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IDEATION CENTER INSIGHT

Turning bits into dollars

The potential of the data economy in the GCC

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The Ideation Center

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EXECUTIVE SUMMARY

Data are a force for economic growth, creating value when companies, governments, and individuals use them to radically improve, and even transform, decisions and business processes. A move toward data-driven technologies as artificial Intelligence (AI), will further increase the economic value of data. However, despite the Gulf Cooperation Council (GCC)[1] countries producing increasing amounts of data, the economic return remains small. We estimate that the GCC data economy is worth US$4.7 billion (around 0.3 percent of regional GDP), a smaller proportion than in the European Union, where it is estimated at 1.9 percent of GDP. GCC countries have lagged behind because stakeholders lack awareness of the value of their data, and do not sufficiently understand their data's commercial potential. Moreover, there is a lack of government policies and regulations to safeguard data use, and a shortage of the necessary human and technical capabilities to support further expansion.

Data create value in two main ways. First, companies use data internally to improve processes, facilitate decision making, and transform the way they do business. Second, those who produce data can sell them, either in raw or analyzed form as a secondary revenue stream.

To develop the data economy in their region, GCC governments must put in place the right enablers and introduce regulation to safeguard data's safe and fair use. This means clear guidelines for ownership, accountability, consumer protection, and privacy.

Companies should refrain from formulating a complex strategy early on, and focus on continuous learning by launching pilots for use cases where they can benefit from data-driven insights. They should enhance their corporate governance to manage potential liability and ethical risks.

Individuals are wary of sharing their data, but they too need to take action. They must be more aware of what they do share, either intentionally or unintentionally; actively manage their privacy; and potentially demand a share of the value of the data they generate.

RAPID GROWTH BUT INSUFFICIENT VALUE

The volume and quality of data in GCC countries are growing rapidly, although the region is a long way from realizing data's full economic potential. The consumption of data in Saudi Arabia, the region's largest economy, grew by 35 percent from 2014 to 2018, a higher rate than in the U.S. and the U.K. (where growth was 30 percent and 24 percent, respectively).[2] Data consumption in Saudi Arabia is forecast to grow by 28 percent a year between 2018 and 2022, faster than the expected growth rate of 20 percent in the U.K. and 23 percent in the U.S. This is part of a broader international trend in which the total size of data generated in 2025 is expected to be 175 zettabytes, more than five times the volume in 2018, according to market intelligence firm IDC (*see Exhibit 1, page 4*).[3]

Improved technology and connectivity, such as the ongoing deployment of 5G, are accelerating the growth of data and the improvement in quality. Major factors include the wider adoption of the Internet of Things (IoT, the network of connected devices) and greater consumption of video content.

There are three main sources of data:

- **Individuals' digital footprints**
  These are the trails of data we create actively while using the Internet, which includes the websites we visit, emails we send, and information we submit or share online.

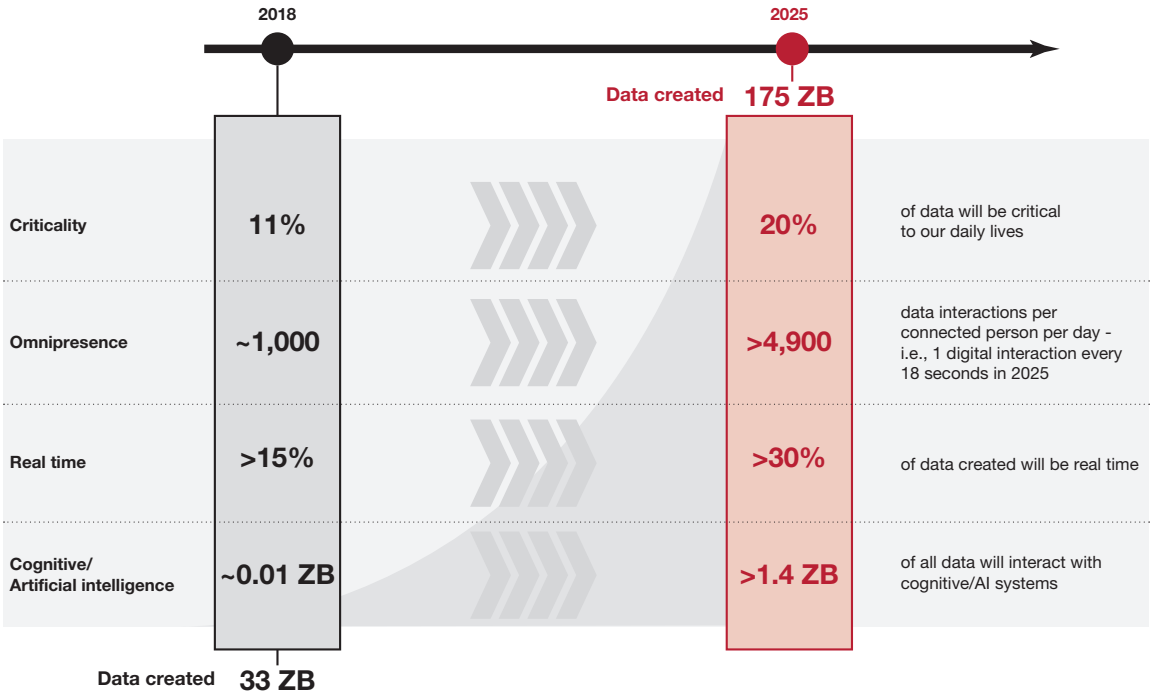
- **Organizations' data**
  Private companies and government agencies create and store large volumes of data. These relate to their own systems and processes, or to customers, suppliers, and others.

- **Data from machines and devices**
  Much of the data volume from machines and devices results from IoT, which includes consumer-connected devices (such as smart appliances, smart TVs, and wearables), and industrial and enterprise devices (such as commercial security systems, driverless cars, preventative maintenance systems for industrial products, smart meters, and smart traffic measurement). The number of connected devices around the world is increasing exponentially. It was estimated at 8.4 billion in 2017, up 31 percent from the previous year.[4] By 2025, according to an IDC forecast, the average person will interact with connected devices 4,909 times daily, compared to 584 times daily in 2015.[5]

These global trends are clearly visible in the GCC, thanks in part to the widespread use of smartphones and government investment in "smart cities."[6] For example, the UAE smart homes market is expected to grow rapidly, by 14.8 percent per year from 2016 to 2022.[7] This compares to 12 percent annually between 2018 and 2024 globally.[8] Similarly, shipments of wearables were up 78 percent in the Middle East, Turkey, and Africa for the period 2017—2018.[9]

EXHIBIT 1

What will data look like in 2025?



Note: AI = Artificial intelligence; ZB = zettabyte.
Source: IDC – Data age 2025 (April 2017); Strategy& analysis

Understanding the value of data

Data create value by facilitating decisions at the individual, organizational, or country level. Data-driven technologies, including AI and machine learning, will radically improve and even transform business processes and decisions. There is growing recognition of the economic opportunity that they represent. The European Commission recognizes data as a "new type of economic asset."[10]

Suketu Gandhi, Bharath Thota, Renata Kuchembuck, and Joshua Swartz from MIT argue that organizations can create value from their data in two ways.[11] First, organizations use data to improve internal operations and productivity, the quality of products and services, and the customer experience. This allows companies to reinvent how they work, to reevaluate their business models, and to better respond to customer needs. Second, organizations create new business models and revenue streams that make data available to customers and partners, which results in data sales.

Creating value from data through these two routes is possible only through data-enabling solutions and services (which include data analytics, classification, exchange platforms, extraction, and storage). These make the overall data economy function more effective and allow for the creation of economic value (*see Exhibit 2, page 6*).

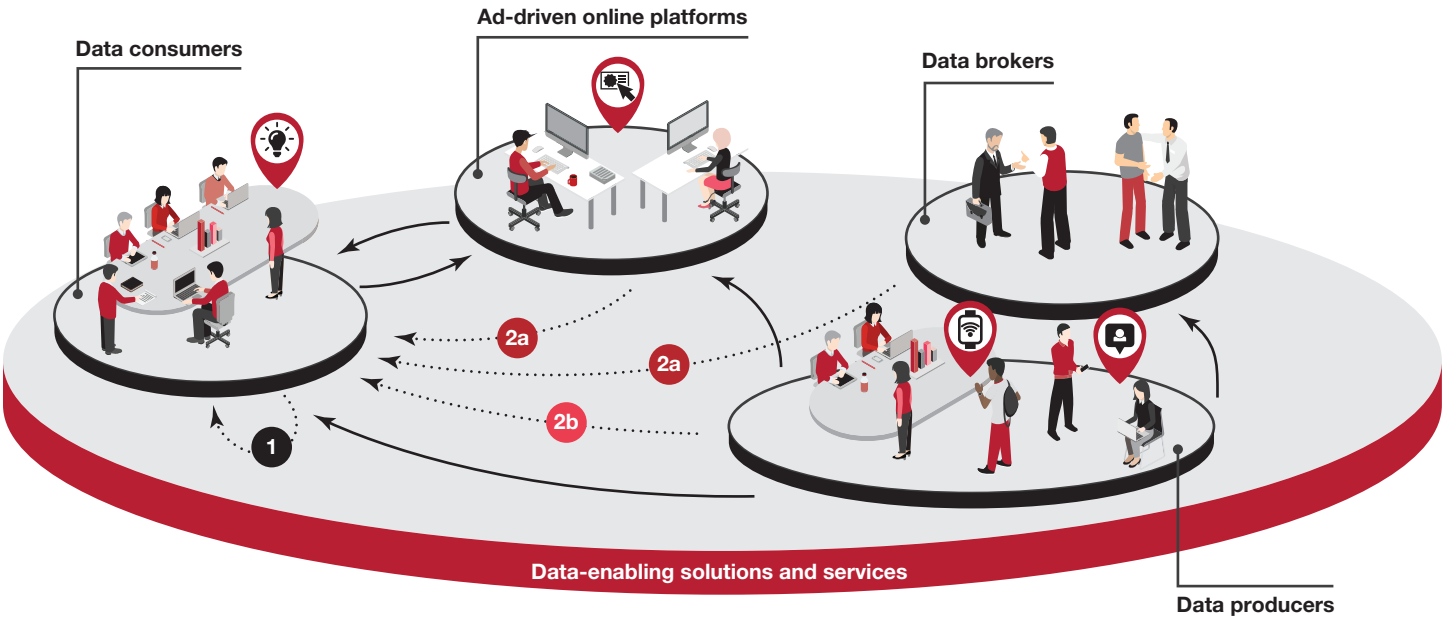
We estimate that the global data economy was worth $1.38 trillion in 2018. The two main elements of the global market are business optimization and data-enabling solutions and services, which together account for over 84 percent of the total. Most future growth will come from data sales and analytics. We estimate the value of the GCC data economy was $4.7 billion in 2018.[12] This is equivalent to around 0.3 percent of regional GDP, six times lower than the proportion in the European Union, where the data economy was estimated to be worth 1.9 percent of GDP in 2015.[13]

The economic contribution of the data economy is even greater when considering that it is the main enabler for the proliferation of AI applications. In practice there is no AI without data. So the more data that devices capture, exchange, and analyze, the greater the value that AI creates.

MAPPING THE KEY ECOSYSTEM PLAYERS

There are several players that contribute to value creation in the data economy. These include data producers (companies, individuals, and machines); and ad-driven online platforms and data brokers, both of which gather data from producers to provide enhanced solutions to companies, which then use the data to improve their decision making. Specialized players offering a range of data-enabling solutions and services enable the ecosystem (*see Exhibit 2*).

EXHIBIT 2
Business optimization and data sales are at the core of data monetization



Source: Strategy&

Data producers

Data producers are individuals, companies, and government agencies, along with data-producing machines, that create a digital footprint.

Data consumers

Data consumers are companies and government agencies that use data insights to guide internal business decisions. Their presence in the GCC is growing, yet remains below what is found in other regions.

Ad-driven online platforms

Online platforms use insights from data gathered from their online users to offer improved targeted advertising services. The likes of Google and Facebook are the dominant players in this category.

Data brokers

Data brokers have access to large volumes of data relevant to consumer behavior, produce insights, and share them in a raw or analyzed format with decision makers.

Brokers collect information about consumers, such as from public records,[14] and sell it as raw data or as analyzed information. Credit agencies, such as Equifax and Experian, provide credit ratings that they sell to lenders. Marketing firms such as Acxiom and Epsilon develop profiles of segments of the population, based on age, ethnicity, education level, income, or other factors, which is then used for marketing. Other data brokers include platforms that allow individuals to monetize their data. These have a limited presence in the GCC.

Solution and service providers

Solution and service providers offer infrastructure and tools for data extraction, classification, storage, analytics, and data exchange. Large technology companies and startups are experimenting with dedicated platforms to boost the exchange of information.
Startups are also experimenting to provide solutions for increased data trade. They are building marketplaces wherein machines and people can exchange data and money. These markets operate like real-time trading terminals with prices based on supply and demand. Examples of such marketplaces include IOTA and Datamarx.

DATA GROWTH: UNDERLYING UNCERTAINTIES

Although the data economy is still in its early stages, the GCC is already behind other regions. This is due to a lack of awareness among players in the region of the value of their data, and the reluctance of companies and individuals to share data and therefore risk their privacy. At the organizational level, there is a shortage of human and technical capabilities to implement the business transformation effectively, and a lack of government policies and regulations that create the right privacy, security, and benefit boundaries for increased use.

A large part of the reluctance of corporations and individuals to share their data is the lack of sufficient transparency or privacy in existing data trade practices. Users have become wary of sharing personal data because of the high profile of data breaches in the past few years. Policymakers, meanwhile, are exploring ways to guarantee more privacy and control of an individual's data.

There are five roadblocks that are hindering the development of a full-fledged data economy, both globally and in the GCC. These are related to ownership, accountability, benefit, privacy, and security.

Ownership

On a global scale, data have emerged as a new class of asset. Yet, there is no regulatory framework that explicitly enforces the right ownership of data. Without these legal mechanisms, the rights of individuals will continue to be overlooked, and there will be little scope for individuals to assert themselves against large data aggregators (such as Internet giants and car manufacturers). Individuals are becoming more aware of their data and are claiming a right of ownership. Today, however, Internet giants still control these data, from which they have prospered.

The ownership challenge is also reflected within the companies themselves. For example, it could be that data owners do not know which operational challenges their data could solve. Alternatively, it could be that data owners are not authorized to take decisions. Undefined ownership of data at the company level can hinder business optimization.[15]

Accountability

Much of the data used by decision makers are created externally. Some such data are vulnerable to tampering, threatening their authenticity and quality. With an increasing number of decisions based on external data and machines, it is important to validate the authenticity of data.[16] In particular, determination of responsibility becomes less clear when dealing with AI. A wrong decision by a machine can have serious consequences with complex liability implications, for example if a driverless vehicle were to cause an accident.

Benefit

Individuals are becoming increasingly aware of the value of their data. According to a Strategy& analysis, the value of the average Internet user's personal data worldwide is about $1.18 a month, but reaches $4.91 in the United States.[17] This value is likely to grow as the data ecosystem matures. Under the right market conditions, individuals and companies alike should be allowed to benefit from the data they share. This prompts the question of what is the fair price for data.

Privacy

Without robust forms of aggregation and anonymization, and with the boom in data exchange, data are increasingly vulnerable to security breaches. Companies that collect personal data have an important role to play in protecting their customers' privacy. The IoT is even more vulnerable to privacy violations. Researchers and IT professionals are trying to ensure that IoT data are managed in a way that guarantees privacy.[18]

Security

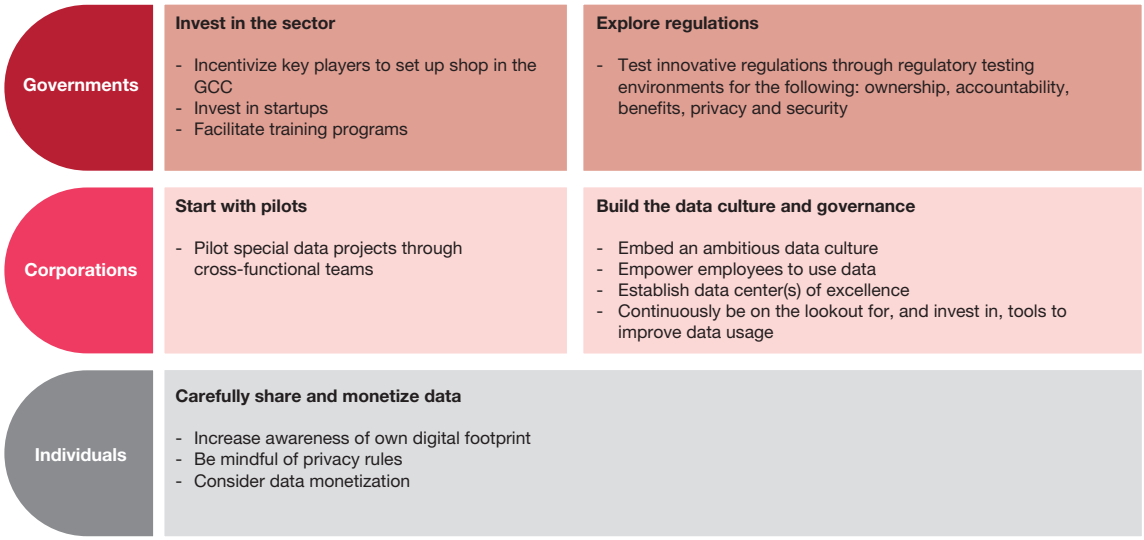
Approximately 90 percent of the data from personal interactions will be vulnerable to unauthorized capture or cyber theft, yet less than half of those data will be secured.[19]

> A large part of the reluctance of corporations and individuals to share their data is the lack of sufficient transparency or privacy in existing data trade practices.

HOW THE GCC CAN UNLEASH ITS DATA ECONOMY

The data economy in the GCC will start realizing its full potential when regulators can guarantee that the rights of actors are well protected and actors are compensated fairly, when companies identify opportunities and then shift their focus to building their data-driven culture and undergoing the required organizational changes, and when individuals become more comfortable sharing their data (*see Exhibit 3*).

EXHIBIT 3
The role of different stakeholders in unleashing the potential of data



Source: Strategy&

Governments should explore new regulations and invest in the data sector

Regulations and technology to safeguard the privacy, ownership, authenticity, and quality of data are critical. However, the GCC countries' regulatory systems are still less advanced than in the European Union (EU), with the exception of Bahrain where on August 1, 2019, the Personal Data Protection Law took effect.

Given the emerging nature of this market, and the fact that it will remain in continuous change, governments should establish regulatory testing environments (so-called sandboxes) to examine new regulations, such as tacit collusion or mandatory data sharing. In addition, governments should strive to develop the sector by creating favorable conditions for individuals and companies to become more knowledgeable about their data.

Explore regulations

Regulation can help to resolve many of these challenges, in combination with self-regulation and legislation.

Ownership
Mandatory data sharing for industries could resolve the issue of ownership. The aim would be to support smaller organizations in improving their data analytics function by giving them access to existing datasets. Germany, for example, requires that insurers make available sets of statistics that smaller firms would not be able to compile on their own.

Accountability
Regulation should set the rights and duties of data stakeholders, ensuring protection for data buyers and data suppliers. For example, regulations should guard against data buyers purchasing expired, compromised, incomplete, untraceable, or subjective data. A distributed ledger system, such as blockchain, can help prevent data tampering as network nodes will note any inconsistency.[20] Estonia has gradually moved all of its citizen data on to such a distributed ledger system.[21]

Benefit
A viable commercial data ecosystem in which producers and consumers of data can trade and profit from data will help develop the data economy. Regulators and competition authorities are exploring the benefits of establishing a fair price for data to ensure fair compensation for owners, and commercial-based access to this data for its users. Already the EU Markets in Financial Instruments Directive, which came into force in 2007, establishes that pricing of market data such as data on bids and financial securities should be made available to all sector players on a "nondiscriminatory commercial basis at a reasonable cost."[22]

Privacy
Regulation needs to establish rules for the collection and use of certain types of data to protect user privacy. The European Parliament passed the General Data Protection Regulation to establish rules for the ethical processing, use, and storage of personal data. Regulation must also deal with the IoT and related privacy violations.[23]

France and Finland also grant, through the law, the right of individuals and companies to protect their communication and identification through the use of encryption.[24]

Security
Aggregators of personal data should be required to have the right architecture, and technical tools to ensure data integrity against any damage or loss. It is also recommended that companies store as little data as possible, and in as few locations as possible, to reduce their exposure to loss.

Invest in sector stimulation

GCC governments could also strive to develop the data sector by creating favorable conditions through a variety of approaches. Governments could offer incentives to private-sector companies, such as infrastructure or solution providers, or data traders that might consider setting up a business in the country. Also, governments could invest in startups that support data democratization such as encryption solution providers; distributed ledger technologies such as blockchain; data marketplaces; cryptocurrencies; and data analysis and classification solution providers. Government could promote training programs to equip companies and government departments with the required digital skills, academic programs that teach data skills, and student internships with leading data-driven companies globally.

Opportunities for companies

There are two principal monetization opportunities for companies: business optimization and data sales and analytics.

Business optimization

Companies in the GCC are increasingly using data for business optimization and in some cases to change the way they run their business. Use cases vary from basic process optimization, such as facilitating financial management and marketing decisions, to more advanced usage of data for informed decision making. In particular, businesses are turning to data analytics applied to internal and external sources of customer data to derive meaningful insights on their operations and marketing activities.

In the views of David Dubois, associate professor of marketing at INSEAD, customer behavior is increasingly transparent and easily accessible to brands in a digital world. According to Dubois, there are four main types of individual footprints. These are known as “the Four s’s” of data:

- Social media data (content from social networks such as Facebook or Twitter)
- Search data (search queries performed about the brand/category on search engines such as Google, or marketplaces such as Amazon)
- Site data (visitor interaction with the brand and associated websites)
- Shop data (shopping activity on e-commerce platforms or brand websites)

The Four s's offer insights into customer behavior by providing a different perspective on how a brand, person, product, or service is searched, liked, discussed, and bought. For example, industrial products manufacturers can discover why and when their customers are drawn to their products, enabling them to implement more-effective segmenting, targeting, and positioning strategies.

In the GCC, telecom operators are playing a leading role in leveraging customer data. They have employed several use cases, such as improving their sales footprint, proactive maintenance, call center workforce planning, and network planning. For example, telecom operators have big data analytics of traffic by geography and customer segment for their long-term capital expenditure plan and prioritization. Dubai Parks, and some GCC banks have also started to use data for internal optimization.

Also at the top is Majid Al Futtaim Group, having started its digital transformation in 2016. The company benefits from rich and high-quality data sets, and uses them to improve operations across all its businesses (*see "How the Majid Al Futtaim Group uses data to improve offerings and operations"*).

How the Majid Al Futtaim Group uses data to improve offerings and operations

The Majid Al Futtaim Group is at the forefront in terms of using data for internal optimization. The company, a leader in shopping malls, communities, retail, and leisure, started its digital transformation in 2016 with the ambition to become as prominent digitally as it is physically, and identified data, analytics, and technology as key enablers for its success. It uses rich data sets of 13 million customers across thousands of touch points to optimize operations, improve customer retention, and facilitate decision making. The data collected by Majid Al Futtaim are secured and managed by the company in line with local laws and regulations. To proactively manage data as a new asset class, Majid Al Futtaim distinguishes three use cases for data:

1. **An internal currency to drive business optimization**

   Majid Al Futtaim uses data and analytics to improve its operations, resulting in improvements for customers, as well as incremental financial impact for itself. Carrefour, a Majid Al Futtaim franchise, uses customer purchase data collected from its loyalty card program to optimize shelf assortments, significantly reducing the time required to adapt its product offering to its varied customers in the UAE, and resulting in sales improvements ranging between 1 to 5 percent. Majid Al Futtaim's VOX Cinemas uses machine learning to personalize its website via movie recommendations, resulting in

conversion rate increases of 15 to 30 percent. The group's shopping malls also use data to get the most out of parking operations, as well as tenant selection and placement. At a group level, rich employee data are analyzed to manage the workforce and hiring.

2. **A stakeholder currency to drive engagement with its ecosystem of partners**

   Data are also used to engage with Majid Al Futtaim ecosystem partners. The Group shares anonymized data with Smart Dubai, a government entity, and leading academic institutions including Wharton Customer Analytics Initiative. The purpose is to engage in joint analytics projects — gaining wider insights on trends impacting the UAE — as well as cutting edge research on machine learning and AI.

   The company also shares anonymized data with its mall tenants via an online analytics portal to build mutually beneficial practices.

3. **A market currency to build and enable new business models**

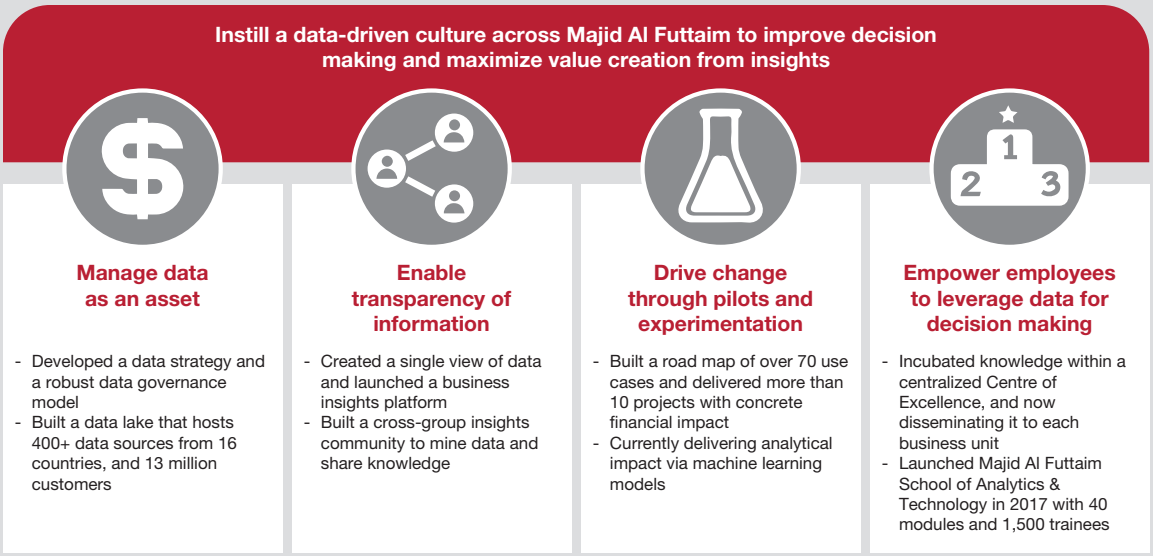
   A first mover in the data transformation evolution in the region, Majid Al Futtaim is now at the early stages of leveraging data to incubate new business opportunities through insights and analytics.

   The company has pushed this strategy by creating a data-driven culture across its organization with the aim to improve decision making and maximize value creation. It is important to mention that the company initiated its transformation with a series of small pilot projects between 2016 and 2017, before implementing its full-fledged data transformation (*see Exhibit 4*).

EXHIBIT 4

Majid Al Futtaim embarked on an Advanced Analytics transformation in 2016

Key achievements of the Advanced Analytics transformation



Source: Majid Al Futtaim Group; Strategy& analysis

Internationally, industries already are exploring the benefits of internal data use, with companies exploiting data to build new business models.

There are many examples of internal data use to optimize and automate processes across sectors. In healthcare, Bangkok Hospital uses enterprise resource management big data to increase the patient's satisfaction with the overall experience and improve clinical outcomes. The result has been a marked increase in return visits by foreign patients of 30 percent. The amount of outpatient referrals went up by 25 percent.[25] In the oil and gas sector, Royal Dutch Shell uses data collected from IoT devices to keep an eye on oil fields and automate processes, saving the company more than $1 million in its operations in Nigeria.[26]

Companies are also employing data insights to facilitate decision making. In financial services, Morgan Stanley is using Hadoop to process large datasets for portfolio analysis. The results are improved investment portfolio returns as the customer investment insights that used to take months to spot are now tracked in real time.[27]

Data sales and analytics

The market for data sales and analytics consists of indirect and direct sales. It is a significant and largely untapped opportunity in GCC countries. Typically, companies that exploit their own large volume of data tend to venture into direct data sales themselves. Smaller companies, and individuals, monetize their data through aggregators and brokers.

Direct data sales and analytics
Telecom operators are the first and only movers in this field to diversify their business from traditional products and services, which are under pressure. In the UAE, for instance, Etisalat and du have recognized that data and analytics are vital for strategic differentiation and new revenue streams.

Regional telecom operators already offer such services as:

- Human movement monitoring: Tracking of human activity in specific locations (such as the movement of Hajj and Umrah pilgrims)

- Vehicle traffic congestion management: Traffic alerts about congested roads, and alternate route information

- Road speed areas and statistics: Identification of high-speed areas and determining the percentage of speeding vehicles in these areas

In addition, Dubai has an all-encompassing initiative. Smart Dubai announced the "Dubai Data Private Sector Strategy and Policy" in April 2019. The initiative consists of creating and managing a "data trust" that will serve as a repository for many companies' anonymized data. The data trust will allow members to receive aggregated and more accurate insights on customer preferences to inform decision making for businesses and policymakers. Payments will be done through cryptocurrencies in the form of "tokens," based on the amount of data shared by companies. Majid Al Futtaim Group is one of the companies that already contribute to the trust.

Away from the GCC, several sectors, such as financial services, automotive, retail, healthcare, and others, are turning to proprietary data sales and data analytics as a new source of growth. For example:

Financial services

Banks, credit card companies, and other financial institutions hold profile data on merchants and customers, and track every transaction made by card or between accounts. These data can offer valuable insights on individuals' financial behavior and purchase preferences. In 2017, American Express launched its Amex Advance platform with Acxiom. Building on its wealth of transaction and credit score data, American Express is offering marketers the ability to target customers more effectively and to personalize the customer experience. The platform applies machine learning techniques to develop insights about consumer buying behaviors from analysis of American Express and publicly available data.[28]

Automotive

Most vehicles built in the last two years send information to car manufacturers' databases. Data exchanged includes speed, average acceleration, braking, fuel consumption, battery status, or the number of passengers. These data can be useful for companies, governments, and city planners. For example, the startup company Otonomo has a cloud-based platform that stores the data of more than 2 million cars, and then processes and sells these data to automotive suppliers, retail, insurance, and fleet management companies for marketing and product development purposes.

Retail

Retail stores collect customer information from surveys and transactions that they are increasingly monetizing. For example, Walmart has introduced Walmart Exchange, which allows suppliers to make use of customer data from Walmart stores and Walmart.com to target, purchase, measure, and optimize advertising.[29]

Indirect data sales and analytics

Another significant opportunity lies in indirect data sales and analytics, from data collected by online advertising platforms and data brokers. Advertising-driven online platforms are capturing around 90 percent of this market globally. Specialized data brokers capture a little under 10 percent. Emerging individual platforms are starting to take the remainder, although such players have no presence yet in the GCC.

Google and Facebook dominate the GCC online advertising market. They gained a larger market share (70 percent) of the GCC digital advertising market in 2018 than they did globally or in their home market in the U.S., where they had 56.8 percent market share.[30] This dominance emphasizes how little digital players from the GCC are monetizing their content, and how little GCC-based advertisers are monetizing digital platforms. The principal source of these advertising revenues is individuals' personal data, with Google capturing about 25 percent of users' data.[31]

In the past, advertisers targeted their audience according to demographics, such as gender, location, or age. Now in a digital age, advertising-driven online platforms are better able to understand customers and can target them based on their interests, purchase history, behavior, and shopping intent.

How a leading, global telecom operator provides data mining and analytics-based products and services

A leading, global telecom operator created a big data unit for the external market. It uses its unique data to offer solutions for business insights and data analytics, including:

- A service that uses anonymous data such as about gender, time of transaction, and age to help companies understand which factors influence the number of people visiting a particular location.
    - These insights help retailers count and understand the number of shoppers outside their stores and elsewhere, thereby allowing them to tailor product promotions, and determine the best locations and formats for new stores.
    - This service can also help local councils see how many people visit main streets, and then decide whether to introduce free car parking, late night shopping, or farmers' markets.
- The big data unit also created a business-to-business-to consumer platform that provides clients with insights about customers based on data that customers have voluntarily shared and that is personal. Clients can use this information to improve the experience of their customers, enhance security, and prevent fraudulent transactions.

The big data unit also provides consultancy and analytics services for strategy and transformation, data engineering, tools and infrastructure, and data science.

Internet giants can gather intent information from customers through search queries and behavioral signals, and then add this to information from other proprietary platforms — in the case of Google, for example, that would be Chrome, Maps, and YouTube. They then use these data to help businesses make better internal decisions. For example, they can provide retailers with information on the seasonal patterns of their sales and how they are faring against the competition. Such information can aid marketing initiatives by, for example, enhancing the customer experience online. It can also improve logistics, such as through same-day delivery, and guide strategic decisions, for example in relation to expansion in a new market or a new product category.

Increasingly, companies are applying machine learning and AI to advertising products and tools. For example, machines now automate the establishment of target demographics and willingness to pay. As a result, advertisers are starting to hire more data scientists and programmers instead of marketers. Today, many major advertisers have data scientists and programmers on their marketing teams to make sense of the data and help produce better business decisions.

When it comes to data brokers, the few leaders such as Narrative and Experian are barely active in the GCC. Data management platforms (DMPs) conduct most of the data trade in GCC countries. The main DMPs are Oracle BlueKai, Lotame, and Adobe. Publishers have been the first to take advantage of this new source of revenue by partnering with DMPs for the purposes of data monetization. These include *Khaleej Times*, *The National*, and *Forbes Middle East*. Approximately 60 percent of publishers in GCC countries and e-commerce platforms are monetizing their data in partnership with DMPs.

Companies should start with pilot projects

Full data monetization is a long way off for many GCC-based companies. They should not spend excessive time identifying all their data sources, or formulating a comprehensive big data strategy. Instead, companies should focus their attention on a business-focused and use-case driven pilot project, creating more value through data-driven insights. Cross-functional teams should lead pilot projects, with coordination between departments. At the same time, companies should start embedding a data-driven culture in their organizations.

Companies will need to make enterprise data governance a priority so that they can maximize value from their data. Organizations should assign owners to manage data, depending on their needs. At the executive level, someone such as a chief data officer should have overall control to guarantee quality and consistency of the data and process.[32]

A central governance model focused on developing a center of excellence is the best way to start. Large companies could move to a more decentralized model of data governance as they acquire these capabilities and they understand the value of data better. It is also important to build the data skillset of all employees to embed a data-driven culture and leading practices.

Individuals should carefully share and monetize data

Individual users should be more aware of their digital footprint. They need to become more mindful of the data they share with providers, either intentionally or unintentionally. They can then start actively managing their privacy, and demanding a share of the value. Sharing their data with companies is important as it helps to grow the data economy. As a start, individuals can consider using the emerging data sharing platforms, which help producers of data gain control over what is being shared and with which entities, and realize value.

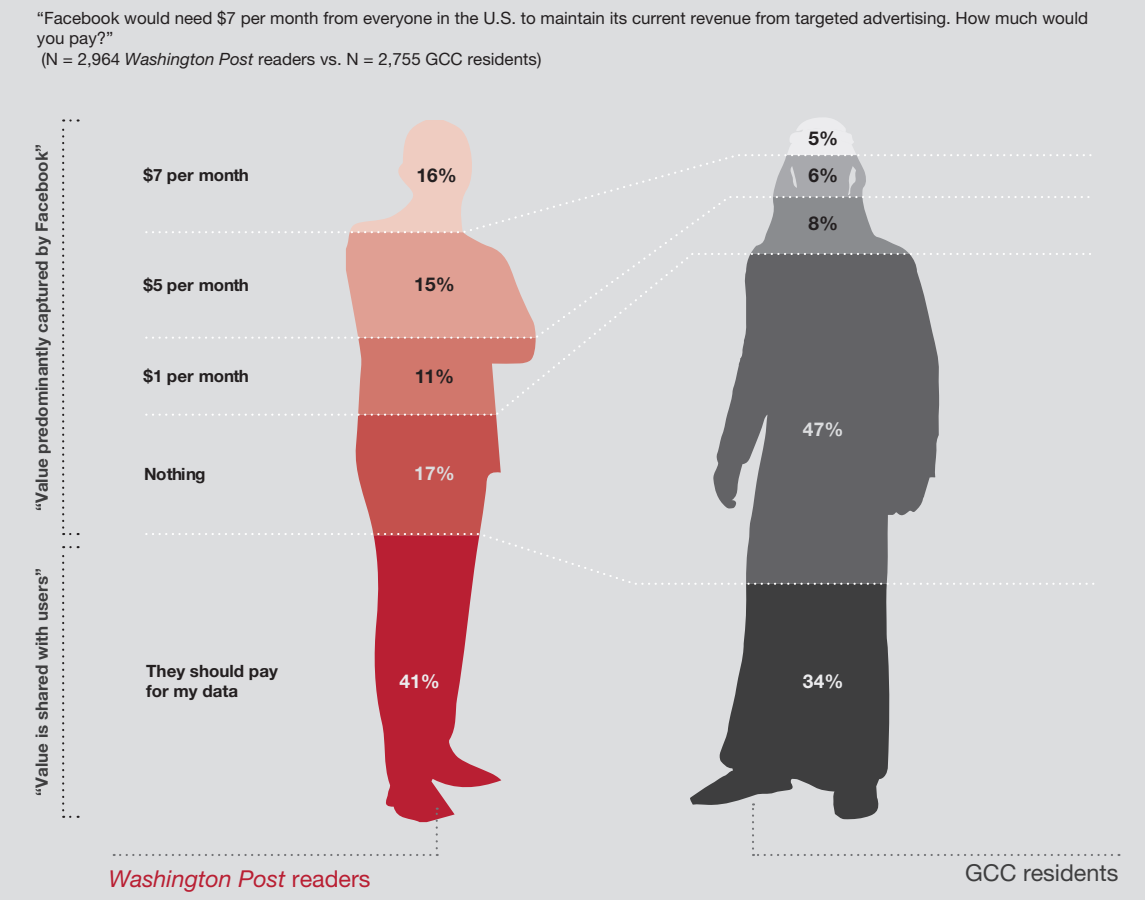
As individuals become increasingly aware of the value of their data, it is questionable whether the Internet giants will be able to maintain their dominance. Globally, individuals' data-sharing platforms are still at an early stage. We estimate the size of the global market to be around $34 million today, with Datacoup and CitizenMe capturing most of this revenue.

In terms of GCC-region countries, Strategy&'s 2018 GCC data sentiment survey found that users are aware of the value of their data but are unwilling to share too much (*see Appendix*). Our survey, conducted in August 2018 with YouGov, found that more than a third of people in the GCC know the worth of their data, a high proportion given that the figure in the U.S. is 41 percent, according to a *Washington Post* poll that collected responses from 2,964 readers. The *Washington Post* asked readers what they would pay Facebook to have the targeted ads removed and stop the company from tracking their online behavior. We compared our survey findings to this poll (*see Exhibit 5*).[33]

EXHIBIT 5

Many people in the GCC are aware of the value of their data

Survey question: Willingness to pay for social media



Source: Strategy& 2018 GCC data sentiment survey; *Washington Post*; Strategy& analysis

Only 23 percent of GCC respondents would be willing to share more data if they were in control of it. Only 19 percent of respondents would share more data if they were getting paid for it. The same proportion would share more data if they understood better how their data is used.

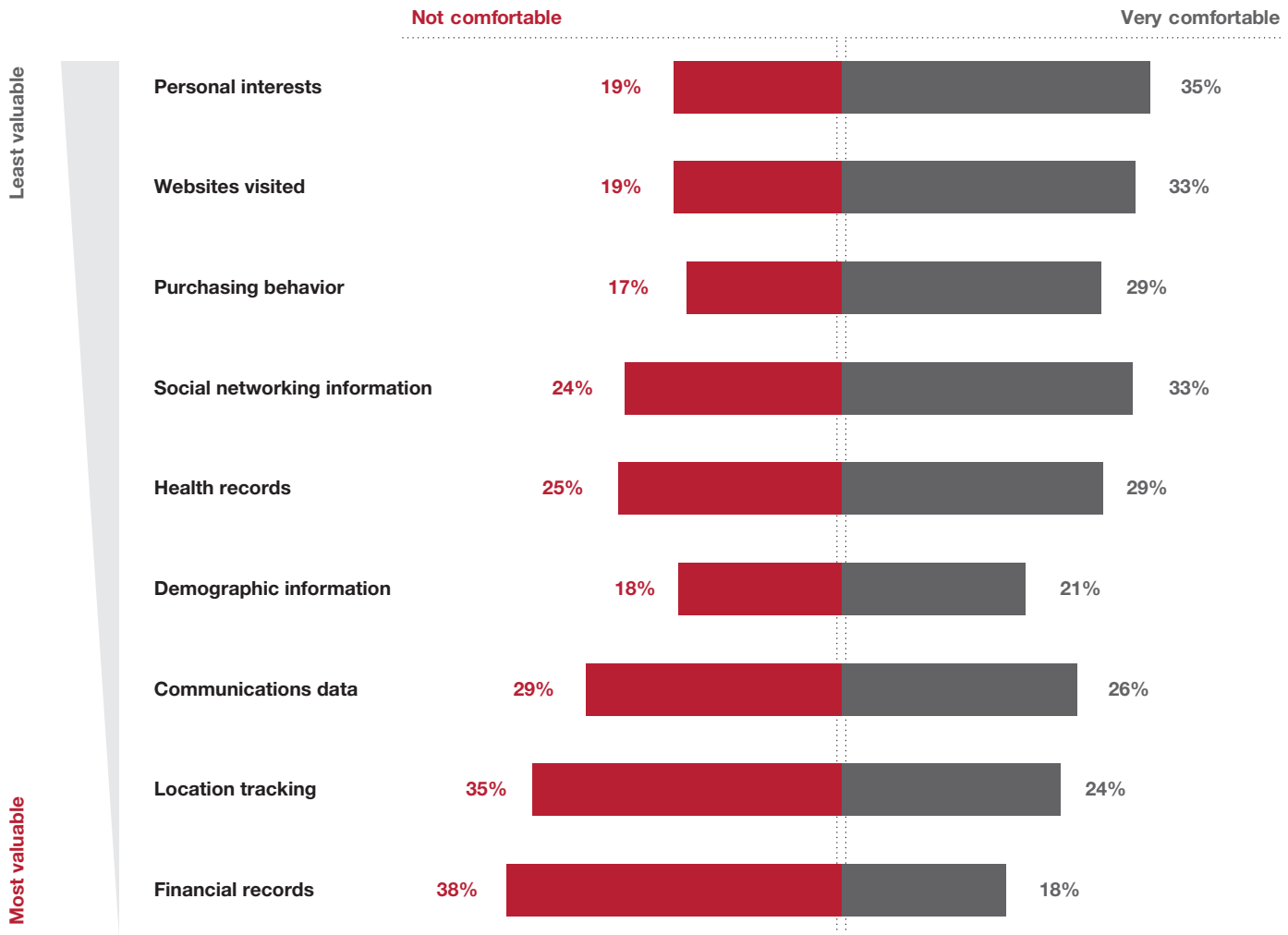
As indicated by our survey, GCC citizens are currently least comfortable sharing telecom-related data, such as location-tracking and communications, and financial services-related data. Both are important parts of the global data trade (*see Exhibit 6*).

Governments and companies also have a role to play in encouraging increased data sharing. They must provide a more secure and safer data sharing framework to unlock the potential of the data economy, given the reluctance of the GCC population to share more data.

EXHIBIT 6

GCC respondents are more averse to sharing financial and mobile phone data

Comfort levels on data sharing, by data type (% of respondents, N = 2,755)



Source: Strategy& 2018 GCC data sentiment survey; Strategy& analysis

CONCLUSION

GCC-region countries can reap benefits from the proliferation of data if governments, companies, and individuals alike understand the value of data. They will need to build a legal and regulatory environment in which companies and individuals will be willing to share data and participate in building the data economy. The organizations that will be in the vanguard of this new economy will be those that understand how to align new data-driven technologies with emerging regulations.

APPENDIX: SURVEY METHODOLOGY

YouGov conducted a data sentiment survey among 2,755 citizens and residents of GCC countries in August 2018 for Strategy& Middle East. The survey sought to understand the extent to which residents are aware of their data's value and how their data are being used by the companies that collect them. The survey also analyzed the comfort levels of GCC residents, across gender, age group, income group, employment, and marital status, with sharing different data types, including social data, financial data, and others. Finally, the survey sought to understand the perquisites of increased data sharing among GCC citizens and residents.

ENDNOTES

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