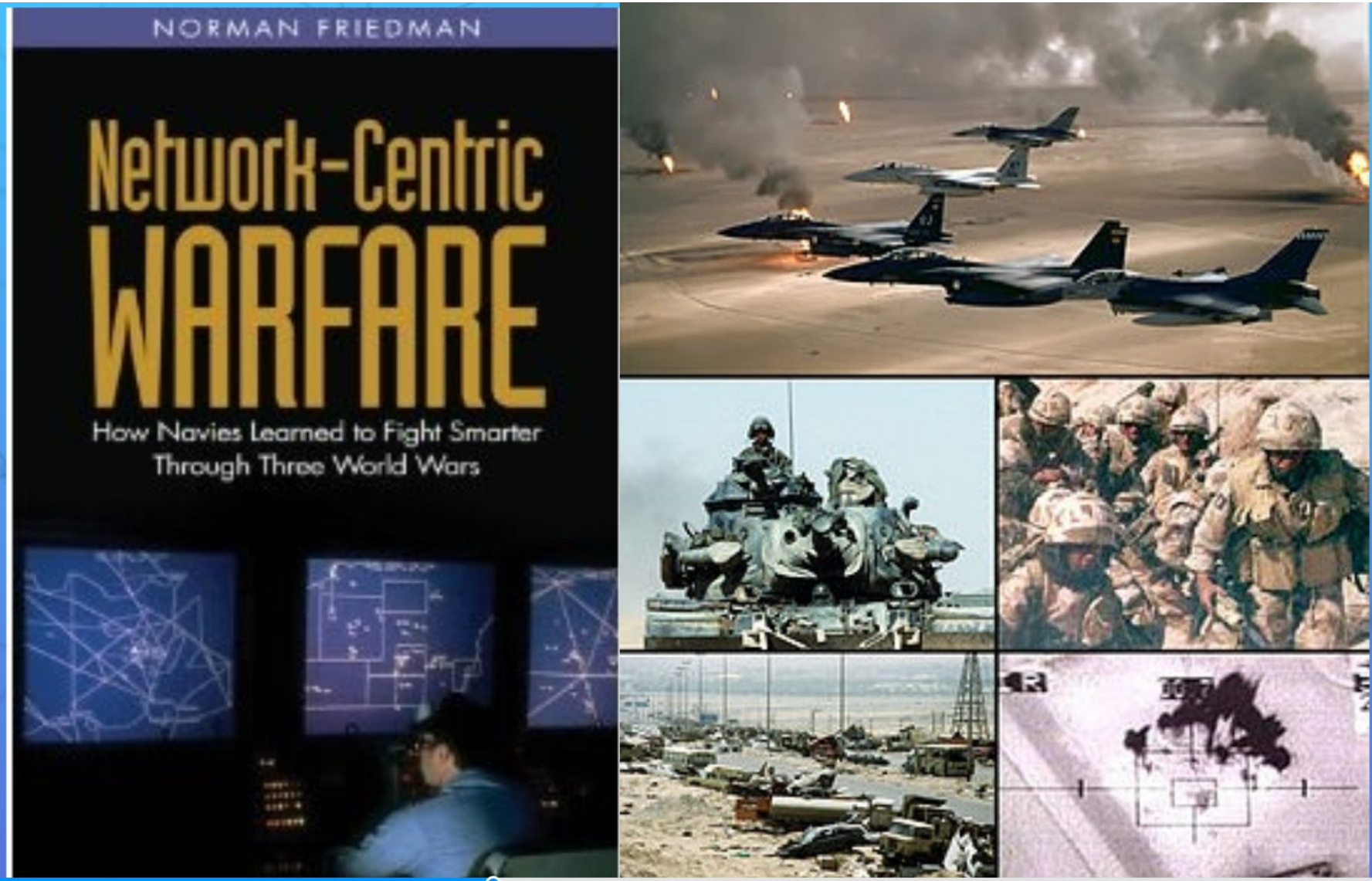
Alfred Vail (1807–1859), Description of the American Electro-Magnetic Telegraph Now in Operation Between the Cities of Washington and Baltimore (wood engraving), Washington: Printed by John S. Gideon, 1845
Reproduction
U.S. National Library of Medicine



Communications Spans the Sea



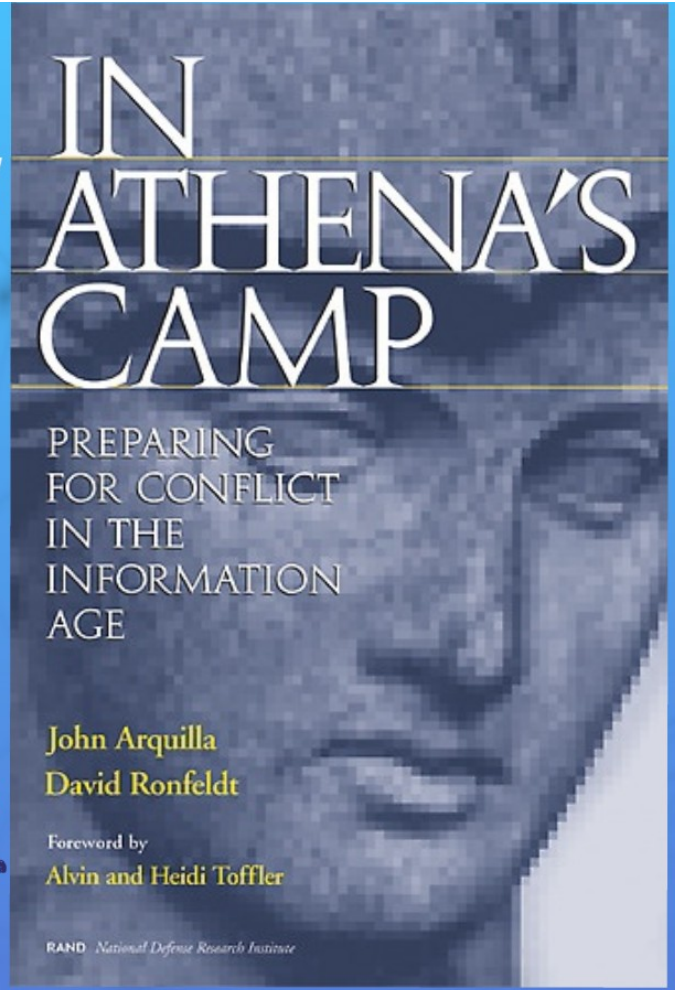



NORMAN FRIEDMAN
Network-Centric
WARFARE
How Navies Learned to Fight Smarter
Through Three World Wars

CYBERWAR IS COMING!

John Arquilla and David Ronfeldt, 1993

Suppose war looked like this: Small numbers of your light, highly mobile forces defeat and compel the surrender of large masses of heavily armed, dug-in enemy forces, with little loss of life on either side.



What Do We Do In Cyberspace?

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Communicate

What Do We Do In Cyberspace?

Communicate

What do we communicate...?

Chinese View

"Joint Campaign Information Operations"

"Through the comprehensive implementation of electronic warfare and computer network warfare that is
computerized electronic (wangdian)
integrated warfare (yiti zhan)
one can carry out an overall damage or breakdown of the enemy's information system."

网电一体战

HISTORY OF NORTH KOREAN CYBER

1979	1985-6	1990s	2002
DPRK established its first factory to produce first-generation ICs.	DPRK established the PIC (Pyongyang Informatics Centre) and processed 30K chips	DPRK developed Lab Number 110 (110호 연구소), responsible for hacking, cyber terror, and cyber espionage	Pyongyang opens its first Internet café and opens first e-business center in DPRK

What Do We Do In Cyberspace?

Communicate

What do we communicate...?

How Does North Korea Want To Use Cyber?

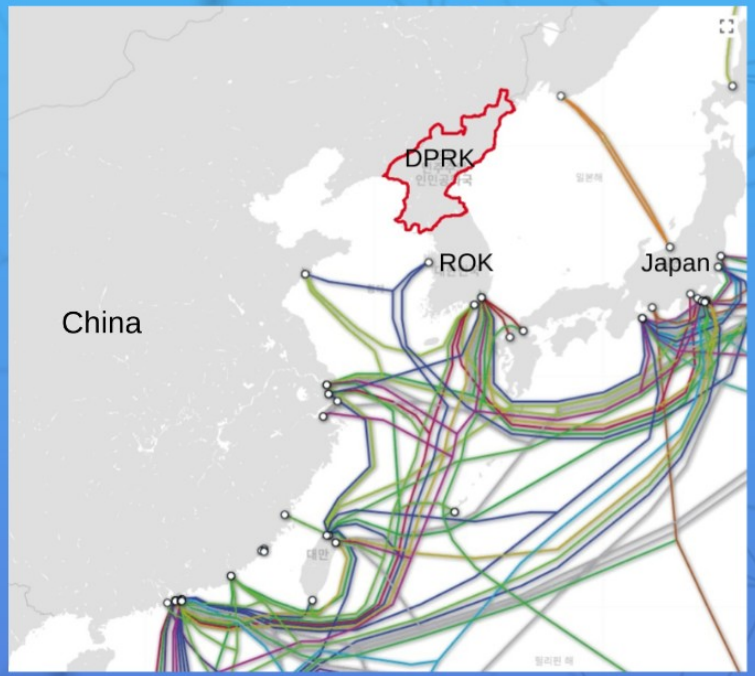
Communicate

What do we communicate...?

How Does North Korea Want To Use Cyber?

1. Test Capabilities
2. Deception and Confusion
3. Opportunistic Attacks and Theft

"Hermit Kingdom"



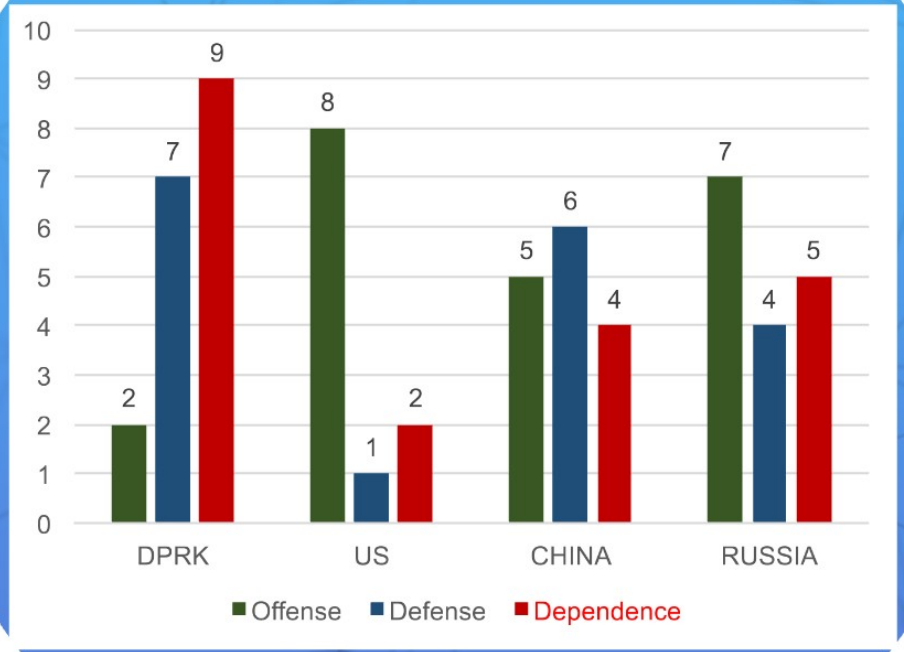
Undersea cables

North Korea Cyber Locations

North Korea Cyber Locations

***not* in North Korea!**

Cyber Power Rankings



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Wanncry 2017

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