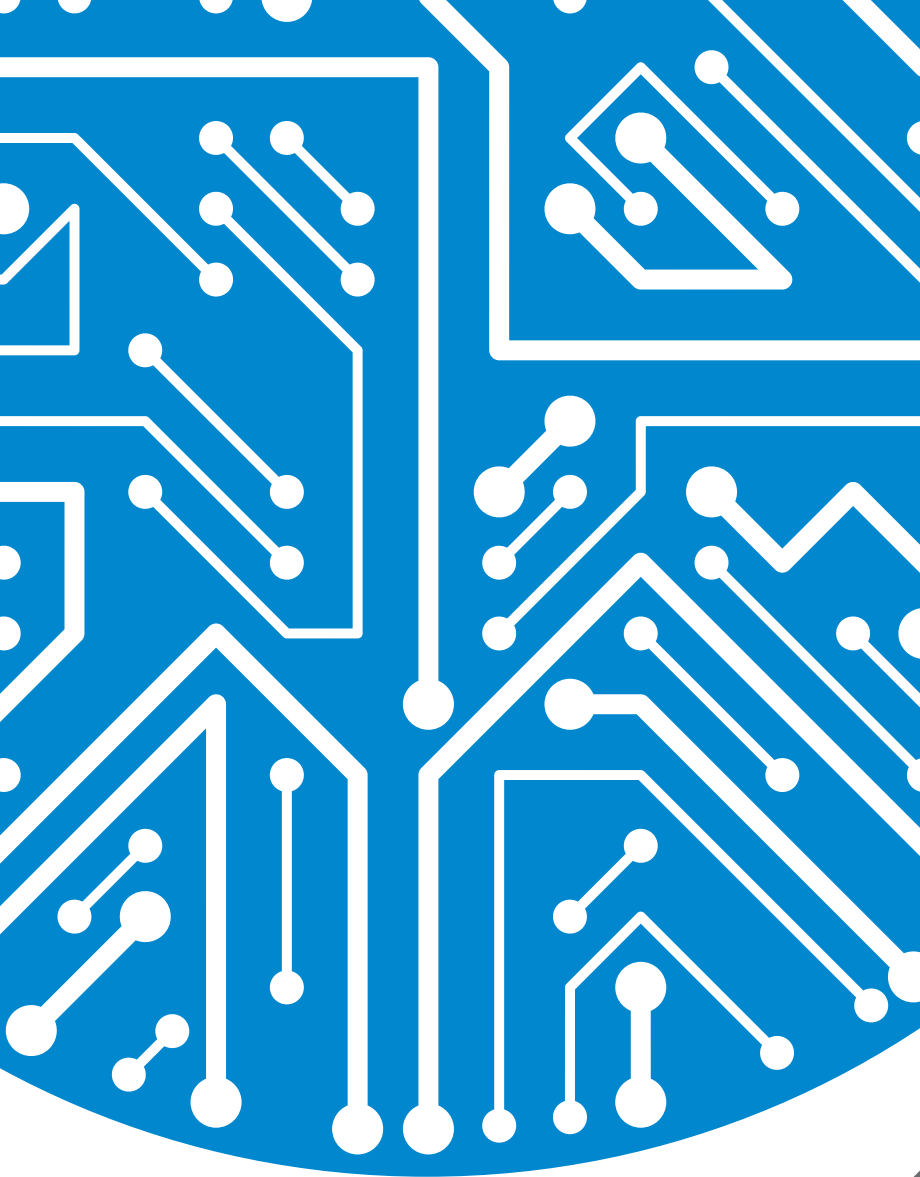# ICT
UNLEASHING
THE POTENTIAL

Atiba Phillips
Principal
Consultant
and Managing
Director at
INFOCOMM
Technologies Ltd

Since the liberalisation of its telecommunications sector 13 years ago, Trinidad and Tobago has moved from having the 2nd highest broadband tariffs (most costly), to being the most affordable broadband destination in the Caribbean region. Trinidad and Tobago now ranks #16 in the world in respect of the monthly subscription charge for fixed (wired) broadband Internet service, being more affordable than countries such as Japan (21), Switzerland (34), India (36), France (37) and Estonia (50).
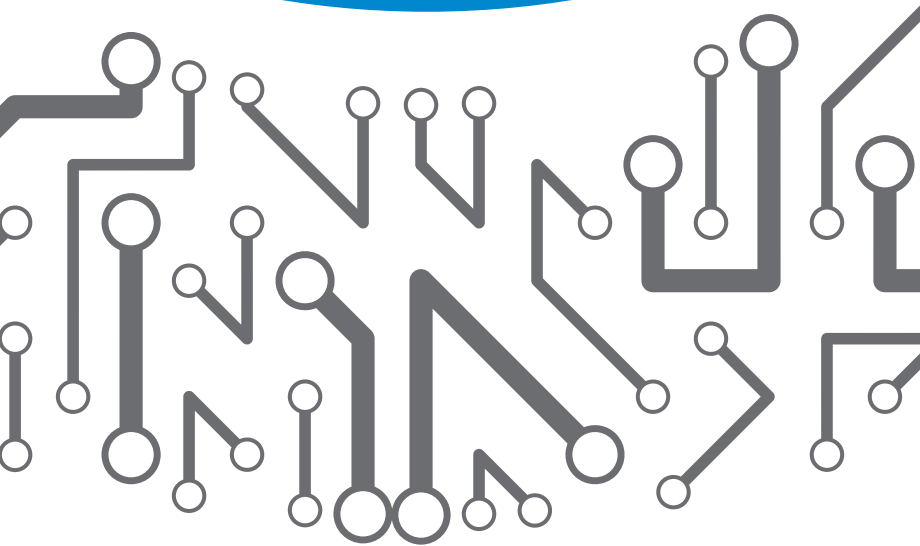
Trinidad and Tobago was one of the first Caribbean countries to open up its telecommunications sector. The Telecommunications Act – the piece of legislation which governs the broadcasting and telecommunications sector – was amended in 2005 to facilitate new entrants into a sector which was previously dominated by the State telecommunications provider, Telecommunications Services of Trinidad and Tobago (TSTT).

Since then, the country has seen an almost 12-fold increase in Internet Household Penetration and also now displays some of the highest mobile service penetration rates in the world, jumping from 40.8% (2004) to 143.8% (2010) to 150% (2017). By contrast, according to World Bank data, mobile penetration is 118% in Europe, 74% in Africa, 127% in the United States of America and 97% in China. The maximum download speeds, as well as the number of television stations, have also seen significant increases over time.

Indeed, between 2011 and 2012, T&T jumped an unprecedented 19 places in the World Economic Forum's (WEF) Global Information Technology Report (GITR) from 82 to 63. No other country has achieved this feat either before or since.

In fact, Trinidad and Tobago has consistently ranked #1 in mobile network coverage in the GITR among 150-plus countries between 2011 and 2017. T&T also ranks #16 in the world on IPV6 adoption and deployment, beating countries such as Canada, Australia and the Netherlands.

Other major ICT developments have also been taking place. In 2014, the country launched its Internet exchange

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point (IXP). Called TTIX, the local IXP brought together seven of the country's Internet service providers (ISPs) - TSTT, Digicel, Massy Communications (now called Amplia), Open Telecom, Greendot, Lisa Communications and Flow - which have all signed on to the local exchange point. TTIX connects the ISPs to a special network switch that gives the ISPs a cost-effective way to connect their customers to locally destined content and services.

In addition, both the government and the commercial sector have built up the ICT infrastructure in-country which now includes multiple data centres, hosting facilities, a DNS root server, five international sub-sea cables as well as terrestrial fibre.

Outside of these significant ICT advantages, Trinidad and Tobago is fortunate in that it lies below the transatlantic hurricane belt. As such, it is much less prone to natural disasters as compared to many of its Caribbean and Latin American comparators such as Puerto Rico, Jamaica and the Bahamas. This makes the country a good centre for the location of Regional Data Centres.

New Possibilities
What does all this now make possible? The key challenge for Trinidad and Tobago now is to accelerate the commercial and institutional uptake and usage of the technologies at all levels in the society, including Government, big business, state sector, professional bodies and SMEs (Small and Medium-sized Enterprises).

The nature of global trade has changed fundamentally in the last 25 years. We may tend to think of competitiveness of individual states, such as Trinidad competing against Barbados or Panama, but goods are no longer assembled entirely within the bounds of one factory in one country. Instead, many goods are produced in "global value chains" in which the efforts of companies in multiple countries are brought to bear.

The global digital technology revolution has made it much easier to outsource and to co-ordinate complex activities at a distance. The multi-billion dollar oil and gas finds in Guyana, for example, are being explored by the American company Exxon. But these operations can be supported remotely
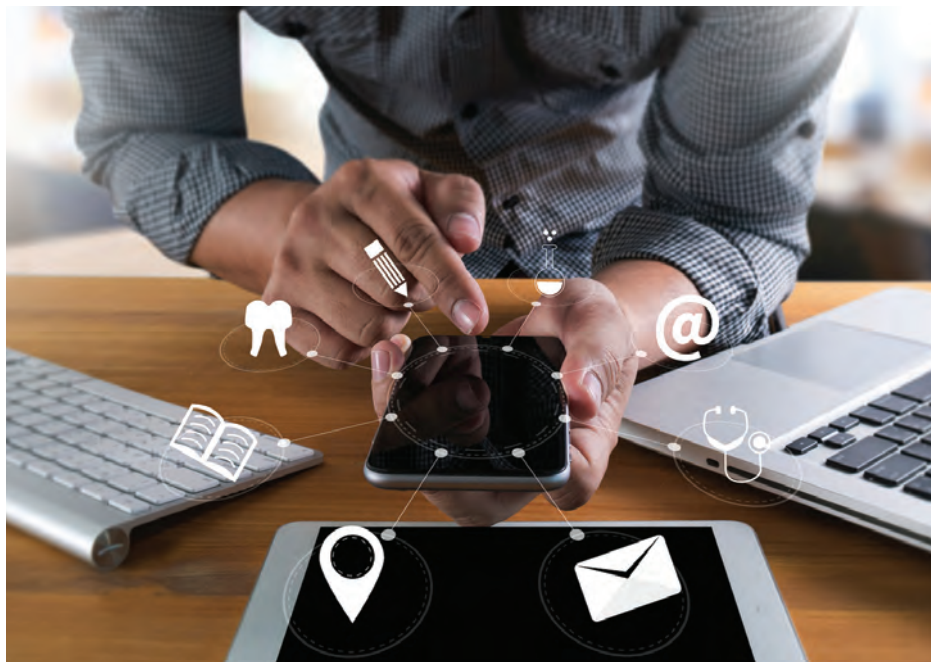
and logistically, thus reaping greater efficiencies, by leveraging the robust ICT infrastructure and deep energy expertise of Trinidad and Tobago.

To get into global value chains, however, developing nations like Trinidad and Tobago will have to think again about their tariff structures and foreign investment policy framework. In this new interconnected world, taxing an imported component only raises the cost (and reduces its competitiveness) when it is re-exported. Traditional theories of the best way to develop an economy have to be re-evaluated for the digital era.

At the same time, there needs to be preparation for foreign investment such that fewer concessions are required over time, and Trinidad and Tobago can eventually spawn domestic companies that are able to export and lead new global value chains of high-value, globally competitive products. This requires strategic policy, long-term (multi-administration) commitment, and measurable and transparent metrics for success.

Disrupting Dysfunctional Institutions and Processes
Another huge opportunity for T&T tech firms is in the disruption (or facilitation of orderly digital transformation) of many cumbersome or dysfunctional national or commercial processes, which currently increase the cost of doing business and potentially reduce the quality and competitiveness of the T&T economy.

Anywhere there is frustration, a plethora of middlemen, long waiting times and friction - these are the target points for digitisation. Just consider the global examples of Amazon, Air BnB and Uber which have digitised retail markets, travel accommodation and hired transportation (taxi hailing) respectively. Avant-garde, innovative and particularly technology companies are thriving in this environment globally. Energetic, passionate and self-confident domestic tech firms in Trinidad and Tobago can do the same!

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THE STATE OF TELECOMMUNICATIONS MARKET IN TRINIDAD AND TOBAGO PRE VS POST LIBERALIZATION

STATISTIC	2004	2010	2017
ANNUAL TELECOMM MARKET REVENUE	TT$3.3B	TT$4.4B (EST)	TT$4.9B
MOBILE SUBSCRIPTION	530,000	1,894,000	2,036
MOBILE PENETRATION	40.8%	143.8%	150%
FIXED VOICE SUBSCRIPTION	319,000	293,000	266,000
FIXED VOICE PENETRATION	24.4%	22.3%	19%
FIXED INTERNET SUBSCRIPTIONS	53,000	171,000	249,000
INTERNET HOUSEHOLD PENETRATION	4.9%	49.9%	58.0%
MOBILE INTERNET SUBSCRIPTIONS		451,000	679,571
MOBILE INTERNET PENETRATION	18.2% (2009)	23.5%	51.4%
INTERNET DOWNLOAD SPEEDS	1MBPS (2005)	100MBPS	UP TO 1GBPS
RADIO STATIONS	33 FM	37 FM	37FM
TV STATIONS	3	8	16

SOURCE: TELECOMMUNICATIONS AUTHORITY OF TRINIDAD AND TOBAGO (TATT) WWW.TATT.ORG.TT