

UP

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Boston Scientific - pioneering medical innovation

Jihad Jhaveri - Head of Process

The late 1970s was an exciting time for the fledgling medical device industry in the US. With low levels of regulation, leading physicians were generally the gatekeepers of the industry - designing and manufacturing unique medical devices for specific patient needs. They were assisted by small inventor-led medical device companies such as Medi-tech, Boston Scientific's predecessor.

Boston Scientific - pioneering medical innovation

Medi-tech pioneered the development of steerable and balloon cardiac catheters that enabled complex, risky operations (ie surgery to remove blood clots) to be replaced by minimally invasive, safer procedures.

The FDA began codifying regulations for the industry in 1976, creating a three-class, risk-based classification system for all medical devices. Registration for class three products (life sustaining) became increasingly onerous, necessitating more rigour (and costs) in product development, testing, manufacturing and post-launch monitoring. This dramatically increased the barriers to entry into the medical sector. It also shifted the balance of power away from physicians and entrepreneurial inventors, towards innovative and better funded companies like Boston Scientific, who have subsequently enjoyed rapid organic growth augmented by continuous acquisitions. We explore their key divisions and standout product innovation.

Entrenched in highly concentrated, growing niche markets

Today, Boston Scientific focusses on three broad disciplines within medical technology: (i) cardiovascular, (ii) neurology and rhythm, and (iii) medical surgery. Their research and development (R&D) spend is consistently higher than comparative companies (\$1 billion per year). This scale, together with their efficacy - particularly in transferring technology across disciplines - is a

competitive advantage (*below left*), allowing the business to enjoy sustained high margins.

In general, the markets in which Boston Scientific competes are characterised by:

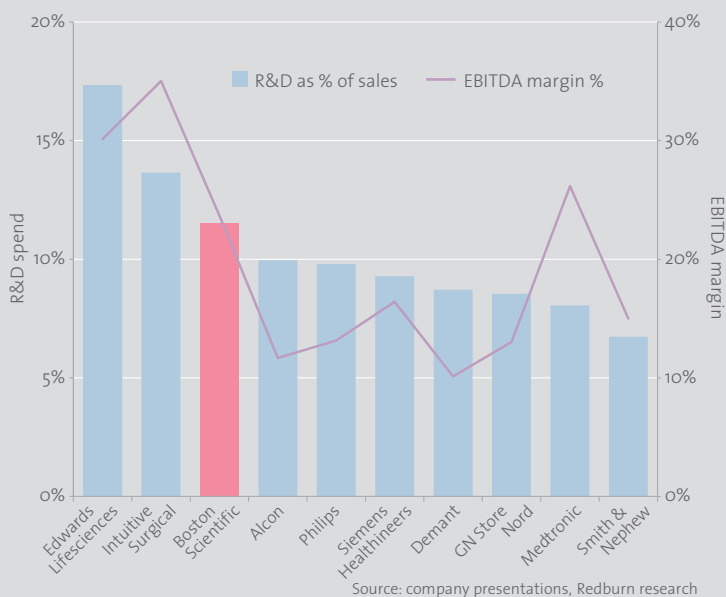
- very high levels of manufacturer concentration due to limited competition, indicated by the top three market shares in the *right chart below*;
- low levels of adoption, which means large scope for growth; and
- US-dominated sales, which is a function of more generous medical insurance payments for cutting-edge medical devices in that region. They have, however, seen rapid sales growth in emerging markets in recent years.

Much like other successful medical technology companies over the last few years, Boston Scientific has succeeded in outsourcing meaningful parts of its manufacturing process. This has enabled greater focus on capital allocation and human resource development, resulting in good returns.

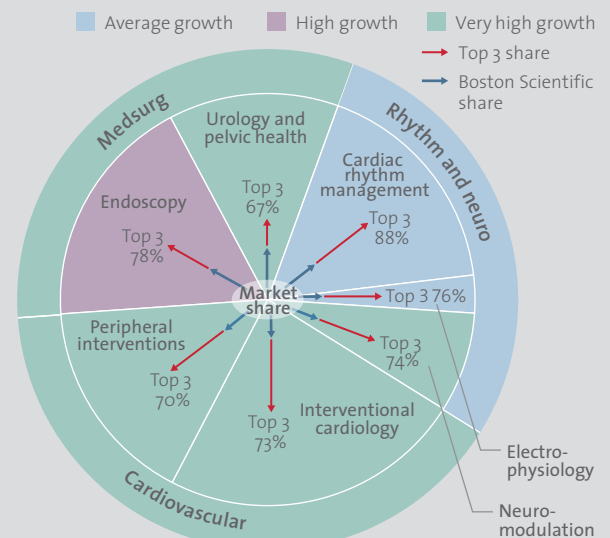
Curbing cardiovascular disease

As indicated in the *right chart below*, the cardiovascular portfolio is Boston Scientific's largest segment. Products developed here are primarily used for diagnosing and treating coronary disease and structural heart conditions.

Medical technology sector: R&D spend and margins



Boston Scientific revenue split (2020)



Peripheral interventions develop minimally invasive treatments for vascular diseases and cancer, including:

- drug-eluting vascular stent systems that treat peripheral artery disease by way of an inserted stent¹ that slowly releases therapeutic drugs; and
- the highly targeted TheraSphere cancer treatment involving the infusion of millions of radioactive micro glass spheres directly into tumour feeding arteries.

Within **interventional cardiology**, structural heart therapies are a rapidly growing niche segment in which Boston Scientific has a large market share. This represents a very meaningful part of their overall profits. Success in this area has historically created opportunities to cross-sell other cardiology and rhythm management products. Structural heart therapy products include:

- The WATCHMAN FLX™ (*below left*) device is designed to close the left atrial appendage (LAA) of the heart in patients who are at risk of a stroke. Ninety percent of stroke-causing blood clots in affected patients emit from the LAA and Boston Scientific's FDA approved WATCHMAN system delivers an implant to this section of the heart, permanently closing it off to prevent clots from escaping. This lifesaving procedure is performed under general anaesthetic, where

the implant is delivered through a catheter inserted in the upper leg, that expands into shape and anchors at the site.

- Transcatheter aortic valve replacement (*below centre*) is a minimally invasive heart procedure that replaces a narrowed aortic valve without the need for open heart surgery. A compressed artificial valve is implanted and expands into shape at the site, opening the area to help enable healthy blood flow from the heart to the rest of the body.

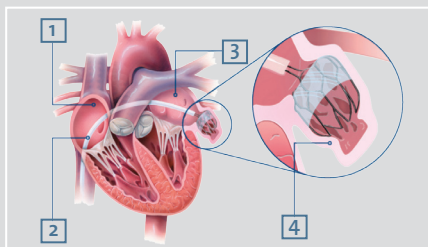
Electric impulses stimulate cardiac and neurological therapies

Boston Scientific is maintaining profitability in the more established, slower growing **cardiac rhythm management (CRM)** devices segment by its movement away from simply monitoring and managing cardiac issues, towards restoring, repairing and healing. These products (eg pacemakers and implantable fibrillation) monitor the heart and deliver an electric current to treat abnormalities. While the global CRM market is more established and offers less growth than other markets targeted by Boston Scientific, their innovation and differentiation in this area has been impressive. They offer the world's first minimally invasive subcutaneous implantable defibrillator that provides lifesaving protection against cardiac arrest without the need for a lead to be surgically placed in the heart.

¹ A small mesh tube.

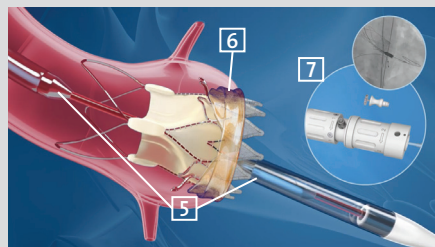
Boston Scientific's leading innovations

WATCHMAN FLX™ implant device:



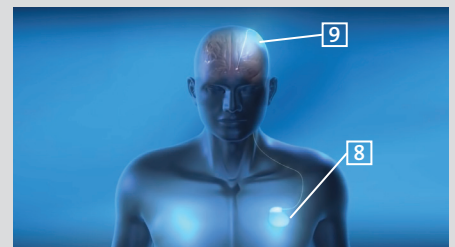
1. Right atrium - receives deoxygenated blood from systemic veins
2. Delivery catheter - inserted via small cut in upper leg and used to provide access to a procedural location
3. Left atrium - receives oxygenated blood from pulmonary veins
4. Watchmen FLX™ device is guided to the location of the LAA, where the majority of blood clots originate in affected patients - the device deployment creates a permanent closure, thereby significantly reducing the risk of stroke due to escaping clots
5. The delivery system that deploys the self-expanding replacement aortic valve

ACURATE™ aortic valve system:



6. Fully expanded and deployed replacement aortic valve, which takes over control of blood flow between the pumping chamber and the main artery
7. Control system with accurate visualisation and precision positioning facilitated by radiopaque material in delivery system
8. Titanium encased impulse generator that is implanted under the skin in the chest region - powered by wirelessly charged batteries
9. Leads with platinum/iridium insulation that are placed in the brain, delivering targeted impulses to therapeutic regions and minimising side effect stimulations

Deep brain stimulation system:



Boston Scientific - pioneering medical innovation

Their fast-growing **neuromodulation** business designs devices that treat neurological movement disorders (eg Parkinson's Disease) and manage chronic pain:

- Deep brain stimulation systems (*previous page right*) use an implanted device that sends electrical signals to the areas of the brain responsible for body movement, thereby assisting in the regulation of brain activity.
- Spinal cord stimulation systems work similarly. A battery-operated pulse generator is planted under the skin and connected to leads that stimulate nerves in the spinal column. This intercepts pain signals to the brain and replaces them with a tingling sensation (paraesthesia). With today's high prevalence of chronic illnesses and associated pain, the addressable market for this alternative to drugs and surgery is sizeable.

Less invasive surgery meets lifestyle disease demands

The Medsurg division houses the company's leading market share positions in gastrointestinal and pulmonary **endoscopy** and surgical urology. There is strong demand growth for these treatments arising from the increase in lifestyle-related diseases. Ground-breaking technologies include:

- The SpyGlass™ cholangioscopy system is used for visualisation, diagnostic evaluation and therapeutic interventions within the bile ducts. It assists in obtaining biopsy specimens, diagnosing abnormalities and guiding gall stone therapy. Although the SpyGlass™ consoles require a substantial upfront capital investment, the health-related economic benefits (from better surgical outcomes) is leading to strong growth in developed and emerging markets. Additionally, a high level of customer contact (servicing and provision of consumables) results in the cross-selling of other Boston Scientific products.
- Stent (scaffold) systems enable the treatment of pancreatic and biliary diseases (including cancer) and comprise Boston Scientific's enhanced AXIOS™ stent and delivery system. This is the first catheter and stent system for the treatment of pancreatic pseudocysts, whereby large cysts can be drained into the stomach. This procedure is made possible by way of an oral endoscopy that guides a stent into place via a catheter

and allows for a conduit opening to be created in the wall of the stomach. As this is the only stent currently available to bridge two tubular organs, there are exciting new areas of application for this technology being researched. This includes endoscopic gall bladder drainage and even gastric bypasses, which would be a major surgical breakthrough in a large, high growth area of medical treatment.

Furthermore, Boston Scientific currently holds the largest market share in **surgical urology and pelvic health**. It is an entrenched global leader in the treatment of kidney stones and, through acquisitions and R&D, has built a strong portfolio in the pelvic health arena. Key products include:

- a comprehensive suite of kidney stone management devices (stone laser devices make up the largest portion of revenue);
- the GreenLight Laser System, whereby a thin, flexible fibre carrying current is inserted into the urethra and used to vaporise excess prostate tissue; and
- the single-use LithoVue Ureteroscope, which has significantly disrupted the largely reusable market by increasing surgeon productivity (eliminating the need for time-consuming sterilisation). The success of this repeat-use product is translating into cross-sell opportunities across the surgical portfolio.

Continuous innovation is the guidewire for profitable growth

The continuous medical breakthroughs made by Boston Scientific since the 1970s have enabled complex surgical operations to be replaced by simpler and safer procedures - resulting in better patient health outcomes. The current portfolio enjoys meaningful growth because of the high efficacy of its products and their current low usage rates globally. Niche product segments often originate from specialised medical technology breakthroughs such as those created by Boston Scientific, with only a small group of competitors able to follow. This is evidenced by the very high level of concentration in each of Boston Scientific's product markets. These dynamics should allow the company to enjoy an extended period of strong growth, with solid returns on investment - ultimately benefiting our clients with global equity exposure. **UP**



Nutrien sows sustainable seeds

Abdul Davids - Portfolio Manager

Nutrien is a Canadian-based agricultural chemicals company that was formed following the 2018 merger of Agrium Limited and PotashCorp. It has grown to become the world's largest provider of crop inputs and services, with close to 20 000 employees and operations in 14 countries - reaching every major growing region in the world.

Nutrien sows sustainable seeds

Key demand drivers for fertilisers and agricultural chemicals are population growth, rising incomes and growing urbanisation that reduces the availability of arable land for food production. We unpack how Nutrien plays a critical role in 'feeding the future' by helping farmers increase food production in a sustainable manner.

Agricultural retail: the bedrock of Nutrien's profits

Nutrien owns some of the oldest and lowest cost potash mines in Canada, annually producing and distributing over 25 million tons of potash, nitrogen and phosphate products for agricultural customers worldwide. The company's agriculture retail distribution business is the largest segment (*charted below*) by way of revenue and profits, with a global reach and dominant market shares in North America and Australia.

The company has spent just over \$1 billion on purchasing retail operations over the last five years, currently comprising over 2 000 locations across North America, Australia and Brazil. Nutrien's retail operations offer farmers a complete range of seed, liquid and dry fertiliser products; primary crop protection products (including herbicides, insecticides and fungicides); specialty nutrition products; and a host of related services and solutions for more efficient farming. In addition, they have over 3 600 agronomists and farming specialists working

directly with farmers to optimise crop yields, to implement more efficient farming methods and to improve on sustainable farming practices.

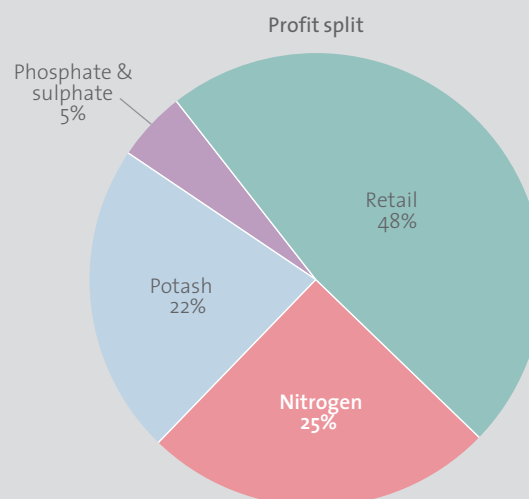
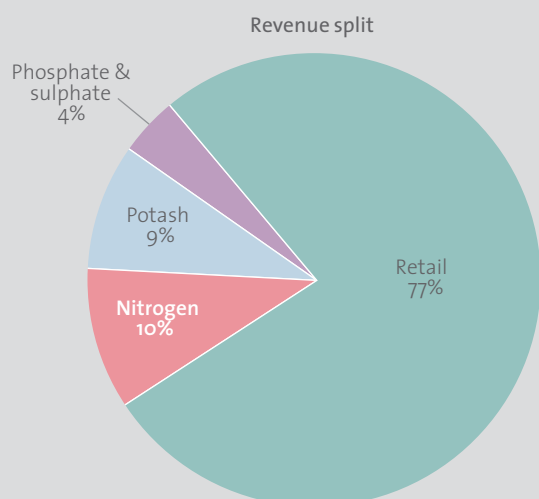
As farming is notoriously seasonal and cyclical, with periodic droughts and unfavourable weather impacting negatively on demand and income, Nutrien's global geographical footprint reduces and diversifies their risk and exposure to single adverse environmental phenomena.

Nitrogen: economics are favourable

Nitrogen is a fundamental building block of plant proteins and is therefore essential for improving crop yield and quality, as well as animal nutrition. Ammonia is a concentrated source of nitrogen and the basic feedstock for all upgraded nitrogen products, that are used as a direct application fertiliser and to make industrial products. The most widely used nitrogen fertiliser is urea, which is also the primary raw material input for industrial products such as plastics, resins and adhesives.

Nutrien is the second largest global producer of ammonia (annually producing close to five million tons of nitrogen out of nine facilities in North America and Trinidad, with a total capacity of around seven million tons) and one of the lowest-cost producers of nitrogen fertiliser. Ammonia is primarily consumed close to the regions in which it is produced due to the high

Nutrien revenue and profit split by division (June 2021)



cost of transportation. As such, Nutrien's North American plants are situated near customers and have access to low-cost natural gas feedstock. This creates a competitive advantage for the company in the US. Its proximity to growing agricultural markets in South America additionally creates a valuable avenue for future growth.

Phosphates: a key link between N & K

Phosphates, or phosphoric acid, represents the 'P' in NPK¹ fertilisers and is an essential element that allows plants to absorb nutrients to grow optimally. While the phosphates division is Nutrien's smallest segment (5% contribution to group profits in the last financial year), it sells a range of phosphate-based products including diammonium phosphate (DAP - the world's most widely used phosphorous fertiliser) and monoammonium phosphate (MAP - a key ingredient in fertilisers, fire extinguishers, optics and electronics). Nutrien produces 5 million tons of phosphate-based products annually, while global phosphate demand is at roughly 70 million tons.

Potash: potential aplenty in Canada

Southern Saskatchewan contains the western world's largest deposit of potash resulting from the geological formation of a layered sequence of halite (rock salts) and other evaporite minerals called the Prairie Formation. The potash extracted from the predominantly sylvinite ore is mainly used as a

fertiliser. The unique feature of this potash deposit is its uniform, almost undisturbed formation over a vast area - occurring at a depth of around 1 000 metres and extending for almost 300 kilometres into North Dakota. The evenly formed, 3-metre-thick deposit enables bulk, mechanised mining and efficient extraction of the potash ore. This creates a natural low-cost production advantage for Canadian potash producers (*tabled below left*).

The top three potash producing countries account for 60% of global production, with Canada at the helm and enjoying the largest share of available reserves. Nutrien and Mosaic, Canada's top two producers, currently account for approximately 20 million tons of potash production per year.

Nutrien has seven potash facilities, with a total capacity of 22.6 million metric tons. However, 2020 saw the company producing only around 12.9 million tons, representing a 57.5% capacity utilisation rate. Nutrien purposefully restrains its production of potash in order to play a decisive role in keeping global potash supply, demand and inventory levels in balance. This enables a stable and predictable pricing environment for customers. The *right chart below* highlights the large global potash producers and their relative production cost position.

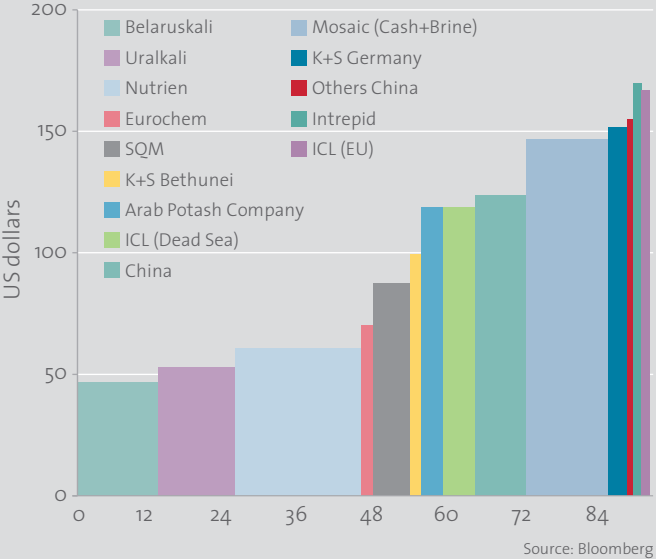
¹ A fertiliser's N-P-K ratio is the proportion of three plant nutrients in order: nitrogen (N), phosphorus (P) and potassium (K). The product's N-P-K numbers reflect each nutrient's percentage by weight.

Production and reserves of potash*

Country	Production	Reserves
Canada	12.0 (28.6%)	1 000 (25.6%)
Russia	7.2 (17.2%)	500 (12.8%)
Belarus	6.4 (15.3%)	750 (19.2%)
China	6.2 (14.8%)	360 (9.2%)
Germany	2.9 (6.9%)	150 (3.9%)
Israel	2.2 (6.9%)	270 (6.9%)
Jordan	1.3 (3.1%)	270 (6.9%)
Chile	1.2 (2.9%)	44 (1.1%)
Spain	0.7 (1.7%)	210 (5.4%)
United States	0.5 (1.2%)	40 (1.0%)
United Kingdom	0.5 (1.2%)	24 (0.6%)
Brazil	0.3(0.7%)	90 (2.3%)
Other countries	0.5 (1.2%)	90 (2.3%)
World total	42.0 (100.0%)	3 900 (100.0%)

* Both in K₂O equivalent; 2017 in million tons
Source: Bloomberg

Global potash producer cost curve



Nutrien sows sustainable seeds

Belaruskali and Uralkali, two Belarussian producers, have been impacted by European and US sanctions resulting in Belarussian potash exports declining to 11.8 million tons (1.5 million tons to Europe, 0.7 million tons to the US and the remaining 9.6 million tons mainly to Asian and South American countries). Mosaic, a key North American producer, has experienced a loss of close to 0.7 million tons of potash production due to flooding. The subsequent decline in supply, coupled with robust demand growth has resulted in potash prices rising to multi-year levels, as indicated *below left*.

Nutrien's current cost of production (approximately \$58 per ton of potash) stands in stark contrast to potash pricing at present (around \$550 per ton). While we do not expect the current high potash prices to be sustainable, the company is enjoying record profitability and increased exports to meet customer demand.

Corporate activity illustrates Nutrien's value

BHP Limited, the world's largest mining company, made a \$43 billion bid for PotashCorp in 2010, but this was thwarted by the Canadian government. The PotashCorp/Agrium merger of

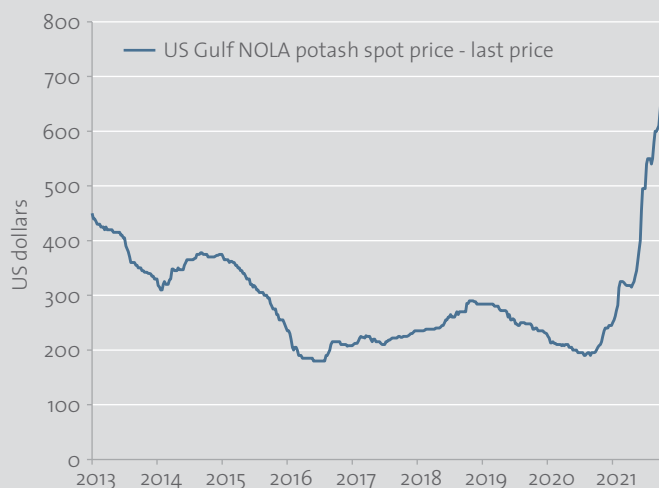
equals valued PotashCorp at \$17 billion in 2018, with Nutrien's (new company) market value of \$34 billion reflective of the merger values of the two companies at the time. BHP recently announced that it will proceed with its delayed Jansen potash mining project, with a total price tag of almost \$12 billion for the anticipated annual production of around 4 million tons by 2027. This would imply a capital value of close to \$3 000 per ton. In contrast, Nutrien's current market capitalisation implies its 22.6 million tons of capacity has a value of only \$17 billion, ie \$752 per ton.

Despite a 20% increase in revenue and an almost doubling of profits since 2018, Nutrien's market value has languished over the last three years, significantly underperforming a strong recovery and rebound in the potash price (*below right*).

Robust outlook warrants investment

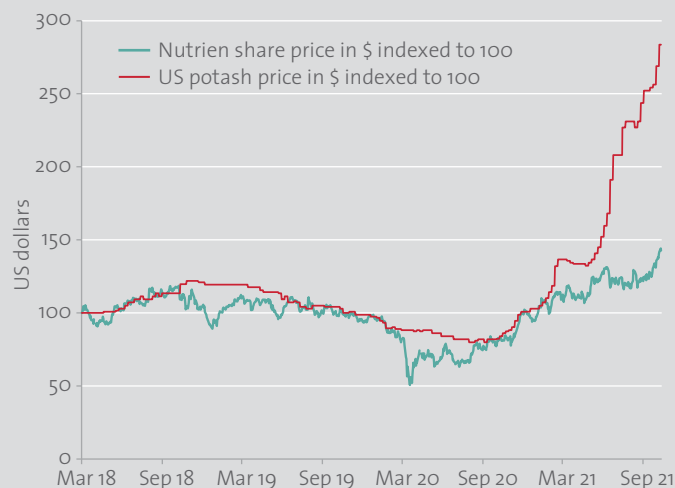
Dominant positions in key potash and fertiliser markets coupled with a stable and growing retail footprint are key Nutrien attributes. In addition, the company's exposure to compelling demand drivers for its fertiliser products makes Nutrien an exciting investment proposition for investors. **UP**

Rising potash prices



Source: Bloomberg

Nutrien has lagged the potash price rebound



Source: Bloomberg



PGMs: towards greener mobility

Mandi Dungwa - Portfolio Manager

“The transportation of people and goods is expected to evolve significantly as the world endeavours to reduce global greenhouse gas emissions to zero by 2050 - in our attempt to moderate climate change. This transition will materially impact the markets for platinum group metals (PGM). We explore these dynamics and our expectations for this evolving market.”

PGMs: towards greener mobility

Going green at full steam

Fossil fuel-powered internal combustion engines (ICEs) have been the main technology employed in transportation for the past 100 years. This is set to change as the world transitions to greener transportation modes. As *charted below*, the transport sector is responsible for 24% of global greenhouse gas emissions, with road transport making up over 70% of these emissions.

Since 1975, vehicular emissions have been managed and reduced using PGM autocatalysts, that reduce toxic gases and pollutants emitted from engines. Autocatalysis does not, however, eliminate these harmful emissions completely.

The **passenger road vehicle segment** is currently the largest contributor to global transport emissions, at around 45%. Efforts to tackle this have seen increasingly strict emission control standards being imposed and several countries and cities announcing upcoming bans on the sale of new petrol and diesel cars - many by as soon as 2030. There is much uncertainty around what the future mix of passenger vehicles will be, given the practical constraints with respect to the transition. Over the medium term, we believe that hybrid vehicles will increasingly replace ICE vehicles as they produce 10% to 75% lower carbon dioxide emissions and are more scalable than battery electric vehicles (BEVs).

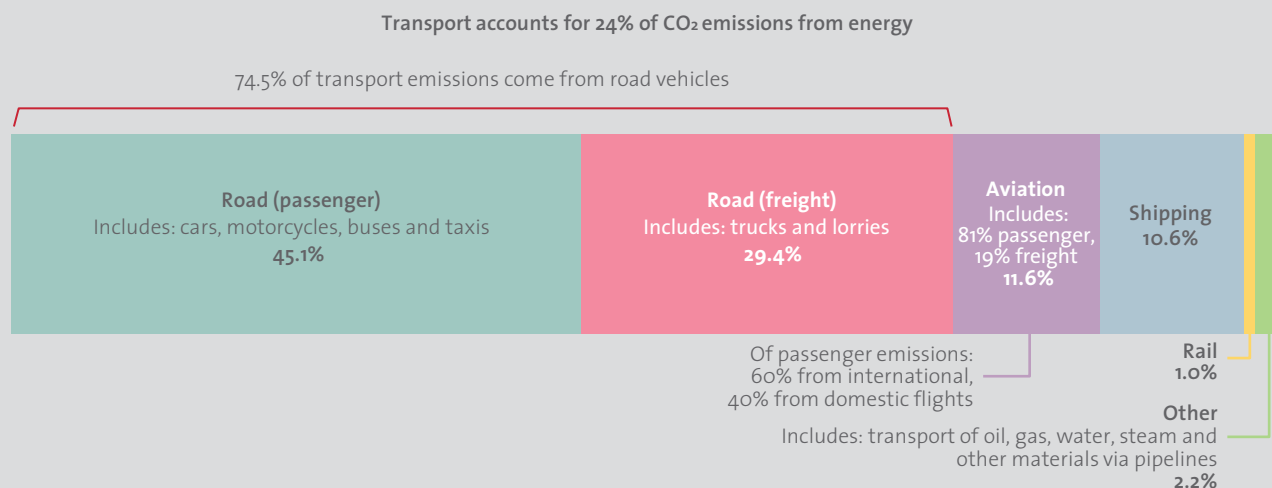
BEVs or hydrogen fuel cell electric vehicles (FCEVs) produce zero carbon emissions directly and should therefore become the ideal solution in the long term. Despite ongoing research and development (R&D) around improving the energy efficiency of FCEVs, BEVs are significantly more energy-efficient and already more commonly found in this segment.

The widespread adoption of BEVs is, however, currently restricted because: (i) they are significantly higher priced than hybrid and ICE vehicles, given their high cost of manufacture; (ii) there is insufficient battery charging infrastructure in place; and (iii) manufacturers are not yet set up to produce sufficient volumes of BEVs and there is a scarcity of the raw materials that are required for batteries.

While hydrogen fuel cells may not be the leading technology in the passenger vehicle segment at present, we believe that it is the answer for the future of the **heavy-duty vehicle segment**. This is key for PGM demand going forward as there is a large requirement of PGM's in these applications. Currently, this predominantly diesel-fuelled transport mode contributes just over 29% of global transport emissions.

Heavy-duty vehicles require large amounts of power to pull heavy loads across vast distances and high energy density FCEVs are proving more economically viable and efficient than

Global CO₂ emissions from transport*



*Based on global transport emissions in 2018, which totalled 9 billion tons CO₂
Source: OurWorld in Data, International Energy Agency (IEA), International Council on Clean Transportation, licensed under CC-BY by author Hannah Ritchie

BEVs in this area (which take longer to refuel and require much space to accommodate the large, heavy batteries used).

While hydrogen fuelled technology is still in its infancy - requiring further optimisation and a significantly wider adoption to lower the costs - truck manufacturers such as Daimler have indicated that it is their preferred zero emissions vehicle solution for long-haul, heavy-duty fleets.

The **shipping and aviation** sectors combined, account for over 20% of transport emissions. Technologies such as hydrogen fuel cells, sustainable biofuels and e-fuels will need to be implemented to effectively reduce emissions in these sectors. However, they are currently not commercially viable and require further R&D.

The movement towards zero emission mobility is largely dependent on government reduction target policies. In addition to banning the sale of ICEs, developed countries have committed to investing substantially in charging infrastructure for electric vehicles and to supporting the purchase of such vehicles through consumer subsidies.

Developing countries lag far behind. For example, 40% of used ICE passenger vehicles are exported to Africa, compared with only 2% of new vehicles being purchased there. Developing nations need to consider the trade-off between economic

growth, affordability and sustainable development. This makes the transition towards greener mobility practically more difficult for them, with limited long-term visibility on a solution.

The knock-on effect for PGM demand

As 70% of 3E (platinum, palladium and rhodium) PGM demand comes from the automotive sector, developments in this area will have a material impact. Initially, an increase in the purchase and use of hybrid vehicles that continue to use autocatalysts in the same quantities as existing ICE vehicles, will support PGM demand growth. This will be boosted by the continued push for tighter emissions legislation by governments globally. Longer term, the increased use of electrified drivetrains will see PGMs used more frequently via the deployment of hydrogen fuel cell technology (mainly platinum, ruthenium and iridium).

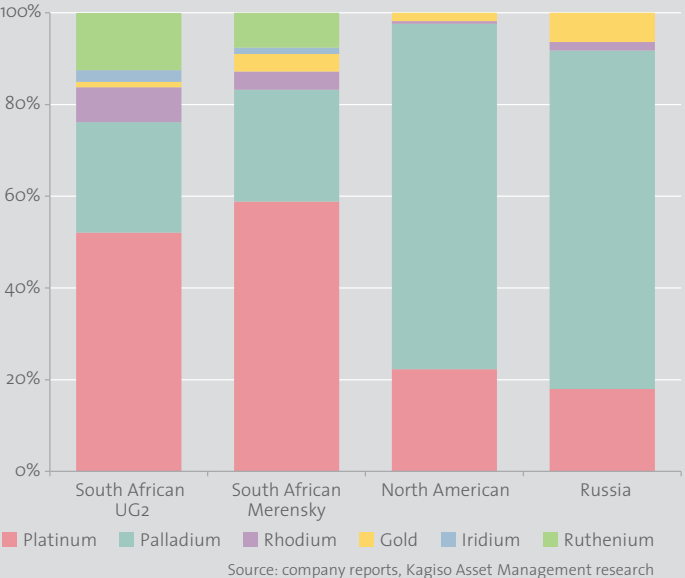
Platinum is predominantly used in autocatalysts for diesel vehicles, while palladium and rhodium are more heavily used in petrol autocatalysis. The demand for platinum will benefit from FCEVs becoming the preferred choice in the heavy-duty segment as the platinum content in these technologies is higher than the current content per diesel vehicle. This is positive for the long-term platinum price, which is currently depressed by a surplus of supply over demand. We expect this situation will reverse in the face of declining supply and a rising demand environment.

3E PGM auto demand sensitivity to BEV market share

	2019 numbers	Faster transition to zero emissions	Kagiso base case	Slower transition to zero emissions
Auto production by 2030 (million vehicles)	89	112	112	112
3E PGM auto demand (000's ounces)	13 561	13 194	16 098	17 295
Global BEV market share by 2030	2%	40%	26%	20%

Source: Johnson Matthey, IHS, Kagiso Asset Management research

Regional metal splits



PGMs: towards greener mobility

Given its dominance in petrol autocatalysis, palladium is due to face a significant reduction in demand if evolving mobility trends develop in line with expectations. A declining passenger vehicle petrol ICE market share will reduce palladium demand in the medium to longer term and there appears to be few new sources of demand for the metal.

Oxides of nitrogen (NO_x) are air pollutants emitted by diesel and petrol engines (including hybrids). These are harmful to humans and damage crops and natural ecosystems. Rhodium is particularly useful in controlling the reduction of these emissions. As such, we anticipate that the tightening of NO_x-related emissions regulations will increase the demand for rhodium over the next decade. Following that, however, the decline of ICE vehicle production will see a reduction in demand for rhodium in line with palladium demand. The *left table on the previous page* explores the uncertainty that exists for the PGM market between the various stages of evolution over the next decade.

Other sources of PGM demand

Platinum is used in jewellery (28% of demand), owing to its purity, strength, resistance to fading and aesthetic appeal. We expect this segment to be supported by the growing middle class in China and India, and growing consumer incomes globally.

Platinum, palladium and rhodium also have a wide range of other uses in industrial applications, where they are used in the manufacturing of goods ranging from fertilisers to cancer medication. Ruthenium is used as a catalyst in many chemical and electrochemical processes and in the manufacture of semiconductors and hard disk drives. Being highly corrosion-resistant, iridium is used to make crucibles. While we expect the industrial demand for PGMs to be robust into the future as global economies grow, this source of demand will remain rather small.

Hydrogen power technology has the potential to accelerate the deployment of renewable energy, replacing a larger proportion of fossil fuels and bringing about progress in the decarbonisation of the energy sector. In addition to hydrogen fuel cells that use hydrogen to produce electricity, electrolyzers are used to produce hydrogen by splitting water into hydrogen and oxygen. Platinum, ruthenium and iridium are key components in this process if Proton Exchange Membrane (PEM) electrolyzers are used. While still a nascent technology, PEM electrolyzers

have significant potential, as demonstrated by the sizable investment into this technology taking place at present.

Supply and pricing outlook

The years between 2012 and 2018 saw very low PGM prices relative to mining costs, with a significant portion of South African mining supply making losses at this time. Producers responded by reducing the capital investment that sustains future production in favour of balance sheet preservation. Consequently, supply will decrease as existing mines deplete, to be increasingly replaced by growing supply from the recycling of autocatalysts (via the scrapping of older vehicles).

While South African producers have announced some incremental growth, these are only medium-term (five year) replacement projects and a declining production base is expected to follow thereafter. PGM miners produce a basket of commodities that vary in relation to geographical location. South Africa is well suited to benefit from the evolving PGM demand trends, given its exposure to platinum, ruthenium and iridium (*previous page right*).

The local PGM market picture

Currently, the PGM revenue basket is unsustainably high in our view. High palladium and rhodium prices are due to substantial deficits of supply relative to demand, but as mentioned, demand for these metals will decrease as ICE vehicle usage declines. Our medium-term expectations are for the PGM basket price to be supported by growing platinum and rhodium demand. Longer term, we anticipate a basket supported by growing demand for platinum, iridium and ruthenium from PEM electrolyzers and FCEVs. Yet, the timing of this (and likely the extent) remains uncertain, which has led PGM company boards to opt for paying out cash flows to shareholders rather than investing in growing future production.

Our clients are invested in low cost South African PGM producers that are expanding production in the currently high PGM price environment and growing cash flows, such as Northam Platinum and Anglo American Platinum. Their low cost of production relative to competitors positions them favourably in the positive (but lower than current) metals price environment and acts as a defence against weakness in an uncertain, but evolving, PGM market. **UP**



Opportunity aplenty for Telkom

Gracious Mashila - Associate Analyst

Fixed telephone lines were first introduced in South Africa in the late 1800s, when the infrastructure was managed by the Department of Post and Telecommunications. Telkom was incorporated as an independent state-owned company in 1991 and listed on the JSE Securities Exchange in 2003. Telkom, in partnership with Vodafone, was the first to provide mobile telecommunication services in South Africa through the establishment of Vodacom in 1994. They subsequently sold this Vodacom stake.

Opportunity aplenty for Telkom

Telkom's product and service offering has evolved materially over the last decade to include fixed line and mobile services, along with data and information technology services. We discuss Telkom's transformation from their roots as a solely fixed line business.

From fixed to mobile

Since the late 2000s, the telecommunications industry has evolved from copper and traditional fixed line offerings to newer and faster technologies such as mobile, fixed wireless and fibre. While maintaining its monopoly in fixed line connectivity, Telkom has undergone a remarkable transformation to become South Africa's third largest mobile network operator. It has strategically transitioned to its new mobile business, while maximising profitability in the fixed business. The *charts below* highlight changes in revenue composition over the last few years, with the mobile business now contributing almost half of group revenue and traditional fixed products constituting just 28% of revenue (from over half in 2017).

Fixed line growth inflection on the horizon

Although copper continues to be used for fixed line voice and data services, the shift to new generation technologies such as LTE and fibre has resulted in fixed line revenue continuing to decline. These newer technologies offer vastly higher data transmission speeds.

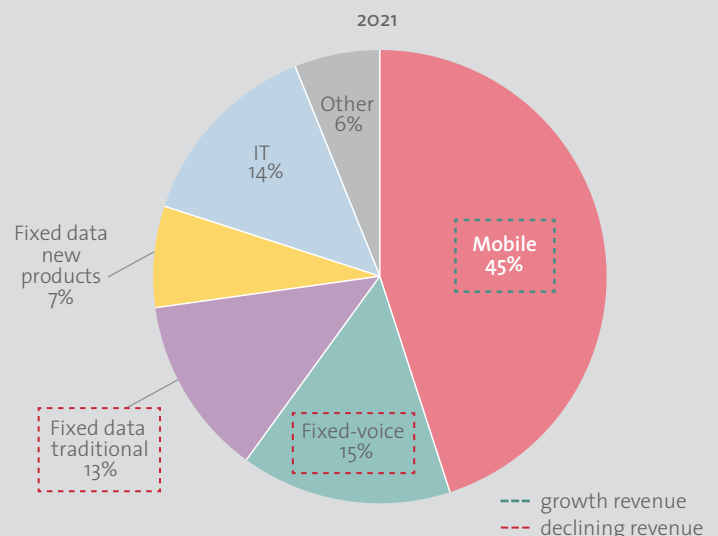
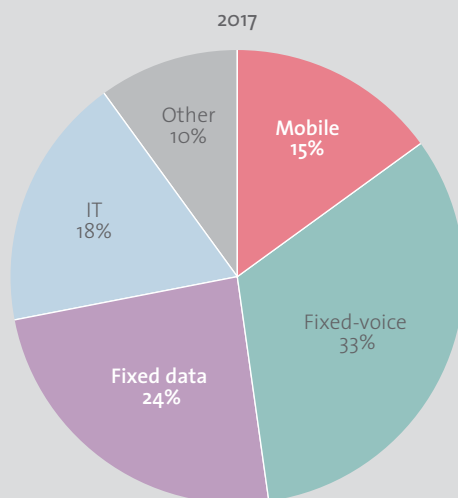
Despite a sharp fall in revenue for the fixed line business since 2011, Telkom has managed to stabilise profitability through a material reduction in operational costs, including reducing employees by approximately 10 000 over the last decade.

As Telkom continues to invest in new generation fixed line products (mainly optic fibre), we expect to see these products increase revenue to the point where it soon surpasses legacy fixed line revenue. We estimate that Telkom has spent more than R23 billion over the last five years on expanding its fibre network. While fibre investments have a high upfront cost, they can be substantially leveraged as data demand grows and, at full utilisation, fibre infrastructure assets have the potential to deliver high returns to shareholders. Telkom has been very successful at growing fibre asset utilisation rates (*charted on following page*) and we expect this to continue on its vast installed base. Fixed line service revenue will grow substantially, along with profitability.

A network advantage

Telkom's telecommunications network is the largest in South Africa, with over 169 000 kms of copper and fibre. The network is managed through a division called **Openserve**, which is a very valuable asset of the group.

Comparison of contributions to group revenue



Source: company reports, Kagiso Asset Management estimates

Openserve is the only infrastructure provider with a regional network touching remote towns across South Africa, therefore most telecommunication companies are reliant on their infrastructure to deliver services to customers. It is also the only network with full network redundancy¹ - limiting connection interruptions. The network is a clear competitive advantage and positions the group well for future growth in fibre-related services. It has also been a key growth enabler for Telkom's mobile business.

Mobile success story

Initially launched as 8ta in 2010 and rebranded as **Telkom Mobile** in 2013, this business has had noticeable success after an extended loss-making period in the initial years. Strong subscriber growth over the last decade (*charted on following page*) has resulted in a 13% subscriber market share, with more than 15 million subscribers to date.

Telkom has effectively marketed unique all-in-one solutions, for example their 'FreeMe' offering. This package is customisable and has enabled data and minute sharing. They have particularly found market success and grown subscribers over the last three years by offering data-focused packages that are relatively affordable compared to competitors.

¹ Having multiple, geographically diverse cable routes that service the same client site.

Telkom's mobile network was configured to allow for high asset utilisation in that it was purposefully built for carrying data (rather than voice). This has resulted in a lower cost of carrying data versus competitors, enabling Telkom Mobile to enjoy a material cost advantage. In addition, the group benefits from being able to substantially leverage the already established and depreciated fixed line network. These advantages are enduring and should see further growth and market share gains in the mobile business over the medium term.

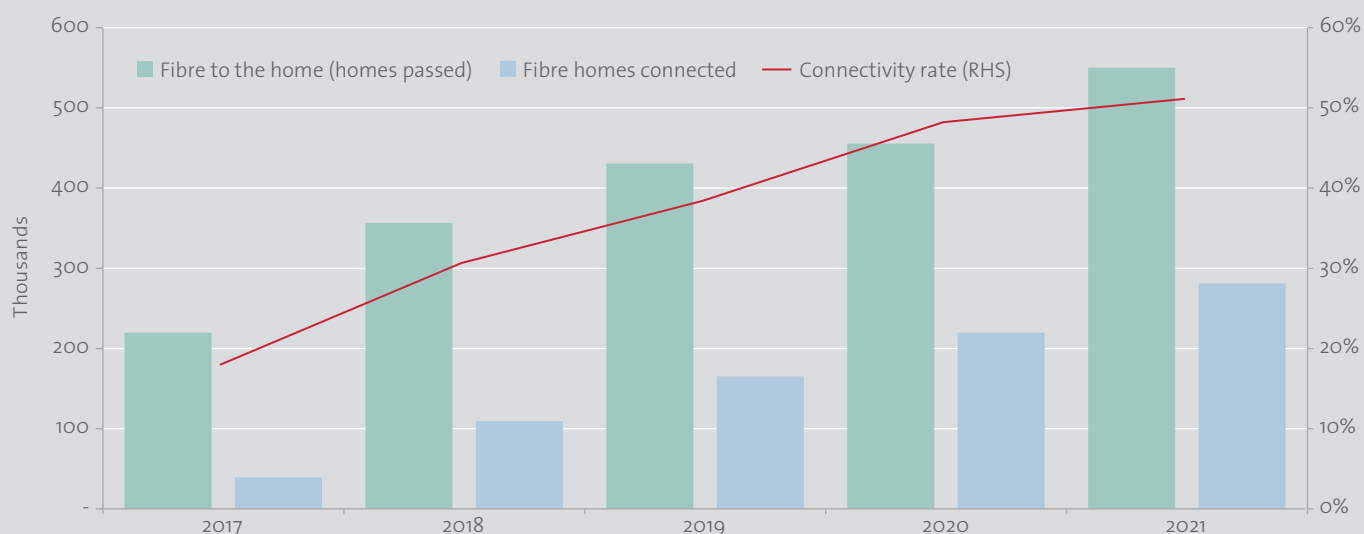
At the IT helm

Telkom provides information technology (IT) services to the group and external customers through **BCX**. This business was acquired in 2016 and is one of South Africa's largest IT companies, providing services such as: converged communications, IT infrastructure management, cloud computing and cybersecurity. BCX is well positioned in the fast-growing datacentre market, currently owning the largest Tier-4 datacentre² footprint.

Despite its position in growing markets, BCX revenue performance has been weak due to its high exposure to declining voice services. Recent performance has also been negatively impacted by the COVID-19 pandemic, which has led to reduced IT spend by large enterprises. This has forced BCX to focus on restructuring the cost base to maintain

² A Tier-4 datacentre is built to be completely fault tolerant and has redundancy for every component to ensure a minimum uptime of 99.995% (26.3 minutes of downtime annually).

Telkom brings fibre to homes



Source: company reports

Opportunity aplenty for Telkom

profitability, but presents an opening for growth once the economy recovers.

New opportunities for expansion

Telkom's portfolio currently includes businesses that we believe could unlock incremental value for shareholders if unbundled or sold.

Gyro was created in 2017 to house Telkom's masts and towers infrastructure business, including land and a multi-use property portfolio. Masts and towers carry the radio antenna of mobile telecommunication providers and there is growing demand for well-located sites close to densely populated areas.

Telkom's legacy fixed line business required a telephone exchange³ in most residential and business areas before they were fully developed. This has resulted in the ownership of large parcels of land in very valuable locations (we estimate 88% of the portfolio is situated in the busiest economic hubs around Gauteng, the Western Cape and KwaZulu-Natal). The tower portfolio is sizeable, currently constituting around 22% of total South African mobile towers, which is proportionately large compared to its market share of subscribers.

Telkom Mobile is an anchor tenant, leasing 44% of the tower portfolio, with the balance leased to other mobile network

3 A central building housing equipment that interconnects phone calls between users.

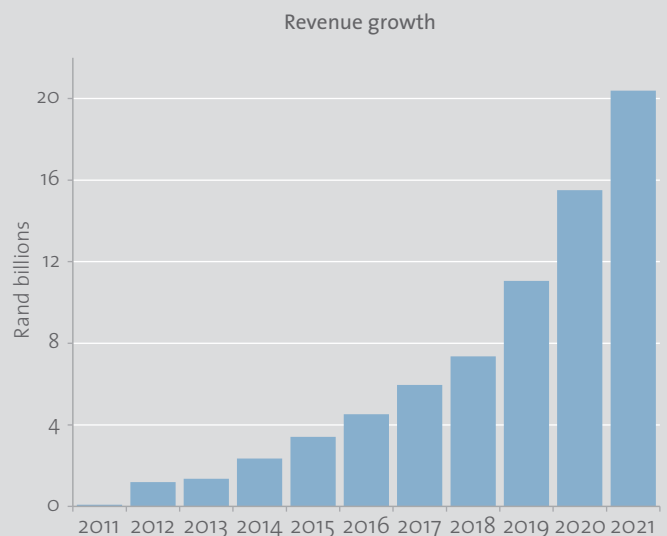
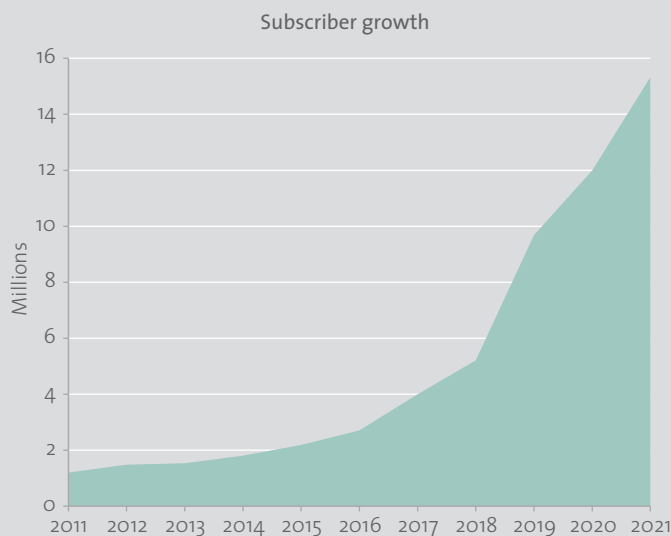
operators and corporates. The current demand for towers is buoyed by the exponential growth in data consumption and the shift to 5G technology. 4G/5G is deployed at higher spectral frequencies requiring denser networks, ultimately resulting in the need to construct more towers. The main objective for this focused property segment is to unlock value through growing occupancy on masts and towers and by redeveloping land via direct investment or in partnership with property companies.

There is also lots of opportunity to realise growing value from Telkom's **datacentres**, of which there are 10 in South Africa, with over 6 000 m² of combined floor space. While Telkom management does not disclose utilisation rates, we believe that there is ample capacity for growth. Converting these assets to providing a vendor-neutral and open-access service model could lead to substantially higher future returns.

Reaping investment rewards

The medium-term growth outlook for Telkom is positive and the investment case remains attractive. The mobile business is strong and, after many years of investment, the fixed line business has reached an inflection point, with growth declines expected to moderate materially and eventually turn around. We expect patient shareholders to be rewarded through improving earnings, increasing free cash flow and higher returns. **UP**

Telkom mobile subscriber and revenue growth



Source: company reports

Kagiso Asset Management Funds

Performance to 30 September 2021	1 year	3 years ¹	5 years ¹	10 years ¹	Since launch ¹	Launch	TER ²	TC ³
Unit trust funds⁴								
Equity Alpha Fund	39.0%	14.4%	10.1%	11.2%	16.0%	Apr-04	2.04%	0.51%
SA Equity General funds mean	27.4%	6.8%	5.1%	9.0%	12.0%			
Outperformance	11.6%	7.6%	5.0%	2.2%	4.0%			
Global Equity Feeder Fund[#]	22.7%	-	-	-	9.6%	Nov-19	2.39%	0.31%
FTSE World Index ⁸	17.5%				18.0%			
Outperformance	5.2%				-8.4%			
Balanced Fund	27.7%	10.6%	8.5%	9.9%	9.4%	May-11	1.58%	0.39%
SA Multi Asset High Equity funds mean	18.7%	7.2%	6.2%	8.9%	8.4%			
Outperformance	9.0%	3.4%	2.3%	1.0%	1.0%			
Protector Fund	28.0%	10.3%	8.8%	8.3%	9.9%	Dec-02	1.61%	0.31%
CPI + 4%	9.0%	8.0%	8.7%	9.6%	10.2%			
Outperformance	19.0%	2.3%	0.1%	-1.3%	-0.3%			
Stable Fund	29.3%	8.7%	7.5%	8.3%	8.3%	May-11	1.51%	0.45%
CPI + 2%	7.0%	6.0%	6.3%	5.9%	5.9%			
Outperformance	22.3%	2.7%	1.2%	2.4%	2.4%			
Institutional funds⁵								
Managed Equity Fund[*]	40.6%	14.7%	9.5%	11.1%	11.7%	Sep-06		
FTSE/JSE Capped SWIX Index	30.3%	7.1%	5.8%	11.2%	10.9%			
Outperformance	10.3%	7.6%	3.7%	-0.1%	0.8%			
Domestic Balanced Fund⁶	33.6%	13.1%	9.5%	9.6%	9.1%	May-07		
Peer median	26.6%	7.1%	6.4%	9.6%	8.9%			
Outperformance	7.0%	6.0%	3.1%	0.0%	0.2%			
Global Balanced Fund⁷	30.2%	12.2%	10.2%	-	10.4%	Jul-13		
Peer median	21.7%	8.1%	7.7%		9.3%			
Outperformance	8.5%	4.1%	2.5%		1.1%			
Bond Fund	16.2%	9.6%	9.4%	-	9.0%	Aug-15		
BESA All Bond Index	12.5%	9.1%	8.5%		8.1%			
Outperformance	3.7%	0.5%	0.9%		0.9%			
Money Market Fund	5.5%	7.1%	7.7%	7.1%	7.7%	Jan-04		
Alexander Forbes STeFI Composite Index	3.8%	5.8%	6.4%	6.2%	7.1%			
Outperformance	1.7%	1.3%	1.3%	0.9%	0.6%			
Sharia unit trust funds⁴								
Islamic Equity Fund	41.2%	12.1%	10.9%	10.6%	11.8%	Jul-09	1.54%	0.20%
SA Equity General funds mean	27.4%	6.8%	5.1%	9.0%	10.1%			
Outperformance	13.8%	5.3%	5.8%	1.6%	1.7%			
Islamic Global Equity Feeder Fund[#]	11.0%	-	-	-	12.0%	Jan-19	2.16%	0.16%
Global Equity General funds mean	13.4%				20.3%			
Outperformance	-2.4%				-8.3%			
Islamic Balanced Fund	29.9%	10.7%	9.3%	9.1%	8.2%	May-11	1.53%	0.15%
SA Multi Asset High Equity funds mean	18.7%	7.2%	6.2%	8.9%	8.4%			
Outperformance	11.2%	3.5%	3.1%	0.2%	-0.2%			
Islamic High Yield Fund[#]	11.8%	-	-	-	7.6%	Mar-19	0.59%	0.04%
Short-term Fixed Interest Index (STeFI)	3.8%				5.5%			
Outperformance	8.0%				2.1%			

Highest and lowest monthly fund performance	Highest	Lowest	Highest	Lowest	Highest	Lowest	Highest	Lowest	Highest	Lowest
Equity Alpha Fund	10.9%	-2.8%	12.6%	-21.6%	12.6%	-21.6%	12.6%	-21.6%	12.6%	-21.6%
Global Equity Feeder Fund	15.4%	-6.6%	-	-	-	-	-	-	18.1%	-15.6%
Balanced Fund	9.1%	-0.7%	9.1%	-15.7%	9.1%	-15.7%	9.1%	-15.7%	9.1%	-15.7%
Protector Fund	7.4%	-0.3%	7.4%	-13.9%	7.4%	-13.9%	7.4%	-13.9%	9.5%	-13.9%
Stable Fund	6.1%	-0.6%	6.1%	-11.4%	6.1%	-11.4%	6.1%	-11.4%	6.1%	-11.4%
Islamic Equity Fund	9.6%	-1.4%	9.6%	-14.3%	9.6%	-14.3%	9.6%	-14.3%	9.6%	-14.3%
Islamic Global Equity Feeder Fund	7.9%	-4.9%	-	-	-	-	-	-	14.6%	-8.4%
Islamic Balanced Fund	8.0%	-1.1%	8.0%	-9.3%	8.0%	-9.3%	8.2%	-9.3%	8.2%	-9.3%
Islamic High Yield Fund	2.7%	0.1%	-	-	-	-	-	-	2.7%	-2.4%

Footnotes and disclaimer follow overleaf.



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Footnote: ¹ Annualised (ie the average annual return over the given time period); ² TER (total expense ratio) = % of average NAV of portfolio incurred as charges, levies and fees in the management of the portfolio for the rolling three-year period to 30 September 2021; ³ Transaction costs (TC) are unavoidable costs incurred in administering the financial products offered by Kagiso Collective Investments and impact financial product returns. It should not be considered in isolation as returns may be impacted by many other factors over time including market returns, the type of financial product, the investment decisions of the investment manager and the TER. This is also calculated on the rolling three-year period to 30 September 2021; ⁴ Source: Morningstar; net of all costs incurred within the fund and measured using NAV prices with income distributions reinvested; ⁵ Source: Kagiso Asset Management; gross of management fees; ⁶ Median return of Alexander Forbes SA Manager Watch: BIV Survey; ⁷ Median return of Alexander Forbes Global Large Manager Watch; ⁸ Benchmark changed with effect from 1 January 2021 from "Average performance in Global Equity unit trust universe".

* Our two Managed Equity composites have been amalgamated with immediate effect. The history of Managed Equity (SWIX) has been maintained and the benchmark changed to Capped SWIX with effect from 1 July 2019. In future, therefore, we have just one Managed Equity composite with a Capped SWIX benchmark. This change has been implemented after consultation with our GIPS auditors, and therefore our composites will continue to be GIPS verified going forward.

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