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NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

THESIS

**THE INSURGENCY BUSINESS: THE ISLAMIC STATE
IN IRAQ AND SYRIA, 2010–2016**

by

Beau L. Pillot

December 2017

Thesis Co-Advisors:

Nick Dew
Craig Whiteside

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**THE INSURGENCY BUSINESS: THE ISLAMIC STATE IN IRAQ AND SYRIA,
2010–2016**

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Submitted in partial fulfillment of the
requirements for the degree of

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ABSTRACT

The Islamic State (IS)—also known as Islamic State of Iraq and the Syria (ISIS)—managed to seize large swaths of territory within the sovereign countries of Iraq and Syria from 2011 to 2016. Even though its caliphate has been reduced in size and scope in 2017, the IS's entrepreneurial capability to effectively manage money, manpower, and materiel has enabled it to develop its brand as the deadliest and most widely known terrorist organization. The narrative of the IS being a governing body promoted a value proposition of financial stability, security, religious structure for divine worship, and camaraderie, thus enticing local and global customers to its brand and furthermore allowing the group to recruit talented individuals to support the caliphate. Using the human capital it cultivated, the IS developed its organizational structure and promoted its brand through entrepreneurial ingenuity, which included plundering, fabricating, and acquiring war materiel, to support its strategic objectives. The IS is generally more organized and sophisticated than any other regional non-state actor or traditional terrorist group such as Al-Qaeda. In conclusion, the IS's short-term politico-military successes and global media coverage over the last several years have enabled the group to establish a franchise that draws in the money, manpower, and materiel that allow it to continue being the world's most recognized terrorist brand.

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LIST OF ACRONYMS AND ABBREVIATIONS

AQ	Al-Qaeda
AQI	Al-Qaeda in Iraq
CAR	Conflict Armament Research
CTC	Combating Terrorism Center
DHS	U.S. Department of Homeland Security
DOD	Department of Defense
DOS	Department of State
IS	Islamic State
ISI	Islamic State of Iraq
ISIL	Islamic State of Iraq and the Levant
ISIS	Islamic State of Iraq and Syria
IW	Irregular Warfare
ODNI	Office of the Director of National Intelligence
USD	U.S. Dollars
UN	United Nations
U.S.	United States

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EXECUTIVE SUMMARY

The Islamic State (IS)—also known as Islamic State of Iraq and the Syria (ISIS)—seized large swaths of territory within the two sovereign countries of Iraq and Syria from 2011–2016. At the zenith of its expansion, the IS generated upwards of \$2 billion in revenue in a single year (2015), proclaimed governance over eight million people, and annexed over 86,000 miles of land from Iraq and Syria (Hansen-Lewis & Shapiro, 2015). This feat, coupled with the IS’s entrepreneurial skills and ingenuity, enabled it to attain the status as the world’s most recognized terrorist brand and organization, far surpassing its competitors of other violent extremist organizations.

At its pinnacle, the IS created a brand and image that they exported across the globe. By August 2015, the IS had cultivated over 40 international and local jihadist groups for allegiance and support (Barrett, 2014; Lynch, 2015). The IS brand has, in essence, gone global with a number of affiliates pledging allegiance, having inspired lone wolf attacks in Western countries, and with a name that has become correlated with terrorism. Yet, whether this brand of the IS will endure or fade away as its competitors continue to root out its followers, policymakers from around the world need to maintain a strategy in order to hedge this threat.

The IS has proven, throughout its 18-year history, to be a learning organization that is adaptive, resilient, and entrepreneurial. Even though the group has been driven out from their physical strongholds in Iraq and Syria, policymakers need to take the time to dissect and deconstruct this organization. Devoting countless resources to “decapitating” the group’s leadership may not be the solution. Instead, policymakers might consider developing a robust Information Operations (IO) multidisciplinary strategy to study and defeat the IS within such disciplines as finance, psychology, military, logistics/economics, and religion to hedge the brand the IS has established, promoted, and become. If history is an accurate indicator from which to learn, one could argue policymakers were quick to forget the IS in years past when they were beaten back in 2009 and 2010 as Islamic State of Iraq (ISI). In essence, policymakers need to reconstruct

how effective the IS actually was and avoid the temptation to walk away just because the “physical caliphate” all but disappears.

The IS could not have achieved its success just by chance or because of instability in the region. Instead, the IS’s leadership and middle management displayed sharp business acumen, entrepreneurial intellect, and resourcefulness for such achievements. The IS’s internal business practices were integral in the generation of large sums of money, the recruitment of necessary human capital, and the efficient management of acquired resources to become globally recognized as an enduring proto-state. This research, therefore, investigates the means, systems, and strategies that the IS used internally to support itself by analyzing the core resources of money, manpower, and materiel.

A. MONEY

As in any firm, corporation, or business, the IS relies heavily on capital for obtaining the necessary resources needed to meet its objectives (Kress, 2016; Mesquita & Smith, 2011). The IS’s organizational design not only wages violent tactics against its enemies, it also provides integrated structure and functioning bureaus to manage revenues for state building, propaganda, employee training, and operating expenses. The seizure of large swaths of territory allowed the group to generate funding internally, thereby providing a competitive advantage over other insurgent and terrorist groups reliant on external support.

The IS’s financial strategy is based upon territorial control, which provides it with autonomy and a diversified resource base to fuel its operations (Bindner & Poirrot, 2016). In seizing the land, the IS exerted its authority over the occupied regions’ natural resources, raw materials, commercial activities, and manufacturing base, thereby providing itself with a primary source of funding (Binder & Poirrot, 2016).

The IS’s elaborate organizational structure provides it the bureaucratic and administrative expertise to effectively manage its financial strategy. Having the business acumen and oversight at various levels yields it the ability to produce positive gains from its numerous revenue streams internal to its caliphate. This research displayed the IS

capitalizing and managing a number of revenue streams to fuel its operations unlike previous terrorist and insurgent groups. Ultimately, the IS exploited numerous different types of resources that yielded billions of dollars in revenue consisting of oil and natural gas, taxation and extortion, commercial enterprises, plundered cash, ransoms, antiquities, human trafficking, and external donations. Even though the IS generated billions of dollars at its pinnacle, the group strived to maintain detailed oversight of its expenditures and outlays. The IS incentivized its fighters and followers with monthly salaries and spent millions of dollars in marketing, propaganda, public services, and war materiel, all of which underpinned its rise to the world's most recognized terrorist brand. While the IS's financial strategy and economic activities allowed them to yield financial gains, capital cannot be acquired, and money cannot be spent, if there is no manpower.

B. MANPOWER

Whether it is a corporation or the IS, no one rules alone—organizations need a winning coalition of middle managers, foot soldiers, and loyal supporters (Mesquita & Smith, 2011). Dating back to its infant years as Al-Qaeda in Iraq (AQI) and ISI, the IS demonstrated the entrepreneurial and management expertise required to support its envisioned sophisticated financial, military, and state-like institution by always having an organizational and hierarchal protocol (Shatz & Johnson, 2015).

The growth and formation of the IS and what it achieved at its pinnacle was not a rigid step-by-step process; rather, it was fluid and ever-evolving in order to support the dynamics of governance, resource management, and military operations (Ryan, 2009; Shatz & Johnson, 2015). During the IS's peak of controlling territory from 2013 to 2015, it operated and functioned as a government with a bureaucratic hierarchy. At the top, two deputies supported the Caliph (Abu Bakr al-Baghdadi)—one for Iraq and one for Syria—forming “The Emirate,” which planned key strategic policies for the IS. Twelve governors of the IS's caliphate in Iraq and Syria supported the policies of “The Emirate” (“The Islamic State,” 2014). This command relationship was underpinned by nine councils, or ministries, which created and implemented the day-to-day policies of the IS

specific to finance, media, leadership, military, and judicial arenas (“The Islamic State,” 2014). As IS grew in size, so did its need to manage internal coordination across vast areas of territory. The IS, with the core competency of a hierarchy, had abilities to allocate personnel to locations and positions needed to support operations, thus giving the IS an advantage over other insurgent groups in the region (Johnston et al., 2016).

At its peak, the IS cultivated a robust labor force to support military operations, safeguard lines of communication, extract resources, and provide governmental services to its constituents (Cronin, 2015). The IS’s appeal of a global self-styled caliphate was integral in its recruiting efforts, legitimacy, and image, all of which underpinned its brand of being the most recognized terrorist organization. The IS’s determination and aspiration to hold territory and provide state-like institutions made it both entrepreneurial and reliant on manipulating the human capital it needed on the battlefields and in the myriad of backroom roles for managing its quasi-state institutions. The IS was able to attract thousands of foreign fighters, coerce local populations, incentivize intermediaries and black marketers, and even entice women, all of which strengthened the legitimacy of its brand.

The organization’s ability to endure goes beyond its fighters’ ability to pull the trigger. The resiliency of the IS can be traced to the vital skills of those found behind the scenes who manage its finances, market its image/brand, and allocate expertise where it is needed. From 2010 to 2016, the IS had the ability to cultivate the vast number of foreign fighters, persuade the local populations, and market its brand to its international affiliates, which bolstered its rise of distinction. During this timeframe, the IS’s expansionist territorial goals required extensive manpower, and, in order to aggressively defend its borders, war materiel was vital for protection. The IS’s organizational structure was critical to the identification, management, and procurement of materiel needed to support its tactical and strategic objectives.

C. MATERIEL

The IS needed equipment, tools, and parts to support its requirements. Whether this materiel (equipment, tools, and parts) was captured, purchased, or manufactured in an ad hoc location, the IS employed a vast array of war materiel to support its strategic objectives of expanding and defending its caliphate. The IS seized and utilized weapons and ammunition that were manufactured from over 15 countries, including China, Russia, and the United States. The preponderance of weapons utilized by the IS, originating from the aforementioned countries, was captured from the Iraqi military, the Assad (Syrian) military regime, and other rebel factions in the region (Ahmed, 2014; Nance, 2016). The volume of weapons, military equipment, and ammunition the IS plundered was estimated to be in the hundreds of millions of dollars and could potentially support its combat operations for many years to come. The seized U.S. and Russian military hardware not only provided lethality to the IS on the battlefield but also bolstered its image and brand by depicting its ability to defeat a militarily superior force on the battlefield. At its pinnacle, the IS amassed a profuse arsenal of military hardware that could last years and potentially fund a resurgence. In needing to sustain its spoils of war, the quasi-state established a self-styled industrial base to legitimize its franchise.

Even though the IS captured huge troves of weapons, it required a robust supply of ordnance and ammunition in order to continue defending and expanding the peripheries of its caliphate. Given the kinetic environment the IS operated within, captured ordnance and ammunition would only last the group so long. To maintain adequate levels of these resources, the IS's entrepreneurialism and ingenuity enabled the group to manufacture and deploy ammunition, ordnance, and IEDs on a quasi-industrial scale (Conflict Armament Research [CAR], 2016). Evidence shows that the IS employed a centrally managed weapons production capability within its caliphate using highly bureaucratic and strict reporting lines of standardization and quality control to manufacture mortars, mortar tubes, and rockets (CAR, 2016). The scale of production from the IS equates to the sophistication and capacities of a conventional military force, and the IS thereby distinguished itself and its brand from other regional insurgent groups.

In addition to this centralized control of its weapons production, the IS's ability to standardize its weapons manufacturing demonstrates its intellectual expertise, business acumen, and logistical competency. Thus, the IS's entrepreneurial leadership recognized the need to preserve and maintain its military hardware, which led the group to establish numerous vehicle maintenance facilities within its peripheries. These facilities overhauled and upgraded its inventories of all types of vehicles, ranging from installing multi-spectral camouflage on tanks, reinforcing armor of fighting vehicles, and even fabricating and fusing together two separate and distinct military weapons into a single principal end item. Evidence suggests the IS maintained serialized management and accountability with its military hardware (Mitzer & Oliemans, 2017c). Inventory of the IS's organic property provided it such benefits as asset visibility, organization of warehouses, accuracy of resupply, and internal staff efficiency, which demonstrated the innovative skills for endeavoring to manage its resources and institutions.

Given its history, resiliency, and adaptability, the IS may lose its physical caliphate, but its ideological vision is likely to continue. The group needs to be recognized not only for the barbaric and violent acts to which it subjects its enemies but also for its level of ingenuity, resolve, and tenacity. This insurgency defied the odds and rose from a local criminal syndicate network, starting in 2010, to becoming the world's most recognized terrorist brand in 2016. For a non-state actor such as the IS to have accumulated the amount of wealth it did, seized and governed the amount of territory it controlled, and defended itself against such overwhelming odds, should be recognized for the feat it is.

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I. INTRODUCTION

If the west sees ISIS as an almost stereotypical band of psychopathic killers, we risk dramatically underestimating them.

—General Stanley McChrystal (Malik, 2015)

Modern-day nations find themselves confronted with adaptive enemies who present irregular threats in the form of terrorism, insurgencies, and criminal networks (Department of Defense [DOD], 2010). Throughout the world, law-abiding citizens find these threats intertwined among their own populations. The United States faces challenges with regional areas of instability across the globe as it seeks to protect its national and strategic interests. In order for the United States to counter future conflicts, policymakers must address changes presented by our adversaries and adapt to new methods of deterrence (DOD, 2010).

Evolving technologies, failing states, and lack of regional security allow insurgencies greater potential for success (DOD, 2010; Jones, 2016). According to Seth Jones (2017), the author of *Waging Insurgent Warfare*, as of 2016, 37 active insurgencies had been recognized throughout the world. Of these 37 active insurgencies, this author speculated that none have received notoriety or exposure to compare to the Islamic State (IS).

Department of the Army Field Manual 3-24, *Counterinsurgency*, defines the term *insurgency* as “an organized movement aimed at the overthrow of a constituted government through the use of subversion and armed conflict” (Department of the Army, 2006, p. 1-1). Insurgencies are clandestine or non-state groups that wage political and military tactics, seeking to overthrow the interim government (Jones, 2016). An insurgency distinguishes itself from a terrorist organization through its attempt to gain control over the population of sovereign states (Central Intelligence Agency, 2012). Although the IS can utilize a number of tactics to achieve its strategic objectives, it is first an insurgency that uses terrorism as a tactic.

At the zenith of its expansion, the IS generated upwards of \$2 billion in revenue in a single year (2015), proclaimed governance over eight million people, and annexed over 86,000 miles of land from Iraq and Syria (Hansen-Lewis & Shapiro, 2015). The IS could not have achieved its success just by chance or because of instability in the region. Instead, the IS needed sharp business acumen for such achievements. This author is convinced that the IS's internal business practices were integral in the generation of large sums of money, the recruitment of necessary human capital, and efficient management of acquired resources to become globally recognized as an enduring proto-state.

This thesis investigates the means, systems, and strategies that the IS used internally to support itself. The thesis analyzes the core resources of money, manpower, and materiel within the IS, in an attempt to answer the following question: How did the IS manage its resources (money, manpower, materiel) in order to establish itself as the world's most recognized terrorist brand and organization? This chapter provides background and context into the IS, the methodology for this research, further research questions, benefits of research, and the overall organization of this thesis.

A. THE ISLAMIC STATE TODAY

The IS—also known as the Islamic State of Iraq and Syria (ISIS), the Islamic State of Iraq and the Levant (ISIL), and Daesh—originates from the ideology of Salafi—Jihad (Nance, 2016). This ideology combines two criteria: returning to a pious state, similar to first-century Muslims following the death of the prophet Mohammed; and advocating for a violent jihad to be personal, religious, and required of every Muslim (Weiss & Hassan, 2015).

The IS's origins date back to 1999 to the militant group Jama'at al-Tawhid wa'l-Jihad, led by the Abu Musab al-Zarqawi, who was of Jordanian descent (Bunzel, 2015). Shortly after the United States led the invasion of Iraq in 2003, al-Zarqawi moved his militant operations into Iraq to wage jihad against Western occupiers (Bunzel, 2015). Concurrently, Osama bin Laden (leader of the terrorist organization Al-Qaeda) saw the U.S. occupation within Iraq as an opportunity to continue his vision of waging global jihad against Western infidels (al-'Ubaydi, Lahoud, Milton, & Price, 2014). In 2004, al-

Zarqawi committed to bin Laden, renaming his group Al-Qaeda in Iraq (AQI), thereby giving him the franchise recognition to consolidate the intellectual, human, and financial capital to fuel a growing insurgency in Iraq (Bunzel, 2015; Johnston et al., 2016). It can be argued that, to this day, well after his June 2006 death from coalition airstrikes, al-Zarqawi's insurgency still exists and wages on (Bunzel, 2015; Johnston et al., 2016).

Al-Zarqawi's death, coupled with increased U.S. military troop surges and the Iraqi "Sunni Awakenings," triggered a decline in AQI's influence and cohesion in Iraq (Weiss & Hassan, 2015). In late 2006 to early 2007, AQI joined with other extremist groups in Iraq to form the Islamic State of Iraq (ISI), shedding the name AQI and subsequently rendering all ties to Al-Qaeda nebulous (Johnston et al., 2016). ISI envisioned a modern state with loosely defined boundaries and the ability to extend its force globally, and filled with individuals who would swear their allegiance to the caliph leader of this Muslim land (Johnston et al., 2016). ISI would provide "similar services as any modern state, but it would improve both the religious and worldly conditions of its citizens, with specific services including judicial processes, dispute resolutions" and support for families of individuals killed while carrying out duties on behalf of ISI (Johnston et al., 2016, p. 2).

In 2011, after years of fighting an irregular warfare (IW) campaign comprised of assassinations against coalition and security officials in Iraq, ISI's new leader, Abu Bakr al-Baghdadi, shifted part of his organization's operations into Syria to capitalize on the instability resulting from the Syrian Civil War (Johnston et al., 2016). As ISI began to develop capacity, capabilities, infrastructure, and influence, concurrently the United States withdrew its military presence from Iraq, creating a power vacuum amongst the warring Sunni and Shia Muslim population and sectarian divide (Nance, 2016).

In April 2013, ISI leadership rebranded itself as the Islamic State of Iraq and Syria (ISIS) and severed ties with any Al-Qaeda affiliates or organizations (Nance, 2016). Using the Syrian Civil War as a smoke screen to mask its movements, ISIS secured large swaths of territory in eastern Syria during 2012 and 2013 (al-'Ubaydi et al., 2014). Concurrently, Iraq began to see extensive antigovernment protests across the country due to Shia-led movements suppressing Sunni populations (Johnston et al., 2016).

Maintaining its conquests in Syria, ISIS saw this as an opportunity to weaken government forces in Iraq by utilizing the ground lines of communications using the porous borders of the neighboring countries. In June 2014, ISIS captured the Iraqi city of Mosul where the group renamed itself the Islamic State (IS), proclaimed al-Baghdadi as the caliph of all Muslims, and captured billions of dollars in U.S. weapons and equipment (Johnston et al., 2016). The world began to watch as the IS seized numerous oil fields, hundreds of millions of dollars in banks, liquid assets, and whole cities such as Mosul, Iraq, and Al-Raqqa, Syria (Nance, 2016).

Currently, the IS is an insurgency that has morphed into a proto-state using IW and terrorism as a tactic seeking to establish a caliphate, uniting the Muslim world under one banner (al-'Ubaydi et al., 2014). As depicted in Figure 1, the IS's strategic vision of the caliphate expands through northern Africa, parts of Europe, and the Middle East.



Figure 1. Envisioned Geographic Span of the IS's Caliphate. Source: al-'Ubaydi et al. (2014).

Unlike its predecessors, AQI and ISI, the IS controlled territory within two sovereign countries in the Middle East (Fanusie & Entz, 2017). Currently, much of its expansionist policies have been retracted due to suffocating international pressure, military bombardment, and economic sanctions placed on the quasi-state. As severely diminished as the IS currently is, it continues to adapt, innovate, and attempt to manage money, manpower, and materiel in efforts to support its ideological goals.

B. SCOPE AND METHODOLOGY

The IS's strategic goals compel it to develop methods of sustainment in order to support its desired state-like institutions of governance, security, and legal proceedings (Kennedy, 1988). Therefore, this thesis focuses on the business-like methods and frameworks utilized by the IS to manage its money, manpower, and materiel in order to sustain its organization. Although the specific business strategies are not openly available, an examination of its core resources through patterns of behavior may shed light on the practices the IS uses to manage its money, manpower, and materiel.

The methodology employed in this research is qualitative, using detailed descriptions of specific situation(s) found in unclassified news articles, think-tank research reports, peer-reviewed scholarly journals, and translated documents available from the Combating Terrorism Center (CTC) of the United States Military Academy and a graduate research fellow from Oxford University, Aymenn Jawad Al-Tamimi. In utilizing these different types of resources and data sources, this author uses the framework of money, manpower, and materiel to analyze the IS's economic durability.

To date, this author has found limited research that explicitly focuses on the IS and its logistical capacity, business strategy, sustainment methods, and capabilities. This thesis, therefore, contains chapters and subchapters that vary in length due to availability of open source information and data. Because of this, some content and sections of this report are more speculative. The end goal of this research is to provide a deeper understanding of the logistical capabilities of the IS through a focused analysis into its methods of resource management of money, manpower, and materiel research questions.

C. RESEARCH QUESTIONS

The primary research question explored in this thesis is as follows:

- How did the IS manage its resources (money, manpower, materiel) in order to establish itself as the world's most recognized terrorist brand and organization?

Secondary questions explored in this thesis include the following:

- What business strategies did the IS employ that allowed it to build capacity in money, manpower, and materiel, separating it from other insurgent groups?
- What kind of strategies did the IS use that made it resilient and able to maintain itself when faced with policies designed to hinder its resource base?
- How can United States policymakers apply their knowledge of the IS business strategy to curtail its resource management activities during future conflicts?

D. BENEFITS OF RESEARCH

Today's non-state adversaries continue to resort to the IW of insurgencies, criminal networks, and terrorism to spread interests and tactics. Having an understanding of the resiliency and methods that tangibly fuel non-state actors' ideologies may provide policymakers with the appropriate knowledge needed to develop strategies that can affect the funding, sustainment, and economic durability of said-name organizations. Additionally, this thesis provides a deeper understanding of how the IS operates, given the breadth and strength of IS materiel control and support. Lastly, this research aids in forming new theories about how the IS may react in future conflict while expanding our understanding that the IS does operate with competent business acumen.

E. ORGANIZATION OF STUDY

Chapter II analyzes the fiscal infrastructure of the IS specific to its financial management bureaus, revenue streams, and expenditures. It also provides insight into the financial enterprise of the IS, analyzing the strategy and institutions used to manage its

money. Furthermore, it details the numerous revenue streams the IS capitalizes on to support its quasi-state. Last, it displays the different types of expenditures the IS outlays to maintain its caliphate.

Chapter III analyzes the innovative manpower framework the IS established in order to support its strategic goals of the global caliphate. It also provides insight into the transformation of the organizational and hierarchical structure within the IS. Additionally, it explores the local and international reservoir the IS recruits and employs as a workforce, and depicts evidence on the IS's aptitude to conduct talent management on its potential labor force in order to support the needs and services within the caliphate. Last, the chapter compiles the number of fighters the IS has accumulated throughout the years to support its operations.

Chapter IV analyzes the IS's entrepreneurial capability with managing the war materiel it employed to expand and defend its caliphate. It also displays the vast amount of war materiel (e.g. tanks, vehicles) that the IS seized throughout Iraq and Syria. Furthermore, it investigates the IS's ability to generate an industrial base for manufacturing ordnance and armored vehicles while demonstrating ingenuity in enhancing its war materiel within its inventories. In addition, the chapter also analyzes the logistical competency of the IS, given the challenging environment it operates in, with constrained resource pools and intense pressure from the international coalition's military campaign to stifle its objectives.

Chapter V provides analysis for linking all three resources and the success that they yield for the proto-state. It also provides an aggregate analysis by succinctly linking the group's entrepreneurial capabilities to its management of money, manpower, and materiel, thereby creating the brand of the *deadliest and most widely known terrorist organization*. Additionally, it identifies recommendations for policymakers and future areas of study for continuing to hedge the threat of the IS.

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II. MONEY

There are two things a brother must always have for jihad, the self
and money.

—An Al-Qaeda operative (Benner, 2011)

As in any firm, corporation, or business, an insurgency relies heavily on capital for obtaining the necessary resources needed to meet its objectives (Kress, 2016; Mesquita & Smith, 2011). The IS's organizational design not only wages violent tactics against its enemies, it also provides integrated structure and functioning bureaus to manage revenues for state building, propaganda, employee training, and operating expenses (Boll, 2017; Johnston et al., 2016). This chapter analyzes the financial infrastructure of the IS specific to its financial management bureaus, revenue streams, and expenditures. Section B provides insight into the financial enterprise of the IS, analyzing the strategy and institutions used to manage its money. Section C details the numerous revenue streams the IS capitalizes on to support its quasi-state. Section D displays the different types of expenditures the IS outlays to maintain its caliphate.

A. FINANCIAL ENTERPRISE

The creation of the IS's quasi-state or caliphate provides them a competitive advantage over other insurgent groups and terrorist-like networks (Bindner & Poirot, 2016). The creation of the IS's caliphate allowed the group to generate funding internally, thereby providing a competitive advantage over other insurgent and terrorist groups reliant on external support.

1. Strategy

The IS's financial strategy is based upon territorial control, providing the IS with autonomy and a diversified resource base to fuel its operations (Bindner & Poirot, 2016). Having territory under its control, the IS can exert authority over the industrial, commercial, and agricultural commerce to finance its objectives (Bindner & Poirot, 2016).

As stated in Chapter I, at its pinnacle, the IS generated upwards of \$2 billion in revenue in a single year (2015), while proclaiming governance over eight million people, and annexing over 86,000 square miles of land from Iraq and Syria (Hansen-Lewis & Shapiro, 2015). In seizing the land, the IS exerted its authority over the occupied regions' natural resources, raw materials, commercial activities, and manufacturing base, thereby providing itself with a primary source of funding (Binder & Poirot, 2016). Thus, the IS's territorial holdings provided this quasi-state with an independent economic source of funding and revenue.

An internal document drafted by the IS validates its strategy: "The wealth of the State is the principal component and source of financing for all internal and external operations, and the existence of secure financial resources whose value does not change in every time and place is a must" (as cited in "The ISIS Papers," 2015).¹ Using the industrial, commercial, and agricultural activities under its influence, the IS extracts the maximum amount of capital from its resources, a system that mirrors the economic model of an autocratic, extractive regime (Hansen-Lewis & Shapiro, 2015).

2. Financial Structure

This author assumes that the overall organization structure of the IS provides the group with a second competitive advantage over its contemporaries—the financial strength needed to manage and account for the resource of money. Consisting of multiple levels of command and bureaucracy, the IS's structure consists of the following:

- The caliph, or leader, of the IS
- 2 deputy caliphs—each assigned to either Iraq or Syria
- 7–14 ministerial *diwans* (cabinet or council), each overseeing a specific functional area such as finance, military, social affairs, and security
- Multiple committees and *wilayats* (provincial leaders of provinces that implement IS policies locally) (Jones et al., 2017; Nance, 2016)

¹ This is a quote from Abu Abdullah al-Masri found in the IS internal document "Islamic State Caliphate on the Prophetic Methodology" from 2013–2014.

Chapter III of this thesis focuses on the breadth of the organizational structure. Within the IS, the Diwan, or Ministry of Finance—led by the minister of finance—oversees all revenues and expenditure streams within the caliphate (Nance, 2016; Office of the Director of National Intelligence [ODNI], 2016). This author argues that while all positions within the chain of command are relevant, the minister of finance proves the most significant in the management and sustainment of the group’s financial resources. The minister conducts this management through the establishment of finance centers located throughout IS-controlled provinces, or *wilayats*, allowing distribution of funds to support the payment of fighters, public services, and accountability of numerous cash storage sites containing large amounts of seized cash (Boll, 2017; ODNI, 2016; Windrem & Arkin, 2015).

Based on resources provided by Aymenn Jawad Al-Tamimi’s and CTC’s Harmony Program of translated IS administrative documents (Figures 2 and 3), this author projects that the financial hierarchical structure within the IS not only meticulously maintains the records management of its finances, but also displays a direct line of descent from AQI to today’s IS (Jung, Ryan, Shapiro, & Wallace, 2014).

Using these historical documents shown in Figures 2 and 3, this author captures two internal financial type forms depicting evidence on resource allocation (money) to its personnel or fighters from both the IS and its predecessor ISI. Figure 1 depicts the sum of outlays for the month of November 2015 from the *wilayat* (province) of al-Anbar. When translated, the documents capture outlays of salary payments, incidental expenses (food payments), fuel provisions, winter clothes for workers, and weapons expenses. Figure 2 is claimed to be an actual spreadsheet from IS that consists of numerous tabs titled as “Debts, Rent, Expenses, Income, and Management,” summarizing records on more than 850 fighters (Jung et al., 2014). These translated documents provide this author with justification that the IS has proficient business acumen to manage the resource of money. By using major cities and hubs such as Mosul and Raqqah, the group employs a centralized budget which is appropriated daily to its *walis*, or governors, throughout its caliphate for its outlays of salaries, services, education, and so forth (Jones et al., 2017; Solomon, 2015b).

The IS’s organizational structure provides it the bureaucratic and administrative expertise to effectively manage its financial strategy. Having the business acumen and oversight at various levels yields it the ability to produce positive gains from its numerous revenue stream internal to its caliphate.

B. REVENUE STREAMS

Research has shown that unlike previous terrorist and insurgent groups, the IS has capitalized on a number of revenue streams to fuel its operations. Within its caliphate, the IS exploited numerous different types of resources. This section focuses on eight to 10 documented revenue streams, consisting of oil and natural gas, taxation and extortion, commercial enterprises, plundered cash, ransoms, antiquities, human trafficking, and external donations.

1. Oil and Natural Gas

It can be argued that at its pinnacle, the single most important revenue stream for the IS was the oil and refined oil products that it exploited within its self-styled caliphate (Jones et al., 2017). At IS’s apex in 2014 to 2015, the IS controlled 15 oil fields in Syria

and 10 in Iraq, which were key elements for revenue generation (Bindner & Poirot, 2016). Before the international coalition began targeting the IS, the group purportedly extracted upwards of 50,000 barrels per day (bpd) in Syria and 30,000 bpd in Iraq, yielding a potential \$3–\$8 million of U.S. dollars (USD) per day in earnings (Devenny, 2014; Hansen-Lewis & Shapiro, 2015). Coupled with the pressure from the international military campaign to combat the IS, the aging oil infrastructure in Syria and Iraq required constant preventative maintenance such as water pressure injects to keep the output reliable and reservoir management for machinery and diagnostics (Johnson, 2014). Due to the kinetic environment, skilled labor, intellectual capital, and spare parts were hard to obtain for the long-run production of oil within its caliphate, thereby hindering the ISs' ability to generate maximum output of this resource (Hansen-Lewis & Shapiro, 2015).

Lacking the conventional oil production capabilities and access to formal economic markets, the IS sold its product to other insurgent groups, the Assad Regime in Syria, or to intermediaries who smuggled the product to neighboring counties to be sold at a discounted rate (Bindner & Poirot, 2016; Hansen-Lewis & Shapiro, 2015). In addition to this economic setback, in April 2016, the international coalition began directly targeting the oil infrastructure of refining, storage, and transportation equipment of both Iraq and Syria (Bindner & Poirot, 2016; Boll, 2017; al-'Ubaydi et al., 2014). To combat this strategy of decreasing oil revenue, the IS adapted and collaborated with local entrepreneurs to establish *teapot* refineries, using ingenious operations that heat the crude oil to separate out low-quality gasoline and diesel, thereby selling these resources locally for cash (Boll, 2017). In addition, the IS began to transport oil using smaller trucks (e.g., Kia Bongo) instead of actual tankers in order to blend into the local populations and avoid detection from airstrikes (Nance, 2016).

As of September 2016, the IS has lost all of its oil refineries in Iraq due to its own overreach and the international coalition's targeted attacks (Boll, 2017). Despite its loss in Iraq, the IS still holds significant oil fields in Syria, which allegedly equate to 70 percent of its overall income (Boll, 2017). At its height of exploiting oil for profit, the IS generated over \$1 billion in 2014, and over \$600 million in 2015 (Bindner & Poirot, 2016).

From 2014 to 2015, the IS controlled at least a dozen natural gas fields in Iraq and Syria, generating annual revenues of \$489 million USD and \$350 million USD, respectively (Bindner & Poirot, 2016). As with the oil fields, the maintenance of these facilities, which extracted the resources, required specific purification equipment and practical expertise, all of which were scarce in IS-controlled territories (Bindner & Poirot, 2016; Hansen-Lewis & Shapiro, 2015). It can be argued that in order to extract and generate some type of financial gain for the IS, the organization orchestrated contracts with the Syrian regime or local public syndicates (Bindner & Poirot, 2016). Although the international coalition airstrikes mainly targeted oil facilities, the natural gas revenue stream was affected by this kinetic strategy, which reduced this resource's utility for the IS (Bindner & Poirot, 2016). This author is currently unable to confirm whether the IS still generates revenue from natural gas or holds any facilities to do so.

2. Taxation and Extortion

Data suggests that the second most lucrative revenue stream inside the peripheries of the IS is taxation and extortion (ODNI, 2016). Looking back at the infancy of the IS in 2006, the organization then referred to as ISI generated between \$70 to \$200 million USD per year through extortion and smuggling rackets in Iraq (Burns & Semple, 2006). Taxes were ubiquitous under the rule of the IS, greatly affecting the economic activities of the eight million people once under its control (Binder & Poirot, 2015; Mesquita & Smith, 2011). The IS substantiates the collection of taxes from its local residents as “*zakat*, or a mandatory tax paid as one of the pillars of Islam” (al-'Ubaydi et al., 2014, p. 61).

In 2014 and 2015, the IS generated an estimated \$360 million and \$800 million USD annually from a broad range of revenue-generating duties. These included fuel/vehicle tax, school fees for children, cash withdrawal from banks, forced donations (extortion of) by local businesses, agriculture, protection tax (*jizia*) levied on religious minorities, transit duties on smugglers crossing borders, and customs tolls on trucks entering/crossing the border of the caliphate (Bindner & Poirot, 2016; Hansen-Lewis & Shapiro, 2015). In addition, the IS utilizes its strict rule of sharia law to impose penalties

on transgressions, which include smoking cigarettes, failing to retort religious questions properly, not having IS-issued license plates on personal vehicles, and women being fined for clothing violations (Bindner & Poirot, 2016). Lastly, within the caliphate, the IS exploited the salaries of Iraqi government employees by having them travel to non-IS-held areas to collect their paychecks and then tax half the value upon reentry (Fanusie & Entz, 2017). This type of racket went on until the latter part of 2015, when the Iraqi government cut wages to employees in IS-held cities (Coles, 2015). Currently, this author does not have accurate estimates of the IS's revenue from taxes and extortion, but believes it has drastically decreased due to dwindling territorial loss and shrinking taxpaying populations.

3. Commercial Enterprises and Agriculture

For the IS to maintain its quasi-state, it must keep businesses running within its self-styled caliphate. The IS exerts control over farming, factories, and other enterprises within its territory, thereby *nationalizing* these activities and funding the organization's revenue base (Fanusie & Entz, 2017). At its peak in 2015, the IS controlled a plethora of commercial and manufacturing facilities across Iraq and Syria, including phosphate, cement and sulfuric acid plants, salt mines, wheat stockpiles, fish farms, and grain silos (United States Department of Homeland Security [DHS], 2016). As a result of its conquests on the battlefield, the IS purportedly generated millions of dollars from these accompanying resources on the black market and provided food to feed its fighters and populations by leveraging the 400,000 farmers inside the caliphate (Jaafar & Woetz, 2016).

This author was limited by the amount of data available on this revenue stream, but according to the Center for the Analysis of Terrorism, in 2015 the IS generated over \$140 million USD in agriculture sales (Fanusie & Entz, 2017). Conversely, the Russian ambassador to the United Nations, Vitaly Churkin, claimed the IS generated an estimated \$200 million USD from barley and rye, \$250 million USD from phosphate, and \$100 million USD from cement sales in 2015 (Jaafar & Woetz, 2016).

A 2017 report from the RAND Corporation, *When the Islamic State Comes to Town* (Robinson et al., 2017), supports the numbers stated in the preceding paragraph. The RAND report compiled data using commercial satellite imagery and remote sensing data to provide seven indicators of economic activity: “electricity consumption (through nighttime lighting); population flows (a measure of labor supply and consumer demand); agricultural activity; commercial vehicle traffic; industrial activity; market activity; and damage to key economic infrastructure” (Robinson et al., 2017, p. 82; Hansen-Lewis & Shapiro, 2015). The report used panel regression analysis to assess how variances in IS control within the caliphate over time affected these seven economic activities (Robinson et al., 2017). Evidence of sustainment in the activity of agriculture, industry, and markets correlated to specific cities and the geographic location within the caliphate (Robinson et al., 2017). Cities that were insulated from military competition—Mosul and Raqqa—within the caliphate were comparatively more stable in these activities throughout the IS tenure when compared to contested cities on the periphery, such as Ramadi and Deir ez-Zor (Robinson et al., 2017). Given this type of analysis, this author hypothesizes that while agriculture and commerce may have produced financial utility for the IS, it did so primarily in deeper territory.

Using translated documents from Aymen Al-Tamimi, Figure 4 provides the framework to the author’s thesis on the IS managing its resources. This image captures an internal IS notification, informing the population to reserve stocks of grain in their homes due to the economic war being waged against the IS. When translated to English, the document reads,

The deranged war being waged against the Islamic State by the Crusader alliance and their followers is no secret, and the economic war is one of the methods of this war. Thus, we must make preparations to resist it and that will be done by leaving reserve stocks of grain in every home of the homes of the Muslims, which is in compliance with the command of God Almighty to prepare material and His command for us in this sort of state of affairs to accumulate storage with His words: “And what you harvest, leave in its spikes.” (Al-Tamimi, 2015b)

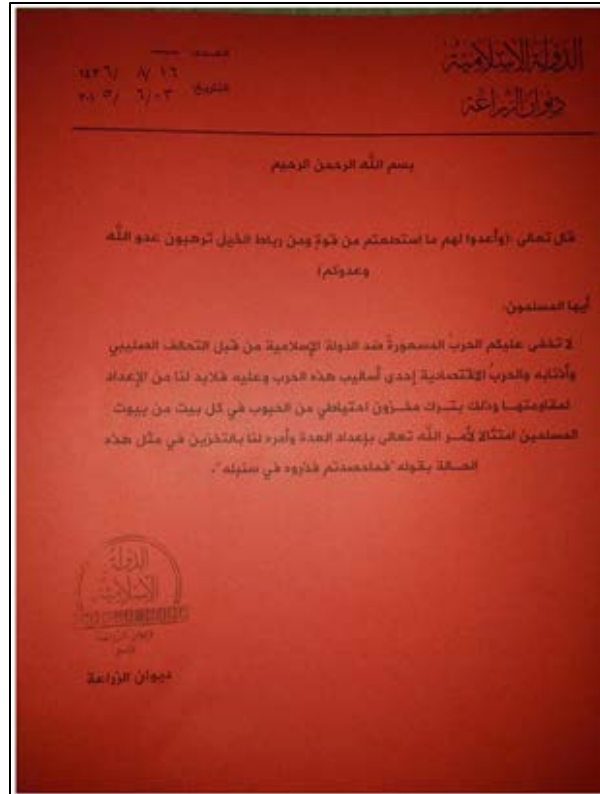


Figure 4. General Notification—Agricultural Department, June 3, 2015.
Source: Al-Tamimi (2015b).

This quote clearly validates the assumption that the IS recognized that its enemies were negatively affecting operations by disrupting its economic durability and logistics. This author can theorize that this demonstrates that the IS leadership was adapting to the conflict and attempting to allocate its resources accordingly, for the long run. While it may have been too late in the planning and provision of supplies, it does show the IS practicing pragmatic business acumen when faced with critical circumstances.

4. Cash from the Banking System

While having cash and liquid capital on hand for reserves is paramount to fund operations, it is a non-renewable source of funding for the IS. When the IS seized Mosul in 2014, it plundered an estimated \$425 million USD from the central banking system within Mosul (Fanusie & Entz, 2017). By 2015, the IS allegedly had over 115 banks (80 in Iraq and 35 in Syria) under its control and looted anywhere from \$500 million to \$1

billion USD that same year (Boll, 2017; Fanusie & Entz, 2017). International sanctions precluded the IS from entering the global financial system, thereby limiting the banks they controlled to deposits only (Boll, 2017). Despite this setback, the IS used an alternative method of earning money by trading foreign currency for local notes outside the traditional banking systems (Fanusie & Entz, 2017). Using *hawala* networks, “whereby the money is paid to an agent who then instructs a remote associate to pay the final recipient,” the IS was able to move money in and out of the caliphate to purchase USD at discounted rates (Fanusie & Entz, 2017, p.14). Once the currency was converted, the IS sent this form of capital back to the black markets within the caliphate to use at its discretion (Boll, 2017). Currently, this author does not have an accurate estimate of the amount of cash on hand within the IS, but speculates it has decreased significantly due to territorial losses, liberated cities, operating expenses (based on the research conducted).

5. Kidnapping for Ransom

Since its inception as ISI back in the mid-2000s, the IS has resorted to kidnapping, ransom, and assassinations to finance its operations by targeting politicians, wealthy executives, and foreigners (Burns & Semple, 2006). While not its most lucrative income stream, it still generated an estimated \$20 million USD in 2014 and \$100 million USD in 2015; one could argue this is the most widely reported enterprise for the IS (Bindner & Poirot, 2016; Hansen-Lewis & Shapiro, 2015). The IS would prefer to exploit “Westerners” or foreigners for ransom, demanding upwards of \$20 million USD for their release but typically only yielding \$3–\$5 million USD (Bindner & Poirot, 2016; Fanusie & Entz, 2017). As the territorial losses continue to mount for the IS, this author projects that the IS will increase kidnappings for ransom in areas lacking full governance, as well as begin abducting significant members of the local population to yield monetary gains. One example is the IS’s 2016 kidnapping of over 200 Assyrian Christians in Syria’s Hasakah province in exchange for several million dollars provided by worldwide donors (Bindner & Poirot, 2016; Fanusie & Entz, 2017).

6. Antiquities Trade

Behind ransoms, the antiquities trade within the IS receives significant attention from the media, and, while the profits from antiquities trafficking are difficult to quantify, this enterprise helps the IS diversify its funding streams (Fanusie & Entz, 2017). At its peak in 2015, the IS raided and controlled 7,000 (2,500 in Iraq and 4,500 in Syria) United Nations Educational, Scientific and Cultural Organization (UNESCO)–protected sites such as Palmyra, Nimrud, Apamea, and Nineveh (Bindner & Poirot, 2016; DHS, 2016). The amount of revenue it has generated from these sites is argued to be anywhere from \$4 million to \$7 billion USD to date (Rose-Greenland, 2016). Supporting evidence of these estimates correlate to the pre-IS antiquities industry in Syria, which “generated more than \$6.5 billion USD annually and accounted for 12 percent of the country’s gross domestic product” (DHS, 2016, p. 9). To manage this resource, the IS uses its officials within the Antiquities Division of the Ministry of Natural Resources to sell dig permits to local excavators and remove relics out of the caliphate, into neighboring countries, and then onto the international market (Rose-Greenland, 2016). In addition to the profit from dig permits, the IS imposes a tax on the salable artifacts or often directly pilferages the relics themselves for sale (Rose-Greenland, 2016). This author speculates that, due to its shrinking borders and international pressure, the IS’s antiquities revenue stream has degraded significantly since its highpoint.

7. Human Smuggling and Trafficking

Although the revenue stream generated from smuggling and trafficking humans is nearly equal to antiquities in terms of leveraging illicit networks and black markets, it also provides incentives for future recruits to enlist as soldiers. At this time, this author has been unable to find annual estimates on human trafficking, but according to a 2016 United Nations High Commission for Human Rights (2016) report, *The Protection of Civilians in the Armed Conflict in Iraq: 1 May–31 October 2015*, the IS had an estimated 3,500 sex slaves. These sex slaves included boys, girls, and women who were sold in markets, shipped around the caliphate, and shipped to other countries where they experienced forced marriage, rape, domestic servitude, and other sexual violence (U.S.

Department of State, 2016b; United Nations High Commission for Human Rights, 2016). This author speculates that in order to offset its losses in other economic activities, the IS will attempt to keep this trade open in order to attract future fighters to support operations regionally and abroad.

8. Donations

The IS's territorial possessions and wealth greatly aid in its political, economic, and religious autonomy (Bindner & Poirot, 2016). This autonomy has allowed the IS to avoid the international communities' standard measures to combat terrorism (Bindner & Poirot, 2016). The IS receives financial assistance and donations from supporters around the globe, including neighboring Gulf state countries such as Kuwait, Saudi Arabia, and Qatar, but this revenue only comprises around 1 percent of its total revenues (DHS, 2016). It is estimated that the IS received \$40 million USD in 2014 and \$50 million USD in 2015 from international donations (Bindner & Poirot, 2016). While the IS prides itself on its autonomy, this author speculates that as the caliphate continues to dwindle, the IS will welcome donations to continue its funding of terrorism.

9. Total Revenues

Michael Knights, a Middle East Expert at the Washington Institute for Near East Policy, said, "The IS had gone from being the world's richest terrorist organization to the world's poorest state" (al-'Ubaydi et al., 2014, p. 65). When the IS was considered the *richest terrorist organization* in 2014–2015, its estimated annual revenue ranged from \$2–\$3 billion (Bindner & Poirot, 2016). As of November 2016, the IS had lost 62 percent of its peak territory control in Iraq and 30 percent in Syria, which degraded its estimated annual revenue to \$870 million (Heibner, Neumann, Holland-McCowan, & Basra, 2017). Figures 5 and 6 provide snapshots of the revenue streams with total estimated annual income of the IS from 2014 to 2016. One can argue that Figure 4 provides evidence that the international coalition has generated success in degrading the IS's revenue base and ability to fund its operations due to the decreasing marginal amounts of revenue.

	2014 (in \$m)	2015 (in \$m)	2016 (in \$m)
Taxes and Fees	300–400	400–800	200–400
Oil	150–450	435–550	200–250
Kidnapping	20–40	Not known	10–30
Antiquities	Not known	Not known	Not known
Foreign Donations	Insignificant	Insignificant	Insignificant
Looting, Confiscations, Fines	500–1,000	200–350	110–190
TOTAL	970–1,890	1,035–1,700	520–870

Figure 5. Islamic State Income, 2014–2016. Source: Heibner et al. (2017).

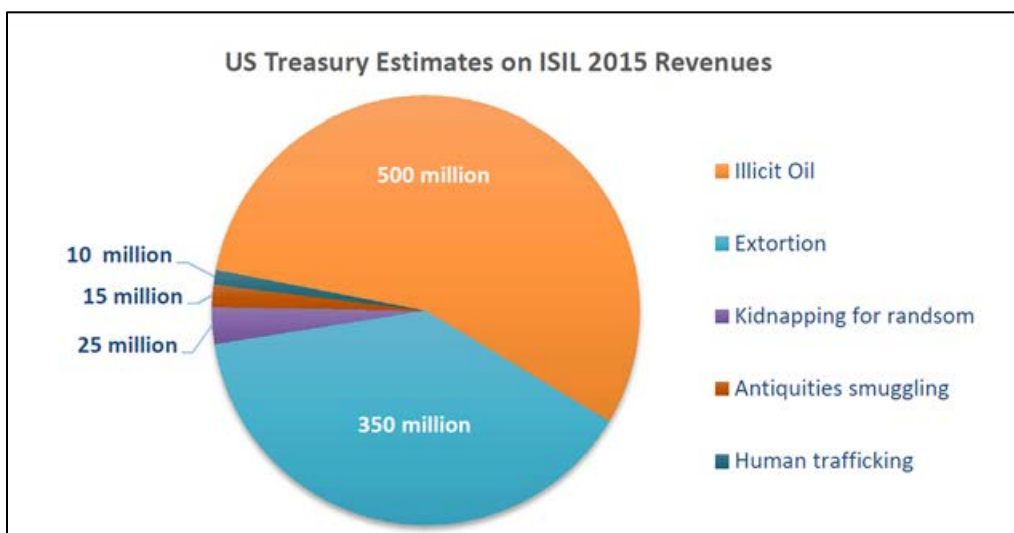


Figure 6. 2015 IS Revenue Estimates. Source: ODNI (2016).

From the research available, this author assumes the three most lucrative revenue streams of the IS during its apex were crude oil products, extortion and taxation, and plundered cash. Due to the relentless international military campaign and financial sanctions, this author speculates the IS has begun to revert to sources of income commensurate to a transnational criminal network, encompassing kidnapping and

external donations. In any case, the IS needs income to support the numerous expenditures to support its caliphate.

C. EXPENDITURES

The construction of an all-inclusive picture of the IS's expenditures presents an extremely complex challenge, given the lack of open source data. While this author speculates that the top IS leaders have detailed oversight on what flows into its coffers, the level of control on how revenues are spent is nebulous. The IS is not any different from other terrorist organizations or insurgent groups—it needs to pay its fighters and procure weapons (Clarke, Jackson, Johnston, Robinson, & Shatz, 2017). Yet, the IS has a different requirement from other insurgent and terrorist groups for allocating funds to maintain the vast infrastructure of its caliphate (Clarke et al., 2017). Details and financial records are difficult to come by, so this author must speculate on the expenditures supported by the IS administrative documents translated by Aymenn Jawad Al-Tamimi and CTC's Harmony Program.

1. Fighters' Salaries

In 2015, the IS spent upwards of \$600 million USD on its fighting forces for salaries and incentives (Jones et al., 2017). Reinforcing this estimate, in March 2017 the Center on Sanctions & Illicit Finance conducted an analysis on the monthly salary amounts during 2014–2016, which depicted local fighters earning \$400–\$600 USD per month, and foreign fighters earning slightly more at \$600–\$800 USD per month. While reports on the actual salary amounts vary, one aspect of this outlay that remains constant is the fact that fighters are provided with the highest salaries, compounded with premiums and bonuses for skills, nationality, geographic location, and number of dependents (women, children, sex slaves; Bindner & Poirot, 2016). Figure 7 depicts an IS salary scheme table recovered in the Hasakah province in northern Syria. The table records a list of 78 fighters along with the following information for each: position of responsibility, date of birth, number of wives, number of children, number of parents (supporting), number of *sabaya* (sex slaves), total sum in dollars, and notes.

Figure 8 presents evidence that the organization has the business acumen to adapt and shift priorities with the resource of money. Figure 7 depicts an internal document to the IS declaring that “on account of the exceptional circumstances the IS is facing, it has been decided to reduce the salaries to its fighters by 50 percent” (Al-Tamimi, 2016a).



Figure 8. Lowering of Salaries for Fighters by 50%, November–December 2015. Source: Al-Tamimi (2016a).

This author comprehends that the international pressure and military bombardment against the IS has forced it to reallocate its resources to support operations and other outlays within the caliphate.

2. War Materiel

The IS is compelled to spend money and resources on war materiel to defend its caliphate from adversaries. According to a March 2017 Center on Sanctions & Illicit Finance report on IS financing, the organization spends an estimated \$1 million USD per week on offensive military operations (Bindner & Poirot, 2016). Supporting this estimate, the *Financial Times* reported the same estimate when interviewing fighters and dealers in the region in which “a week-long offensive” to capture a local airport consumed an estimated \$1 million USD (Solomon, 2015a).

Even though the IS was able to seize millions of dollars of weapons on the battlefield, it still required an intricate and complex logistics network to acquire additional weapons, ammunitions, explosives, and other war materiel (Bindner & Poirot, 2016; Solomon, 2015a). The IS utilized *black marketers* as middlemen to purchase military supplies from pro-government militia in Iraq and Syria, who immediately turned around to trade the equipment back to the IS (Solomon, 2015a). The IS also leveraged arms dealers in the region to supply the organization with arms from other countries. In an interview with a *Financial Times* journalist, a former arms dealer to the IS named Abu Omar said, “We [dealers] could buy from the regime (Assad), the Iraqis, the rebels—if we could buy from the Israelis they (IS) wouldn’t care as long as they got their weapons” (Solomon, 2015a).

3. Propaganda

Similar to its efforts to acquire war materiel, the IS focuses attention on its communications and propaganda. Although the author was not able to find concrete numbers on the amount of money spent on media resources, this author can venture to say the IS did devote considerable money and intellectual capital to generate its narrative. According to the Center for Analysis of Terrorism IS financing report, the IS released an estimated 15,000 propaganda materials, including 800 videos and 20 magazines disseminated in 11 languages, in a single calendar year (Bindner & Poirot, 2016). In order to fund this level of propaganda output, this author confidently opines that the IS propaganda arm was well resourced with money and intellectual expertise.

4. Public Services

During the IS's peak time of power and control, the group used its media capabilities to portray itself conducting public works such as fixing power lines, operating schools and hospitals, providing law and order, and digging sewer systems (Clarke et al., 2017). In actuality, these commercials can be seen as a façade to entice individuals to migrate to the caliphate; public services (hospitals, healthcare, and education) received minimum funding of less than \$10 million USD per month (Bindner & Poirot, 2016; Solomon, 2015a). According to an article from the *Financial Times*, the IS operated an estimated nine hospitals in the province of Deri ez-Zor, Syria, compensating doctors and nurses \$300 USD a month—for a province-wide total of just \$135,000 USD a month (Solomon, 2015b). Conversely, research suggests that security, another public service the IS provided, received the most funding of all public services provided by the IS. The IS security apparatus included the religious police (*hisbah*, or morality police), the secret police (*amniyat*, or intelligence), and tax collectors who reportedly received \$10–\$15 million USD per month in 2015 (Bindner & Poirot, 2016; Jones et al., 2017; Solomon, 2015b).

From the research and data available, this author was only able to determine that four different expenditures are enduring for the IS. Given the difficulty and sensitive nature of this topic, this author assumes there are potentially others.

D. SUMMARY

Given the shrinking fringes of its caliphate, this author argues that the IS potentially operates in a deficit regarding the resource of money. Even before the IS seized control of provinces in Iraq, the official operating budget of those areas was estimated to be \$2.6 billion USD, which exceeded the faction's financial capabilities (Bindner & Poirot, 2016). This author speculates that as the IS's caliphate continues to decline, so will its annual revenue. The IS global reach will continue to impact the international community on terrorism attentiveness due to affiliated groups, sympathizers, and the vast number of foreign fighters returning to their countries of origin (Fanusic & Entz, 2017). Arguments can be made that the group will evolve into a

transnational terrorist group or recede back to the underground criminal networks in northern Iraq it once functioned under in the mid- to late-2000s as ISI. Regardless, the fight against IS requires a coordinated and multinational effort to yield success in the long run. While the IS's financial strategy and economic activities allow it to yield financial gains, capital cannot be acquired, and money cannot be spent if it does not have the manpower.

III. MANPOWER

There is no excuse for any Muslim not to migrate to the Islamic State ... joining [its fight] is a duty on every Muslim. We are calling on you either to join or carry weapons [to fight] wherever you are.

—Abu Bakr al-Baghdadi (Gardner, 2015)

While money is paramount for a company or firm to survive, a workforce is critical for production, customer relationships, and strategy implementation. Whether it is a corporation or autocratic regime, no one rules alone—these organizations need a winning coalition of middle managers, foot soldiers, and loyal supporters (Mesquita & Smith, 2011). Contemporary and publically traded corporations have millions of shareholders, lesser sets of institutional shareholders, and a small group of essentials. (Mesquita & Smith, 2011). It can be argued that the IS uses the same model as these corporations, due to the extensive manpower necessary to seize and preserve the peripheries of its caliphate (Gates & Podder, 2015; Mesquita & Smith, 2011). Dating back to its years as ISI, the IS demonstrated the entrepreneurial and marketing expertise required to support its sophisticated financial, military, and state-like institutions (Shatz & Johnson, 2015). This chapter analyzes the innovative manpower framework the IS established to support its strategic goals of the global caliphate. Section B provides insight into the transformation of the organizational and hierarchical structure within the IS. Section C explores the local and international reservoir the IS recruits and employs as a workforce. Additionally, it depicts evidence on the IS's aptitude to conduct talent management on its potential labor force in order to support the needs and services within the caliphate. Section D compiles the number of fighters the IS has accumulated throughout the years to support its operations.

A. ORGANIZATIONAL AND HIERARCHICAL STRUCTURE

1. 2004 to 2013: AQI and ISI

Prior to the U.S.-led invasion of Iraq in 2003, Osama bin Laden's core Al-Qaeda terrorist group developed into a well-institutionalized, hierarchical organization (Johnston

et al., 2016). Following the 2003 invasion of Iraq, Abu Musab al-Zarqawi's Salafi-Jihad militant group—later known as AQI—began as a small part of a large, broadly based insurgency against foreign occupation that eventually came to dominate due to AQI's steadfast opposition to a democratic government (Whiteside, 2017). This author is convinced that under the volatile conditions of a post-Saddam Hussein Iraq, the early IS began to develop, recruit, and evolve its organizational structure to expand its ideology and strategic vision.

The growth and formation of the current IS into what it achieved at its pinnacle was not a rigid, step-by-step process; rather, it was fluid and ever-evolving to support the dynamics of governance, resource management, and military operations (Ryan, 2009; Shatz & Johnson, 2015). Using a number of translated documents from CTC's Harmony Program and various research reports, this author is convinced that the infancy organizational structure of the IS correlates to that of Al-Qaeda. This author is unable to speculate on the level of composition Al-Qaeda achieved, but captured documents reveal that Al-Qaeda designed its group to manage and audit its operations using a vertically integrated organization (Johnston et al., 2016). Al-Qaeda developed into what is called a *multidivisional hierarchy*—or “M-form”—with a centralized management structure linked to multiple lower level bureaus, which is comparable to a contemporary and publically traded corporation (see Figure 9; Johnston et al., 2016, p. 7).

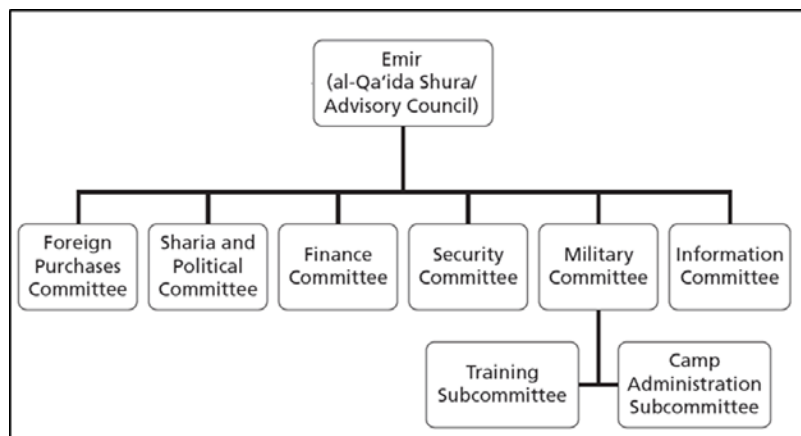


Figure 9. Al-Qaeda's Organizational Structure. Source: Johnston et al. (2016).

In this hierarchical structure shown in Figure 9, the leader, or *emir*, maintained responsibility for all aspects of strategic, tactical, logistical, and organizational planning (Johnston et al., 2016; Shatz & Johnson, 2015). A *shura*, or advisory council, supported the *emir* for various administrative needs, thereby allowing a secondary tier of committees to be “responsible for administering the organization’s day-to-day activities in key functional areas” such as military, information, and finance (Johnston et al., 2016, p. 74). As with any contemporary organization, Figure 1 provides the organizational framework for Al-Qaeda and the IS to execute its core competencies, as specified in its strategic goals and vision.

In 2006, AQI joined with other extremist groups in Iraq while calculatingly recruiting former military Ba’athist regime members of Saddam Hussein in order to bolster its combat tactics and serve in key military roles (Whiteside, 2017). This transformation yielded an infant existence of the IS in the form of ISI, thereby shedding the name AQI, and subsequently rendering all ties to Al-Qaeda nebulous (Johnston et al., 2016; Whiteside, 2017). This transition from AQI to ISI in 2006 represented a key turning point in image and self-positioning: from a local insurgent group to a metaphoric actual state (Kazimi, 2008). Reshaping its image as the ISI arguably overtook the global Al-Qaeda network as the vanguard of the global jihadist movement by elevating itself as a new brand of enemy against the West (Kazimi, 2008). The ISI would ultimately link the global jihadist movement as an emerging empire rather than disparate groups operating independently against the West (Kazimi, 2008).

ISI began *seeding the market* to build its image and brand throughout Iraq. This new image and brand were based on four pillars: security, sharia, military, and administration (Shatz & Johnson, 2015). Several ministries underpinned these pillars including military, administration, public relations, public security, health, and media. These ministries strengthened ISI’s narrative as a self-governing organization (Shatz et al., 2015; Al-Tamimi, 2015a). ISI began establishing governorate or provincial and district or sector-level multi-divisional bureaus that ultimately reported to a centralized command throughout Anbar, Ninawa, and other areas of influence in Iraq (Johnston et al., 2016; Shatz & Johnson, 2015). Figure 10 uses the translated documents from the

CTC's Harmony Program to depict the organizational structures of AQI as it transitioned to ISI in 2006 and 2007 (Johnston et al., 2016).

Core Al-Qa'ida	Governorate-Level AQI	District-Level AQI
Emir Secretary Deputy Advisory council Committees Military Political Administration and finance Security Intelligence Media	Emir Sector emirs Committees Military Administrative Security Legal (sharia) Media	Emir Military emir Security emir Administrative emir Legal (sharia) emir Media (propaganda) emir Medical emir

Figure 10. Core Al-Qaeda and ISI Organizational Structures, 2006–2007.
Source: Johnston et al. (2016).

Taking into consideration the information shown in Figure 10 and the analysis of other translated documents, this author is convinced that in 2006–2007, ISI was forming the necessary organizational infrastructure to successfully govern and support its physical caliphate. Figures 11 and 12 depict the tiered levels of bureaucracy for both a provincial and local or district levels of ISI in Anbar, Iraq, in 2006 and 2007 (Johnston et al., 2016).

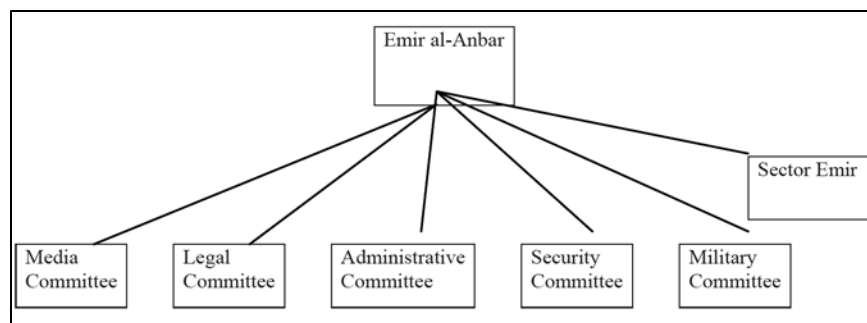


Figure 11. ISI's Provincial Organizational Chart for Anbar Governorate, 2006–2007. Source: Johnston et al. (2016).

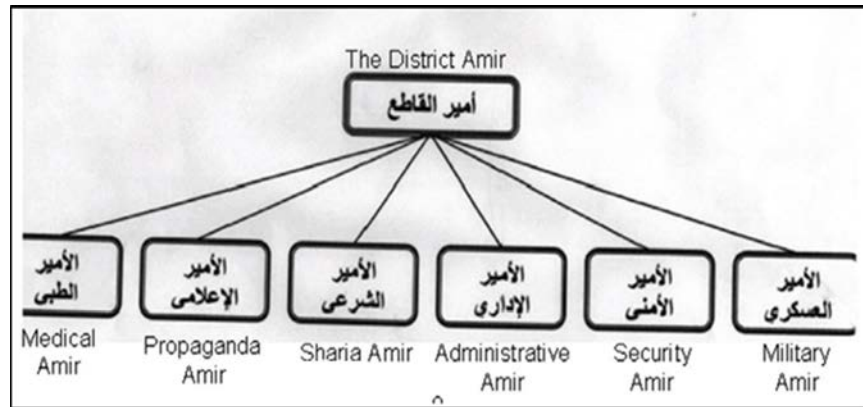


Figure 12. ISI's Sector-Level Organizational Chart for the Western Sector—Anbar Governorate, 2006–2007. Source: Johnston et al. (2016).

Although ISI would not physically hold territory until 2012 and 2013, this author advocates that during these infant years, ISI reflected the entrepreneurial skills and rationale needed for a functioning organization by identifying such components as security, military, legal, and administrative emirs and bureaus (Johnston et al., 2016). It could be argued that this centralized structure of command provided little, if any, management on the ground during the years as ISI; however, it did produce a brand in the local market of governance to the local populaces (Al-Tamimi, 2015a). ISI would disseminate this narrative with a book titled *Informing the People about the Birth of the Islamic State*, which stated,

After more than three years of jihad in Iraq, the mujahideen have by the granting of success from God been able to reach an appropriate level of organizational, military, administrative, economic and media capabilities and preparations that they have not attained before. (Al-Tamimi, 2015a)

Despite the fact that ISI claimed this achievement of reaching necessary levels of organizational, military, and administrative interoperability, ISI recognized its own limitations as a functioning state. In the same publication, ISI explained,

We realize completely that the basis on which the Prophet ... lied in the establishment of his first state did not possess the supreme fields of knowledge, worldly specialties, and material capabilities of that time, but rather his enemies were far ahead of him in this regard, but that was not a reason to put a stop to the destiny of the state and its project. (Al-Tamimi, 2015a)

To compound the previous quotations from the IS's book, from 2007 to 2009, the increased U.S. troop numbers, the rise of the *Sahwa* (Sunni Awakening) among Iraqi Sunnis, and the permutation of the structure within ISI bolstered the extraction of ISI from its strongholds throughout Iraq (Al-Tamimi, 2015a; Johnston et al., 2016; Shatz & Johnson, 2015). In August 2014, Brian Fishman (2014), a journalist for *War on the Rocks*, stated in the article, "Don't BS the American People about Iraq, Syria, and ISIL," that the surge and Sunni Awakening pushed ISI out of its former safe havens and also repressed its ability to hold and control territory.

Yet, even with these setbacks, ISI was able to employ irregular warfare (IW) attacks as it retreated and established itself in the city of Mosul (Al-Tamimi, 2015a). From 2009 until its reemergence as ISIS in 2013, ISI entrenched itself as a criminal syndicate within the Ninawa province of Iraq, extorting money from businesses and smuggling oil for profit (Al-Tamimi, 2015a; Babington, 2009). This author speculates that ISI's ability to adapt and maintain a transparent organizational structure of turnover among its leaders was integral in its survival during these difficult years in Ninawa province. Beginning in 2009, ISI had restructured its provincial hierarchy, underpinned by five pillars: security, sharia, military, administration & finance, and media (Shatz & Johnson, 2016). Figure 13 provides an illustration of the upper and lower level structures with specific geographic focus for the military emir in Mosul (Ryan, 2009).

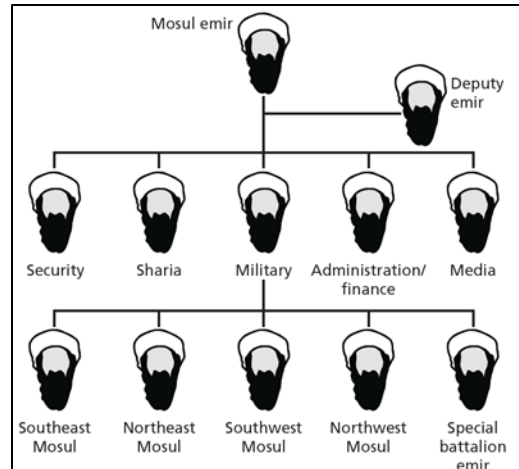


Figure 13. The Upper and Lower Level: ISI Organization in Mosul, 2009.
Source: Shatz and Johnson (2015).

This author speculates that given the context of the ISI structure shown in Figure 13, ISI established local cells for each of its pillars (e.g., security, media, finance) in order to build efficiency and internally refine communications. It could be argued that from 2009 to 2012, ISI used Ninawa province as its main hub to operate as a criminal-type organization, whereby it was unable to hold and govern territory (Al-Tamimi, 2015a). Even though ISI had been significantly reduced in its capabilities and capacity, this author is convinced that from 2009 to 2011, ISI continued to refine its internal business practices, improve its core competencies, and enhance its organizational structure while waiting for the chance to reemerge.

2. 2013 to Present: ISIS and IS

Up until 2010, ISI was constantly pursued and attacked by United States-backed Iraqi military forces, reducing the organization to a “small functioning cell concentrated in Mosul, Iraq” (Barrett, 2014; Lewis, 2013). In 2010, Abu Bakr al-Baghdadi, the Caliph (leader of the IS), inherited the significantly weakened ISI during the same time the United States began withdrawing its forces from Iraq (Alexander & Alexander, 2015). Baghdadi sought to rebuild the organization with a relentless campaign titled *Breaking Down the Walls*, in which his organization attacked and breached numerous prisons across Iraq, freeing over 500 seasoned former members of the 2006–2008 ISI (Barrett,

2014; Lewis, 2013). Simultaneously, while the organization plundered Iraqi prisons to grow its human capital, the Syrian civil war broke out in 2011, allowing Baghdadi to expand and establish safe havens for his insurgent organization to grow and operate (Alexander & Alexander, 2015; Barrett, 2014; Lewis, 2013).

By 2012 and 2013, Syria plunged further into its civil war, while extensive antigovernment protests from Shia-led movements across Iraq suppressed Sunni populations (al-'Ubaydi et al., 2014; Johnston et al., 2016). By 2013, now under the brand of ISIS, the IS began employing its core competencies of attempting to influence, regulate, and take over the surrounding areas of Iraq and Syria through the following:

- The IS deployed experienced group members to target cities for gathering intelligence and surveillance in order to develop a network of safe houses for follow-on capacity.
- Once a foothold was established, the IS cells began employing intimidation, extortion, and criminal activities while laying foundations for command and control, finance, logistics, recruiting, and other support needs.
- The IS infused relationships with the local religious leaders and began establishing a media and information function to disseminate its narrative.
- Lastly, the IS began planning, conducting, and recording military attacks (Shatz & Johnson, 2015).

As the IS's quasi-state grew to over 86,000 miles of land—equating to roughly the size of Pennsylvania—so did its organizational structure as it needed to manage its expanding peripheries (Hansen-Lewis & Shapiro, 2015; Thompson & Shubert, 2015). The IS went on to design, adapt, and employ a multi-divisional vertically integrated centralized management structure with functioning bureaus (Johnston et al., 2015). The online Terrorism Research and Analysis Consortium developed a detailed graphical model of the purported IS organizational structure—shown in Figure 14.

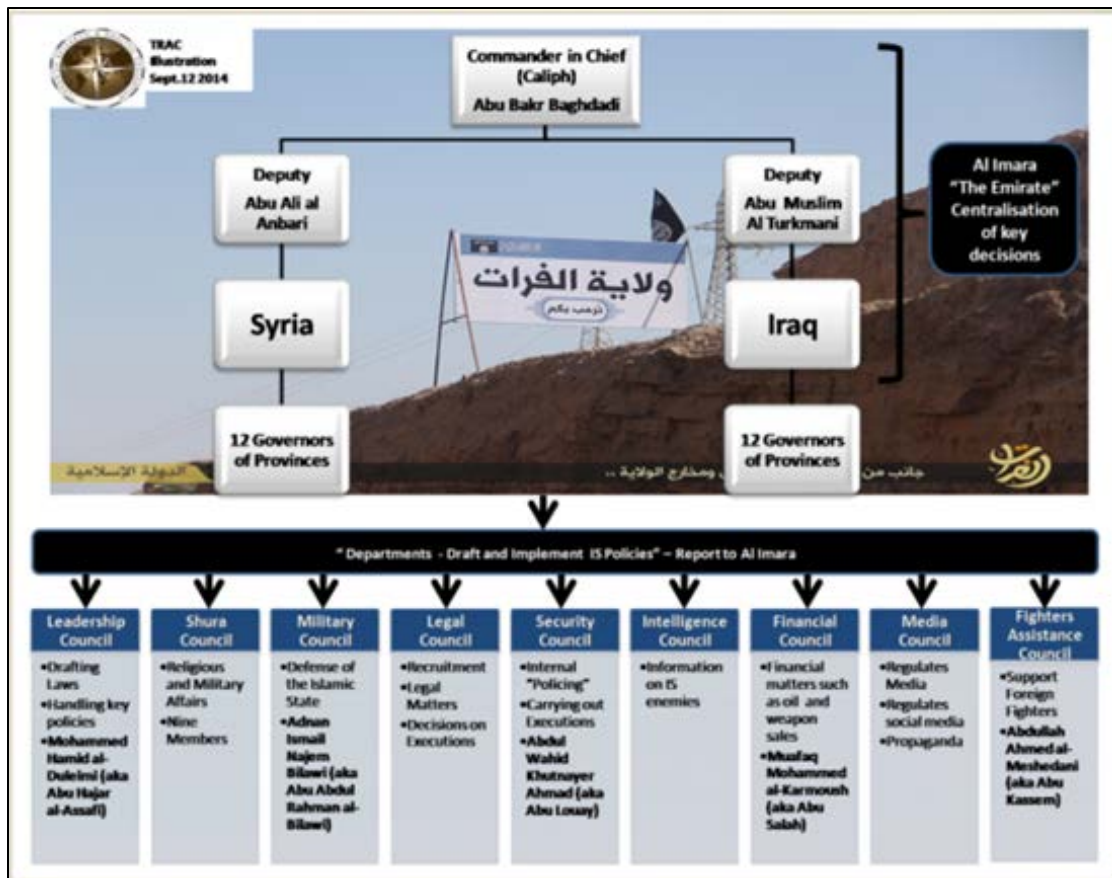


Figure 14. Islamic State Hierarchy. Source: Islamic State (IS) / Islamic State of Iraq and ash Sham (ISIS) / Islamic State of Iraq (ISIS or ISIL, IS) (2014).

To underscore this intricate organizational structure that the IS developed, in 2016 the Center for Analysis of Terrorism used translated IS documents to sketch out a similar hierarchy to the one shown in Figure 14. Figure 15 displays similarities to Figure 14 with financial, security, and military components, which one could argue supports the IS's predefined financial strategy of having governmental and administrative bureaus present at each level (Bindner & Poirot, 2016).

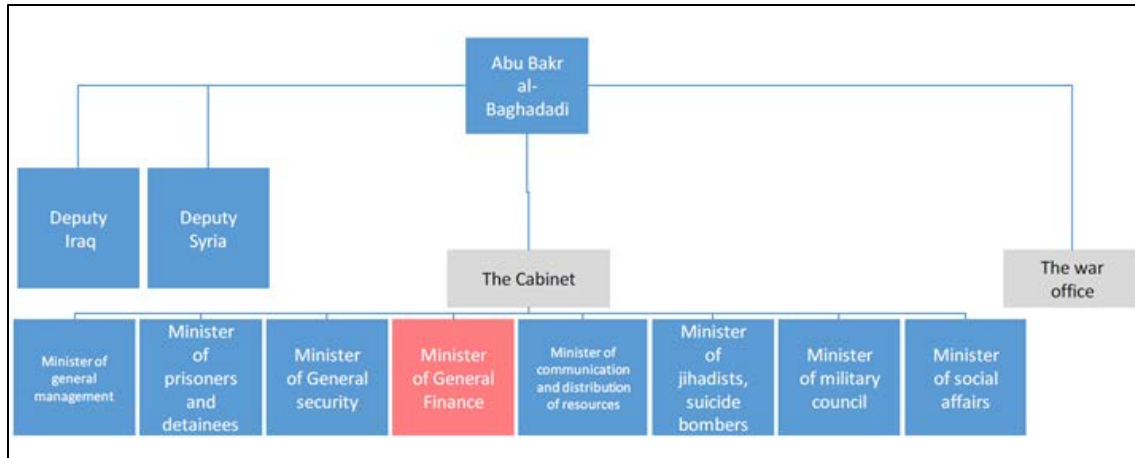


Figure 15. The IS Organizational Chart, 2014. Source: Bindner and Poirot (2016).

Both Figures 14 and 15 depict the infrastructure into which the IS’s internal business processes are deployed and which ensures that its core competencies are executed within the organization. Having this structure allows the IS to execute its value proposition of governance and stability using the various service bureaus to support its clients. Given that, the IS has needed to manage a number of basic tasks to achieve its objectives:

- Plan, employ, and record its use of violence and attacks while collecting and building an intelligence apparatus.
- Rapidly seize “all the economic and social infrastructures in an area,” thereby making it challenging for local populations to resist its influence and presence.
- Grow management capacity and intellectual expertise across its envisioned caliphate (Johnston et al., 2015; Speckhard & Yayla, 2015, p. 99).

Figure 16 reinforces the previous two figures, emphasizing that the IS, during its peak for controlling territory, operated and functioned as a government with a bureaucratic hierarchy. At the top, two deputies supported the Caliph (al-Baghdadi)—one for Iraq and one for Syria—forming “The Emirate,” which planned key strategic policies for the IS. Twelve governors of the IS’s caliphate in Iraq and Syria supported the policies of “The Emirate.” The command relationship was underpinned by nine councils—or

ministries—which created and implemented the day-to-day policies of the IS specific to finance, media, leadership, military, and judicial (“The Islamic State,” 2014).



Figure 16. The IS: How its Leadership Is Organized. Source: “The Islamic State” (2014).

As the IS grew in size, so did its need to manage internal coordination across vast areas of territory. The IS, with the core competency of a hierarchy, had the ability to allocate personnel to locations and positions needed to support operations, thus giving the IS an advantage over other insurgent groups in the region (Johnston et al., 2015). Even though the IS had the organizational framework to potentially be a quasi-state, it still needed the proper background, dexterity, and training of a loyal workforce to carry out its vision. This author is convinced that the organization the IS built is what made them more competitive, with longer established and more locally tied insurgent cells.

B. THE CALIPHATE’S WORKFORCE

At its peak, the IS cultivated a robust labor force to support military operations, safeguard lines of communication, extract resources, and provide governmental services to its constituents (Cronin, 2015). This author assumes that the IS appeal of a global self-styled caliphate is integral to its recruiting efforts (Robinson et al., 2017). The IS’s determination and aspiration to hold territory and provide state-like institutions has made

it both entrepreneurial and reliant on manipulating human capital (Dodwell, Milton, & Rassler, 2016). While the IS needs human resources to fight on the battlefields, it also needs personnel to fill backroom roles of officials, along with representatives for numerous bureaus to support its quasi-state institutions—a bureaucracy of sorts (Dodwell et al., 2016). This author’s ability to construct an all-inclusive picture of the IS’s personnel workforce is complex given the lack of open source data. Therefore, this author provides assumptions on some aspects of the organization’s workforce using translated IS administrative documents from Aymenn Jawad Al-Tamimi, the CTC, and scholarly journal reports. The IS operates in a competitive market with other jihadist organizations, which correlates to specific demands for human capital: Foreign fighters, local populations, intermediaries, and individuals with intellectual expertise meet the needs of the caliphate.

1. Foreign Fighters

To this day, the IS relies heavily on the recruitment of foreign fighters to fill its ranks (Gates & Podder, 2015). David Malet (2013), author of *Foreign Fighters: Transnational Identity in Civic Conflict*, defines foreign fighters as “non-citizens of conflict states who join insurgencies during civil conflicts” (p.9). This subchapter emphasizes that foreign fighters were individuals who joined and operated within the confines of the IS insurgency, lacked citizenship in Iraq or Syria, lacked any affiliation to an official military organization, and were unpaid prior to joining the IS (Gates & Podder, 2015; Speckhard & Yayla, 2015).

By December 2015, the IS purportedly attracted upwards of 30,000 fighters from over 100 countries using the intricate messaging within its media committee (Speckhard & Yayla, 2015). Due to both the IS’s concealment and U.S. intelligence declassification procedures of captured IS documents, the actual number of foreign fighters the IS has recruited is ambiguous. Figure 16 shows a graphic from the 2014 *Washington Post* article “Airstrikes against Islamic State Do Not Seem to Have Affected Flow of Fighters to Syria” that provides context regarding distance, numbers, and diversity of fighters flowing to the IS (Miller, 2014).

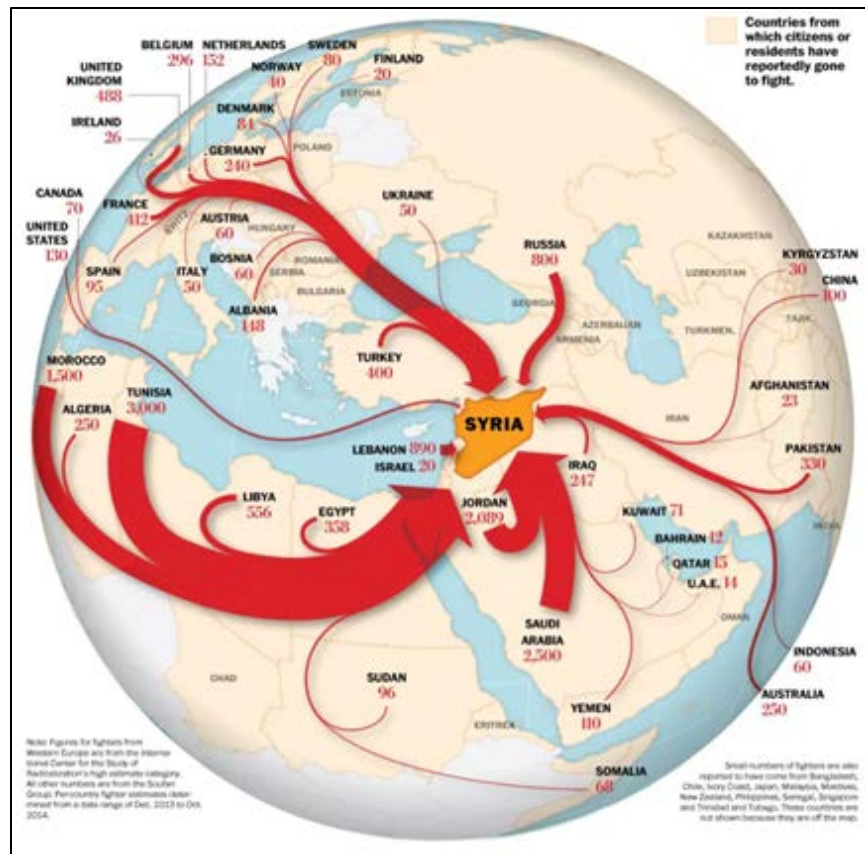


Figure 17. Foreign Fighters Flow to Syria, October 2014. Source: Miller (2014).

Figure 17 provides a narrative to a 2015 analysis by the Soufan Group titled, *Foreign Fighters: An Updated Assessment of the Flow of Foreign Fighters into Syria and Iraq*, which estimated that between “27,000 and 31,000 potential fighters traveled to Syria and Iraq to join the IS and possibly other violent extremist groups” (Barrett, 2015, p. 4).

The IS’s marketing and brand image of the pure Islamic caliphate attracts a diverse population of foreign fighters (Dodwell et al., 2016; Gates & Podder, 2015; Speckhard & Yayla, 2015). One can argue the pool of potential applicants ranged from unskilled novices who sought camaraderie and adventure, to experienced militants looking for combat and martyrdom (Gates & Podder, 2015). According to the CTC’s analysis of over 4,600 translated documents on IS personnel records, foreign fighters on

average were quite well-educated in the context of their countries of origin (Dodwell et al., 2016). Figure 17 provides a graphical distribution of the various recorded levels of education of 4,600 recruits, with the majority of individuals reporting a high school education (Dodwell et al., 2016).

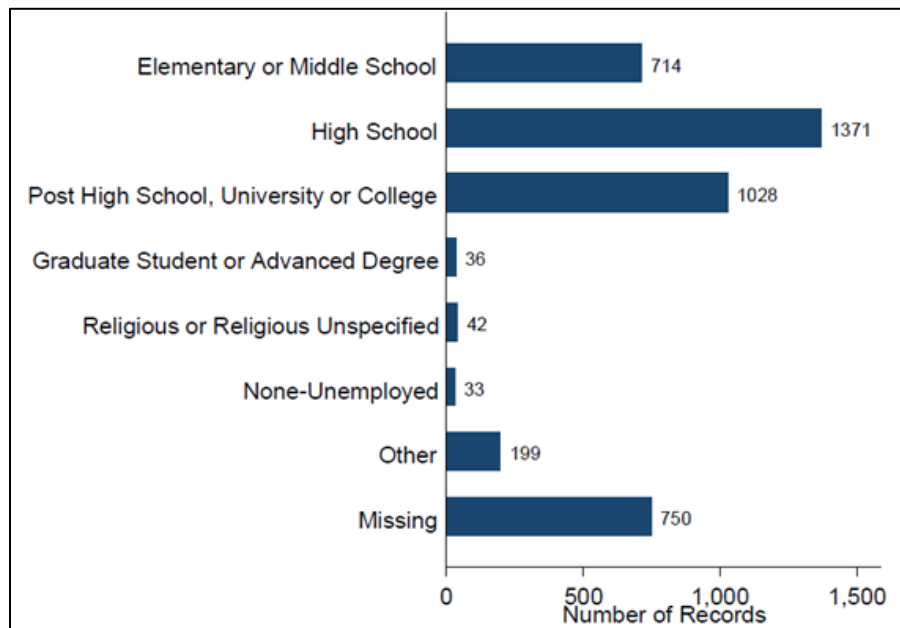


Figure 18. Education Level of Fighters. Source: Dodwell et al. (2016).

Figure 18 indicates an even distribution of education levels within the foreign fighters, ranging from elementary/middle to college or university degrees (Dodwell et al., 2016). When this distribution is compared to data from the United Nations, “on average years of schooling the IS appears to be well-educated” (Dodwell et al., 2016, p. 16). This author confidently assumes the IS understood its audience’s needs, wants, and demands and developed core marketing concepts to incentivize their migration to the caliphate. In order to attract experienced professionals such as engineers, professors, and business owners, the IS offered different value propositions to its audience (Dodwell et al., 2016). To entice younger novice individuals, the IS offered adventure, personal wealth, and religious ideology (Speckhard & Yayla, 2015). In 2015, *Perspectives on Terrorism* published an article on interviews with IS defectors, in which one defector stated,

Thus, a very real reward of becoming an IS fighter is not only the imagined pleasure of the houris (virgins) in paradise if they are “martyred” but the very real reward of “sex now” with the wife he will be able to marry only if he has a salary—something IS membership makes possible. (Speckhard & Yayla, 2015)

For the individuals who possessed key skills, the IS offered appointments in positions to “oversee operations in key facilities such as banks, municipal services, or military commands,” thereby undermining the potential candidates’ current careers in their countries of origin (Barrett, 2014, p. 10). Ultimately, the IS’s value proposition to those seeking martyrdom and religious enlightenment is the forefront of its offerings (Barrett, 2014; Dodwell et al., 2016; Speckhard & Yayla, 2015). In the same 2015 *Perspectives on Terrorism* article on IS defector interviews, two defectors discussed reasons for joining that support religious education and martyrdom:

They taught us how to pray and taught us our religion. In Syria, the Sunni part of the country was not taught religion properly. We felt a vacuum filled. We hadn’t learned in school our real history and religion. Daesh filled an emptiness in us. We felt joy from this and anger at Assad. (Speckhard & Yayla, 2015)

Some people join IS in order to become “martyrs” so that their past sins are forgiven. I spoke to one sheikh. He told me, “I am from Saudi Arabia. I was very rich and I had committed most of the sins. I thought that I had to do something big to be forgiven, so I left everything behind to fight here to cleanse my soul.” (Speckhard & Yayla, 2015)

The IS finds and identifies methods to attract individuals from abroad. This author is convinced that whether it is adventure, carnal pleasures, religious piety, or a sense of belonging to a higher purpose, the IS’s brand and image delivers some kind of superior value to the foreign fighter market.

2. Local Fighters

This author confidently argues that although the IS’s value proposition has enticed foreign fighters, it has also been employed to attract the local populations into its ranks. The IS markets itself by disseminating the narrative of needs, or basic human requirements (food, water, security), and wants of stability and governance to the local populations by promoting a theme of significant legitimacy (Barrett, 2014; Gates &

Podder, 2015). The IS sponsors the narrative of justice, governance, and economic and manufacturing services to its audience at the local level in order to draw support (Dodwell et al., 2016; Gates & Podder, 2015). Similar to the number of foreign fighters, the ability for this author to capture actual numbers of local fighters is extremely difficult. Yet, this author confidently assumes that the local pool of talent is treated and recruited differently from foreign fighters outside Iraq and Syria.

According to informants from the 2015 *Perspectives on Terrorism*, membership to join IS is voluntary (Speckhard & Yayla, 2015). Yet, the local population—men and women—find themselves forced to join the IS in order to survive. Since the IS seizes the vast majority of resources in local areas, inhabitants join to obtain food, a salary, and benefits of security and protection (Barrett, 2014; Gates & Podder, 2015; Speckhard & Yayla, 2015). One defector claimed, “When Daesh took over they said, you are either with us or not. They gave no food, no jobs except to people who joined them, so the people got so hungry” (Speckhard & Yayla, 2015, p. 99). In addition, as with the foreign fighters, the IS incentivized the younger and poorer demographics of the local populations with personal gain, carnal pleasures, and adventure. According to another defector, “When I joined [IS], they told me I need to go to fight in Ramadi for a year and then I will be free to go anywhere in the caliphate. They also give you a free house, furniture, all your needs in a house—even the money to purchase slave girls” (Speckhard & Yayla, 2015, p. 102)

This author assumes that foreign fighters bring a diverse set of multilingual and technical skills to the IS, while the local fighters bring regional continuity, influence, and intelligence of the local human terrain. While both pools of fighters provide a competitive advantage to the IS, this also creates a clashing of two cultures (Gates & Podder, 2015). This author speculates the nature of fighting for the IS unquestionably varies from those recruited abroad to those originating from the local market. For foreign fighters, the motivations to join the IS are potentially universal, such as martyrdom, wealth, and adventure, while the local communities’ motivation is driven by needs, grievances, oppression from current regimes, and stability (Barrett, 2014; Gates & Podder, 2015; Speckhard & Yayla, 2015). While foreign fighters and local populations provided the IS

with an abundant pool of human resources, support positions are needed to enable the caliphate to survive. The IS also requires female and supporting personnel to fill the roles in its organizational hierarchy.

3. Supporting Personnel and Female Involvement

In addition to the ample personnel needed for supporting and defending the peripheries of the IS caliphate, this author suggests that the IS needs to interface with and enlist support personnel (Hansen-Lewis & Shapiro, 2015; Jung et al., 2014). Individuals are needed to hold positions in committees and administrative assignments, transport supplies in and out of the caliphate, develop media narratives, enforce laws and regulations, and conduct medical services. As with the foreign and local fighters, open source data is difficult to find, therefore developing an all-inclusive picture on the capacity of support personnel in the IS is extremely difficult. Yet, this author confidently assumes that women played a key role in the functionality of the IS (Speckhard & Yayla, 2015). According to the 2015 Terrorism Research Initiative's IS defector interviews, potential foreign and local female candidates do not become fighters. Rather they are employed in the *hisbah* (morality police) to enforce morality rules for other women (Speckhard & Yayla, 2015). Eyewitness accounts state, "These women move around freely without taking orders from anyone and they have more power and authority than the regular women's *hisbah*" (Speckhard & Yayla, 2015, p. 102). Additionally, the IS offers the incentive for women to practice their religion and traditions, while offering them security and stability from violent attacks, lack of resources, and oppression in the eyes of the IS (Alexander & Alexander, 2015). This author speculates that female recruits are drawn to the IS for many of the same reasons that men are—feelings of isolation in their homeland, marriage, adventure, support for a cause, and stability (Huckerby, 2015). Regardless of the women's decisions to join, the IS capitalizes on their interest along with the pools of candidates, by using its brand and image to advance support from a number of other internationally recognized jihadists affiliates.

4. IS Global Affiliates

At its pinnacle, the IS created a brand and image that was exported across the globe. It can be argued that, by August 2015, the IS had cultivated over 40 international and local jihadist groups for allegiance and support (see the appendix; Barrett, 2014; Lynch, 2015). While this appears significant regarding the IS's goal of the global caliphate, many argue the majority of these groups are, "with little to no pedigree, with severe organizational problems," and have been excommunicated by the rival AQ for being undisciplined (Barrett, 2014; Boghani, 2014; Lynch, 2015). Yet, this author argues that the rise of the IS has potentially created a duopoly in the global market for jihadist organizations, with the IS and AQ battling for control.

This author speculates that the IS's ability to market its brand and image provides them a level of durability and resiliency by shifting foreign fighters to support its operations. In 2015, the IS purportedly received a number of fighters in Syria, from its affiliate in Afghanistan—the Islamic State in Khorasan Province (ISKP; Osman, 2016). A counterargument to this makes claims that the IS's affiliates tend to be of low quality and made up of splinters from AQ who are undisciplined and undesirable, with the exceptions being the groups Boko Haram and the Islamic Movement of Uzbekistan (Lynch, 2015). In contrast, AQ retains very tight affiliations with dozens of other stronger, well-recognized Salafi jihadist such as the Taliban, Al-Qaeda in Arabian Peninsula, and Al-Qaeda in the Islamic Maghreb (Lynch, 2015). In any case, this author speculates that due to the IS's achievements and brand, they have made themselves the face of international terrorism and a household name across the globe, which is a potential morale builder for its fighters in place.

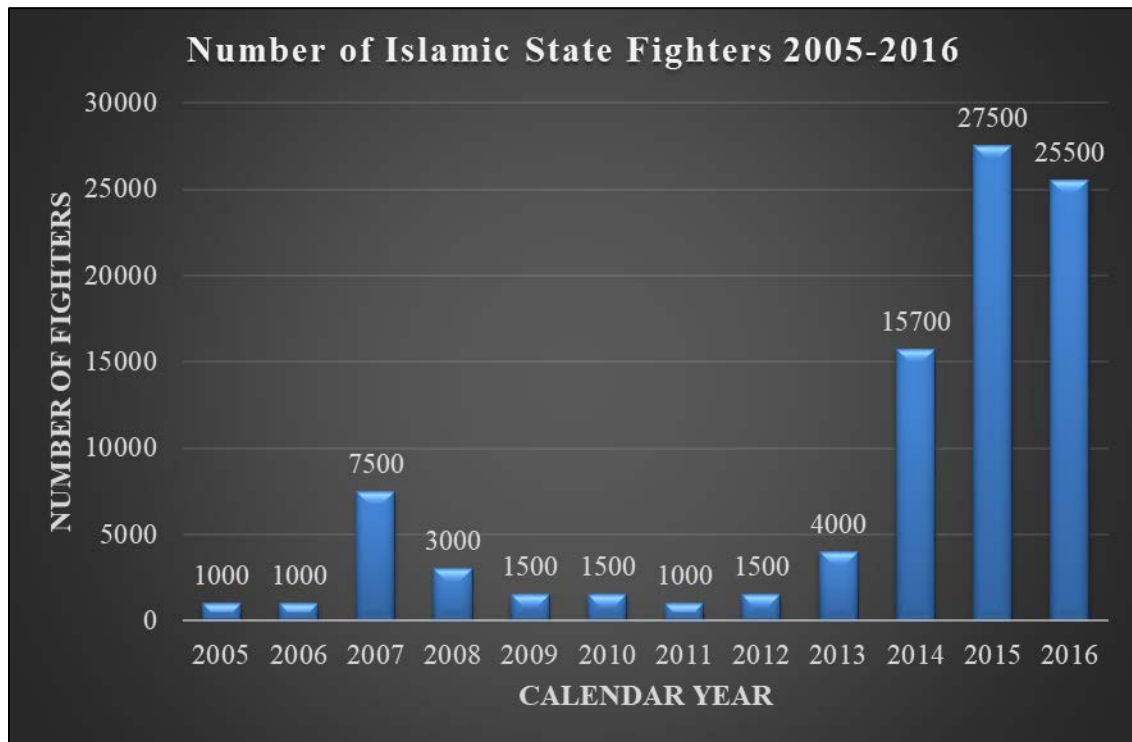
5. Talent Management

As with any firm or corporation, the IS needs skills and talents in various degrees and specialties to support its caliphate. According to translated personnel records from the CTC and Aymen Jawad Al-Tamimi, evidence exists that the IS used "processing forms to *talent scout* and identify specific educational, professional, and military backgrounds" (Dodwell et al., 2016, p. 24). Figure 19 provides an example of this form

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6. The Islamic State Capacity

As is the case in many other subchapters of this thesis, it is extremely difficult to provide an all-inclusive narrative of the total number of IS members. This author attempts to capture a visual analysis of the total number of fighters the IS was able to amass to date. Using recorded numbers from the U.S. State Department's Country Reports on Terrorism, Office of the Coordinator for Counterterrorism, and a number of open media sources, Figure 21 provides a graphic on the number of fighters that purportedly fought in the IS from 2005 to 2015.



.Adapted from “Two Arab Countries” (2014); U.S. Department of State (2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016a); Yeginsu (2014); Zahriyeh (2014); Zenko (2016).

Figure 21. Number of Fighters in the IS, 2005–2016

This author would emphasize that the annualized numbers in Figure 21 had disparate numbers for certain years and averages for each year were calculated in order to develop an estimate. This author is convinced that the purported numbers do not make sense with the reported casualties on the battlefield (Hassan, 2017). The testimonials from the local population and the international coalition's intelligence capabilities suggest that the actual size of the IS's fighting army was inflated (Hassan, 2017). The numbers reflected in Figure 20 do not equate to the standing number the organization had for that year. Rather, the estimated numbers show the IS's purported strength at any given time of foreign and local fighters. In addition, a number of interviews from both Iraqi and Syrian locals suggest that the majority of the IS fighters were from the local population, especially during its breakout years of 2013 and 2014 (Hassan, 2017). Finally, this author highlights the shift in tactics the IS implemented as the international coalition began applying pressure to it. The IS shifted from an overt and conventional force to covert, small fighting units, which potentially masked the organization's actual numbers on the ground (Hassan, 2017). In any case, this author confidently undertakes the trend that as the IS grew, so did its number of fighters—especially those from foreign countries. At this current time, the IS has suffered numerous defeats on the battlefield and its caliphate's peripheries have shrunk, allowing this author to speculate that its current strength is commensurate to its 2009–2010 numbers.

C. SUMMARY

The human capital that the IS recruits is a catalyst to its fluid and evolving organizational structure. The organization's ability to endure goes beyond its fighter's ability to pull the trigger. The resiliency of the IS can be traced to the vital skills found behind the scenes—the managing of its finances, the marketing of its image/brand, and the allocation of its expertise where it is needed. Currently, the IS peripheries continue to shrink due to the international coalition's military campaign and economic sanctions. At its peak, this author confidently assumes that it was the IS's ability to cultivate the vast number of foreign fighters, to persuade the local populations, and to market its brand to its international affiliates that bolstered its rise of distinction. As the vast number of foreign fighters return to their countries of origin, the IS global reach will continue to

impact the international community due to the tactical knowledge and warfare acumen that its fighters acquired while supporting the caliphate (Fanusie & Entz, 2017). At its peak, the IS's expansionist territorial goals required extensive manpower and in order to aggressively defend its borders, war materiel was vital for protection. The IS's organizational structure is critical to the identification, management, and procurement of materiel needed to support its tactical and strategic objectives.

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IV. MATERIEL

The spoils are to be distributed according to the necessity dictated by the Islamic State's military situation. God Almighty has said: 'Know that whenever you have seized something, a fifth goes to God, His Messenger, and to his relatives, the poor and wayfarer' [Qur'an 8:41]. Exempted from this is what is found with the slain from personal possessions and money, and this constitutes 'plunder,' and this wealth will be the property of the one who killed him, and not to be subject to partition of a fifth part.

As for heavy vehicles like tanks, aircraft and heavy mechanisms, they should go to the treasury of the Dawla [IS] with the observation to pay in compensation for the sum of the spoils to the mujahedeen who took the spoils.

—Spoils of War for the Mujahedeen (Al-Tamimi, 2015c)

Similar to large firms such as Tesla and Lockheed Martin, the Islamic State needed equipment, tools, and parts to support its requirements. Whether this materiel (equipment, tools, and parts) has been captured, purchased, or manufactured in an ad hoc location, the IS employs a vast array of war materiel to support its strategic objectives of expanding and defending its caliphate. This chapter analyzes the IS's entrepreneurial capability with managing the war materiel it employed to expand and defend its caliphate. Section B displays the vast amount of war materiel (e.g. tanks, vehicles) the IS has been seizing throughout Iraq and Syria. Section C investigates the IS's ability to generate an industrial base for manufacturing ordnance and armored vehicles while demonstrating ingenuity in enhancing its war materiel within its inventories. In addition, Section C also analyzes the logistical competency of the IS, given the challenging environment it operates in, with constrained resource pools and intense pressure from the international coalition's military campaign to stifle its objectives.

A. SPOILS OF WAR

It can be argued that the IS employs conventional military tactics on the battlefield, but when compared to a conventional army, it does not possess capacity or logistics of that magnitude (Nance, 2016). This author believes that the IS relies heavily on seized or captured weapons to expand its inventory of war materiel. According to a

2014 report from the Conflict Armament Research (CAR), the United Kingdom-based organization monitoring the movement of conventional weapons, ammunition, and related military materiel in conflict zones, the IS acquired and utilized weapons and ammunition from over 15 countries, with China, Russia, and the United States being the most prominent (Ahmed, 2014; Nance, 2016). The preponderance of the weapons utilized by the IS originated in the aforementioned countries, were captured from the Iraqi military, the Assad (Syrian) military regime, and other rebel factions in the region (Ahmed, 2014; Nance, 2016). Given a lack of source documents accounting for the volume of weapons, military equipment, and ammunition the IS has seized, along with the lack of accessibility into war-torn regions, it is extremely difficult to account for all materiel the IS currently possesses. Despite this lack of information, there is sufficient documentation available in open source reporting that examines the amount of materiel acquired by IS in both Iraq and Syria.

1. Iraq

In mid to late 2014, after seizing control from the U.S.-backed Iraqi army in such cities as Mosul and Ramadi, the IS acquired a plethora of abandoned U.S. military hardware, including up-armored Humvees, trucks, machine guns, and M1A1 tanks (Pianin, 2015). It has been estimated that the IS seized over \$650 million USD in U.S. military equipment during this time. This estimate only captures a portion of the other hundreds of millions of dollars of equipment that fell into the clutches of the IS (Nance, 2016; Pianin, 2015). Table 1 provides a summary of the U.S. military equipment captured in Iraq by the IS throughout 2014.

Table 1. List of Captured United States Military Equipment in Iraq, 2014.
Adapted from Golson (2010); Nance (2016); Mitzer and Oliemans
(2014b); Pianin (2015).

Equipment	Amount	Per unit Price	Total Price
Up-armored Humvee	2,300	\$70,000	\$161 Million
M1A1 Tank	40	\$4.3 million	\$172 Million
M198 Howitzer	52	\$527,337	\$27.4 Million
M35 2 ^{1/2} ton Truck	46	\$60,000	\$2.76 Million
MTVR – 7 ton Truck	7	\$230,000	\$1.61 Million
Army Machine guns	74,000	\$4,000	\$296 Million
Mine Resistant Ambush Protection Vehicle (MRAP)	23	\$540,000	\$12.42 Million
Navistar International 7000 – Truck	124	Unable to determine	Unable to determine
M-548 Tracked Cargo Carrier	2	Unable to determine	Unable to determine
Ford F-250	2	\$23,052	\$46,104
Ford F-350	202	\$23,277	\$4,701,954
Chevrolet Silverado	31	\$25,575	\$792,825
M1117 Vehicle	25	\$700,00	\$17.5 Million

Note. Additional estimates on the per unit price were found using the following websites:

MRAP estimates—used Category II Models from Forecast International, MRAP family of vehicles. Sources from Oshkosh Corporation. Retrieved from <http://www.fi-aeroweb.com/Defense/MRAP-Vehicles.html>;

F-250 estimates—used 2014 Ford Super Duty XL 4WD Short Bed Super Cab. Sources from Motortrend.com. Retrieved from <http://www.motortrend.com/cars/ford/f-250/2014/>;

F-350 estimates—used 2014 Super Duty XL 4WD SRW Short Bed SuperCab. Sources from Motortrend.com. Retrieved from <http://www.motortrend.com/cars/ford/f-350/2014/>; and

Chevrolet Silverado estimates—used 2014 Work Truck 2WT 4WD Standard Bed Double Cab. Retrieved from <http://www.motortrend.com/cars/chevrolet/silverado-1500/2014/>.

This author was unable to find price estimates for the Navistar International 700 truck and the M-548 Tracked Cargo Carrier, which is why these cells were labeled “unable to determine.”

In June 2016, *Foreign Policy* released an article titled, “The Islamic State Just Got Their Hands on More U.S. Weapons,” which claimed that militants had seized crates of ammunition containing an estimated 2,000 rounds, U.S. mortars, a modified Toyota Hilux pickup to carry a heavy machine gun, and new body armor (Johnson & McLeary, 2016). This article was the most current reference this author was able to find on the capture of U.S.-type weapons by the IS. It is still uncertain whether or not any other U.S. equipment has been seized by the IS since mid-2016.

While equipment such as up-armored Humvees, trucks, and machine guns greatly filled the inventories of the IS, this author is convinced the M1A1, a highly valuable lethal military assets, was instead captured intact, stripped for vital parts (e.g. machine guns, ammunition), and destroyed (Harress, 2014; Mitzer & Oliemans, 2014b). Ultimately, the IS’s entrepreneurial leadership recognized the M1A1 tank for its high visibility on the battlefield, logistical and maintenance burdens, and organizational limitations to the IS and decided to destroy it, rendering it unserviceable for its enemies (Harress, 2014; Mitzer & Oliemans, 2014b). This author is further convinced that the decision to destroy such a lethal military asset gives credence to the IS’s rational decision making among its commanders. Figure 22 provides evidence of the IS stripping the captured M1A1 tank for its weapons and subsequently destroying the tank.



Figure 22. M1A1 Tank Captured and Destroyed. Source: Mitzer and Oliemans (2014b).

This author is additionally convinced that, while captured U.S. military hardware provided lethality to the IS on the battlefield, it also bolstered its image and brand, which depicted the IS as able to defeat a militarily superior force on the battlefield. Additionally, according to *International Business Times*, the IS's armaments exceeded the amount of seized U.S equipment, having been a consortium of aging Soviet tanks, armored vehicles, and black market arms (Harress, 2014). Table 2 provides a summary, based off photographic evidence, of the remaining military hardware the IS purportedly seized and captured in Iraq since 2014.

Table 2. List of Captured Foreign Military Equipment in Iraq, 2015. Adapted from Mitzer and Oliemans (2014b); Nance (2016); Pianin (2015).

Equipment	Type	Manufacturer	Number Captured
T-55	Tank	Russia/Soviet Union	6
T-72	Tank	Russia/Soviet Union	2
T-69	Tank	China	19
MT-LB	Armored Fighting Vehicle (AFV)	Russia/Soviet Union	17
BMP-1	AFV	Russia	7
BTR-80	Armored Personnel Carrier (APC)	Ukraine	4
BTR-4	APC	Ukraine	2
T-653	Military Engineering Vehicle (MEV)	China	1
WZT-2	MEV	Poland	3
BTS-5B	MEV	Ukraine	1
Ural-4320	Truck	Russia/Soviet Union	9
KrAZ-6322	Truck	Ukraine	10
Ashok Leyland	Truck	United Kingdom	11
Mercedes-Benz	Truck	Germany	1
Roman Diesel	Truck	Romania	2
Daewoo Novus	Truck	South Korea	11

Equipment	Type	Manufacturer	Number Captured
Range Rover	Sport Utility	United Kingdom	4
Land Cruiser	Sport Utility	Japan	37
Otokar Akrep	Infantry Mobility	Turkey	21
Dzik-3	Infantry Mobility	Polish	8
SPG-9 73mm	Recoilless Rifle	Russia/Soviet Union	17
M133/M113 Konkurs	Anti-Tank Missiles	Russia/Soviet Union	3
D-30/D-74	Towed Artillery	Russia/Soviet Union	8
14.5mm KPV/ZPU	Anti-Aircraft Guns	Russia/Soviet Union	98
23 mm ZU-23	Anti-Aircraft Guns	Russia/Soviet Union	31
37mm T-65	Anti-Aircraft Guns	China	2
Mohajer-4	UAV	Iran	4
Mi-17V-5 & 35M	Helicopter	Russia/Soviet Union	3
MiG-21FL	Aircraft	Russia/Soviet Union	3

This author is unable to confirm whether the amount of captured equipment in Iraq, as listed in Table 1, remains operational or destroyed. On March 31, 2015, an Oryx Blog post titled “Vehicles and Equipment Captured, Operated, and Destroyed by the Islamic State inside Iraq” displayed photographic evidence that the majority of equipment listed in Table 1, including nine M1A1 tanks, 265 Humvees, eight M1117, and six M35 trucks have all been destroyed (Mitzer & Oliemans, 2014b). While the spoils of Iraq supplied the IS’s war reserves with materiel to last for years, its largest source of weaponry is located in Syria, which includes stockpiles of Soviet and Chinese armaments (Ahmed, 2014; Harress, 2015).

2. Syria

Unlike in Iraq, a deeply rooted civil war has been waging in Syria since the Arab Spring of 2011 (“Syria’s Civil War,” 2017). To this day, the war has multiple belligerents vying for power to control the country, and within that power struggle, the IS has been able to capture a glut of weapons, vehicles, and ammunition from the Assad regime’s

military, the Free Syrian Army, and many other insurgent groups fighting in the region (Nance, 2016). As with Iraq, the number of weapons the IS has been able to seize in Syria is difficult to estimate. As of March 31, 2015, the Oryx Blog titled, “Vehicles and equipment captured, operated, and destroyed by the Islamic State inside Syria,” provided photographic evidence on the military hardware the IS purportedly seized in Syria—see Table 3.

Table 3. List of Captured Foreign Military Equipment in Syria, 2015. Adapted from Mitzer and Oliemans (2014a); Nance (2016).

Equipment	Type	Manufacturer	Number Captured
T-55	Tank	Russia/Soviet Union	81
T-62	Tank	Russia/Soviet Union	15
T-72 Ural	Tank	Russia/Soviet Union	14
T-72AV	Tank	Russia/Soviet Union	7
BRDM-2	AFV	Russia/Soviet Union	6
BMP-1	AFV	Russia/Soviet Union	26
VT-55KS	Tank Recovery	Czechoslovakia	4
MAZ-6317	Truck	Belarus	3
73mm SPG	Recoilless Rifle	Russia/Soviet Union	1
83mm B-10	Recoilless Rifle	Russia/Soviet Union	3
9M14M Malyutka	Anti-Tank Missiles	Russia/Soviet Union	1
9M111M Faktoriya	Anti-Tank Missiles	Russia/Soviet Union	2
9M113 Konkurs	Anti-Tank Missiles	Russia/Soviet Union	5
9M113M Konkurs-M	Anti-Tank Missiles	Russia/Soviet Union	6
9K115-2 Metis-M	Anti-Tank Missiles	Russia	10
9M133 Kornet	Anti-Tank Missiles	Russia	6
I-RAAD	Anti-Tank Missiles	Iran	3
HOT	Anti-Tank Missiles	Germany	4
85mm (D-44)	Towed Artillery	Russia/Soviet Union	1
122 mm (M-30)	Towed Artillery	Russia/Soviet Union	2

Equipment	Type	Manufacturer	Number Captured
122mm (D-74)	Towed Artillery	Russia/Soviet Union	1
20 122mm (D-30)	Towed Artillery	Russia/Soviet Union	20
130mm (M-46)	Towed Artillery	Russia/Soviet Union	34
122mm 2S1	Self-propel Artillery	Russia/Soviet Union	4
57mm UB-16	Rocket Launchers	Russia/Soviet Union	15
107mm T-63	Rocket Launchers	Russia/Soviet Union	3
122mm BM-21	Rocket Launchers	Russia/Soviet Union	11
Scud-B	Ballistic Missile	Russia/Soviet Union	1
14.5mm KPV	Anti-Aircraft Gun	Russia/Soviet Union	35
14.5mm ZPU-1	Anti-Aircraft Gun	Russia/Soviet Union	3
14.5mm ZPU-2	Anti-Aircraft Gun	Russia/Soviet Union	6
14.5mm ZPU-4	Anti-Aircraft Gun	Russia/Soviet Union	1
23mm Zu-23	Anti-Aircraft Gun	Russia/Soviet Union	52
37mm T-65	Anti-Aircraft Gun	Russia/Soviet Union	20
57mm AZP S-60	Anti-Aircraft Gun	China	1
23mm ZSU-23/4	Anti-Aircraft Gun – Self Propelled	Russia/Soviet Union	3
9K32 Strela-2	MANPADS	Russia/Soviet Union	5
FN-6	MANPADS	China	1
Hwaseong-Chong	MANPADS	North Korea	1
V-750/600	SAM Missiles	Russia/Soviet Union	13/1
MiG-17/21M/21MF	Aircraft	Russia/Soviet Union	1/1/9
MiG-21bis/21UM	Aircraft	Russia/Soviet Union	1/7
L-39ZA Albatros	Aircraft	Czechoslovakia	4
Mi-17	Helicopter	Russia/Soviet Union	2
R-3S/ R-13M	Air-to-air Missile	Russia/Soviet Union	10/4

This author is unable to confirm whether the amount of captured equipment in Syria, as listed in Table 2, is still operational or destroyed. As depicted in both Tables 2 and 3, the IS has seized a number of aircraft during its conquests of both Iraq and Syria.

According to the UK-based Syrian Observatory for Human Rights, the IS did attempt to train its members to fly these jets over captured military airports in Syria (Westall, 2014). According to an October 2014 article from *Reuters* titled “Islamic State Flying Three Jets in Syria,” the IS used the intellectual expertise of former Iraqi pilots who served under the regime of Saddam Hussain to build additional capacity (Westall, 2014). The counterargument to these claims was that in 2014 United States Central Command reported that “it was not aware of Islamic State flying jets in Syria” (Westall, 2014). If this claim is true, it reinforces this author’s conviction that the IS used talent management to gain the maximum amount of utility from the members it employed and the resources it harnessed.

Other major seizures of military hardware in Syria include the capture of Tadmur (Palmyra) airbase in May 2015; the Ayyash weapons depot in January 2016; military checkpoints in Khanasir in February 2016; and a Deir ez-Zor storage depot in February 2017 (Mitzer & Oliemans, 2015, 2016b, 2016c, 2016d). The seizure of Tadmur airbase yielded the IS large amounts of ammunition, anti-aircraft guns, and artillery such as the 130mm M-46 field gun (Mitzer & Oliemans, 2015). This author was not able to locate an all-inclusive list of all materiel seized, but photographic evidence does exist for the spoils the IS gained (see Figures 23 and 24).



Figure 23. Captured Ammunition from Tamdur Airbase, Syria, 2015.

Source: Mitzer and Oliemans (2015).



Figure 24. Captured Artillery and Anti-aircraft Guns from Tadmur Airbase, Syria, 2015. Source: Mitzer and Oliemans (2015).

While the spoils of Tadmur did not yield any operational aircraft for the IS to potentially exploit and use to its advantage, the airbase was home to a number of radar systems which supported the Syrian Arab Air Force (SyAAF; Mitzer & Oliemans, 2015). The loss of the airbase, however, did negatively impact the SyAAF's ability to conduct operations against the IS. This outcome further bolstered the franchise of the IS in defeating a militarily superior force while pushing deeper into regime-controlled territory, threatening major cities, consuming resources, and expanding its caliphate. Yet, some spoils of Tadmur were short-lived; in the same month Tadmur fell, the U.S. coalition reportedly destroyed six anti-aircraft artillery systems and one artillery piece near the city of Tadmur (DOD, 2015b).

In January 2016, the IS purportedly capitalized on the biggest seizure of weapons and ammunition of the Syrian Civil War when it overran the Syrian regime's military depot of Ayyash ("Islamic State Presses Attack," 2016). While exact numbers of military materiel cannot be confirmed, it was estimated that over one million rounds of small arms ammunition, 9,000 grenades, hundreds of anti-tank guided missiles, tanks, and Boyevaya Mashina Pekhotys (BMPs) were among the loots of Ayyash (Mitzer & Oliemans, 2016b). Figures 25 and 26 provide an estimated summary and photographic evidence of the captured materiel from Ayyash.

Ammunition:	Vehicles (derelict trucks not included):	Weaponry:
<ul style="list-style-type: none"> - 1,348,300 to 1,791,960 rounds of 7.62x39 and 7.62x54R ammunition. - 17,140 rounds of 12.7mm ammunition. - 158,996 rounds of 14.5mm ammunition. - 119,768 rounds of 20mm ammunition. - 450 rounds of 23mm ammunition. - 223 rounds of 73mm ammunition. - 72 rounds of 82mm ammunition. - 2000 rounds of 85mm ammunition. - 6 rounds of 107mm ammunition. - 4 rounds of 120mm ammunition. - 165 rounds of 120mm RAP ammunition. - 576 rounds of 122mm ammunition. - 1120 fuses for 122mm artillery rounds. - 7 PG-2 rocket-propelled grenades. - 10 PG-7 rocket-propelled grenades. - 1 PG-7VL rocket-propelled grenade. - 1 TBG-7V rocket-propelled grenade. - 1 OG-7V rocket-propelled grenade. - 2 PG-29V rocket-propelled grenades. - 2 M-57 rocket-propelled grenades. - 9025 grenades. - 36 rifle grenades. - 98 9M14M Malutka ATGMs. - 1 9M113M Konkurs ATGMs. - 7 3M9 surface-to-air missiles. 	<ul style="list-style-type: none"> - 1 T-55(A)MV. - 2 T-55As. - 5 BMP-1s. - 1 23mm ZSU-23. - 1 BRDM-2. - 1 BTR-152. - 2 BREM-2 ARVs. - 3 2P25 TELs. - 1 SURN 1S19 radar. - 6 ZIL-131s. - 2 GAZ-3308s. - 2 GAZ-66s. - 2 Ural-375Ds. - 1 KamAZ-53212. - 1 MAZ-5336. - 1 Tatra 815. - 1 GAZ Sobol. - 1 UAZ-469. - 2 excavators. - 1 Land Rover Defender. - 2 technicals. - 3 trucks. - 4 cars. 	<ul style="list-style-type: none"> - 84 7.62mm AK(M)-47s. - 5 7.62mm PKMs. - 1 7.62mm RPD. - 1 7.62mm SGM. - 3 12.7mm DShK(M)s. - 11 14.5mm KPVs. - 2 23mm ZU-23s. - 1 RPG-2. - 13 RPG-7s. - 1 73mm 2A28 Grom. - 1 M40 106mm RCL. - 122 bayonets. - 1 pistol. - 1 flintlock.

Figure 25. Captured Military Materiel from Ayyash, Syria, 2016. Source: Mitzer and Oliemans (2016b).



Figure 26. Captured Military Materiel from Ayyash, Syria, 2016. Source: Mitzer and Oliemans (2016b).

Following the seizure in Ayyash in February 2016, the IS launched attacks in the vicinity of Khanasir, Syria, in order to cut the Syrian regime's supply routes to the city of Aleppo (Mitzer & Oliemans, 2016c). This action resulted in another confiscation of war booty of foreign military equipment catering to its image of employing anything from modern day, U.S.-made weaponry to aging Soviet-style arms (Mitzer & Oliemans, 2016c). As with the majority of the other caches captured by the IS, exact numbers are hard to determine, but this specific plunder is known to have included several tanks, armored vehicles, artillery, small arms, and ammunition, as depicted in Figures 27 and 28.

Ammunition:	Weaponry:	Vehicles:
<ul style="list-style-type: none"> - 19,330 rounds of 7.62x39 and 7.62x54R ammunition. - 430 rounds of 12.7x99 ammunition. - 90 rounds of 12.7x108 ammunition. - 2634 rounds of 23mm ammunition. - 116 rounds of 60mm ammunition. - 30 rounds of 106mm ammunition. - 3 rounds of 107mm ammunition. - 2 rounds of 120mm ammunition. - 30 rounds of 122mm MRL ammunition. - 7 rounds of 3BK14 125mm ammunition. - 1 round of 3BM-44 125mm ammunition. - 45 rounds of artillery ammunition. - 43 charges for artillery rounds. - 98 (PG)-7 (Nader) rocket-propelled grenades. - 7 RPG boosters. - 39 grenades. 	<ul style="list-style-type: none"> - 65 7.62mm AK(M)-47s (KL). - 5 7.62mm PKMs. - 2 7.62mm SVD Dragunov. - 1 7.62mm PSL. - 1 12.7mm HS.50 (AM.50) - 1 12.7mm DShK. - 1 14.5mm KPV. - 8 RPG-7s. - 2 Type-69s. - 1 60mm mortar. - 1 81mm mortar. - 1 73mm SPG-9 - 1 130mm M-46 field gun. - 2 122mm D-74 field gun. - 1 152mm D-20 howitzer. - 1 M40 106mm RCL. 	<ul style="list-style-type: none"> - 1 T-72M1 (equipped with the Sarab-1). - 1 BMP-1 - 1 122mm 2S1 Gvozdika. - 1 Safir. - 1 GAZ-3308s. - 1 Tatra 148. - 1 Tatra 815s. - 1 truck. - 6 technicals. - 3 bulldozers. - 2 motorcycles.

Figure 27. Captured Military Materiel from Khanasir, Syria, 2016. Source: Mitzer and Oliemans (2016c).



Figure 28. Captured Military Materiel from Khanasir, Syria—T-72M1(Left) and 152mm D-20 Howitzer (Right), 2016. Source: Mitzer and Oliemans (2016c).

This author was able to research and locate final, open source evidence as it relates to the IS capture of large troves of military materiel in Syria, occurring in February 2017, with the IS plundering a military storage depot in Deir ez-Zor, Syria (Mitzer & Oliemans, 2017b). According to the Oryx Blog post titled “Another One Bites the Dust: Major Arms Depot Falls to Islamic State,” the militant group captured an estimated bulk of small arms totaling three million rounds of 7.62x39 ammunition, five T-72 tanks, 2,000 rounds of 85mm ammunition, and a smattering of other vehicles, cars, and ordnance (Mitzer & Oliemans, 2017b). Exact numbers are difficult to identify, but Figure 29 provides photographic evidence of the captured materiel and depicts the IS members loading the spoils of war onto vehicles, further demonstrating the IS’s logistical and entrepreneurial competency in its distribution of military resources.



Figure 29. Captured Ammunition from Deir ez-Zor, Syria Military Depot, 2017.

Source: Mitzer and Oliemans (2017b).

Although the IS has been able to accumulate a vast array of military weaponry, the international coalition continues its efforts to combat the IS's control of resources through an aggressive targeting campaign. As of August 7, 2015, the number of IS targets damaged or destroyed include the following:

- Tanks—119
- HMMWVs—340
- Staging Areas—510
- Buildings—3,262
- Fighting Positions—2,577
- Oil Infrastructure—196
- Other Targets—3,680
- Total Targets—10,684 (DOD, 2015a)

This author is convinced that due to these current tactical defeats the IS has incurred on the battlefield, the numbers above have only increased.

From this chapter, this author can argue that thus far, the IS accumulated an estimated 200 plus tanks and hundreds of armored fighting vehicles (AFV). This amount of armored weaponry posed a direct challenge to its enemies and potentially made the IS the second largest operator of armored military hardware in the region behind

governmental forces (Mitzer & Oliemans, 2017c). The quagmire of the Syrian Civil War saw many other insurgent groups operating armored vehicles; yet, this author argues only that the IS operated and deployed armored assets on a scale commensurate to nation state militaries (Mitzer & Oliemans, 2017c).

In June 2017, the IS raided rural areas in Hama, Syria, resulting in the seizure of mines, artillery shells, anti-tank missiles, Kalashnikov rifles, bulldozers, and pickup trucks (Tomson, 2017). From this evidence, this author is convinced that, even though the caliphate continues to collapse, the IS will continue to utilize stolen war booty as a vital resource to engage its enemies and wage its violent jihad against the apostates in the region. At its pinnacle, however, the IS amassed a profuse arsenal of military hardware that could last years and potentially fund a resurgence. In its need to sustain its spoils of war, the quasi-state has established a self-styled industrial base to legitimize its franchise.

B. THE ISLAMIC STATE'S INDUSTRIAL BASE

1. Home-Grown Ordnance and Ammunition

During its height, even though the IS captured huge troves of weapons, it required a robust supply of ordnance and ammunition in order to continue defending and expanding the peripheries of its caliphate. Given the kinetic environment the IS operated within, captured ordnance and ammunition would only last the group so long. To maintain adequate levels and inventories of these resources, the IS manufactured and deployed ammunition, ordnance, and IEDs across its caliphate on a quasi-industrial scale (Conflict Armament Research [CAR], 2016a). In November 2016, CAR embedded a team within the Iraqi governmental forces during the battle for Mosul, Iraq (CAR, 2016a). In the technical report from CAR (2016a) titled *Standardization and Quality Control in Islamic State's Military*, evidence shows that the IS employed a centrally managed weapons production capability of six facilities in the vicinity of Mosul, Iraq using recovered ordnance on the battlefield.

Using its competitive advantage over other insurgent groups in the region, the IS's organizational structure provides highly bureaucratic and strict reporting lines by its establishment of the Central Organization for Standardization and Quality Control (COSQC; CAR, 2016b). The COSQC was accountable to the group's Soldiers Bureau within the Committee for Military Development and Production, which provided standard and technical parameters for the manufacturing of mortars, mortar rounds, and rockets—using raw materials of specific type and origin (CAR, 2016b). Figures 30 and 31 provide photographic evidence of the formal technical instructions and a snapshot of the sheer volume of ammunition manufactured within its six known facilities.



Figure 30. Technical Manual Issued by the COSQC for 115mm Rockets, Gogjali, Mosul, November 2016. Source: CAR (2016b).



Figure 31. Mortar Production Facility, Gogjali, Mosul, November 2016.
Source: CAR (2016b).

This author was unable to find exact numbers on the amount of ammunition and ordnance manufactured by the IS, yet it is estimated to be upwards in the tens of thousands for the facilities within Mosul, Iraq (CAR, 2016b). The scale seen from this evidence matches the sophistication and capacities of a conventional military force (“Islamic State Developing New Weapons,” 2017). This level of production from the IS distinguishes itself and its brand from other regional insurgent groups that manufacture improvised weapons on an ad hoc basis (CAR, 2016b). The level of detail and intellectual expertise in this capability is seen through the IS’s ability to construct palletized wooden boxes for long-term storage of rockets and mortars to quality control labeling used on finished products (CAR, 2016b). Figures 32 and 33 provide photographic evidence of this capability, which further legitimizes the IS’s value proposition to its followers while serving logistical functions.



Figure 32. Empty Boxes for 115 mm Fateh Rockets Manufactured by IS Forces, Gogjali, Mosul, November 2016. Source: CAR (2016b).



Figure 33. Label on 120 mm Mortar Round Assembly Manufactured by IS Forces—Near Karamlais (Left) and Gogjali (Right), Mosul, November 2016. Source: CAR (2016b).

Using its organizational structure and entrepreneurial skills, the IS established other improvised weapons manufacturing facilities in other cities throughout the caliphate, for example, the city of Fallujah, Iraq. CAR found additional evidence within Fallujah to confirm that the IS COSQC (Committee for Military Development and Production), managed weapons production across the caliphate by coordinating labor and manufacturing capacity (see Figure 34; CAR, 2016b).

الإسلامية
تطوير والتصنيع الحربي
ت الغربية

العدد: 5
التاريخ: / /

جدول المراقبة

العدد	اسم الورشة	اليوم
3	ورشة أبو خطاب الجناي	السبت
3	ورشة أبو فاسم	الأحد
3	ورشة أبو عائشة	الاثنين
3	ورشة أبو بونس	الثلاثاء
3	ورشة أبو اسلام الفتي	الأربعاء
3	ورشة أبو جعفر كوزة	الخميس
3	ورشة أبو طهية الفتي	الجمعة

ملاحظة / يكون تواجد الأخوة المراقبين أمام مكتب العنبر الساعة 6, 3 مساءً

أبو احمد التطوير
الانظر

Figure 34. Production Management's Daily Schedule for 2016, Fallujah.

Source: CAR (2016a).

In addition to this centralized control of its weapons production, the IS's ability to standardize its weapons manufacturing demonstrates its intellectual expertise, business acumen, and logistical competency. By standardizing its weapons production it provides the IS with the following:

- Minimal variation among its geographically located factories and workshops.
- Enables weapon interoperability, meaning that mortar rounds manufactured in one facility in the caliphate are calibrated and design to be employed with mortar tubes produced in a different facility within the IS.
- Using the same raw materials yields redundancy and functionality among weapon systems (CAR, 2016a, 2016b).

In order to achieve this level of standardization with its mortars, mortar tubes, and rockets, the IS utilized homogenous raw materials of one-off, bulk-procurements and repeated acquisitions of identical products (CAR, 2016a, 2016b). This author is convinced that given this level of coordination and quality control, the IS established a

robust supply chain requiring periodic and continuous reviews of its inventories of raw materials, such as potassium nitrate from single suppliers on the Turkish market (see Figure 35).



Figure 35. Bags of Potassium Nitrate from the Turkish Distributor Doktor Tarsa—Qaraqosh, Iraq (Left) and Fallujah, Iraq (Right), November 2016. Source: CAR (2016a).

Due to production dates crossing a range of years, it appears that the IS forces made repeated acquisitions and further convinces this author that the group must have established an economic order quantity, reorder points, and safety stock of its raw materials (CAR, 2016a, 2016b). The level of manufacturing achieved by the IS during this short timeframe intuitively provides the rationale for the IS to have the logistical competency to sustain its organic manufactured ordnance and ammunition. Even though the IS demonstrated the intellectual expertise to manufacture on an industrial scale, it also has the human capital to maintain and alter its military hardware within established workshops.

2. The Workshop

This IS's entrepreneurial leadership recognized the need to preserve and maintain its military hardware, which lead the group to establish numerous vehicle maintenance facilities among the *wilayats* (governorates) of the caliphate to repair and modify vehicles for current and future operations. This author was unable to determine if any maintenance

infrastructure was established in Iraq, but the IS did establish multiple sites in Syria with two major locations being al-Raqqa (a.k.a. “The Workshop”) and Deir ez-Zor (Mitzer & Oliemans, 2017c). From its inception in the summer of 2014 to its demise in June 2017, The Workshop was the IS’s primary facility for overhauling and upgrading its inventories of all types of vehicles, ranging from installing multi-spectral camouflage on tanks, to the up-armoring of AFVs and even fabricating and installing modular turrets on 4x4 trucks (Mitzer & Oliemans, 2017c). Figure 36 provides before and after photographic evidence of the IS T-72 “Ural” #311 tank undergoing an upgrade in The Workshop.



Figure 36. T-72 “Ural” #311 Tank Upgrades (before and after) in the Workshop.
Source: Mitzer and Oliemans (2017c).

The same T-72 Ural #311 tank was photographed later (date unknown) with the modification of multi-spectral camouflage on the turret, which demonstrates ingenuity to hedge targeting from aircrafts. While experts on tank tactics would argue the presence of the camouflage impedes the capabilities of the tank’s optics, this author sees the entrepreneurial intelligence fast at work to increase the longevity of this military asset (see Figure 37; Mitzer & Oliemans, 2017c).



Figure 37. T-72 Ural #311 Tank with Multi-spectral Camouflage. Source: Mitzer and Oliemans (2017c).

In addition to upgrading military hardware within its workshops, this author is convinced the IS also conducted maintenance and repairs of its vehicles. While new repair parts were undoubtedly difficult to acquire, the IS cannibalized and scrounged for spare parts to keep its military assets on the battlefield (Mitzer & Oliemans, 2017c). This author speculates that the group would transport damaged vehicles back from the frontline to locations like The Workshop to be stripped of spare parts, sights, or even ordnance (e.g., cannons from tanks) for installation on other tanks and AFVs (Mitzer & Oliemans, 2017c). Figure 38 provides photographic evidence of armored vehicles awaiting repairs and upgrades within The Workshop and a tank carcass being used for spare parts.



Figure 38. Tanks Awaiting Repairs/Upgrades at the Workshop (Left) and Cannibalized Vehicles (Right), Date Unknown. Source: Mitzer and Oliemans (2017c).

Like any business or firm, maintaining inventory of your organic property provides such benefits as asset visibility, organization of warehouses, accuracy of resupply, and internal staff efficiency. The IS has depicted evidence for conducting serialized management and accountability with its military hardware. This author speculates that another reason for upgrading its armored vehicles includes implementing inventory management policies within the caliphate. After vehicles were overhauled and upgraded by The Workshop, the equipment would be assigned a unique serial number indicated by black squares reading, “Islamic State, The Caliphate Army” (Mitzer & Oliemans, 2017c). Figure 39 provides photographic evidence of these serialized markings of various military vehicles within the IS’s inventory.



Figure 39. IS Markings on Military Vehicles. Source: Mitzer and Oliemans (2017c).

According to an April 2016 Oryx Blog post (Mitzer & Oliemans, 2017c), the serialized black squares were a plaque indicating that the vehicle had been overhauled by The Workshop. This author speculates that this marking policy demonstrates the entrepreneurial skills apparent in the centralized organizational structure in the IS which allowed its leaders to have transparency with its capabilities, thereby enabling them to distribute IS resources accordingly within the caliphate. A case in point is that even though The Workshop was located in al-Raqqa, Syria, many of its products were purportedly seen operating throughout the caliphate, including Iraq. Figure 40 supports this case by depicting an overhauled T-55 Syrian tank (with an IS plaque) operating in the vicinity of Mosul, Iraq (Mitzer & Oliemans, 2017c).



Figure 40. Overhauled T-55 Tank Operating near Mosul, Iraq, Date Unknown.
Source: Mitzer and Oliemans (2017c).

Serialized inventories did not just end with vehicles; the IS also maintained inventories of other military hardware such as personally assigned weapons to members of the IS. Using translated documents from Aymenn Jawad Al-Tamimi, Figure 41 depicts a personnel and weapons list from the western al- Shirqat district of Iraq.

No.	Full name	Place of work	Kalashnikov rifle	Number of rounds	Clips and chest pouches	Rifle no.	Type of pistol	Pistol no.
1	Azhar Adwil Hamoud Hamish	Base	Akhmas [type of attachment for the rifle to the body] Wooden	120 rounds	4/clips/without pouch	846232	None	None
2	Ibrahim Adnan Imran Abd al-Jabbar	Base	Akhmas Wooden	120 rounds	4/clips/with pouch	945573	None	None
3	Ihsan Ahmad Alwan Muhammad	Base	Akhmas Wooden	120 rounds	4/clips/without pouch	3387	None	None

Figure 41. Specimen 22Y: Personnel and Weapons List, Western Shirqat, Iraq.
Source: Al-Tamimi (2016a).

In addition to personnel and weapons documentation, the IS also maintained inventories on ancillary equipment of major end items. Figure 42 depicts an inventory checklist of tools to support the principal end item of a drone.

تفقد الحقيبة
Tool Case Check
المعدات و المجهزات
Tools & Devices

رقم	ملاحظات	رقم	ملاحظات	عدد	ملاحظات
1	مفاتيح	27	كوبور و ميموري	2	ملاحظات
2	مفاتيح	28	فونون	2	ملاحظات
3	مفاتيح	29	كابل البطاريات	2	ملاحظات
4	مفاتيح	30	لاب توب	2	ملاحظات
5	مفاتيح	31	مجهزات التفجير	2	ملاحظات
6	مفاتيح	32	بطاريات استيموك	2	ملاحظات
7	مفاتيح	33	طيار آلي	2	ملاحظات
8	مفاتيح	34	متحكم السرعة الموزون	2	ملاحظات
9	مفاتيح	35	مرسل الفيديو	2	ملاحظات
10	مفاتيح	36	كاميرا التحكم	2	ملاحظات
11	مفاتيح	37	كوبور	2	ملاحظات
12	مفاتيح	38	ميموري	2	ملاحظات
13	مفاتيح	39	سلك	2	ملاحظات
14	مفاتيح	40	موتور	2	ملاحظات
15	مفاتيح	41	فيديو وسير	2	ملاحظات
16	مفاتيح	42	مرسل صوتي	2	ملاحظات
17	مفاتيح	43	موتور و ميموري	2	ملاحظات
18	مفاتيح	44	موتور	2	ملاحظات
19	مفاتيح	45	سلك التحكم	2	ملاحظات
20	مفاتيح	46	متحكم السرعة الموزون	2	ملاحظات
21	مفاتيح	47	مفاتيح	2	ملاحظات
22	مفاتيح	48	كوبور و ميموري	2	ملاحظات
23	مفاتيح	49	فونون	2	ملاحظات
24	مفاتيح	50	كابل البطاريات	2	ملاحظات
25	مفاتيح	51	لاب توب	2	ملاحظات
26	مفاتيح	52	مجهزات التفجير	2	ملاحظات

Figure 42. Tool Case Checklist for Drone Use. Source: Al-Tamimi (2016a).

Whether the IS methodically implemented inventory policies or whether it happened by chance, this author is convinced it demonstrated the organizational leadership skills for endeavoring to manage its resources and institutions. As with the organic manufacturing of ordnance and ammunition, the IS's ability to franchise its military hardware enhanced its legitimacy as the caliphate and galvanized degrees of nationalism among its followers. However, this author speculates that the IS's intellectual leadership knew they could only interface with like-minded individuals. In order to support its caliphate, the IS would have to do business with intermediaries, smugglers, and middle men from the black market.

3. Intermediaries, Gunrunners, Smugglers, and the Black Market

In contemporary legitimate open business markets, firms, consultants, and companies exist to serve as mediators between suppliers and consumers for business deals, investment decisions, transactions, and negotiations (Edelman, 2014). These intermediaries or "middlemen" provide valuable benefits such as finding buyers what they need, highlighting alternatives to consumers, and regulating business standards (Edelman, 2014). This author is convinced that the IS operates along the same lines but interfaces with black market intermediaries such as smugglers, gunrunners, and traffickers. The IS exploits the individuals found in conflict zones where overall the society's value system has been degraded due to war and violence (Brisard & Martinez, 2014). This widespread breakdown of values is rampant in the war-torn region of Iraq and Syria, with nearly three decades of the people being involved in various forms of black market and smuggling activities to circumvent the numerous dictatorships in the region (Brisard & Martinez, 2014).

Whether it is smuggling unrefined crude oil outside its borders, purchasing raw materials for its ordnance and IED-making factories, or acquiring guns to support its army, the IS uses intermediaries to import and export goods, utilizing an established secure supply chain network (Solomon, 2015a, 2015b). Due to the shrouded secrecy that is the black market, the ability for this author to develop a narrative for the IS interaction with intermediaries is difficult. Yet, this author is convinced that the types of goods the

IS needs to trade or purchase determine the individuals that IS must collaborate with. To gain revenue for items such as looted antiquities, the IS would grant licenses to local excavators to unearth potential artifacts (Faucon, Kantchev, & MacDonald, 2017). The IS would then collaborate with a web of independent intermediaries to buy the artifacts and clandestinely transport them out of its caliphate using humanitarian convoys, refugees, and agriculture products as concealment (Faucon et al., 2017). Once the plundered items reached safe havens such as Turkey, Jordan, or Lebanon, the intermediaries would interface with “middlemen” to potential buyers to earn a profit for the IS (Faucon et al., 2017).

Even though the IS constantly plundered weapons and ammunition from its enemies, it still interfaced with regional black marketers and gunrunners. The IS would use these regional intermediaries to purchase supplies and weapons from pro-government militia in Iraq and Syria (Solomon, 2015a). A former arms dealer for the IS, Abu Omar, told the *Financial Times* in an interview that “we [the arms dealers] could buy from the regime, the Iraqis, the rebels—if we could buy from the Israelis, they wouldn’t care, as long as they got the weapons” (Solomon, 2015a). As the caliphate continues to contract from the international coalition’s pressure, this author is convinced the IS will continue to interface with and utilize black market intermediaries for potential gains in money, logistical planning, and resupply.

4. Logistical Competency

The IS’s entrepreneurial leadership defines, forecasts, and manages logistics, further demonstrating its ingenuity, accountability, and adaptability with regards to employing its military hardware. Translated documents from Aymenn Jawad al-Tamimi provide further evidence of the IS’s ability and intellect to identify logistical requirements and communicate those necessities to a higher authority. Figure 43 depicts formal correspondence between the *diwan* (district) to the *wilayat* (governorate) in Sinjar, Iraq, requesting they provide the IS members at the district level with weapon accessories such as magazines, optical scopes, and night vision goggles.



Figure 43. Specimen 12Y: Request for Equipment Sinjar, Iraq, Area, 2015.
Source: Al-Tamimi (2016a).

In a similar but completely different internal IS document, the IS again formally identified a need within the caliphate and requested support to a higher bureau. In Figure 44, the wilayat in Salah al-Din, Iraq, requests such items as lamps, water pumps, electrical heaters, and water storage tanks to a recipient by the title of The Economic Centre (Al-Tamimi, 2016).



Figure 44. Specimen 27U: Request for Provision of Goods for Mosques, Salah al-Din Province, Date Unknown. Source: Al-Tamimi (2016a).

This author is unable to determine where within the IS's organizational structure The Economic Centre is positioned. Yet, in addition to the IS formally identifying logistical requirements via written correspondence, the organization also demonstrated knowledge-based decision-making and outside-the-box thinking. Figure 45 shows the IS transporting a T-72 tank via a low-boy semi-trailer, which signifies to this author the organization's ability to recognize the capabilities and limitations of the tank in order to increase its reliability, availability, and maintainability. Figure 45 also depicts the IS's ingenuity and entrepreneurial skills by fusing together separate military assets of a U.S. M-35 truck and a Soviet 122mm D-30 howitzer to fabricate a mobile artillery or anti-aircraft weapon (Mitzer & Oliemans, 2016a).



Figure 45. 120mm D-30 Howitzer with M-35 Truck (Left) and T-72 Tank with Low-Boy Trailer (Right). Source: Mitzer and Oliemans (2016a, 2017c).

This author is convinced that the IS's intellectual expertise with its centrally managed hierarchy did have visibility and decision making over the numerous logistical requirements needed to support the caliphate. This author also speculates that to some degree, the leadership and higher level emirs did manage the needs of its outlying bureaus and committees in the caliphate.

C. SUMMARY

This author is convinced that as the caliphate's size continues to contract due to relentless international pressure, the IS continues to adapt and demonstrate ingenuity to acquire military materiel to fight its enemies. The IS will continue to interface with smugglers and intermediaries, plunder any targets of opportunity to seize personal gains and fabricate resources to support its cause. This author speculates that the group will adjust by relying on its entrenched organizational structure to reimage itself to keep the legitimacy that the IS franchise has achieved over the past four years.

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V. CONCLUSIONS AND RECOMMENDATIONS

Do you think America that victory is by killing one leader or another? Were you victorious when you killed Abu Musab, Abu Hamzah, Abu ‘Umar, or Usama...? No. Indeed, victory is the defeats of one’s opponent ... were we defeated when we lost the cities in Iraq and were in the desert without any city or land ... And would we be defeated and you be victorious if you were to take Mosul or Sirte or Raqqa or even take all of the cities and we were to return to our initial condition? Certainly not! True Defeat is the loss of willpower and desire to fight.

—Abu Muhammad al-Adnani, May 21, 2016, speech

The main research objective of this thesis is to determine how the IS managed its resources of money, manpower, and materiel. This chapter provides analysis for linking all three resources and the success in aggregating all three resources yielded for the proto-state. Section B provides an aggregate analysis by succinctly linking the group’s entrepreneurial capabilities to its management of money, manpower, and materiel, thereby creating the brand of the *deadliest and widely known terrorist organization*. Sections C and D identify recommendations for policymakers and future areas of study for continuing to hedge the threat of the IS.

A. THE FRANCHISE

As of October 2017, the IS has lost nearly its entire caliphate and endured major military defeats in Mosul, Iraq, and Raqqa, Syria. Yet, despite its current downfall, the organization’s history is no stranger to boom and busts (Ingram & Whiteside, 2017). The IS, once branded the “world’s richest terrorist organization,” today creeps back into the shadows of insurgent and criminal-type operations (al-’Ubaydi et al., 2014 p. 65; Ingram & Whiteside, 2017). The core followers of the self-styled caliphate endure, however, and promote messaging such as, “We remain, we are still expanding, and we will never stop inciting,” in order to captivate and recruit new followers (Ingram & Whiteside, 2017). This author is convinced that the world has not heard the last of the IS, due to its resiliency and ability to adapt.

Even though the IS's tangible caliphate has hemorrhaged due to the international coalition's military and economic campaign combating the IS, its long history of resiliency enables it to continue being a reputable and enduring threat. Even though the IS has been dislodged from its current strongholds, the group's history of booms and busts in its infancy as AQI and ISI proves its likelihood to bounce back from this setback. This author is convinced that, even though the IS may be in a fragile state, its global recognition over the past several years continues to position it at the forefront of terrorist organizations. The IS emboldens its followers to disregard setbacks and losses on the battlefield by emphasizing *themes of struggle and sacrifice*, as reminders that its jihad is sanctified and enduring (Ingram & Whiteside, 2017).

This thesis produces three conclusions regarding how the IS managed the resources of money, manpower, and materiel during its apex:

- The IS's organizational structure enabled it to successfully generate, manage, and employ the resources of money, manpower, and materiel, thereby propagating itself as a franchise among other terrorist and violent extremist organizations.
- The IS's ability to seize and expand its physical caliphate, thereby consuming money, manpower, and materiel, bolstered its image and name to the international community as the brand of the world's wealthiest and deadliest terrorist organization.
- The tactics that the IS employed established itself as a terrorist franchise in that the more terror, violence, and civil unrest they generated, the more people were drawn into its brand. The reputation it has built contributes to aggregating the money, manpower, and materiel of the organization.

This author is convinced that the IS's organizational structure is what sets it apart from its terrorist competitors. Referencing the analysis from Chapter III, the IS's ability to form, operate, and adapt its hierarchy to govern its districts, but to also have councils and bureaus to oversee functional areas such as finance, military, and marketing (propaganda), bolstered its legitimacy. As seen in the evidence from Figures 2–8 in Chapter II, having a devoted ministry or council for finance enabled the group to manage the resource of money effectively. These translated documents provide examples of

financial data on payments to its personnel, salary tables, and formal correspondence to adjust salaries, all supporting the narrative that the IS rewards its members and constituents. The IS's narrative of being a governing entity that promotes a value proposition of not only financial stability but also a place for divine worship, a sense of belonging to a greater cause, and security from oppressive apostates, entices its local and global customers to its brand. This author is convinced that the value proposition or promise the IS conveyed to its consumers was this: that when they join, their talents would go to supporting the caliphate while receiving some type of reimbursement for their talents. Figures 18 and 19—translated documents of personnel lists with skills and education and declarations allocating capabilities across the caliphate—provide evidence that the organization established internal methods of managing its human capital within the enterprise.

The IS's organizational structure also enabled it to develop and promote its brand through its entrepreneurial ingenuity of its materiel. Signifying its entrepreneurial abilities, the organizational structure established such capabilities as maintenance facilities—that is, “The Workshop” in Syria—throughout its caliphate to legitimize its spoils of war as its own. As shown in Chapter VI, the IS utilized plundered military assets such as tanks (see Figures 36 and 37 of the T-72 Ural #311 Tank upgrades), which bolstered its franchise with after-market modifications and IS branding. The organizational structure became the linchpin within its ability to promote its brand in the region, not only with fabricated vehicle enhancements, but also with the technical expertise to manufacture its own ordnance and ammunition, as seen in Figures 32 and 33 showing the labels on a 120 mm mortar round assembly manufactured by IS forces. It goes without saying that within a business paradigm, the more organized the competition is, the harder it is to defeat it. This author argues that the IS is generally more organized and sophisticated than any other regional non-state actor and any traditional terrorist group such as Al-Qaeda. The success and global media coverage the IS achieved over the last several years has enabled the group to establish a franchise whose integral strength is drawing money, manpower, and funding into its cause.

Franchising enables individual groups or companies to carry out specific commercial activities as an agent for the parent company's product for service. A brand is a distinguishing symbol, mark, or label with an attached meaning used to distinguish a product from competitors (Greaver, 2016; Kotler & Keller, 2012). This author is convinced that the IS's brand exposure within the international community underpinned its growth as a franchise. Evidence of its franchise growth is reinforced by 40 plus violent extremist affiliate groups that have pledged allegiance to the IS from around the globe (see appendix). When a group pledges allegiance—or *baya*—to the IS, it accepts strict operating principles or activities (ideology, tactics, uniforms) to carry the brand of the IS (Al-Tamimi, 2016b). Prior to being authorized to carry the brand of the IS, affiliate groups must achieve a specific level of organization and sophistication and not be an ad hoc gang of extremists (Winter, 2016). Affiliate groups who pledge allegiance—and whose allegiance the IS accepts—are bound to operate under specific parameters regarding military tactics, marketing and propaganda, ideology, and religious practices (Winter, 2016).

Since its reemergence in 2012 and 2013, the IS has spawned a franchise that aggregates money and manpower, which is used to generate and reinforce itself with its “branded” materiel (see Figure 46). Integral to this feedback loop is the group's organizational and hierarchical capacity, which enables these three resources to be both individually and collectively potent. The brand of the IS has grown a reputation which triggers intense personal reaction across the globe—both positive and negative, whether the feelings come from its supporters and potential followers or its adversaries. Regardless of the depth of negativity toward the group, the IS has become a compelling symbol for its consumers to associate themselves with.

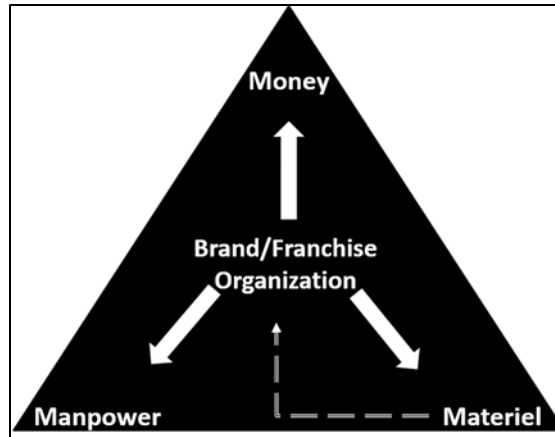


Figure 46. The IS Franchise and Feedback Loop to Money, Manpower, and Materiel

Terrorist and insurgent groups use symbolic labels to induce emotions from targeted audiences (Greaver, 2016). This author is convinced that the IS brand signifies a voice to Sunni Muslims who favor the rejection of the Western globalization and innovation encircling the Arab world. The IS brand rejects any diversion from moralistic principles that correlate to the scriptures of the Quran and the teachings from the *hadiths* (Barrett, 2014). The IS’s enamored followers are legitimized by the brand’s voice to incite violence, thereby promoting it in the interest of reviving Islam, “returning it to its pure form, and uniting” all Muslims while fulfilling the evangelization of Allah (Barrett, 2014, p. 18). Conversely, the IS brand—represented by the IS flag shown in Figure 47—also speaks for the terror and incredibly barbaric acts committed by the group intended to frighten and disenfranchise its enemies (Romeo, 2017).

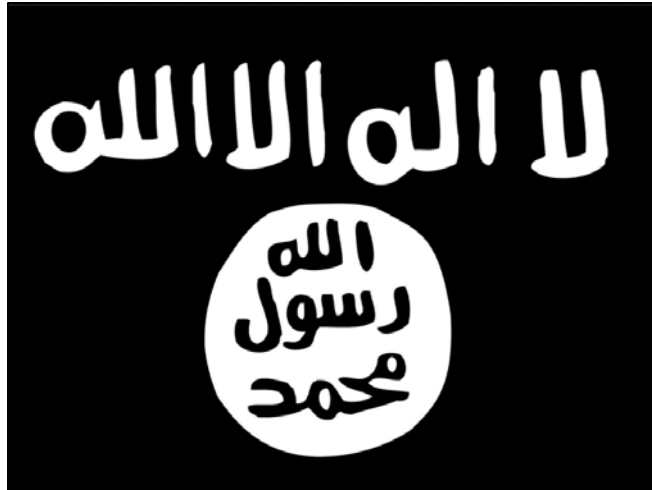


Figure 47. The IS Flag or Black Standard. Source: Romeo (2017).

This author is convinced that when non-IS advocates see this brand element—the black standard—they see it as a symbol of terror. The franchise of the IS uses its label and many other marketing tools—videos, magazines, audio recordings—to disseminate its narrative to its competitors and adversaries. In addition to inciting fear, this author is convinced the black standard is used to seduce devoted followers with the ragged, sixth century writing of the profession of faith, or “*shahada*,” and seal of Mohammad to symbolize its pious origins (Romeo, 2017). The franchise, with the aid of the black standard, terrorizes and intimidates one audience but attracts and draws in another. It could be argued that Mohammad’s preaching (*hadiths*) suggests that black flags will appear in Syria during the end of days (Romeo, 2017). This author sees this brand element as having a major psychological impact on jihadists and devoted followers, who legitimize themselves by using *hadiths* to promote the IS franchise.

The IS makes its brand exclusive from its competition and provides its potential consumers reasons to endorse and support it. The IS brand differs from its competitors because its existence is founded on claims that it held actual territory and created a self-styled caliphate, even if only for the short term. This feat far surpasses that of its competitors by achieving something that Al-Qaeda never did—controlling territory (Romeo, 2017). Holding the amount of territory for as long as the IS did helped develop the brand due to increased exposure from the global media coverage. The IS franchise

differentiates itself from other terrorist organizations as fulfilling prophecies by glorifying barbaric acts of violence against all apostates (Muslims and non-Muslims) and disseminates its actions for a global audience to see using a much larger social media apparatus (Malsin, 2015). Using social platforms such as Twitter, Facebook, and others, the IS—it could be argued—has revolutionized how a terrorist/insurgent group bonds with its followers and targets an audience. At its pinnacle in 2015, it is estimated that the IS disseminated 90,000 Tweets per day and cultivated over 46,000 followers on social media platforms alone (Berger & Morgan, 2015). The IS did not stop with social media to disseminate its narrative; it also developed, designed, and published a number of digital magazines, websites, and even smartphone apps (Shroder, 2015).

Figures 48 and 49 provide visual evidence of the level of lustrous propaganda the IS disseminates, using “sophisticated, slick, and beautifully produced” graphics and visuals (Clarion Project, 2014). Figure 48 shows the annual report (“*al Naba*”) publicizing the results of the IS’s military campaigns and actions on the battlefield (Bilger, 2014). This author equates this specific piece of propaganda to a legitimate company’s or firm’s “10-K report,” which gives a comprehensive summary of a company’s financial performance to potential investors. This same paradigm could be applied to the IS using the “*al Naba*” to target and attract an audience to its cause to build capacity and invest in the self-styled caliphate. Additionally, Figure 49 depicts the online IS magazine *Dabiq*, with its messaging of Unitarianism, truth-seeking, jihad, caliphate migration, and community (Clarion Project, 2014). Even though some of its competitors—such as Al-Qaeda—also published magazines, this author is convinced the IS had a much more potent brand to attract and influence its audience.



The IS brand has in essence gone global: It boasts a vast number of affiliates around the world who have pledged allegiance, it has inspired lone wolf attacks in Western countries, and it has established a name that has become synonymous with terrorism. Yet, regardless of whether this IS brand will endure or fade away as its competitors continue to root out its followers, this author advocates that policymakers from around the world need to maintain a strategy to hedge the threat of the IS.

B. RECOMMENDATIONS FOR POLICYMAKERS

The hierarchical structure of the IS serves a vital purpose for the organization and has helped it to endure for as long as it has. The history of the group includes the turnover of its leadership from Abu Musab al-Zarqawi to Abu Omar al-Baghdadi and Abu Ayub al-Masri to the current leader Abu Bakr al Baghdadi. This author advocates that a decapitation strategy to combat the IS is of limited effectiveness, with the impact being ephemeral. The IS's organizational hierarchy facilitates leader replacement while being underpinned with its bureaucratic decision-making. In the article *When Heads Roll*, evidence showed that targeting terrorist leadership as a counterterrorism policy does not necessarily lead to the organizational collapse of a group (Jordan, 2009). Data showed that of the 239 terrorist groups analyzed, those terrorist organizations of larger size and longer history that had its leadership removed did not result in collapse (Jordan, 2009). Rather, if it did experience a loss of leadership, the group still managed to endure and continue operating using the same tactics (Jordan, 2009). This author advocated to refrain from devoting countless manpower and resources to “decapitating” terrorist groups’ leadership, but recommended instead the development of a robust information operations (IO) campaign to defeat the brand the IS has established, promoted, and become.

Using the paradigm of this thesis, this author is convinced policymakers should consider framing and defeating the threat of the IS as a corporate brand. We need to ask ourselves such questions as, “How do we defeat or kill a brand?” or “Why do big brands fail?” This author suggests that policymakers should push for IO tactics that undermine the IS's ideological and strategic goals. The strategy for going after IS as a brand is a new issue for policymakers, and needs exploring. It is beyond the scope of the current thesis, but this is an important issue or topic for follow-up work. The following can be used to undermine the IS's legitimacy and message: Disseminating narratives and messaging that highlight the group's failure to hold the territory it captured, or sky-lining its inability to provide “security and services” to its so-called constituents to demoralize them while proclaiming they have a “Caliph without a Caliphate” (Ingram & Whiteside, 2017). Additionally, this author sees potential in exploiting the IS's “brand megalomania,” with

a strategy that emphasizes the group's overreach and its inability to touch consumers without its tangible physical space.

The IS has proven throughout its 18-year history to be a learning organization that is adaptive, resilient, and entrepreneurial. Even though the international coalition has been effective in driving out the group from its physical strongholds in Iraq and Syria, policymakers need to take the time to dissect and deconstruct this organization. This author recommends adopting a multidisciplinary strategy to study the IS from such disciplines as finance, psychology, military, logistics/economics, and religion. If history is an accurate indicator for society to learn from, one could argue policymakers were quick to forget the IS in years past when it was beaten back in 2009 and 2010 as ISI. In essence, policymakers need to reconstruct how effective the IS actually was and avoid the temptation to walk away just because the "physical caliphate" will all but disappear.

C. RECOMMENDATIONS FOR FUTURE AREAS OF STUDY

Areas for future research to dissect and the study the IS are unlimited. Given the breadth and focus of this thesis, this author advocates for further paradigm analysis on the group from a business and economic perspective. One future research topic includes a similar methodology as this thesis but on a classified level. This author is convinced that there are a number of classified documents and translated correspondence from the IS that could bolster this thesis's objective of better understanding the group's entrepreneurial skills and logistical competency.

A second area for future research regarding the IS is developing a regression analysis or triangulating the amount of territory the group controlled to the number of fighters within its ranks. Although the data may be difficult to estimate and compile, having this type of analysis may support further strategies in deterring future threats. In addition, the research could also analyze the amount of territory the IS controlled in relation to the estimated total revenue it potentially generated. This could provide further data on the durability of the group's financial strategy of generating wealth through its so-called caliphate, and could further forecast out how prosperous the caliphate actually was or was not.

Third, policymakers alike would benefit from an understanding of the IS's internal communications. Having an understanding of how the group utilized information technology and information systems to operate, communicate, and disseminate its internal narrative could help provide deterrence to similar and future threats.

Lastly, using this thesis as the base, research on methods to defeat and destroy a brand such as the IS would potentially add relevance to the study of this topic from a multidisciplinary paradigm.

D. SUMMARY

Given its history, resiliency, and adaptability, the IS may lose its physical caliphate, but its ideological vision is likely to continue. The group needs to be recognized not only for the barbaric and violent acts it subjects its enemies to, but acknowledged also for its level of ingenuity, resolve, and tenacity. This insurgency has defied the odds and risen from a local criminal syndicate network, starting in 2010, to become the world's most recognized terrorist brand in 2016. For a non-state actor such as the IS to have accumulated the amount of wealth it did, seized and governed the amount of territory it controlled, and defended itself against such overwhelming odds, should be recognized for the feat that it is.

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APPENDIX. GROUPS PLEDGING ALLEGIANCE OR SUPPORT FOR THE IS, 2015

Name	Location	Date Pledged	Allegiance	Support
Abu Hanif's Jamatt	Kazakhstan, Uzbekistan, Russia (Dagestan)	~2013	X	
Caucasus Emirate (CE)	Russia (Dagestan)	December 2013		X
Islamic Movement of Uzbekistan (IMU)	Pakistan or Afghanistan	September 2014	X	
Jaish al_Muhajireen wal-Ansar	Russia (Dagestan)	November 2013	X	
Jund al-Sham	Lebanon & Chechnya	~July 2014	X	
Katibat Al-Aqsa faction	Russia (Dagestan) and Chechnya	~July 2014	X	
Sabiri's Jamaat	Uzbekistan, Tajikistan, & Caucasus	March 2014	X	
Ansar al-Islam	Iraq	January 2015	X	
Faction of Katibat al-Imam Bukhari	Syria	October 2014	X	
Jaish al-Sahabah in the Levant	Syria	July 2014	X	
Jamaat Ansar Bait al-Maqdis	Egypt	June 2014	X	
Jund al-Khilafah in Egypt	Egypt	September 2014	X	
Liwa Ahrar al-Sunna Baalbek	Lebanon	June 2014	X	
Mujahideen of Yemen	Yemen	November 2014	X	
Mujahi-deen Shura Council in the Environs	Egypt	October 2014		X

Name	Location	Date Pledged	Allegiance	Support
of Jerusalem (MSCJ)				
Supporters of the Islamic State in the Land of the Two Holy Mosques	Saudi Arabia	December 2014		X
Supporters for the Islamic State in Yemen	Yemen	September 2014	X	
Al-Huda Battalion in Maghreb of Islam	Algeria	June 2014	X	
Al-I'tisam of the Koran and Sunnah	Sudan	August 2014		X
Al Murabitoun	Mali	May 2015	X	
Ansar al-Sharia	Libya	September 2014	X	
Ansar al-Sharia	Tunisia	September 2014	X	
Boko Haram	Nigeria	March 2015	X	
Islamic State Libya (Darnah)	Libya	November 2014	X	
Islamic Youth Shura Council	Libya	June 2014		X
Jund al-Khilafa fi Tunis	Tunisia	December 2014		X
Lions of Libya	Libya	September 2014		X
Okba Ibn Na-faa Battalion	Tunisia	September 2014		X
Shura Council of Shabab al-Islam Darnah	Libya	October 2014	X	
The Soldiers of the Caliphate in Algeria	Algeria	September 2014	X	
Al-Tawheed Brigade in Khorasan	Afghanistan	September 2014	X	
Ansar al-	India	October 2014	X	

Name	Location	Date Pledged	Allegiance	Support
Tawhid in India				
Heroes of Islam Brigade in Khorasan	Afghanistan	September 2014	X	
Hezbi-e-Islami (HiG)	Afghanistan	July 2015	X	
Jundullah	Pakistan	November 2014		X
Leaders of the Mujahid in Khorasan	Pakistan	January 2015	X	
Tehreek-e-Khilafat	Pakistan	July 2014	X	
Abu Sayyaf Group	Philippines	June 2014		X
Ansar al-Khilafah	Philippines	August 2014	X	
Bangsamoro Islamic Freedom Fighters (BIFF)	Philippines	August 2014		X
Bangsmoro Justice Movement (BJM)	Philippines	September 2014		X
Mujahideen Indonesia Timor (MIT)	Indonesia	July 2014	X	

Note. This list was derived from multiple sources, which are compiled on the website “Islamic State’s Global Affiliates—Interactive World Map,” IntelCenter, March 7, 2015, <http://intelcenter.com/maps/is-affiliates-map.html>.

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