INFORMATION TECHNOLOGY ON THE BATTLEFIELD

"SUCCESS IN BATTLE IS INCREASINGLY ABOUT MAKING DECISIONS MORE QUICKLY THAN YOUR ADVERSARY"

By

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Education

- BS (Economics), USMA, 2002
- MBA (Entrepreneurial Management), Wharton Business School, 2012

Branch

- Field Artillery Officer

Army Experience

- Iraq -2003 – 2004 (12)
- Afghanistan - 2004 (4)
- Iraq – 2005 (4)
- Iraq – 2006 (4)
- Afghanistan – 2009 – 2010 (10)

Current Assignment

- Instructor of Economics-United States Military Academy

MAJ JOE DA SILVA

Education

- BS (American Politics), USMA, 2002
- MA (International Economics & Strategic Studies), Johns Hopkins University (SAIS), 2012

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- Iraq – 2005 – 2006 (12)
- Iraq – 2007 – 2008 (15)
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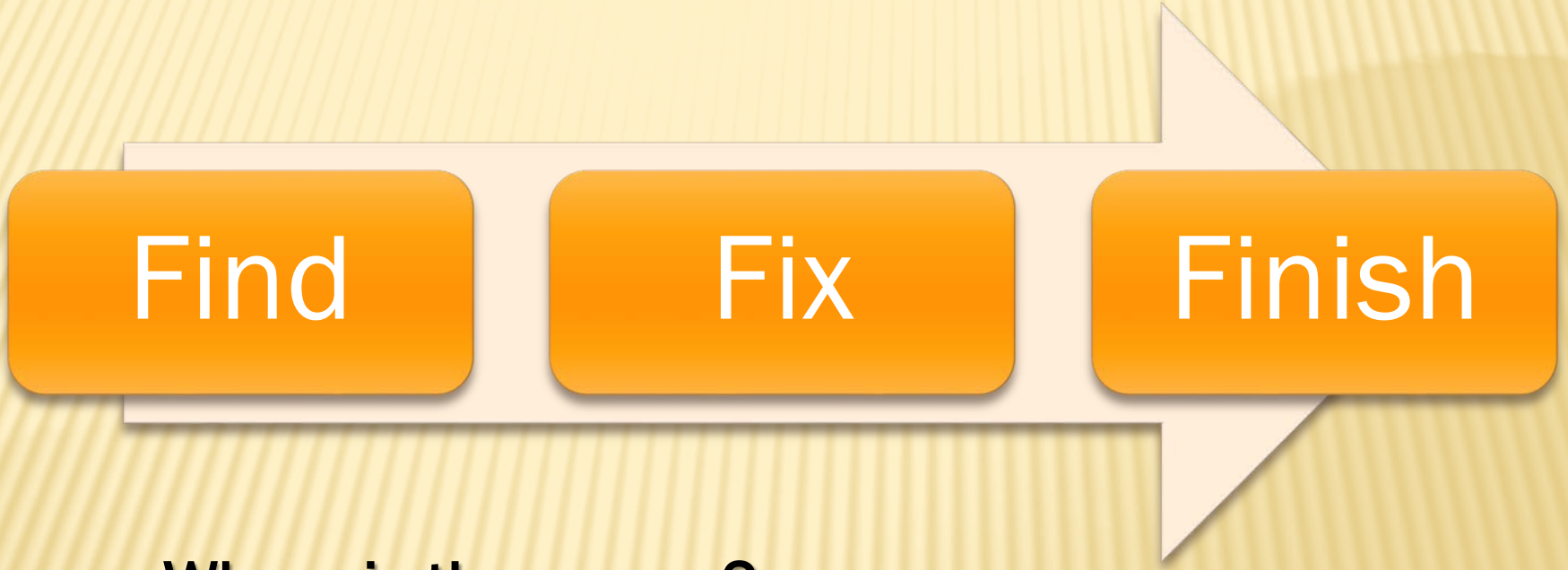
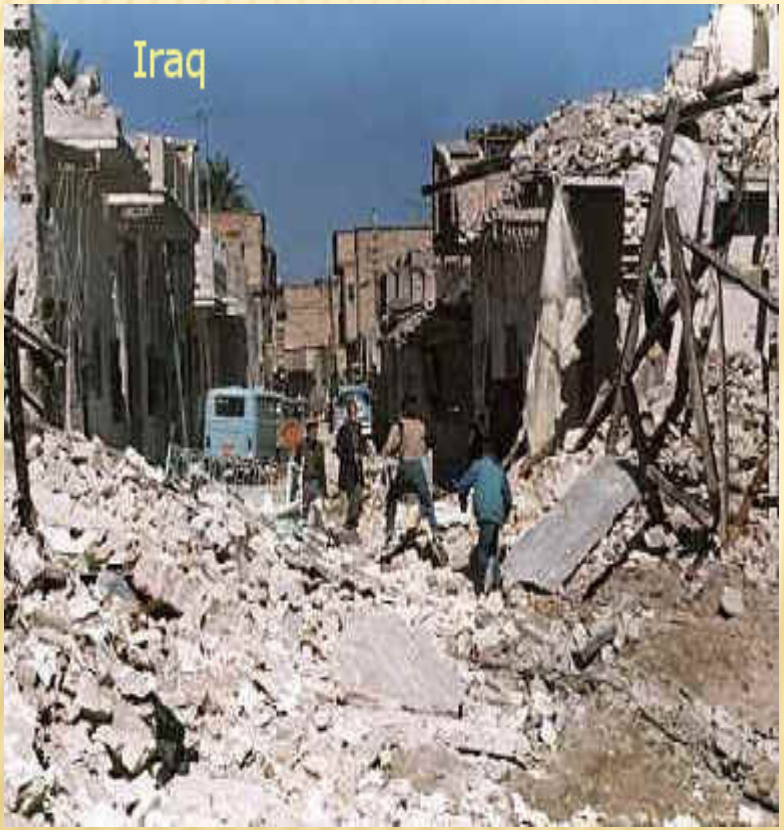
TARGETING PROCESS - 2003



- Where is the enemy?
- How do you defeat them?
- How do you minimize collateral Damage?

2003- SHOCK AND AWE

CHANGE IN MISSION



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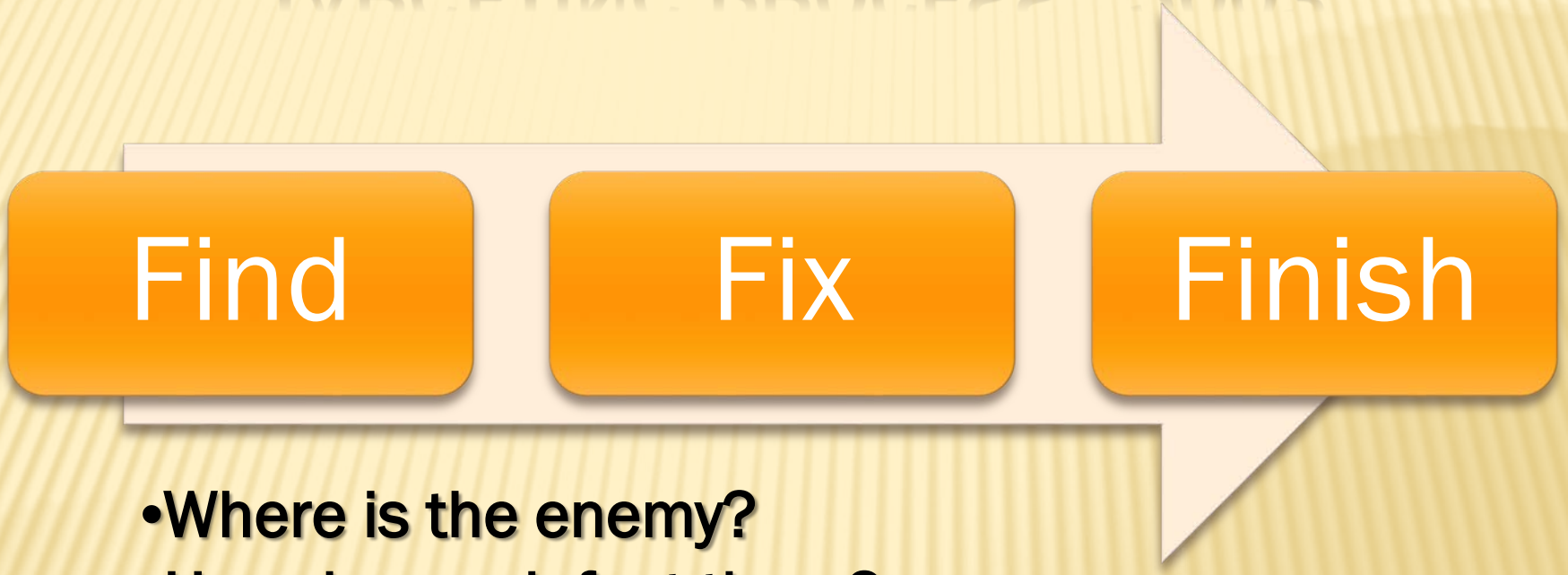


- **Where is the enemy?**
- **How do you defeat them?**
- **How do you minimize collateral Damage?**

How does Information Technology help us answer these questions given the new conditions?

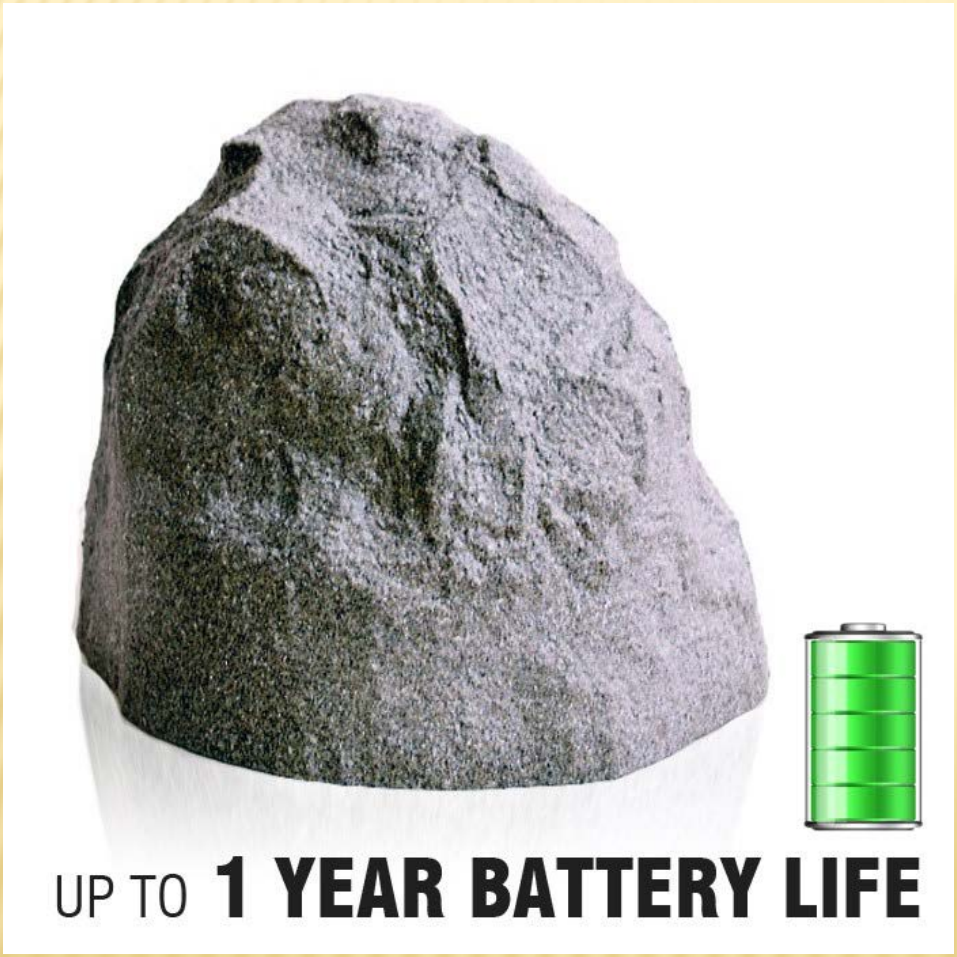
SENSORY ENHANCEMENT

- Sight – Unmanned Arial Vehicles (UAV) or other platform with a camera and relay capability
- Sound- listen to and locate cell phones, communicate over satellite relay
- Feel / Touch – ground sensors (seismic), IR/Heat signature

PREDATOR DRONE

AEROSTAT BALLOON

ROCK CAMERA



HEAT & INFRARED SIGNATURES

ADAPTATION OF SENSORY INFORMATION TECHNOLOGY

- At first, completely foreign / Overwhelming
- *Often decreases capability before it increases it*
- Comfort builds slowly, Usage leads to trust
- Can become a distraction, receive too much attention
- Becomes a type of prosthesis
- Creates Sensory Omnipresence
  - Plus access to digital memory
- Link together multiple capabilities

UFED

IT ENHANCED TARGETING PROCESS

TRANSLATING DATA INTO INTELLIGENCE

TAMING THE BEAST – THE CHALLENGE OF DATA

- F3 EA (Find, Fix, Finish, Exploit, & Analyze
  - Changed the way we conducted operations
- Every mission generated more data which strained our abilities to both store and analyze the data
  - Data: Collection of information devoid of meaning
  - Information: Analyzed data that is assigned meaning
  - Mission Intelligence: Vetted Information whose meaning has a direct impact of mission goals and success
- Results:
  - Huge Backlog in getting Intelligence
  - Huge Target Sets
  - Confusion of priority

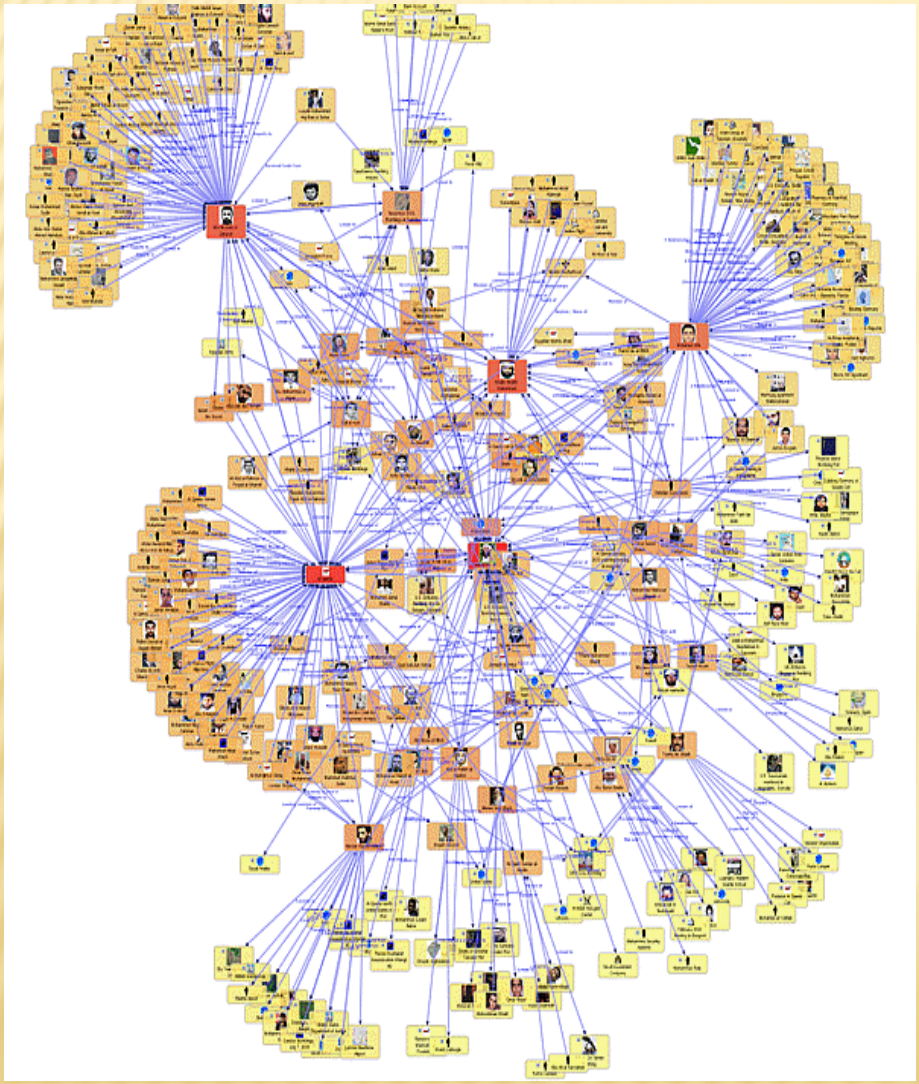
MAKING DECISIONS ON THE BATTLEFIELD

- Military Leaders at the tactical level have 2 key fundamental question to answer.
  - Where do I put my forces?
  - What tasks do I assign them?
- As the target lists grew and more data accumulated the answers to these questions became more difficult
- As the lists of potential targets grew so did restrictions on action targets
  - We had to become much more selective in who we decided to target

CHANGE IS A ROUTINE THING

- Where do I put my forces?
  - First you had to decide which targets had priority?
- Turning data into intelligence became essential so two major technological shifts started to happen in 2005
  1. Network Nodal Analysis
  2. Organizational Adaptation

SOCIAL NETWORK NODAL ANALYSIS

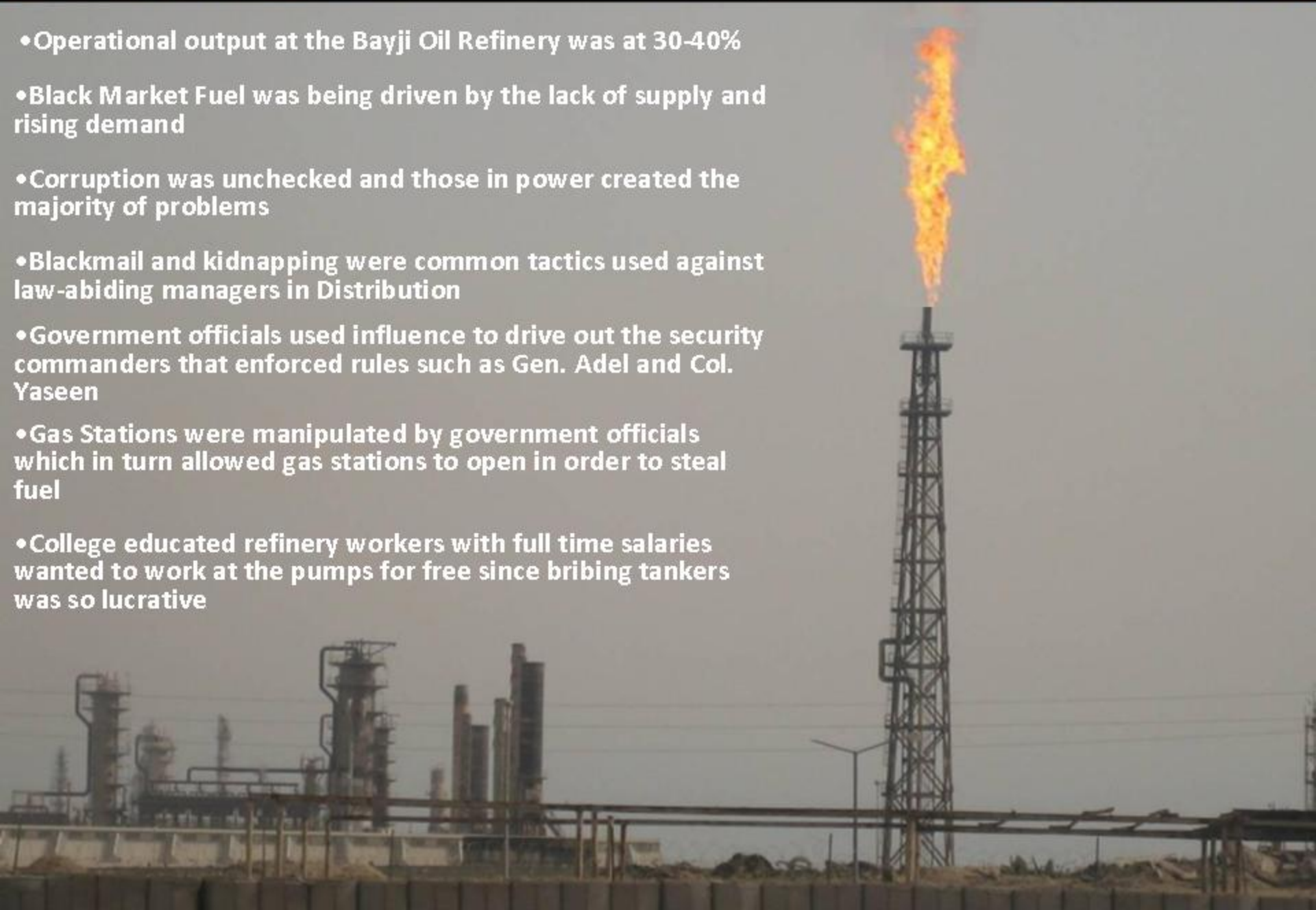


ORGANIZATIONAL CHANGE

- Prior to 2005 all intelligences assets rested at the battalion level
- Intelligence ⇨ Operations
- Now: Intelligence ⇆ Operations
- Change: Company Level Intelligence Analysts
  - Intelligence Analysis was now moved to lower levels
  - TIGR Net

Bayji Refinery 2007

- Operational output at the Bayji Oil Refinery was at 30-40%
- Black Market Fuel was being driven by the lack of supply and rising demand
- Corruption was unchecked and those in power created the majority of problems
- Blackmail and kidnapping were common tactics used against law-abiding managers in Distribution
- Government officials used influence to drive out the security commanders that enforced rules such as Gen. Adel and Col. Yaseen
- Gas Stations were manipulated by government officials which in turn allowed gas stations to open in order to steal fuel
- College educated refinery workers with full time salaries wanted to work at the pumps for free since bribing tankers was so lucrative



Production to Distribution

The amount of money received in 2007 was 4 billion IQD (Approximately 3.3 Million USD) unaccounted for and attributed to poor accounting practices and corruption.

Production volume is sent daily by TF HYDRA

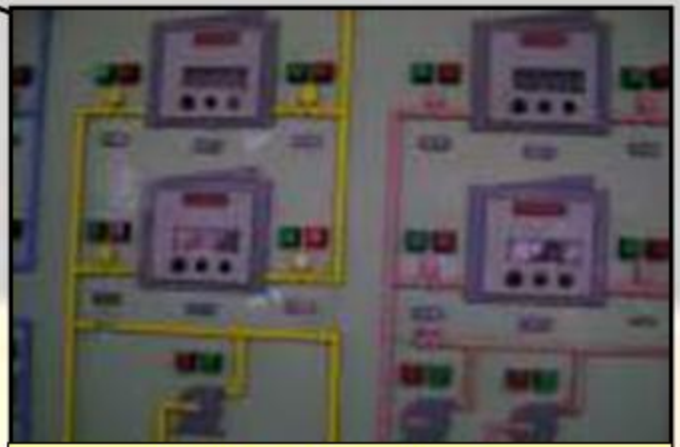
Production

Production Storage

Distribution Storage

Fuel tanker Pumps

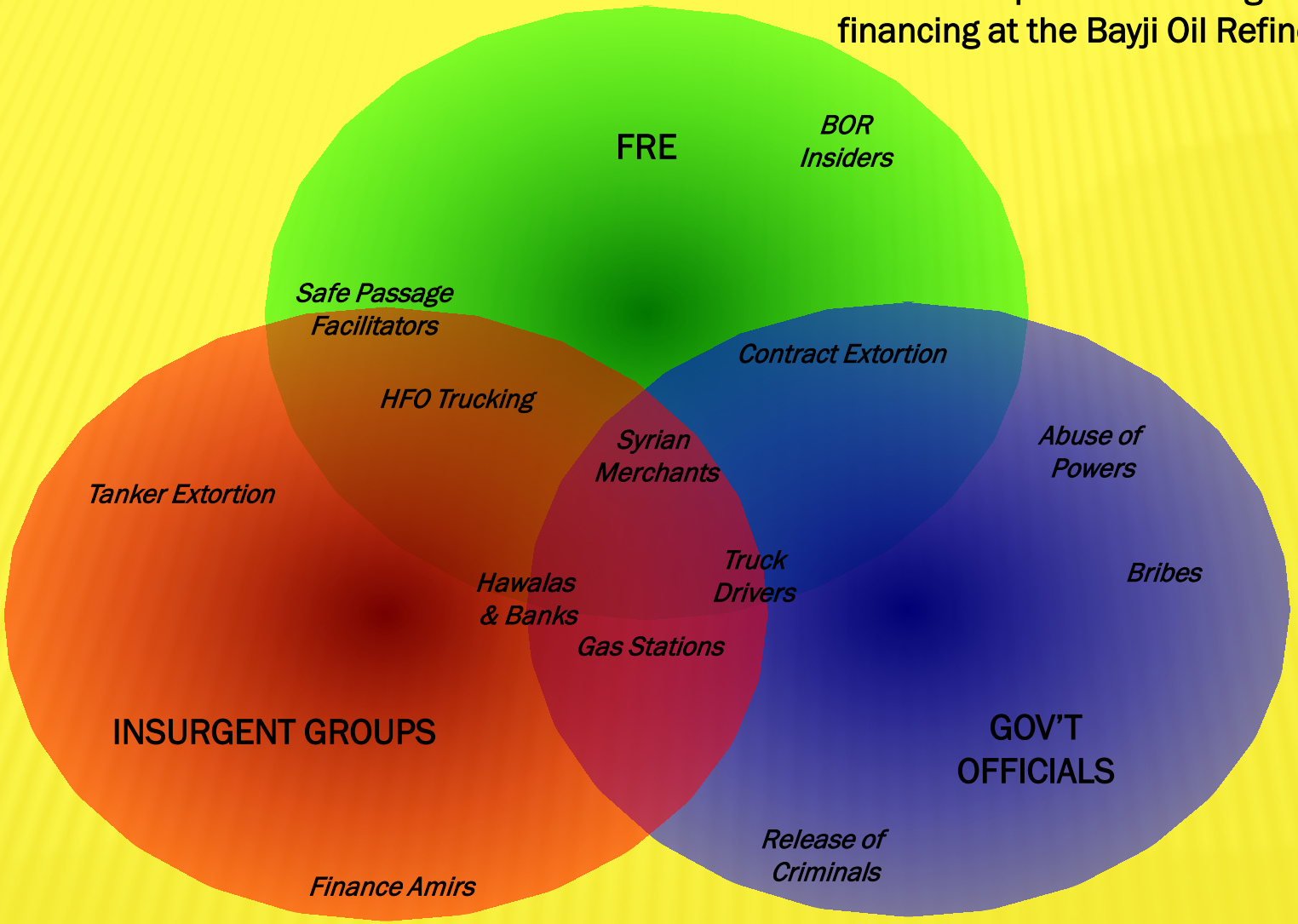
Poorly tracked paperwork enables theft



Oct 2008: Digital meters with no discrepencies

Who were the Groups?

We were able to identify 32 key figures in the corruption and insurgent financing at the Bayji Oil Refinery.



INFORMATION TECHNOLOGY TO THE RESCUE

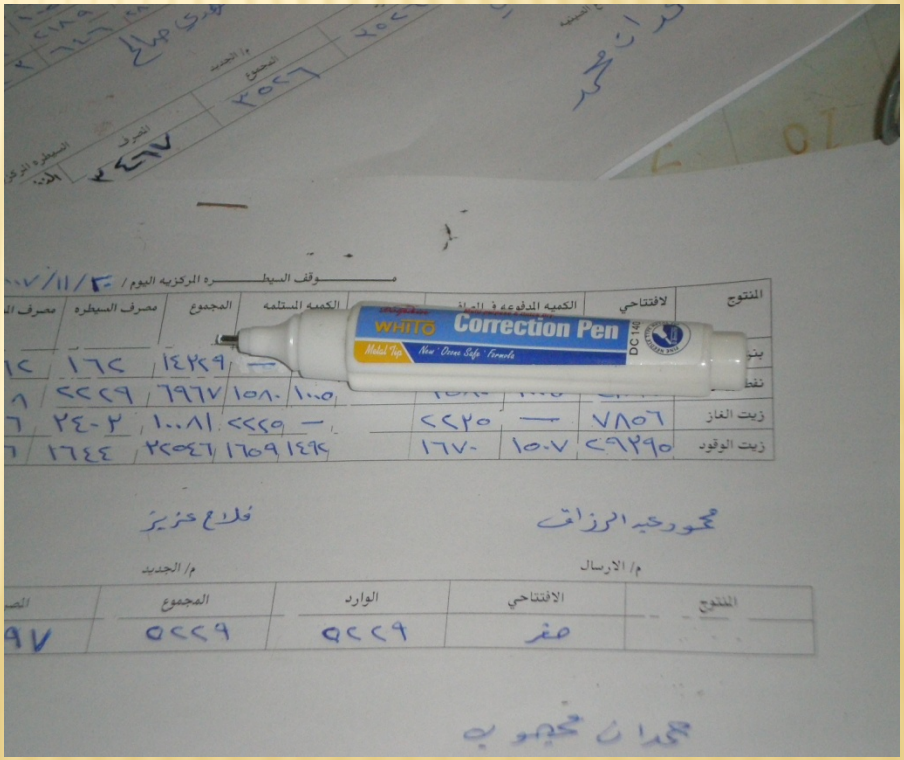
- Using Social Network Nodal Analysis I was able to take a target list of over 500 and pinpoint 32 key figures
- Given 32 possible targets I asked myself”
  - What effect do I want to get by removing these individuals?
- After looking at these effects 1 target created the greatest effect not only on his network but the others

IRAQ'S INSURGENCY RUNS ON STOLEN OIL PROFITS

NY Times: March 16, 2008

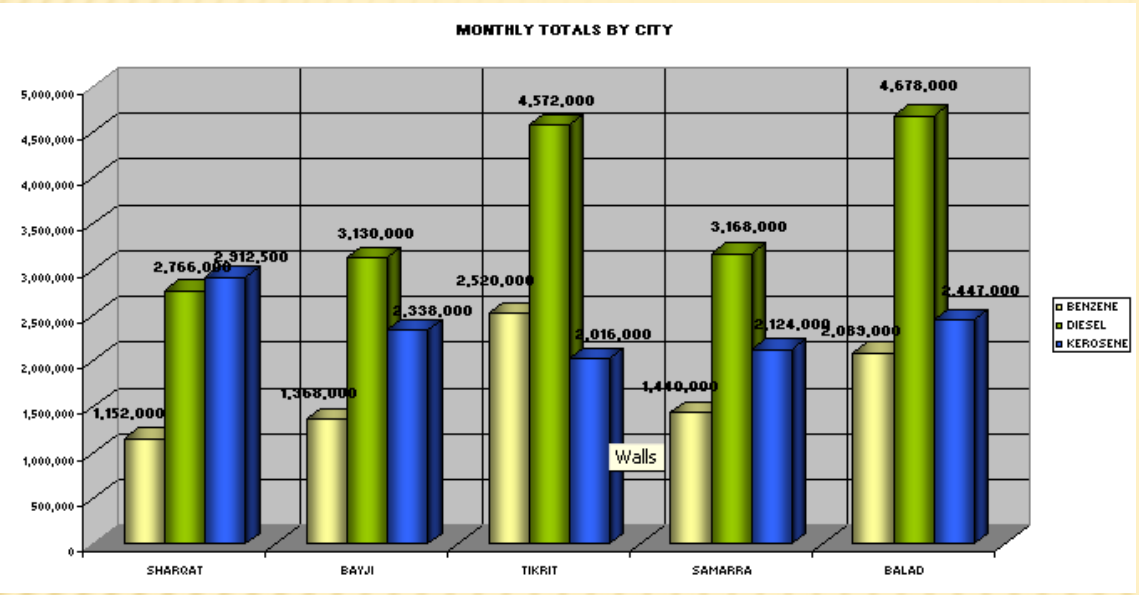
EFFECT

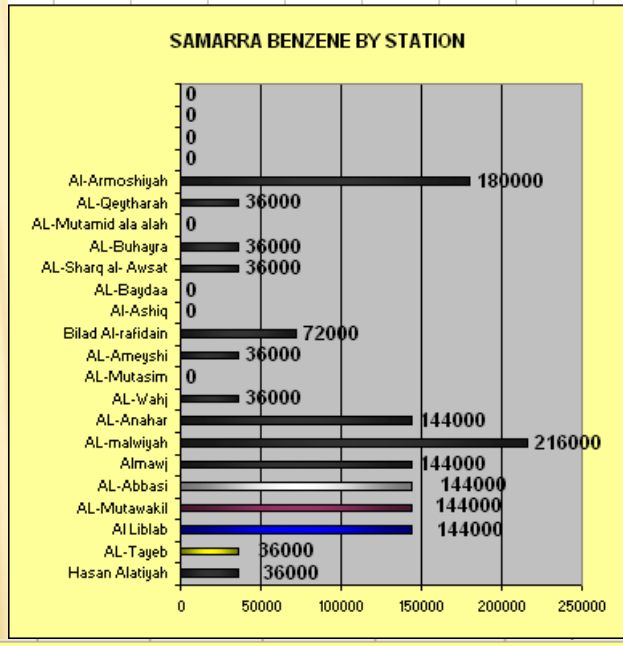
- Ghalib Ali Hamid was the Inspector General for the Iraqi Oil Ministry
  - Charged with accountability



Accountability of Products

PROVINCIAL

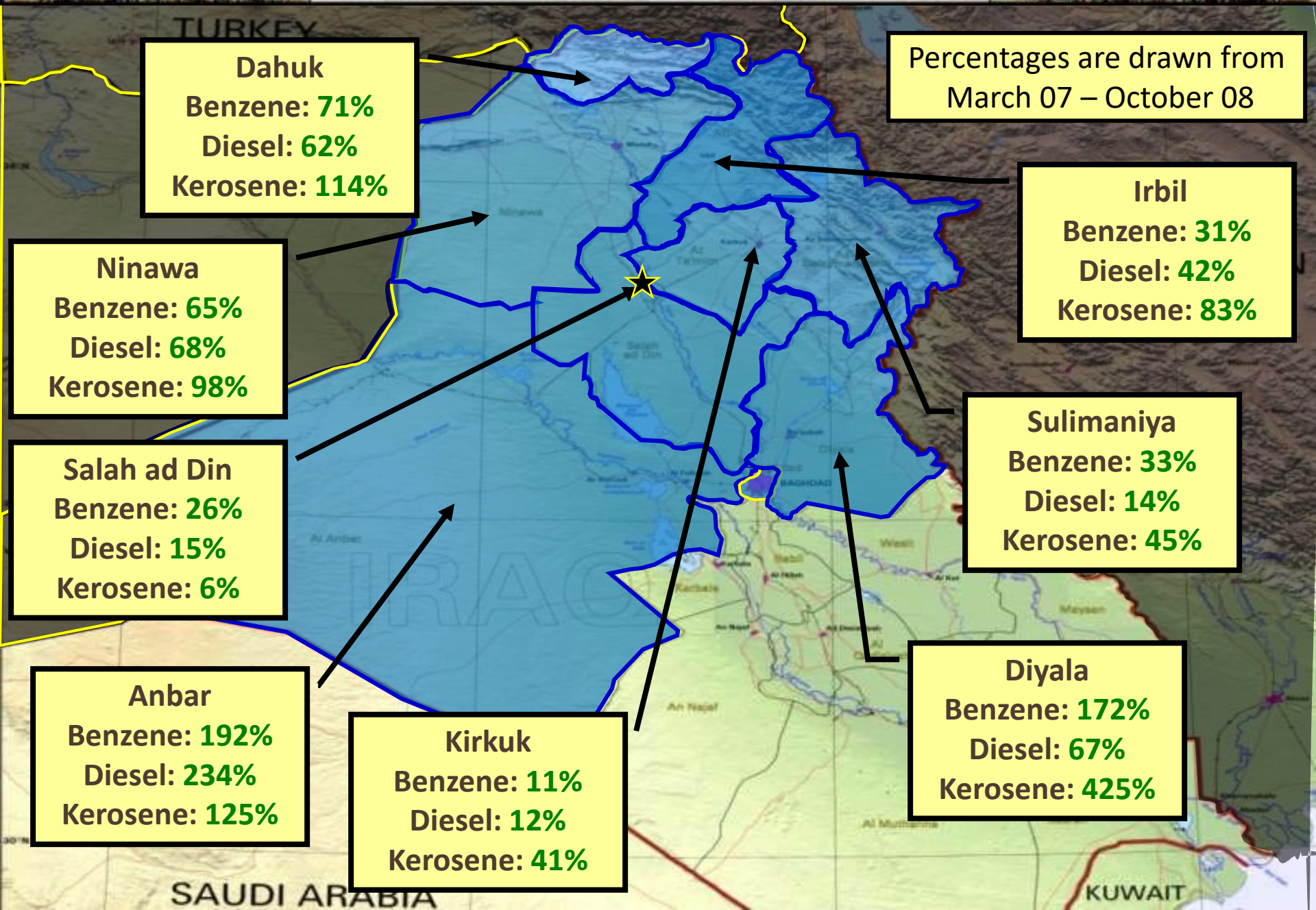




Samarra Filling Stations (Benzene)

Filling Station Name	Type	2-Jul	5-Jul	8-Jul	12-Jul	15-Jul	18-Jul	21-Jul	24-Jul	27-Jul	28-Jul		30-Jul	TOTAL	% of Total
Hasan Alatiyah	Private					36000								36000	3%
AL-Tayeb	Private				36000									36000	3%
Al Liblab	Private		36000				36000		36000				36000	144000	10%
AL-Mutawakil	Private		36000		36000		36000				36000			144000	10%
AL-Abbasi	Private	36000				36000		36000		36000				144000	10%
Almawj	Private			36000			36000		36000				36000	144000	10%
AL-malwiyah	Private	36000	36000		36000	36000		36000	36000					216000	15%
AL-Anahar	Private	36000		36000				36000					36000	144000	10%
AL-Wahj	Private										36000			36000	3%
AL-Mutasim	Private													0	0%
AL-Ameyshi	Private							36000						36000	3%
Bilad Al-rafidain	Private		36000				36000							72000	5%
Al-Ashiq	Private													0	0%
AL-Baydaa	Private													0	0%
AL-Sharq al- Awsat	Private												36000	36000	3%
AL-Buhayra	Private				36000									36000	3%
AL-Mutamid ala	Private													0	0%
AL-Qeytharah	Private			36000										36000	3%
Al-Armoshiyah	Private	36000	36000		36000	36000			36000					180000	13%
														0	0%
														0	0%
														0	0%
														0	0%
TOTAL:		144,000	180,000	108,000	180,000	144,000	144,000	144,000	144,000	36,000	72,000	0	144,000	1,440,000	

Provincial Increases '07-'08



RESULTS

- Black Market fuel prices were cut in half
- Increasing in Fuel Delivery to all Iraqi Provinces
- 90% drop in insurgent financing
- Increased accountability in oil (still a long ways away from perfect)

FINAL THOUGHTS

- " People with power to make important policy decisions often don't understand the possible or impossible."

  -Peter Singer-

- Technology has improved our efficiency on the battlefield
- Technology alone without organizational adaptation can be harmful
  - Micro management
  - Data Indecision

QUESTIONS