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The strategic advantages of moving upstream by telecommunication operators: The case of Asiacell.

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ABSTRACT

Purpose - This case examines the increase in smartphones and mobile devices usage, and wider utilization of applications, increases the demand for a faster network. The growth of Facebook, YouTube, online banking, and numerous other Media portals caused a call for higher-speed data.

Methodology – This paper was conducted as an exploratory qualitative research. Primary data was collection by researchers directly from Asiacell. Primary data was compared with secondary data and available literature.

Findings – Moving from 3G to 4G is an expensive affair, internal data by telecommunications operators worldwide showing clear indications of consumer demand, and potential revenues to justify such investments in new infrastructure. This is also true in the move towards 5G networks.

Conclusion - Asiacell had to move to 3G technology to maintain competitive advantage, however, because of regulatory, infrastructure, technological, managerial and general business environment in Iraq, Asiacell is unable to move towards 4G anytime soon. This will lead to a loss of market share as current 4G streaming in the Kurdish region of Iraq is being provided by competitor ISP providers, namely Newroz Telecom and affiliated companies.

Keyword: 3G, 4G, 5G, Asiacell, telecommunications, Iraq, upstream, competitive advantage

1. Background of the study

The need for a new, and faster networks and the move towards 5G is nothing new to telecom operators. Such need is fuelled by an ever-increasing demand by consumers; being organizations and subscribers for more and faster data. The increase in smartphones and mobile devices usage, and wider usage of applications, increases the demand for a faster network. The growth of Facebook, YouTube, online banking, and numerous other Media portals caused a call for higher-speed data. Over-the-Top Services (OTT) or commonly known as data services, are the game changer for telecom operator and ISPs. Customers (subscribers) are the most significant driver behind moving upstream and moving from 2G to 3G to 4G and now 5G. OTT is transparent to network infrastructure, or technology used as a medium; they only need access to data, which enables them to communicate via applications that usually shared between different users or the OTT service owner and customer. In the other hand, the network providing the data access has no control over the content which is transferred digitally through the network(s) (Jacobson & Smetters, 2016). Most popular examples of applications that need OTT services to function are; Skype, Facebook, YouTube, WhatsApp, and Twitter to name a few.

Asiacell

Asiacell is the first and largest amongst three telecommunications network operators in Iraq. The company services covered over 500,000 subscribers within first year of operation (Albawaba, 2003). However, revenue for all operators in Iraq declined because of growth in
use of voice and text applications such as Viber, WhatsApp, Skype, etc. Asiacell was pushing hard to get the 3G up and running, but the call for upgrade, requires regulatory approvals by the Iraqi government. The GSM slow data speed and high cost per Gigabyte of data stems from the fact that technology such as UMTS, and later LTE is more efficient, and much faster than GSM. UMTS and LTE are designed to satisfy the hunger to extra high speeds of data, which enables all subscribers to be connected (Hwang, et. al., 2007). As internal statistics by Asiacell constantly reveals a surge in data traffic, particularly in the southern region of Iraq, this is derived by the fact that ISPs in southern Iraq was not meeting the growth in consumer demand in terms of data rates and network availability.

While revenues at Asiacell generated by data services was rising, the voice and text revenue were declining daily. This phenomenon was not limited to Asiacell, but it was experienced by operators across the globe (Khan, et. al., 2009) since subscribers were moving seamlessly towards Internet Protocol (IP). Data is generally needed by customers for voice, text, streaming or gaming. Figure 1. shows the percentage of Internet usage in Iraq, and indicates the launch of 3G service during 2013-2014, which allowed more customers to access the World Wide Web.

![Percentage of customers using the Internet in Iraq](Source: ITU)

Asiacell’s internal key performance indicators generated by business intelligence department consistently reveals an increasing growth in the utilization of data across Iraq since inception. Internal analysis also reveals another finding, which is the increasing need for data, however, such demand varies from city to another, and more precisely in southern Iraq. Asiacell enjoys wider network coverage, better network effect, and it can reach more consumers, while ISPs are limited to land cables, short distance microwave dishes and limited number of towers. This is largely because of the business nature of small companies with limited CAPEX/OPEX. The graphs below show Region 5 (cities of Basrah, Nasiriya, Amara and Samawa) were data volumes jumped exponentially (around seven times) right after the 3G launch. While in region 1 (cities of Sulaymaniah, Kirkuk, and Diyala) the data volumes up to quadruple of data volume prior to 3G launch.
**Fig 2.** 3G data volume upon introduction of 3G (North Iraq)

**Fig 3.** 3G data volume upon introduction of 3G (South Iraq)

**Research problem**

Moving from 3G to 4G is an expensive affair, telecommunications operators need clear indication of consumer demand and revenues to justify such investments in new infrastructure. This is also true in the move towards 5G networks. Moreover, the need for data prior to the introduction of 3G service was essential to the existence of telecommunication operators globally, but is it the same in the case of Iraqi telecommunication operators? The problem for Asiacell, is to meet the growing demand for more and faster data. An upgrade to 4G services, requires enormous investment by Asiacell in equipment and infrastructure. Yet, an upstream upgrade seems to be an inevitable investment. So, did such investment pay off?

**Significance**

Examining historical internal data, investments made and business decisions may reveal number of lessons for telecommunication operators. This is especially important in the eve of 5G network and the pressure to move upstream. Lessons learnt from the case of Asiacell may be of significance for other operators around the world.
2. Literature review
The telecommunication industry over the past three decades had to cope with continuous changes in technology, that significantly impacts the foundation of existing business models (Hui & Yeung, 2003). Statistics show global mobile data ramping around 40% on annual bases (Khan, et. al., 2009; Ken Research, 2019). Increasing acceptance of smart devices and adoption of mobile phones, computer PDAs by consumers led to increasing connectivity (Mahmood & Ismeal, 2019). This is anticipated to grow even more in the era of the Internet of things that links home appliances, pets tracking devices and transportation vehicles to the world wide web (Salih, et. al., 2019). Traditionally, the primary revenue stream for telecom have been a voice and messaging (SMS). With data coming in the picture, this added a disruption to an established business model since the invention of telecommunications (Mzory & Firend, 2016). However, while the telecommunications industry fast to respond to game-changing technology, as in the case of the emergence of mobile communication in the 1990s and the explosion of the Internet. The industry seems to be caught off guard in the face of their newest revenue challenges (Salih, et. al., 2019).

Over the Top Services (OTT) is a data service, such as the provision of video, audio and other media content using Internet provided by a network operator, but not necessary directly from that provider's business (Abbassi, 2013). Internet service provider does not control the distribution of the content. The ISP only provides content packages and generally receives no revenue from the delivery of this content from third-party online providers. The increasing impact of OTT services on the voice and message revenue of telecommunications is a broadly accepted phenomenon today (Al-Salami et. Al, 2015). Their effect on mobile data traffic and data revenue from telecommunications are also parts that have been recognized as critical. The market for wireless telecommunications is increasing driven by consumer convergence and enlarged wireless integration in the business segment.

North vs. South telecom players
The Kurdish region of Northern Iraq has always been viewed as a success story. This is primarily because of the relative political stability of the region that managed to avoid the sectarian violence that swept the rest of the country (Zorpette, 2006). The Kurdish political leadership played a critical role in attracting businesses, reforming old investment regulations, lobbying international firms, and legislating new visa system that facilitated business mobility. Such steps helped in advancing the private telecommunication sector in the Northern Kurdistan region of Iraq, which at later stages had a spill-over effect to the rest of Iraq (Mzory & Firend, 2016). Up till the introduction of (licensing) small operators to provide OTT in Northern Iraq only, ISPs in Kurdistan region were, and still, doing a good job in terms of data speed, reliability, and availability (Broadband Networks in the Middle East and North Africa). The major ISP provider in the Northern Kurdistan region is Newroz Telecom and its affiliated companies such as Allai Newroz and Fastlink operating in the norther cities of Duhok and Erbil (Ken Research, 2019; Zorpette, 2006). These small operators have wireless and wired Internet service. DSL and high-speed broadband FTTH services (fiber to homes), are all accessible to users in these two cities. Later Newroz Telecom became the first LTE network owner in Iraq. In the norther city of Sulaymaniayah. Small operators such as Goran Net, Tishek Net, IQ Networks and some other small companies are running similar business model. ISP also have an external connection to the world fibre optics cable through Turkey, and later in 2013, another link to the Gulf states, through the city of “Faw” in southern Iraq, which is bordering Kuwait (Broadband Networks in the Middle East and North Africa; Ken Research, 2019). In middle
and southern Iraq, the situation is seen to be chaotic (TeleGeography, 2011; Zorpette, 2006). The Iraqi government represented by ITPC (Iraq Telecoms and Post Company) does not have plan for fibre-infrastructure and information infrastructure in general (CMC, 2019; ITU, 2017). Old fibre networks were either damaged by hostile actions or poorly maintained (CMC, 2019; TeleGeography, 2011). In the capital city of Baghdad, a hybrid network of fibre and microwave are used to reach end-user and connect them to the Internet (Abiresearch.com, 2019).

3. Methodology

This paper was conducted as an exploratory research with qualitative techniques applied. The conceptual framework of this case study is based on a deductive method of a positivism paradigm. Primary data was collection by researchers directly from Asiacell. Primary data was compared with secondary data and available literature. Interviews were conducted with number of Asiacell employees over a timespan of 14 month to verify data and analysis. Interviews were conducted in an open-ended question with various department heads, including technical, engineering, marketing, sales, and legal department. Interaction with partners and cross-departmental technical teams was critical in the assessment gathering of data assessment of findings. Data presented in graphs in this study included first-hand data gathered from Asiacell, such as Key Performance Indicators (KPI) before and after the 3G launch. Interviews were conducted in Kurdish, Arabic and English languages. A triangulation approach was administered to compare and verify interview findings with internal reporting’s. Analysis and findings from Asiacell internal reports, were compared to industry reports, which confirmed numerous findings. Secondary data was collected from the Iraqi ministry of communications reports, telecommunication industry reports, and scholarly academic literature concerned with both the industry of telecommunications in Iraq, and Asiacell. Analysis conducted was to determine the impact of technology changes, such as OTT on Asiacell business model and market share. Exploring any critical factors to the company, to highlight elements that is perceived to be of importance to the company in relation to their long-term position in the industry, and their related competitive advantage issues.

4. Analysis

Mobile Service Providers

Internet service providers in Iraq are small to medium size businesses, in terms of size, capital investment, service area and number of subscribers. This in turn, contribute to lower capital expenditure and operational expenditure (CAPEX and OPEX). Most Internet Service Providers (ISPs) have been established by Iraqi entrepreneurs with IT industry experience. As such, decision making at smaller companies is relatively faster, including adaptation to market changes. This poses a threat to large and established Cellular companies such as Asiacell, Zain and Korek. OTT traffic by the big Cellular companies has dropped notably in the northern Kurdistan region, affected by new smaller companies providing OTT data such as Newroz Telecom and Goran Net. Most of the ISP own fibre network or parts of it, gave smaller data providers the needed leverage over large established cellular operator, that usually lease the dark fibre that leads to a ramp in the dollar per gigabyte rate. The fiber network is in essence an Internet provider, since it encompasses the means of transferring data reliably and securely.

Iraq took its first step out of its isolation in 2003 when the Iraqi government media and telecommunication regulator body CMC (The Commission of Media & Communications) awarded
three GSM licenses to Asiacell, Atheer Telecom and Orascom-Iraqna. The licenses extended in 2007 on different bid terms replacing the old temporary agreement with new 15-years long contract, Orascom withdrew from Iraq for Korek Telecom (Telecoms.com, 2019). The telecommunication infrastructure in Iraq was significantly damaged after decades of wars and international sanctions. According to ITU (International Telecommunication Union), the Iraqi mobile communication service penetration is over 90% (Ken Research, 2017). The mobile phone penetration year-to-year jump in figure 4 shows the thirst for more broadband, an awaited service in Iraq.

![Mobile subscribers growth in Iraq](link)

**Fig. 4** Mobile subscribers growth in Iraq
Source: International Telecommunication Union [link]

**GSM network limitations**
The GSM networks running today in Iraq by the three operators are using the highest GSM available technology. However; the GSM itself, no matter how advanced is, cannot deliver the required data speeds or provide other feature that 3G and 4G are capable of. The GSM uses a technology called TDMA (Time Division Multi Access), which is mature and active, but limited in the capacity of users and data they can upload or download (Dan Wheeler, 2019). More users coming to network need more infrastructure to build, in many cities’ hot spots areas the distance between neighbouring towers reached few hundred feet made it impossible to offer better services to the already congested network.
3G is the answer to 2G limitations

3G technology is actually UMTS, which stand for Universal Mobile Telecommunications System. 3G is a broadband system that offers higher capabilities for mobile wireless connectivity, when compared to GSM 2G system. The upgraded network, which first officially launched in 1998 by NTT DoCoMo (Reuters). The response to a shortage in network capacity was a newer technology that can take more subscribers and have a better quality of service or what call (QoS). The logical upgrade to 2G GSM is the UMTS 3G as they both administrated by same organization 3GPP (The 3rd Generation Partnership Project) making both technologies able to interact and create a seamless transfer and service consistency. In addition, it is essential to go with 3G so the operator can still use the same backbone of its mature GSM network (Cognitel Admin, 2014). Investments in better network upgrades, which costs billions of dollars in ground infrastructure and R&D is the answer for companies where GSM couldn’t offer high quality service to customers, UMTS has better capacity and high-speed data rates (x200 faster compared to GSM), the way to 4G LTE goes through 3G, and technology availability and readiness at affordable prices.

As such, when 3G is faster and high quality than 2G, the same goes for 4G and 5G technologies. An upward streaming can better serve the consumer when high data speeds are needed. Such demand is driven by wider utilization of smartphone and smart devices with extensive capabilities and software developments during the last decade. Development in IOS and Android as main platforms for users has contributed to such demand. As such demand for 5G is a pressing necessity for telecommunication providers. Particularly in the case of Asiaccell. However, competition from smaller and newer OTT providers Such as Newroz Telecom, is posing a tremendous threat to Asiaccell’s ability to provide 4G (a service offered by competitors) and to maintain their existence in the long-run.
The role of Iraqi Regularity body CMC in shaping the competitive landscape

GSM licenses was first offered in 2003 to secure voice call and SMS texting; it was all needed for a country that just broke walls of silence and chains of isolation (ITU, 2017). The first three companies first started to operate in separate regions; Orascom in central Iraq, Asiacell North, and ATC-Atheer (rebranded later as Zain) in the south with no interconnection between any two of them at the beginning (Zorpette, 2006). In 2007, new licenses offered, forced the three operators to cover the entire country geography and allowed for incoming and outgoing connections. The new situation enhanced the network effect principle and offered a fair market competition, which later led to levelling the customer market share between Asiacell and Zain. The introduction of new licenses that can potentially disrupt business models of large cellular operators is attributed to governmental bureaucracy and corruption, which has reached an all levels (Doing Business World Bank Group, 2019) discouraging start-ups and investments. Iraq ranks 171 out of 190, and scores 44 in a scale of 0 to 100, where 0 is the worst. Iraq is currently viewed as one of the worse countries in the Middle East to do business with. The Doing Business Group ranking takes into consideration several factors such as getting credit, solving insolvency, getting electricity, registering property and so on. Figure 4 below shows Iraq ranking among other Middle-Eastern countries in ease of doing global business scale. Another factor that can decide the ISP success is the political aspect of doing business in Iraq. Political connections placed a preference of some companies over others. This is evident from the geographic areas of operations of each ISP in correlation to a dominant political faction in that region.

![Fig. 4. Ease of Doing Business Score in Iraq in 2019 (Source: World Bank link)](image)

Such difficulties, that discouraged foreign operators from entering the local ISP business in Iraq are anticipating lower profitability because of a crowded market (many licenses in the same region). This in turn, presented a greater chance for local operators to capitalize on this opportunity (Zorpette, 2006). Since local operators owns most of the ISP, they could break through Iraqi market barriers, and take on market offering to the next level.

The biggest challenge for Asiacell was not to start 3G service in Iraq, but it was the crucial approvals of governmental entities that allows for telecommunication and media service to be introduced in the country. The Iraqi CMC (The Commission of Media & Communications) was established in 2004 by The Coalition Provisional Authority (CPA) led by the United States and is engaged in all decisions regarding telecom network licenses, frequency bands,
technologies used and more details of cellular business (CMC About us). It took the CMC over five years to finalize the 3G service use, and subsequently allowed the Iraqi service providers to launch UMTS 3G in 2014. The slow response from CMC to the market need had a negative role on the entire business. Many in Iraq telecommunication industry relate such mishap to the political environment and inter-sectarian tensions. The Iraqi CMC was reluctant to give the green light to operators to run 3G service. This was ubiquity across telecommunication industry, and hampered Asiacell from moving to 4G, which might affect their core existence in the marketplace. No telecommunication operator of any size today is able to provide 4G service in central and southern Iraq, where the majority of the market exist. 4G services is only available in the Kurdish northern region of Iraq, where about 12% to 13% of the population resides by small new operators. Non-of the big operators, which constitute the competition of Asiacell, namely Korek Telecom and Zain are able to provide 4G services.

5. Conclusion
Analysis reveals that Asiacell had to move to 3G technology to maintain competitive advantage, however, because of regulatory, infrastructure, technological, managerial and general business environment in Iraq, Asiacell is unable to move towards 4G anytime soon. This will lead to a loss of market share. 3G guarantees data speed that was sufficient for those used to 2G, enough to stream videos at acceptable quality, making calls via VoIP application and many other capabilities, yet this is not enough anymore for consumers with more need for 4G streaming that is provided by competitor ISP provider in the Northern Kurdistan region, namely Newroz Telecom and affiliated companies. As customers get accustomed to more and faster bandwidth, the move from 4G to 5G is something Newroz Telecom is capable of, given their ability to deal directly with 5G infrastructure provider such as Huawei Telecommunications.

For the very first time, Iraq 3G allowed network operators to offer portable internet through phones and external hotspot devices. Such devices like USB Modem and other devices that make it possible to connect computers and PDAs to the internet. The internet mobility put network operators back on track after losses to ISPs. Analysis further shows that the exclusive features that Asiacell, Zain and Korek have over ISPs in terms of service quality and market share leverage are as following; better coverage backed by established country-wide network, mobile phones with geo-location services such as GPS, maps, and other applications on iOS and Android platforms. In order for Asiacell and another mobile service operator to win larger market share and gain competitive advantage, constant upgrading of their services and upstream move towards 4G and ultimately 5G is a necessity. ITU (2017) and Amazon subsidiary, Amazon Alexa concerned with internet traffic analysis (Bohac & Keck, 2018) shows that top 3 sites in Iraq are Google.com, YouTube and Facebook. Such websites require high traffic for video streaming and social networking. Majority of this data streaming are originating indoor, which require enormous investment in indoor connectivity (Abiresearch.com, 2019). Analysis further reveals that open cap data limit, or near to unlimited, is a necessity for operators in Iraq, as well as other markets to gain customer satisfaction and maintain market share growth.

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