The Internet in the Gulf Countries
How Issues of Internet Access and Cybercrime Impact the Region
Introduction

The internet is often termed a ‘disruptive technology’, referring to its game-changing impact on communications markets. But the internet has the potential to be disruptive in more ways than one: as well as bringing opportunities for economic growth, access to information and being a crucible for innovation, it can also be perceived as disrupting the harmony of societies, undermining hard-won stability or even providing a haven for crime and extremism.

This paper aims to complement discussions at Chatham House’s roundtable on the internet in the Gulf countries, which was held on 12 January 2016. It begins with a review of Gulf Cooperation Council (GCC) plans to develop knowledge economies and the challenges involved. It goes on to review the current state of internet access in the Gulf, evaluating internet penetration rates, broadband costs and social media uptake. The paper highlights particular features of the internet in the Gulf: the contrast between vibrant social media uptake and low domain name registrations; a relatively immature market for online payments and the impact on ecommerce; and low levels of local language content, particularly for general websites, and software tools. The next section focuses on cybercrime. While the region has not historically been associated with cybercrime, this is changing – and the GCC is increasingly a target and source of online crime. There are links between cybercrime and proscribed terror groups. The distinction between cybercrime on the one hand, and cyber-activism on the other, is often blurred. Civil society groups criticize recent internet laws enacted in Gulf countries as being ‘tools for repression’. Different understandings of the definition of ‘cybercrime’ makes the sale of dual-use technologies to Gulf governments by Western companies an increasingly controversial issue.

The paper ends with a short conclusion, suggested interventions for Western allies, and questions for discussion.

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1 This paper was originally prepared to support discussions at Chatham House’s roundtable on the internet in the Gulf (12 January 2016). It was later revised and finalized in the light of comments at the roundtable, which was held under the Chatham House Rule.

2 Roundtable speaker
Creating knowledge economies – an aspiration or source of disruption?

Numerous factors are combining to drive rapid social and economic change in Gulf countries. Economies that have relied on hydrocarbon resources will need to diversify as oil reserves are depleted; young populations are presented with few employment opportunities at home outside of the public sector; in a post-oil era, the current economic bargain between state and citizen will become unsustainable. High levels of migrant workers in all Gulf countries, especially in Qatar and United Arab Emirates (UAE), are in some cases leading to a sense of loss amongst the indigenous populations: of cultural identity and of language (accentuated by an increasingly bi-lingual Arabic/English younger population due to improvements in education).

Gulf countries have developed long-term strategic visions for transformation, which include plans to diversify sources of wealth, improve health and education and in some cases (e.g. UAE and Saudi Arabia) transition to a ‘knowledge society’. There is evidence of a positive correlation between economic growth and internet uptake. The Gulf countries’ strategic plans recognize that to effect transformation, progress is required on numerous fronts: infrastructure, skills (including the capacity for scientific research and innovation) and financial support.

Across the GCC, there is interest in developing e-government to make government more efficient and improve connections between government and citizens. The UAE is a leading example. Saudi Arabia faces greater challenges in bringing e-government to a more geographically dispersed population. The Saudi e-government plan, Yesser, was launched in 2005 and has resulted in the development of a government portal (www.saudi.gov.sa), a data centre, certification and an online payment system (SADAD). By 2014, reports indicate that in some government departments up to 60 per cent of their services have moved online.

The impact on Gulf society of greater internet uptake is contested. It would be an understatement to say that Western assumptions that the internet would automatically deliver greater freedom and democracy throughout the world have not always proved correct. Another view is that

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3 For example 50 per cent of the population of North African countries is under 25 years of age, compared with 27 per cent in Europe. See US Census Bureau, population by age groups, for North Africa (youth population) https://www.census.gov/population/international/data/idb/region.php?N=%20Results%20&T=13&J=both&R=0&Y=2015&R=13&C=, compare with Europe, https://www.census.gov/population/international/data/idb/region.php?N=%20Results%20&T=4&J=both&R=0&Y=2015&R=13&C=


5 See, for example, Mobile Broadband for the masses, McKinsey & Company, February 2009, and Information and Communications for Development 2009: Extending Reach and Increasing Impact World Bank 2009

6 For more information, see the Arab Government Services Outlook 2014, Mohammed bin Rashid School of Government, Dubai http://www.mbrsg.ae/getattachment/145ceac6-6985-4cb2-a97c-30defb18084a/The-Arab-Government-Services-Outcome-2014. UAE scores highly for customer satisfaction and accessibility.
authoritarian regimes have been strengthened by adapting the internet into an instrument of surveillance and repression. While social media platforms are recognized as enablers of citizen engagement, they have also been successfully exploited as propaganda channels for violent extremism, by organizations such as Islamic State of Iraq and Syria (ISIS). As highlighted by a recent Carnegie paper, Twitter is one of the arenas in which sectarian hate speech has been exchanged between Sunni and Shia Muslims, in the Gulf and regionally – but has also been an area for cross-sectarian dialogue and activism. Whereas some social media platforms may primarily encourage discussion within existing groups, the Carnegie analysis of Twitter interactions indicated that ideologically diverse users often engage with each other on Twitter, exposing each other to different opinions. In Saudi Arabia restrictions on assembly and formal civil society organization has encouraged the development of the virtual sphere as arguably the primary locus for informal civil society association.

At the same time, for individuals in Gulf countries where the internet is primarily experienced through a handful of US platforms (Facebook, Google, YouTube) there are ‘competing imperatives from globalization, westernization and the desire to preserve traditional culture and values’. Societies everywhere are struggling with how to respond to the internet, and as with any new technology there is a powerful impulse towards moral panic. A liberal democratic outcome is not guaranteed, nor is political stability or the creation of home-grown technology industries.

In the Chatham House report, Future Trends in the Gulf, Jane Kinninmont argues that ‘relationships between citizens and state in the Gulf should be seen as fundamental to the future security of those countries’. The report recommends that Western allies seek to diversify areas of engagement beyond the oil and defence industries and security issues (including the sale of dual-use technologies by Western companies, which critics say can be used for the purposes of repression). Instead allies are encouraged to identify areas that are valued by Gulf countries as contributing to future economic diversification and widely held social concerns – including education, access to information and media.

Collaboration on internet development could provide mutual benefits, as well as a platform for advocating in favour of human rights, which the report goes on to recommend. However, such advocacy can be undermined if private actions do not match public words.

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9 See, for example, “From Majlis to Hashtag, the UAE National Brainstorming Session. Engaging Citizens through Social Media” Mohammed bin Rashid School of Government, 2015 http://www.mbrsg.ae/getattachment/0162a279-89f3-466b-bf1d-c9544b08fc3d/From-Majlis-to-Hashtag-The-UAE-National-Brainstorm.aspx

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3 | Chatham House
Internet access in the Gulf

Internet penetration and infrastructure

The Gulf is home to some of the world’s richest countries, and consistently outperforms other Arab States in internet development (e.g. in the International Telecommunication Union’s ICT Development Index). Gulf countries also rank amongst the highest in the Middle East region in key metrics that tend to support a vibrant digital economy, for example, ease of doing business and essential skills such as literacy.

Internet penetration rates are relatively high in the Gulf, and have grown rapidly over the past five years. There is a strong preference for mobile over fixed broadband, although there has been a notable growth in fixed broadband subscriptions in Saudi Arabia since 2010 (from 6.3 per cent to 10.4 per cent of the population).

### Table 1: Internet metrics for the Gulf, 2014

<table>
<thead>
<tr>
<th>Country</th>
<th>Percentage of individuals using the internet</th>
<th>Fixed broadband subscriptions</th>
<th>Mobile broadband subscriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bahrain</td>
<td>91%</td>
<td>21%</td>
<td>126%</td>
</tr>
<tr>
<td>Kuwait</td>
<td>79%</td>
<td>1%</td>
<td>140%</td>
</tr>
<tr>
<td>Oman</td>
<td>70%</td>
<td>5%</td>
<td>74%</td>
</tr>
<tr>
<td>Qatar</td>
<td>92%</td>
<td>8%</td>
<td>106%</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>64%</td>
<td>10%</td>
<td>99%</td>
</tr>
<tr>
<td>United Arab Emirates</td>
<td>90%</td>
<td>12%</td>
<td>114%</td>
</tr>
</tbody>
</table>

Source: ITU, 2015

There are an estimated 36 million people online in the GCC, as of November 2015.

Both fixed and mobile internet access prices are becoming more affordable in the Gulf countries. For example, fixed broadband subscriptions costing less than 2% of gross national income per capita.

Across the Arab States, there are comparatively few internet exchange points (IXPs), which tend to reduce costs and increase internet speeds through traffic peering. The few IXPs in the region tend to be in the Gulf: Bahrain, Saudi Arabia and UAE each have a single IXP. There are none in Oman, Kuwait or Qatar.

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According to the Arab Social Media Report, there are 81 million Facebook users and 6 million Twitter users in the Arab world, and use of social media is growing rapidly. 20 YouTube is also particularly popular. In 2013, the top four most subscribed YouTube channels in Saudi Arabia were comedy shows, each with over a million subscribers, 21 supporting the observations of commentators that social media uptake in the Gulf provides a ‘much-needed safety-valve’, and may be evidence of a ‘budding subculture... [which] is carving more and more space for the free flow of ideas’. 22 In 2009, Dr Rasha Abdulla, an expert in role of the internet in Egypt, contrasts the freedom of social networks with offline life, characterizing Facebook as ‘a place where members can roam freely without worrying about the restrictions their own countries and political systems might be imposing on them.’ 23

21 Source: Saudi Arabia, Transition to Knowledge Economy, 2014, p 124 (quoting Social Blade)
The building blocks for a vibrant digital economy

The Gulf countries have all the foundations for a vibrant digital economy: the financial resources to invest in internet infrastructure and related businesses; access to undersea cables; high levels of broadband penetration, at affordable prices; increasingly high levels of literacy and education. Yet at present the region is primarily a consumer rather than a creator of internet services. A number of factors at the infrastructure level need to be addressed in order to fulfil Gulf leaders’ ambitions of diversifying their economies and fostering greater innovation.

High social media uptake contrasts with low domain name penetration

High usage of social media across the region contrasts with comparatively low domain name registration figures. A recent study by the Internet Corporation for Assigned Names and Numbers (ICANN) in 2015 found only 2.9 million domain name registrations across the Middle East and adjoining countries. In the Gulf, UAE and Qatar have the highest penetration rates for domain names with fewer than 15 registered per 1,000 people – while Saudi Arabia has fewer than 2 domains per 1,000.

This may be a result of the local country-code top level domain registries’ complex or restrictive registration policies, lack of local registrars (retailers) and the resulting weak competition and high costs. Another key reason is simply that the market for related services – e.g. internet hosting – is weak. Furthermore, there may be perceived advantages when users wish to post more contentious (or just satirical) content of using a large US platform, which is likely to be more permissive than tightly controlled local environments. Consequently, it not surprising that faced with a choice between the costly, time-consuming and complex task of registering a domain and finding providers to create a website, or creating a Facebook page or YouTube channel immediately for free, people in the Gulf seem to be choosing the latter.

Does it matter if people can create and share content while earning money (YouTube estimates revenues for the most popular sites in Saudi Arabia are up to $60,000 per year) without registering domains? Reliance on foreign social media platforms limits local infrastructure industries leaving them weak, the natural corollary is that consumers have few choices of local providers of home-grown internet services. This may undermine Gulf leaders’ ambitions to create enabling environments for start-ups. More practically for citizens, in a region where some countries have banned access to US platforms, income streams that depend on such platforms could be at risk.

Online banking and payments

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25 Fewer than 10% of the 500 most popular sites in Saudi Arabia are hosted locally (ibid, figure 11)
26 See [http://socialblade.com/youtube/user/eyshelly](http://socialblade.com/youtube/user/eyshelly)
27 Pakistan banned YouTube in 2013, Iran blocks Twitter and Facebook.
Lack of satisfactory online payment mechanisms, particularly for the unbanked, may also hold back development of local web services. Abed et al. set out the complex reasons for low uptake of online payments, and how this inhibits growth of ecommerce.28

According to a study by the Oxford Business Group, in 2014, the Saudi government has created a number of initiatives to enable online payments SARIE (interbank payments) grew by 25 per cent in 2012; the SADAD payments system, established in 2004, handled $35bn in transactions by 2014. Where secure infrastructure and mechanisms exist, supported by enabling legislation, there is a strong appetite for moving payments online: Saudi Hollandi Bank reported a 200 per cent increase in transactions since launching its mobile app in 2013.

Local language content and software tools
Analysis of the 500 most popular websites by country across the Middle East indicates that English dominates in the region. More than 70 per cent of the sites in the region are primarily English-language content, compared with 55 per cent globally.29 There is a gap between the current situation and user preference. While users in the region show remarkable flexibility in switching language online, according to context – unsurprisingly people say they prefer to use their local language when interacting with government or friends.30

For countries interested in fostering technical innovation, language is not just an issue at the level of user interfaces, but also in software tools used to build new systems. There are examples that challenge preconceptions that the region is lacking in innovation or technical skills:

- Arabic script domain names are generally not considered to work well in email.31 To demonstrate that the problem of sending and receiving emails with Arabic script links can be solved, the Saudi domain name registry has developed a working model known as Raseel.32
- Aramco’s implementation of SAP (the popular modular software platform), notes a ‘lack of Arabic-language support, a requirement critical to the project’s success’. Aramco’s resources enabled it to commission an Arabization project for SAP.33
- Technical and linguistic experts from across the Middle East are collaborating to agree code points for supporting Arabic script in domain names. This self-organized project is enabling experts to work across religious and political divides.

A key challenge is that implementation of many Arabization projects depends on the actions or cooperation US companies. At a recent meeting in the region, there was hostility from local industry participants as representatives from major US tech companies explained how it was difficult for

29 Source: Alexa.com, by country, 2015
30 ICANN Middle East DNS Study, 2015.
33 Saudi Arabia, Transition to Knowledge Economy, 2014, p 211
them to advocate for internal resources to do the complex technical development required to support Arabic scripts in their applications, as the financial return on such investment was viewed as poor.\textsuperscript{34} This is an example of a technical issue that promotes strong emotions relating to national identity and culture.

### Cybercrime in the Gulf

Traditionally, the region has had exceptionally low crime rates, but there are signs that this is starting to change. Chawki et al. and El-Guindy suggest that Saudi Arabia is becoming a major source and target of cybercrime, and that there are high rates of phishing attacks in Saudi Arabia, UAE and Qatar with targets including banking, government and ecommerce sites.\textsuperscript{35, 36}

The cost of cyberattacks on key installations in the UAE alone was estimated at US$ 1 billion in 2015, a 400 per cent increase on the previous year.\textsuperscript{37} Cyberattacks on Saudi Aramco in 2012 were a wake-up call. Aramco reported that 75 per cent of its workstations (30,000 computers) on its network were affected by a virus that destroyed data and erased hard drives, resulting in losses of $15 million.\textsuperscript{38} Qatar’s RasGas was reportedly affected by the same malware.\textsuperscript{39} The Flame virus infiltrated computers in numerous countries including the UAE, turning on microphones to record conversations, and stealing credentials of systems administrators.\textsuperscript{40} ‘Operation Cleaver’, believed to operate from Iran, has led to the extraction of ‘highly sensitive materials from the networks of government agencies and major critical infrastructure companies’ in more than 15 countries including Kuwait, Qatar, Saudi Arabia and the UAE.\textsuperscript{41}

The rapid growth of the user base, coupled with poor security awareness are suggested as possible enablers of cybercrime. In addition, terrorism is thought to be a ‘dramatic motivation’ for cybercrime throughout the Middle East. Chawki et al. give examples such as ‘Jihad Online’, which uses hacking as a weapon against its enemies;\textsuperscript{42} others use tracking and profiling techniques to identify possible recruits from those who browse their website; others are used for fund-raising, propaganda and recruitment. Arabic-language hacking forums have emerged that sell exploits, a software tool to take advantage of weaknesses in a computer system, for example, arhack and aliyosh.

\textsuperscript{34} Meeting of APTLD, Oman 2014. Since then, ICANN has convened a project to address email address internationalisation, with the participation of Google and Microsoft.
\textsuperscript{35} Mohamed Chawki, Ashraf Darwish, Mohammad Ayoub Khan, Sapna Tyagi, “Cybercrime, Digital Forensics and Jurisdiction”, 2015. Springer, Switzerland
\textsuperscript{36} El-Guindy, M., (2008), Cybercrime in the Middle East, ISSA Journal
\textsuperscript{39} See Security Middle East, 5 January 2015, “Cybercrime one of the biggest Middle East security threats”, http://securitymiddleeast.com/2015/01/05/cybercrime-one-biggest-middle-east-security-threats/
\textsuperscript{40} Rohini Tendulkar, IOSCO, 2013. “Cyber-crime, securities markets and systemic risk” IOSC-IOSCO, World Federation of Exchanges
\textsuperscript{42} Chawki et al., (2015), 'Cybercrime, Digital Forensics and Jurisdiction'.
Kaspersky identifies a new group, Desert Falcons, described as highly skilled cyber mercenaries operating in the Middle East, whose members are native Arabic speakers. The group is ‘very active’ and has developed its own malware targeting Windows, Android and social networks. ‘Victims are enticed with socio-political news and information, and many succumbed rapidly to malware infection’.

Gulf countries have recognized the need to develop cyber resilience. The UAE has doubled cybersecurity spending to $10 billion over the next five years. Saudi Arabia, the UAE, Qatar, Kuwait and Bahrain have established annual cybersecurity summits.

How are governments responding to the online propaganda of ISIS?

Social media is also being used by proscribed terrorist organizations. For instance, ISIS has employed social media to spread its propaganda. According to Schori Liang, the al-Hayat Media Center produces video content for ISIS, ‘shot in high definition, with professional editing and consistent branding’. In a single month, July 2014, al-Hayat distributed 11 releases in English. One of these videos gained over 18,000 views within a 7 hour timeframe.

Governments worldwide are struggling to find an effective response to ISIS’s online propaganda machine. Technical measures such as blocking, filtering and take-down are reactive, engender wider costs (financial, and through collateral take-downs at the level of domain blocking) and can be ineffective – as the same content will usually pop up in different online locations. Such methods need to be part of a wider, sustained counterterrorism strategy. A participant at a recent Chatham House breakfast briefing highlighted that governments in the Middle East region face particular challenges in direct engagement with citizens: ‘They are having to learn to interact with their citizens. Some are learning fast, and effectively; others are struggling.’ At play are conflicting traditions of consultation (the majlis culture) and ruling elites, which have historically been remote from their people.

What is the difference between cybercrime and cyber activism?

The risks of too heavy a security agenda from international partners (particularly the West) when interacting with governments from the region include differing perceptions of what amounts to

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44 Security Middle East, 2015. “Cybercrime one of the biggest Middle East security threats” http://securitymiddleeast.com/2015/01/05/cybercrime-one-biggest-middle-east-security-threats/
cybercrime, and in whose interests cybersecurity risks should be assessed – the government or citizen. In Gulf Countries, recent trends have been to criminalize cyber activism. Media laws across GCC countries contain a number of prohibitions that affect journalists and bloggers. Oman (in 2011), UAE (in 2012) and Kuwait (in 2013) have updated their cybercrime laws, increasing penalties for acts such as defamation and criticism of the government. Kuwait’s Cybercrime Law imposes custodial sentences for insulting religion and for criticizing the emir on the internet.

In 2014, Saudi blogger Raif Badawi was sentenced to 10 years imprisonment and 1,000 lashes for the crime of ‘insulting Islam’. Saudi leaders may have been surprised by the international outcry that followed Badawi’s punishment, but his case is not an isolated incident. Another young Saudi, Hamza Kashgari, was imprisoned in 2012 after a court found lines of poetry he had posted on Twitter to be ‘blasphemous’, while in 2015 a death sentence was passed on a man who had posted a video of himself tearing pages of the Qu’ran. According to Amnesty, ‘dozens of activists remain behind bars... simply for exercising their right to freedom of expression and assembly’.

Nor is Saudi Arabia alone in punishing online ‘crimes’: cybercrimes laws in the UAE and Oman have been tightened up since the Arab Spring uprisings, while in Bahrain, which has the most organized opposition movement in the Gulf, numerous activists have been jailed for political tweets or for ‘insulting the king’.

Humour has also fallen foul of the law. In 2013, a US citizen was jailed in UAE for posting a YouTube video that satirized elements of Emirati youth culture. In 2015 an Australian woman was jailed, then deported from the UAE for posting an image on Facebook of a vehicle blocking two disabled bays.

Kuwait and Bahrain are the only two GCC states to have ratified key Human Rights conventions, such as the International Covenant on Civil and Political Rights. Kuwait provides constitutional guarantees for freedom of expression. Despite these constitutional protections, Kuwait has jailed at least 63 people who expressed critical views on Twitter and other online platforms since 2011. Blogger Abduljalil Al-Singace and other Bahraini journalists have been jailed for reporting on the Arab Spring uprisings in 2011.

Comments from the Chatham House Roundtable on the internet in the Gulf countries (January 2016) highlighted the importance of distinguishing between cybercrime on the one hand, and cyber activism on the other.

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49 ibid
50 https://www.amnesty.org.uk/issues/Saudi-Arabia
51 https://freedomhouse.org/report/freedom-net/2014/united-arab-emirates
The roundtable also highlighted the issue of private companies that provide surveillance technology to authoritarian states. An example given was FinFisher software, which is manufactured by an EU company, Gamma, and ‘was linked to the monitoring of high profile dissidents in Bahrain’. Furthermore, European company Hacking Team ‘sells its software to several governments with repressive human rights records, such as... Saudi Arabia’. The co-existence of such trade connections, although not illegal, can undermine trust, especially when Western countries seek to advocate for human rights. For example, after the British prime minister’s, David Cameron, speech to the National Assembly in Kuwait (2011), a speaker at the round table commented that ‘local activists asked themselves “why the UK is pretending to be interested in freedom of expression, when your companies are selling surveillance”.’

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57 Citizen Lab, 2015 “Hacking Team leak highlights Citizen Lab research” https://citizenlab.org/2015/08/hacking-team-leak-highlights-citizen-lab-research/
Conclusion

Opportunities for long-term engagement

Gulf countries have high levels of internet access at affordable prices and the region is characterized by enthusiastic social media use. Gulf leaders’ strategies to improve education are starting to reap rewards in terms of uptake and skills relevant to creating knowledge economies. At the same time, there are challenges that must be overcome in order for the region to transition from an online consumer to an innovator: balancing social media usage with uptake of domains and other resources necessary to build bespoke applications; ensuring that Arabic language is well supported in content, software tools and essential infrastructure; further developing online payments to support ecommerce.

Responses to emerging cybercrime will also be crucial. While it is necessary to combat threats to national security, this should not be at the cost of access to information, and freedom of expression.

Constructive engagement to support internet industries and usage in the Gulf

Kinninmont advises international partners to engage with Gulf countries on issues other than hydrocarbons, and defence, and to think about the Gulf’s own priorities (improvements to health, education and diversifying economy). Technical cooperation is an area where communities have traditionally worked well despite political and religious divides (for example, both .ps, Palestine, and .il, Israel, are both full members of the domain name organization CENTR; experts from Iran and Saudi Arabia are collaborating within the Task Force on Arabic IDNs).

Examples of interventions relating to the internet in the Gulf could include capacity building to strengthen local service provision; prioritize linguistic diversity in internet content, as well as software tools and essential protocols.

There are numerous areas for further research, including seeking cooperation from popular social networks on documenting how their platforms are being used in Gulf countries, and a better understanding of how cybercrime is evolving in the region.

Questions for discussion

- To what extent are Gulf strategies for creating knowledge economies being implemented?
- What are the principal challenges to universal internet access in the Gulf, and what needs to be done to overcome them?
- Does it matter that social media use is so far ahead of any other form of internet uptake? What impact will this have on strategies to nurture digital innovation?
- What are the characteristics of cybercrime in the Gulf? What interventions are necessary to combat online crime without adversely impacting individuals’ freedoms?
- What actions on the part of Western allies would be effective in helping enhance the internet in the Gulf?