

Good afternoon,

Welcome to the first issue of Tech Talk for 2020. I trust you had an enjoyable break and that the new year has gotten off to a good start.

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**The following is touched on in today's issue:**

- A start-up wants to 3D-print an entire neighbourhood ✓
- The big differences between 4G and 5G ✓
- BMW has launched its gaze detection so your car knows what you're looking at ✓
- How the music industry makes money ✓
- App Store customer spending hit a record \$1.4bn from Christmas Eve through New Year's Eve ✓
- Apple is expected to officially unveil a new low-cost iPhone as early as March ✓
- Amazon wants to make your hand your credit card
- What is expected in South Africa on the Fintech side of things in 2020 ✓

Regards,



Nicholas Dakin  
Equity Analyst

*The purpose of this note is to educate, create interesting talking points, and to increase awareness regarding some of the longer-term investment trends and themes which are taking place, in order to determine where the world is going and to find potential investment opportunities.*

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**[BusinessTech - This start-up is 3D-printing an entire neighbourhood](#)** ✓

- It rains a lot in the Mexican state of Tabasco. In a typical year, they get around two metres of rain, causing flooding and making life extremely difficult for some of Mexico's poorest people.
- 50 of the poorest families in the state will soon move into **brand-new 3D-printed homes**.
- The homes are built using a **giant 3D printer, the Vulcan II**. It creates them in pairs, with each house needing around **24 hours of total print time** to complete. Using a specially mixed concrete that hardens quickly, the machine prints the structure in a series of layers, creating a ridge-effect in the walls.
- At 500 square feet, the houses have a living room, a kitchen, a bathroom and two bedrooms.



## [CNN Business - The big differences between 4G and 5G](#) ✓

**Investment Themes:** 5G; Smart Mobility; Internet of things

- The **three major differences between 4G and 5G are faster speeds, higher bandwidth and lower "latency,"** or lag time in communications between devices and servers. But those perks are going to require building out a lot of new infrastructure and billions of dollars in annual investments. **5G is expected to be nearly 100 times faster than 4G.**
- A small but significant difference exists between speed and latency, which is the time it takes for devices to communicate with each other or with the server that's sending them information. Speed is the amount of time it takes for your phone to download the contents of a webpage. Latency is the time between when you send a text to a friend's phone and when their phone registers that it has received a new message **Latency is already low with 4G, but 5G will make it virtually zero.**
- **Companies are racing to have the fastest or largest 5G networks.** And countries are competing to be the first to deploy fully functional, nationwide 5G, because of the many revolutionary innovations experts anticipate will be built on top of it. For example, the development of ridesharing apps, such as Uber and Lyft, was made possible by 4G. With 5G, ridesharing cars could one day navigate themselves — no human driver required.

*5G is a theme that is likely to generate a lot of interest in 2020. According to the Global Mobile Suppliers Association (GSA), 296 operators in 100 countries, or 7% of operators worldwide, have launched with limited availability, deployed, demonstrated, are testing or trialling, or have been licensed to conduct field trials of mobile 5G or FWA 5G. The pace of the rollout is expected to accelerate going forward, with the majority of mobile operators hoping to launch 5G commercially by 2020.*

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## [TechCrunch - BMW launches gaze detection so your car knows what you're looking at](#) ✓



**Investment Themes:** Smart Mobility; Artificial Intelligence

- BMW unveiled its **new gaze detection system**, which can track what you're looking at outside of the car and then present relevant information about it.
  - Using its AI tools, the car's systems can follow the driver's gaze and interpret it. That means you will be able to get more information about a restaurant, for example, or which movies are playing at a cinema that you're driving by.
- The idea is to **simplify the driver's interaction with the car's system**, including touch control, gesture and speech recognition, with a special focus on what that will look like once our cars are driven autonomously.

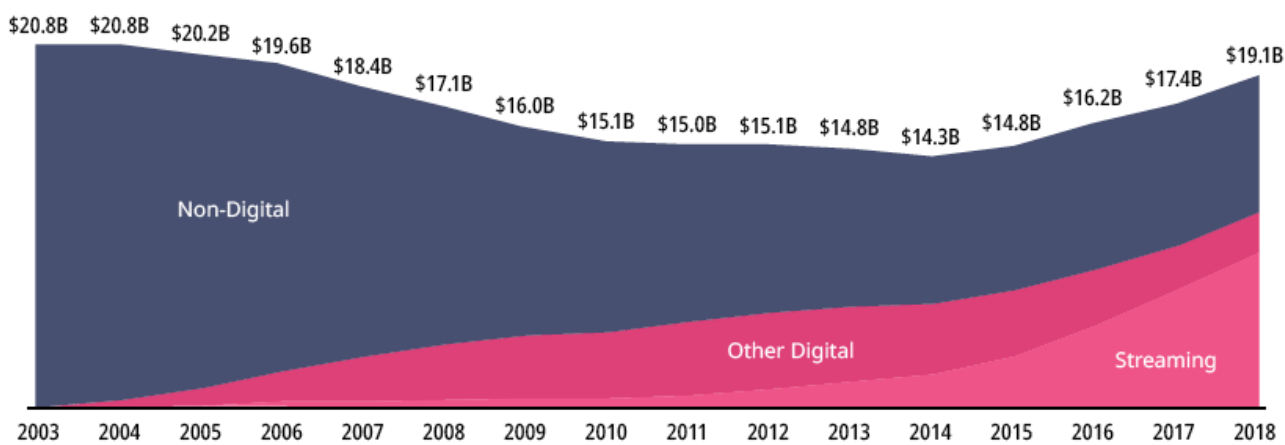
*This is an example of how 5G will enable other long-term themes – Smart Mobility in this case. 5G will provide the connectivity which is a necessity for autonomous driving vehicles, as they need to communicate with each other and with traffic infrastructure to carry out certain safety functions.*

## Visual Capitalist – How music streaming makes money ✓

**Investment Theme:** Digital Entertainment (Audio)

- The global music market experienced its fourth consecutive year of growth in 2018, generating over \$19 billion in revenue. Music streaming now accounts for almost half of that revenue, with **255 million paid users worldwide**.
- 67% of online adults have used a music-streaming service in the past month.
- With 217 million active users, and revenues of almost \$6 billion in 2018, **Spotify is the global leader** in music streaming.

**Global Recorded Music Revenues**



Source: 2019 Global Music Report

Streaming will dominate music consumption going forward. By 2022, streaming revenue will be larger than the entire recorded-music market was worth in 2018, predicts Midia Research. However, while still achieving very impressive growth rates, music streaming is slowing.

## TechCrunch - App Store customer spending hit record \$1.42B from Christmas Eve through New Year's Eve ✓

**Investment Theme:** Digital Entertainment

- The App Store sees over a **half a billion visits** from people in 155 countries per week.
- On New Year's Day, customers spent \$386 million alone - a 20% increase over 2019 and a new single-day record.

2019 Top Paid iPhone Apps	2019 Top Free iPhone Apps
1 Facetune	1 YouTube: Watch, Listen, Stream
2 HotSchedules	2 Instagram
3 Dark Sky Weather	3 Snapchat
4 The Wonder Weeks	4 TikTok – Make Your Day
5 AutoSleep Tracker for Watch	5 Messenger
6 TouchRetouch	6 Gmail – Email by Google
7 Procreate Pocket	7 Netflix
8 Sky Guide	8 Facebook
9 Toca Hair Salon 3	9 Google Maps – Transit & Food
10 Scanner Pro: PDF Scanner App	10 Amazon – Shopping made easy

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Staying with Apple...

### [Bloomberg - New Low-Cost iPhone to Enter Mass Production in February](#) ✓

**Investment Theme:** Digital Entertainment

- Apple suppliers plan to begin assembling a new low-cost iPhone in February and the company is expected to officially **unveil the new phone as early as March**.
- It will look **similar to the iPhone 8 from 2017** and include a 4.7-inch screen, Bloomberg News has previously reported.
- Apple is planning a slew of **new high-end iPhones for release later in 2020** that include 5G connectivity, faster processors, and new 3-D cameras on the back

*Apple hopes its iPhone shipments will grow this year on the back of this. It plans to ship more than 200 million units in 2020.*

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### [Wall Street Journal - Cash, Plastic or Hand? Amazon Envisions Paying With a Wave](#)

**Investment Themes:** Fintech; E-Commerce

- Amazon wants to make your hand your credit card by creating checkout terminals that could be placed in bricks-and-mortar stores and allowing shoppers to link their card information to their hands.
  - Amazon has also been experimenting with payments at its Amazon Go stores, where customers can walk out without stopping to pay. It has also been building out Amazon Pay, a digital wallet that consumers can use to make payments at online merchants not owned by Amazon.
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*Here is what is expected in South Africa on the Fintech side of things in 2020...*

### [BusinessTech - Fintech in South Africa in 2020 – what can we expect?](#) ✓

**Investment Theme:** Fintech

- **SME banking:** While 2019 saw the introduction of consumer digital banks such as TymeBank and Discovery Bank; in 2020 the focus will turn towards the SME market. Bank Zero will also be launching, and it will be interesting to watch how this digital bank will put more pressure on the incumbents to innovate. Mobile point of sale (mPOS) players like Yoco and iKhokha are also making further inroads in the SME market.
- **Shared finances:** Insurers like Sanlam are working with the National Stokvel Association of South Africa (NSASA) to offer financial services products to their base. In line with this concept, mutual services will see strong growth next year.
- **Bitcoin:** 2020 will put the focus back on the decentralised money discussions that were rife when Bitcoin first appeared. Today, the major difference is that the spotlight is firmly on Africa. Centbee – which recently launched its Minute Money remittance solution - uses Bitcoin SV to make cross-border payments to support family easily and more affordably.

- **Insurance:** Another key trend will be around smarter insurance. Discovery and OUTsurance are using data to reward good driving behaviour with better priced premiums. Lumkani seeks to address the challenge of fires in informal settlements and townships with a sensor network of early warning systems. This has resulted in a partnership with Hollard to introduce affordable shack insurance for fire cover.
  - **Financial inclusion:** 2020 will also see a focus on expanding financial inclusion in Africa. Companies like Selpal, Flash and Nomanini are making it easier for informal traders to sell their products. These innovators bring alternative distribution channels to informal communities that easily connect merchants to suppliers and customers. Zande provides trade and merchant finance to spaza shops to enable stock purchases.
  - **Alternative fintech partnerships:** Root and Investec have launched a programmable bank account for software developers. Essentially, this lets developers control their money programmatically, build their own features, and securely integrate with other services. Retailers will also start coming back into the financial services space. Shoprite is looking at a number of financial services initiatives while Pick n Pay has partnered with TymeBank.
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