



BCX

Digital Innovation Index Report

2023

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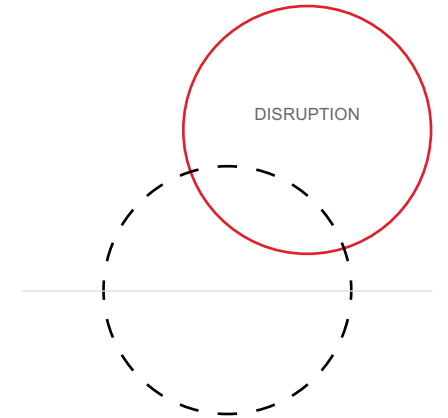


1

Executive Summary



The COVID-19 pandemic, coupled with its economic repercussions, supply chain disruptions, and shifts in work paradigms, has swiftly altered the business landscape across diverse sectors.



As businesses traverse this evolving environment, adopting a mindset of 'disruption as the new normal' is imperative. This necessitates a continuous reassessment of strategy, operations and business models more broadly.

Digital transformation, ignited by an array of emerging technologies, is shortening product life cycles, reshaping value chains and accelerating market creation and entry. It's revolutionising business models and making innovation an inherent necessity and a tool for achieving efficiency, growth, and long-term value creation. This is particularly relevant in South Africa, where businesses of all sizes must balance operational stability and sustainability with the drive to innovate.

Against this backdrop, the BCX Digital Innovation Index, a collaborative effort with EY Parthenon, aims to provide guidance for businesses of all sizes in South Africa. The report focuses on the 'building blocks' of Innovation Excellence and evaluates how organisations can champion innovation within both national and sectoral contexts in South Africa. It explores the complex interplay between various internal and external drivers that uniquely affect each economic sector.

Drawing upon data gleaned from questionnaires and interviews with senior leaders from 42 notable institutions, the report delineates the multifaceted challenges and prospects tied to the pursuit of digital innovation. The study classifies South African organisations into four discernible categories: 'Excellent', 'Maturing', 'Emergent', and 'Nascent', each presenting different approaches and stages of development in pursuing innovation.

Many large established enterprises grapple with obstacles in pursuing innovation. Their expansive scale and historical baggage often hinder their agility, preventing them from emulating the nimbleness of start-ups or the scalability of tech giants. Being digital and innovative describes a way of doing business, rather than simply a set of technologies or new products and services.

Thus, in this era of rapid transformation and digital innovation, it is imperative for businesses, be they large enterprises or small and medium-sized ventures, to engage thoughtfully with the insights presented in this report. The BCX Digital Innovation Index serves not merely as an academic exercise but as a guiding framework. It calls upon organisations to introspect, recalibrate their strategies and approaches, and embrace the dynamic landscape with both resolve and agility. Given the pace of change, the time for action is now.

By absorbing and acting on the guidance found in this report, you not only set your organisation on a path to success but also contribute to building a resilient and vibrant economy for South Africa.

2

Terminology & definitions

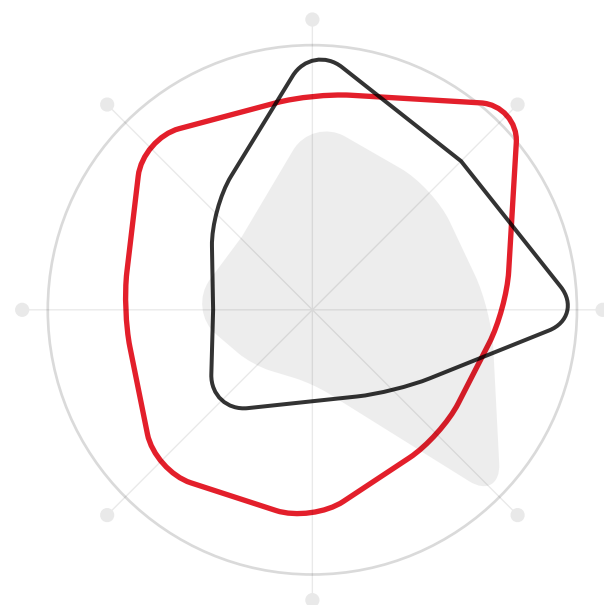


Innovation

A new idea or invention that creates a new or transforms an existing process, product, service, or business model that creates value for the organisation or for which customers will pay.

In this report, we define innovation broadly to include the development of new products, services, processes, and business, in new or adjacent markets, across horizons, from incremental improvements to transformational or disruptive innovation.

Our definition of innovation encompasses digital innovation as digital assets and capabilities are typically a key enabler or ingredient to innovation in this day and age.



Business Transformation

A fundamental change to a business' operations, process, people or systems to enhance its operational or financial position or to better align with its strategy or vision.

Digitalisation

'Digitalisation' refers to the transformation of traditional, often manual, operations into digital formats through the application of modern technology. This involves converting tangible objects or existing procedures into digital data that can be stored, analysed, and manipulated with electronic devices and specialised software. The end result is a more streamlined, efficient, and accessible way of conducting business.

Innovation Enablers

Trends, capabilities, tools or ways of working that support the delivery and success of innovation initiatives born either within an organisation or its broader environment.

Innovation Inhibitors

Factors that cause a slowdown or halt to innovation efforts or initiatives.

Innovation Triggers

Factors within an organisation's external or internal environment that drive or motivate an organisation to pursue digital innovation.

Digital

In the business context, 'Digital' refers to the use of numerical data, coded as bits and bytes, for the storage, transmission, and processing of information. Unlike analogue methods, which use a continuous range of values, digital techniques convert information into a format that can be easily managed and manipulated by electronic devices such as computers and smartphones. This digital framework is the foundation for technologies that drive modern businesses, including the internet, cloud computing, and data analytics.

Digital transformation

Adoption of digital technology by an organisation to enhance any non-digital products, services or operations within the organisation with the ultimate goal increasing value for customers, employees and or improving organisational efficiency.

Capability

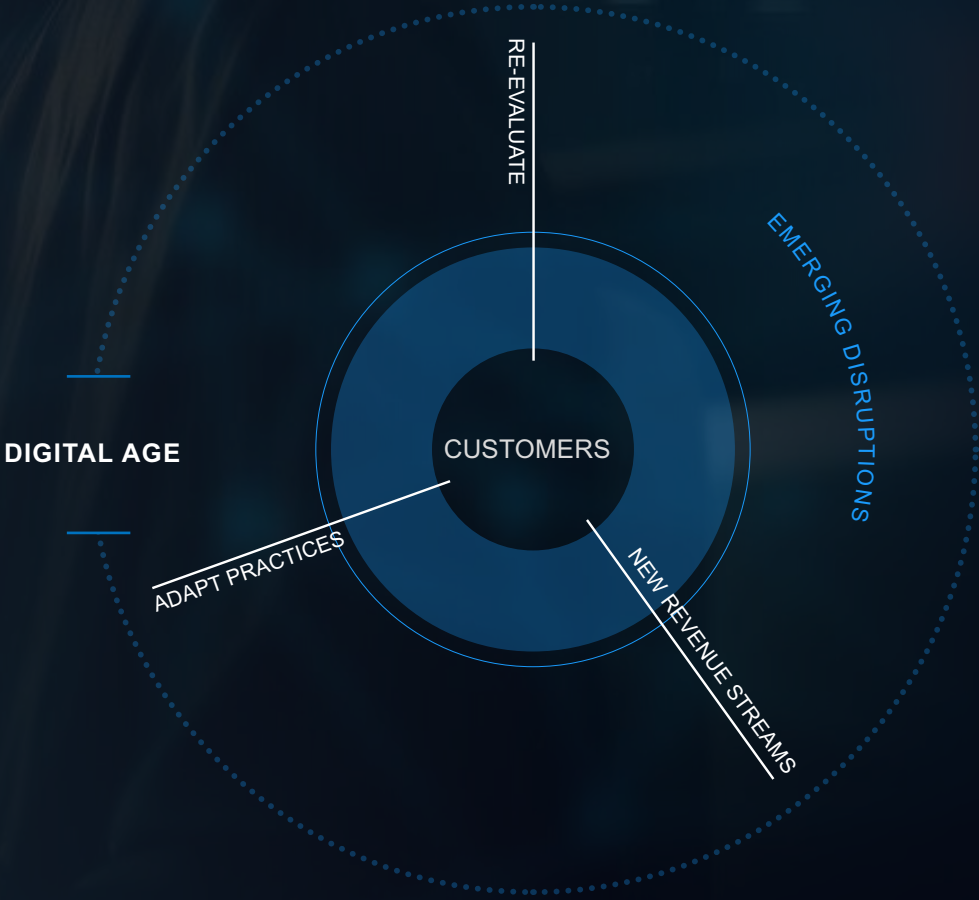
A combination of knowledge, skills and resources that create competence in achieving certain objectives.





3

Purpose of the report



In our digital age, the introduction of new technologies, the emergence of disruptors within and across industries, and rapidly evolving customer expectations present both challenges and opportunities for existing business models.



To compete effectively in such a climate, businesses today must stay close to their customers and continually challenge the status quo that has sustained their performance in the past. They need to re-evaluate how they conduct business and serve customers, adapting their practices to reduce costs and tap into new value streams.

The current wave of digital transformation, supported by the wealth of data and the growing accessibility of technological tools, provides significant opportunities for businesses. When applied effectively, these tools can transform businesses in terms of achieving operational efficiencies and unlocking new areas of value. Innovation, which includes digital innovation like introducing a new process, product, service, or business model, remains a powerful force, enabling organisations to transition into a transformed or re-invented version of themselves.

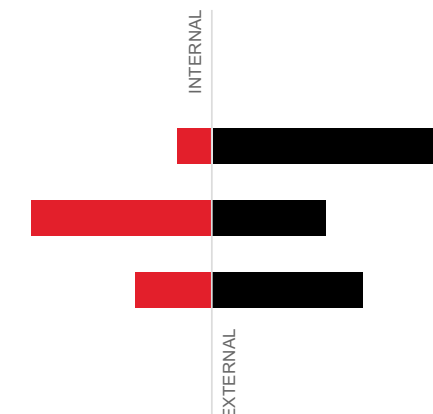
While being nimble and agile allows start-up companies to quickly identify and act on opportunities, large incumbents operate from a sturdy yet slower foundation, navigating these dynamic times. Their substantial asset and customer bases, coupled with established practices, often lead to a more cautious approach to risk and a measured exploration of growth through innovation. For large, well-established organisations, the pursuit of innovation presents a distinct set of challenges compared to start-ups.

With this perspective, the BCX Digital Innovation Index report, a pioneering study centred on large businesses in South Africa, seeks to unveil how these large entities are approaching innovation. It aims to illuminate the factors that either stimulate or impede digital innovation and growth on both a national and sectoral scale.

The BCX Digital Innovation Index offers a benchmark for major South African organisations, guiding them in refining their innovation strategies to tackle challenges and leverage innovation drivers within the local context.

The index evaluates how organisations are structured to champion innovation across five pivotal areas, termed the ‘building blocks’ of Innovation Excellence.

Additionally, the report delves into the interplay between these building blocks, examining how they synergise or amplify efforts towards achieving innovation excellence. It also explores how various internal and external drivers impact each sector of the economy in unique ways.



4

Research approach & methodology



In South Africa, large organisations confront the dual challenge of maintaining consistent service delivery and operations while also preparing for the future through innovative practices.

Gaining insight into how these entities strategize for success in innovation can offer a deeper understanding of both the opportunities and challenges inherent to the South African context.

This comprehensive study, a collaborative effort between BCX and EY-Parthenon, delves into the innovation landscape of South Africa's major organisations. By combining data from both surveys and in-depth interviews with senior leaders from 42 of the country's leading organisations, we provide a holistic view of innovation practices across varied organisations.

Our mixed-methods approach not only offers a close-up view of innovation in South Africa but also ensures the confidentiality of specific business activities when presenting our findings.

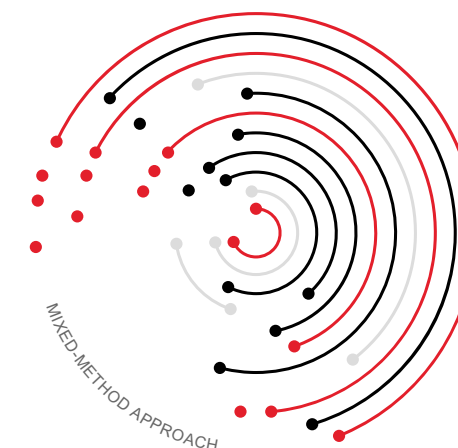
The BCX Digital Innovation Index serves as a tool to evaluate organisations across five distinct business elements, referred to as 'building blocks'. Organisations are assessed and scored based on survey statements or through a series

of questions posed during interviews. This scoring system allows for benchmarking each organisation against its South African peers. Our research team meticulously analysed the assessment results, assigning an innovation archetype that encapsulates an organisation's position on BCX Digital Innovation Index. This also enabled us to draw insights from consolidated sector experiences.

It's important to note that while our approach offers a snapshot of current practices, it doesn't project the future innovation ambitions and efforts of the organisations.

The foundation of BCX Digital Innovation Index framework and formula is built upon industry best practices, innovation theory, and the extensive knowledge and experience of EY. While our analysis incorporates data from 42 organisations, it's crucial to understand that EY did not conduct any audit work. Furthermore, they did not undertake any procedures to verify the accuracy of the information provided by the participating organisations. The responsibility for the content and conclusions of this report is expressly limited to BCX and any other party with whom there exists a written agreement concerning a duty of care. Any other parties choosing to rely on this report's contents do so entirely at their own discretion.

Evaluating the practices and factors that either support or impede innovation is not a straightforward task. The conclusions we've drawn are inherently subjective, relying heavily self-assessment reported by the participant and our innovation practitioners individual experience.



To ensure the robustness of our research, we adhered to certain design principles.

These principles, inspired by best practices in study design, played a pivotal role in shaping both the development of the Index Framework and our data collection approach. These guiding principles are:

Respect Confidentiality

The survey questions sought to preserve the confidentiality of respondents and their organisations. They were designed to avoid revealing the content of the company strategy or details of any project or investment. Every respondent had the choice about whether the identity of their organisation would be disclosed in the report.

Avoid Cognitive Bias

An attempt was made to formulate questions logically, and to design the survey to avoid cognitive biases from the researchers' perspective, such as circular reasoning or confirmation bias.

Not Leading

Questions were posed objectively and did not suggest to respondents that there could be a right or wrong answer.

Unambiguous

The survey sought to provide clear questions and answer options, that were easy to understand. They were designed to leave no room for doubt, misunderstanding, or confusion, ensuring respondents could accurately determine what was being asked.

Clear Articulation and Structure

The survey and interview started by clearly articulating the aims of the study, setting expectations with respondents at the outset. The questions were organised in a logical structure, with intuitive transitions between sections.



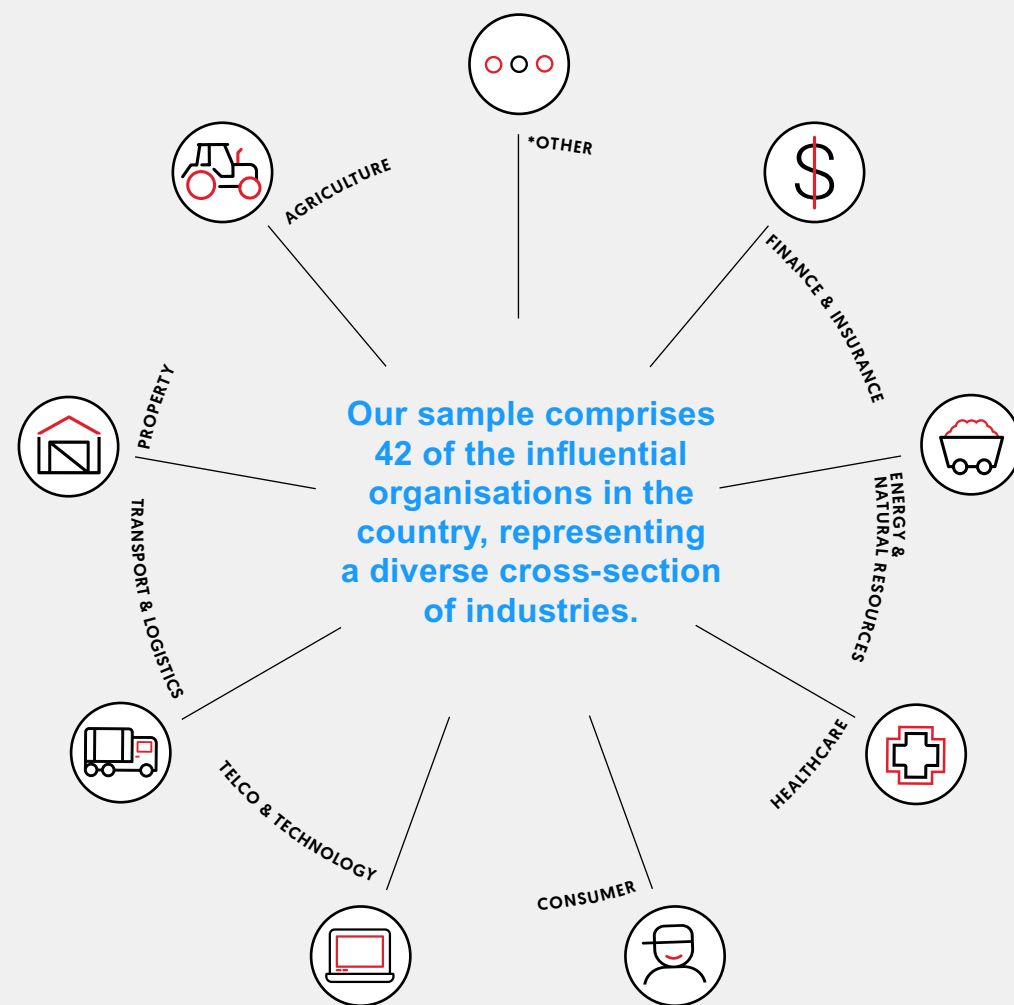
5

Respondent organisation profile



Our study delved into the innovation pursuits of the country's largest organisations.

To pinpoint these entities, we selected eight pivotal sectors that form the backbone of the South African economy:

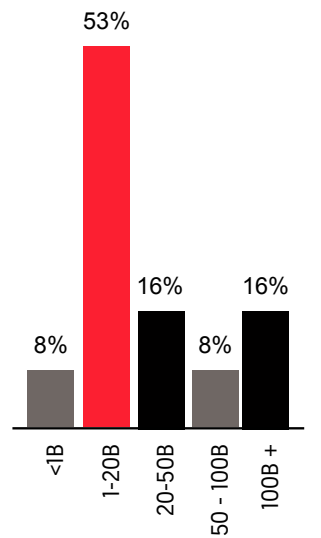


* We took into account large conglomerates operating across multiple sectors, categorised under "Other".

We focused on organisations from these sectors that have a presence on the Johannesburg Stock Exchange, as well as formidable privately-held entities.

It was imperative for our respondent organisations to have a footprint within South Africa, but we remained open-minded about the location of their global headquarters.

Impressively, over 92% of our respondent organisations boasted an annual revenue exceeding 1 billion ZAR.



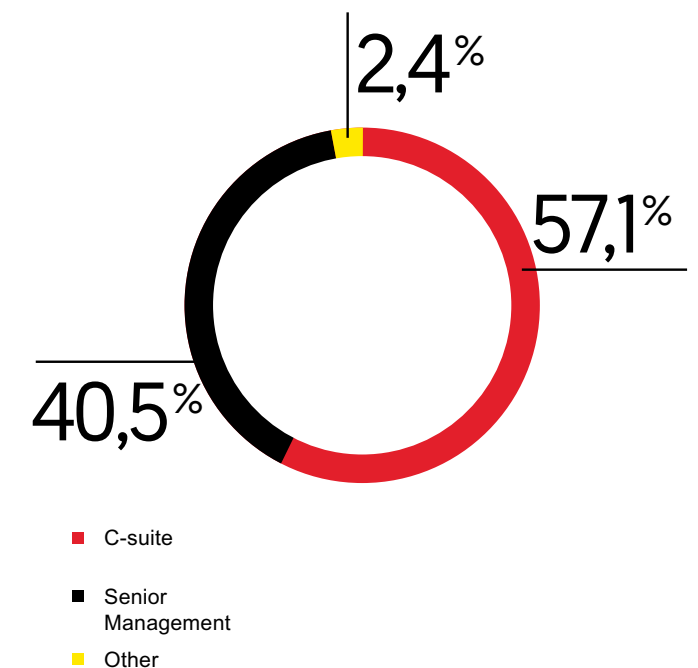
Annual revenue ranges from participating organisations

Respondent Profiles

The individuals representing the participating organisations were not just any employees; they were those in senior or leadership positions, equipped with a profound understanding of their company's aspirations and initiatives in innovation, growth technology, and strategy. Their roles often required a panoramic view of the business, encompassing the organisation's strategic objectives, structural nuances, and operational dynamics. Their positions also demanded a keen awareness of innovation trajectories and technology investments. Given their stature, these respondents were expected to possess a comprehensive understanding of their organisation's broader industry landscape and business context.

We sought insights from those with a strategic influence within their organisations. A significant portion of our participants hailed from the C-suite or senior management echelons. These individuals, with their deep-rooted understanding of the symbiotic relationship between innovation and strategy, furnished invaluable insights. They shed light on their organisations' innovation prowess and candidly discussed the myriad internal and external challenges they face in their innovation journey.

98% of our respondents belonged to the C-suite or senior management within their organisation.





6

The BCX Digital Innovation Index



This report introduces the Innovation Excellence Index, encompassing five foundational pillars for innovation mastery.

This index is bolstered by a formula that categorises organisations along a continuum of excellence.

The Innovation Excellence formula delineates the ideal configuration for spearheading and facilitating digital innovation endeavours within expansive organisations.

The methodology and framework underpinning BCX Digital Innovation Index offer a swift means to evaluate an organisation's dedication to and proficiency in innovation. It also benchmarks entities to foster impactful innovation practices.

The five building blocks of innovation excellence are:



The innovation excellence pillars emphasise the importance of being primed for innovation pursuits. Possessing these pillars equips organisations with the essential catalysts to propel innovation at scale. This includes crafting new, appealing, and feasible products and services, forging scalable business models, and nurturing digital skills that bolster resilience against unpredictability and disruptions.

When these pillars are robustly established and adeptly managed, digital innovation evolves into a ubiquitous capability permeating the entire organisation.

1. Strategy

Driving innovation with a clear strategic intent shows that it's a top priority for both leadership and the organisation. It indicates that resources should be allocated to it. To achieve innovation excellence, a clear innovation strategy must be in place. This strategy should align with the broader organisational strategy, making its contribution to the overall business objectives clear. It's essential for this strategy to be applied across individual business units and/or departments. An innovation strategy provides clarity on the goals of innovation efforts and outlines how these efforts should be organised, pursued, and funded. It sets the mandate for the innovation capability within an organisation or a broader innovation ecosystem. Many innovation projects or teams fail due to a lack of clear direction, increasing the risk of unsuccessful investments.

2. Investment

Investment is crucial for executing an innovation strategy, as it provides the necessary resources to achieve innovation outcomes. True excellence in this area is marked by a dedicated, recurring, and transparent budget. This budget should be specifically earmarked to support innovation activities. However, a budget is only effective if it's accessible through a clear and well-understood process.



It also needs to be appropriately sized within the organisation, ensuring that experiments and learning cycles are conducted at the right scale.

Innovation investment demands a distinct framework or governance mechanism. This mechanism should allocate funds to innovation initiatives and measure their performance. Traditional metrics often fall short in the dynamic and uncertain environment of innovation, making the measurement of return on investment a challenge.

3. Operating Model & Process

An operating model details how an innovation capability is structured and pursued. It determines how innovation efforts are managed and integrated into the organisation, whether these efforts are solely internal or also involve external partners. This model sets out the guidelines, frameworks, and ways of working that guide how innovation is integrated into the organisation. The innovation process, whether termed a journey or lifecycle, charts the course of an idea from pinpointing a business issue to developing a solution and then scaling it.

Excellence in this realm necessitates a clearly defined approach to idea generation, solution development, and either its implementation or scaling. This approach should foster swift ideation, testing, and development in a setting that's free from the constraints of everyday business operations.

Ideally, innovation efforts should be spearheaded by a dedicated team with a designated leader, working in tandem with the wider business. Integrating these efforts across the business is vital to prevent siloed thinking and solution development. However, it's essential to strike a balance between independence and integration. This ensures that innovation can operate beyond bureaucratic and traditional methods, whilst still drawing on the inherent skills and strengths of the business.

4. Skills and Capabilities

Innovation, encompassing digital innovation, necessitates the collaboration of interdisciplinary teams. This foundational element includes the competencies needed to guide innovation initiatives through the innovation process, as well as any specialist technical skills specific initiatives might demand.

Organisational capabilities, such as skills, knowledge, and resources in data, customer focus, and user-centricity, are pivotal. Additionally, the agility to adopt a growth mindset, embrace new learning, and tackle problems with both creativity and rigour is essential for achieving innovation excellence. To meet these requirements, an organisation can choose to upskill its teams or acquire these skills through partnerships and alternative models.

5. Culture and Commitment

A culture that is open and collaborative, promoting interdisciplinary work, lays the foundation for innovation. Cultivating a habit of experimentation, coupled with a 'fail-fast, learn-fast' ethos, empowers employees to take measured risks and delve into new business models, product features, and user experiences.

Spaces and forums that encourage cross-functional collaboration, combined with a robust culture of ownership championed by leadership, embolden employees to venture into innovative solutions for the business challenges they encounter. This ensures a wholehearted embrace of innovation initiatives across the organisation. True excellence in an innovation culture is characterised by a spirit of experimentation, hypothesis testing, and a collaborative atmosphere that acknowledges and learns from setbacks.

Exploring Innovation Excellence

Exploring Innovation Excellence assesses whether organisations possess the foundational elements needed to chase innovation, craft new digital business models, and hone digital competencies in a VUCA (Volatile, Uncertain, Complex, Ambiguous) world.

How do organisations:

- Pinpoint and nurture ideas for fresh growth?
- Propel successful ideas to scale, ushering the business into the future?
- Persistently engage with digital advancements?

Large, well-established organisations, when compared to newcomers or smaller businesses, typically boast resources, business infrastructure, a loyal customer base, and a recognised brand. These are strengths that enable them to invest in and swiftly chase new ventures. However, they often grapple with the intricacies, entrenched habits, and conflicting priorities that come with size and legacy. These challenges can hinder their agility and adaptability. For such long-standing, sizable organisations, it's especially crucial to have these foundational elements in place. This ensures they have the mandate and capability to pursue innovation with the highest likelihood of success.

Innovation Excellence Categories: Levels of readiness to excel at innovation

The Innovation Excellence categories were developed by assessing organisations' innovation set-up maturity or readiness against the aforementioned building blocks.

Four levels or categories have been defined to gauge an organisation's positioning for excelling at innovation. An organisation's average score across all building blocks determines its category placement.

EXCELLENT Organisations in this category are ideally structured to champion innovation. Key traits of such organisations include leadership, structure, and a culture deeply committed to innovation as a strategic priority for growth, market relevance, and sustainability. They possess the necessary resources, skills, and capabilities, along with the systems and processes, to consistently drive innovation from ideation to scale. Embracing risk and potential failure in exploring new avenues, these organisations demonstrate agility in adapting when presented with new insights.

MATURING Organisations in this category are on a promising trajectory towards innovation excellence. While they already showcase areas of excellence, dedicated teams are at the forefront of driving their innovation initiatives. While certain building blocks might need further alignment to consistently support their efforts, their culture and business processes are evolving to embrace broader innovation scopes. These organisations successfully deliver value through innovation, and with some refinements in their set-up, they have the potential to unlock even greater achievements.

EMERGING Organisations at this stage are taking commendable steps towards prioritising innovation. They may invest in specific initiatives, and while the building blocks for innovation excellence are in place, they are still being refined and expanded. These organisations are on a journey of transitioning from legacy systems and protocols, and are gradually shifting their cultural focus to embrace more risk and innovation. As they continue to evolve, they'll be better positioned to amplify the impact of their innovation initiatives consistently.

NASCENT Organisations in the nascent stage might not currently prioritise innovation. They are either just beginning to recognise the potential of innovation to drive growth or are finding it challenging to structure their innovation efforts.

The matrix below details the characteristics associated with the pursuit of innovation and building blocks across the assessment categories. Organisations in these categories may exhibit some of these traits to varying degrees.

It's important to note that this is a compilation of characteristics and not definitive for an organisation that falls within a specific category. The placement of an organisation within a particular category is determined by its average score across all building blocks.

	NASCENT	EMERGING	MATURING	EXCELLENT
 INNOVATION STRATEGY	- No current strategy to innovate, although ambition might be there. - There aren't clear objectives nor a specific mandate for innovation efforts defined. - The organisation does not currently see innovation as a focus area and initiatives are not prioritised.	- Innovation is considered a business priority. 'Innovation' and 'digital' are understood to be part of the corporate strategy but not actively defined nor explicitly translated into divisional/functional strategies. - Some individual departments have defined an innovation strategy to guide innovation efforts.	'Innovation' and 'digital' are embedded into corporate strategy and well-understood by and communicated across the broader business. - Some individual departments have defined an innovation strategy to guide innovation efforts.	- A defined innovation strategy is in place guiding innovation efforts. - The strategy is widely communicated and understood across the whole organisation. - The innovation strategy aligns with the wider company strategy and cascades down to individual business units and/or departments.
 INVESTMENT	- Investment in digital innovation efforts isn't currently funded or funding isn't allocated or disbursed specifically for this purpose. - There is no formal or recurrent investment into innovation. - No formal governance process exists to nurture and track investments into innovation.	- Some funding is available to explore digital innovation activities, but it is hard to access. - Some individual departments or business areas fund their own innovation initiatives. - Investments are governed through existing financial return metrics.	- Budget is made available for specific initiatives. - There is a process in place to access investment to drive new initiatives. - Investments are evaluated per initiative, against a business case that assesses traditional investment metrics. - Unique metrics are applied to some extent or to some projects.	- Innovation activities are supported by a dedicated, recurrent and transparent budget across the organisation. - There is a known and clearly understood process in place to access the set innovation budget. - A governance framework or mechanism exists to best allocate funding to innovation initiatives and also measure performance.
 OPERATING MODEL	No teams or formal structures exist to test, validate and scale innovative ideas different from typical project development.	- Innovation teams are formed in an ad hoc manner by business units. - No formal roles have been assigned for digital or innovation efforts. - Innovation initiatives follow project management cycles.	- Teams or departments practise innovation in pockets within the organisation. - Design thinking approaches are applied to innovation efforts although a unique process is not formally defined. - Team/s are formed internally and limited by low cross-functional representation.	- There are structures in place to rapidly ideate and experiment with new business models, ideas and experiences in an environment unconstrained from the day-to-day business. - A dedicated team owns and drives innovation objectives within the organisation.

NASCENT

EMERGING

MATURING

EXCELLENT



SKILLS AND CAPABILITIES

- Skills that can drive innovation may be present, but are not visible.
- Technologies, tools and systems are not designed to support testing of innovative ideas.
- Organisation does not hire or upskill its staff in innovation, but staff may pursue learning on their own.

- Some key skills are not available or are immature in order to drive initiatives to success.
- The organisation may have access to user-centric, data-centric, digital and technical capabilities, although these are scattered.
- Technologies, tools and systems available limit teams' ability to innovate.
- Upskilling or hiring not driven formally by organisation, but may be led by individual teams.

- Teams may not have sufficient capacity to deliver innovation at the scale required to drive impact for organisation, but there are the skills required to deliver creative problem-solving in fast-paced, iterative cycles of learning and adapting.
- Tech stack may restrict some types of digital innovation.
- Upskilling or hiring is restricted to certain groups.
- Innovation teams are data-centric, and have some access to data within and beyond the organisation.

- Large enough teams across relevant disciplines drive innovation, e.g. product management, agile methodologies, user experience design, business acumen, data and tech.
- Flexible tech infrastructure supports digital innovation.
- Organisation systematically invests in upskilling or hiring relevant talent.
- Innovation teams have access to specific technical skills and support as required for specific initiatives (through hiring and/or upskilling).



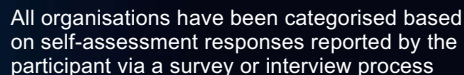
CULTURE AND COMMITMENT

- Innovation culture not visible within the organisation.
- A risk averse culture dominates across the organisation.
- Cross-functional collaborations and innovation resources are scarce across the organisation.

- Business metrics and leadership tone doesn't drive or encourage innovation.
- Organisation's culture is focused on minimising risk and failure.
- A culture of curiosity, questioning and learning may be present amongst some, but is not widespread or applied effectively throughout organisation.

- Innovation culture contained within innovation teams.
- Systems and processes may hamper risk-taking and block innovation.
- Employees feel empowered to take risks and explore new innovation ideas to solve business challenges.
- Failures in innovation are considered sources of learning to some extent.

- An innovation culture of testing, failing, learning and pivoting is practised across organisation.
- Innovation is celebrated through rewards and incentives.
- Employees feel empowered to take risks and explore new innovation ideas to solve business challenges.
- Cross-departmental/functional collaboration is encouraged through shared spaces and forums.



from ideation through solution design, testing and scaling, free from the constraints of traditional business processes and mindsets. Such a process accommodates the iterative nature of innovation, with cycles of testing, failing and learning in order to improve a solution. Through partnerships with start-up ecosystems, organisations may also have access to strong entrepreneurial ability and working solutions that can be tested at scale within their business.

A small number of excellent organisations have successfully hired teams dedicated to innovation. This allows them to resource their innovation initiatives adequately. Nevertheless, despite their ambition, a large number of participant organisations have not yet systematically adopted innovation. They do not have employees dedicated to innovation, and also do not adopt processes tailored to innovation. This may reflect the talent shortages found on the local market.

Shortage of innovation talent is a limiting factor:

Access to top talent inhibits organisations’ ability to innovate. Nevertheless, most organisations surveyed believe that their digital and technological capabilities in South Africa cover sufficient breadth and depth to support innovation and the creation of new digital products and services. On the other hand, it appears that many organisations face shortages of innovation talent.

Many respondents feel that, although they had people with the right skills focused on innovation, they are too few to cope with the demand for innovation to solve business challenges. A small number of respondents believe that they lack critical skills in-house to drive innovation initiatives to success.

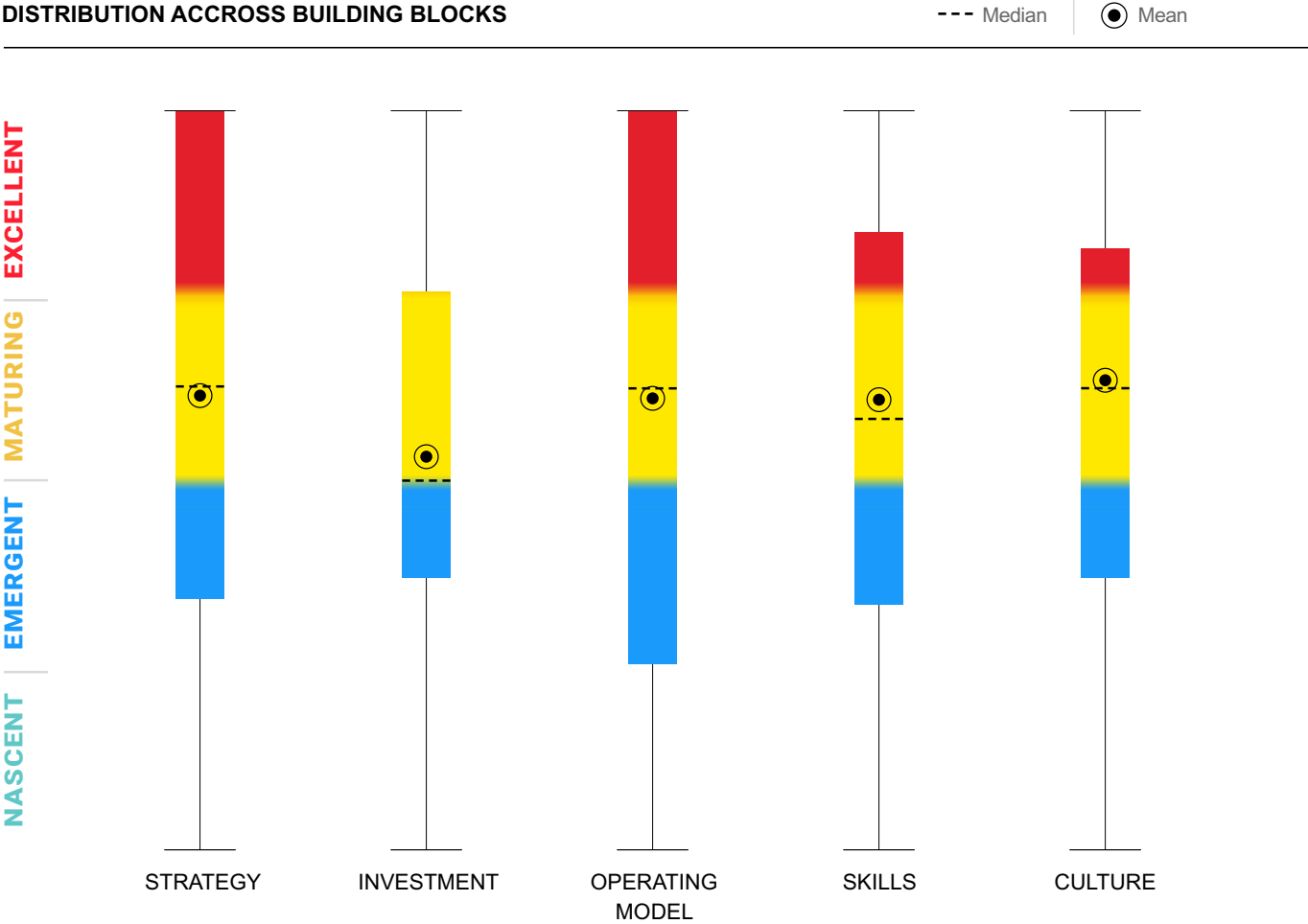
Amidst this talent shortage, a few of the ‘Excellent’ organisations have adopted a structured, organisation-wide approach to hiring, retaining and upskilling employees. Others offer dedicated support and resources to innovation teams.

An aversion to risk and failure undermines innovation efforts:

Through innovation, businesses formulate solutions to their challenges in an iterative manner. New solutions that are fit-for-purpose and that are likely to be adopted by the target users can only be developed through repeat cycles of ideation, testing, failing and learning. Naturally, this process requires undertaking risk in exploring uncharted territories to find new solutions. It also requires that business teams accommodate failure and improvement through repeated testing. This appears to be the biggest challenge faced by our respondents: despite their ambitions to innovate and challenge the status quo, many organisations are built for confidence or certainty in return. They work within environments of legacy systems and processes that are not designed to accept failure. Only a small number of organisations in the ‘Excellent’ category have adapted their culture to take measured risks, navigate uncertainty and innovate. These organisations also appear to be more seasoned innovators: they embed an innovative culture of creative problem solving through iterative testing across the business.

In contrast, given the cultural challenges involved, many organisations in South Africa are only able to practise innovation within dedicated innovation teams.

The organisations that embrace risk and view failure as a learning experience are more likely to push boundaries, experiment with new approaches, and break new ground in tackling business challenges. On the other hand, organisations that shy away from risk altogether may miss out on valuable opportunities for growth and innovation. By recognising the importance of managing risk and creating a supportive environment that encourages calculated risk-taking and learning from failure, organisations can fuel their innovation efforts. The ability to strike a balance between embracing risk while effectively managing it becomes paramount in driving successful innovation initiatives.



Our findings reveal a diversity of approaches taken by South African organisations to pursue innovation.

When tuned appropriately for an organisation in a particular sector, the five building blocks can help orchestrate the success and impact of innovation efforts.

Importantly, nurturing a culture that bears agility and is open to innovation, as well as a healthy risk appetite are significant enablers of innovation. By learning from these different approaches and incorporating the necessary elements, organisations can position themselves for success and make significant strides in their innovation journeys.

This graphic describes how organisations are distributed across our 5 building blocks.

Investment appears to lag the other building blocks, with the median being the lowest.

On the other hand, a lot of variance is observed in how organisations articulate their innovation strategy and create an operating model to systematically run innovation.

7

Factors impacting innovation across sectors



Economic outlook presents an imperative to innovate for growth.

The South African economy faces fluctuating investor sentiment and currency performance, with brief periods of optimism followed by recurring concerns. For organisations, this may be felt as a restrictive investment environment in their respective industries. In addition, political uncertainties ahead of the 2024 elections, weak local economic growth, and a fragile fiscal position contribute to the pressure on the South African rand and overall market within which organisations operate, further constraining any potential investments into growth and innovation.

In this difficult environment, South African organisations need to maintain their product and service delivery, and seek and compete for new growth. The persistent issue of loadshedding also continues to pose significant challenges to the country. Reduced generation capacity and power plant breakdowns contribute to unreliable power supply, impacting businesses and hindering economic productivity. Several organisations highlight how loadshedding constrains their ability to operate and innovate, whilst the excellent organisations identified by the index describe using loadshedding as a parameter around which to organise innovation. This opens new possibilities and can lead to efficiency gains.

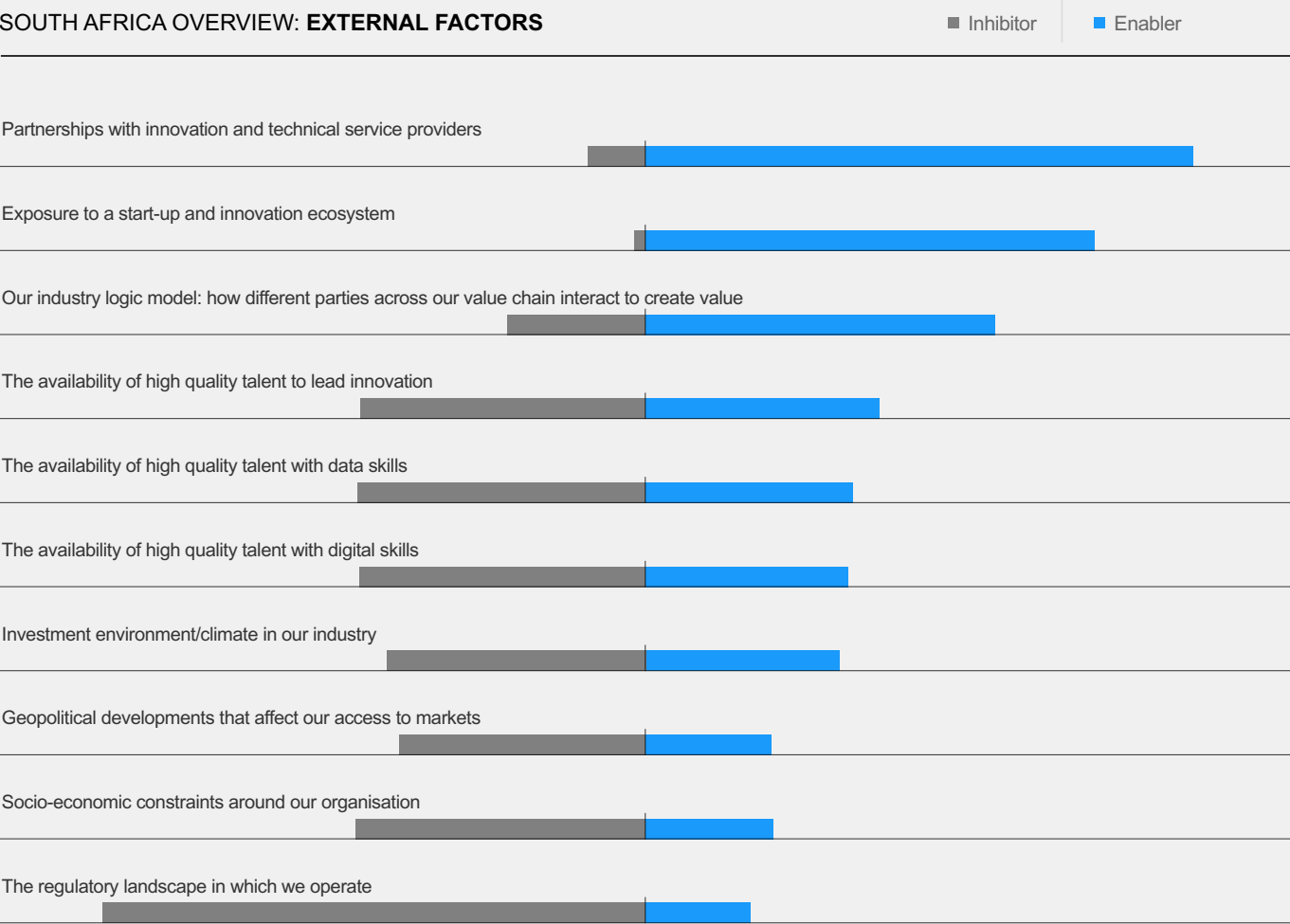
On top of these macro-level challenges, organisations face pressure from customers’ increasing digital presence, potential disruptors that challenge incumbents, climate change and the urgency for sustainability. On the other hand, new, emerging

technologies, supply chain network transformations and infrastructure networks present opportunities for organisations to innovate and gain efficiency across their value chain. The need to adapt to this rapidly evolving context requires that organisations be able to innovate.

Regulations that lag technologies hinder innovation.

Respondents cite regulation as one of the biggest external inhibitors of innovation. This appears to be true across sectors. Strict compliance requirements, and a lack of clarity on how to implement new technologies, can halt any experimentation and testing within organisations.

In the face of these challenges and opportunities, organisations must show adaptability to remain competitive. Organisations seek to navigate external challenges while working within internal systems to survive and thrive. Through innovation within this multi-dimensional context, organisations can increase their resilience in the market. Innovation requires that organisations embrace change, and foster a culture that takes measured risks whilst accommodating failures. South African organisations do so by leveraging external partnerships.



It has been crucial to comprehend how organisations are structured to pursue innovation, as it provides us with insight into how these organisations are preparing themselves to adapt to the trends within their respective countries and industries, ensuring their sustained success in the future. But what exactly are these trends that require adaptation?

Organisations are consistently confronted with dynamic forces of change at the global, national, or sectoral levels. It is imperative to understand these forces and determine whether to harness them for growth and benefits or to prepare for defensive measures.

These forces for change can act as catalysts for innovation or create environments that either facilitate or hinder the growth, innovation, and operation of businesses.

The following section of the report delves deeper into sector-specific perspectives, shedding light on the environmental forces or factors that affect large organisations within particular sectors. It also highlights any commonalities and nuances in how businesses approach innovation, considering the unique characteristics of their respective sectors.

7.1. FINANCE AND INSURANCE

Finance and Insurance here comprises Banking, Insurance and Wealth management.

The major players in South Africa's banking sector notably rank highly on BCX Digital Innovation Index.

It's an expectation that these giants would fervently embrace digital innovation, considering the magnitude of disruptions and competition engulfing the industry. The pertinent question is: **how are they tackling this challenge?**

The well-established, long-standing banks find themselves in an intriguing position. They operate within an exceptionally competitive industry where both service quality and innovative offerings are pivotal for acquiring and retaining market share. Simultaneously, they must maintain stability and trustworthiness while grappling with the legacy systems and operations that support their substantial scale. Balancing these aspirations and constraints in their quest for digital innovation is a compelling endeavour, one they execute impressively, as this analysis reveals.

Despite the perception that banks may not be as innovative as newer entrants and FinTech companies, many financial institutions excel in innovation within their digital pursuits. They have proactively established dedicated teams or capabilities to drive innovation efforts across their businesses. Additionally, the terms 'Digital' and 'Innovation' are explicitly embedded as strategic priorities and enablers within their corporate strategies.

These organisations have typically nurtured well-established ecosystems, fostering collaboration with a diverse range of partners and industry stakeholders. This collaborative approach enables them to tap into innovative ideas from external sources while also supporting the development and scaling of internally generated innovative concepts.

Digital innovation in Finance and Insurance encompasses activities focused on addressing day-to-day operational business problems, aiming to enhance efficiency and improve the customer experience. It also encompasses more disruptive innovation, considering the entire value chain and the role a business intends to play.

Driving the need to innovate are:



1. **Changing consumer behaviours and expectations.**

Today’s customers no longer confine themselves to a single service channel, nor do they limit their service experience expectations to those unique to the Finance and Insurance industry. Ever-rising standards and expectations regarding seamless, accessible, affordable, and trustworthy experiences continually emerge and evolve from all facets of customers’ digital lifestyles. Keeping pace with these evolving expectations necessitates rapid change to ensure that traditional banks remain competitive and responsive to client needs.



2. **Emerging technologies that are becoming more accessible.**

Traditional Finance and Insurance players, whose systems were built and set up over the last 50 years for physical or branch-centric operations, grapple with the need to adapt to a new era of servicing that demands agility and digital innovation. Newer players have technology infrastructure built on modern cloud-based systems that enable agility, responsiveness, cost efficiency, and a client experience that traditional players cannot match with their legacy systems alone. The emerging technologies that are becoming more accessible reduce the time and resources required to introduce new products and services and are pivotal in maintaining banks’ competitiveness. These aspects are further explored in the [digital factors and opportunities section](#).



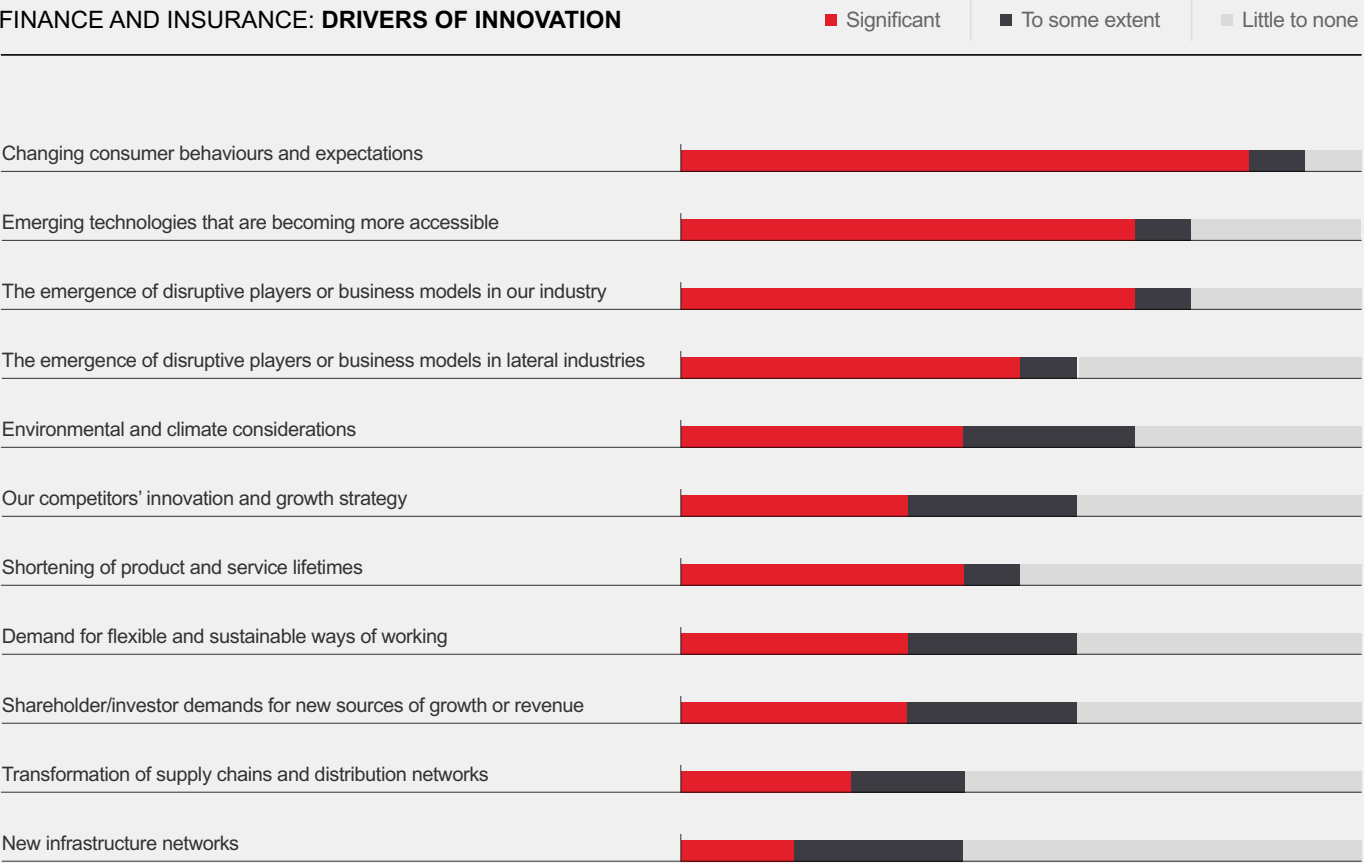
3. **The emergence of disruptive players or business models in the industry.**

New players and FinTech companies, employing advanced technologies, have surfaced as formidable contenders against traditional institutions. This competition stimulates innovation as these players concentrate on enhancing and devising new solutions to maintain their competitive edge in the battle for market share. When players collaborate within ecosystems that include banks, FinTech companies, and retailers to offer customers a wide range of services and products, unique opportunities and benefits arise for all.



4. **Environmental and climate considerations.**

There is an increased awareness of the broader societal and environmental impacts of banking and other Finance and Insurance. This awareness extends to the design of offerings tailored to meet the evolving financing and insurance requirements of ESG-conscious operations. Across the economy, operational and cost structures are undergoing changes, prompting financial service providers to reconsider financing models and practices to support their customers on their ESG journeys.



In the pursuit of growth and innovation, various external factors play pivotal roles in enabling and supporting these efforts and ambitions:

The top three external enablers strongly underscore the potency of collaboration in creating new value. The inclusion of ‘Partnerships with innovation and technical service providers’ and ‘exposure to start-up and innovation ecosystems’ reflects a recognition and appreciation of the value derived from collaborating with external entities, leveraging their respective strengths to foster innovation.

Notably, the local regulatory landscape emerges as both an enabler and a significant inhibitor. Discussions have highlighted that while the regulatory environment can be enabling, fostering collaboration with regulators is essential. This collaboration allows for the accommodation of new approaches and the

advancement of the regulatory system, provided that risk and stability are adequately managed. By building robust relationships with regulators, organisations can contribute to the development of regulatory frameworks that foster innovation and growth.

Similarly, compliance and risk management within organisations present both challenges and opportunities for the sector. Regulatory changes are expanding the regulatory scope, granting regulators greater control over financial service providers and their operations. Consequently, businesses must continuously comprehend and adapt to these changes, investing in compliance and risk management. However, the introduction of new technologies and their capabilities can streamline these processes, enhancing business efficiency and effectiveness in compliance and risk management.

In the local market, the availability of high-quality and skilled talent, particularly in digital and innovation capabilities, was frequently cited as a challenge. This situation necessitates businesses to achieve more with fewer resources. It was also noted that South Africa experiences a brain drain, and competing with international remuneration levels has become increasingly challenging.

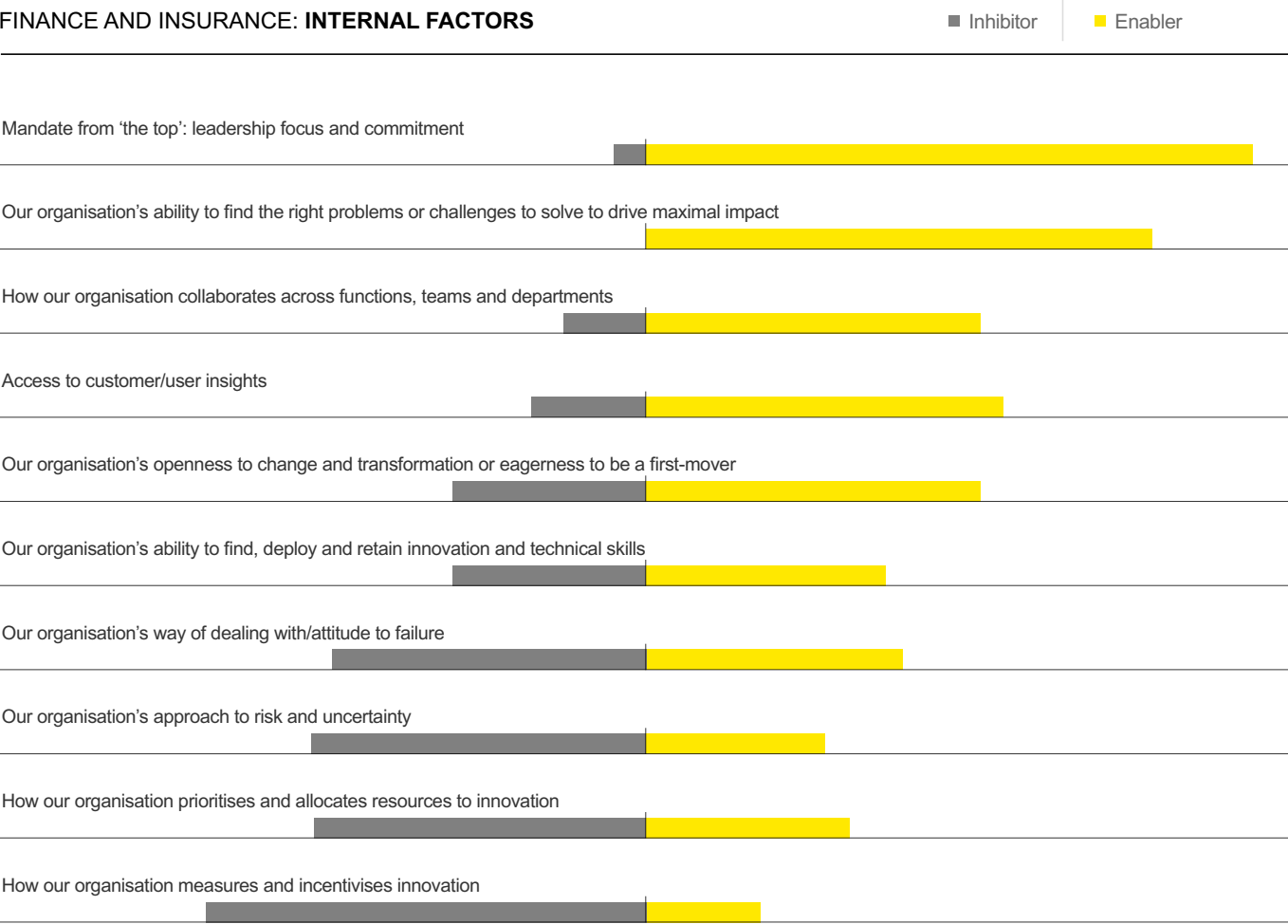
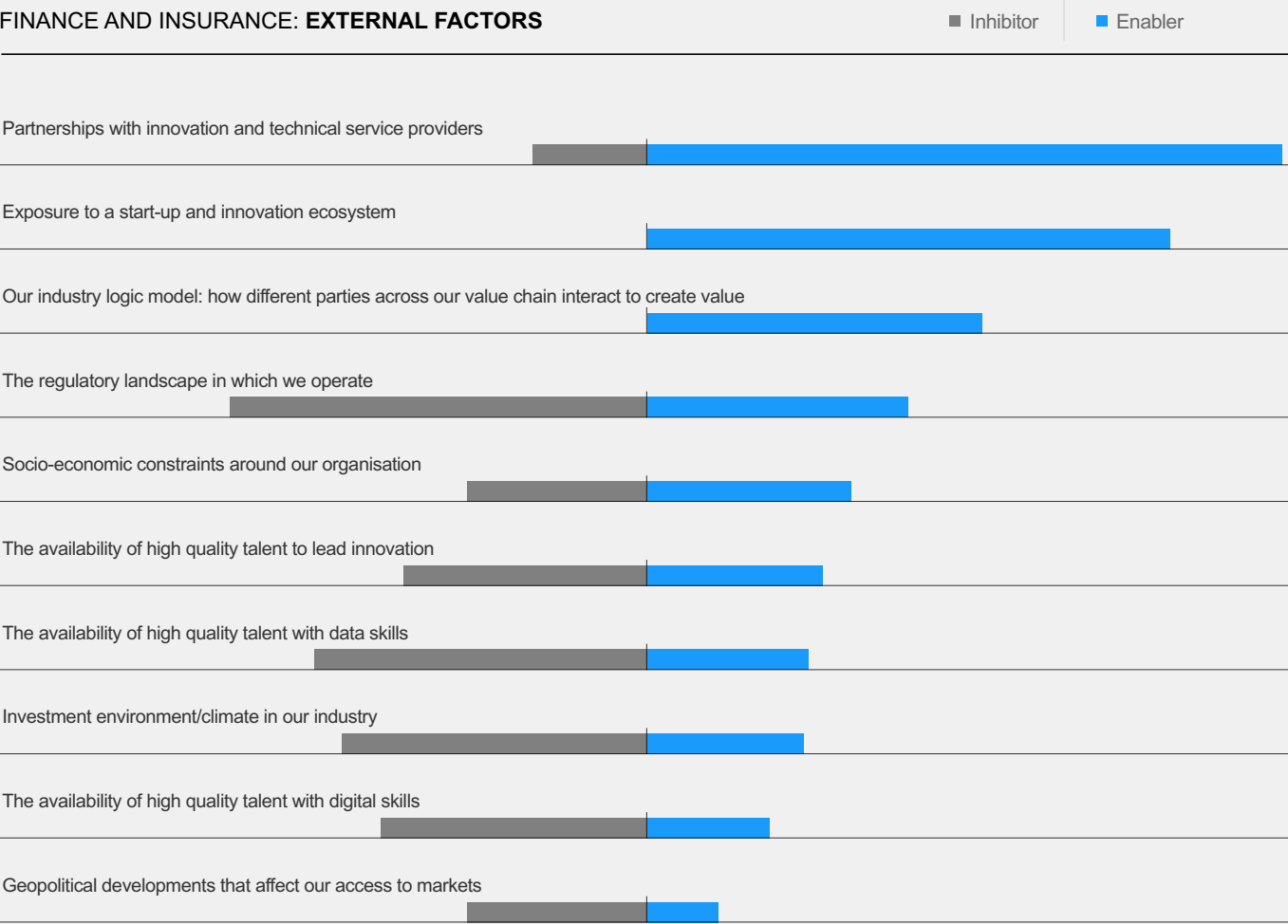
Given the presence of these external inhibitors in the local market, the selection of the best ideas and their effective execution becomes paramount. This, of course, is influenced by an organisation’s internal structure and dynamics.

Promisingly, the top internal enabler underscores the significance of leadership focus and commitment towards making innovation a priority within businesses. Without such leadership dedication, innovation efforts would inevitably encounter obstacles.

Leaders not only formulate strategies that direct focus and resources but also shape the tone and culture that establishes an enabling environment for innovation.

The second-ranking internal enabler, ‘Ability to find the right problems or challenges to solve to drive maximal impact,’ is also highly promising. This is because innovation efforts often falter without a clearly defined problem statement or aspiration, resulting in solutions that may not be relevant in the market.

The third internal enabler emphasises that collaboration within the organisation is equally crucial as collaboration within the external ecosystem. It facilitates knowledge transfer, communication, and cooperation among different functions, enabling the co-creation and sharing of ideas. Furthermore, it promotes the exchange of learnings from innovation efforts between businesses or functions.



The top inhibitors or challenges experienced internally within Finance and Insurance organisations revolve around grasping and accommodating the unique approaches demanded by innovation delivery compared to traditional or business-as-usual activities.

An organisation's approach to failure becomes an innovation inhibitor when the punishment of failed ideas stifles further innovation efforts, driven by the fear of recurring failures. It takes courage to discontinue ideas that have lost relevance or aren't proving viable for various reasons.

While most banks identify themselves as innovative, the implementation phase poses significant challenges. This difficulty arises from the need to consider and integrate banking fundamentals into innovative concepts.

These fundamentals revolve around stability and risk management, even when innovative ideas involve inherent risk and uncertainty. These seemingly contradictory characteristics can be tested in a secure environment if the right attitude and appetite exist.

In the technology and digital domain, traditional players are gradually shifting away from the mindset of building everything in-house. They are now exploring how to integrate with third parties and determining the necessary capabilities for such integration. Many well-established financial service organisations still operate on technology platforms that do not facilitate this integration, which is why transitioning away from or transforming legacy systems remains a lengthy and intricate journey.

7.2. CONSUMER

Consumer products in this context comprise manufacturing, distribution and retail of consumer products.

Meeting customer expectations for experience while simultaneously addressing business requirements related to cost, profit, and sustainability presents a challenge for consumer organisations globally. This challenge is particularly pronounced in the current context, characterised by climate variations, market fluctuations, trade dynamics, political instability, and regulatory changes.

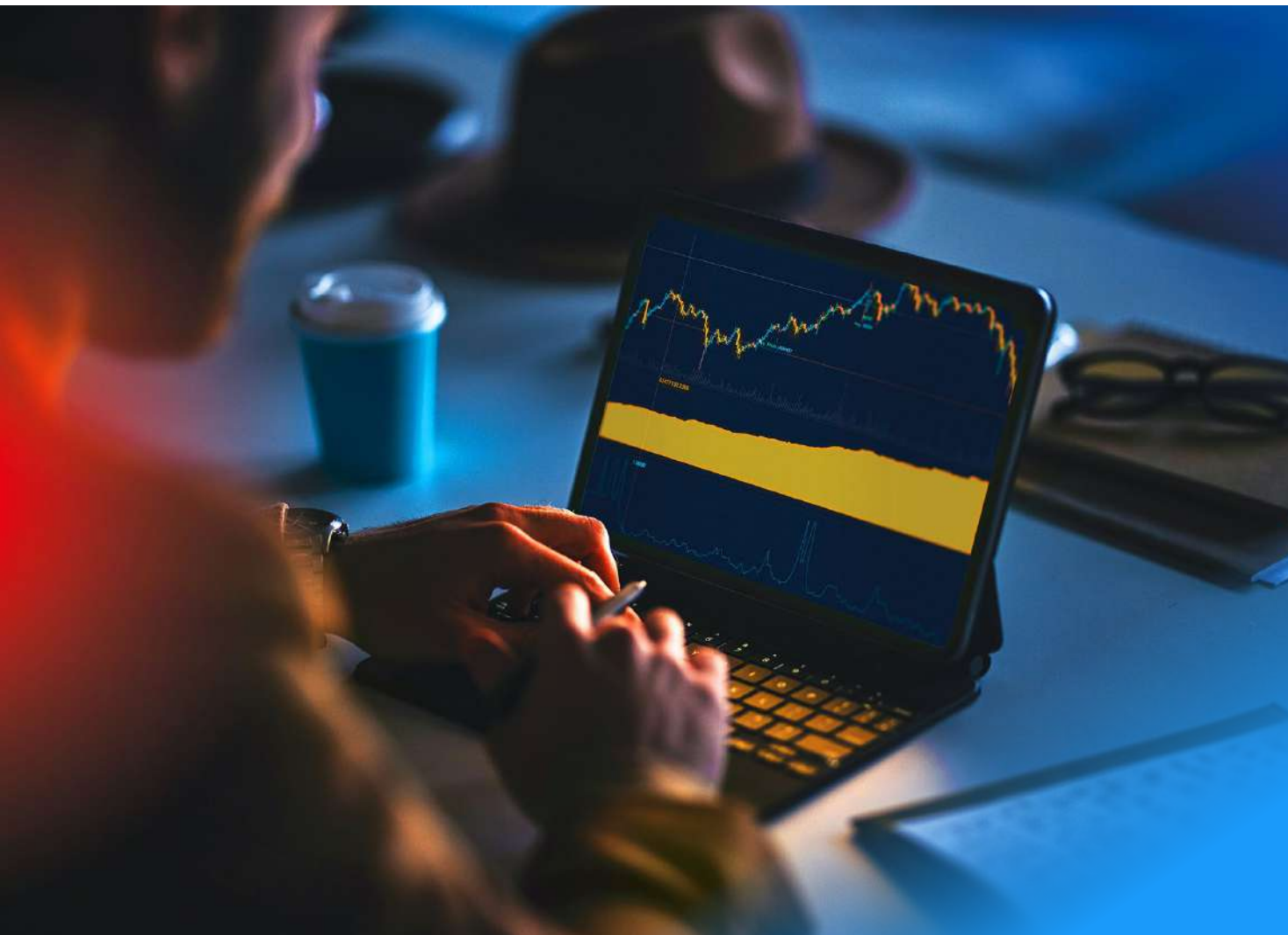
Economic volatility and significant disruptions, exemplified by the COVID-19 pandemic, have underscored the urgent need for consumer industries to prioritise supply chain resilience and devise effective strategies for adapting to change and pursuing growth. Regardless of where an organisation positions itself within the value chain, it is essential for them to have a comprehensive awareness of the entire value chain when delivering a product or service to end consumers. This is because consumers themselves closely scrutinise this process. Consequently, an organisation's role within consumer industries, whether upstream or downstream, is significantly influenced by consumer demands, values, and behaviours, thereby impacting both strategic decision-making and operational activities.

The focus and type of innovation may vary based on an organisation's position within the value chain. For instance, manufacturers may concentrate on innovating processes or machinery, while distributors may prioritise transforming their distribution networks.

Retailers, on the other hand, may place their focus on innovating customer engagement, with all stakeholders emphasising product innovation. Although the outcomes of innovation may vary, the approach to innovation and the factors influencing it remain relevant to all participants in the industry. This is precisely what we explore in the Index.

The Index results suggest that, generally, innovation is not as prioritised or embedded within organisations as much as desired. Many organisations encounter constraints in their business processes and access to skills and resources, limiting their ability to explore innovative initiatives effectively.

The top-ranked organisations are often those predominantly operating through e-commerce platforms, having fully embraced digital innovation. Digital innovation is especially critical considering the increasing level of sophistication that consumers now expect from online shopping channels. Implementing digital innovations can enhance agility, improve efficiency, and align ecosystems with evolving consumer preferences and behaviours. To achieve this, organisations must establish capabilities that place data at the core of their operations and enable the agility needed to respond effectively to market changes. Supply chains and capabilities across the value chain must evolve into transparent demand-response networks, necessitating a focus on digital innovation.



Top drivers of innovation



1.

Transformation of supply chains and distribution networks.

One of the primary catalysts for innovation is the transformation of supply chains and distribution networks. All participants have identified this as a significant driver of innovation within their organisations or the market. The transformation of supply chains and distribution networks is bringing about fundamental changes in business performance. It supports sales growth, drives cost efficiencies, minimises risks, and enhances operational resilience. We are witnessing a shift from linear to interconnected ecosystems comprising partners, suppliers, and alliances, moving towards fully autonomous supply chains that fuel innovation and business growth.

Organisations within this sector operate within extensive and intricate networks, making the focus on creating sustainable networks crucial to their success. The sourcing of inputs and the delivery of goods experienced significant disruptions during the pandemic. This disruption has prompted a focus on new approaches to ensure the stability of their networks, with some considering a shift from global to local suppliers.

Organisations that embrace innovation and digitally transform their supply chains gain the ability to respond more effectively to consumer demands, measure environmental impact, maintain lower operating costs, and achieve higher levels of employee engagement.



2.

Changing consumer behaviours and expectations.

All organisations have indicated that changing consumer behaviours and expectations significantly drive their innovation efforts. Consumer-facing organisations achieve the greatest success when their values and actions align with those of their customers. Therefore, this alignment becomes a crucial focus for innovation. Organisations are now striving to differentiate themselves by ensuring a stronger alignment with their consumers' values and desires, aiming to maintain their interest.

Over time, and in the face of significant disruptive forces and crises, consumer behaviours naturally evolve. The pandemic, in particular, deeply impacted consumer values, with a heightened commitment to living sustainable lifestyles. Consumers increasingly scrutinise not only the product or service but also the organisation behind the brand and its environmental impact. Therefore, this innovation trigger is often closely considered in conjunction with the one mentioned above.



3.

The emergence of disruptive players or business models in our industry.

The presence of disruptive players or innovative business models within our industry is a noteworthy factor. These two aspects are themselves catalysts or facilitators of this phenomenon. The changing landscape of supply chains and the commitment to meet evolving consumer expectations have given rise to new entrants and business models. A substantial 80% of participating organisations have signified that the emergence of disruptive players or business models in their industry significantly drives their innovation efforts. These novel business models and agile market entrants are reshaping the shopping patterns and preferences of consumers.

Consequently, established organisations find themselves compelled to disrupt their own business models to remain competitive against new entrants and to retain their existing customer base, while also attracting new consumers. This disruption in business models has led to a growing need for organisations to restructure their operations, facilitating an omnichannel strategy and transitioning from traditional brick-and-mortar establishments to a strong online presence. This includes shifting from traditional billboards and other marketing methods to more modern social media and online campaigns. By adopting this strategy, organisations can enhance their omnichannel approaches, expanding the boundaries of their channels to offer convenient online purchasing options and almost immediate delivery of goods and services.



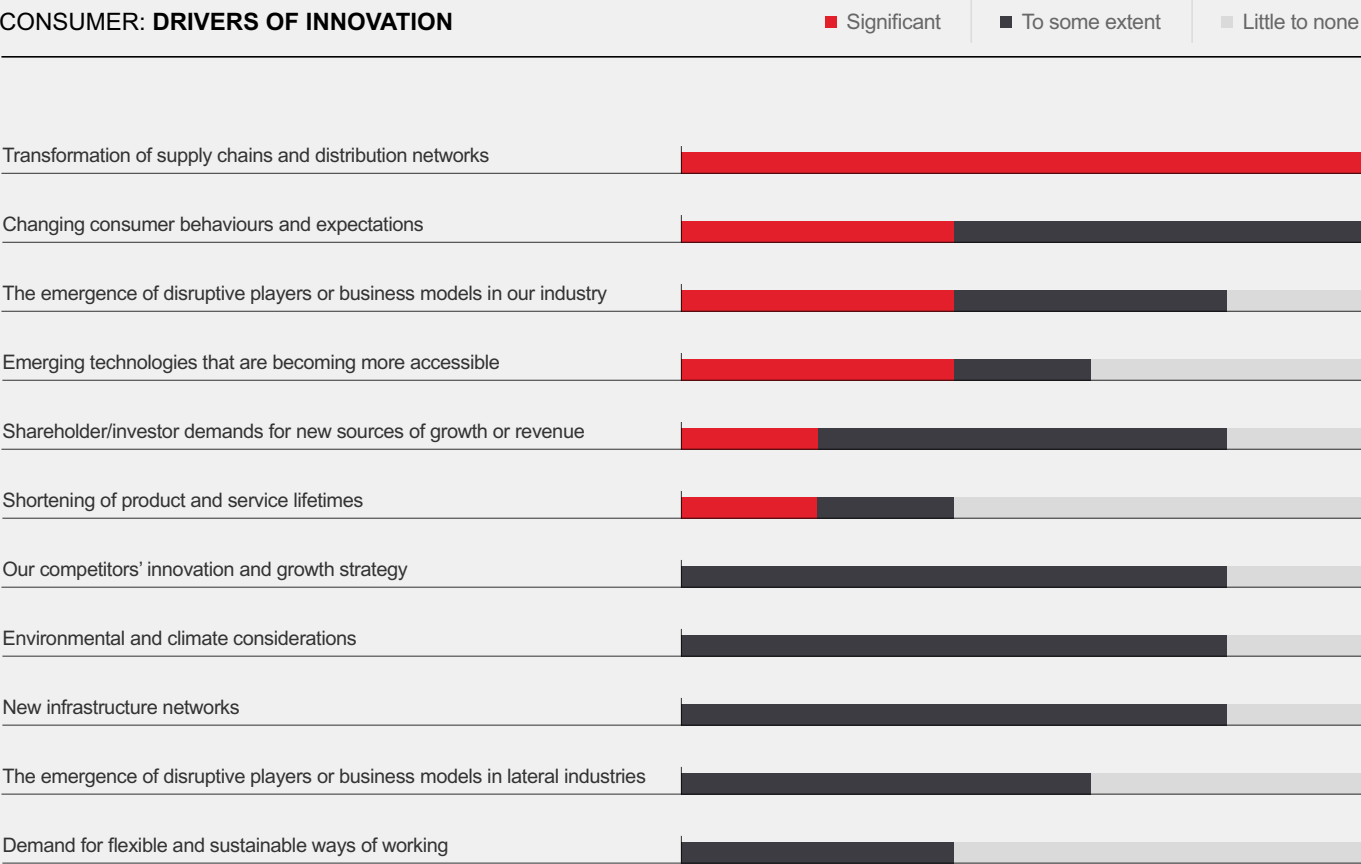
4.

Emerging technologies that are becoming more accessible.

There's a notable rise in emerging technologies that are increasingly within reach. A substantial and rapid shift towards e-commerce underscores the importance for business leaders to consistently challenge their assumptions about what the digital consumer desires, how they prefer to make purchases, and what it takes to meet these evolving needs.

In today's digital landscape, consumers find it far easier to encounter and be influenced by new technology, information, alternatives, and shared experiences with their peers. This places significant pressure on larger organisations to stay abreast of these changes and maintain consumer loyalty.

The accessibility of technology and digital capabilities has made it considerably easier for consumers to access information, explore alternatives, share their experiences, collaborate, and learn from one another. Within operations, emerging technologies are enhancing manufacturing and distribution performance. The drive towards digital innovation, capitalising on these emerging technologies, is a powerful force propelling the highly competitive consumer industry forward.



To drive growth and innovation, these external factors support and enable innovation efforts and ambitions.

In the pursuit of growth and innovation, various external factors are recognised for their role in enabling and supporting these endeavours.

The industry logic model was identified as the biggest external enabler in this sector. This speaks to the nature of the makeup of the sector, the type of business models, and the dynamics across the value chain.

The makeup of the sector in terms of the size of organisations has been changing over time. Digital capabilities are empowering smaller organisations to compete with the larger market leaders. The improvements in the supply chain that digital solutions enable mean that smaller players can better manage ordering and stock to meet demand and tap into the efficient goods delivery networks that the bigger players operate on.

Vertical integration by larger players across the value chain has led to access to new capabilities and markets. Additionally, the growth and expansion of stores and warehouses are no longer predominantly about physical expansion but about restructuring to take advantage of the opportunities borne by digital.

Purely online retailers have disrupted the traditional retail business model by simply acting as a platform which sells goods directly to consumers, making profits through commission, subscriptions, or media and content. To operate such platforms, collaboration from various sectors is required, such as Finance and Insurance to handle transactions, and transport to handle distribution. Such expertise from different sectors needs to be coordinated in an innovative way to productively manage these platforms.

Retailers and wholesalers are good partners for other sectors to build strategic partnerships with because they generally have strong networks established. The extent of infrastructure of large organisations in the sector, the size of their market bases, and their distribution systems are significant assets that others can tap into and expand the services provided for consumers.

Partnerships within innovation and technical service providers are experienced as an enabler, and similarly, exposure to start-ups and a broader innovation ecosystem. Partnerships and collaborations enable organisations to serve customer needs beyond the core capabilities and offerings of a single organisation. This collaboration supports the servicing of a collective of customer needs and often does so to fill a gap in the market or make offerings more convenient and valuable.

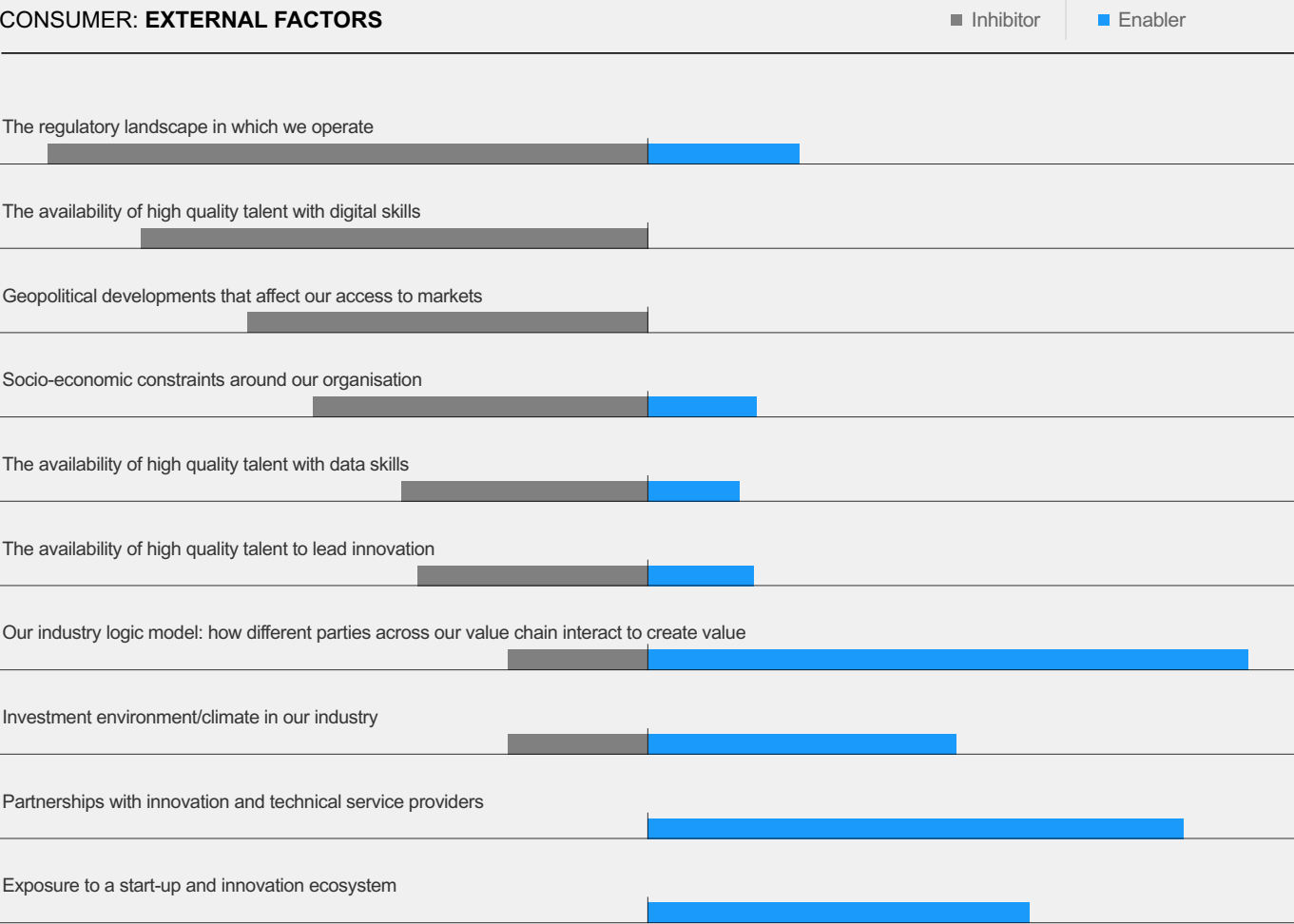
Local organisations not part of an international organisation indicated that partnering is especially key for them in gaining access to experts required to pursue innovation.

Interestingly, the local regulatory landscape is highlighted as a significant inhibitor by most, but an enabler by some. The inhibiting nature of the regulatory landscape lies in increasingly extensive and complex regulation and the associated impacts on time and costs of compliance. Additionally, consumer insights have become a critical input for many new innovative products or systems, but stronger policies such as POPIA, have significantly reduced the way in which third-party consumer data can be tracked and used.

These regulations around data protection are creating complexities for online businesses, especially ones that operate across borders, to ensure compliance in protecting data that may need to cross borders. In a digitally-enabled environment, there are a lot of data points being collected, used, and shared, and managing those responsibly becomes challenging.

The regulatory landscape for consumer products that package their products is also becoming increasingly challenging. Changes to regulations mean changes to packaging, which incur large costs. On-pack information must always be accurate and up to date, but changes in the markets, regulations, supply, etc. are happening faster than the packaging can be printed.

CONSUMER: EXTERNAL FACTORS



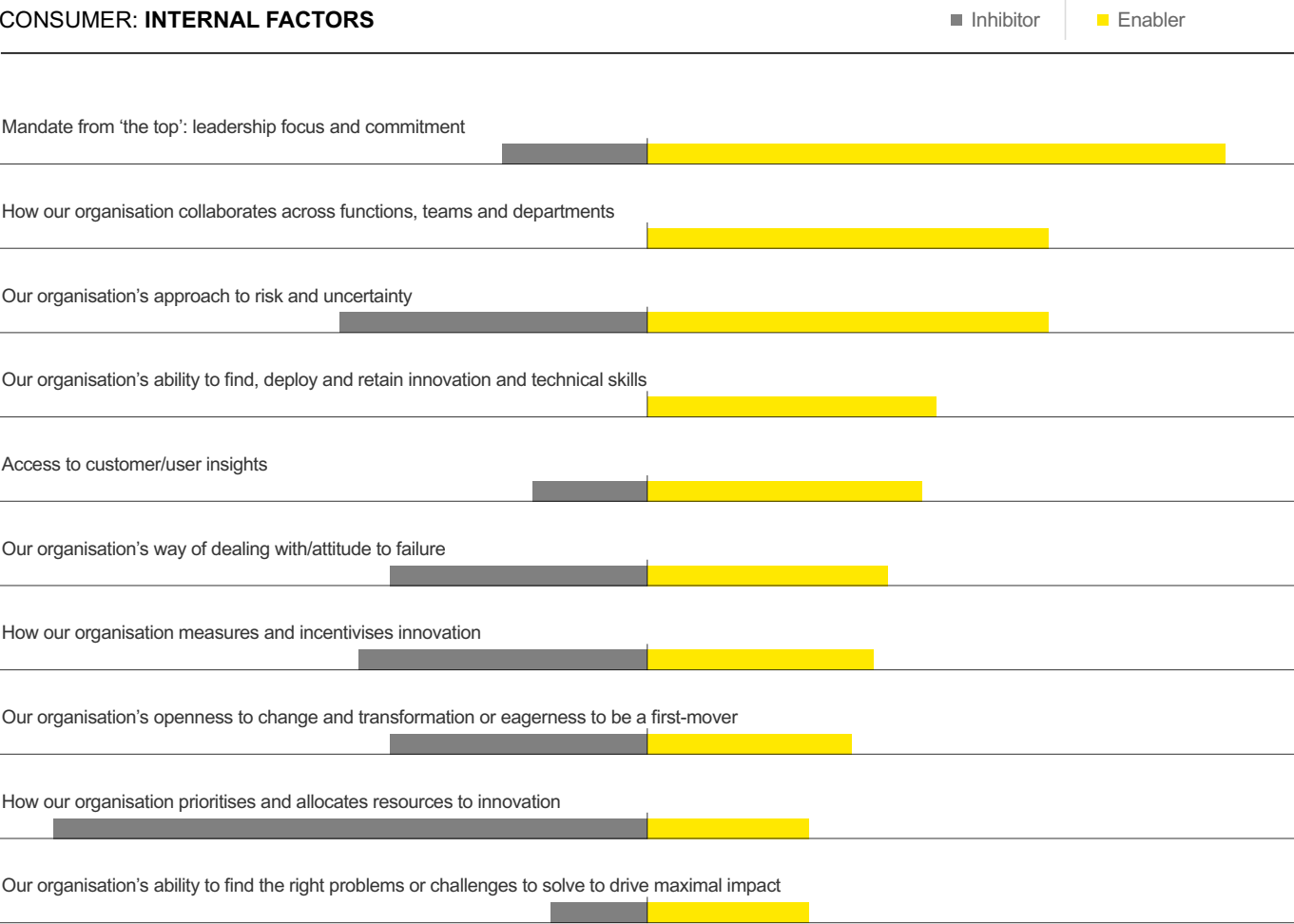
The scarcity of high-quality skills and talent in the SA market is a significant inhibitor of innovation, especially digital skills. This is a significant impediment across sectors, a significant systemic challenge for the country and, if left unresolved, will impact growth.

Organisations capable of tapping into the resource pool of a global network are somewhat shielded from this, as they can bring in skills when required.

Geopolitical developments present challenges in terms of political change and uncertainty felt within the country. The consumer sector highlights this as a factor because geopolitical risks create supply chain pressures. Production disruptions in mainland China and elevated risks to international logistics, including sea and air routes for vital shipping lanes, continue to put pressure on companies. Similarly, the Russo-Ukrainian War has strained access to supplies and supply chains globally.

These global geopolitical issues have a significant impact locally in South Africa (its consumers and companies), a country dependent on many others for imports and characterised by a weak exchange rate. Socio-economic factors such as local unrest, a very high unemployment rate, and inflation volatility also contribute to these challenges.

CONSUMER: INTERNAL FACTORS



Leadership focus and commitment were identified as the top internal enablers in pursuing innovation. When the drive towards innovation emanates from leadership and a clear mandate is established, the rest of the organisation is more easily inspired, guided, resourced, rewarded, and motivated to foster a culture of innovation. It is the style and culture of leadership that also sets the tone around accepting failure for learning and a mandate to prioritise resources towards innovation. If there isn't commitment from leadership, then one would expect that some of the inhibiting factors outlined become prevalent.

The ease of collaboration across the business is also highlighted as an important internal enabler, something which can be hard to achieve within large organisations, especially for organisations spanning a large part of value chains.

Here, a defined innovation strategy and capability or team to integrate efforts and orchestrate collaboration across business areas become critical building blocks.

During discussions with organisations, the complexity of production operations and legacy technology infrastructure often make implementing change or transformation a significant challenge.

This complexity can lead to an aversion to risk and uncertainty, as well as the possibility of failure.

7.3 HEALTHCARE

Participating organisations in this sector comprise providers of medical services, retailers and providers of Healthcare products and support systems.

The Healthcare sector in South Africa falls within the mid-tier range on BCX Digital Innovation Index, showcasing a spectrum of digital innovation efforts, ranging from nascent to more mature initiatives. The nature of South Africa's Healthcare sector is characterised by diverse characteristics and capabilities, featuring a dual Healthcare system. This system comprises a well-established private sector catering to those who can afford private health medical aid and services, alongside a public sector aimed at serving the majority of the population.

To address Healthcare inequities and enhance Healthcare infrastructure, Healthcare providers are motivated to innovate across various facets of the Healthcare system. These areas include disease burden diagnostics, treatment, and prevention; government initiatives and the regulatory environment; research and development; technological advancements; as well as global and local partnerships, entrepreneurship, and start-ups.

Healthcare organisations that fall into the maturing category exhibit individual departments with clearly defined innovation strategies guiding their efforts. 'Innovation' and 'digital' are integrated into their corporate strategies and effectively communicated across the broader business.

As organisations aspire to excel in their digital innovation endeavours, they can find direction by implementing well-defined innovation strategies that align with their overarching organisational goals. These strategies should guide efforts that are widely understood and effectively communicated throughout their respective organisations.

The COVID-19 pandemic has significantly reshaped the Healthcare sector on a global and local scale, accelerating the integration of technology into the industry. It has underscored the importance of increased collaboration, data-sharing, and digitalisation in responding effectively to health crises. This has ushered in an era of Healthcare transformation, where resilience, adaptability, and innovation are pivotal in addressing the ever-evolving challenges in global and local health.

Furthermore, the Department of Health's digital health strategy has fostered an environment of innovation for Healthcare organisations in South Africa.

This strategy has been instrumental in driving the need for innovation in the sector.



1.

Changing consumer behaviours and expectations.

Consumer behaviours in the South African Healthcare sector are dynamic and responsive to a wide range of factors. As these factors change or evolve, so do consumer preferences and behaviours when seeking and accessing Healthcare services. Several factors, including the availability of health technologies, telemedicine, and health apps for customers, heightened awareness of potential health crises like COVID-19, shifts in cultural beliefs and social norms, as well as alterations in Healthcare policies and regulations, have compelled organisations within this sector to develop innovative solutions. These solutions aim to either establish them as market leaders or prevent them from lagging behind their competitors.



2.

The emergence of disruptive players or business models in lateral industries and their own industry.

As noted earlier, there is a growing need for organisations to be aware of industry players who are developing new and improved solutions. These solutions not only pose a competitive challenge but also offer collaborative opportunities in the Healthcare sector. Innovation in the Health Insurance industry, for example, necessitates a parallel innovation effort by Health providers and other industry players to support innovative business models.



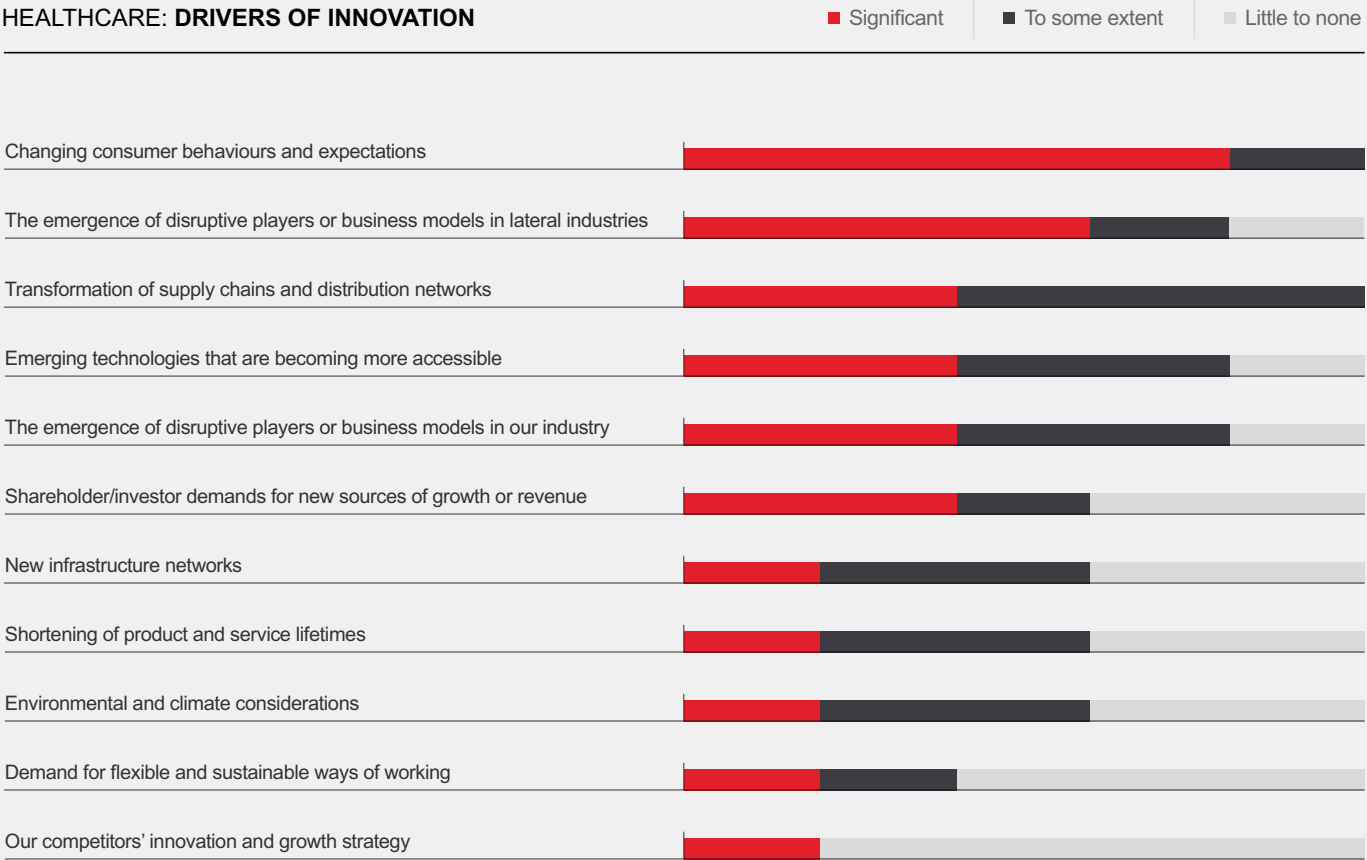
3. Transformation of supply chains and distribution networks.

The transformation of supply chains and distribution networks is leading to an increased emphasis on efficiency, resilience, and accessibility within the Healthcare sector. Some factors that are becoming increasingly important for organisations in the sector to consider include understanding how streamlined supply chains can lead to efficiency gains (reduced costs and wastage, as well as increased availability of supplies), digitalisation, the expansion of telemedicine, the reduction of Healthcare disparities, and the improvement of environmental sustainability.



4. Emerging technologies that are becoming more accessible.

Emerging technologies that are becoming more accessible to patients are profoundly impacting the Healthcare sector in South Africa, ushering in a new era of innovation and transformation. The sector is witnessing a surge in patients utilising tools such as smartphones to access medical advice, AI and machine learning, health informatics, the Internet of Things, and wearables, among others. This trend places organisations in a position that necessitates innovation.



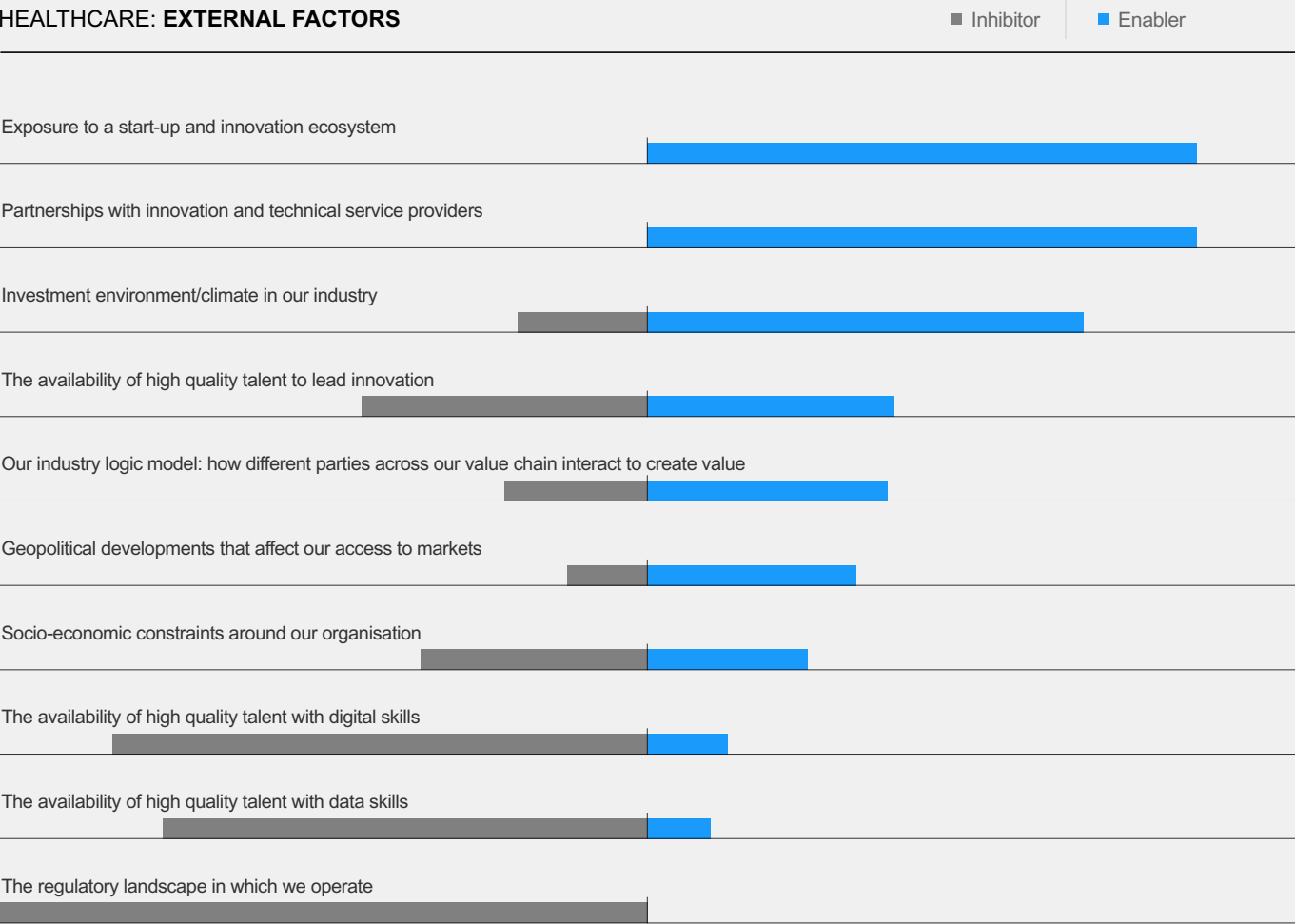
Examining the Innovation Enablers within the external environment in the sector:

Emerging as prominent external factors are organisations' engagement with start-up and innovation ecosystems, as well as their collaborations with innovation and technical service providers. Both signify a shift towards relational efforts and partnerships with leading innovation thinkers in the sector, propelling organisations in their innovation endeavours.

Closely trailing behind is the investment climate within the Healthcare industry. The Healthcare sector is witnessing a surge in investment initiatives aimed at addressing Healthcare challenges, enhancing infrastructure, and fostering innovation.

It's worth noting that the sector's emphasis on digital health, driven by providers and market players, is acting as a catalyst, driving organisations towards innovation.

HEALTHCARE: EXTERNAL FACTORS



Conversely, the following factors experienced in the external environment are found to inhibit and create blockers for innovation efforts and ambitions:

1. Healthcare regulatory landscape

Organisations within the Healthcare sector highlight certain regulatory obstacles stemming from the government's lack of an open stance towards the adoption of new technology. This, in turn, places limitations on innovation and collaboration between the private and public Healthcare sectors. Regulatory and policy constraints also encompass concerns regarding the impact of the National Health Insurance (NHI) on the private Healthcare industry. However, it's noteworthy that the South African Medical Association has called for clear and transparent governance structures within the NHI framework to promote inclusivity among all Healthcare professionals and stakeholders.

2. High-quality skills and talent

Leadership in innovation and the contribution to data and digital capabilities are crucial in the Healthcare sector. Investment in the attraction and development of such talent will play a pivotal role in advancing Healthcare services and addressing the evolving needs of patients and Healthcare providers in South Africa.

3. Socio-economic factors

The South African society and economy are marked by various disparities, including income inequality, health-related behaviours (such as diet, exercise, smoking, and alcohol consumption), urbanisation, and economic instability, among others. These factors create mounting pressures for organisations within the Healthcare sector and, consequently, impede their innovation efforts.



Driving and enabling organisations towards innovation in their internal environment are a wide span of factors including:

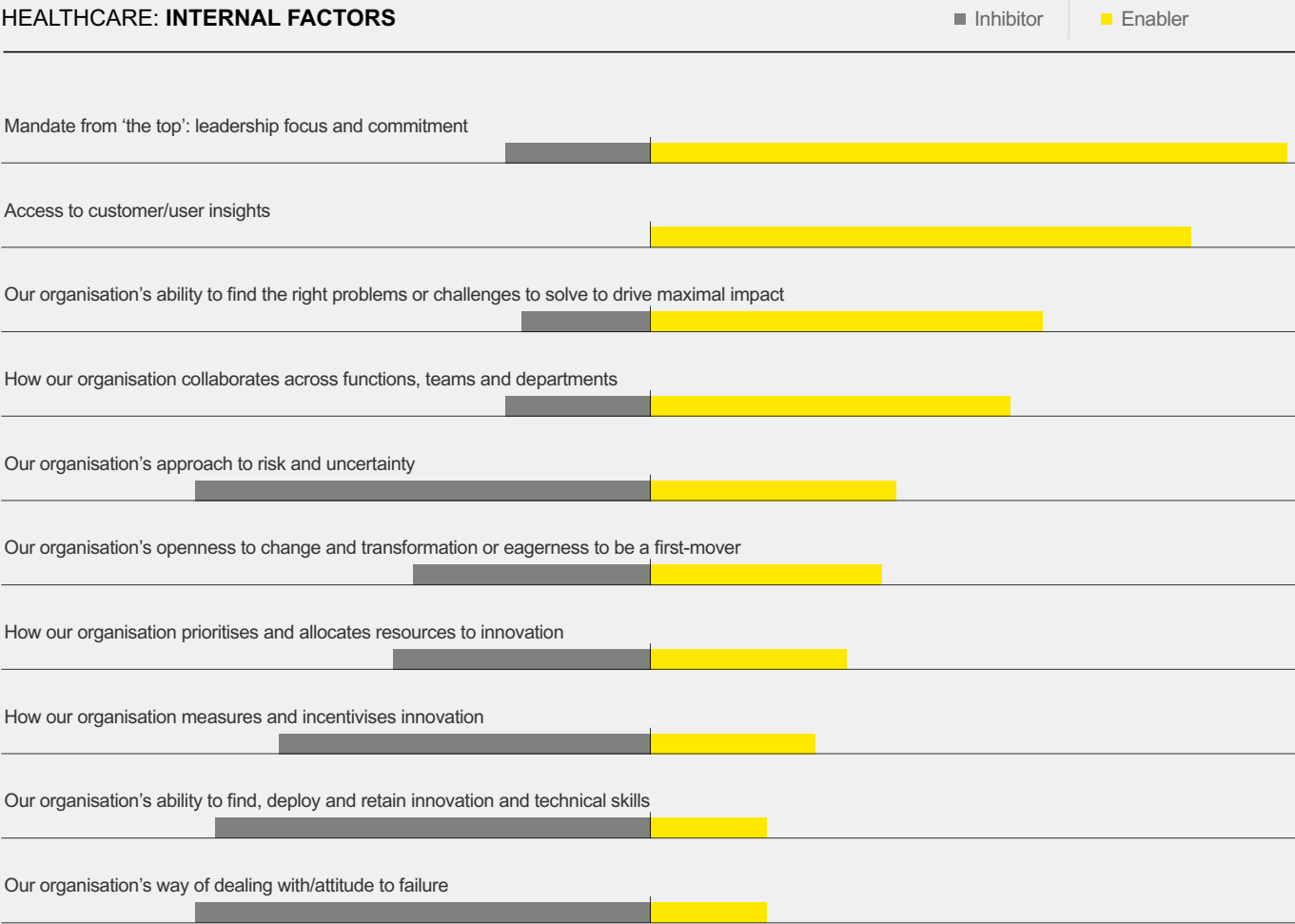
1. Mandate from ‘the top’: leadership focus and commitment

A strong emphasis on leadership at the highest levels of organisations tends to foster a culture and work environment that is highly motivated and performance-driven. Such healthy cultures enable organisations to seize greater opportunities for innovation, thanks to the guidance of dedicated and committed leaders. Organisations that excel in innovation often attribute their success to the unwavering commitment of their leadership.

2. Access to customer/ user insights

Gaining valuable insights from customers or users empowers organisations to strive for innovation excellence. Continuously enhancing their offerings in ways that ensure both customer and patient satisfaction becomes the driving force behind their innovation endeavours.

HEALTHCARE: INTERNAL FACTORS



Although considered as potential enablers of innovation, organisations’ approach to risk, uncertainty, and their attitude towards failure are often found to hinder progress within the Healthcare sector. This underscores the importance of fostering cultural norms that promote a ‘fail fast, learn quickly’ mindset, which is indispensable for driving innovation.

From a ‘people’ perspective, organisations also identify inhibitors related to their ability to locate, deploy, and retain innovation and technical skills. Additionally, they grapple with how to effectively measure and incentivise innovation, as well as how to allocate resources to support innovative initiatives.

Furthermore, organisations have voiced concerns about communication issues and siloed entity structures within their setups, which act as obstacles to innovation.

These challenges underscore the need for Healthcare sector organisations to comprehensively address talent and people agendas as part of their strategic growth efforts. Such efforts are essential for achieving innovation excellence, particularly in the face of mounting pressures affecting the people agenda, including the policy environment, competitive landscape, and economic and business conditions.



7.4 ENERGY AND NATURAL RESOURCES (ENR)

Organisations involved in the mining, extraction, manufacturing, distribution and retail of natural minerals and other geological materials, and the by-products thereof.

It has never been more crucial for organisations in the ENR sector to be intentional about their investments and the allocation of their limited resources. The transformational forces of decarbonisation, digitisation, cost constraints, and geopolitical unpredictability demand a careful balance between addressing immediate commercial pressures and reconfiguring businesses for the future. Increasingly, organisations in this sector find it challenging to achieve interim net zero targets, alongside productivity and revenue objectives, compelling them to re-evaluate strategies to stay pertinent.

In gauging how local ENR organisations approach innovation, the majority resonate with the 'Emerging' category of Innovation Excellence. The most pronounced distinction between lower and higher-ranked organisations is that the latter have instituted formal internal roles to oversee and coordinate innovation efforts throughout the organisation. Another notable variance is that organisations in the 'Maturing' and 'Excellent' brackets have a distinct process whereby digital and innovation concepts transition from pinpointing a business challenge to solution development and scalability.

These two aspects signify a commitment to allocating resources for innovation and an adherence to experimental methodologies that bolster successful innovation results.

As anticipated in an industry traditionally laden with assets and characterised by prolonged investments, every organisation conveyed their aversion to risk.

A significant 86% highlighted that their business procedures either don't account for uncertainties or their organisation aims to limit failures and sidestep risks when delving into new initiatives or ventures.

This stance presents a challenge when adopting the experimental methodology essential for innovation endeavours.

The top drivers of innovation within the ENR sector:



1. Environmental and climate considerations.

Environmental and climate factors profoundly influence the strategies and innovation endeavours of ENR sector organisations, given that ESG demands attention across all operational facets. Several prominent areas ripe for ESG enhancement, such as bolstering diversity, equity, inclusion, mine closures, and rehabilitation, are not novel. However, the evolving nature of ESG necessitates newfound expertise in areas like water stewardship and biodiversity.

Stakeholder expectations are expanding to encompass enhanced risk and opportunity evaluations, transparent reporting, outcome-driven metrics, and assurance. Innovation presents avenues for ENR organisations to adapt to an evolving future and fulfil these anticipations.

Firms that critically assess and adapt their business models now can gain a competitive advantage as demand and expectations evolve.



2. Transformation of supply chains and distribution networks.

Recent worldwide upheavals have heightened the need to hasten supply chain evolution to withstand fluctuations better and uncover avenues for enhancing efficiency, resilience, and clarity. ENR organisations are contemplating advanced, innovative methods to alleviate supply chain risks, encompassing fortified supplier relationships and collaborative agreements.

It's the infusion of digital innovation and emerging technologies that power this shift, facilitating marked improvements in cost, productivity, and safety.



3.

Changing consumer behaviours and expectations.

Lately, there’s been a notable change in how investors, customers, and the wider society perceive value, acknowledging the extensive effects - both favourable and adverse - of an organisation’s actions. Consumers are becoming more motivated by social and environmental principles. ENR organisations must prioritise defining their purpose, utilising it to fortify their brand and convey worth to their consumers.



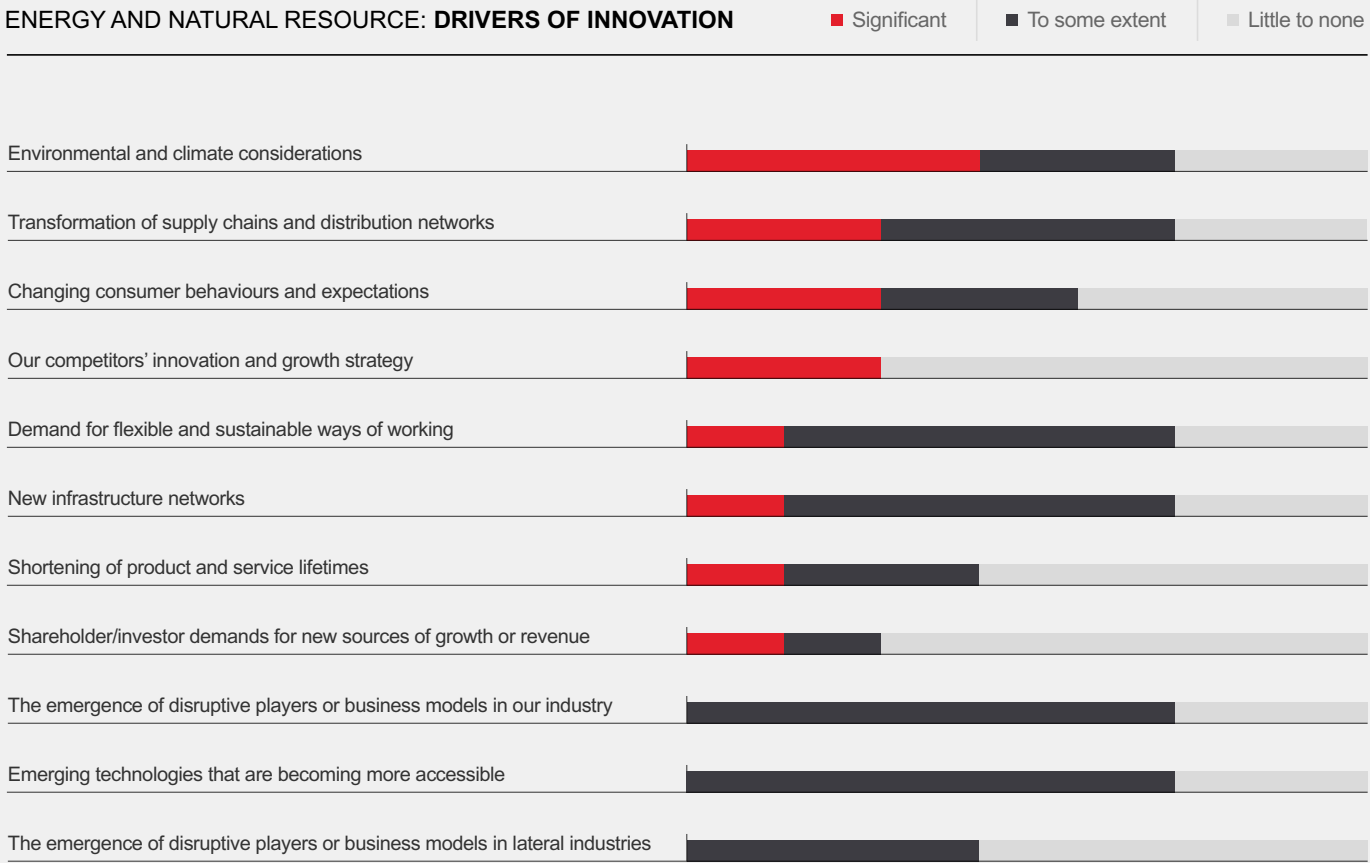
4.

Demand for flexible and sustainable ways of working.

Amidst this changing landscape of values, the sector anticipates a need for varied workers, possessing diverse skills and unique work priorities, to evolve into a more digital, data-centric, and streamlined industry.

Embedding innovative strategies into workforce planning and establishing a blueprint that guarantees the requisite talent aligns with future business needs is paramount for a sustainable future in the workplace. To source talent with essential ENR skills, the sector must reconsider its methods of attracting, nurturing, and retaining talent, especially as younger workers might be dissuaded by the mining industry’s reputation and their inclination for flexible work schedules and locations.

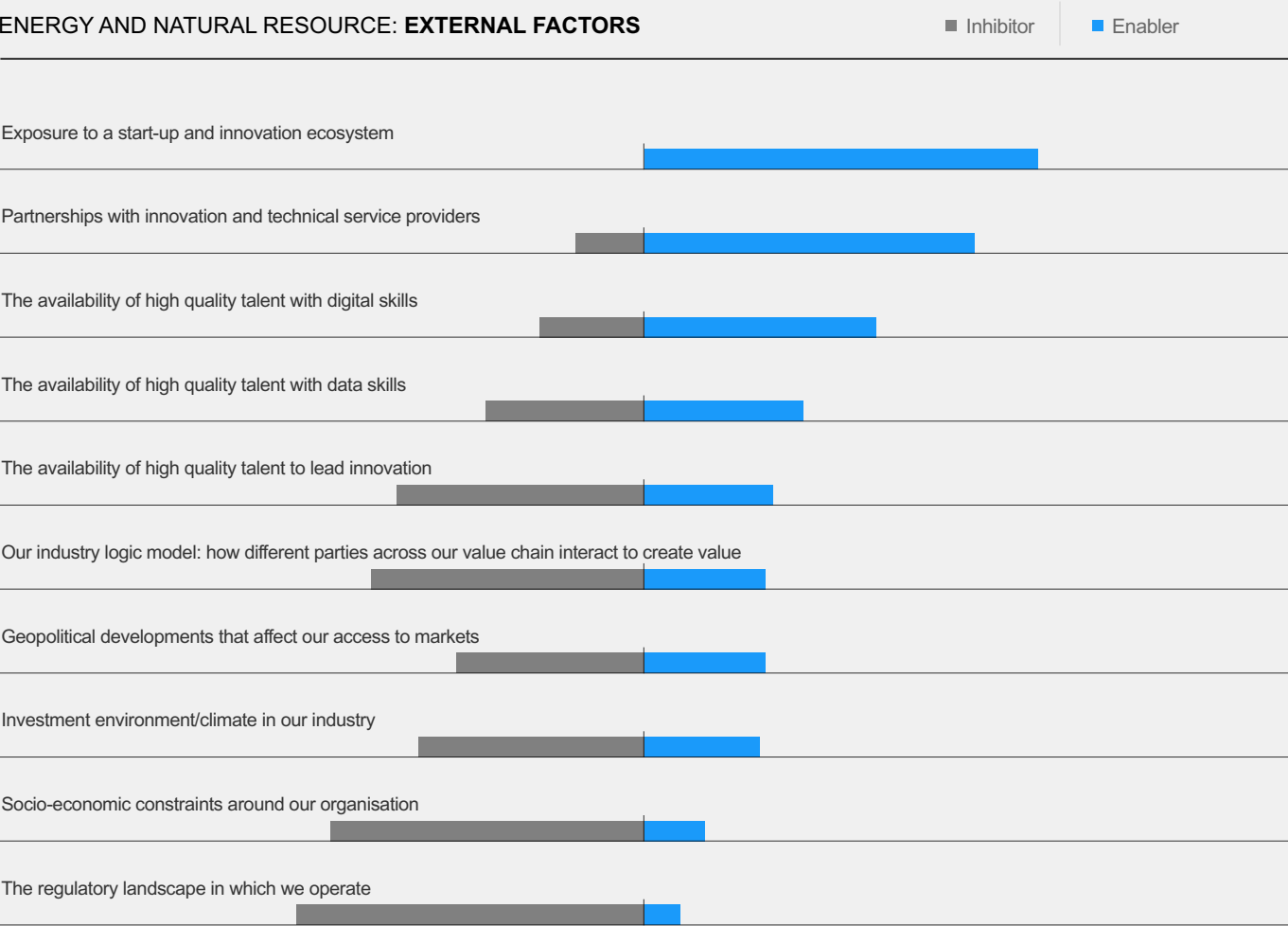
Furthermore, infrastructure networks, particularly in energy, are changing. The energy transition is altering demand patterns, with companies pivoting by investing more in “future-oriented” commodities like copper and lithium, divesting coal assets, and adopting forward-looking innovative business models.



In pursuing growth and innovation, the following factors experienced in the internal and external environment are found to enable or inhibit efforts and ambitions:

Within the ENR sector, organisations pinpoint their interaction with start-up ecosystems and innovation, as well as partnerships with innovative and technical service providers, as significant enablers in the external environment. These organisations acknowledge that collaborations with such agile businesses, and the skillsets they offer, bolster the evolution and expansion of innovative ideas within the broader organisation.

This strategy mitigates the extent of investment and productivity loss needed, especially given the restrictive circumstances that hamper the ability to invest in enduring skills and capability.



Such partnerships become indispensable when seeking expertise in innovation, digital, and data realms due to the pivotal role of these skills in spearheading digital innovation ventures. The lack of access to talent possessing the requisite competencies is a substantial hindrance. Many organisations particularly highlighted the difficulty of sourcing such skills within South Africa. The challenge isn't merely the limited supply of talent in these areas; the ENR sector grapples with the allure of drawing talent into the sector, given its waning appeal in the job market. Upcoming generations entering the workforce perceive the ENR sector as misaligned with their personal values and mission.

The investment landscape elicited diverse reactions, with some viewing it as a facilitator and others as a constraint. A few noted the robust investment directed towards digital and innovation, while others remarked on the cash flow challenges many ENR organisations face, restricting funds for fresh ventures. Nevertheless, it's vital to contemplate ways to channel investments into growth and transformation, all the while retaining a stringent focus on capital discipline.

ENR organisations, characteristically laden with assets and infrastructure, grapple with the challenge of enhancing current business performance, judiciously discarding outdated inefficiencies, and concurrently forging the enterprises of the future - all with alacrity.

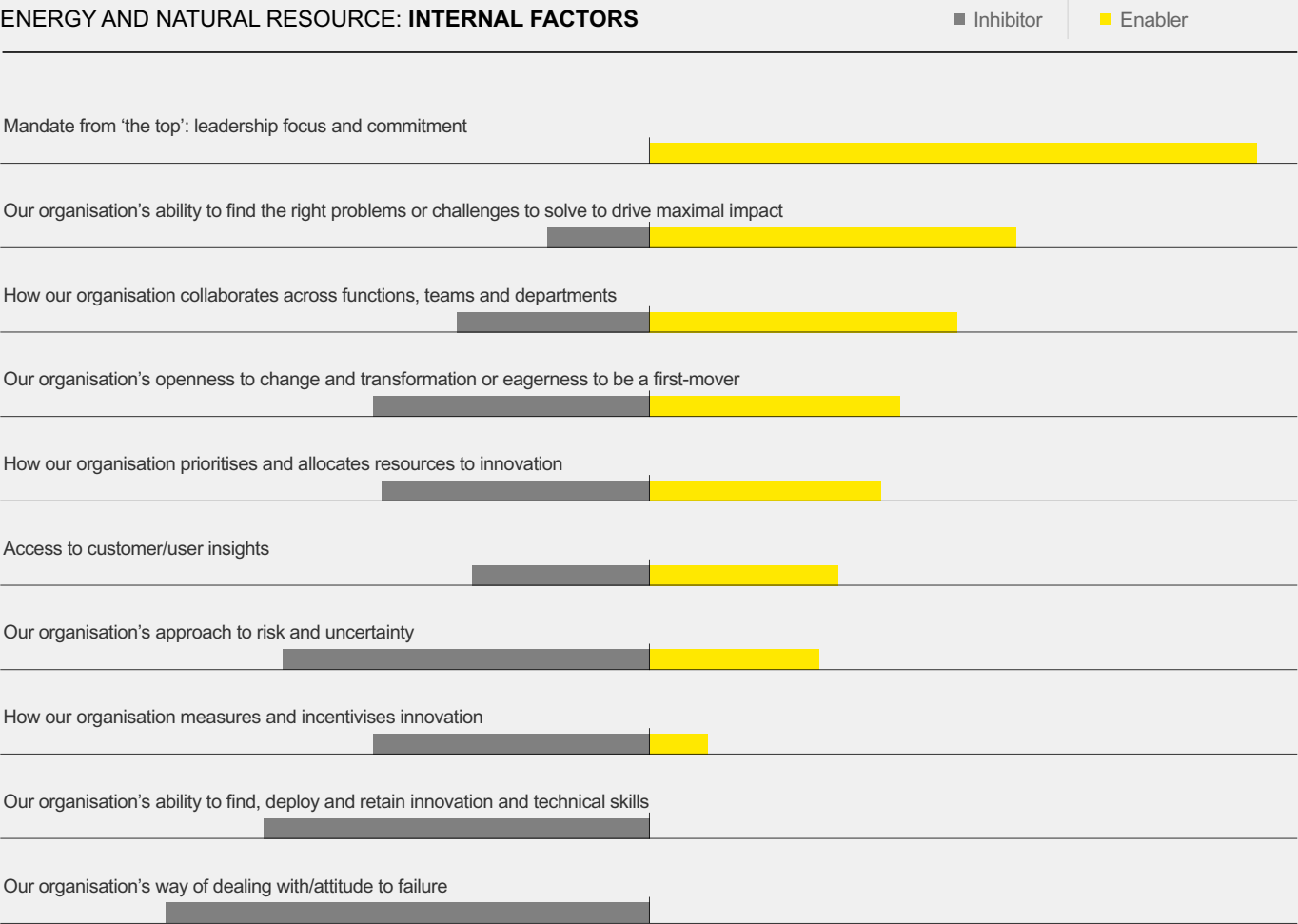
A prominent factor recognised as both a facilitator and impediment is the industry's logic model, which examines the interactions among various entities across the value chain to generate value. The agility and responsiveness can be constrained due to the substantial scale of many groups within the ENR sector, several of which have global operations and vital stakeholders like governments that necessitate close collaboration. However, this model proves advantageous when stakeholders cooperate, such as teaming up with OEMs for joint problem-solving through co-designed solutions.

The predominant constraining factor that organisations encounter from the external milieu is the regulatory framework. A sentiment echoed by several organisations is the perception of the sector being excessively regulated within South Africa.

While the paramount significance of regulation and policies is indisputable, particularly in ensuring safety, such regulation often stymies innovation and digital transformation due to the constraints it places on machinery and subterranean operations. The intricacy and sheer volume of regulations demanding compliance present a disconcerting barrier to the exploration of novel solutions, which could greatly enhance the very operating conditions that regulation aims to safeguard.

Given its historical stature as a substantial employer and contributor to the South African economy, socio-economic elements profoundly influence ENR organisations. There's an intensified scrutiny on ENR entities concerning their support for communities affected by their operations.

ENERGY AND NATURAL RESOURCE: INTERNAL FACTORS



The most pronounced enabling factor within the internal business environment is the unequivocal and dedicated mandate from leadership. Such a mandate naturally leads to the prioritisation of, and investment in, innovation endeavours. Organisations emphasised that this commitment also engenders close collaboration and robust support from leadership to delivery teams.

This commitment reinforces the next highly ranked enabler: the organisation's aptitude in pinpointing the right problems or challenges to address, thereby maximising impact. Firms highlighted that this is facilitated by a culture that promotes an objective evaluation of performance rather than an emotional one. Concentrating on the correct issues ensures a higher return on investment.

How organisations earmark resources for innovation is another significant enabler within the internal landscape. Yet, a direct challenge to this is the organisation's capacity to identify, utilise, and retain innovation and technical expertise — a factor ranked high as an internal barrier. The interplay is evident: while an organisation might prioritise innovation when resources are allocated, the necessary skills for the initiative might be lacking. Firms noted the increasing difficulty in attracting and subsequently retaining the right talent, resulting in compact innovation teams overwhelmed by their workload. Furthermore, when budgets tighten, innovation is often the first area to experience cuts, exacerbating capability deficits.



A notable inhibitor for ENR organisations, which further decelerates innovation, is the firm's approach to failure. This attitude significantly influences the prioritisation, development, and scaling of identified solutions. Many commented that their leadership, accustomed to navigating numerous regulatory requirements, instinctively questions novelties, resulting in slower adoption or outright obstruction of innovation. Moreover, the manner in which organisations measure and incentivise innovation was also highlighted as a major internal barrier. Absent the motivation stemming from effective performance metrics and incentives, there's little impetus for employees to take initiative or assume added responsibilities.

The organisation's stance on failure, combined with its approach to risk and uncertainty, was underscored as a major internal impediment to innovation.

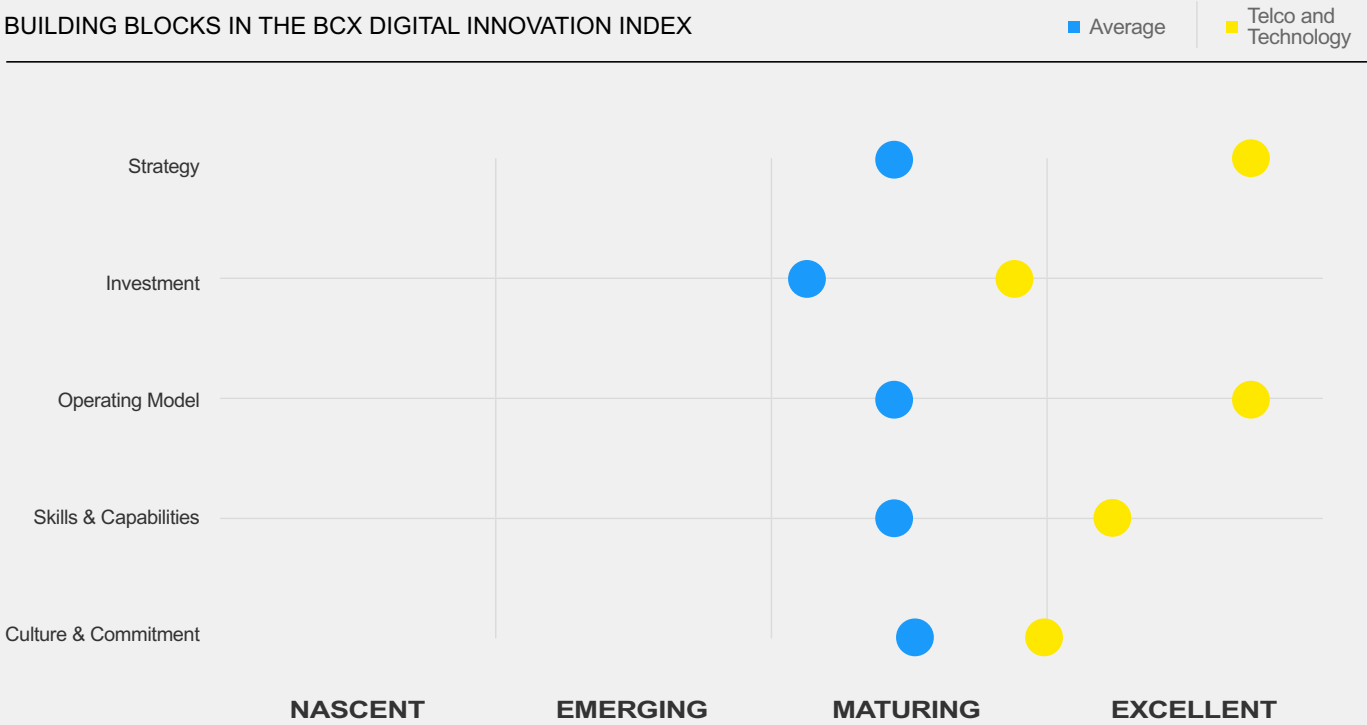
The inherent resistance to change, like altering work methods, significantly influences the approval rate and market introduction speed of digital or innovative initiatives. Some proposed that this might be the driving force behind the demand for a unique process detailing the progression of an idea from problem identification to solution development and expansion.

It's intriguing to observe the nearly equal divide regarding ENR organisations' receptiveness to change and their pioneering spirit. All firms ranking this factor, be it as an enabler or barrier, placed it within their top three. This highlights the varied emphases organisations within the sector assign to market disruption. Some lean towards a proactive stance, while others adopt a more reactive approach due to variables such as alignment of digital and innovation to overall strategy, investment availability, or access to necessary capabilities.

7.5 TELCO AND TECHNOLOGY

The participating organisations comprise multinational telecommunication providers of wired and wireless voice, messaging, data and integrated communications solutions and technology product & service providers.

TECHNOLOGY SECTOR OUTPERFORMS OTHERS ACROSS ALL FIVE BUILDING BLOCKS IN THE BCX DIGITAL INNOVATION INDEX



As pioneers facilitating the digital revolution, telco and technology organisations might be expected to possess advanced innovation capabilities. Indeed, on average, entities in this sector outperform others across all five building blocks in our BCX Digital Innovation Index. One differentiating factor among these players appears to be the extent to which innovation is practised. Specifically, whether these initiatives encompass the entire business or remain confined to innovation teams or dedicated working groups.

Innovation emerges as a pivotal strategic priority across the board. All respondents describe an innovation strategy that aligns with the broader Group strategy, is documented, and disseminated throughout the organisation. Organisations falling into the ‘Excellent’ category implement this innovation strategy across their business units, while others may restrict it to innovation teams exclusively.

These organisations consciously invest in innovation. Some maintain dedicated innovation budgets, while others finance compelling innovation initiatives that are given priority. The outstanding players in this sector also have the ability to monitor their innovation projects using metrics and Key Performance Indicators customised for innovation. Conversely, other players rely on standard financial and project metrics to assess their investments in innovation and may overlook the value created by innovation.

External partnerships appear to be the primary driver of innovation for most of these organisations. Some operate with dedicated internal teams. All respondents seem to employ a staged approach to innovation, encompassing ideation, testing, validation, and scaling solutions to address business challenges, although some confine this process solely to innovation teams.

Predictably, these organisations can harness technological and digital capabilities as needed, with some even dedicating these capabilities to innovation. All respondents in this sector acknowledge the necessity of recruiting and training the right talent to drive innovation. Some organisations source and

deploy skilled personnel across their entire business, while others retain them within specialised groups. Several organisations mention the difficulty of finding a sufficient number of skilled personnel, which restricts their ability to drive innovation effectively.

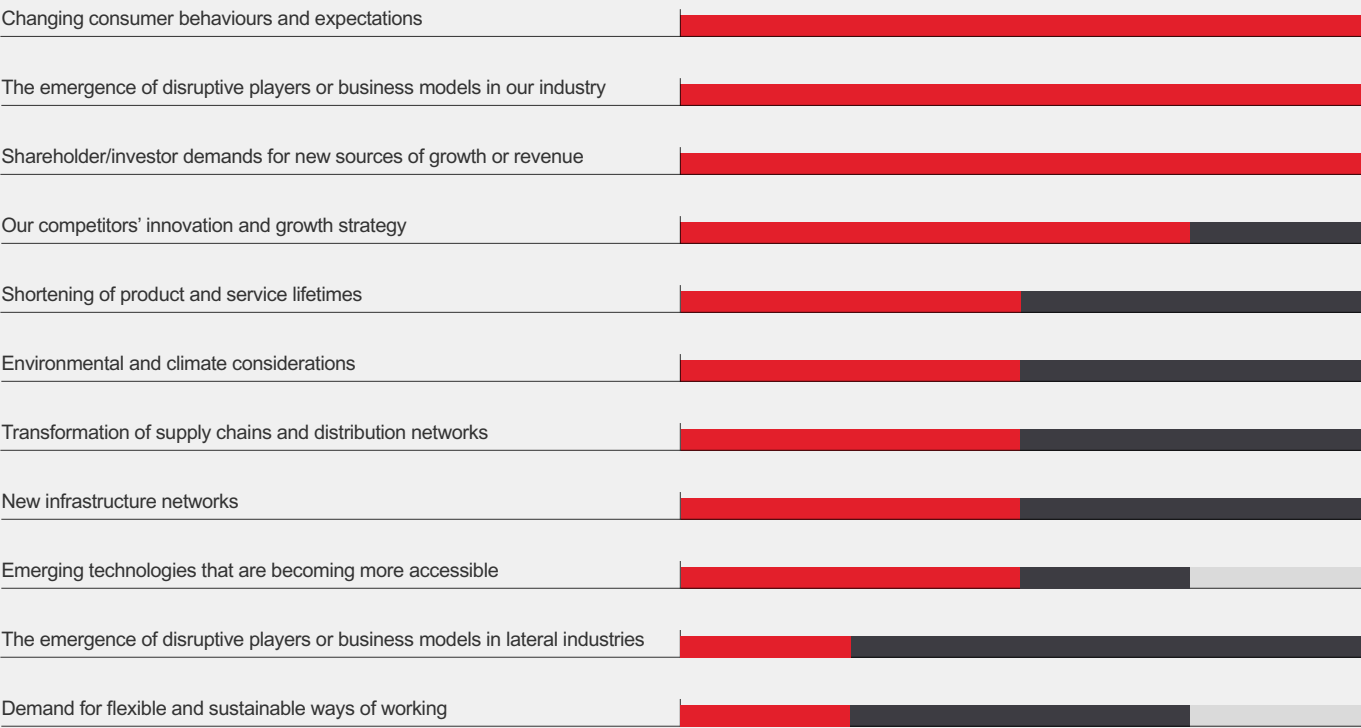
A few organisations have successfully ingrained a culture of innovation, characterised by experimentation and testing, throughout their entire business, whereas others confine such a culture to dedicated innovation teams. Disparities are also evident in how these organisations approach risk and failure, with excellent players adeptly navigating the inherent uncertainty in innovation and learning from their failures. However, most respondents note the challenge of exploring new avenues for growth and innovation while grappling with rigid legacy business processes that do not accommodate risk or failure.





TELCO AND TECHNOLOGY: DRIVERS OF INNOVATION

■ Significant ■ To some extent ■ Little to none



Organisations in the telco and technology sector appear to be highly attuned to their external environment. They anticipate challenges to their positioning in the market, aiming to satisfy shareholder and investor demands for growth. They consider the potential emergence of disruptive players within the sector that could erode their market share, as well as their competitors' growth and innovation strategies, as key drivers behind their commitment to innovation.

Amidst a highly dynamic environment, where consumers' digital and physical lives blend more seamlessly, innovating allows them to continue delivering value through distinctive customer experiences. Some organisations mentioned how maintaining proximity to their customers helps guide their innovation efforts. Addressing distinct customer segments through differentiated experiences can be one further way to drive innovation and retain customers.

Additionally, the ability to integrate physical and digital experiences across entire customer journeys, while simultaneously optimising the backend employee experience to accompany these journeys, can help organisations provide strong value propositions to both their customers and internal stakeholders.

Telco and technology organisations recognise value from working with their wider ecosystem to innovate. Having access to external service providers and a start-up ecosystem allows them to bridge a talent gap. Partners provide specialist skills the organisations need in order to grow without incurring large costs of finding, hiring, and retaining top talent. Partnerships are also a way to de-risk how new avenues of growth and opportunity can be tested. Through partnerships, organisations run fast experiments and learn about what works and what does not on the market, eventually deploying solutions that consumers and internal stakeholders are likely to adopt.

Partners also offer wide geographic coverage, enabling organisations to innovate within South Africa, but also across the wider African continent.



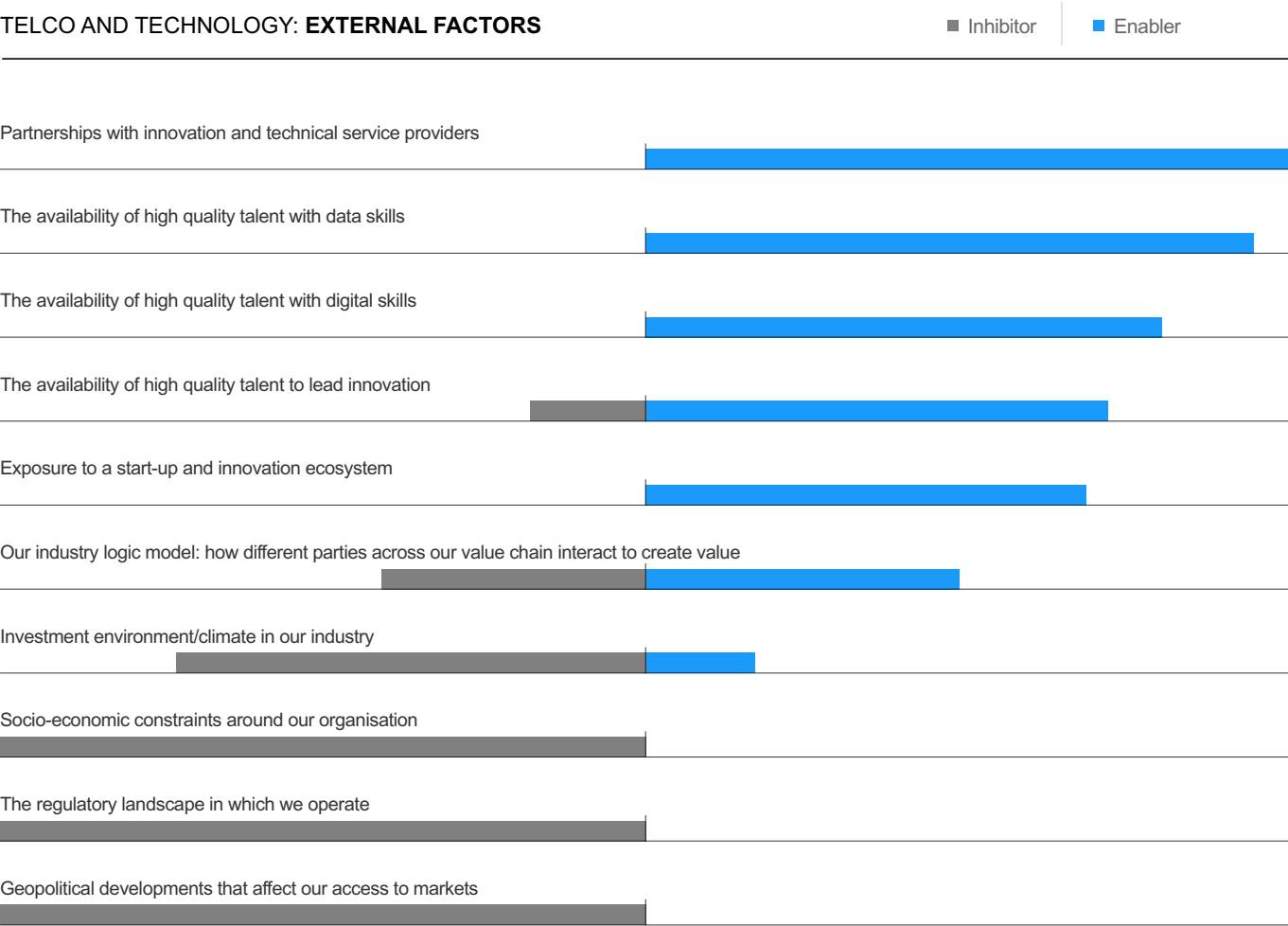
Respondents listed the country’s socio-economic constraints, geopolitical developments, a poor investment climate, as well as regulation as the top external inhibitors to innovation within their industry.

South African households face increasing pressure and are changing their spending habits due to the economic downturn. This affects how telco and technology companies can innovate.

Some organisations tie their innovation budget to their current performance – any negative impact on their performance today can restrict their ability to invest in new growth opportunities through innovation. Some organisations mentioned how socio-economic inequalities can affect the viability of their innovative business models.

The fact that regulation tends to progress more slowly than the rate at which new technologies emerge, and the expectation of consumers for seamless digital and physical experiences, presents a challenge for these organisations in continuing to delight their customers.

In such cases, organisations discover that forming strategic partnerships with a broad network of stakeholders, including local communities and the government, can facilitate their access to markets and customer service. This necessitates reframing constraints from inhibitory to guiding principles for innovation. It also demands the ability to coordinate how ecosystems of partners collaborate to create and capture value in the sector, especially as stakeholder needs rapidly evolve.



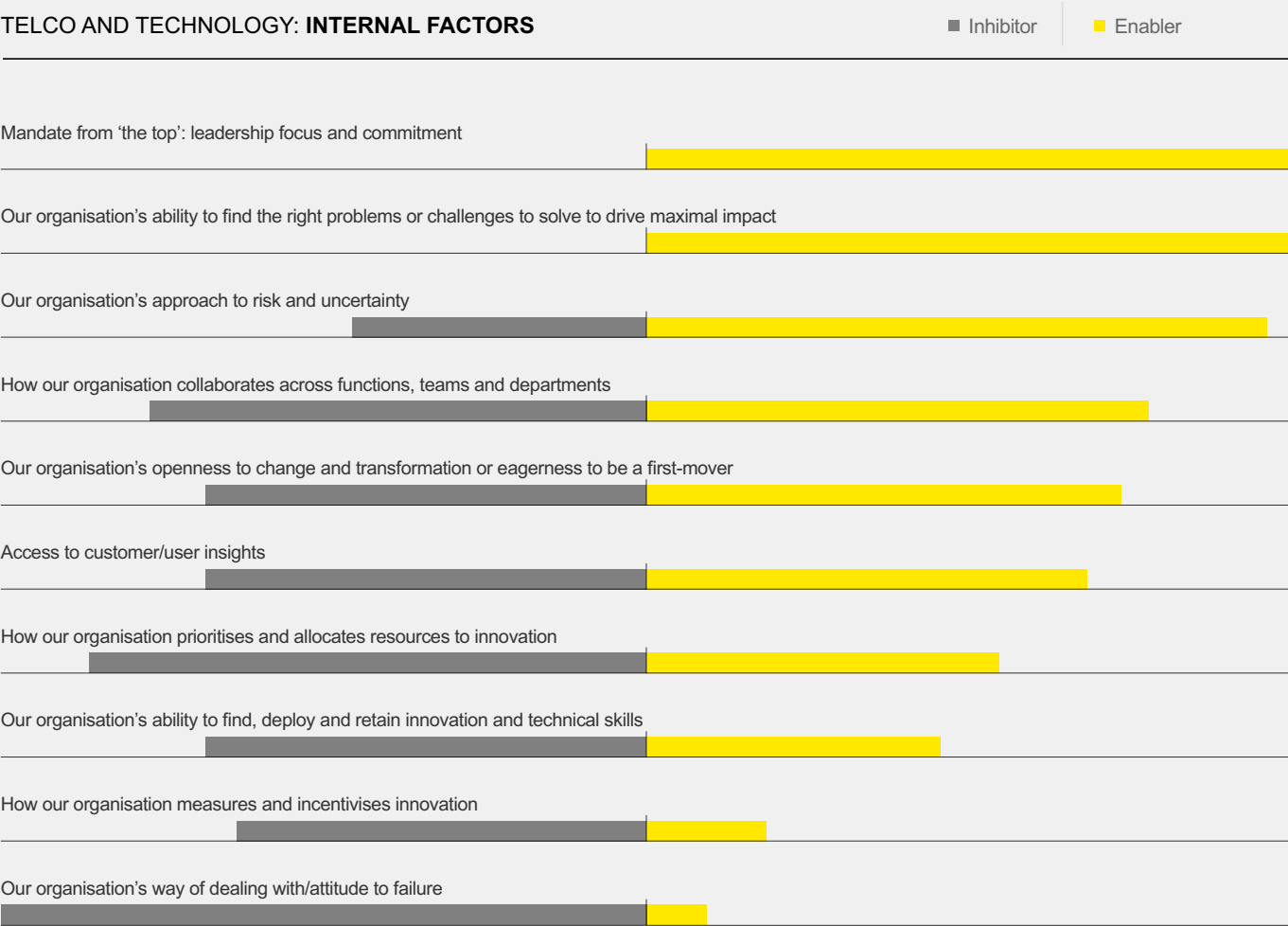
Internally, the success of innovation initiatives relies on leadership’s commitment, while a siloed culture that is averse to failure poses a challenge.

In the telco and technology sector, organisations emphasised the crucial role of leadership in setting the tone and direction for innovation, allowing their businesses to execute accordingly. Without this level of commitment, their initiatives often falter.

Interestingly, these organisations mentioned a risk-averse culture, resource allocation issues, and limited cross-functional collaboration as obstacles to innovation. This suggests that, despite their progress in establishing internal innovation practices, they may encounter difficulties due to legacy operating models, outdated systems, and a fear of failure. Metrics of success might also be misaligned, hindering the ability to experiment, learn from failure, and innovate effectively.

In fact, to innovate successfully, organisations must operate at multiple speeds. On one hand, delivering value to customers necessitates adaptability to their needs and expectations. On the other hand, supporting backend processes must also be flexible. Implementing this can be challenging, especially when the right talent to drive such initiatives is scarce.

This may explain why some organisations achieve greater success by driving innovation within specialised teams.

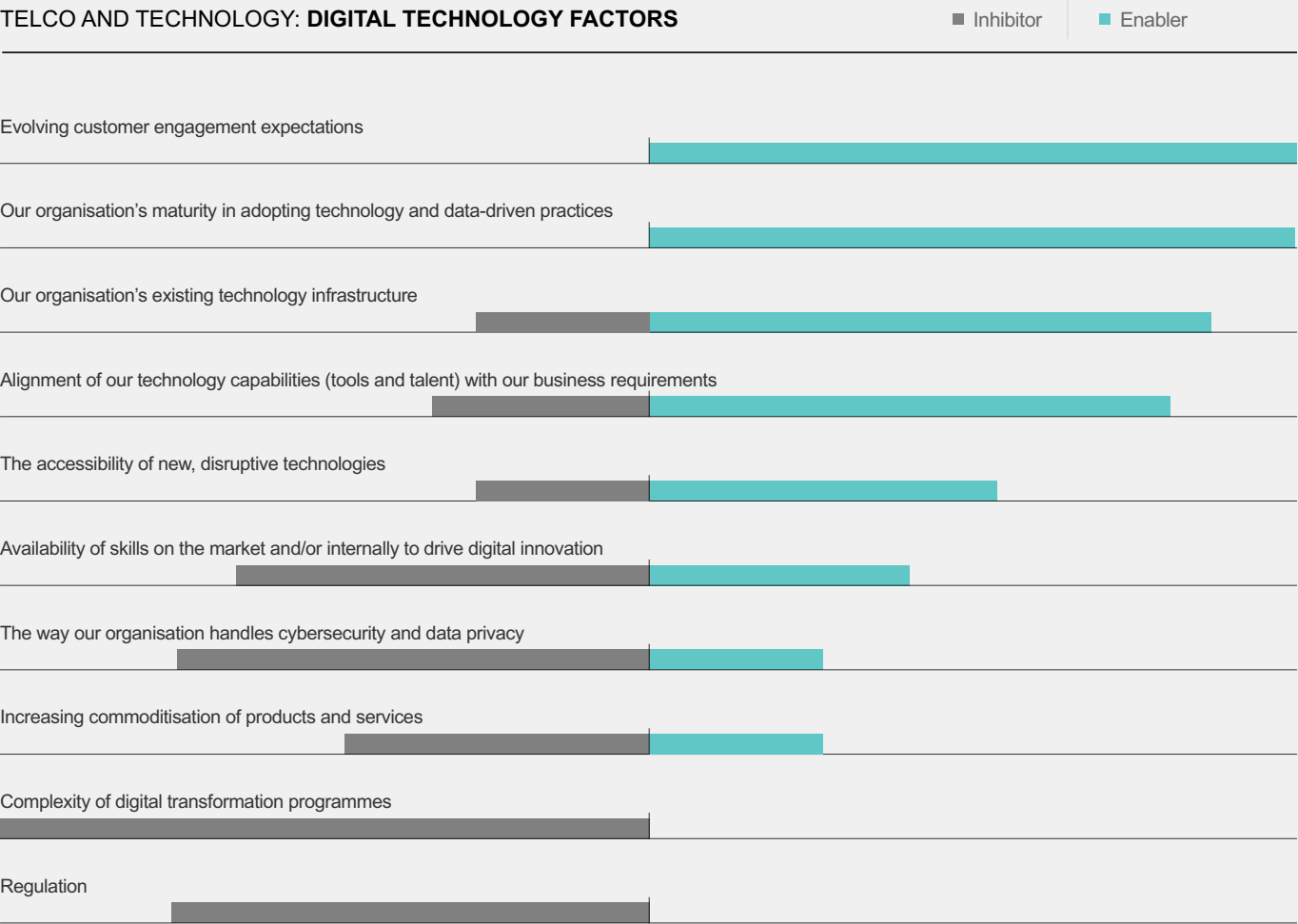


A tug of war between the tech infrastructure, data and regulation and or digital transformation.

Respondent organisations in this sector believe that their technology infrastructure, along with their habitual use of data-driven practices in business decision-making, enables them to innovate. However, regulatory frameworks, which often lag behind the emergence of new technologies, cybersecurity and data privacy requirements, and the complexity of multi-phased digital transformation programs, appear to hinder their ability to move swiftly and explore new avenues for growth.

Organisations might opt to wait for regulations to catch up with emerging technologies before adopting them. While this cautious approach may be prudent for unproven technologies, it can also be risky. By the time regulations catch up, and respondent organisations begin adopting a new technology, their competitors may have already established a successful value creation cycle around the same technology. To avoid losing out to their competitors in this way, organisations may lead small, low-risk experiments to explore use cases when new technologies emerge.

TELCO AND TECHNOLOGY: DIGITAL TECHNOLOGY FACTORS



7.6 AGRICULTURE

In this context, agriculture includes organisations involved in grain production, agricultural marketing, logistics, retailing, and trading products, with a primary emphasis on crops and plantations.

Participating organisations have achieved high rankings on BCX Digital Innovation Index, demonstrating their serious commitment to pursuing innovation within the sector. This commitment is crucial, given the current circumstances.

In an industry influenced by weather conditions and consumer preferences, there will always be a certain level of uncertainty. However, the disruptions we face today, such as the COVID-19 pandemic, have laid bare the fragility of the global food system. The recent conflict in Ukraine has underscored the world's reliance on key commodity producers and highlighted the interconnection between the agriculture sector and industries like oil and gas. Inflationary pressures have led to a sharp increase in fuel and food prices, placing additional strain on agriculture and food businesses.

The world's dependence on the agriculture sector is paramount in sustaining the rapidly growing global population. According to UN projections, the world population is expected to increase by nearly 40% in the next 30 years. The demand for food and other agricultural products is accelerating at an unprecedented pace.

However, demand patterns are shifting, and a smart approach to supply growth is imperative.

Expanding arable land is a significant constraint in the sector's growth and production. To meet the escalating market demand intelligently, it is essential to promote efficient farming practices. Digital technologies and capabilities are being harnessed to enhance crop and livestock yields, fostering innovative farming methods.

In response to these challenges, organisations are leveraging relationships, networks, and partnerships both within and outside the agricultural sector, including counterparts and stakeholders in the value chain. These collaborative efforts play a pivotal role in driving innovation within the sector. Agricultural organisations are increasingly recognising the potential inherent in developing economies, such as the South African economy, and the opportunities presented by modern, digitalised farming practices to sustainably 'feed the world'.

Driving the need to innovate are:



1. **Changing consumer behaviours and expectations.**

Digital devices, capabilities, and the data they generate are providing customers across the value chain with a more extensive view of operations than they’ve had previously. Consequently, they can now make more informed decisions. The availability of information regarding farming practices to the general public is exerting pressure on industry stakeholders to ensure that their farming methods adhere to ethical and sustainable standards. Retailers and consumers are keen to gain insights into how products are grown, processed, and distributed, and this is influencing their purchasing decisions. They are genuinely interested in the ‘story’ behind the products. It’s no longer solely the price that drives product choice.

2. **Shareholder/ investor demands for new sources of growth or revenue.**

Investments within the sector are expanding and diversifying, encompassing novel farming methods, advanced farm machinery, biotechnology, and cloud infrastructure. The sector has successfully harnessed the potential of investment in technology and digital infrastructure, enabling more accurate measurement and mapping of variations. This, in turn, facilitates better-informed decisions aimed at enhancing yields and reducing costs.

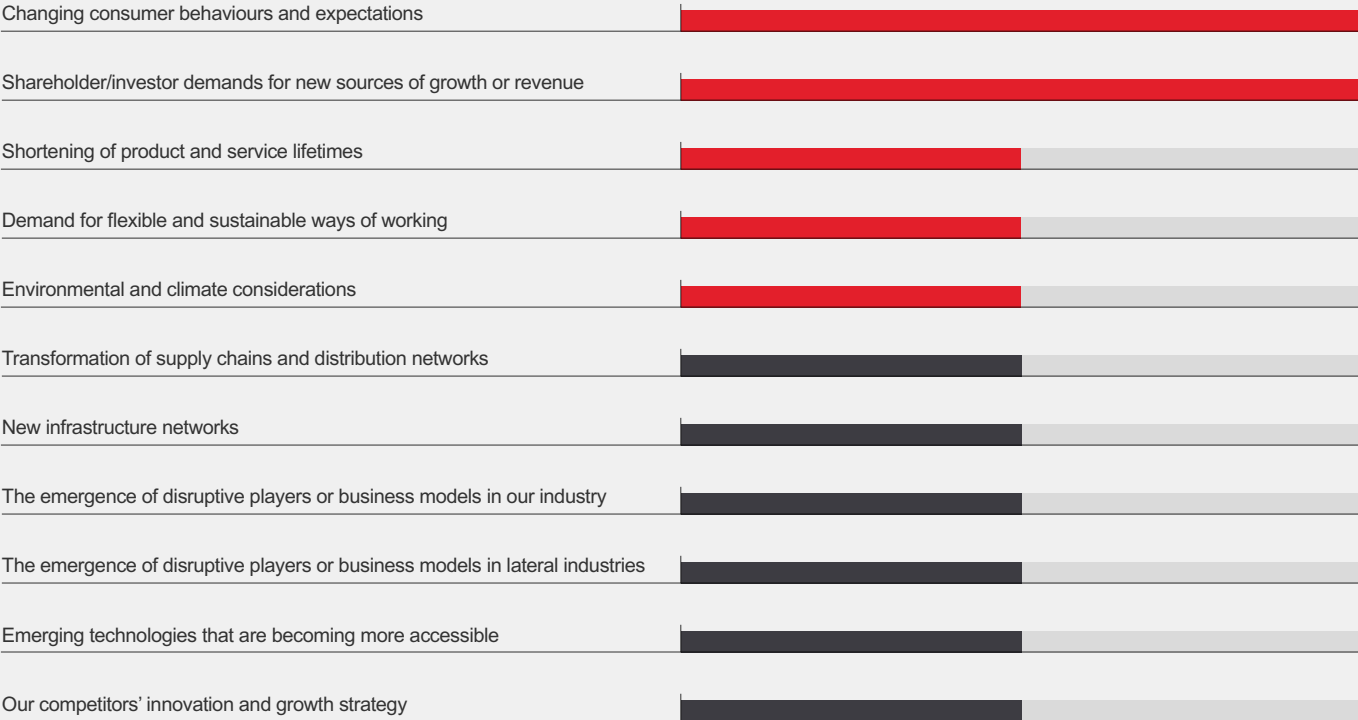
3. **Reduced product lifetimes, flexible and sustainable work demands, and environmental concerns.**

Digital platforms enable new distribution methods, bringing consumers and farmers closer and bypassing intermediaries. Companies are vertically integrating and investing in their supply chains and operations to enhance resilience in their value chains.

As expected, environmental and climate concerns serve as a primary driver of innovation in the sector. Climate change disrupts rainfall patterns, intensifies droughts, and triggers unpredictable weather events, directly impacting crop yield and quality. Sustainable agricultural practices, aimed at addressing present and future environmental challenges, lead to the preservation and restoration of vital habitats,

AGRICULTURE: DRIVERS OF INNOVATION

■ Significant ■ To some extent ■ Little to none



protection against adverse incidents, and improvements in soil health and water quality. In response, innovative solutions are imperative for developing drought-resistant crops, optimising irrigation, and adopting adaptive farming techniques.



In the pursuit of growth and innovation, certain external factors play a pivotal role in enabling and supporting efforts within the Agricultural sector:

The top two enabling factors underscore the significance of collaboration and partnerships in fostering innovation. Increasingly, there's a growing partnership among growers, advisers, suppliers, buyers, and retailers. This collaborative approach allows all stakeholders to collectively address the complex challenges arising from rapid changes and innovations. Together, they co-create solutions that benefit the entire ecosystem. For example, when seed providers, farmers, and logistics companies collaborate, they can develop crop varieties with higher yields and improved suitability for efficient harvesting and transportation. Recognizing that value can be enhanced at various stages fuels the drive for innovation. Post-harvest technology, for instance, can reduce food wastage, resulting in cost savings for distributors and lower prices with fresher produce for consumers. Organisations that may not be vertically integrated but have partnerships within their ecosystem can better serve other stakeholders and consumers in a relevant manner.

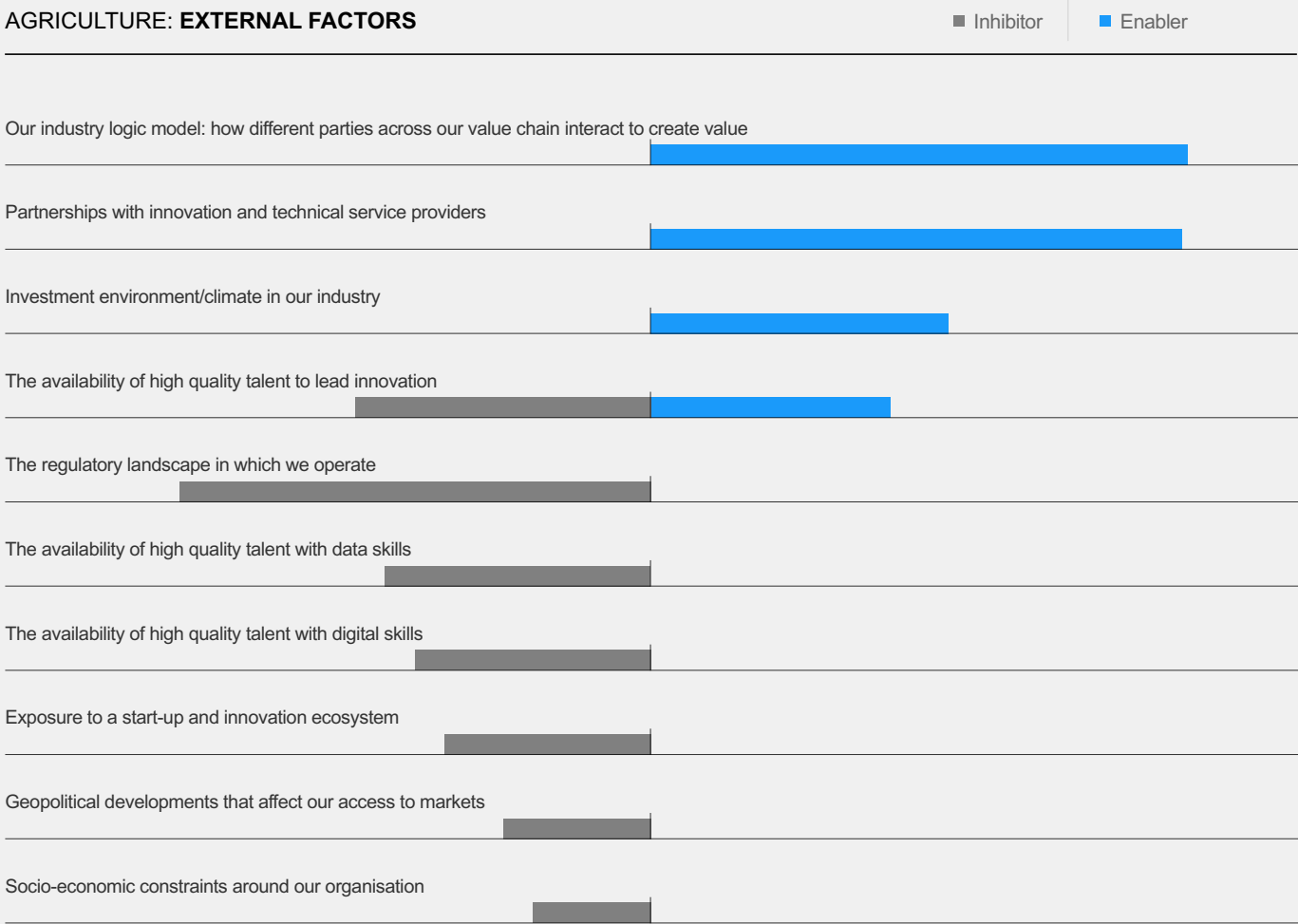
Cross-industry collaborations, such as those between tech companies and agricultural firms, facilitate the merging of expertise and the emergence of innovative solutions. For instance, a tech firm specialising in AI can assist a farming cooperative in predicting weather patterns more accurately or optimising irrigation schedules. Partnering to leverage existing platforms, tools, or technologies also provides access to capabilities without requiring substantial upfront investments.

The investment environment is primarily focused on driving sectoral growth to meet escalating global demand projections efficiently. This involves investing in new technologies to enhance yield, facilitate informed decision-making, and reduce costs.

Digital agriculture is ushering in a new era of farming that embraces technology, harnessing its efficiencies and synergies to positively influence the entire agribusiness value chain. This transformation is aimed at achieving sustainable global food production.

When it comes to inhibiting factors, much like in other sectors, the regulatory environment governing the Agricultural sector emerges as a prominent obstacle to pursuing innovation. Government policies can either promote greater competition in specific markets to drive competitive prices for producers and consumers or impose restrictions on inputs in food production, significantly affecting participants across agri-supply chains.

A significant challenge lies in accessing the skills and talent required to lead innovation and contribute to local data and digital capabilities. As digital agriculture gains global prominence, it presents vast opportunities for all stakeholders in the agribusiness sector to create a more productive, cost-efficient, and flexible Agricultural value chain. However, to realise these benefits, a sufficient level of skills and capabilities is essential. As observed across all sectors, such advanced skills are scarce within the country.

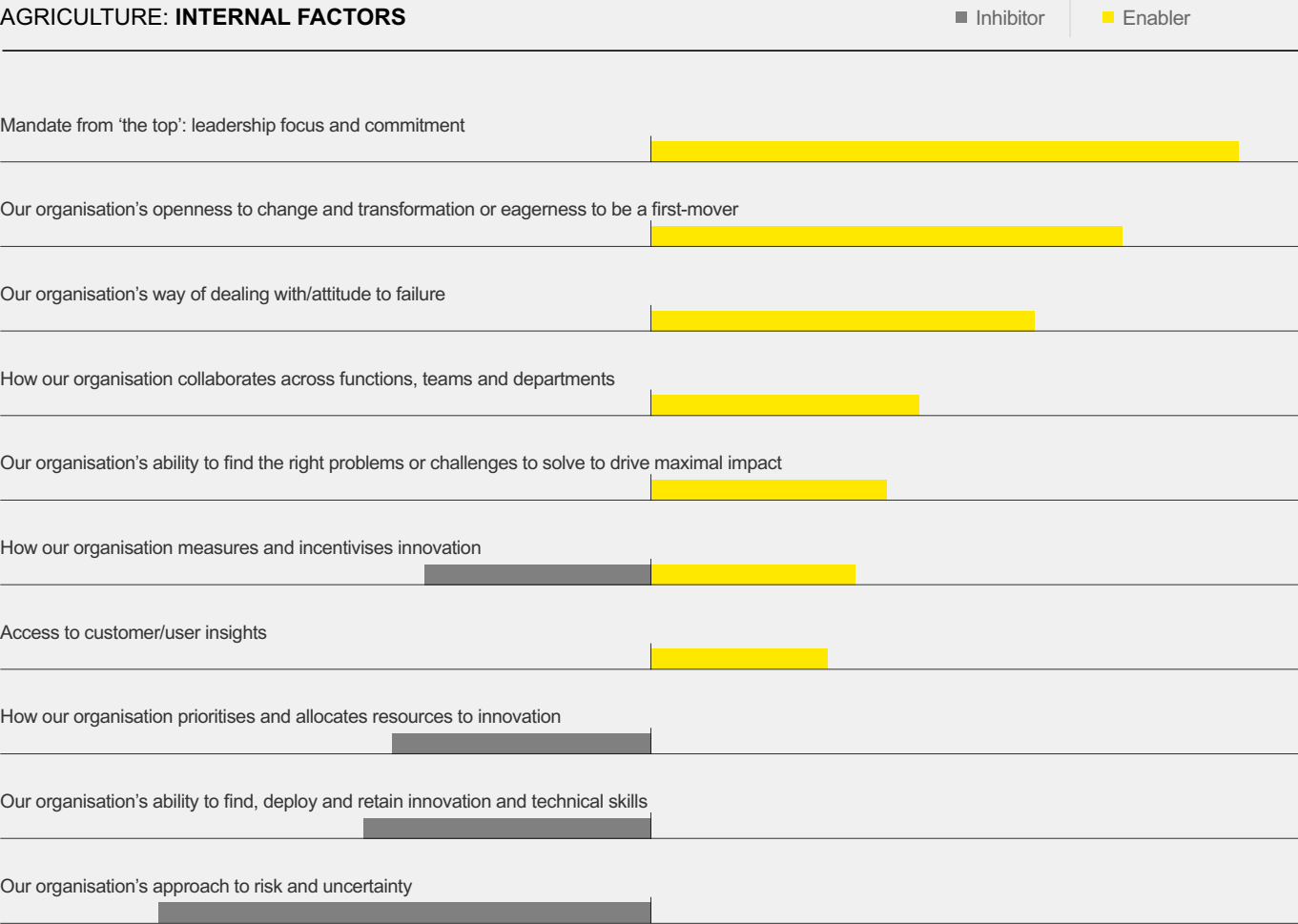


Internally, key factors that empower organisations in their pursuit of innovation include a ‘mandate from the top’: leadership focus and commitment, the organisation’s openness to change and transformation or its eagerness to be a pioneer, and the organisation’s approach to handling failure. These factors are crucial in fostering a culture of willingness to experiment, test, fail, and ultimately innovate.

Challenges arise in finding the right skills and resources, effectively allocating them to address significant challenges and seize opportunities, and cultivating a culture of experimentation within current structures and operations.

Furthermore, discussions have revealed that some organisations perceive their inability to innovate across the entire supply chain or Agricultural lifecycle as a hindrance to their innovation efforts. Their motivation to innovate is often limited to the scope of their influence within the supply chain, rather than pursuing innovation holistically. This underscores the importance of fostering openness to collaboration, driven by leadership, within the Agricultural value chain as a means of enabling innovation for organisations. Through end-to-end value chain collaboration, organisations may discover the potential for transformative innovation, benefiting not only themselves but the entire value chain.

AGRICULTURE: INTERNAL FACTORS



7.7 TRANSPORT AND LOGISTICS

Providing services for the efficient movement of goods, including distribution and logistics management, warehousing and supply chain optimisation and fleet management.

New mobility and supply chain models are emerging, driven by digital ecosystems and enhanced connectivity within market networks, moving from linear chains towards more integrated, dynamic, and responsive networks.

As populations continue to grow and urbanisation accelerates, the strain on transport infrastructure intensifies. In South Africa, it is imperative to assess the cost implications of upgrading and replacing ageing infrastructure components against the long-term advantages these investments would yield, as well as the expenses associated with maintaining the status quo. The deficiencies in infrastructure significantly hinder economic growth. Improvements in road, rail, and port infrastructure are essential not only for the growth of the transportation sector but also for all other sectors, as the Transport sector plays a pivotal role in creating a conducive economic environment for both citizens and businesses.

At the local level, labour disputes disrupt the implementation and completion of infrastructure enhancement projects, while foreign direct investment is deterred due to this challenge.

The transportation sector in South Africa faces cost pressures, primarily due to the volatile fuel prices. Moreover, additional cost factors include the necessity for frequent vehicle maintenance due to the rough state of roads and incidents of theft involving railway and electric cables. These escalating costs exert pressure on transport operators, compelling them to innovate their business models and value propositions in order to maintain competitive pricing.

Top drivers of innovation



1. Transformation of supply chains and distribution networks.

The transformation of supply chains and distribution networks stands as a pivotal driver of innovation within the sector. This transformation gained notable momentum, particularly in rethinking supply chain design and sustainability, following the widespread disruptions and halts in transport systems experienced during the Covid-19 pandemic.

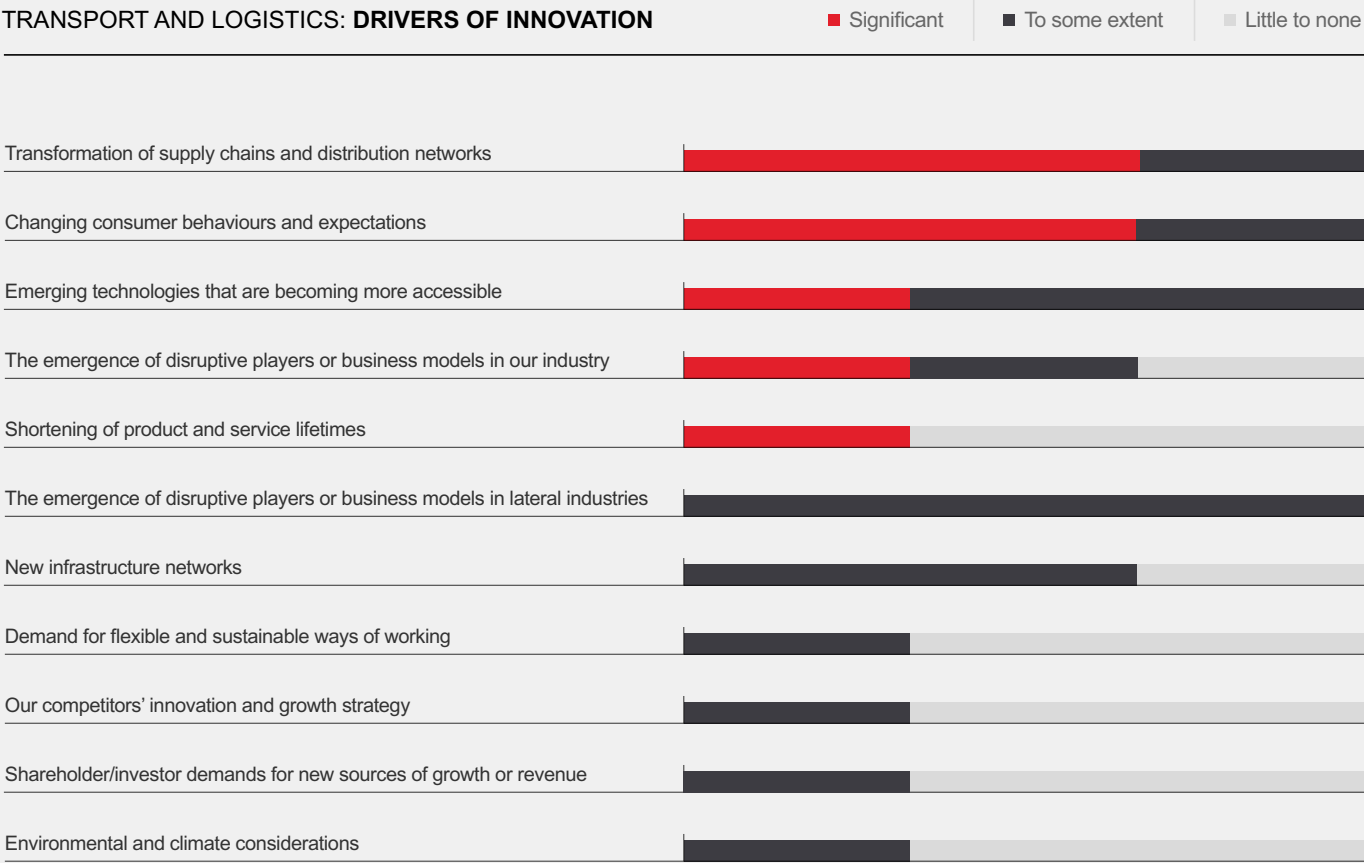
As lockdowns and border closures compelled organisations to adapt their supply chains and delivery networks, they triggered a complete re-evaluation of infrastructure, operations, and relationships in this sphere. This re-evaluation aimed to foster greater flexibility, adaptability, and sustainability. Key to this transformation are the availability and adoption of new technologies and digital capabilities, such as Internet of Things, automation, and real-time tracking systems. These technologies optimise the movement of goods and significantly enhance the visibility and transparency of supply chain processes, serving as critical enablers for this redesign and transformation.



2. Changing consumer behaviours and expectations.

In the era of the digital age and technological advancements, consumers now hold ever-increasing expectations regarding convenience, speed, and personalised experiences across all facets of their consumer journey, particularly in the realm of physical product delivery. They demand seamless booking and payment procedures, real-time tracking and updates, flexible mobility options, same-day delivery, expanded pickup locations or door-to-door delivery services, and environmentally responsible choices.

Transportation, logistics management, and processing systems lie at the core of this transformation and, therefore, play a pivotal role in shaping the customer experience.



The following factors are currently being experienced in the external environment that affect the way in which organisations in the sector pursue innovation:

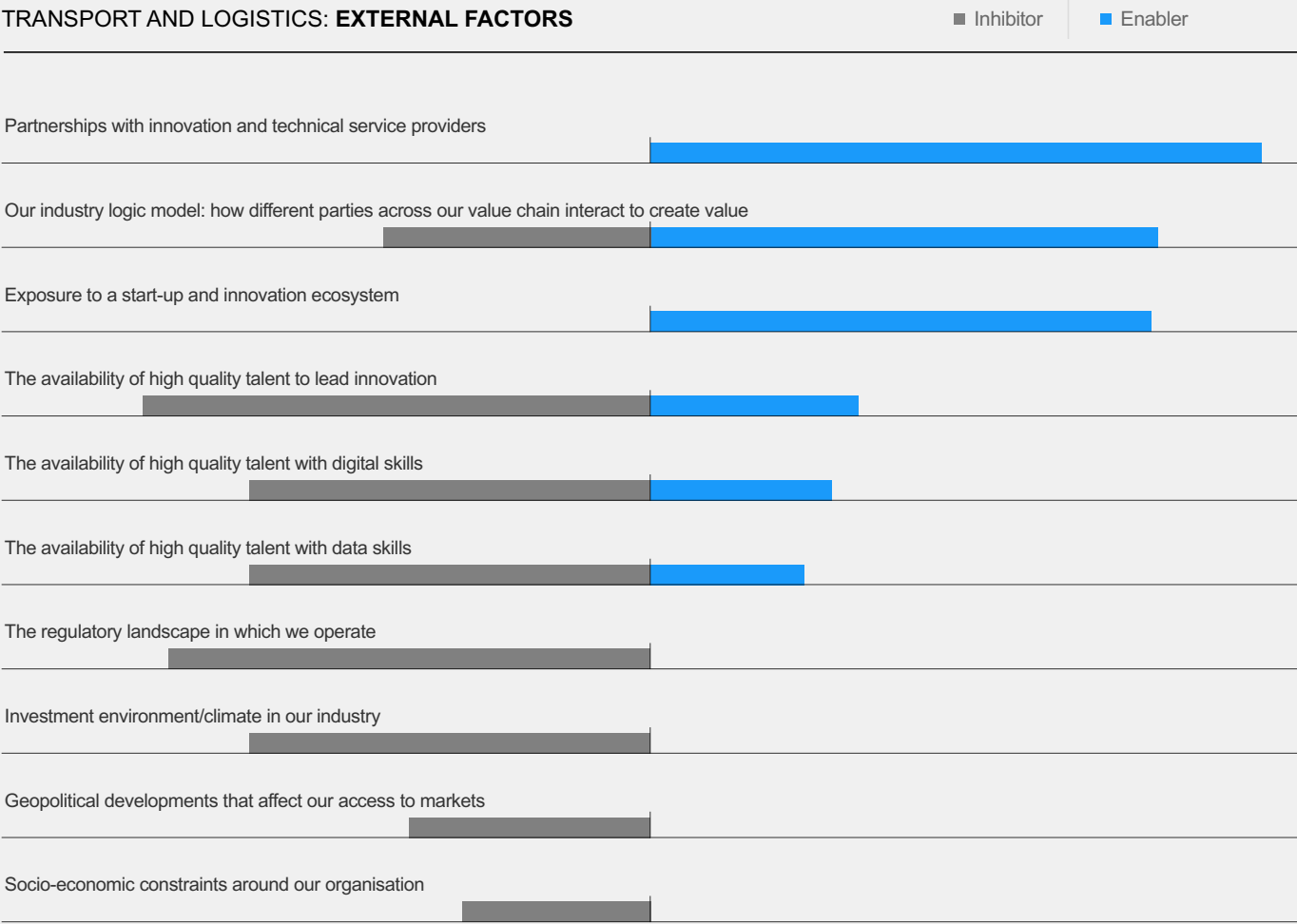
A crucial facilitator for these organisations in their external environment is their partnerships with innovation and technical service providers. Collaborating with such providers allows organisations to access specialised expertise and the latest technologies for exploring innovative solutions. Being part of a start-up and innovation ecosystem nurtures the mindset of entrepreneurial thinking and a unique approach to accelerating the development of new ideas and facilitating the implementation of innovative initiatives. It’s worth noting that participation in innovation hubs, incubators, and accelerators can foster collaborations, facilitate knowledge sharing, and lead to the adoption of innovative practices and solutions. Organisations emphasised that this exposure extends beyond local entities, encompassing international businesses when seeking new solutions.

Organisations also pointed out that comprehending the industry logic model, which delineates how various parties within the value chain interact to create value, can aid in identifying opportunities for innovation. This entails recognizing pain points, inefficiencies, and areas for improvement where innovative solutions can be developed. Collaborating with stakeholders within the value chain, such as suppliers, customers, and regulatory bodies, can provide insights and enable co-creation of innovative solutions that enhance overall value and incorporate sustainability in response to market shifts.

The regulatory landscape in which organisations operate was highlighted as a significant external impediment, impacting the ease of conducting business in the sector. Handling data necessitates careful use and storage to comply with regulations and best practices. Organisations noted that this places a burden on their digital and innovation solutions, as there’s an increased need for due diligence when introducing new third-party solutions or applications. The heightened compliance requirements have made many leaders apprehensive and discouraged them from taking risks to pursue these solutions. Organisations mentioned that these regulatory factors have extended the timelines for the development and implementation of digital and innovation initiatives significantly, consequently affecting costs and resource allocation.

Another highly rated external inhibitor is the availability of high-quality talent to lead innovation, especially talent with data and digital skills.

Organisations voiced challenges in attracting skilled talent, as the sector they operate in often struggles to offer competitive compensation compared to other sectors competing for the same skills. It was also noted that sourcing skills on an ad hoc or project-driven basis can be challenging, as many individuals prefer more permanent roles.



Delving into the internal environment, various factors were noted to affect the manner in which transport sector organisations pursue innovation:

Organisations have emphasised that their various business units’ robust relationships and deep understanding of specific markets enable them to identify innovation opportunities. Collaboration between these business units and innovation teams fosters the generation of valuable customer insights and provides guidance in the development of solutions. This approach supports a customer-centric orientation, allowing organisations to pinpoint the specific problems or challenges that will yield the most significant impact and enable them to proactively respond to market needs.

It has been indicated that there is a need to invest in more transformational innovative initiatives in addition to optimising infrastructure and operational efficiency. However, there can be a reluctance to undertake these larger-scale projects due to risk aversion.

The approach to risk and uncertainty, as well as the attitude towards failure, can significantly influence whether digital and innovation initiatives are prioritised for testing, development, or implementation.

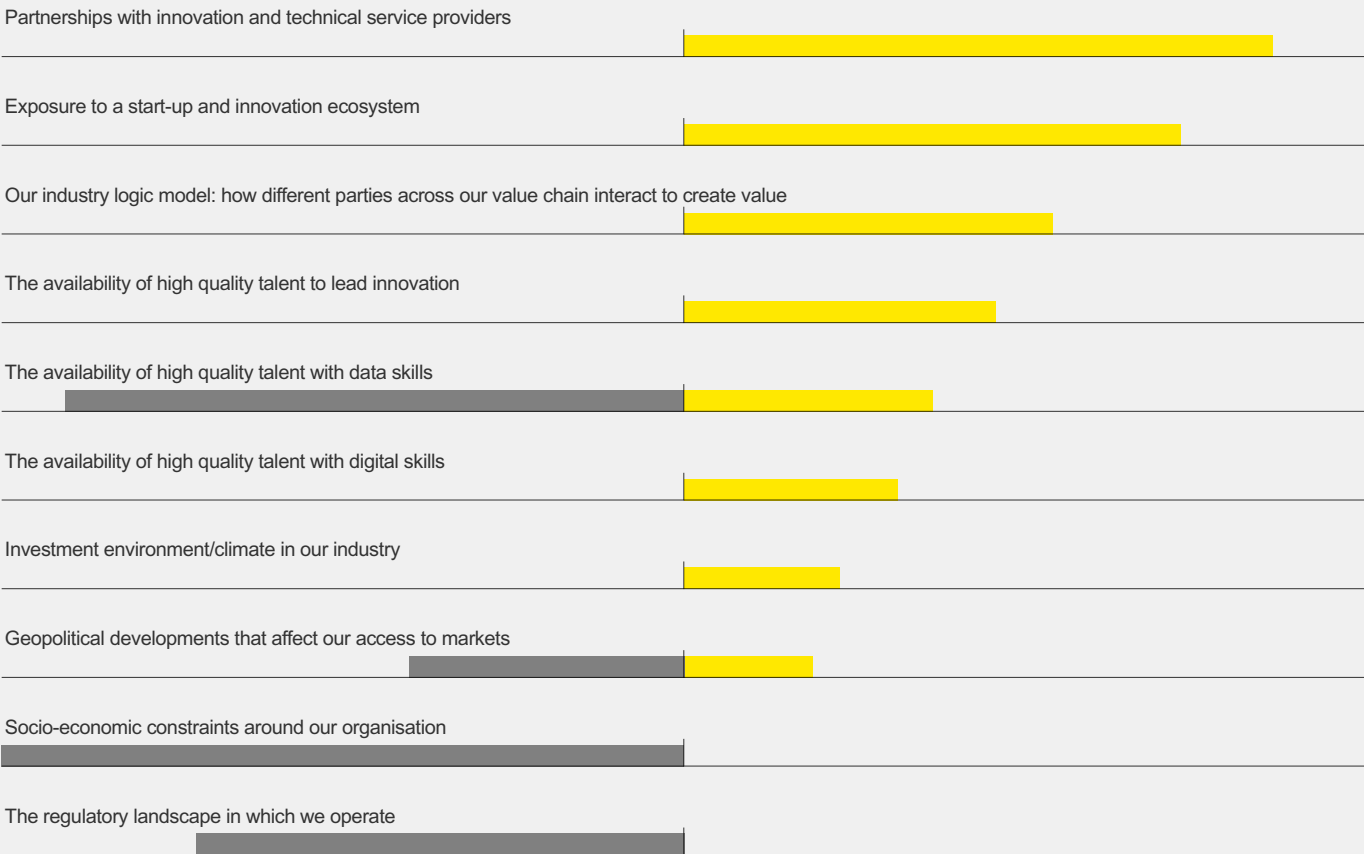
There is a desire to adopt a less risk-averse approach and embrace more of a start-up mindset. However, it was noted that the culture of an organisation that consistently embodies this mindset can be slow to develop.

Extensive transformation or large-scale innovative projects often necessitate the integration of networks and the establishment of smart systems. These projects are complex and substantial, with higher costs associated with failure. Detailed business cases must be developed to instil confidence in returns, and the more capital allocated to a project, the less tolerant organisations are regarding failure. This underscores the importance of developing unique approaches within traditional project development, as a mature understanding of such approaches can actually mitigate the risks associated with large projects.



TRANSPORT AND LOGISTICS: INTERNAL FACTORS

■ Inhibitor ■ Enabler



7.8 PROPERTY

Organisations participating in this sector comprise Real Estate Investment Trusts with portfolios spanning retail, industrial and office spaces as well as specialist property.

The property sector in South Africa, and indeed worldwide, has encountered significant challenges both during and after the COVID-19 pandemic. As workplaces underwent transformations due to lockdowns, interest rates saw an increase, and investment preferences underwent changes. The demand for real estate, whether through purchase or lease, has also shifted. These factors have placed constraints on the balance sheets of property industry players. In this dynamic market, organisations within the property sector are directing their innovation efforts towards meeting customer needs and harnessing the power of data to create new avenues of value.

Entities operating in the property sector that participated in the study found themselves positioned within the emerging spectrum of BCX Digital Innovation Index.

Respondents consistently emphasised that digital innovation is a top-tier business priority deeply integrated into their corporate strategy. These organisations demonstrate unwavering commitment from their leadership in gaining a competitive edge with customers. Additionally, there is a discernible trend towards centrally defining an operational efficiency and growth agenda, which various divisions or functions within these organisations are tasked with executing.

Driving the need to innovate in the sector:



1. **Changing consumer behaviours and expectations.**

As customer needs, behaviours, and expectations evolve with increasing access to the digital realm, real estate organisations find themselves presented with an opportunity to enhance their offerings. However, the current socio-economic context in South Africa and beyond imposes constraints on organisations' willingness to pursue potentially risky sources of growth. Instead, these organisations are primarily investing in well-calculated initiatives aimed at achieving operational efficiency and cost reduction.



2. **New value propositions aligned to developments.**

Respondents have indicated their ability to craft compelling value propositions by closely listening to their customers and monitoring developments in both local and global markets. Armed with these valuable insights, they make informed decisions regarding which paradigms to adopt in order to expand their business and deliver stronger returns to their shareholders and investors. Examples of such decisions include the provision of fit-out packages to tenants in rental properties and the application of smart technologies in building management. Notably, stakeholders in the broader property sector are also exploring emerging technologies like blockchain for smart contracting.



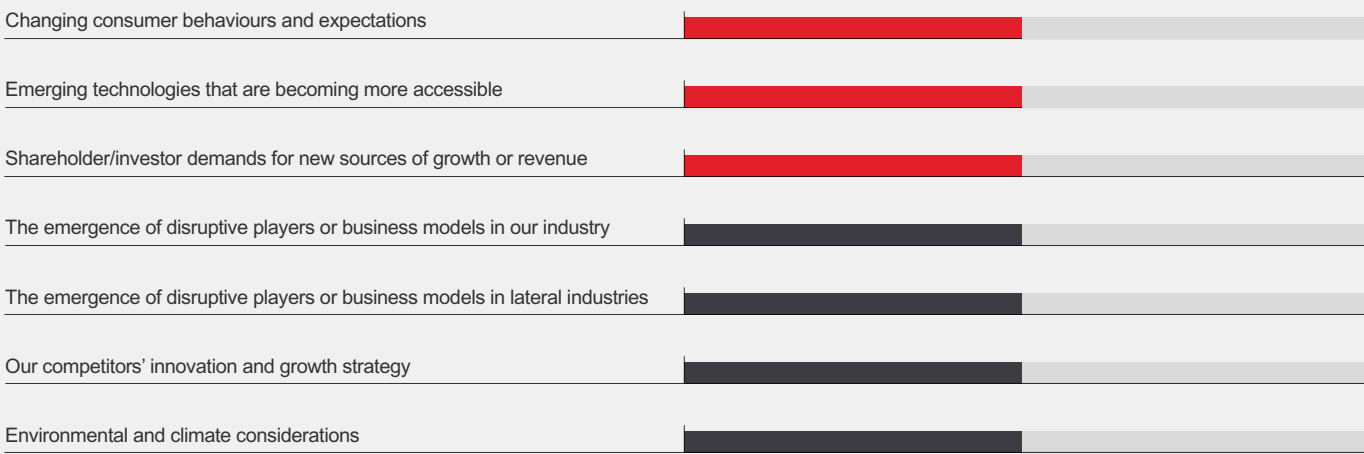
3. **Sustainability and environmental concerns.**

Another guiding principle in driving innovation within the sector appears to be sustainability. Faced with global challenges posed by climate change and local issues such as loadshedding, organisations are actively seeking new technologies and methods to meet their energy needs, protect the environment, and achieve cost savings.



PROPERTY: DRIVERS OF INNOVATION

■ Significant ■ To some extent ■ Little to none



Partnerships and market access enable innovation, whilst talent scarcity and the regulatory landscape hamper it.

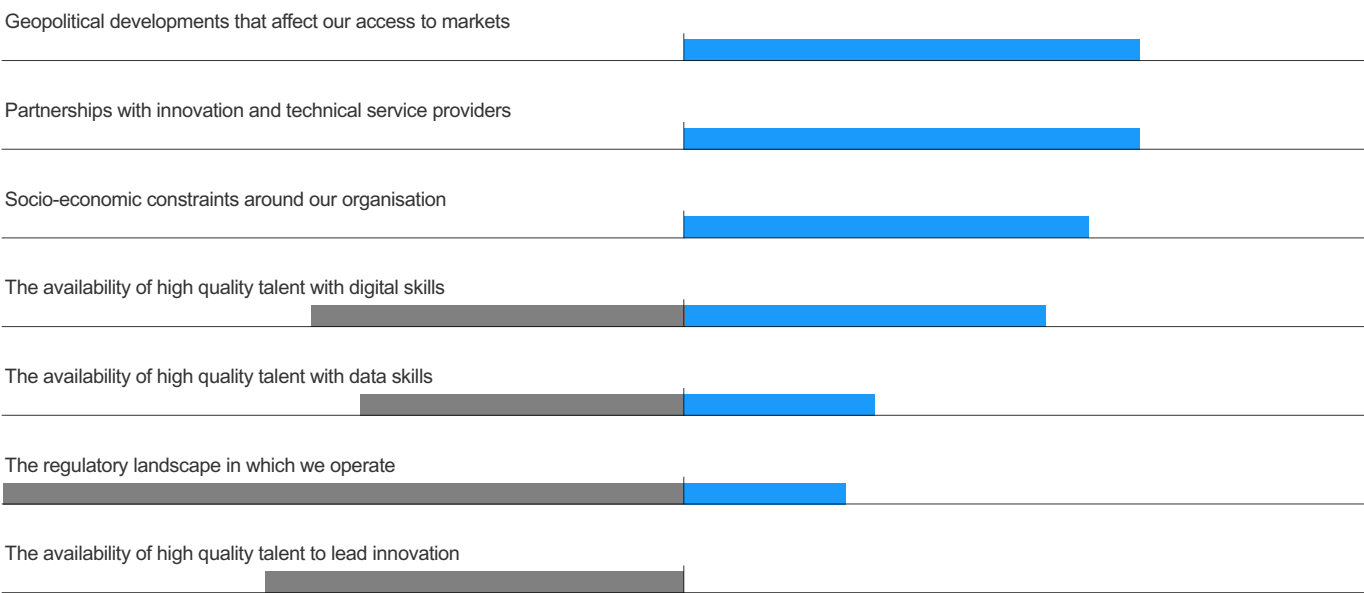
Similar to other entities in South Africa, organisations within the property sector seem to have the capacity to forge external partnerships to drive innovation. Notably, there was an emphasis on technical solutions tailored to address specific use cases. However, a significant challenge that surfaced was the scarcity of talent capable of spearheading digital innovation and fully harnessing the potential of data. In cases where the requisite skills were available.

Moreover, a conservative regulatory environment at the provincial and local levels within their respective municipalities seemed to pose a hindrance to innovative endeavours. The policies at these regional levels did not grant these organisations sufficient flexibility to explore new avenues for growth and innovation.

Interestingly, our respondents pointed out that ongoing geopolitical developments were contributing to broadening their market access, which, in turn, was fuelling both growth and innovation. This expanded market access, combined with their robust ability to collect and act upon customer insights, holds promise for these organisations.

PROPERTY: EXTERNAL FACTORS

■ Inhibitor ■ Enabler

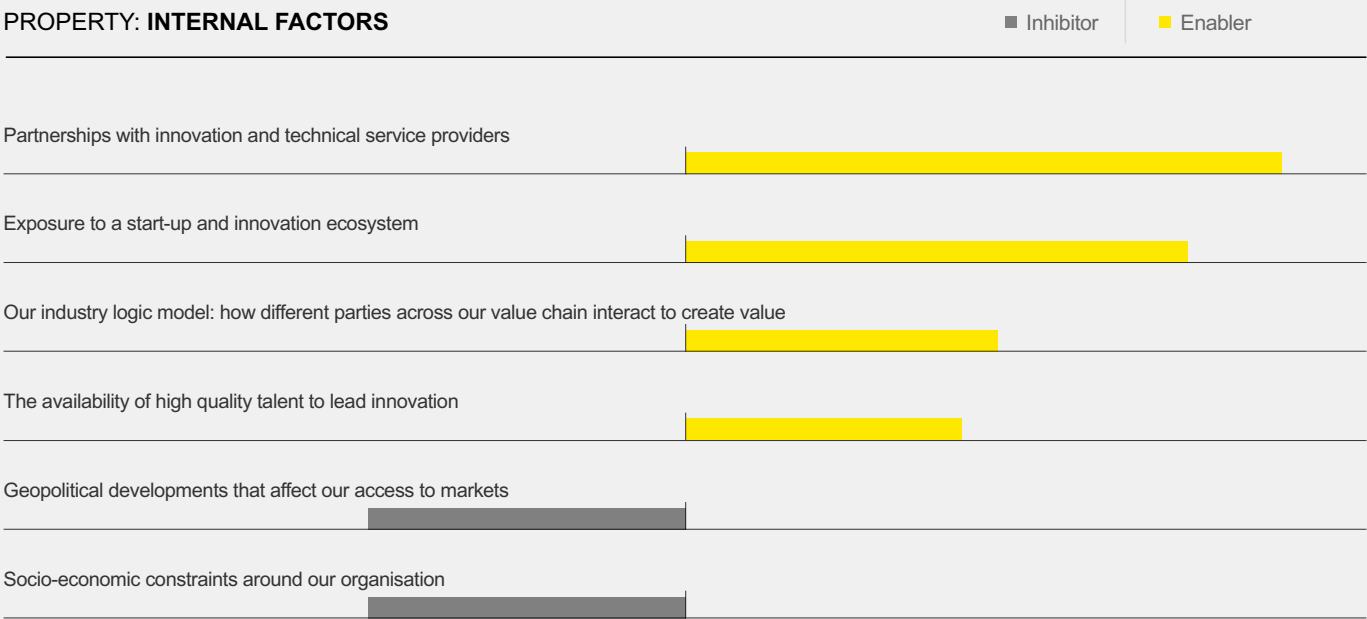


An ambition to lead digital transformation and the ability to prioritise business challenges for impact are dampened by a risk averse culture

Organisations within the property sector are acutely aware of the significance of digital transformation. The shift towards cloud computing and the inventive utilisation of data present pivotal opportunities for innovation and the enhancement of both business processes and the services extended to customers.

However, akin to other South African entities, a culture that is averse to risk can impede leadership’s commitment to innovation and growth. While these organisations are structured to embrace ideas from all departments and echelons, there tends to be a prioritisation of initiatives that can swiftly demonstrate tangible returns.

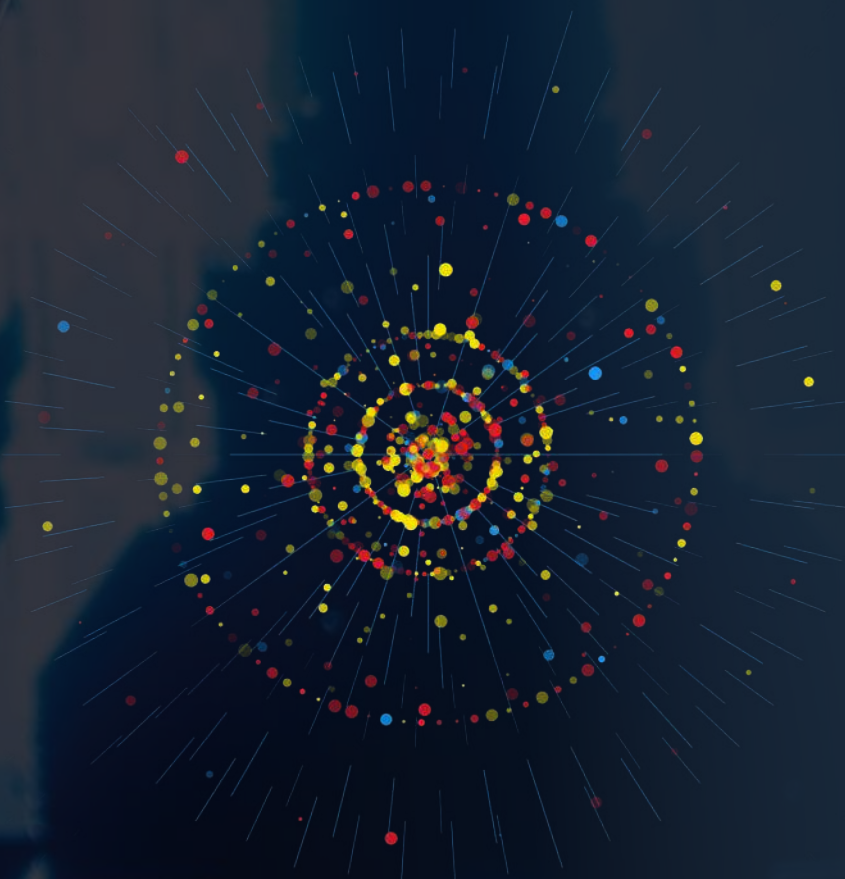
Furthermore, the existing cultural and skills gap in operating digitally and effectively utilising data seems to act as a brake on the progress of these organisations.





8

Digital factors & opportunities



Digital technology and capabilities, coupled with an experimental approach, are indispensable ingredients for Innovation as a source of growth.

Technology and tools have levelled the competitive playing field, making it easier for challenger firms to threaten incumbents while simultaneously making it harder for incumbent firms to effectively differentiate themselves and maintain a unique presence in an increasingly competitive market.

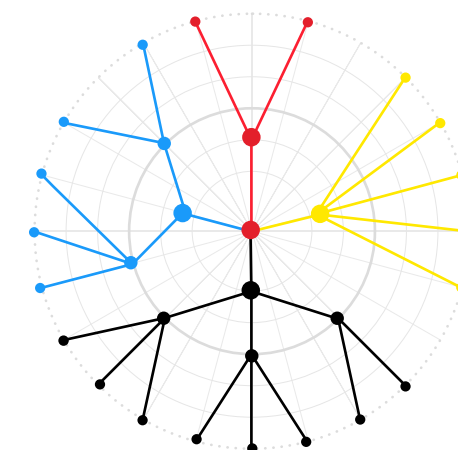
In today's landscape, emerging and evolving digital technologies are progressively disrupting organisations across all sectors. This disruption encompasses how they manage their operations, meet evolving customer expectations, and adapt to the changing nature of products and services.

Organisations operating across the economy must gain a profound understanding of where digital technologies and capabilities can wield the most significant impact and to what extent. Such insights are crucial for responding strategically and building a sustainable competitive advantage. Transforming a non-digital business into a digital one involves leveraging technology to reshape not only infrastructure and operations but also products, services, and culture.

Digital innovation encompasses the creation of novel solutions enabled by digital technologies and capabilities. These innovations occur at a pace and magnitude that disrupt established norms in value creation, social interaction, business practices, and our broader thought processes. It represents a continuous transformation of business models, products, services, or experiences, underpinned by data and technology.

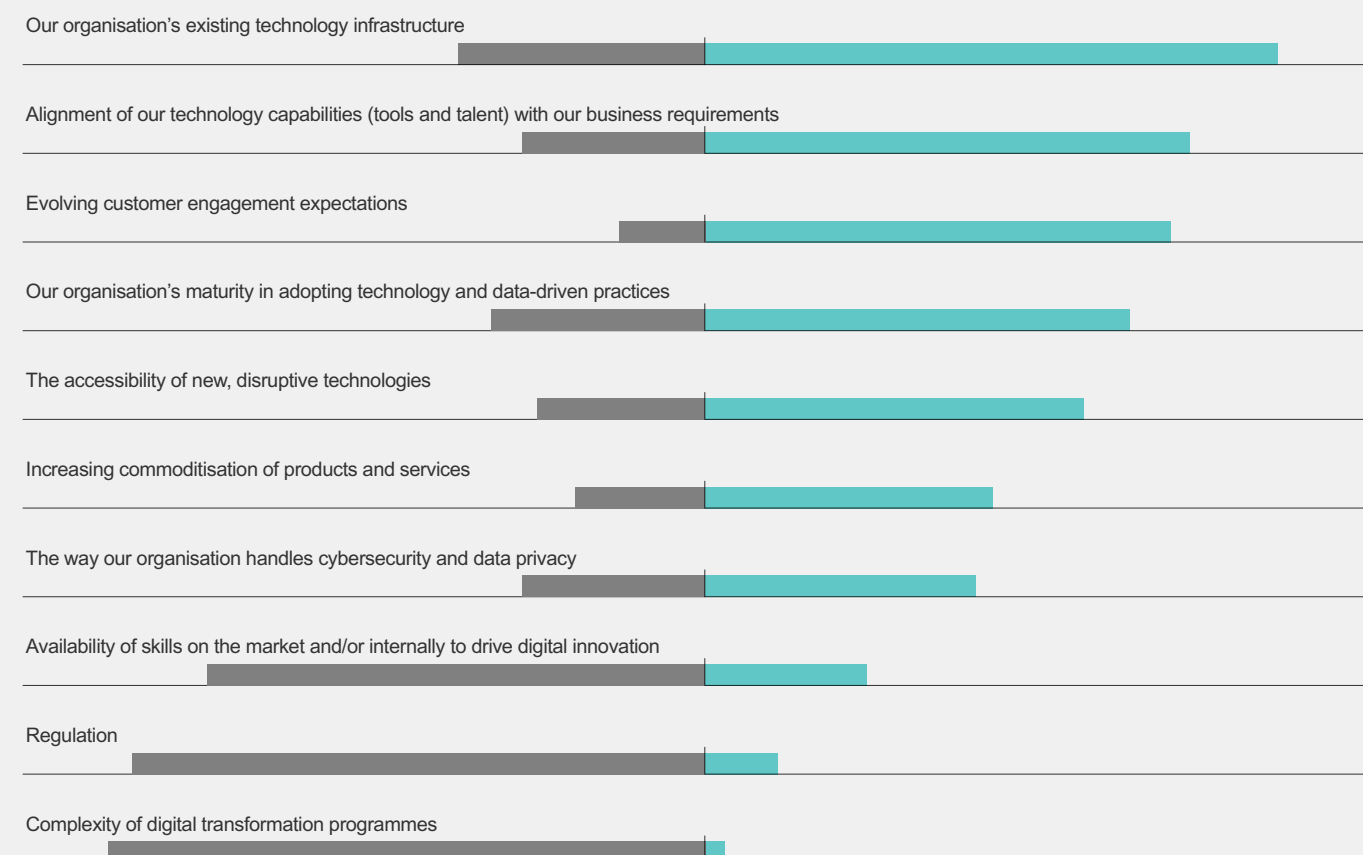
In the context of rapid change, large organisations often grapple with pivotal decisions regarding which technologies to adopt, when to adopt them, why they should do so, and how to execute the adoption effectively. Formulating a well-structured plan for adopting new tools and technologies aligned with customer and business objectives is instrumental in enabling organisations to preserve or enhance their performance.

Now, the question arises: **What factors facilitate or impede an organisation's ability to innovate with regard to technology and digital-specific initiatives?**



DIGITAL FACTORS

■ Inhibitor ■ Enabler



Serving digitally savvy customers, who expect real-time access to information, necessitates digital innovation.

Customers, with their online lifestyles, possess the ability to seamlessly integrate offline needs with online tools while having instant access to information. An organisation's capacity to offer accessible and affordable digital interactions with their products and services forms the foundation of the trust they earn from customers. South African organisations perceive the challenge of servicing and delighting customers across multiple channels, including digital ones, as one of the top three drivers of digital innovation.

As more customers migrate online and products and services become increasingly commoditized, organisations face the imperative to reconsider how they can distinguish their offerings and maintain competitiveness. Some organisations opt for tailored, personalised experiences, while others adopt a systemic approach to digital innovation. They collaborate with suppliers and customers alike to digitally optimise their service delivery model.



Aligning business objectives with technological capabilities, supported by a robust tech infrastructure, fosters digital innovation.

Organisations discover that aligning their technological capabilities with their strategic focus on enhancing customer/user value empowers them to innovate and expand their business. The ability to define and prioritise specific use cases that drive business impact, such as enhancing customer retention, enables them to select the most suitable data, tool sets, and technologies to address these use cases and unlock value. This approach facilitates the creative amalgamation and application of technologies, serving as a bulwark against potential disruptors and competitors.

Organisations categorised as 'Excellent' underscore the significance of a flexible technology infrastructure built on micro-services. Such an infrastructure allows them to experiment and match technologies and tools with their business objectives, leveraging high-value components that span various areas of the organisation. This flexibility enables them to maintain a tech stack that remains responsive to evolving business needs. This is especially pertinent in fiercely competitive sectors, such as Finance and Insurance and consumer industries.

In these organisations, data consistently guides and informs business decisions, aligning with their business objectives. Robust processes are in place to translate these business objectives into a set of technical requirements. These prioritised requirements are then harmonised with the appropriate tools and technologies. Through this systematic approach, organisations mitigate the risks associated with adopting digital tools and technologies.

Talent shortage in South Africa hampers organisations' ability to innovate at the leading edge.

Digital innovation occurs at the convergence of business, data, and technology. It necessitates the skill to translate business growth into a series of customer and internal user journeys. These journeys can be facilitated through technology and assessed using data to stimulate engagement and create value. The achievement of digital innovation projects hinges on the proficiency and combined application of user experience design, technology - including enterprise architecture and software engineering - as well as data to produce user value. In 'Excellent' organisations, this process unfolds rapidly, involving the execution of multiple experiments, many of which may fail. This enables businesses to swiftly learn how to sustainably generate user value and launch highly appealing products and services.

However, the talent capable of driving such initiatives at pace is scarce. All surveyed and interviewed organisations emphasise the necessity of competing on a global scale to attract, recruit, and retain top-tier talent capable of making a significant impact through digital innovation. In addition to competitive compensation packages, this talented workforce seeks a blend of well-being, a culture of growth, and rewards and benefits programmes to complement their work. The investment required in these cases can be daunting for many organisations. Consequently, it's not surprising that the larger South African organisations highlighted in this report are better equipped to afford the high-calibre talent needed to drive innovation. Many consider this challenge of talent acquisition and retention as a long-term investment in their businesses, opting to collaborate with service providers and start-up ecosystems to foster innovation in the short- to medium-term, while simultaneously enhancing the skills of their existing talent pool. Such partnerships can also yield innovative outcomes within an environment that is shielded from the legacy systems of these organisations.

The complexity of digital transformation programmes and regulation are top inhibitors to digital innovation in South Africa.

The effective implementation of technology can enable organisations to maintain and enhance their market position. However, does this invariably necessitate extensive digital transformation programmes?

Digital transformation is geared towards digitising business processes to enhance operational efficiency. By design, these transformation programmes are executed over several phases spanning multiple years. They aim to modernise business processes and facilitate the adoption of digital processes within organisations while minimising disruptions to existing operations. These programmes require meticulous coordination and must be accompanied by robust change management initiatives to encourage adoption. Additionally, digital transformation programmes aim to reshape the prevailing organisational culture into one that is ready for the digital age. South African corporations consider the staged, multi-year, and multi-dimensional nature of such programmes as one of the primary deterrents to digital innovation and technology adoption.

In contrast, innovation presents an alternative approach to achieving impact through digital tools and technologies. Digital transformation commences with a predefined end state and concludes with the realisation of promised value or efficiencies. Conversely, digital innovation often begins with a tangible and pressing business challenge for which no guaranteed solution exists in the current market.

Through a series of low-risk experiments centred around end users, innovation practitioners gradually uncover solutions likely to drive impact for both users and the business. This approach allows organisations to deliver value from technological applications at an early stage. They can then choose to implement and operationalise the tools and technologies that already demonstrate clear evidence of value and potential for adoption.

As organisations transition towards more digital processes and digital information repositories, their vulnerability to potential cybersecurity threats indeed escalates. Prior to embracing and implementing any new technology or tool, organisations must assess and establish data and security governance and control mechanisms. They should also provide training to their employees to ensure the effective use of these tools while safeguarding the organisation's information.

During the experimental phase, employing a sandbox with predefined security and data governance parameters can facilitate the discovery of practical new applications for new tools or technologies before formally initiating a broader rollout.

With the emergence and widespread adoption of new tools, South African regulators must acquaint themselves with these tools' legal, societal, and policy implications. They should be prepared to adapt the law accordingly. Certain sectors are subject to stringent security and compliance requirements, coupled with legislation that evolves at a more gradual pace. This slower legislative progress can hinder innovation and the adoption of new technologies (two-thirds of respondents rated regulation as inhibiting to varying degrees).

Interestingly, we have observed that, even in highly regulated sectors, the 'Excellent' players can harness technology and regulation.

For instance, by starting from the fundamental principles underpinning regulatory requirements concerning customer onboarding and service, they can devise technological solutions that offer a robust and data-driven approach to fulfilling these obligations. These organisations adeptly transform these regulatory constraints into opportunities, capitalising on their extensive knowledge of the law, public policy, compliance, and their mastery of technology. Consequently, a distinct service experience that is convenient for customers becomes a source of competitive advantage.

In their pursuit of digital innovation, organisations cultivate the ability to be nimble, adaptable, and flexible in how they formulate and execute strategies to embrace the digital market.

Emerging Technologies: Innovating on the Frontier

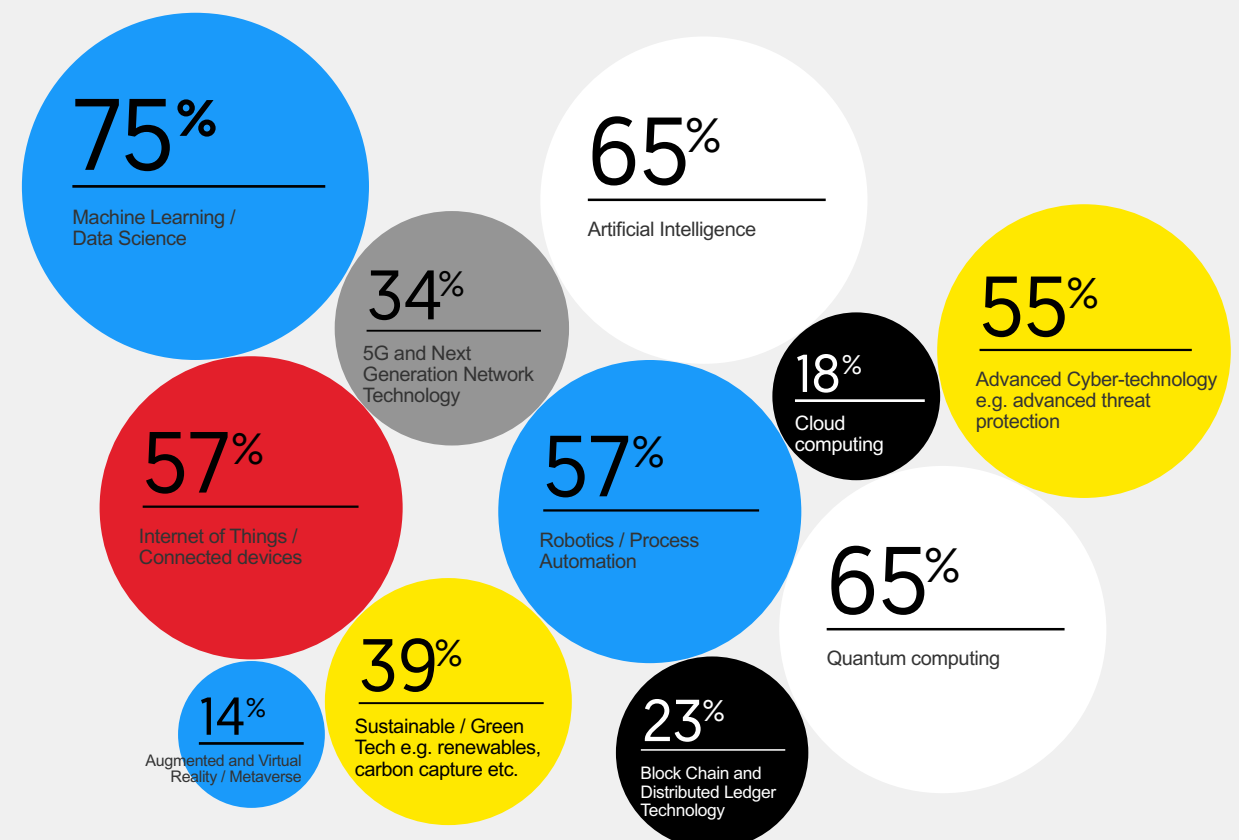
New technologies, fuelled by the wealth of data available, are emerging at an increasingly rapid pace. These technologies primarily impact how data is collected, processed, and analysed to generate value for both internal and external users.

The swift development of fresh capabilities in the market presents a challenge for organisations. They must continue providing services and value to their customers while also remaining vigilant for opportunities and threats posed by potential disruptive technologies.

We conducted a survey of our respondents to identify the technologies their organisations are likely to adopt in the short to medium term, revealing their eagerness to embrace a wider range of digital capabilities.

Our participants intend to integrate various technologies to varying degrees. There is significant enthusiasm surrounding artificial intelligence, driven by both the sustainability imperative and the urgency to stay competitive. Some organisations are striving to catch up by transitioning to cloud-based solutions, while others have a more technical focus, already delving into experiments involving synthetic biology.

EMERGING TECHNOLOGIES





We discovered that **'EXCELLENT'** organisations in South Africa consistently scan the external landscape for innovative solutions and potential disruptions. They mitigate risks by conducting small-scale experiments with emerging technologies that exhibit early promise. This approach enables them to establish a path for early adoption, capitalising on technologies that gain traction and limiting exposure to those that do not.

Some **'MATURING'** organisations have invested significant time and resources in designing a technological architecture that fosters innovation and facilitates the adoption of new technologies. They have also developed a strategy to instil change from within through agile processes. This trend is particularly evident in sectors such as Finance and Insurance, the Consumer sector, and Healthcare. As more users access online and mobile platforms, these customer-centric industries compete vigorously to engage and serve their customers through technology and digital channels. Interestingly, certain organisations have reimagined the infrastructure challenges posed by loadshedding and electricity shortages as constraints that spur innovation.

Organisations classified as 'Maturing' in innovation practices face challenges such as the absence of regulatory frameworks for adopting new technologies, the inertia introduced by existing legacy systems and organisational cultures that impede change efforts, and the daunting cost of some frontier technologies for proof-of-concept experiments.

For **'EMERGENT'** organisations, the most prevalent challenges include talent shortages in South Africa and a risk-averse technological infrastructure primarily designed for sustaining core operations. Some of these organisations are exploring how multiple emerging technologies can converge to create unique business value. They emphasise the need for careful consideration of data security and governance processes when undertaking such initiatives.

'NASCENT' organisations cite conservative leadership attitudes and the necessity to comply with stringent data protection and security regulations as the primary barriers to adopting new technologies. Their focus tends to be on adopting technologies primarily for operational efficiency.

In South Africa, organisations appear to follow a particular model for effectively adopting emerging technologies:

This structured approach enables them to validate the value of data and technologies before undertaking expensive implementations. It also facilitates the

incorporation of data security and governance into the adoption of new technologies, ensuring compliance with regulations. When coupled with user-centric innovation practices, transitioning both internal (employees) and external (customers) stakeholders to a new technology encounters less resistance.

1 They identify specific use cases aimed at addressing persistent problems or significant strategic challenges, such as cost reduction or enhancing customer retention.



2 They seek out the relevant technologies and data that can support these use cases, exploring how different technologies might converge to create business value.



3 They create small-scale experiments to assess how these use cases can be addressed using specific technologies or combinations thereof.



4 Concurrently, they cultivate the practice of basing and steering business decisions on data.



5 They execute the small-scale experiments and swiftly acquire the know-how to apply the technology to address their business challenges within their specific context.



6 If the experiments provide clear evidence of technology's impact, they strategize and implement its wider adoption.



Lost in jargon about Emerging Technologies? Start here

Distributed Ledger Technology and Blockchain

A distributed ledger is a decentralised database, where data is stored across multiple computers in a network. Each computer within the network maintains the ledger. When new data is added through any computer within the network (for instance, when a transaction is initiated from one computer), each computer independently verifies this new data. Once all computers agree on the new data, the ledger is updated without the need for an intermediary. This way, stakeholders within the network can efficiently and securely exchange data by collaborating and transacting with each other in a transparent manner.

The blockchain is a type of decentralised ledger system, where the data is stored in a sequence of blocks. A cryptographic signature links the blocks together and allows for data verification.

Distributed ledger technologies offer greater transparency, and have applications in financial services, as well as complex supply chains. They can provide secure digital identities to stakeholders in a network, enable smart contracts to be issued between these stakeholders, and provide traceable information storage and transparency around transactions happening within the network.

Artificial Intelligence

Artificial intelligence (AI) is a branch of computer science that enables machines to mimic human intelligence. AI systems use algorithms to look for patterns in data. AI applications include data analysis and decision-making, virtual assistants as well as autonomous vehicles. More recently, generative AI built from large language models has gained popularity, where algorithms scour large databases of information to generate new text or imagery from

human prompts. In this context, AI is able to extend human creativity.

Machine Learning and Data Science

Machine Learning is a subset of AI that uses algorithms to classify information (data) into categories or to build regression models for how different data variables might relate to one another. Machine Learning enables systems to recognise patterns, make predictions, and automate decision-making. It has applications in various domains from recommendation engines to medical diagnoses.

Data Science is a multidisciplinary field that combines statistics, programming and domain knowledge to analyse and interpret large volumes of data that define variables across multiple dimensions. Analysing such data visually can be challenging to the human eye. Applications of data science can help organisations optimise their processes (e.g. operational efficiency and cost control), minimise machinery downtime (e.g. predictive maintenance) and also deliver and manage personalised customer experiences to maximise retention (e.g. through personalised recommendation engines or adverts).

Internet of Things or Connected Devices

Through the Internet of Things (IoT), devices ranging from smart thermostats and wearable fitness trackers to industrial sensors can be interlinked within a network. When online, these devices can collect data, communicate and perform tasks autonomously. They have applications in various industries, including energy and natural resources (including manufacturing), agriculture and farming, transport, Healthcare and even consumer sectors. These connected device networks aim to enhance how humans can control systems conveniently and efficiently.

Going online through the IoT comes with potential exposure to cybersecurity threats. Therefore organisations need to implement security and governance protocols when implementing connected devices across their network.

Robotics and Process Automation

Through Robotics and Process Automation (RPA), organisations integrate technologies into existing tasks and workflows. Robotics involves the development of mechanical devices that can perform actions autonomously or with human guidance, while Process Automation employs software to streamline and optimise repetitive tasks and workflows. Together, they can bring about efficiency, precision, and scalability, ultimately reshaping how work is done across diverse sectors, from manufacturing and Healthcare to customer service and finance.

When trying to implement RPA, organisations have an opportunity to question how their systems and processes are designed, and how they might be optimised, to achieve specific business goals.

Augmented Reality, Virtual Reality and the Metaverse

Augmented and Virtual Reality (AR and VR) provide immersive experiences that blend the physical and virtual realms. AR overlays digital information on our real-world surroundings, whilst VR immerses the user in computer-generated environments. The metaverse is a combination of emerging technologies such as AR, VR and spatial computing to present experiences to users. This blend of the physical and virtual presents opportunities to organisations in creating digital twins, and training environments, as well as driving collaboration and entertainment.

Cloud computing

Cloud computing enables organisations and individuals to access and use computing resources, such as servers, storage, and software, over the internet. It offers scalability, flexibility, and cost-efficiency. Users can then leverage powerful computing capabilities without the need for extensive physical infrastructure on-premises. With cloud computing, businesses can support collaboration, streamline operations, store, and analyse data, and deploy applications easily.

The choice to migrate to the cloud as opposed to maintaining services on-premises is influenced by data security and governance requirements, costs of accessing new technologies at the right scale within an organisation, as well as the skills available to operate on the cloud as opposed to on-prem.

Quantum Computing

Quantum computing is the application of quantum mechanics to computing. In classical computing, information is stored in binary units, or bits, which can hold a value of either 0 or 1. In quantum computing, the equivalent quantum bits can represent both 0 and 1 simultaneously. This largely increases the computational power available to complete complex calculations. Quantum computing has potential applications in large-scale models in financial services, complex supply chains, Healthcare, and even climate predictions. Implementing quantum computing requires that organisations implement new infrastructure and data storage (for the data to be accessible to quantum algorithms). It also challenges existing paradigms of data security and cryptography, which suggests that wider adoption of quantum computing in business will come with new security protocols.

5G Technology

5G, or Fifth Generation, technology is the latest advancement in networking technology. It has significantly higher data transfer speeds, minimal latency, and increased connectivity capacity compared to its predecessors. It has many potential applications in business: from enhanced video conferencing and collaboration capabilities amongst employees to stronger connectivity across IoT devices in a farm, warehouse or manufacturing plant, or even better virtual experiences for customers in retail or patients in Healthcare. Compatibility of old devices with 5G networks, as well as increased exposure to cybersecurity threats as more devices go online, may challenge organisations' ability to adopt 5G.

Advanced Cybersecurity technology

Advanced cybersecurity technology encompasses cutting-edge tools and methods to protect and enhance digital systems. It includes encryption, AI-driven security, and threat analysis, safeguarding data and digital infrastructure in our interconnected world. Different tools can detect threats, defend systems against new threats, respond to security incidents, protect data, and offer compliance to security regulations. The right combination of cybersecurity technologies for a particular organisation lies at the intersection of the business need, its existing digital footprint and the investment required.

Sustainable or Green Technology

Sustainable or green technologies are solutions and practices aimed at minimising the environmental impact of organisations' activities. Their application aims to promote resource efficiency and minimise pollution. Sustainable technologies include renewable energy sources (such as solar, hydro and wind power), energy-efficient equipment and appliances (such as lighting and efficient data centres), water conservation (minimise usage and recycling), supply chain sustainability tools (including responsible sourcing and transport) and carbon emission-reduction technologies. An organisation can help mitigate climate change and protect the planet for future generations by meaningfully applying sustainable technologies across its value chain.

Synthetic biology

Synthetic biology refers to the design and engineering of living organisms for specific functions. The field melds biology, engineering, and computer science. It has potential applications in Healthcare, agriculture, manufacturing, biotechnology, bio-remediation and even biofuel production. It requires advanced technical and scientific capabilities, and organisations at the frontier of these sectors tend to invest in synthetic biology.



Conclusion

The BCX Digital Innovation Index serves as more than just an illuminative snapshot of South Africa's innovation landscape; **it acts as an urgent call to action for organisations to transcend their existing limitations and ambitiously reach for innovative solutions.**

Shaped by our collaboration with all major business sectors in South Africa, the report underscores the profound importance of innovation as a strategic priority across the board.

Companies categorised as 'Excellent' have formalised their innovative strategies and disseminated them through their organisations, thus nurturing an innovation-centric ethos. Despite this strategic priority, the sobering reality of constrained investment capital, a cautious organisational culture, and a talent pool in need of deepening casts a shadow over the ambition to innovate on a grand scale.

Investment in innovation is widespread, yet the methods for assessing the returns on such investments are underdeveloped. Many organisations revert to established financial and project benchmarks, potentially skewing the actual value yielded from their innovative endeavours. This is where the importance of external partnerships comes into the limelight. Collaboration with external entities—especially for start-ups—provides a robust framework for navigating the complexities of innovation from inception to execution and scale.

However, South Africa's innovation journey isn't without its unique hurdles. Socio-economic imbalances, political instability, and constrained economic growth, not to mention the logistical nightmare posed by loadshedding, can significantly impair both the pace and scope of innovation. Moreover, regulatory hurdles and a lagging alignment between compliance and technological advancement can severely constrict experimental forays into innovative solutions.

Yet, it's precisely within these challenges that the seeds for innovation are sown. The most successful organisations adapt to these conditions as a backdrop against which to innovate, frequently forging external partnerships to bolster their internal capabilities. The growing need for digital transformation and sustainability amidst complex economic dynamics offers fertile ground for the genesis of new solutions, provided the organisations can rise to the challenge with agility, a balanced risk-taking culture, and a relentless focus on adaptability.

Organisations in South Africa must navigate a complex set of internal and external conditions to truly innovate and grow. Whether in investment mechanisms or talent availability, the inhibiting factors are considerable, yet not insurmountable. Through a blend of strategic planning, external partnerships, and a resilience borne out of necessity, the future of innovation in South Africa can be not just promising but transformative. Given the exigencies of the current economic and social landscape, there has never been a more crucial time to heed the insights and imperatives laid out in this report. Let this serve not just as an analysis but as a call to action for all stakeholders to elevate their contributions to building a more resilient and innovative South Africa.

10

Appendix



We would like to extend our deepest gratitude to all 42 organisations that participated in this year's BCX Digital Innovation Index.

Your invaluable contributions have not only enriched our understanding of the innovation landscape in South Africa but have also illuminated the pathways and challenges that lie ahead. Your openness in sharing insights, challenges, and best practices provides a nuanced tapestry from which businesses across sectors can learn and adapt. It has been a true pleasure for BCX and EY-Parthenon to partner with and learn from South African business leaders in this endeavour.

Looking ahead, we strongly encourage more organisations in South Africa to partake in next year's BCX Digital Innovation Index. Participation in this important survey amplifies the collective voice of the South African business community and enables us to provide an even more robust and comprehensive view of innovation.

As we strive for progress and resilience, your input is not just beneficial—it's essential for shaping a more innovative and competitive South African economy.



Digital Innovation Index Report 2023
in collaboration with

