Approximately
R2 billion
for the maintenance and acquisition of cranes, tipplers, dredgers, tugs, straddle carriers and other port equipment.

Unique technology such as the optimised undercarriage concept or the crane control system make the mobile harbour cranes among the most powerful material handling equipment in the world. The flexibility of the mobile harbour crane makes it effective for all areas of application in the harbour and thereby guarantees the highest level of effectiveness.

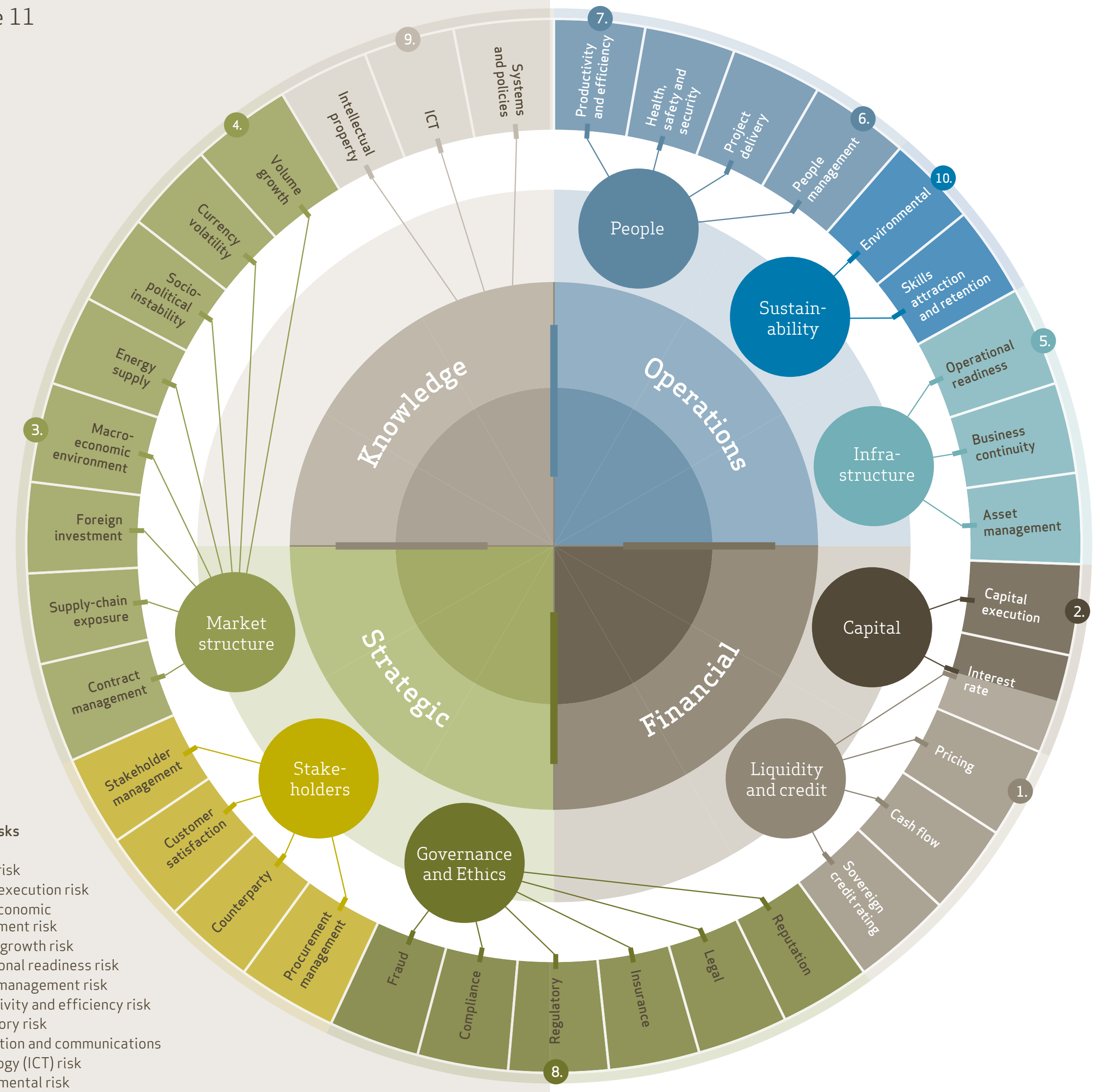
Opportunities and risks

Transnet's top risks for 2018

Transnet assesses strategic risks on an annual basis. Risks are evaluated on an inherent risk basis before considering current controls. Both internal and external factors are considered to understand the interconnectedness of risks and to appreciate potential impacts. Risk sponsors are assigned to each strategic risk to ensure mitigation strategies are aligned across all operations. The Group Leadership Team rates the effectiveness of the current basket of controls, which is expressed as a percentage, resulting in a residual risk rating for each risk.

Figure 11 shows Transnet's overall material risk universe for the 2018 financial year.

Transnet's material risk universe
Figure 11



Top 10 material risks

1. Pricing risk
2. Capital execution risk
3. Macroeconomic environment risk
4. Volume growth risk
5. Operational readiness risk
6. People management risk
7. Productivity and efficiency risk
8. Regulatory risk
9. Information and communications technology (ICT) risk
10. Environmental risk

Transnet's top 10 material risks for 2018 and the year-on-year movement of the top 10 risks from the prior year

Figure 12

Figure 12 shows Transnet's top 10 material risks for the 2018 financial year, as approved by the Board on 9 November 2017. The relative positions of risks are plotted on the heatmap according to their consequence and likelihood ratings, and expressed as a consolidated priority risk rating. The top 10 material risks for 2018 are plotted in relation to the prior year's top 20 material risks.

Risk ranking/ priority	Level
Priority I risk	Transnet GCE and Board level
Priority II risk	Operating Divisions' CEO level
Priority III risk	General Managers' level
Priority IV risk	Managers' level
Priority V risk	Employees' level

Residual risk profile 2017

1. Pricing risk
2. Capital execution risk
3. Macroeconomic environment risk
4. Volume growth risk
5. Operational readiness risk
6. People management risk
7. Productivity and efficiency risk
8. Regulatory risk
9. ICT risk
10. Environmental risk

Residual risk profile 2018

1. Pricing risk
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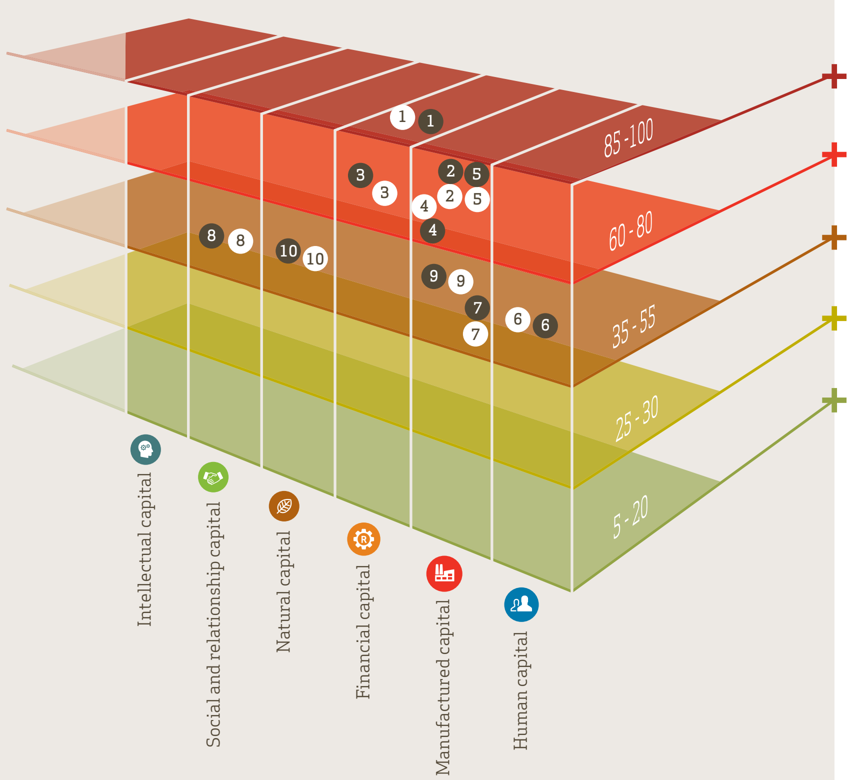
9. ICT risk
10. Environmental risk



Residual risk rating key

5-20 25-30 35-55 60-80 85-100

Risks and opportunities arising from material matters

Cluster: Build social trust through strong leadership and corporate citizenship

Material aspects	Why it matters: Risks and opportunities	Management approach	Time frame
Ethics management within Transnet	Practices that lead to Government intervention to rebalance infrastructural disparities can lead to ethical transgressions. Perceptions of anti-competitive behaviour and corruption negatively impact reputation and investment sentiment. Sound corporate governance and a track record of ethical leadership can attract local and foreign investment and promote our reputation.	The Governance Framework guides management of governance and ethics. The Board delegates leadership for ethics and sustainability matters to the Remuneration, Social and Ethics Committee. Transnet is subject to sections 51 and 55 of the PFMA's obligations.	Short to medium term
Responding to stakeholder issues	Negative stakeholder sentiment adversely impacts the Company and affects global investor confidence. Proactively engaging stakeholders retains customers, counters competitive resistance, and attracts critical talent and investor confidence.	Structured process and protocols for engaging stakeholders and handling stakeholder concerns – from everyday interactions through to crisis communication (read more page 49).	Short to medium term
Managing our environmental impact	Risks include adverse impacts of energy supply, pollution, water shortages and extreme weather patterns. We can set leading precedents in managing waste and pollution within operations, particularly in view of our regional strategy.	Transnet's freight demand modelling tools quantify the highest-impact opportunities to reduce greenhouse gas emissions. Our environmental stewardship initiatives focus on energy and water use. Transnet's Energy Policy outlines our commitments to energy efficiency and security. The ISO 50001 energy management system is implemented across the Company. Transnet is investigating alternative energy technologies.	Medium to long term
Partnering communities to build mutual value	Adverse impacts on communities could lead to reputational risks and challenge our social licence to operate. Transnet can improve the lives of communities, e.g. localised procurement, enterprise development and employment.	Transnet Foundation* invests in projects with a strong community impact. Integrated CSI approach between the Foundation* and Operating Divisions.	Medium to long term
Transparency and accountability	'Radical transparency' – stakeholders demand that all facts are put on the table, even if uncomfortable. Lack of transparency can lead to loss of stakeholder confidence and reputational risks. Transparency enables more realistic future expectations and builds trust.	Structured process and protocols for engaging stakeholders and handling stakeholder concerns – from everyday interactions through to crisis communication (read more page 49).	Short to medium term

Key measures for tracking our performance

- Adherence to PFMA provisions and monitoring PFMA reporting
- Stakeholder surveys and customer satisfaction ratio
- Percentage improvement in our Group Weighted Energy Efficiency (electricity and fuel)
- Our ability to reduce our carbon emission intensity (kgCO_2/ton)
- Our CSI spend

** Due to changes in the operating model in 2018, part of Transnet Foundation resources have been incorporated into Transnet Corporate Centre.*

Unlock organisational value by attracting talent, fostering innovation and building unity

Material aspects	Why it matters: Risks and opportunities	Management approach	Time frame
Promoting health and safety	Adherence to standard operating procedures (SOPs) in a highly industrial operating environment and public safety at level crossings. In adhering to SOPs, our staff become personally accountable for operational impacts on colleagues, the environment and communities while reducing business interruptions.	Health and Safety committees. Recognition agreements with trade unions ensure a safe working environment. Various policies improve safety across the business, (e.g. Occupational Health Management Policy, Integrated Emergency Management Service, etc.)	Short to medium term
Having the right skills at the right time	Transnet has to compete for scarce skills with other engineering firms and SOCs. As an 'employer of choice,' Transnet attracts scarce technical skills, and strengthens staff retention and sustained productivity.	Transnet's talent management and development programme plans for priority and critical positions. Leadership programmes and coaching target specific management levels. Feeder training pipelines support critical skills categories.	Short to medium term
Operational efficiency	Low productivity levels due to absenteeism, strike action or operational inefficiencies lead to unreliable services, reduced asset performance and adverse impacts on service delivery. Efficiency gains improve operational efficiency of the entire freight logistics system - shaping the country's ability to compete globally.	The TVCC coordinates oversight of operational activities in the value chain and streamlines task flows. Automation and digitisation within operations enhance efficiencies.	Short to medium term

Key measures for tracking our performance

- Tracking our training spend and the number of artisans, engineers and technicians trained
- Maintaining a DIFR below 0,75 to maintain global leading standards
- Tracking our performance in terms of volume growth, rail efficiency, container moves, train turnaround times, average anchorage waiting time and ship turnaround times
- Our investment in new technologies
- Our spend on research and development

Ensure long-term financial stability in a tough economy

Material aspects	Why it matters: Risks and opportunities	Management approach	Time frame
Capital investment and progress on major projects	Transnet not realising benefits from its capital investments. As a SOC, Transnet facilitates broad-scale industrial opportunities by delivering major infrastructure benefit to the country and promoting the localisation of supply on mega projects.	The Capital Governance Framework has an integrated assurance framework that empowers oversight authorities to assess, challenge and direct project, programme and portfolio delivery.	Medium to long term
Funding and liquidity	Inadequate liquidity can negatively impact the Company's going-concern status and impact our credit rating, cost of funding and investment plans. Private-sector partnerships enable Transnet to broaden the available finance pool and expedite infrastructure development and capacity creation.	Positive engagement with financial capital providers. We access facilities from various sources for bridging finance. Revenue diversification. We constantly review our finance and funding strategy.	Short to medium term
Pricing and tariffs	Tariff decisions could impact negatively on investment decisions, investor confidence and strategic execution. To justify tariff increases we must provide infrastructure service reliability and technical innovation commensurate with tariff increases. Through operational efficiency and R&D activities, we enhance infrastructure reliability, as well as our technical expertise.	We manage national sector policy processes, tariff modelling and tariff benchmarking to ensure a fair return on investment and cash flow. Our pricing strategy for non-regulated entities ensures pricing methodologies; and tools, governance and performance measures inform business decisions. Revenue risk management mitigates policy, economic and reputational risks. We are engaging Government policy departments and regulators.	Short to medium term
Slow recovery of the macroeconomic environment	The global economic growth outlook, while improved, is clouded by policy uncertainty as pressure mounts on the world trading system. The positive trajectory breaks with several years of declining growth, yet the projected growth rate falls short of reducing unemployment, poverty and inequality.	Three main growth thrusts of Transnet 4.0: – Geographic expansion – Product and service innovation – Expanding the scope of Transnet's manufacturing business. Compliance with the Treasury Financial Risk Management Framework. Adopting the Long-term Planning Framework. Developing and maintaining strategic customer engagement plans.	Medium to long term

Key measures for tracking our performance
- Investment in sustaining and expanding infrastructure requirements (e.g. the acquisition of locomotives and wagons)
- Capital investment in key capacity-creation projects
- Financial, such as EBITDA, cash interest cover, gearing, ROTA and average tariff increases

Ensure customer centricity and build partnerships for sustainable growth

Material aspects	Why it matters: Risks and opportunities	Management approach	Time frame
Volume and revenue growth	Not attracting and sustaining additional volumes as new capacity is created and protecting current volumes against new entrants. Opportunity to capture greater domestic market share through the road-to-rail strategy and geographic expansion.	Basing volumes targets on inputs from customers, financial plans, funding requirements, operational plans, capital investments and risk management strategies across the Company.	Medium to long term
Expanding Transnet's business on the continent	Socio-economic and political instability in operating countries and operational risks in planning and staffing of the regional business. The region needs improved infrastructure connectivity, which Transnet can facilitate through its Africa expansion strategy.	Transnet's Africa expansion strategy. A subdivision of Transnet – Transnet International Holdings (TIH) – will direct all regional activities.	Medium to long term
Fostering lasting customer relationships	The risk that poor client service delivery and capacity constraints result in strained relationships with customers and loss of business. Mutually beneficial customer relationships facilitate long-term planning of commodity performance with customers.	Enhanced key account management. Enhanced integrated customer planning. Designing transparent capacity allocation processes. Becoming a 3PL end-to-end logistics service provider.	Medium to long term
Facilitating private sector investment in logistics	Collaborative partnerships with customers and private-sector partners can support end-to-end logistics service solutions. Strategic commercial partnerships play a crucial role in enabling our regional integration strategy.	Transnet is pursuing agreements with various port authorities to develop regional shipping services, thus boosting inter-Africa trade. Concession opportunities are also being pursued. Create new market opportunities by strengthening partnerships with regional OEMs.	Medium to long term

Key measures for tracking our performance
- Tracking volume growth, e.g. general freight railed volumes, export coal and iron ore railed volumes, and container and automotive volumes handled through the ports
- Cross-border revenue from our regional integration initiatives and Africa operations
- The number of regional integration projects in selected African corridors
- Achieving key operational targets to meet customer expectations
- Number of PSP transactions concluded

Promote transformation and growth in the wider South African economy

Material aspects	Why it matters: Risks and opportunities	Management approach	Time frame
Promoting transformation	As a SOC, Transnet must deliver on Government's developmental imperatives (i.e. job creation, skills development, transformation and localisation). Transnet promotes social value through employment equity in the Company and black economic empowerment through our suppliers.	Transnet's Employment Equity Policy supports the Employment Equity Act, No 55 of 1998. Transnet's Broad-Based Black Economic Empowerment (B-BBEE) policy and strategy addresses economic transformation.	Medium to long term
Localisation of supply	Transnet 4.0 requires specialist emerging skills and digital technologies. If these skills and tools are not locally available, Transnet, as a SOC, must support the growth of national capability among local suppliers. The scale and scope of our procurement expenditure creates and empowers local black businesses in many sectors.	Transnet promotes training, skills development and local technology transfer, particularly through our relationships with OEMs in our locomotives acquisition programme. Our Supplier Development Plan is guided by Government's Competitive Supplier Development Programme. Enterprise development hubs in Johannesburg, De Aar and Saldanha Bay provide a 'one-stop' business resource facility for potential suppliers.	Medium to long term
Creating and sustaining jobs	Ensuring the recruitment and retention of top-quality employees in all employment groups – for the Company, but also to boost South Africa's market competitiveness – particularly in the engineering and logistics sector.	Our human capital strategy approaches job creation within the framework of strategic workforce planning. Our supplier development initiatives create direct and indirect jobs in the wider economy.	Medium to long term

Key measures for tracking our performance
- Tracking performance against transformation targets, e.g. employee equity targets, B-BBEE, and enterprise and supplier development
- Procurement of local content through local suppliers
- Fair and competitive remuneration and reward for employees
- Measurable direct, indirect or induced employment in the wider economy

Anticipating the future and developing methods of minimising the effects of shocks and stresses of future events

Material aspects	Why it matters: Risks and opportunities	Management approach	Time frame
Business continuity	The risk that essential business functions are interrupted during or after a disaster, operational incident or challenges, such as load-shedding or inadequate Information and Communications Technology (ICT) infrastructure, which extends to cybersecurity failures.	Business continuity intervention plans. Equipment lifecycle management and ICT Disaster Recovery Plan. Comprehensive security and monitoring for all critical systems – including cybersecurity.	Medium to long term
Extreme weather events	Changes in the frequency, intensity, spatial extent, duration and timing of extreme weather and climate events, resulting in business disruption, infrastructure vulnerability, safety events and economic losses.	Business continuity interventions in place in case of weather disruptions. Two-way ICT Disaster Recovery Plan. Comprehensive security and monitoring for all critical systems.	Medium to long term
Disruptive technologies	New technologies can displace Transnet's established technologies or alter its way of doing business, resulting in business losses. Transnet can use and develop 'disruptive technologies' to adapt to industry evolutions.	Transnet 4.0 Strategy – strategy for growth in the context of a disruptive and innovative 4th Industrial Revolution. Digital technologies to reimagine the business and revenue streams. The digital growth aims to develop commercialisation strategies and customer value propositions for growth initiatives.	Medium to long term
Restructuring value chains and value networks	Long-standing value chain models are being transformed by new entrants who restructure the way value is delivered to the customer. They use productivity, technology and innovation to change the division of labour and influence workflows, skill needs and control. As an end-to-end 3PL logistics provider, Transnet can use technology, skills and value chain partnerships to eliminate whole stages of complex logistics value chains.	The Framework and Capacity Planning unit is developing future scenarios within the Transnet 4.0 context. Value chain performance measures to drive incentives. Automation to simplify, integrate and optimise end-to-end Freight Rail value chain processes. Digitising the transactional value chain. The TVCC is being geared to deliver total product transportation solutions to final destination.	Medium to long term
Investing in emerging technologies and ensuring digital readiness	The risk of Transnet not being ready to embrace or adapt to disruptive technologies and our current ICT solutions not being integrated. We can create new and innovative technologies to adapt to the 4th Industrial Revolution.	Leading the convergence for digital planning in the capital project environment – tools, systems and processes. Digitalisation strategy and roadmap. Digitisation project for managing construction projects. Predictive systems to maintain Transnet's assets.	Medium to long term

Key measures for tracking our performance
- The quality of ICT governance
- R&D investment in advanced manufacturing
- Investment in new technologies

Internal sources of risks (aspects of business activities):

- Product planning, design and manufacture
- Specialist skills and knowledge deployment
- Quality, cost competitiveness and technological advantage
- Processes, training, relationship management
- Market differentiation
- Business model

Priority I risk – Transnet GCE and Board level
Priority II risk – Operating Divisions' CEO level
Priority III risk – General Managers' level
Priority IV risk – Managers' level
Priority V risk – Employees' level

Risk description	Inherent risk	Residual risk	Root causes of risks	Impact(s) on value: • Financial • Manufactured • Intellectual • Human • Social and Relationship • Environmental	Key control strategies
Pricing risk – high cost of providing freight service is rendering price uncompetitive in certain commodities			Non-regulated pricing – models and methods not flexible enough to be competitive Regulated pricing – tariff guidelines not supportive of volume growth	Not meeting planned volume growth Impacting adversely on financial results Slowing down the road-to-rail strategy	National Ports Authority applies the Ports Regulator's approved tariff methodology to ensure regulatory and revenue certainty. Ports Regulator does not account for inflationary increases. Pipelines applies for its petroleum pipelines tariffs on an annual basis due to NMPP project challenges. Ministerial Task Team was established to develop the Interim Rail Economic Regulatory Capacity for Freight Rail. Economic regulation of Freight Rail will put pressure on future revenue streams. Stakeholder relationship building with regulators and Government departments. Key non-regulated pricing strategy: – Effective pricing will mitigate risks – Review current strategy – Strategy to be dynamic, broad and inclusive
Productivity/efficiency risk – inefficiencies in the value chain leading to lower volumes and financial instability			Ineffective value chain coordination Ineffective rail and port planning Asset availability and reliability concerns	Lower volumes Financial instability Reduced asset performance Adversely affecting service delivery levels	Full implementation of Crew Management System in Freight Rail. Develop Capacity vs Demand Model for ports to address holistic operation. Review Port Development Framework Plans. Improve and reinforce the TVCC coordination. Initiate Port Operations Centres and develop into Joint Operations Centres. Implement Regional Economic Integration Programme and memorandums of understanding to coordinate regional cargo flows. Establish a competent human resources capacity. Develop comprehensive business continuity management plans to allay incidents and asset failures. Embed a risk management culture in decision-making. Integrated planning between Operating Divisions and industry for contingency capacity in the event of outages.
Operational readiness risk – misalignment between operational readiness and rolling stock acquisition			Operations not ready to operate the newly acquired assets in terms of training of drivers and maintenance staff, upfront spares, tools and facilities Alignment across the value chain between Operating Divisions and Specialist Units	Delays in the deployment of newly acquired rolling stock Reduced availability of rolling stock Lower productivity	Locomotive execution strategy – four-tier governance (Executive Sponsor, Steering Committee, Locomotive Owners, Programme Director). 1 064 Locomotive Steering Committee to manage effectiveness and controls – Engineering and Freight Rail committees established. Group SteerCo not established yet. Capital project planning between Group Capital, Engineering, Port Terminals and Freight Rail for alignment across the value chain. Operational readiness effected in preparation for locomotive deployment. Ordering of railway material done a year in advance. Project Management Office (PMO) established. Engineering and Freight Rail maintain risk registers.
ICT risk – inadequate ICT infrastructure and technology to enable business and to deal with disruptive innovation			Organisation not ready to embrace disruptive technologies Current ICT solutions not integrated Funding constraints	Business is not enabled to deal with disruptive innovation Delayed implementation of new technologies Reskilling of human resources required Delayed commercialisation of digital solutions	Effective implementation plans for the IT Strategy. IT systems convergence to improve visibility between Operating Divisions. Strategic customer engagement. Ramp up training before new assets in production. Equipment lifecycle management. Two-way ICT Disaster Recovery Plan. Comprehensive security and tracking for critical systems. Redesign the Project Management Office (PMO). Legacy renewal continues. Implement systems automation strategies. Evolving pre-emptive and proactive responses to business needs through diagnostic capabilities to deliver on advanced analytics.
People management risk – inadequately skilled staff in operations, not skilled for future operations			Operational staff not skilled for future operations Lack of scarce skills in the job market Not actively managing skills development	Delayed benefits realisation of new technologies Retraining of current employees Reliance on external skills	Implement a compelling employer brand. Workforce strategy to determine long-term and temporary skills requirements. Cultivate skills development strategies, i.e. partnerships with educational institutions or programmes to supply scarce skills. Vacancy management and displacement. Initiate recruitment, talent and compensation strategies to attract scarce skills (i.e. rural areas and global). Renegotiate main agreements with organised labour.

Risk description	Inherent risk	Residual risk	Root causes of risks	Impact(s) on value: • Financial • Manufactured • Intellectual • Human • Social and Relationship • Environmental	Key control strategies
Capital execution risk – not realising benefits of capital investment			Expected market demand not validated sufficiently Lower economic activity both locally and internationally leading to a lack of market demand Delays in the execution of capital projects	Not generating adequate cash flows to contribute to future capital expenditure Stranding and underutilisation of newly acquired assets	Implemented total cost of ownership planning techniques to ensure the best option when acquiring assets, using case validation and gate review process. Fleet planning with the full asset lifecycle in mind. Develop clear Replace/ Repair/Refurbish guidelines. Operational readiness monitored in execution through SteerCo, with focus on mega projects. Apply design to cost principles. Robust demand validation process is now mandated for all strategic commodities. Quarterly portfolio update and monitoring to assess changes in macroeconomic factors – to be considered in rebalancing the portfolio. Developing assets with scalable and flexible solutions. Capital Operating Model finalised. Skills audit on 1 200 PMO offices.

External sources of risks (aspects of legal, commercial, social, environmental and political contexts) – direct or indirect impacts of risks:

- Needs and interests of stakeholders
- Macro/micro economic conditions
- Market forces, e.g. competitor strengths/weaknesses
- Environmental challenges
- Legislative and regulatory environment
- Political environment
- Market segmentation
- Market channels

Risk description	Inherent risk	Residual risk	Root causes of risks	Impact(s) on value: • Financial • Manufactured • Intellectual • Human • Social and Relationship • Environmental	Key control strategies
Environmental risk – energy supply, water shortage and adverse weather patterns			Absence of sufficient sub-stations along the network Water shortage in certain geographical areas Adverse weather patterns resulting in strong winds and torrential rains	Operational disruptions Handling of certain commodities adversely affected (i.e. saw dust at Port of Richards Bay) Safety incidents: loss of life and damage to equipment	Setting of energy-efficiency targets, energy-saving initiatives and consumption reporting. Electricity price path management, continuous price analysis. Implement ISO 50001. Water Policy. Water retention initiatives – leak detectors, pressure control values, remote loggers. Refurbish Delkor Plant, boreholes. Agreement with Council for Scientific and Industrial Research to obtain weather updates.
Macroeconomic environment risk – deterioration in macroeconomic environment due to global economic slowdown and slow recovery rendering capital projects unviable			Global economic slowdown and concomitant slow recovery Local economic policy uncertainty Weakening of local currency	Capital projects becoming unviable Increased cost for the replacement of current assets and acquisition of spares Possible sovereign credit rating downgrades	Treasury Financial Risk Management Framework. Adopt Long-term Planning Framework. Strategic customer engagement plans. Annual corporate plan and budgeting. Flexibility to adjust the Corporate Plan and investment strategy to operations. Capital reprioritisation.
Regulatory risk – changes in the regulatory environment (i.e. economic, technical and compliance) – spending on capex based on assumptions that may be negatively impacted by subsequent changes in regulations			National policy changes anticipated in terms of economic regulation National Treasury increasing procurement controls to contain uneconomical spend and opportunities for fraud	Spending on capex based on assumptions may be negatively impacted by subsequent changes in regulations Compliance requirements becoming more onerous Local policy uncertainty	Regular engagement with Government and regulators to align strategies. Assessing draft legislation through communication and consolidation of impacts on internal processes. Shareholder Task Team built to engage with the Rail Regulator. Developed and maintained minimum control frameworks in response to procurement legislation. Assurance activities on priority legislation for control effectiveness. Competition Commission investigation – prepare the required documentation to inform on alleged port and rail exclusionary practices and price discrimination.
Volume growth risk – inability to attract and sustain additional volumes as new capacity is created and to protect current volumes against new entrants, customer activism			High reserve stock levels of some commodities Current customers in financial distress Pricing not integrated across the Company Inflexible pricing strategies don't compete with rivals in new markets	Not meeting planned revenue diversification opportunities Stranding and underutilisation of newly acquired assets Reduced volumes from current customers	GLT diversification initiatives Think Tank initiatives Strategic customer engagement plans Group integrated pricing forum Key account management Approved pricing strategy Road-to-rail strategy

Transnet's risk control and assurance environment

Transnet has an established, principles-based Integrated Assurance Model that provides a clearly defined, documented approach for integrating and aligning Transnet's assurance processes and control systems, thereby enabling appropriate risk and governance oversight.

The governance of risk

Accountability is key in the management of risks. Named individuals are associated with specific risks, controls or tasks. The primary risk roles are:

- Risk owners: Ensure that the risk assessments are up to date and properly recorded in risk registers.
- Control owners: Provide periodic assurance that controls are adequate, effective and efficient.
- Task owners: Take appropriate risk treatment actions.

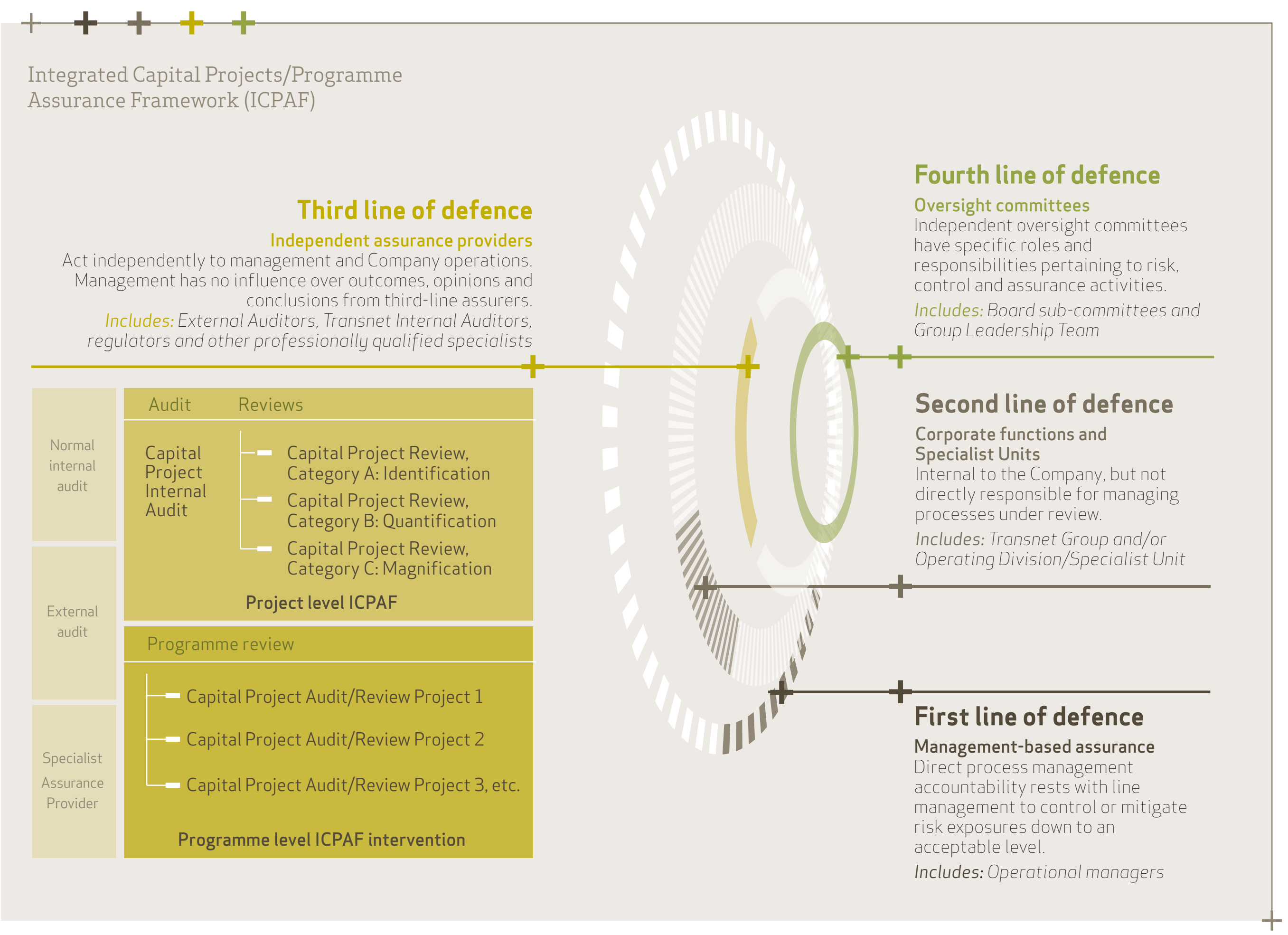
Risks taken outside tolerance levels

Risk sponsors assess the desired control effectiveness of all risks, assuming that all additional mitigation has become effective. The level of desired control effectiveness considers various perspectives, including the extent to which the Company can control the root causes, consequences and the likelihood of the risk materialising. The Company also performs a cost benefit analysis when assessing the scope for further control and risk treatment. The risk sponsors consider closing the gap (if any) between the actual control effectiveness and the desired control effectiveness when deciding on risk response strategies. The top five residual risks are tolerated for being outside the generic tolerance levels. This is largely due to the influence of external factors on these risks.

Management of risk

Transnet's enterprise risk management (ERM) process aims to achieve an appropriate balance between opportunities realised for gain, while minimising adverse impacts. General activities include risk identification, evaluation, prioritisation, treatment, monitoring, reporting and integration in decision-making and key business processes. Rather than striving only for inherent efficiencies and operational performance, the ERM process helps to shape the business' strategic direction. The risk management approach is evolving from being process- and compliance-focused, to one of data centricity. The strategic risk profile considers King IV principles[1] and the ISO 31000:2009 Risk Management Standard. It is further based on Transnet's Shareholder's Compact and strategic fundamentals[2].

Integrated Assurance Model for capital projects and programmes

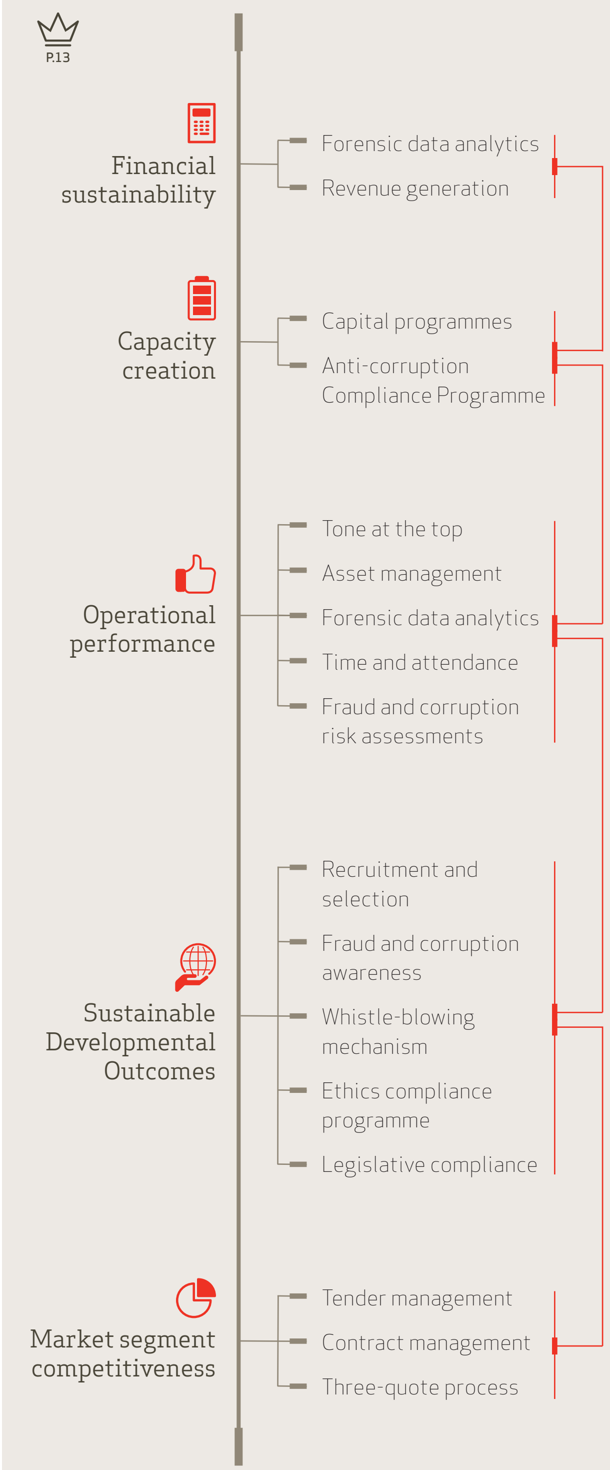


Fraud and Corruption Risk Management Strategy

Transnet's Fraud and Corruption Risk Management Strategy, as contained in the Fraud Risk Management Programme (FRMP), provides mechanisms for the prevention, early detection and investigation of irregularities. The FRMP provides corrective measures to address control breakdowns and related root causes.

Key themes of the Fraud and Corruption Risk Management Strategy

Figure 13



Emerging risks

In 2016, Transnet undertook a Sustainability Risk and Opportunities Assessment to assess emerging risks that have the potential to impact our business in the medium to long term. Accordingly, we developed a pathway to leverage opportunities. This was done across seven themes:

- Biodiversity
- Circular economy
- Climate change
- Disruptive technology
- Energy security
- Social inequality
- Water

Risk event proximity

Since reporting on these risks in our 2017 Integrated Report, we have observed movements in these risks, with some having already materialised in the current reporting year. Accordingly, we assessed how the risks have evolved over the past two-year period and reviewed their relative impacts.

Transnet used an Event Proximity Matrix (EPM) to track the status of emerging risks. The EPM defines the time proximity for the risk assessment in terms of short (One-year: Financial year), medium (Five-year: Corporate Plan) and long term (30-year: Long-term Planning Framework) time horizons, and positions emerging risks in terms the following parameters:

- **Value network:** Provides a global view of emerging risks
- **Value chain:** Provides a localised (South African) view of emerging risks
- **Business operations:** Provides a view of emerging risks in terms of Transnet's business operations

Accordingly, Transnet can interpret the interconnectedness and dependencies of operations with greater accuracy. It is particularly useful as a planning tool to assess the speed and intensity with which these emerging risks are likely to impact our operations as they filter through from a global to local context, compelling the Company to transform at an accelerated pace.

We encourage the reader to read our EPM findings below together with our section on 'Strategy and Resources' (page 47), which looks ahead at our long-term planning horizon, as well as our 'Outlook' section (page 103), which considers our short- to medium-term planning horizon.

[1] *King IV Report on Corporate Governance of 2016.*
[2] *Financial sustainability, capacity creation, operational excellence, market segment competitiveness, and nine SDOs.*

Circular economy emerging risks and opportunities

VN Global view

a. The global shift to a circular economy, coupled with cheaper renewable energy sources and climate change agreements, is expected to scale up adoption of renewable energy sources resulting in a decline of fossil fuel production.
b. Increased steel recycling is expected to pose a threat to iron ore demand.
c. Increased alliance in a circular economy and its unique requirements are expected to fast-track circular economy across Africa through collaborations.
d. Adoption of digital factories and use of 3D printing adopted in Western Europe is expected to spread to other areas.

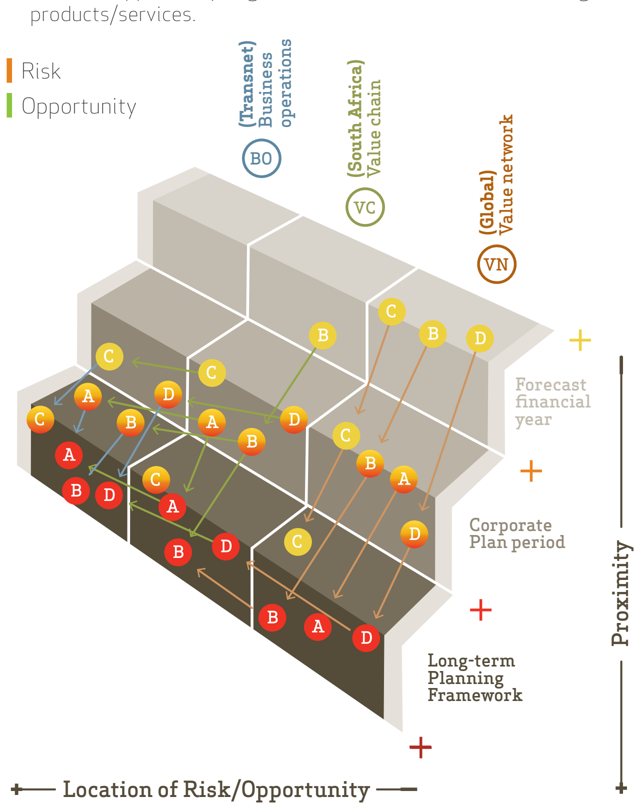
VC South African view

a. The increased use of alternative energy will impact negatively on coal mining and its transportation.
b. Iron ore mining will be impacted due to increased efficiency gains in recycling of steel and a decline in demand due to material substitution related to disruptive technology.
c. Manufacturing waste requirements are expected to be incorporated for producers.
d. Manufacturing at point of use and 3D technologies and digitisation are expected to increase efficiencies.

BO Transnet view

a. Coal volumes are expected to decline due to transition to cleaner energy.
b. Iron ore volumes expected to slow down or decline due to increase in steel recycling and new materials.
c. Impact on waste management optimisation presents an opportunity for recycling and transportation of recycled materials.
d. Manufacturing is expected to be impacted negatively due to increase in manufacturing at point of use through 3D printing. However, opportunity to generate new advanced manufacturing products/services.

Risk
Opportunity



Biodiversity enhancement emerging risks and opportunities

VN Global view

a. Habitat loss caused by land-use change will lead, with high certainty, to continuing decline in the local and global diversity of some taxa.
b. The continuing increase in illegal fishing is contributing to a decline in fish around the world, thus impacting food security.
c. Emergence of Monitoring Valuation and Accounting System (payment for loss of biodiversity instituted).
d. Land-use change due to increased demand for bio-energy.
e. Decline in bee population, thus impacting food production and presenting opportunities for mechanical pollination.

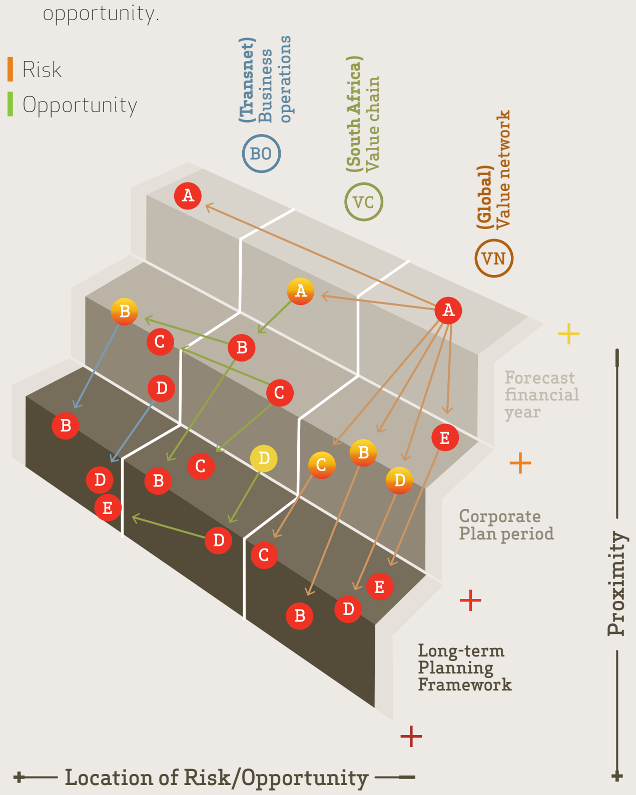
VC South African view

a. Forests and woodlands are converted to cropland and pastures at a rate quick enough to endanger ecosystems.
b. Legacy spatial distribution errors largely have an impact on urban areas due to urbanisation and land grabs, thus impacting biodiversity.
c. Declines in fish population also impacting food production, ultimately causing a rise in food prices.
d. Increase in bio-energy demand impacting the demand of fossil fuel hydrocarbons.

BO Transnet view

a. An increased difficulty in obtaining Environmental Authorisations and licences (WULA and tree-cutting permits).
b. Future corridors at risk due to population growth and human settlements (encroachments) along those corridors.
c. Diminishing fisheries industry, thus impacting the fishery stock volumes decreasing export volumes.
d. Removal of ground cover impacting surface water channelling, accelerated erosion and ultimately damage to infrastructure, increasing the cost of maintenance and possible environmental liability due to pipeline spillages and derailments.
e. Increase in bio-energy demand possibly creating an export opportunity.

Risk
Opportunity



Water security emerging risks and opportunities

VN Global view

a. Water stress amplifying, thus increasing volatility to catchments and subsequently water supply.
b. Review of multinational water supply agreements.

VC South African view

a. Municipal supplies affected, resulting in increasing water tariffs and restrictions on domestic and industrial usage.
b. Food production impacted, resulting in inflationary increase on food prices and increase in imports.
c. Increased water stress in Waterberg region impacting access to water use licensing for coal mining.
d. Water scarcity in the Western Cape and other regions addressed through innovative water solutions.

BO Transnet view

a. Strict restrictions on water supply impacting business continuity in affected regions and health and hygiene of employees.
b. Volume increase at ports from possible increased food imports and exports, thus requiring timeous capacity to be in place.
c. Coal production impacted, resulting in stranded rail capacity and negative impact on revenue.
d. Water security in the Western Cape, thus no water supply to Port of Saldanha and Port of Cape Town – affecting business continuity. Constraints on dust suppression systems at Saldanha impacting export volumes and subsequently revenue.
e. Operations impacted due to changing food import and export patterns.

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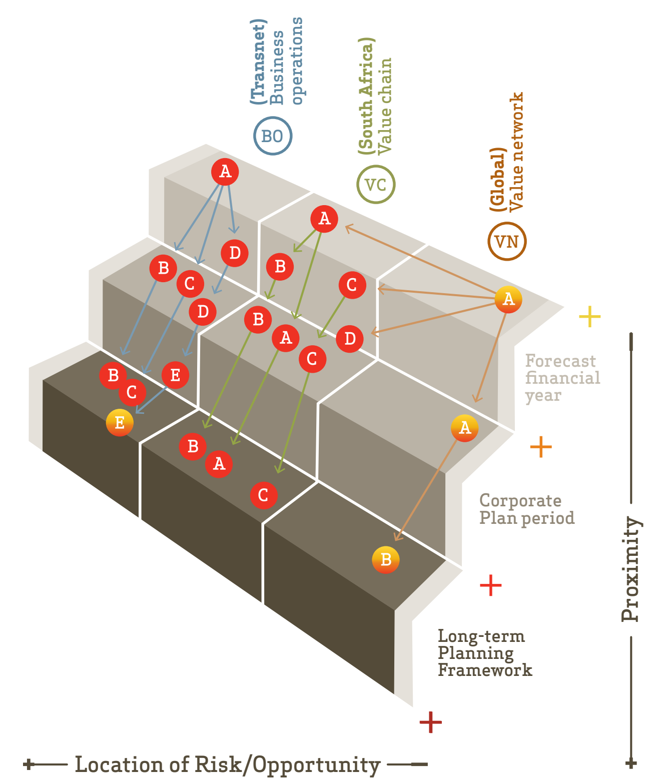

Climate change emerging risks and opportunities

VN Global view

a. Limited progress on global consensus on implementing measures to constrain climate change.
b. Increasing likelihood of large-scale weather events shifting global action towards strong mitigation and adaptation measures.
c. Scaling up of adaptation requirements to build resilience to the environment, society and economic systems.
d. Amplifying response to mitigation with high price placed on carbon.
e. High price placed on carbon drives adaptation at scale including geo-engineering.

VC South African view

a. Water scarcity amplifying across South Africa.
b. Extreme weather events begin to directly impact South African economy.
c. Increasing intensity of weather events requiring increased resilience and adaptive capacity for society and business.
d. Thermal coal mining declines due to reduced demand driven by high carbon price.

BO Transnet view

a. Impact of water scarcity and weather events on business continuity.
b. Damage to infrastructure and safety risk to employees under extreme weather events.
c. Increasing volatility of weather systems amplifying impacts to business.
d. High carbon price impacts thermal coal demand on a global scale, stranding rail capacity and future revenue streams.

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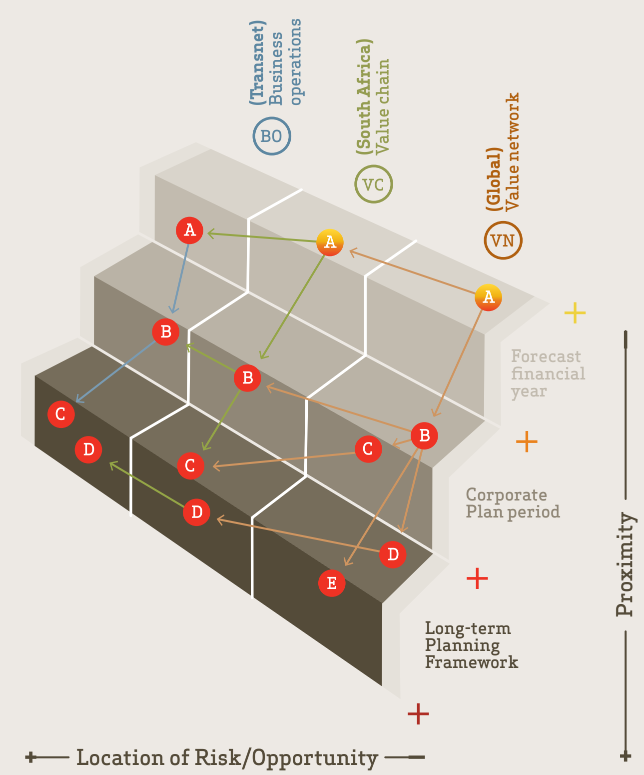

Energy emerging risks and opportunities

VN Global view

a. Acceleration of a circular economy means less energy requirements for the same amount of output.
b. Global emissions reduction agreements lead to global carbon price and subsequently reduce demand for fossil fuel-based energy.
c. Cap placed on carbon emissions drives disinvestment in fossil fuels and thus more focus on renewables.

VC South African view

a. Renewable energy beginning to reach price parity with fossil fuel options.
b. Fuel switching behaviour observed across value chains, especially for primary energy usage and energy-intensive industries.
c. Increased confidence in electric vehicle drives renewable energy and smart grid technology, displacing petroleum as dominant energy source for mobility system.
d. Thermal coal mining declines due to reduced demand driven by high carbon price.

BO Transnet view

a. Price volatility for thermal coal due to competitiveness created by convergence of: renewable energy; smart grid technology driven by 4th Industrial Revolution; and agreement on global carbon price.
b. Thermal coal and iron ore demand impacted due to fuel switching, technology changes and consumption.
c. Petroleum demand decreases as electric vehicles dominate mobility energy mix.

Risk
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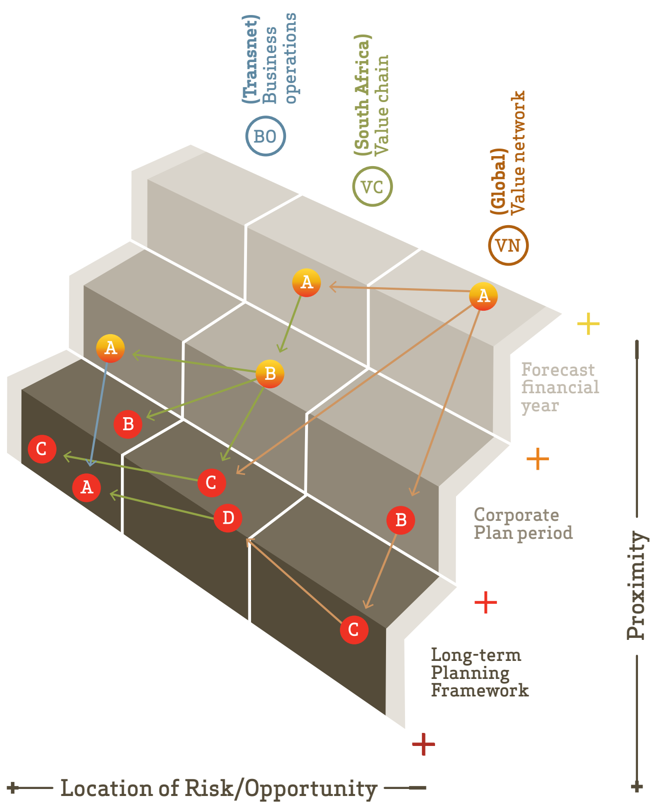

Disruptive technology emerging risks and opportunities

VN Global view

a. Narrow Artificial Intelligence (AI) and Big Data Analytics are accelerating disruption across multiple sectors of the global economy.
b. Embedding Narrow AI into existing business processes accelerates automation, having a negative impact on jobs. Broad AI begins disrupting established business models and reducing embedded waste (time and resources) in the economy.
c. AI addresses system-level challenges such as social inequality, economic progress and environmental challenges, however, creates risks in respect of human ingenuity.

VC South African view

a. Incremental embedding of Machine Learning and Big Data Analytics in blockchain technology increases efficiency in upstream and downstream markets, creating risks and displacing traditional jobs. Need for reskilling.
b. Convergence of AI-driven technology platforms disrupting existing logistics business models, displacing existing jobs.
c. AI-driven predictive analytics provide new avenues of revenue generation and adaptive capacity for industries that are forward looking, thus increasing business resilience, but having a negative impact on organisations still using legacy systems.

BO Transnet view

a. Disruptive technology in the mobility system starts to impact road-to-rail market share. Transnet has the ability to harness such technology as a third- or fourth-party logistics provider.
b. 3D Printing technology at industrial scale reduces quantum of goods to be transported. Opportunities for Transnet to adapt through new products and logistics services.
c. Advancements in electric vehicle technology begin to reduce demand for petroleum products.

Risk
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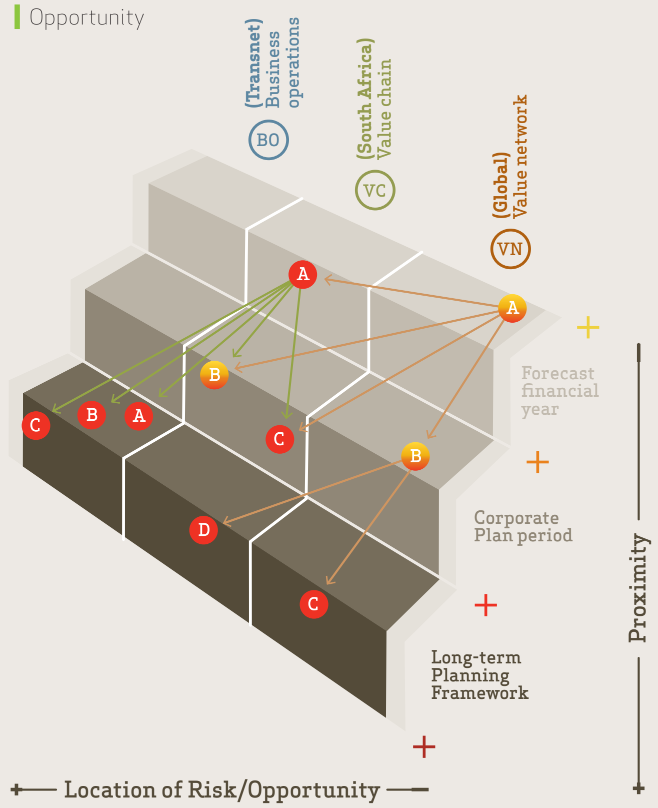

Social inequality emerging risks and opportunities

VN Global view

a. Deepening income inequality eroding social contracts within and between countries.
b. Increased unemployment due to disruptive technologies has a negative impact on individuals.
c. Increased volatility in global commodity prices linked to resource optimisation and circular economy impacts economies reliant on fossil fuels.
d. Extreme income inequality leads to economic collapse and kleptocracy.
e. Increasing political instability and social unrest result in increased large-scale involuntary migration across countries.

VC South African view

a. Slow redress of historical inequality leading to service delivery demonstrations.
b. Social unrest emerging as a result of persistent job losses due to automation, lack of accessibility and efficient service delivery.
c. Severe shift in commodity prices leads to instabilities in communities, businesses and government.
d. Increase in the value-added tax (VAT) exacerbates social inequality.
e. Strain on social services and infrastructure due to inability to cater for increased population due to migration. Regional rail integration and infrastructure reliability become more critical.

BO Transnet view

a. Community unrest imminent as a result of Transnet's inability to meet immediate community expectations on employment, inequalities, etc.
b. Threat to employment due to Transnet not responding to the requirements of the 4th Industrial Revolution. Skills retraining critical.
c. Increase in VAT may result in price increases, thus requiring deeper engagement with customers.
d. Future corridors at risk due to population growth and human settlements encroaching along those corridors, causing safety concerns.

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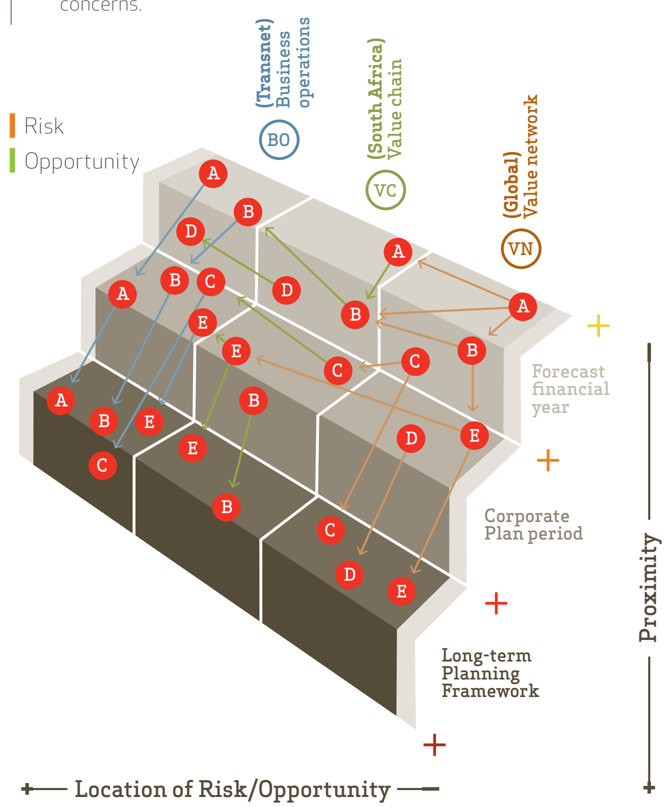

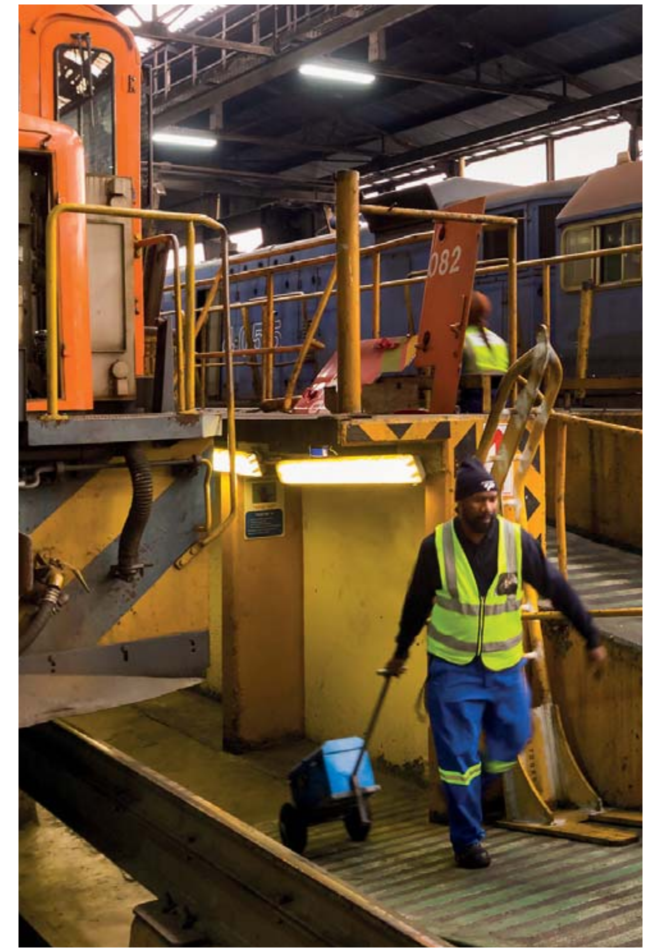

"Governance and compliance are becoming more embedded throughout the transaction lifecycle to partner with the organisation in providing advisory services and to provide assurance that risks are identified and mitigated."

Mr Ndiphiwe Silinga
Acting Chief Corporate and Regulatory Officer

Read more
102 Additional information on our long-term strategic response to the 4th Industrial Revolution paradigm.