MICTSETA | Media, Information And Communication Technologies Sector Education And Training Authority

SHAPING SKILLS, PIONEERING INDUSTRIES, EMPOWERING FUTURES

Sector Skills Plan
2022/23

Final Submission

August 2021

Foreword

In this annual update of the MICT SETA Sector Skills Plan, we have conducted rigorous research to ensure that the documented occupational shortages and skills gaps are true reflections of demand. Data on labour shortages is often a subject of debate. To this effect, a number of different stakeholders were consulted to construct a comprehensive picture of the Sector and its direction.

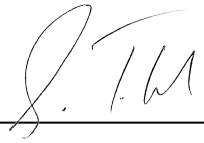
This year, we did a comprehensive analysis of 4IR technologies and their role in the MICT Sector to acquire deeper insights into the real skills shortages and support industry in closing those skills gaps. The more confidence we have in the Sectoral Priority Occupations, the more assured we are of the Strategic Plan. The combined efforts from all stakeholders to produce this document are gratefully acknowledged. The following deserve special mention:

- The Ministerial representatives on MICT SETA's Board;
- Industry, via representation on MICT SETA's Board;
- Organised Labour, through representation on MICT SETA's Board; and
- All the stakeholders who kindly participated in our interviews, surveys and focus groups.

Our thanks go to all the stakeholders whose collective wisdom has been incorporated into this document. Sharing of knowledge is a catalyst for achieving South Africa's skills development potential and economic growth.

Mr. Matome Madibana

Acting CEO: MICT SETA



Mr. Simphiwe Thobela

Chairperson: MICT SETA Board

Acronyms

4IR	Fourth Industrial Revolution	**MCSE**	Microsoft Certified Solutions Expert
5G	Fifth-Generation Wireless Technology	**MDDA**	Media Development and Diversity Agency
ACASA	Association for Communication and Advertising South Africa	**MICT**	Media, Information and Communication Technologies
AI	Artificial Intelligence	**MTSF**	Medium Term Strategic Framework
AR	Augmented Reality	**NAB**	National Association of Broadcasters
ATR	Annual Training Report	**NDP**	National Development Plan
B-BBEE	Broad-Based Black Economic Empowerment	**NGO**	Non-Governmental Organisation
BABOK	A Guide to the Business Analysis Body of Knowledge	**NGP**	New Growth Path
CAGR	Compound Annual Growth Rate	**NLPE**	Neuro-Linguistic Programming Executive
CBO	Community- Based Organisations	**NLRD**	National Learner Record Database
CECS	Centre of Excellence in Cyber Security	**NQF**	National Qualifications Framework
CEO	Chief Executive Officer	**NSI**	National System of Innovation
CISCO	Commercial & Industrial Security Corporation	**NSDP**	National Skills Development Plan
CISSP	Certified Information Systems Security Professional	**OFO**	Organising Framework for Occupations
COBOL	Common Business-Oriented Language	**OGS**	Online Grant System
CompTIA	Computing Technology Industry Association	**PC**	Personal Computer
Covid-19	Corona Virus Disease 2019	**PRINCE2**	Projects in Controlled Environments 2
DCDT	Department of Communications & Digital Technologies	**PICC**	Presidential Infrastructure Coordinating Commission
DHET	Department of Higher Education	**QCTO**	Quality Council for Trades and Occupations
DEF	Deaf Empowerment Firm	**QMR**	Quarterly Monitoring Report
DPSA	Department of Public Service and Administration	**SACIA**	Southern African Communications Industries Association
DTT	Digital Terrestrial Television	**SAP**	Systems Applications and Products
EE	Employment Equity	**SDF**	Skills Development Facilitator
ETQA	Education and Training Quality Assurance	**SDL**	Skills Development Levy
FOSS	Free Open Access Software	**SEDA**	Small Enterprise Development Agency
GDP	Gross Domestic Product	**SETA**	Sector Education and Training Authority
GITOC	Government Information Technology Officers Council	**SET**	Science, Engineering and Technology
HEI	Higher Education Institution	**SIC**	Standard Industrial Classification
HEMIS	Higher Education Management Information System	**SIP**	Strategic Integrated Projects
HRDSSA	Human Resource Development Strategy of South Africa	**SITA**	State Information Technology Agency
HTFV	Hard to Fill Vacancy	**SKA**	Square Kilometre Array
IBM	International Business Machines	**SLA**	Service-Level Agreement
IIBA	International Institute of Business Analysis	**SMME**	Small, Medium and Micro-enterprises
ICASA	Independent Communications Authority of South Africa	**SPO**	Sectoral Priority Occupations
ICT	Information and Communication Technology	**SSP**	Sector Skills Plan
IITPSA	Institute of Information Technology Professionals South Africa	**STB**	Set Top Box
IoT	Internet of Things	**TIA**	Technology Innovation Agency
IPAP	Industrial Policy Action Plan	**TVET**	Technical Vocational Education and Training
ISACA	Information Systems Audit and Control Association	**USAASA**	Universal Service and Access Agency of South Africa
IT	Information Technology	**VOD**	Video on Demand
ITA	Information Technology Association	**VOIP**	Voice Over Internet Protocol
M&E	Monitoring and Evaluation	**VR**	Virtual Reality
MANCO	Management Committee	**WIL**	Work Integrated Learning
MCSA	Microsoft Certified Solutions Associate	**WP-PSET**	White Paper on Post Schooling Education and Training
MCSD	Microsoft Certified Solutions Developer	**WSP**	Workplace Skills Plan

Executive Summary

The MICT Sector Skills Plan (SSP) has been developed over the period of NSDP to map out and plan for occupational skills needs in the Advertising, Film and Electronic Media, Electronics, Information Technology and Telecommunications industries. The SSP is updated each year to analyse the changes in the sector's labour market and does so against the backdrop of the economic performance of the sector and developmental agenda of the country. It sizes up the gap between the demand for and supply of skills and finally outlines strategies for dealing with the identified challenges.

Data collection tools and methods

The data collection tools used included: interview questionnaires specifically designed for the MICT SETA; employer surveys; and tracer studies. The main methods of data collection for the study are: a review of available literature, including national policy and strategy documents, industry plans and sector performance reports; an analysis of data, including SETA employer and employee data, economic and labour market trend data accessed through StatsSA and industry reports, SETA data on grant spending and learner enrolments and completions in recent years; interviews with industry stakeholders including employers; employer surveys; focus groups; and tracer studies.

In addition, there was continuous consultation with stakeholders in each of the sub-sectors, the SETA research team and SETA management focusing specifically on the SSP content and the update of the information in it. In relation to the Hard to fill vacancies, Skills gaps and PIVOTAL lists efforts have been made to triangulate findings and confirm the findings with stakeholders.

Sector Profile

The GDP growth rate of the country improved from -1.8% in 2020Q1 to 6.3% in 2020Q4. In 2020Q1, the Mining and quarrying sector was the worst performing relative to other sectors contributing -1.7% to GDP growth. This remained the case in 2020Q4, with the only other sector contributing negatively to GDP growth being the Finance, real estate and business services sector. The economic performance of the MICT sector as a result of the Covid-19 pandemic is mixed with some parts of the sector, such as information technology (IT), performing better than others, such as advertising. The sector remains amongst those that were less severely impacted by the pandemic.

As of 2021, the MICT sector is made up of 35 569 employers spread across five Sub-sectors. This represents a 23% increase from 28 829 in the previous year. Of the 35 569 employers in the sector, only 9 093 paid skills development levies during 2021, marking a 26% increase in levy payers. The majority (51%) of the employers in the sector (both levy and non-levy payers) are operating within the Information Technology sub-sector followed by 13% in the Electronics sub-sector.

The MICT sector experienced a sharp decline in the number of employees recording a total of 187 585 in 2021. The largest proportion (50%) of employees are working in the Information and Technology subsector followed by 29% working in the Tele-communications subsector. The subsector with the lowest number of employees is Advertising accounting 5% and Film and Electronic Media accounting 6%.

Key Skills Change Drivers

The key drivers of change influencing skills demand and supply across the MICT sector include artificial intelligence, cloud computing, big data analytics, 5G and internet of things.

Change drivers affect how businesses operate and survive into the future. Thus, new ways of doing things, including skills training, are required to exploit new opportunities in the market that emerge as a result of 4IR. Furthermore, the Covid-19 pandemic has spurred on the uptake of 4IR technologies and the relevant skills that are required to enable it. The above-mentioned change drivers call for the continued development of technologies and skills in the sector. However, this must be balanced with also catering for lower-end skills. Ensuring inclusive digital revolution means paying attention to those still becoming digitally literate.

Occupational Shortages and Skills Gaps

The following is a list of the top 10 sectoral priority occupations for the MICT sector: Software developer; Computer Network and Systems Engineer; ICT Systems Analyst; Management Consultant (Business Analyst); ICT Security Specialist; Multimedia Specialist; Programmer Analyst; Developer Programmer; ICT Project Manager; and ICT Sales Representative.

The predominant skills gaps in the sector include: Communication skills, Leadership skills, Technical skills, Project management skills, and Certified skills (CompTIA A+, Network+, MCSA, MCSE, Azure, CISCO, etc.).

SETA Partnerships

The MICT SETA has entered into partnerships with various institutions to advance sector development and growth. These partnerships are structured into the following typologies: Partnerships with TVET colleges; Partnerships with Universities; Partnerships for Special Projects; Partnerships with Industry Vendors; Partnerships with SMMEs; and Partnerships with Research Institutions.

There are a number of successful partnerships that were implemented by the SETA including the Deviare partnership. The model of success was organisational assessment, partner selection, partnership building and maintenance and evaluation. There were also partnerships that were not working well including TVET college partnerships. TVET colleges in rural areas are lacking in skilled lecturers, infrastructure and alternative centres of excellence. Thus, TVET colleges may at times lack delivery capacity, which impacts negatively on the timeous implementation of programmes.

SETA Monitoring and Evaluation

For the MICT SETA, monitoring involves a routine process of collecting data to provide information against set targets, it is a systematic assessment of performance against activities, programmes and projects. The MICT SETA employs monitoring to track progress on programme implementation to ensure consistent achievements of agreed upon deliverables. It provides early indications of progress, achievements, and challenges in programmes' implementation. The SETA uses evaluations to measure the outputs, outcomes and impact of programmes and projects. The SETA has recently established a distinct M&E division to ensure a more systematic and objective approach towards the attainment of strategic objectives and the assessment of their impact thereof.

Strategic Skills Priority Actions

The following set out the proposed broad skills development objectives for the sector:

1. Improve the trustworthiness of the data used for skills planning through data triangulation. Such systematic and in-depth research will be achieved through collaboration with industry bodies, universities and acclaimed research institutions.
2. Better position the MICT sector to enable the 4IR through increasing access to and uptake of relevant skills development interventions, and by developing required qualifications and learning interventions. This will be achieved further through support by the SETA for the development of the skills required to research, develop and commercialise 4IR technologies and products. The impact of Covid-19 in relation to the enablement of 4IR cannot be ignored therefore, in implementing 4IR priority programmes, companies that have been and will be impacted by Covid-19 are also accounted for in the SETA's strategies.
3. Set realistic targets in collaboration with industry, ensure implementation through the allocation of discretionary grants and monitor delivery of Service Level Agreement deliverables as a way of addressing sectoral occupational shortages and skills gaps. This will prioritise the development of skills that enable 4IR occupations and specialisations. The Covid-19 phenomenon has been taken into consideration with regard to the SETA's strategic planning and has been acknowledged as a catalyst for the necessary 4IR related skills development.
4. Identify TVETs with the potential for meaningful collaboration and enter into partnerships with them. These partnerships will recognise some of the TVETs as Centres of Specialisation, linking them with industry and ensuring that programmes offered are aligned to identified skills gaps for ease of learner placement on programmes such as WIL.
5. Scope skills development needs and priorities in rural areas, provide career and vocational guidance, support government in addressing e-governance issues and assist aspirant training providers to attain accreditation and deliver MICT SETA programmes. The SETA will support initiatives which apply technology in a manner that enables transformation of the sector, with regards to female learners, learners with disabilities and rural learners.
6. Improve provision of skills development to SMMEs, entrepreneurs and community-based organisations, particularly with regard to 4IR. This will enable the development and commercialisation of technologies and products that improve localisation and increase exports. The SETA will develop cross-sectoral partnerships and projects in the delivery of learning interventions.
7. Identify and develop occupational qualifications through the QCTO for occupations in high demand in consultation with the sector. Furthermore, the SETA will put in place mechanisms to prioritise 4IR related qualifications and ensure increased number of accredited skills development providers offering occupational qualifications in high demand on an annual basis.

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SSP Research Process and Methods

Introduction

In working towards the 2022/23 Sector Skills Plan (SSP) the MICT SETA was guided by the Department of Higher Education and Training's SSP guidelines and requirements framework. Of which a new requirements framework was released updating Chapters 2 and 4 of the SSP. It is key that evidence-based research is used in the SSP and that it is further informed by consultation with industry stakeholders, an analysis of subsector trends, and strategic engagement at the level of the Board. The SSP Research Process and Methods section presents the research process that was followed to prepare this SSP.

In summary, the research process started with a review of literature to look at the MICT sector broadly. Secondly, interviews were conducted with stakeholders and experts within each subsector including Trade Unions and Industry Associations. A random stratified sampling method was applied to ensure a proper representation of all the sub-sectors, questions asked in these interviews focused on the impact of the 4IR on the sector as well as the impact of the Covid-19 pandemic. The research process also involved employer surveys, which also focused on the 4IR and the pandemic, focus groups and a tracer study, which focused on the relevance and effectiveness of the learning programmes implemented by the SETA. Next, an analysis was conducted using StatsSA data and data found in industry research as well as WSP/ATR data supplied by the SETA and the Higher Education Management Information System (HEMIS) data sourced externally to provide information on the sector profile of the MICT sector and the supply of skills in the sector. Together, all of these sources were used to write a quality researched SSP.

Data collection tools and methods

The data collection tools used included: interview questionnaires specifically designed for the MICT SETA; employer surveys; and tracer studies.

The main methods of data collection for the study are: a review of available literature, including national policy and strategy documents, industry plans and sector performance reports; an analysis of data, including SETA employer and employee data, economic and labour market trend data accessed through StatsSA and industry reports, SETA data on grant spending and learner enrolments and completions in recent years, and HEMIS data on the supply of skills in the sector; interviews with industry stakeholders including employers; employer surveys; tracer studies; and focus groups.

In addition, there was continuous consultation with stakeholders in each of the sub-sectors, the SETA research team and SETA management focusing specifically on the SSP content and the update of the information in it. In relation to the Hard to fill vacancies, Skills gaps and PIVOTAL lists efforts have been made to triangulate findings and confirm the findings with stakeholders. The following data collection tools were used:

Review of Key Literature

As a first step, the current MTCT SETA SSP was reviewed. Next, the relevant policies and strategies of the country were reviewed. The aim is to ensure that the SSP is aligned with the country's key strategies, such as the Economic Reconstruction and Recovery Plan (ERRP), National Skills Development Plan (NSDP), the National Development Plan (NDP) and

associated Medium Term Strategic Framework (MTSF) plans, the New Growth Path (NGP), Industrial Policy Action Plan (IPAP), the White Paper on Post School Education and Training and the Human Resource Development Strategy of South Africa (HRDS-SA), and now the Covid-19 Economic Reconstruction and Recovery Skills Strategy, amongst others.

Workplace Skills Plan (WSP) and Annual Training Report (ATR)

For the period 2021/22, the final submission for WSP and ATR data from employers was 30 April 2021. After the SETA received the WSP/ATR data it had to be coded and mapped to reflect 2019 OFO codes. This is an important dataset which assists us in understanding what the training trends are as well as the qualifications and skills needed in the different sub-sectors.

HEMIS

HEMIS data is sourced from the Department of Higher Education and Training (DHET). It provides information on all of the public Higher Education Institutions (HEI) in the country on enrolments and graduation rates.

Online Employer Survey

An online employer survey was conducted in 2021. Data from this survey was used to supplement the WSP/ATR data since not all of the employers are captured in that dataset. The aim of the survey, together with getting additional data, is also to strengthen the relationship the SETA has with the employers in the sector. Additionally, valuable industry information is obtained from all of the MICT sub-sectors. Questions are asked about hard to fill vacancies, skills gaps, the impact of the Covid-19 pandemic as well as the impact of the 4IR, amongst others.

Tracer Study

In 2021, the SETA conducted a tracer study to assess the relevance and effectiveness of the learning programmes the SETA implements. The study aimed to determine the destinations of learners who have completed learnerships, internships, skills programmes, short learning programmes and bursary programmes; to understand the factors associated with employment/unemployment; to understand the intricacies of the articulation of qualifications into occupations; and to determine the nature of employment of learners who received employment.

In-Depth Interviews

Interviews were conducted with industry stakeholders in the sector. These were semi-structured interviews that allowed room for discussion on matters that are important to stakeholders. Interviews are important as the voices of key industry stakeholders are heard about important issues such as the pandemic, the 4IR and the economic performance of the sector.

Focus Groups

The MICT SETA undertakes yearly focus groups. This year, due to the lockdown restrictions implemented as a result of the Covid-19 pandemic, the SETA held two online SSP focus groups. To ensure that focus group discussions are effective, a focus group guide is used to facilitate the discussions. Participants usually receive the key research findings prior to the

focus groups being held. Topics of discussion included validating the scarce and critical skills identified in the research; identifying the necessary interventions needed to address skills needs; exploring difficulties experienced in relation to supply of such skills; highlighting challenges faced by stakeholders in working with the SETA in delivering relevant occupational programmes in each of the sub-sectors; and suggesting ideas for strengthening skills development.

Table 1: Research undertaken by the SETA

Topic	Nature (Design) of the Study	Objectives of Study	Data Collection Tool	Sample Size and Scope	Data Sources and Data Sets	Time Frame
Stakeholder Interviews	Qualitative	The objectives of these interviews are to get an understanding of key developments in the sector and gather insights regarding hard to fill vacancies, skills gaps, future skills and change drivers in the MICT sector. In addition, consultations had a special focus on the impact of the Fourth Industrial Revolution (4IR) and Covid-19. This study covers the views of various stakeholders across all the sub-sectors of the MICT sector.	• Interview questionnaire	• The scope of the interviews was employers, industry associations, research institutions and trade unions • 23 interviews were conducted	• MICT SETA Levy Huge File • Key role players list	2021/ 22
Stakeholder Survey	Quantitative and Qualitative	• The goal of this survey was to assess stakeholders' opinions on developments and skills requirements in the sector. The survey focussed on skills needs and the impact of 4IR and Covid-19. • The survey also sought to validate the findings from the WSP submissions with regards to hard to fill vacancies and skills gaps.	• Survey	• The scope of the survey was employers, industry associations, research institutions, training providers and trade unions • 411 electronic questionnaires were distributed.	• MICT SETA Levy Huge File • MICT SETA Training Provider List • Key role players list	2021/ 22

Topic	Nature (Design) of the Study	Objectives of Study	Data Collection Tool	Sample Size and Scope	Data Sources and Data Sets	Time Frame
Employer and Industry Association Focus Groups	Qualitative	The objectives of these group discussions are to test the findings of the draft SSP regarding hard to fill vacancies, skills gaps, future skills and change drivers in the MICT sector. This study covers the views of small to large employers and industry associations across all the sub-sectors of the MICT sector.	• Focus group guide • Structured discussion with employers and Industry Associations.	• 2 focus groups sessions were conducted: one for each of the five sub-sectors (IT, Telecommunications, Electronics, Film & Electronic Media, and Advertising) and an additional focus group with an industry chamber of SMMEs • Overall, 75 stakeholders attended across the focus groups	• MICT SETA Levy Huge File	2021/22
MICT SETA Covid-19 Pulse Survey	Quantitative and Qualitative	The objective of the survey was to ascertain the impact of the Covid-19 pandemic on the sector and employers' states of readiness to resume learning programmes and business operations given the lockdown imposed at that time.	• Survey	• The scope of the survey was employers and training providers • The sample size reached was 65	• MICT SETA Levy Huge File • MICT SETA Training Provider List	2021/22
MICT SETA Tracer Study	Quantitative and Qualitative	The study aimed to determine the destinations of learners who have completed learnerships, internships, skills programmes, short learning programmes and bursary programmes, amongst others.	• Survey • Telephone calls	• The scope of the survey and telephone calls were learners who completed MICT SETA learning programmes in the 2018/19 financial year.	• MICT SETA Levy Huge File • MICT SETA Training Provider List	2021/22

Conclusion

A mixed method of data collection was followed including quantitative and qualitative data. Provided that each method on its own has its limitations, using them all together certainly provides for a robust analysis of the MICT sector. There were two data challenges that emerged during the 2022/23 research process. These included:

i. StatsSA does not break down data according to the sub-sectors relevant to the MICT sector. Looking at what is contained in each StatsSA sector allowed us to determine which sectors are relevant to the MICT sector.
ii. HEMIS data for enrolments and graduation in the higher education system reflects up to 2019 enrolments. Data for 2020 onwards is not yet available.

Chapter 1: Sector Profile

1.1 Introduction

This chapter presents and profiles the shape and size of the Media, Information and Communication Technologies (MICT) sector including its scope of coverage and key role players, economic performance, employer profile and labour market profile. It also provides an economic trend analysis and projection of how the economy of the sector may unfold, the potential impact of Covid-19 and concludes with implications for skills development. In profiling the five sub-sectors of the MICT sector, research data from multiple sources, including publicly available literature and data as well as MICT SETA databases, were analysed. Specific data sources include SETA employer and employee data from the WSP/ATR datasets, economic and labour market trend data accessed through StatsSA and industry reports, employer survey data, industry interviews as well as focus groups.

1.2 Scope of Coverage

The MICT sector is made up of five sub-sectors that are interrelated but also quite distinct and identifiable. These are advertising, film and electronic media, electronics, information technology and telecommunications.

The Department of Higher Education and Training, under section 9(1) of the Skills Development Act (Act No. 97 of 1998), as amended, re-established the Sector Education and Training Authorities (SETAs) within a new SETA landscape from 1 April 2020 to 31 March 2030. The Standard Industry Classification (SIC) codes that demarcate the MICT sector, shown in the table below, fall under four different sub-industries, namely: (1) manufacturing; (2) transport, storage and communication; (3) finance, insurance, real estate and business services; and (4) community, social and personal services.

Table 2: The MICT SETA SIC Code List

Sub-sector	SIC Code	Main Activity Description
Advertising	88310	Advertising
	88311	Activities of Advertising Agents
	88313	Commercial Design
Film and Electronic Media	96110	Motion Picture and Video Production and Distribution
	96112	Related Activities - Film and Tape Renting to Other Industries, Booking, Delivery and Storage
	96113	Film and Video Reproduction
	96132	Production and Broadcast of Radio and Television Broadcast Content
	96200	News Agency Activities
	88940	Photographic Activities
Electronics	35791	Manufacture of Alarm Systems
	75216	Security Systems Services Except Locksmiths
	75217	Office Automation, Office Machinery and Equipment Rental Leasing Including Installation and Maintenance
	86004	Electronic and Precision Equipment/ Computer Repairs and Maintenance
	86010	Consumer Electronics Repair and Maintenance
	86013	Other Electronic and Precision Equipment Repair and Maintenance
	86014	Repair and Maintenance of Electronic Marine Equipment
	87142	Research and Development of Electronic Equipment and Systems
	87143	Information Technology Import and Product Integration of Pre-Manufactured Electronics IT and Telecommunications Equipment
	87146	Research and Development in The Physical and Engineering Sciences
	87147	Electronics Importation and Product Integration of Pre-Manufactured Electronics IT and Telecommunications Equipment
	96133	Installation, Maintenance and Repair of Tracking Devices for Cars
Information Technology	86001	Software Publishers
	86002	Computer Systems Design and Related Services

Sub-sector	SIC Code	Main Activity Description
	86003	Computer Facilities Management Services
	86005	Computer Rental and Leasing
	86006	Computer Programming Services
	86007	Other Computer Related Activities
	86008	Call Centre and Customer Relationship Management Systems Development and Installations Activities
	86009	Computer System Design Services and Integrated Solutions
	86011	Computer and Office Machine Repair, Maintenance and Support Services
Tele-communications	75200	Telecommunication
	75201	Wired Telecommunications Carriers
	75202	Television and Radio Signal Distribution
	75203	Cable Networks and Programme Distribution
	75204	Telephone
	75205	Wireless Telecommunications Carriers except Satellite Radio Telephone
	75209	Television Broadcasting
	75211	Telecommunications and Wired Telecommunication Carriers
	75212	Paging
	75213	Cellular and Other Wireless Telecommunications
	75214	Satellite Telecommunications
	75215	Other Telecommunications
	86012	Communication Equipment Repair and Maintenance
	87148	Telecommunications Importation and Product Integration of Pre-Manufactured Electronics IT and Telecommunications Equipment
	96131	Providing Radio and Television Transmission Signals

Source: Government Notice, No. 42589, Government Gazette, 22 July 2019

1.3 Key Role Players

The key stakeholders that contribute to the sector policy and regulatory environment include industry and employer bodies, professional bodies, and state organs. The Department of Communications & Digital Technologies (DCDT) is the key government department that has links with the work of the sector. Professional associations advance professional learning and continuous development amongst professionals in the sector, whilst there are several trade unions representing the interests and rights of workers within the sector. Some of the key role players are listed in the table below.

Table 3: Key role players in the MICT sector

Stakeholder	Role
Association for Communication and Advertising South Africa (ACASA)	ACASA is the official representative body of South Africa's advertising and communications profession. It works with national and provincial government to promote agency and industry transformation and is committed to the discovery and development of new talent through corporate social responsibility programmes. In relation to outcome 4.2 of the NSDP, ACASA trains for the advertising agencies and places people within the industry. Currently it has proposed a partnership with the MICT SETA on a 3-year learning programme.
Black IT Forum (BITF)	The Black IT Forum (BITF) is a forum that represents the interests of black students, professionals and businesses in the ICT sector. Its main focus is the formulation of transformational programmes and the economic inclusion. It works with government and private sector in unlocking barriers of transformation. It responds to NSDP Outcome 4.6 on entrepreneurship and cooperative development, through the facilitation of SMME development programmes. The BITF also responds to Outcome 4.2 of the NSDP by facilitating access to skills development programmes for graduates and unemployed youth. Moreover, BITF plays a role in providing in-depth research of the ICT industry, contributing to NSDP Outcome 1 which focuses on the Identification and increase production of occupations in high demand.
Southern African Communications Industries Association (SACIA)	SACIA is a non-profit organisation registered as a Section 21 company in South Africa. It is specifically designed to promote the adoption of professional standards and ethical business practice in the communications industry throughout Southern Africa. It seeks to further the interests of members through partnership and representation on a range of issues. Primary activities include Market Research & Intelligence Services, Networking activities, and the development of training and skills development programmes. SACIA's activities respond to outcome 4.2 of the NSDP.

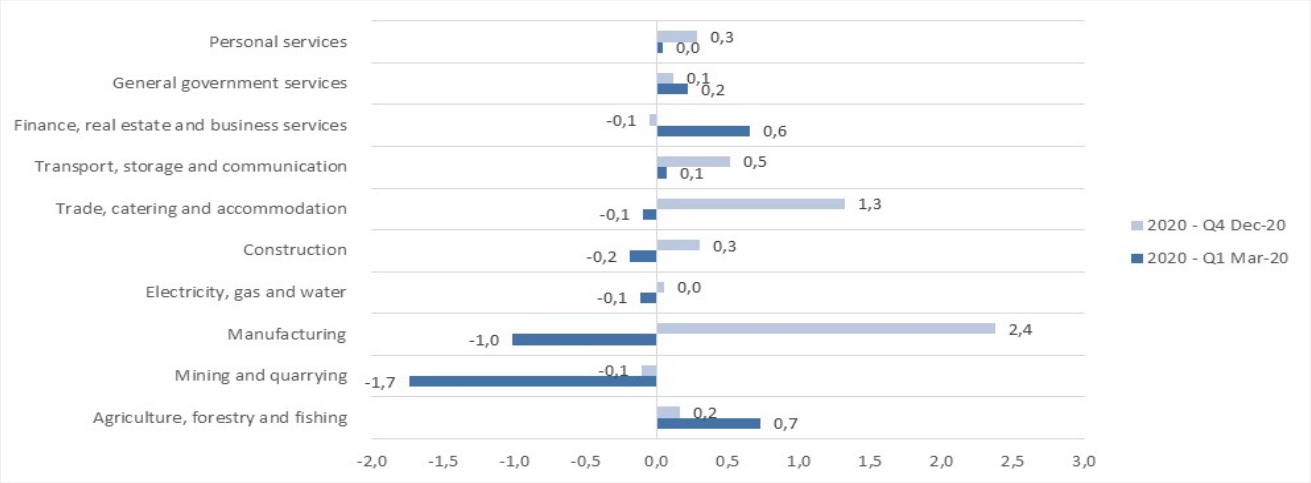
Stakeholder	Role
Institute of Information Technology Professionals South Africa (IITPSA)	IITPSA actively engages with commerce, industry, and government in order to influence policy formulation on behalf of both its own members and other stakeholders. The Society also encourages the growth of professionalism and the responsible and professional use of Information and Communications Technology throughout the South African economy. The IITPSA responds to the NSDP outcome 4.2 by working together with other interested stakeholders to accredit university programmes with computing content at South African Universities. It also has a "Computer Professional Education Programme" that it offers online at Masters Degree level.
Information Technology Association (ITA)	The ITA stands at the threshold of a new era for the local ICT Industry, with its Membership and industry partners, it positions itself to play a crucial role in the growth and development of the ICT sector, as well as serving as a credible, effective channel of communication between various stakeholders. One of the functions of the ITA is lobbying and negotiating at government level on behalf of its members. Members have the opportunity of influencing the South African legislative mechanism through verbal and written submissions by the ITA. This has far reaching effects, which go beyond its members and positively impact the ICT industry of South Africa as a whole. ITA responds to NSDP outcome 4.2 through learning programmes in partnership with the MICT SETA, Microsoft SA, Siemens, SAP, Axiz, and IBM. ITA is in partnership with the DCDT, DPSA, GITOC and SITA. These partnerships are about building an ongoing digital government skills programme, which covers foundational digital skills (such as computer user skills) and advanced skills (such as data analytics skills).
Department of Communications & Digital Technologies (DCDT)	DCDT partners with universities and other partners such as IITPSA, ITA, ICASA and other relevant industry professional bodies to develop ICT policies and legislations that advance the South African economy. The department has special partnerships with, amongst others, civil society organisations, particularly those that have a major interest in skills building and achieving race, gender and disability equity. Through its activities it responds to NSDP outcome 4.2.
National Association of Broadcasters (NAB)	The NAB is a non-profit group of organisations and individuals working in broadcasting and related industries. The NAB assists with industry regulation and is grounded in the principles of democracy, diversity and freedom of expression. In response to NSDP outcome 4.2, it has offered internships in the past in fields such as digital marketing and continues to do so in response to changing environment cause by 4IR technologies.
Government Information Technology Officers Council (GITOC)	GITOC is a body made up of Chief Information Officers of government departments across South Africa. It aims to discuss issues of mutual interest and mainstream excellence in information technology across the public service. One of the main programmes of GITOC is free open access software (FOSS), which they intend to implement across government. As the ICT oversight body of government, it aims to respond to outcome 4.2 of the NSDP by introducing ICT curriculum at the National School of Government which will uplift and align strategic ICT pillars that are required as knowledge for Government Officials on matters pertaining to Big Data, Government, and Cybersecurity.
Information and Communication Technologies SMME Chamber (ICT SMME Chamber)	The ICT SMME Chamber is recognised for its importance and centrality in South Africa's development framework, the National Development Plan, and numerous supporting policy documents of the South African government. It plays a critical role in engaging with government and other ICT stakeholders, and in lobbying government on behalf of the ICT SMMEs on all matters of ICT SMME development and ICT sector transformation. It responds to NSD outcome 4.6 on entrepreneurship and cooperative development, through a partnership with the Technology Innovation Agency (TIA). The Chamber supports the development of technologies from proof of concept, product prototyping, and, ultimately, demonstration of the product in an operating environment.
Universal Service and Access Agency of South Africa (USAASA)	USAASA is a State-Owned Entity of government established through the Electronic Communications Act, No 36 of 2005, to ensure that "every man, woman and child whether living in the remote areas of the Kalahari or urban areas of Gauteng can be able to connect, speak, explore and study using ICT." In providing crucial infrastructure to rural communities and educational institutions, USAASA contributes to realising NSDP outcomes 4.2 and 4.5.

1.4 Economic Performance

The Media, Information and Communication Technologies (MICT) sector is crucial to the economic recovery of the country. The economic performance of the sector as a result of the Covid-19 pandemic is mixed with some parts of the sector, such as information technology (IT), performing better than others, such as advertising. The sector remains amongst those that were less severely impacted by the pandemic.

Figure 1 below illustrates each sector's contribution to GDP growth in 2020Q1 and 2020Q4. The GDP growth rate in 2020Q1 was -1.8% and this improved to 6.3% in 2020Q4. In 2020Q1, the Mining and quarrying sector was the worst performing relative to other sectors contributing -1.7% to GDP growth. This remained the case in 2020Q4, with the only other sector contributing negatively to GDP growth being the Finance, real estate and business services sector.

Figure 1: Sector Contribution to GDP



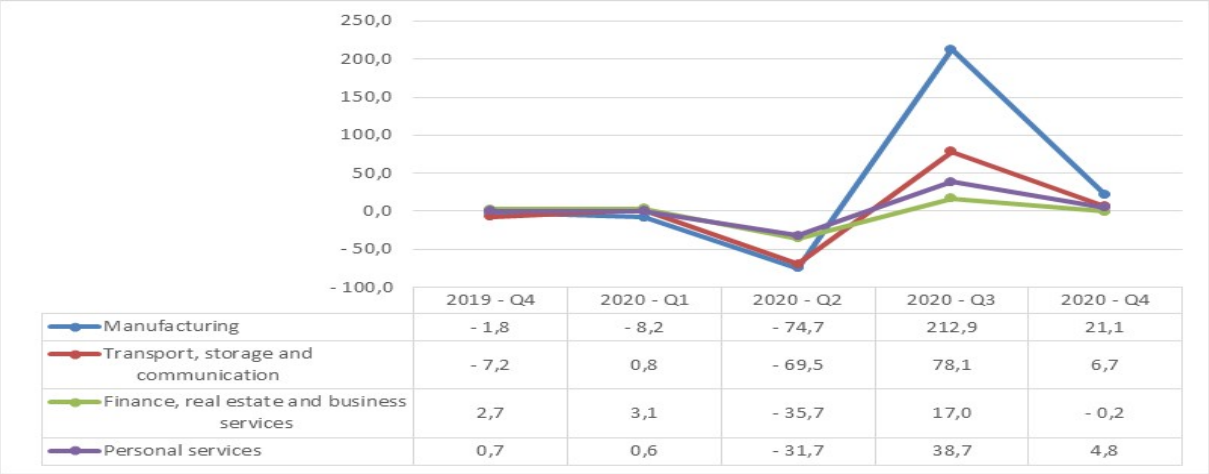
Source: Gross Domestic Product (GDP), 4th Quarter 2020 (StatsSA)

The annual real GDP growth rate for 2019 was 0.2%. This declined significantly to -7.0% in 2020, well below the lowest reading since 2009 when the economy contracted by 1,5% (StatsSA, 2021).

In doing an in-depth analysis of the economic sectors listed in the figure above, it was found that the MICT sector subsectors finds expression in the: Manufacturing sector - Reproduction of recorded media, Recycling; Transport, storage and communication sector - Telecommunication; Finance, real estate and business services sector - Advertising, Hardware consultancy, Software consultancy and supply, Data processing, Database activities, Maintenance and repair of office, accounting, and computing machinery, and Other computer related activities; and Personal services sector - News agency activities, and Motion picture, radio, television, and other entertainment activities.

Figure 2 below shows the growth rate of these sectors:

Figure 2: GDP growth rates of selected economic sectors



	2019 - Q4	2020 - Q1	2020 - Q2	2020 - Q3	2020 - Q4
Manufacturing	- 1,8	- 8,2	- 74,7	212,9	21,1
Transport, storage and communication	- 7,2	0,8	- 69,5	78,1	6,7
Finance, real estate and business services	2,7	3,1	- 35,7	17,0	- 0,2
Personal services	0,7	0,6	- 31,7	38,7	4,8

Source: Gross Domestic Product (GDP),4th Quarter 2020 (StatsSA)

The biggest disruption was in the manufacturing sector recording GDP growth rates as low as -74.7% (2020Q2) to as high as 212.9% (2020Q3). This sector also has the highest growth rate in 2020Q4 (21.1%). When looking at 2020Q1 and 2020Q4 all of the sectors in Figure 2 improved apart from the Finance, real estate and business services sector worsening from 3.1% in 2020Q1 to -0.2% in 2020Q4. As mentioned previously, this points to a mixed picture of economic performance for the MICT sector subsectors.

1.4.1 How the Covid-19 pandemic exacerbated the usage 4IR technologies, and its impact on the MICT sector

The importance of the adoption of the Fourth Industrial Revolution (4IR) in the MICT has long been acknowledged. New technologies such as artificial intelligence, cloud computing, virtual and augmented reality and the internet of things, amongst others has already proven to impact this sector in profound ways.

Research shows that the advent of the Covid-19 pandemic has exacerbated the reality of the 4IR digital workflows, cloud computing, automation, amongst others. The pandemic brought about a number of new ways of doing things such as working remotely, which brought about an exponential rise in video calls/phone calls as an increasing number of people are organizing meetings via apps or collaboration platforms; a rise in e-learning; online education; simulation exercises, and e-governance, amongst others (MICT SETA Focus Group, 2021; BusinessWire, 2021). As such, cybersecurity, and data security saw a surge as most workforces are operating remotely. Cloud services grew, boosted by higher usage of content, video conferencing, and the impact of remote access to corporate networks (BusinessWire, 2021).

The pandemic is considerably changing consumption habits as consumers are making more purchases online and digitally. This fuels more online purchases of technological products and services, an upsurge in cloud-based services, and the need for more devices per household. The media sector grew in importance as more people became dependant on the news. Social distancing and self-isolation meant that telecommunication has become an elevated essential service. All of these factors resulted in the MICT sector not being impacted as negatively by the pandemic as many other sectors such as the mining sector or the construction sector, amongst others (Oberoi & Singh, n.d).

However, there were some negative consequences as well. The impact of the pandemic exposed the fact that many South Africans lack, not just access to the internet, but also access to digital devices that would enable them to work remotely and continue with other aspects of their lives via online channels. The country suffers from digital inequality with low levels of internet penetration specifically in rural areas, high mobile data prices, expensive smart devices and expensive and low-bandwidth connectivity in rural areas making social distancing and self-isolation containment measures more difficult for some than others (MICT SETA Industry interviews, 2021; Maleka, 2020). There is the additional challenge of loss of life brought by the pandemic, organisations are often caught unprepared to deal with the replacement of critical skills as result of the pandemic. There is a need for planning for how those lost skills will be replenished (MICT SETA Industry interviews, 2021).

The MICT SETA conducted a survey wherein employers reported on the impact Covid-19 had on their businesses (2021). Of the 186 responses received, 70.4% indicated that they experienced reduced revenue; 41.4% reported reduced productivity; 29% indicated that they retrenched staff; and 24.7% reported that they cut down working hours of staff. However,

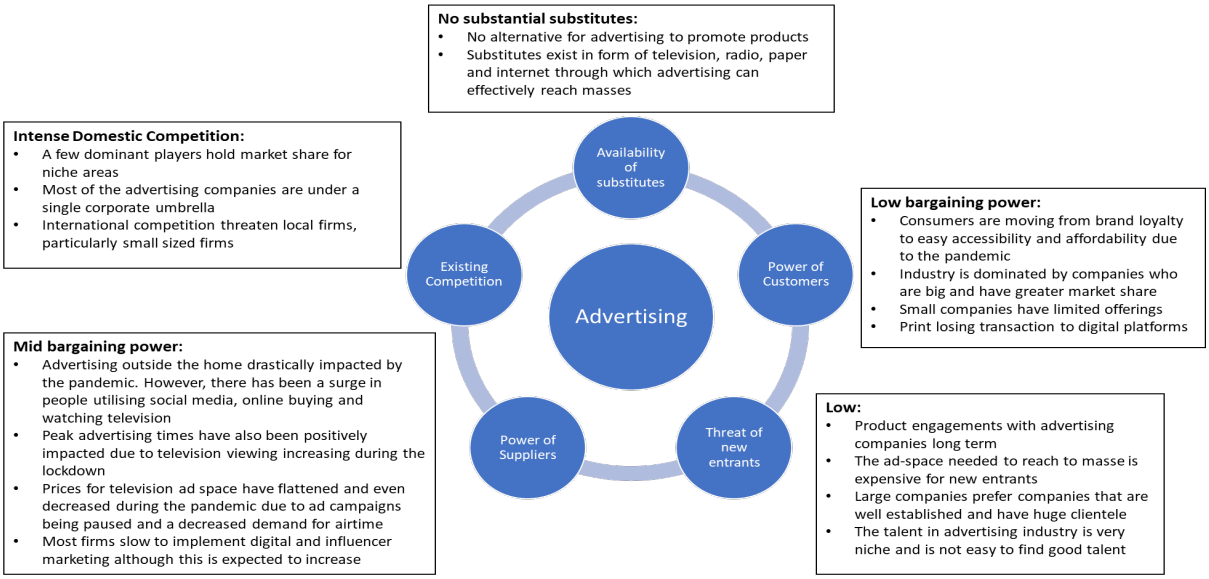
there were employers who reported an increase in productivity (10.2%); increased working hours (9.1%) and some reported that there was no impact on their businesses (9.7%). In terms of retrenchments, 14% of respondents reported that they retrenched less than 10% of staff, 10.8% retrenched between 10% and 20% of staff; and 7% reported to having retrenched more than 50% of staff. Furthermore, the BeyondCovid Business Survey which ran between July 2020 and March 2021 found that 21% of the business surveyed were closed, although 64% of them indicated they expected to reopen. In terms of operating capacity, 54% of businesses reported that they were currently operating below capacity. Also, 41% of businesses were planning to retrench staff over the next six months. Finally, the survey showed that businesses expected recovery to pre-Covid-19 levels to take three-and-a-half years (BeyondCovid Survey, 2021).

1.4.2 Advertising

The South African advertising industry had total revenues of $2.5 billion in 2020, representing a CAGR of 2.4% between 2016 and 2020 (MarketLine, 2021). Ad spending in the Advertising market is projected to reach $2.4 billion in 2021. The market's largest segment is TV & Video Advertising with a market volume of $531 million in 2021 (Statista, n.d). However, internet advertising is consistently gaining ground and is expected to surpass television in the next three years. Globally, social media advertising was expected to account for over 15% of international spend in 2020 and online video advertising for almost 10%. South Africa has many advertising agencies offering different services which are mostly owned by a few key international holding companies such as Omnicom, WPP and Publicis, with stakeholders estimating that almost 80% of the industry is in foreign hands.

In terms of the impact of the pandemic, the knock-on effects of lockdown measures saw companies looking for areas where they can contain costs, one of the first things to be affected are advertising budgets. Covid-19 has resulted in substantial changes to the way consumers are using technology and accessing content, including a rise in television and digital consumption during lockdown. Advertisers are cutting costs, shifting to digital channels and rescheduled investments to later in 2020. Filming of adverts and local series and soaps was allowed under lockdown levels 4 and 3 with some filming restrictions, while local shooting of international films and adverts resumed towards the end of 2020 (Shand, 2020a). The following diagram presents a Porter's Analysis of competition in the advertising sub-sector.

Figure 3: Advertising Porter's Analysis



1.4.3 Film and Electronic Media

The Covid-19 pandemic has had a substantial impact on the film industry as filming stopped initially and cinemas closed. Since opening in August 2020, attendance is not back to previous levels because of reduced seating capacity in most cinemas to implement social distancing measures. Also, people still fear infection. The impact has disrupted the traditional reliance on theatres as the first release window and the way of doing business in the film distribution industry (Maleka, 2020; NFVF, 2020).

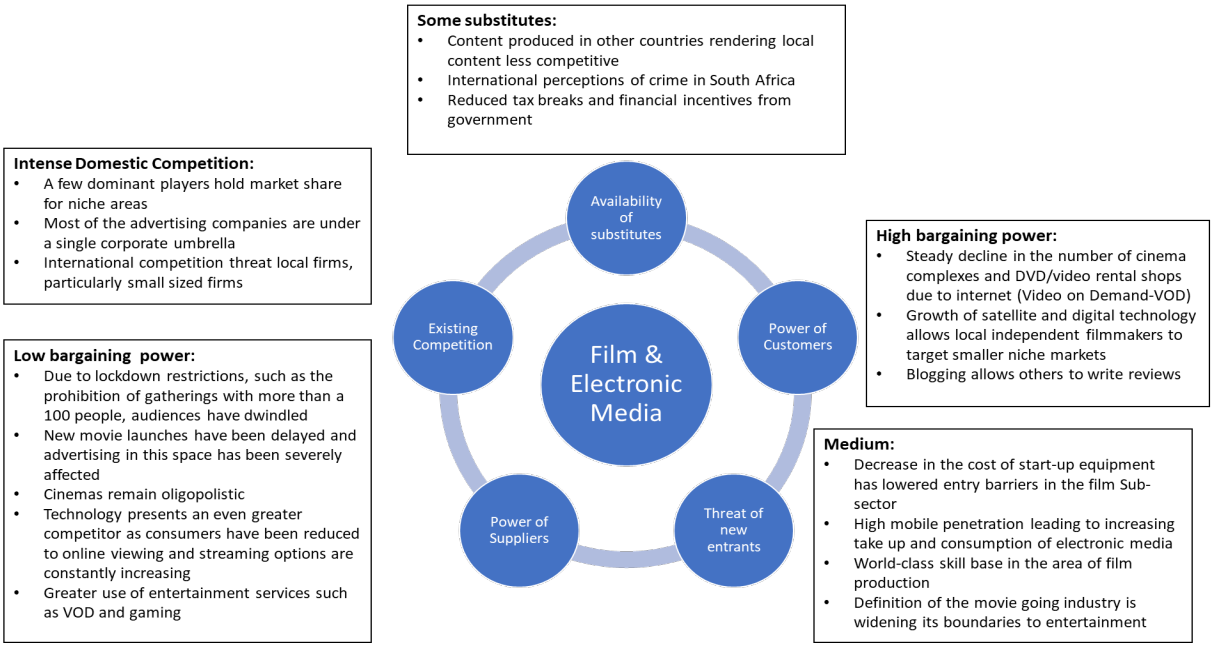
South Africa's total box office revenues for the year 2020 amounted to R214 million, a decline from R1.2 billion compared to 2019 (NFVF, 2020). The total number of films released in South African cinemas dropped from 190 films in 2019 to 96 films in 2020. There were 6 domestic films released in 2020 with box office earnings of R7.6 million placing South Africa's Market Share at 3.5%. This was a significant decline from R59.7 million domestic box office earnings in 2019 (NFVF, 2020). However, increased accessibility and high-speed internet have been game changers for the film industry. Online streaming services such as Showmax and Netflix have changed the way people use TV and film. Streaming has also changed the way copyright and licensing agreements are regulated. Local television production was proclaimed an essential service and continued with restrictions.

In South Africa, the biggest obstacle to a flourishing industry is the monopoly that the broadcasters have on the sector in terms of ownership of content. This is changing as the monopoly that the SABC, M-Net and eTV have is being challenged because of the streaming opportunities presented by Netflix in particular. Local film companies are now able to secure deals with global reach. There remain significant barriers to entry in the industry. Content creation is capital intensive requiring advanced technology and high-level skill sets, and professional film schools are expensive. But technology is increasing accessibility and making production more cost-effective, and it is relatively easy to set up a small-scale film company (Shand, 2020b).

In terms of radio, South Africa has 333 radio stations including community stations. Radio is a widely accessible entertainment format, and despite the rise of new technologies such as streaming and podcasts, radio remains popular in the country (Ngoako, 2020). The radio sector revenue increased in South Africa, even during the pandemic, from R4.5 billion ($319 million) in 2019 to R4.7 billion ($333 million) in 2021 with a CAGR of 2.1% between 2018 and 2023 (PwC, 2021). The total entertainment and media sector in South Africa has a CAGR of 6% between 2018 and 2023 (PwC, 2021).

The following diagram presents a Porter's Analysis of competition in the Film and Electronic Media sub-sector.

Figure 4: Film and Electronic Media Porter's Analysis

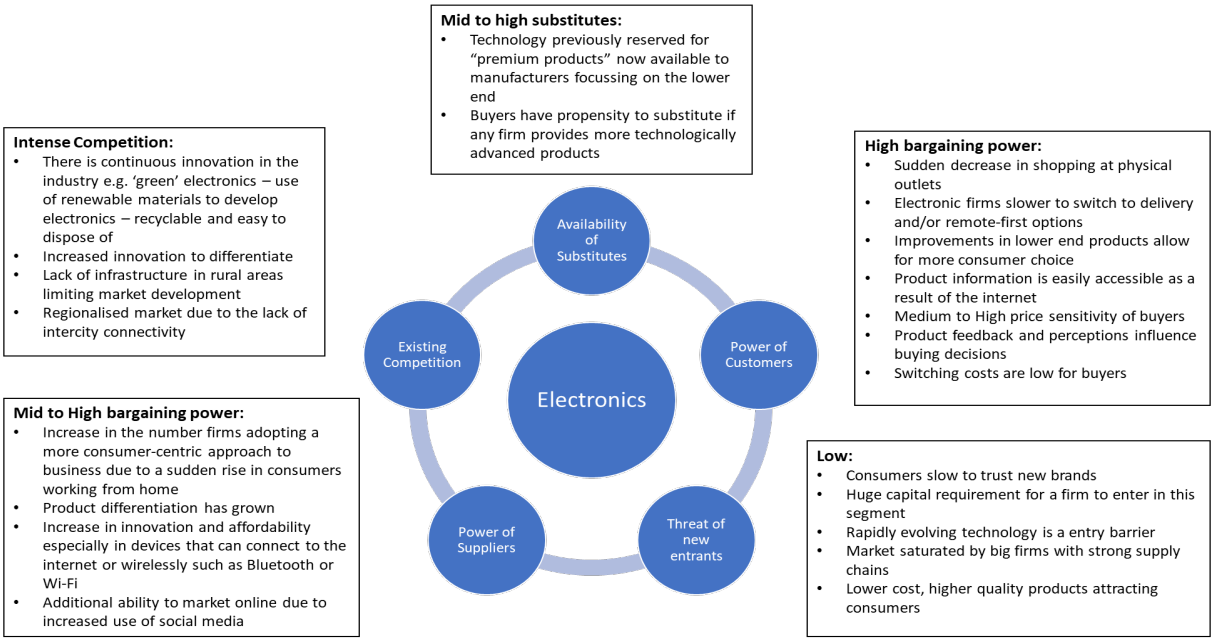


1.4.4 Electronics

Decreasing household incomes, coupled with the weakened rand will negatively impact spending in the consumer electronics market, particularly on PCs, computer hardware and TV sets. Meanwhile, smartphones will continue to cannibalise connected device market share from tablets. Larger smartphone screens and better functionality have made these higher-priced products more essential purchases in the minds of consumers, while the emergence of new sub-USD50 smartphones will find appeal with lower-income customers, adding further pressure for vendors (FitchSolutions, n.d). The South African mobile phones market volume grew by 30% in 2020. However, the mobile phones market value shrank by 21.5% in 2020 to reach a value of $5.6 billion. South Africa accounts for 0.8% of the global mobile phones market value (MarketLine, 2021).

The following diagram presents a Porter's Analysis of competition in the Electronics sub-sector.

Figure 5: Electronics Porter's Analysis



A rebound is predicted for the South African consumer electronics market in 2021. This is supported by improved consumer sentiment as well as the increasing pace of the global economic recovery. In 2025, the South African mobile phones market is forecast to have a value of $7.9 billion, an increase of 41.1% since 2020 (MarketLine, 2021). A key downside to this outlook is the impact of additional waves of infection as well as variants of the Covid-19 virus which may be resistant to available vaccines.

1.4.5 Information Technology (IT)

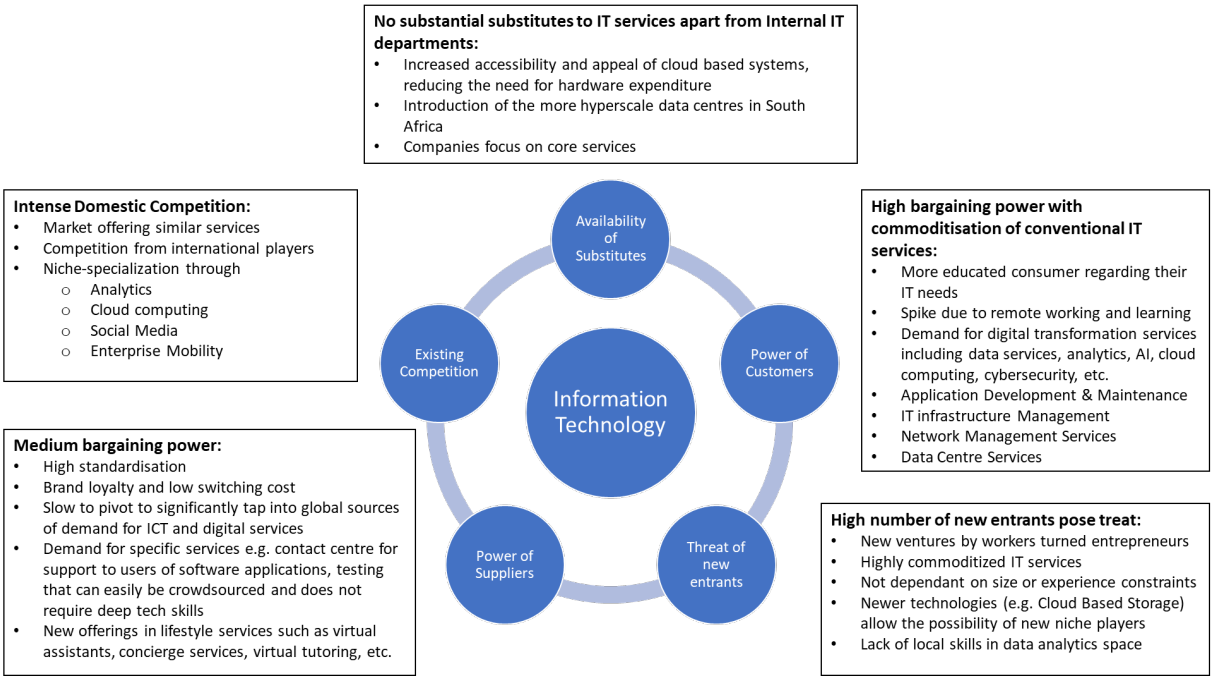
During the Covid-19 pandemic, technology and internet connectivity have helped to maintain business continuity, keep students in education and ensure online access to essential goods and services. However, the pandemic has also exposed significant areas of digital inequality and exclusion in areas without internet access.

It is predicted that that there are more than 20 000 companies in the ICT sector that contributes about 8% to South Africa's GDP. South Africa's IT sector is generally robust, has access to the latest technologies and methodologies and underpins the operations of most other sectors of the economy. However, there is a significant shortage of specialised skills in the sector.

Lockdown restrictions resulted in increased adoption of digitalisation of business processes, remote working, e-learning, e-commerce, e-banking, e-payment services, e-insurance, tele-medicine and virtual events resulting in a higher demand for IT technologies and services to support these activities. Many sectors may work from home permanently, which may lead to additional revenue for the IT sector. However, cybersecurity risks have increased as home users may not have effective security systems (Kneale, 2020).

The following diagram presents a Porter's Analysis of competition in the IT sub-sector.

Figure 6: Information Technology Porter's Analysis



In terms of forecasts, following a decline in the sector in 2020 due to the pandemic, the IT market is expected to rebound in 2021 as more firms return to work resulting in a rise in IT spending. Spending maintains a positive growth trajectory through to the end of the medium-term forecast in 2025. The software and services segments are expected to provide a boost owing to increased demand from public and private sector organisations looking to digitalise

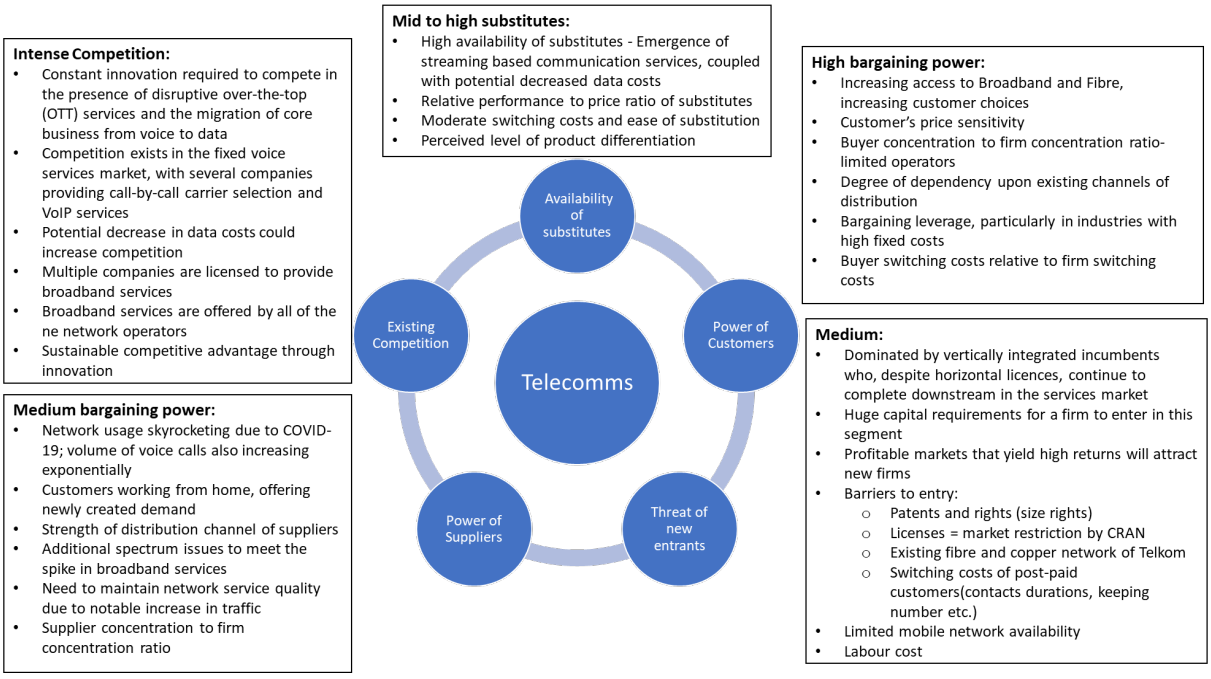
their operations. Stronger growth is also expected over the medium term as enterprises look to leverage the growing availability of cloud-based solutions to drive cost-cutting and efficiency gains in their operations. In terms of IT services, growth will be driven by rising demand for advanced data services. The main downsides are attributed to the country's negative credit rating and significant currency weakness in what was already a weakened economic environment and increasing state debt load (FitchSolutions, n.d).

1.4.6 Telecommunications

The South African telecommunications market is the most advanced in Sub-Saharan Africa, with profitable potentials in both mobile and fixed line services (FitchSolutions, n.d). The South African telecommunication services market had total revenues of $9.6 billion in 2019, representing a CAGR of -1.7% between 2015 and 2019. The wireless segment was the market's most profitable in 2019, with total revenues of $7.3 billion, equivalent to 76.1% of the market's overall value. South Africa accounts for 0.8% of the global telecommunication services market value (MarketLine, 2020).

During lockdown, data traffic has risen significantly but prepaid subscriber numbers have declined, and some operators have reported a decrease in service revenue. Key experts in the sector are of the view that data costs will be brought down, and competition will be increased due to a new bid for high frequency spectrum which was set to conclude by 31 March 2021. Voice's contribution to overall revenue is falling, with the decline being offset by growth in mobile data income. However, data prices are also slowly falling, and the intensive-user market of wealthy and contract consumers is increasingly stable. The majority of subscriber growth is in the lower-revenue prepaid segment. The following diagram presents a Porter's Analysis of competition in the Telecommunications sub-sector.

Figure 7: Telecommunications Porter's Analysis



A key aspect of mobile operators' business strategy is the sale of devices, particularly smartphones. While device sales earn significant revenue for the networks each year, many devices are heavily subsidised and much of their importance lies in the ability to drive growth in data traffic and demand. There are about 53 million active smartphones in the country and smartphone penetration continues to grow. Devices such as smart watches and fitness trackers are not yet very common, but ownership has increased considerably. Large players

have introduced relatively cheap smartphones or “smart” feature phones in an effort to drive smartphone uptake and increase the number of data-enabled devices on their networks (Timm, 2021).

In terms of forecasts, in 2024, the South African telecommunication services market is forecast to have a value of $10.7 billion, an increase of 11.5% since 2019 (MarketLine, 2020). Mobile and wireline data services will be the core growth vectors through to the end of the 2030 forecast period.

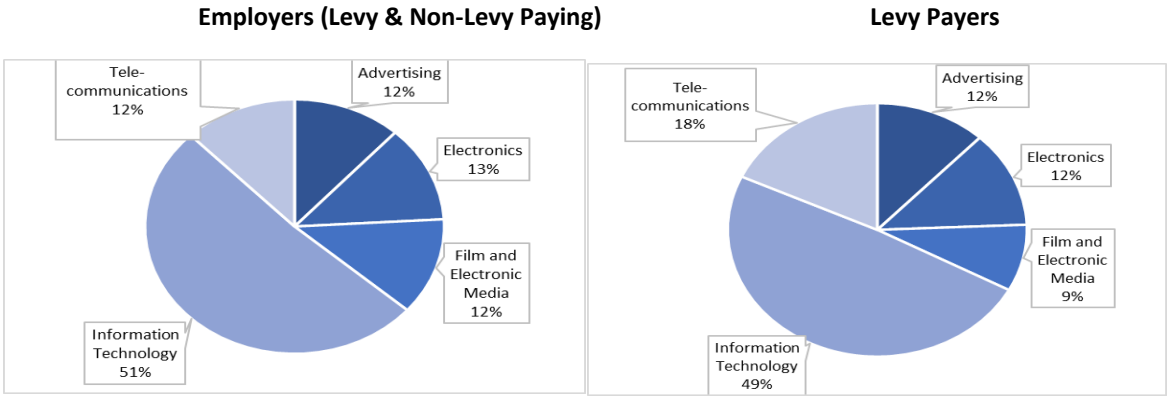
1.5 Employer Profile

As of 2021, the MICT sector is made up of 35 569 employers spread across five sub-sectors. This represents a 23% increase from 28 829 in the previous year. Of the 35 569 employers in the sector, only 9 093 paid skills development levies during 2021, marking a 26% increase in levy payers.

1.5.1 Subsector distribution

The majority (51%) of the employers in the sector (both levy and non-levy payers) are operating within the Information Technology followed by 13% in Electronics. Advertising, Tele-communication and Film and Electronic Media sub-sectors each account for 12% of the total pool of employers.

Figure 8: MICT sector Employers per Sub-sector



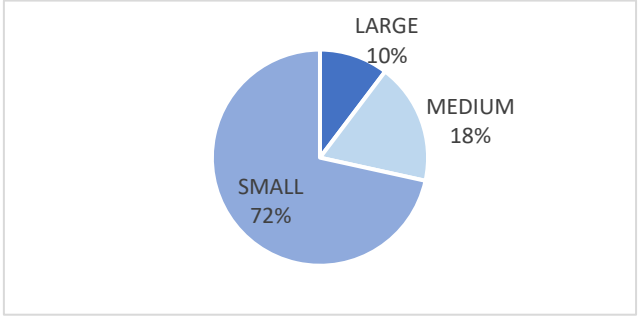
Source: MICT SETA Levy Huge File, 2020/21

The levy paying organization are mostly operating in Information Technology (49%) sub-sector, 18% in Tele-communications and Advertising and Electronics each accounting for 12%. Only 9% are in the Film and Electronics sub-sector.

1.5.2 Distribution by size

The vast majority (72%) of employers in the sector are small businesses employing below 50 employees, 18% medium and 10% are large businesses employing above 50 employees.

Figure 9: Size of employers in the sector

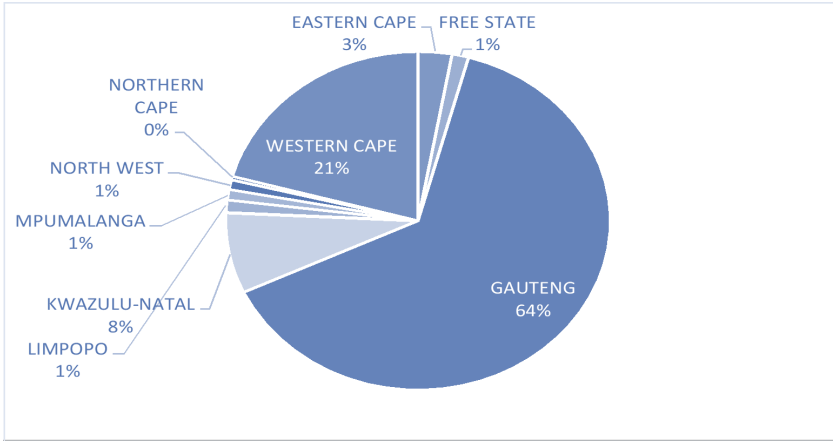


Source: MICT SETA Levy Huge File, 2020/21

1.5.3 Distribution by province

Figure 10 below reflects the number of employers per province. Gauteng hosts the largest proportion of employers across the five sub-sectors followed by the Western accounting 21%. About 8% of employers are based in KwaZulu Natal while 3% are in the Eastern Cape. Free State, Mpumalanga, North-west, and Limpopo only hosts 1% each of the total employers.

Figure 10: MICT sector size of Employers Per Province

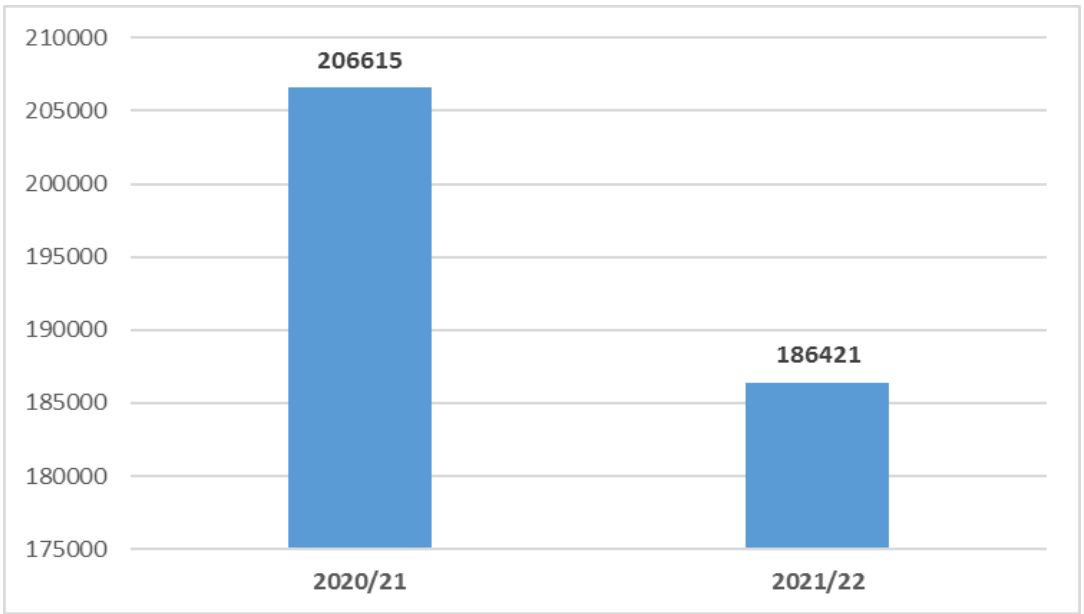


Source: MICT SETA Levy Huge File, 2021

1.6 Labour Market Profile

This subsection discusses the new developments in the labour market between 2020 and 2021. As shown the figure below, the MICT sector experienced a sharp decline in the number of employees recording a total of 187 585 in 2021.

Figure 11: Employment in the MICT sector



Source: MICT SETA Levy Huge File, 2021

1.6.1 Sub-sector distribution of employees

The largest proportion (50%) of employees are working in the Information and Technology sub-sector followed by 29% working in the Tele-communications sub-sector, 10% in the Electronics subsector. The sub-sectors with the lowest number of employees is Advertising accounting 5% and Film and Electronic Media accounting 6%. Table 4 below shows the disaggregation:

Table 4: Sub-sector distribution of employees

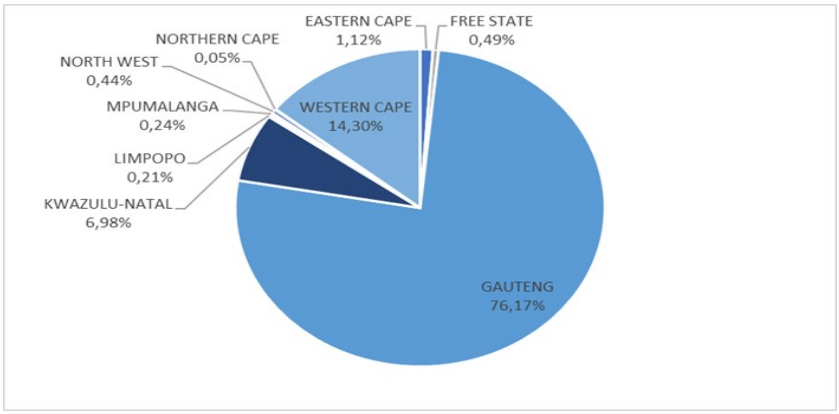
Subsector	Number of employees	Percentage
Advertising	8964	5%
Electronics	19426	10%
Film and Electronic Media	10968	6%
Information Technology	92555	50%
Tele-communications	54508	29%
Total	186 421	100

Source: MICT SETA Levy Huge File, 2021

1.6.2 Employee Geographic Distribution

The figure below shows the spread of all employees across the provinces. The province with the largest number of employees is Gauteng (76%), followed by the Western Cape (14%) and KwaZulu-Natal (7%). These three provinces account for nearly 100 % of all employees in the sector. Northern Cape (0.05%) has the fewest number of employees in the country, followed by Limpopo (0.21%) and Mpumalanga (0.24%).

Figure 12: Provincial Distribution



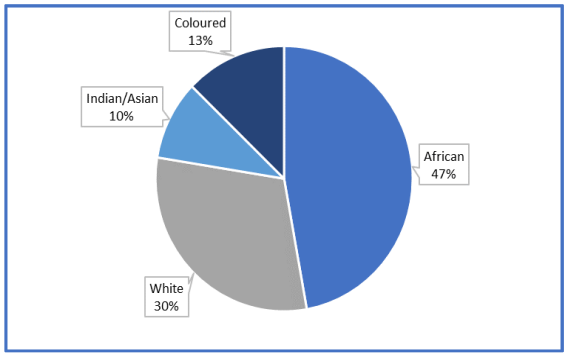
Source: MICT SETA Levy Huge File, 2021

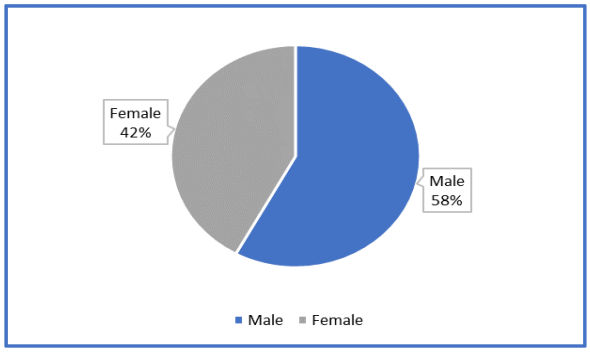
1.6.3 Race and Gender Profiles

The highest proportion of people employed in the sector are African (47%), followed by White (30%). These two race categories make up just over three quarters (77%) of the total number of employees in the MICT sector. Compared to 2020, the proportion of African and White employees in the MICT sector changed slightly, with African employees increasing by 4,2% and White employees decreasing by 3%, although this is largely in the lower and midlevel occupational groups. Coloured employees account for 13% and Indian/Asian employees account for 10% of employees in the sector (Figure 13).

Figure 13: Race and Gender Profiles of Employees

Race **Gender**





Source: MICT SETA Levy Huge File, 2021

There are more male employees (58%) in the sector than females. These results have remained similar over the past 3 years. Whilst Africans make up the largest employee group by race, they still occupy relatively lower positions compared to other race groups and enjoy less representation at senior level. The table below demonstrates that only 7% of African employees occupy managerial positions (with a 1% decrease from 2020) and 33% occupy professional positions (an increase of 2 % from last year).

Table 5: Race Profile by OFO Major Group

	African		Coloured		Indian		White	
OFO Major Group	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
Managers	6028	7%	2383	11%	3188	19%	12928	24%
Professionals	26991	33%	6957	31%	7137	41%	26566	49%
Technicians and Associate Professionals	16875	20%	4444	20%	2618	15%	7572	14%
Clerical Support Workers	15532	19%	5787	26%	2401	14%	3695	7%
Service and Sales Workers	8060	10%	1144	5%	1371	8%	1189	2%
Skilled Agricultural, Forestry, Fishery, Craft and Related Trades Workers	2847	3%	993	4%	263	2%	1301	2%
Plant and Machine Operators and Assemblers	1725	2%	406	1%	99	1%	129	0%
Elementary Occupations	4971	6%	450	2%	42	0%	293	1%
Grand Total	**83029**	**100%**	**22564**	**100%**	**17119**	**100%**	**53673**	**100%**

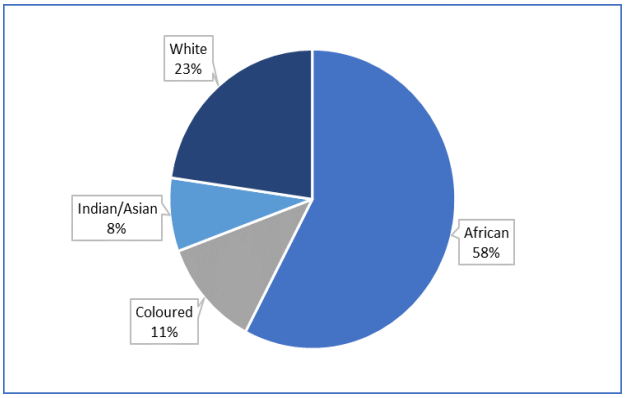
Source: MICT SETA WSP/ATR, 2021

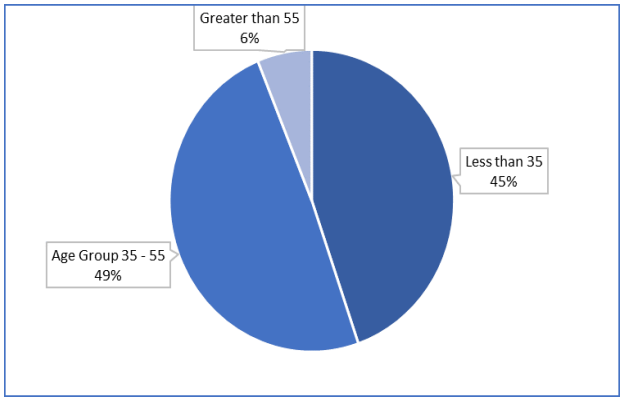
1.6.4 Disability and Age Profiles

Figure 14 below shows that within the MICT sector, most of the employees with disabilities are African at 58%. This is followed by White employees (23%) and Coloured employees (11%). The Indian/Asian category only accounts for 8% of employees with disabilities within the MICT sector.

Figure 14: Disability and Age Profiles of Employees

Employees with Disabilities **Employees by Age**





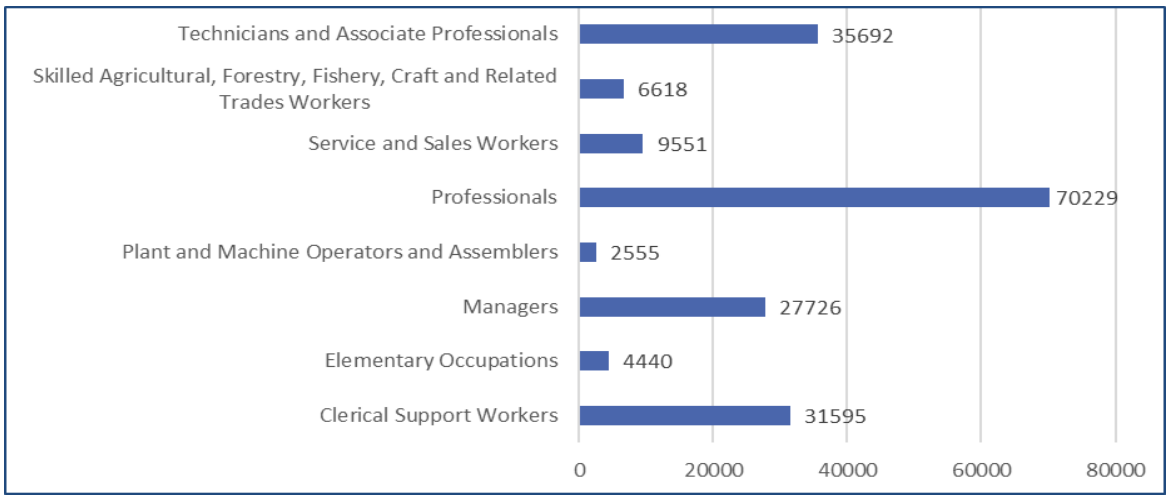
Source: MICT SETA WSP/ATR, 2021

In addition, employment in the MICT sector is dominated by younger employees. In 2021, only 6% of people employed in the MICT sector are older than 55 years of age. Of the remaining 94% of employees, 45% are younger than 35 years of age, and 49% are between the ages of 35 and 55.

1.6.5 Occupational Segmentation

Understanding the occupational divide of employees in a sector is important; specifically, to determine where skills development interventions are most required. The figure below shows that Professionals are the dominant occupational category in the MICT sector. This is followed by Technicians and Associate Professionals, Clerical Support Workers, and Managers. Employment within Managers, Professionals, and Associate Professionals' categories typically require a degree, diploma, or NQF level 6 qualifications as an entry. Combined, these categories account for the bulk (72%) of employees in the sector. As compared to other economic sectors, which employ more people in elementary occupations, this sector reflects the converse and could be attributed to the professional services orientation of offerings by employers in the sector. The figure below shows this breakdown.

Figure 15: Occupations by OFO major Groups



Source: MICT SETA WSP/ATR, 2020

1.7 Conclusion

The GDP growth rate of the country improved from -1.8% in 2020Q1 to 6.3% in 2020Q4. In 2020Q1, the Mining and quarrying sector was the worst performing relative to other sectors contributing -1.7% to GDP growth. This remained the case in 2020Q4, with the only other sector contributing negatively to GDP growth being the Finance, real estate and business services sector. The economic performance of the MICT sector as a result of the Covid-19

pandemic is mixed with some parts of the sector, such as information technology (IT), performing better than others, such as advertising. The sector remains amongst those that were less severely impacted by the pandemic.

As of 2021, the MICT sector is made up of 35 569 employers spread across five sub-sectors. This represents a 23% increase from 28 829 in the previous year. The Information Technology sub-sector is the largest sub-sector, accounting for 51% of employers. The Electronics and Tele-communications sub-sectors account for 13% and 12% of employers, respectively. Overall, the number of levy-paying employers increased from 7 207 in 2020 to 9 093 in 2021.

The MICT sector experienced a decline in employment from 206 615 employees in 2020 to 187 585 employees in 2021. Employment in the Information Technology sub-sector is the largest of the sub-sectors with 50% employees. The sub-sectors with the smallest portion of employees are Advertising (5%) and Film and Electronic Media (6%).

The effect of the Covid-19 pandemic on employment is already apparent as the Unemployment Insurance Fund (UIF) is facing a massive uptake in UIF claims from retrenched workers and applications from employers for Covid-19 relief for furloughed employees (Rasool H. , 2020). Furthermore, Covid-19 will also adversely affect skills development (expanded on in Chapter 3). The SETA intends to play its part in mitigating this by supporting vulnerable parties such as SMMEs, which make up the largest proportion of MICT employers, and underrepresented groups.

Chapter 2: Key Skills Change Drivers

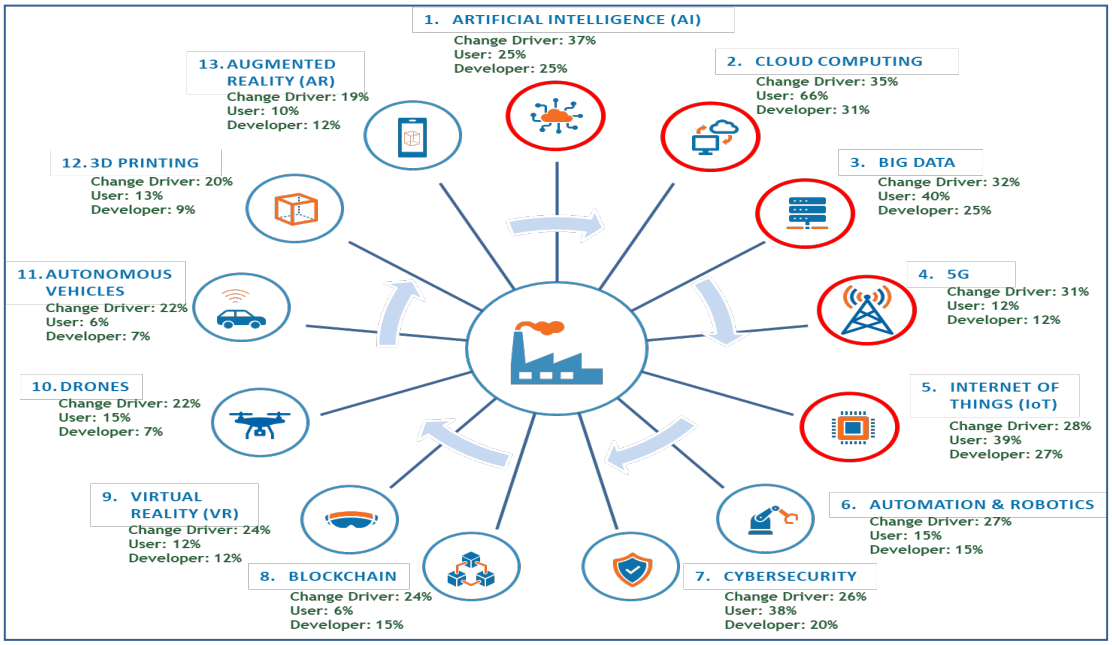
2.1 Introduction

Having explored the profile of the sector in chapter one, this chapter examines the factors influencing the demand and supply of skills in the MICT sector. The chapter draws on a review of current literature, the employer survey, interviews with various stakeholders across all sub-sectors within the MICT sector and focus groups. It identifies five change drivers that are a result of "4IR", outlining how these change drivers may or are already impacting aspects of skills demand and supply in the MICT sector. This chapter further takes into account the overall impact of Covid-19, and analyses policies that affect skills demand and supply in the sector, including the Covid-19 Economic Reconstruction and Recovery Plan and the Skills Strategy.

2.2 Factors Affecting Skills Demand and Supply

While the sector contributes positively to the GDP, the 4IR will alter the way communities live and work through a fusion of technologies. The Covid-19 pandemic has accelerated the use of digital technologies and has revealed the urgency with which the sector must transform with regard to both skills demand and supply. Key technologies such as 5G and Cloud Computing have become important as many South Africans are working remotely, using digital platforms such as Zoom for videoconferencing, for example. With South Africa striving towards being an E-Skilled economy, as outlined in the National Development Plan Vision 2030, key change drivers that affect the MICT sector and socio-economic systems are identified here.

Figure 16: 4IR Technologies as Change Drivers



Source: MICT SETA SSP Survey, 2020

The diagram above demonstrates the presence and influence of 4IR technologies in the MICT sector, ranked by "Change Driver" (the percentage of stakeholders who view the technology as a change driver). "User" indicates the percentage of stakeholders who use the 4IR technology in operations and "Developer" indicates the percentage of stakeholders who develop products in the 4IR technology. Circled in red in the diagram are the five 4IR technologies which ranked highest for driving change in the sector: Artificial Intelligence, Cloud Computing, Big Data, 5G and the Internet of Things. These are discussed below.

2.2.1 4IR Technologies as Change Drivers

2.2.1.1 Artificial Intelligence

"Artificial Intelligence" (AI) has been identified as a key change driver in the MICT sector. It refers to the simulation of human intelligence in machines that are programmed to think like humans and mimic their actions. The term may also be applied to any machine that exhibits traits associated with a human mind such as learning and problem-solving. The ideal characteristic of AI is its ability to rationalise and take actions that have the best chance of achieving a specific goal (Investopedia, Artificial Intelligence (AI), 2020). Nearly half (46%) of South African companies are actively piloting AI within their organisations. Businesses are experimenting with a range of different technologies, including Chatbots, Robotic Process Automation and Advanced Analytics. AI technologies most useful to 67% of South Africa organisations include machine learning, smart robotics and biometrics (BusinessTech, 2019). The level of skill required by AI is advanced and needs to be financially and technically supported by the industry and government. Other examples of AI relevant to the MICT sector include virtual agents such as "chatbots" and recommendation systems. Ultimately, South Africa still lags behind in terms of improving the quality of education, research, innovation and infrastructure required to create an enabling environment for AI adoption (Accenture South Africa, 2017).

2.2.1.2 Cloud Computing

"Cloud Computing" has emerged as a key driver of digital transformation in South Africa. It is described as the delivery of different services through the Internet. These services include tools and applications such as data storage, servers, databases, networking, and software (Investopedia, Cloud Computing, 2019). It is a disruptive delivery model of Information Technology (IT) services which is based on a business model that is flexible and on-demand. South African organisations are consuming significant amounts of cloud services, including software as a service, platform as a service and infrastructure as a service (Gartner, 2019).

The rise of cloud computing puts pressure on skills development, more so now during the Covid-19 pandemic, as more companies are becoming dependent on cloud computing services. Individuals with the skills to design and deploy such technology are in high demand and often poached not only in South Africa, but by global companies. A study by the International Data Corporation (IDC) revealed that more than 90% of South African organisations are either already engaged in developing these skills or in the process of planning for the development of such skills (Nebula, 2018).

2.2.1.3 Big Data Analytics

"Big data", another 4IR change driver identified in the MICT sector, refers to the large, diverse sets of information that grow at ever-increasing rates. It encompasses the volume of information, the velocity or speed at which it is created and collected, and the variety or scope of the data points being covered. Big data often comes from multiple sources and arrives in a variety of formats (Investopedia, 2019). Properly managing 'Big data' is now an important assignment for many organisations, especially with the rapid uptake of 4IR technologies. However, many organisations are still unaware of the opportunities and insights that big data holds for them.

Big data has grown by more than 50% CAGR since 2010, which has in turn enabled AI uptake (Accenture, 2018). In South Africa, many organisations have now realised the potential of 'Big Data and Analytics', however, limited IT budgets and the dearth of skilled resources impede

its adoption. Furthermore, organisations are now developing skills internally by sharing resources, undertaking training programmes, and partnering with vendors. This plays a crucial role for organisations to establish a data-driven culture and encourage knowledge sharing to develop internal capabilities (IDC, 2017). The demand for highly qualified big data analysts and artificial intelligence professionals is outperforming supply to the point where it can take many months to fill vacancies (IOL, 2017). This is due to big data analytics being a relatively new field, and the existing workforce is having to retrain in work with large, sophisticated datasets. Larger companies swiftly recruit new graduates, thus, making it difficult for smaller MICT companies to keep up with the changing labour market.

2.2.1.4 5G

The fifth-generation wireless technology ("5G") has been identified as a key driver of network transformation in South Africa. It has been associated with the need for a greater and wider adoption of emerging technologies. This technology is expected to be more effective, more efficient and as much as 100 times faster than its predecessor, 4G (Corfe, 2018). As capacity demands driven by growing internet data traffic increases – further emphasised by the current world of remote work during the Covid-19 pandemic – 5G will significantly speed up data communication (Statista, 2020). 5G will also advance machine-based, IoT-centric functionalities, for example, in automotive for autonomous and self-driving cars. While 5G is going to be a big enabler for economies and will drive efficiency for many complex operations, much needs to be done right before 5G can be rolled out (Connecting Africa, 2020). Governments need to find ways to mitigate the risk of being left behind as technology sweeps the rest of the world into 5G and beyond. Companies currently struggle to attract and retain staff with scarce skills in hard-to-fill occupations (i.e. computer network and systems engineers, cybersecurity specialists, and those with cloud computing skills), and 5G will make this task even more difficult.

2.2.1.5 Internet of Things (IoT)

The "Internet of Things' (IoT) is another 4IR change driver identified in the MICT sector. It refers to a network comprised of physical objects capable of gathering and sharing electronic information. IoT includes a wide variety of "smart" devices, from industrial machines that transmit data about the production process to sensors that track information about the human body (Investopedia, The Internet of Things (IoT), 2020). IoT allows for remote management or monitoring of connected devices. This information can then be supplied to an AI platform, which may be tasked with responding appropriately based on data received. IoT will continue to grow as cloud computing and cloud app offerings expand in the coming years. IoT thus links to virtually all of 4IR change drivers, further expanding the impact of 4IR. There is limited recognition of emerging 4IR occupations in the OFO, thus limiting funding and formalised training opportunities in "new-age" fields such as IoT. In consultations, stakeholders expressed a need for more "IoT specialists". However, currently no such occupation exists in the strictest sense, instead IoT specialists may emerge as specialisations of existing fields such as software development and design.

2.3 Skills Implications of Change Drivers

Change drivers affect how businesses operate and survive into the future. Thus, new ways of doing things, including skills training, are required to exploit new opportunities in the market that emerge as a result of 4IR. Furthermore, the Covid-19 pandemic has spurred on the uptake of 4IR technologies and the relevant skills that are required to enable it. The above-mentioned change drivers call for the continued development of technologies and skills. Whilst it may be

true that 4IR may invalidate jobs that place emphasis on routine or menial tasks, it also presents an opportunity for the creation and/or advancement of jobs. To this effect, South African organisations are increasingly investing in 4IR technologies. However, funding, formalised training and overall development of emerging occupations is hampered by limited recognition of emerging 4IR occupations in the OFO such as an IoT specialist within the IoT realm, cloud architect for cloud computing and AI specialist within artificial intelligence. To this effect, the SETA is actively engaged with stakeholders such as the QCTO, training providers and industry in the development of new qualifications and improvement of existing qualifications to meet 4IR demands.

2.4 Policy Frameworks Affecting Skills Demand and Supply

South Africa's development trajectory is underpinned by the National Development Plan (NDP), which challenges the country to achieve sustained levels of economic growth through to 2030. The MICT sector is an integral part of South African society and is impacted by various policy interventions, some of which are outlined in the table below.

Table 6: MICT sector Policy interventions

Planning Priority	*Skills Implications*	*Measures to support National Strategies and Plans*
National Development Plan (NDP)	The NDP Vision 2030 (November 2011) identifies as one of its core priorities, reducing unemployment to 6% by 2030. Other objectives include eradicating poverty and reducing inequality. In meeting the objectives of the plan, the following are identified: A larger, more effective innovation system closely aligned with firms that operate in sectors consistent with the growth strategy; support for small businesses through better coordination of relevant agencies, development of finance institutions, and public and private incubators; an expanded skills base through better education and vocational training; identify business incubation for SMEs generally and the expansion of business services in particular as priority actions for growth and development.	The MICT sector will contribute towards the National System of Innovation and will thus, play a role in supporting its effectiveness and efficiency. Additionally, the SETAs strategic plan emphasises provision of financial and non-financial support to SMMEs, NGOs, NLPEs, CBOs. Partnerships with stakeholders like SEDA to encourage incubation would play a key role in achieving sustainability and growth of small businesses in the sector.
Medium Term Strategic Framework (MTSF) 2019-2024	The outcomes for 2019 - 2024 are published as annexures to the MTSF: it is premised on achieving 5 outputs leading to the achievement of 'Outcome 5: A Skilled and Capable Workforce to Support an Inclusive Growth Path'. This is part of a comprehensive plan for implementing the NDP.	The MICT SETA is committed to implementing the 4 sub-outcomes through strategic partnerships. These outcomes are: A credible institutional mechanism for labour market and skills planning; Increase access and success in programmes leading to intermediate and high-level learning; Increase access and efficiency of high-level occupationally directed programmes in needed areas; and Increase access to occupationally directed programmes in needed areas and thereby expand the availability of intermediate level skills with a special focus on artisan skills.
White Paper on Post Schooling Education and Training (WP-PSET)	The White Paper envisages an expanded, effective, and integrated post-school system in South Africa. It is premised on achieving: Expanded access to TVET and University education; Establishment of community colleges and skills centres, to mainstream vocational education and training; Establishment of a national skills planning mechanism within DHET; A strengthened NSA to perform a Monitoring and Evaluation role in the skills system; and Opening up workplaces to give more youth access to work integrated learning opportunities. The White Paper calls for a restructuring of the skills system and an efficient skills development system where strategic plans form the foundation of the service level agreements that SETAs sign with DHET.	The MICT SETA will ensure expanded access to TVET and University education through bursaries. This will directly contribute to one of the premises of the White Paper to expand access to TVET and University education.
National Skills Development Plan (NSDP)	The NSDP is informed by and consolidates the NDP, NGP, WP-PSET and IPAP and seeks to "improve access to occupations in high demand and priority skills aligned to supporting economic growth, employment creation and social development whilst also seeking to address systemic considerations" (DHET, 2019). A call for increased emphasis on improving "both basic skills and technical skills, with a specific focus on 'historically	In addressing the NSDP and new SETA landscape, MICT SETA has incorporated and aligned the outcomes into its Recommended Priority Actions, thus ensuring continued relevance and responsiveness to key issues. Specifically, the MICT SETA responds to the NSDP outcomes by

Planning Priority	*Skills Implications*	*Measures to support National Strategies and Plans*
	disadvantaged individuals'" is made and eight outcomes are presented to this effect.	determining and addressing occupations in high demand, strengthening TVETs, CETs and work integrated learning (WIL), increasing the number of workers trained and supported and supporting SMMEs, Cooperatives and rural learners.
New Growth Path (NGP)	One of the NGP focus areas focuses on meeting the shortages in important skills for the economy and sets targets for: the training of engineers underpinned by improved science and mathematics education and expanded bridging programmes for HE courses; improved skills for workers through the provision of certificated programmes facilitated, financed and managed by SETAs; a TVET college system that produces higher graduation rates; and provision of ICT skills in schooling, adult education and public service.	The MICT SETA in line with the NGP places emphasis on the development of ICT skills, as well as the increased supply of highly skilled labour in the economy.
Industrial Policy Action Plan (IPAP)	The IPAP has identified priority sectors which it aims to support for development in the country. Projects such as a South African garment-sizing database using three-dimensional (3-D) body-scanner technology, and computer-aided design using 3-D scanner data were highlighted.	As stakeholders in the sector start to engage in these programmes, the MICT SETA would be a skills development partner, ensuring that the requisite skills are being developed.
National Integrated ICT Policy White Paper	The National Integrated ICT Policy White Paper replaces all the previous white papers on telecommunication (1996) and postal services (1998). The policy outlines the plan for the rollout of broadband services across the country and directs the allocation of spectrum to all licensed operators, new entrants and SMMEs. The White Paper also covers interventions to boost the manufacturing and software development sectors particularly through advancing affordable devices and innovative services and applications relevant to the South African context. The direct link with the MICT sector include: Facilitate upgrade of manufacturing facilities and capabilities for domestic production and growth of exports; Commercialisation of technologies; Skills development for business process outsourcing sector.	The MICT SETA seeks to support this planning priority through managing supply-side issues and infrastructure roll-out, including supporting work done in scarce resources such as spectrum and interventions to facilitate open access and rapid deployment of infrastructure. The SETA commits itself to facilitating multi-stakeholder participation in the drive for an inclusive digital economy.
Economic Reconstruction and Recovery Plan and Skills Strategy	The main skills problems outlined in the Economic Reconstruction and Recovery Plan (ERRP) are a skills mismatch in the South African labour market; the increase in the use of technology which will result in many semi-skilled and unskilled people being left behind; and there is a need to build a skills base for the economy, industries and jobs of the future. The skills strategy was developed because of the urgency for a well-coordinated strategy of skills development to support both the management of Covid-19 pandemic and the economic and social recovery. Short-term in nature, the strategy is designed to ensure that the skills system is strengthened with its implementation. It also aims to enable the immediate rollout of skills development interventions to make sure that the ERRP is supported. The strategy will focus on interventions that allows for large numbers of youth to access opportunities in the short-term. The strategy contains ten interventions to ensure the effective implementation of the ERRP. The SETAs, including the MICT SETA, finds expression in six of the interventions.	The MICT SETA aims to support each of the six interventions which include: Intervention one: Embedding skills planning into sectoral processes; Intervention three: Increased access to programmes resulting in qualifications in priority sectors.; Intervention four: Access to targeted skills programmes; Intervention six: Supporting entrepreneurship and innovation; Intervention seven: Retraining/up-skilling of employees to preserve jobs; and Intervention ten: Strengthening the post-school education and training system. This is done through ensuring that these interventions find expression in the SETAs Key Skills Priority Actions as well as its Strategic Plan and Annual Performance Plan targets.

2.5 Conclusion

With the Presidential Commission on the 4IR established and the Covid-19 pandemic causing a ripple in the way businesses and the industry operates, it seems South Africa is set to follow a highly skilled intelligence and digital path. The change drivers in the sector suggest an opportunity for ever-increasing access in the intelligence and digital spectrum – an access that needs to be maintained and secured. Therefore, skills development must follow course with specialised skills to set up and maintain new technologies. However, this must be balanced with also catering for lower-end skills. Ensuring inclusive digital revolution means paying attention to those still becoming digitally literate.

Chapter 3: Occupational Shortages and Skills Gaps

3.1 Introduction

The previous chapter examined the factors influencing the demand and supply of skills in the MICT sector. Leading on from that, this chapter delves into the occupations that are hard to fill and skills gaps amongst employees in the MICT sector and some of the reasons for this.

The approach to occupations that are hard to fill and skills gaps in the sector involves a literature study to review the industry dynamics. The literature study entails the analysis of both industrial policies and strategies formulated for the different sectors. Secondly, an analysis is conducted using the 2021 WSP/ATR data. Thirdly, interviews were conducted with stakeholder and experts within each subsector and an employer survey was distributed. Next, focus groups were conducted with industry. Finally, the findings of the literature survey, data analysis, survey, interviews and focus groups are analysed and incorporated into the SSP.

3.2 Sectoral Occupational Demand

Occupations that are hard to fill may be defined as a mismatch between the number of skilled people demanded by firms and the skilled people supplied in the labour market. Technically, hard to fill vacancies refer to vacancies or occupations that an employer was unable to fill within 12 months, or it took longer than 12 months for the employer to find a suitably qualified and experienced candidate (Sector Skills Plan Framework and Guidelines, 2019).

3.2.1 Advertising Sub-sector Occupations with Hard to Fill Vacancies

Using the OFO, the table below provides the top occupations with vacancies that are hard to fill in the Advertising sub-sector. These five vacancies have been identified by stakeholders and include Multimedia Specialist, Digital Artist, Marketing Practitioner, Multimedia Designer and Copywriter.

Table 7: Advertising Hard to Fill Vacancies

OFO Code	Occupation	Reason	Quantity Needed in sub-sector
2019-251301	Multimedia Specialist	Lack of skilled people	138
2019-216601	Digital Artist	Lack of skilled people	262
2019-243103	Marketing Practitioner	Not enough opportunities for workplace placement	396
2019-216603	Multimedia Designer	Lack of skilled people	84
2019-264201	Copywriter	Lack of skilled people	60

Stakeholders in the advertising sector noted that Multimedia Specialist was the most difficult occupation to find suitably qualified people for. The majority of stakeholders in the sector indicated that “lack of skilled people” was the main reason for these vacancies being hard to fill, with particular reference to niche skills such as digital marketing and social media management. Due to increased digitisation in the sector, stakeholders attributed the lack of relevantly skilled candidates to the lag in digital skills training. Candidates are required to possess digital marketing skills to complement their traditional marketing expertise. Digital Marketers and Social Media Influencers are examples of emerging occupations spurred on by increased consumer online presence caused by the Covid-19 pandemic.

Whilst there are enough marketing practitioners graduating, there are not enough employment opportunities for new entrants in the form of, for instance, internships. Under increasing financial strain, especially under the Covid-19 pandemic, employers are hesitant to invest resources into recruiting and training interns.

Another contributing factor to hard to fill vacancies is decreased budgets leading to salaries in the sector being relatively lower than in the past. It was also suggested that whilst there may be shortages in the formal sector, the informal sector, comprising freelancers, has more candidates, and thus less shortages, but these tend not to be recognised in research if they are not in the employ or ownership of a company.

3.2.2 Film and Electronic Media sub-sector Occupations with Hard to Fill Vacancies

Table 8 presents the top 5 hard to fill occupations of the Film and Electronic Media sub-sector, by OFO code, which include Media Producer, Multimedia Specialist, Sound Technician, Director (Film, Television, Radio or Stage) and Film and Video Editor.

Table 8: Film and Electronic Media Hard to Fill Vacancies

OFO Code	Occupation	Reason	Quantity Needed in Sub-sector
2019-265412	Media Producer	Lack of skilled people	271
2019-251301	Multimedia Specialist	Lack of skilled people	80
2019-352103	Sound Technician	Equity consideration	121
2019-265401	Director (Film, Television, Radio or Stage)	Lack of skilled people	50
2019-265403	Film and Video Editor	Lack of skilled people	38

The areas of scarcity for most of the Film and Electronic Media occupations exist primarily in more technical roles specific to the sector and less on generic skills. Most of the shortages are due to a lack of skilled people in the sector, with Sound Technicians being the exception. Whilst there may be plenty of Sound Technicians in the sector, few of them are black-resulting in a shortage when equity is considered.

With viewers consuming a lot more content during the Covid-19 lockdown, especially via Video on Demand, there is a greater demand for productions, with all of the above-mentioned occupations, from Media Producer to Film and Video Editor, being required. However, this is diminished by the lockdown restrictions on travel and congregation in South Africa and around the world limiting shooting.

It was also found that that although people may have technical competence, they were not always able to translate that into the overall concept and visual the director has in mind. Location scouts, for example, need a sense of what the final picture will look like on screen as well as the practicalities of moving equipment around. Sound engineers may know how to collect and mix samples of sound, but in a movie production they need to know how to work with voice and with silence too. In addition to the reasons mentioned above, location also has a bearing on occupational shortages. Economic hubs such as Gauteng and the Western Cape tend to have different hard to fill vacancies to less economically active areas, especially rural areas, due to rural-urban migration.

3.2.3 Electronics, Information Technology and Telecommunications (ICT) sub-sectors Occupations with Hard to Fill Vacancies

There are similarities between the Electronics, Telecommunications and Information Technology sub-sectors. Consequently, these sub-sectors are addressed as one ICT sub-sector

due to the overlapping nature of their occupational demands. To accommodate this amalgamation and the larger size of the ICT sub-sector, provision is made for 10 hard to fill vacancies instead of 5. Table 9 below presents the top 10 hard to fill vacancies within the ICT sub-sector over the next year.

Table 9: ICT Occupations with Hard to Fill Vacancies

OFO Code	Occupation	Reason	Quantity Needed in sub-sector
2019-251201	Software Developer	Lack of skilled people	1277
2019-252301	Computer Network and Systems Engineer	Lack of skilled people	1296
2019-251101	ICT Systems Analyst	Lack of skilled people	828
2019-252901	ICT Security Specialist	Lack of skilled people	182
2019-251203	Developer Programmer	Lack of skilled people	349
2019-672205	Telecommunications Technician	Lack of skilled people	141
2019-215301	Telecommunications Engineer	Lack of skilled people	168
2019-215201	Electronics Engineer	Lack of skilled people	48
2019-311401	Electronic Engineering Technician	Lack of skilled people	165
2019-333903	Sales Representative (Business Services)	Lack of skilled people	171

Software Developer, Developer Programmer and ICT Systems Analyst are some of the top 10 occupations which continue to be hard to fill within the sub-sectors. The top programming languages were found to be Python, C and C++. On the other hand, there has been a decline in demand for people to maintain legacy systems (such as COBOL developers). As organisations work remotely due to the Covid-19 pandemic, technologies such as Cloud Computing find greater demand in storing and transferring data from anywhere and at any time, and Cloud Architect is an emerging occupation that has picked up even more during the pandemic. In addition, with the rise in e-learning during the pandemic, occupations such as Software Developer and Developer Programmer are required to develop and maintain such platforms. Occupations that did not make it on the top 10 list but were highlighted in the 2021 Focus Group include Data specialists and Data analysts. The participants were of the view that these were Hard to fill in industry.

With regard to telecommunications, which incorporates both the retail side and the technical side, network specific professionals, such as Telecommunications Technician and Computer Network and Systems Engineer, continued to be in demand. However, pointing to a limitation of the OFO, stakeholders pointed out occupations such as Telecommunications Engineers are broadly defined and do not recognise emerging specialities.

Electronics Engineers and Electronic Engineering Technicians are occupations which have emerged as being hard to fill in the Electronics sub-sector. The sub-sector has also experienced increased demand for Sale Representatives for business services.

3.3 Skills Gaps

The MICT sector is increasingly operating in an ever-changing environment where new trends are emerging all the time. Reasons for skills gaps emerging include workers in the sector having to constantly upgrade their skills to keep abreast of the latest developments (e.g. certified skills affecting IT Security Specialists and Computer Network and Systems Engineers). This is ever more prevalent with the emerging 4IR technologies. Another reason for skills gaps is that as people skilled in technologies move on or retire, there is still a need for maintenance

of old technologies. That means gaps exist for old technologies where new entrants lack such skills as well as for all the new technologies being rapidly introduced. The broad categories of critical skills gaps that exist amongst employees working across the five sub-sectors of the MICT sector are leadership, communication and technical skills. These are further outlined in the table below by occupation (with OFO codes) and OFO Major group.

Table 10: Skills gaps and the top occupations that they apply to

Major Group	Occupations	Skills Gap
Managers	2019-121901-Corporate General Manager 2019-121101-Finance Manager 2019-122101-Sales and Marketing Manager 2019-122102-Sales Manager 2019-133102-ICT Project Manager 2019-243401-ICT Account Manager 2019-121901-Corporate General Manager 2019-122201-Advertising and Public Relations Manager	Leadership skills Coaching and mentoring skills Remote management skills Communication skills Project management skills Sales and marketing skills Change management skills Financial management skills
Professionals	2019-252901-ICT Security Specialist 2019-251101-ICT Systems Analyst 2019-252301-Computer Network and Systems Engineer 2019-243403-ICT Sales Representative 2019-251203-Developer Programmer 2019-251201-Software Developer 2019-112101-Director (Enterprise / Organisation)	Complex problem solving skills Technical skills Project management skills Communication skills Product knowledge Sales and marketing skills Certified skills (CompTIA A+, Network+, MCSA, MCSE, Azure, CISCO, etc.) Coding language
Technicians and Associate Professionals	2019-351201-ICT Communications Assistant 2019-351301-Computer Network Technician 2019-672205-Telecommunications Technician 2019-352106-Production Assistant (Film, Television or Radio)	Leadership skills Technical skills Certified skills (CompTIA A+, Network+, MCSA, MCSE, Azure, CISCO, etc.)
Clerical Support Workers	2019-422601-Receptionist (General) 2019-333910-Business Support Coordinator	Communication skills Business administration skills Computer literacy
Service and Sales Workers	2019-333903-Sales Representative (Business Services) 2019-334103-Call Centre Team Leader	Communication skills Leadership Skills Product knowledge Time management skills
Elementary Occupations	2019-862918-Electrical or Telecommunications Trades Assistant 2019-811201-Commercial Cleaner	Communication skills Time management skills Computer literacy Reading and writing skills

Employers in the sector require a combination of hard and soft skills. Nuance within occupations is also emphasised, for instance Software Developers that can code in Python are more sought after and Sales Representatives and Account Managers need to have strong product knowledge, which requires greater technical knowledge. Design thinking is another emerging skill in South Africa that promises to accelerate innovation. Liedtka (Why Design

Thinking Works, 2018) notes that, “design-thinking processes counteract human biases that thwart creativity while addressing the challenges typically faced in reaching superior solutions, lowered costs and risks, and employee buy-in.” This appears to be a “future skill” in South Africa that may do for innovation in the MICT sector what Total Quality Management did for manufacturing in the 1980s (Liedtka, 2018).

Given the pressures imposed on businesses by the Covid-19 pandemic, with only 14% of MICT businesses being able to operate without issue during the lockdown, businesses need a competitive edge and prudent management to realise opportunities created by the pandemic. Skills such as remote management, financial management, leadership and business management are increasingly important to keep businesses open, with Finance Manager and Sales and Marketing Managers being some of the affected occupations. Participants at the 2021 Focus Group were of the view that additional skills gaps currently in the sector are skills in the use of virtual platforms which are needed in the remote working environment.

Soft skills such as communication skills and problem solving are also important in a time of Covid-19 to ensure retention of market base and continued income generation for businesses. Sales and Marketing Managers, ICT Systems Analysts and Advertising and Public Relations Managers, amongst others, are affected.

3.4 Extent and Nature of Supply in the MICT sector

This section looks at the provision of education and training of skills, with the focus specifically on MICT-accredited qualifications. It also reviews provision in higher education, TVET colleges and vendor programmes. It assesses the gaps in the supply pipeline in order to help identify where the MICT SETA can most effectively intervene.

3.4.1 State of Education and Training Provision

In 2019, the Post-School Education and Training system had 503 institutions namely: 26 public Higher Education Institutions, 131 private Higher Education Institutions, 50 Technical and Vocational Education and Training (TVET) colleges, 287 registered private colleges and 9 Community Education and Training (CET) colleges (DHET, 2021).

In Table 11, PSET provision is presented with the bulk of students in universities and universities of technology for 2019. These institutions together with the private HEIs have about half the number of students enrolled (56.3%) and TVET colleges has 29.5% of students enrolled.

Table 11: Overview of post-school education and training, 2019

	HEIs			Colleges				Total PSET
	Public	Private	Total	TVET	CET	Private	Total	
Number of institutions	26	131	157	50	9	287	346	503
Number of students enrolled	1 074 912	208 978	1 283 890	673 490	171 409	151 136	996 768	2 279 925

Source: DHET Statistics on Post-School Education and Training in South Africa, 2021

3.4.2 Higher Education

Table 12 shows that there has been a continuous increase in students enrolling in Other humanities programmes and in Science, Engineering and Technology (SET) programmes. The

Business and management and Education programmes declined in enrolment between 2018 and 2019.

As of 2019, there were 1,074,912 total enrolments in these institutions. The major field with the highest number of enrolments was Science, Engineering and Technology, with just over 323,000 enrolments, followed by Other humanities (274,377) and Business and management (265,973). What remains clear is that faster growth is necessary to realise the NDP goal of a 1.6 million headcount by 2030.

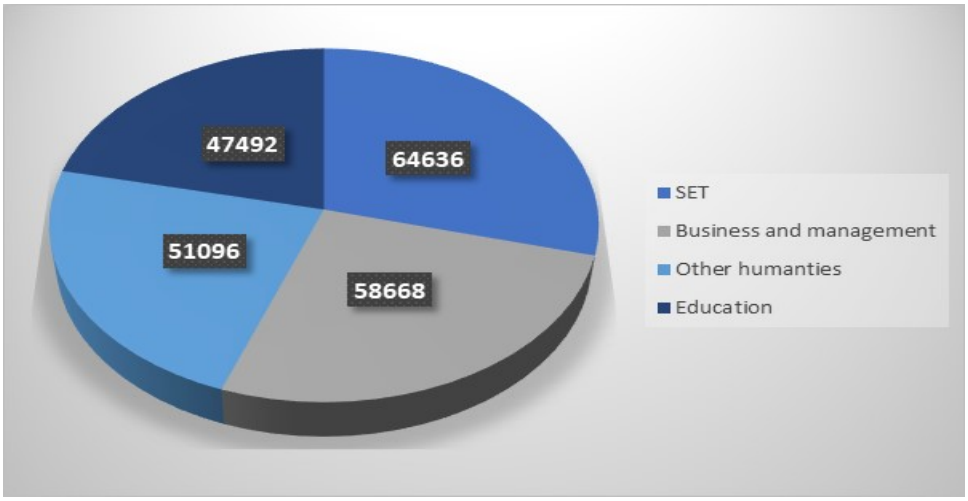
Table 12: Enrolments in public HEIs by major field of study

	2016	2017	2018	2019
Business and management	264,934	278,930	283,194	265,973
Education	176,986	195,113	214,151	211,274
Other humanities	238,535	252,826	267,553	274,377
Science, Engineering and Technology (SET)	295,383	310,115	320,671	323,105
Total	**975,837**	**1,036,984**	**1,085,568**	**1,074,912**

Source: DHET Statistics on Post-School Education and Training in South Africa, 2021

Figure 17 presents the graduations across major fields of study in all public higher education institutions in 2019. The total number of graduates declined by 2.3%, from 227,188 graduates in 2018 to 221,942 graduates in 2019. The number of people completing their qualifications as compared the number of enrolments remains a challenge in the country.

Figure 17: Graduations for 2019 in public HEIs by major field of study



Source: DHET Statistics on Post-School Education and Training in South Africa, 2021

The largest decline in the number of graduates between 2018 and 2019 was recorded in the Education field of study (3 159) followed by Business and Management field of study (1 790). There were 228 more graduates in the other Humanities field of study in the same period despite this overall decline.

A large proportion of graduates were in the SET (29.1% or 64 636), followed by Business and Management (26.4% or 58 668), other Humanities (23.0% or 51 096) and Education (21.4% or 47 492) fields of study. Increasingly, universities have been providing innovative opportunities for students to experiment with developing ICT applications. The Universities of the Witwatersrand and Johannesburg and the Tshwane University of Technology, for example, have "innovation hubs", which are creative spaces where people can meet, brainstorm and work on projects. The hubs are also an environment in which skills are learnt and exchanged across a number of disciplines. The MICT SETA has been involved in supporting these initiatives.

Table 13 below shows the total number of enrolments in private higher education institutions across NQF fields. Such institutions offer programmes spanning from NQF levels 5 to 10. Of the 208,978 students enrolled in these institutions in 2019, 58.6% (122,526) were enrolled in Business, Commerce and Management Studies. 10% of students were enrolled in Education, training and development and 8.6% in Physical, mathematical, computer and life sciences.

Table 13: Enrolments in Private HEIs by NQF Field

NQF Field	2019	
	No.	%
Agriculture and Nature Conservation	260	0.1%
Culture and Arts	13 364	6.4%
Business, Commerce and Management Studies	122 526	58.6%
Communication Studies and Language	7 831	3.7%
Education, Training and Development	20 808	10.0%
Manufacturing, Engineering and Technology	289	0.1%
Human and Social Studies	11 102	5.3%
Law, Military Science and Security	8 515	4.1%
Health Sciences and Social Services	2 547	1.2%
Physical, Mathematical, Computer and Life Sciences	17 929	8.6%
Services	3 572	1.7%
Physical Planning and Construction	235	0.1%
Total	**208,978**	**100%**

Source: DHET, Statistics on Post-School Education and Training in South Africa, 2021

In private institutions, the Culture and Arts and Communication Studies and Language NQF fields find expression in the Film and Electronic Media and Advertising sub-sectors. Culture and Arts, encompassing design studies, visual and performing arts, cultural studies, music, sport, film, television, constituted 6.4% (13,364) of total enrolments in private universities. In 2019, 3.7% (7,831) of enrolments were in the Communication Studies and Language field, which includes communication and information studies, language, literature studies.

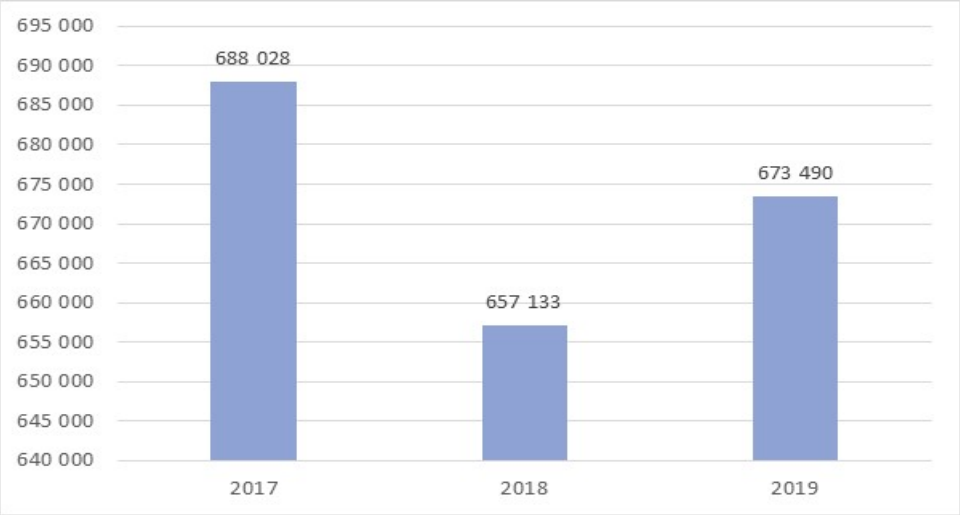
According to DHET's "Skills for and through SIPS" report, which assessed skills development in relation to government's Strategic Integrated Projects, university curricula have generally not kept pace with the rate of change of technology. The report argues for "curricula to be more relevant and academics to have more practical experience to ensure that graduates were prepared for the workplace". It was also suggested that "substantially more mentoring, coaching, and open learning should be available to support graduates in the workplace". Moreover, in the case of Data Scientists: "There are very few South African lecturers with expertise in this field. Currently most are foreign and need to be harnessed to develop a new breed of local data scientists for this expanding field" (Economic Development Department & DHET, 2014).

3.4.3 TVET Colleges

DHET has been promoting TVET colleges to be learning institutions of choice. The White Paper of Post School Education and Training is aspiring for a quality post school education which includes expanded access to public TVET colleges. In addition to increased access, the strategic objective of the public TVET colleges sector is to improve success in programmes that produce quality education at intermediate and higher levels, by providing technical and vocational qualifications.

Figure 18 depicts the total student enrolments in TVET colleges over the 3-year period ending 2019.

Figure 18: Number of students enrolled in TVET colleges, 2017 to 2019



Source: DHET, Statistics on Post-School Education and Training in South Africa, 2021

As seen above, there has been a decline in enrolments from 2017 (688,028) to 2018 (657,133), after which enrolments increased to 673,490 in 2019. There remains an overall decline over the 3-year period, 2017-2019, of 2.1%. It has been suggested that graduates are not being absorbed enough by the sector and many remain unemployed. Under increasing financial strain, especially under the Covid-19 pandemic, employers are hesitant to invest resources into recruiting and training interns.

The NDP indicates that headcount enrolment in TVET colleges should reach 2.5 million by 2030.

TVET colleges offer a variety of learning programmes and qualifications, typically ranging from NQF level 2 to NQF level 5. Of particular importance are the occupational qualifications offered by TVET colleges which encompass workplace-based learning programmes, many of which are funded by the SETA. These occupational programmes provide learners with the opportunity to obtain qualifications or part-qualifications that meet the various workplace skills demands in the sector, as outlined in the beginning of this Chapter (DHET, 2018). However, some stakeholders noted that TVET college graduates are generally not in a position to pass requisite international exams and are therefore not always in high demand upon graduation.

3.4.4 Vendor Programmes

Vendor Specific Programmes provide opportunities for students to integrate disciplinary and theoretical knowledge with work, through the application and use of knowledge and skills in real and professional work contexts (MICT SETA, 2020). These programmes are designed to meet the advancements in the applications and technologies used by companies and business units, and as a result, are most common and relevant to the ICT sub-sector. Vendor programmes are usually short and focused programmes that are designed by software and hardware companies as an effective means to introduce new technologies or applications to both existing and new entrants in the labour market.

Vendor courses have the benefit of keeping up to date with rapidly changing technology. But for the same reason, these courses can quickly become obsolete if the product turns out to have a short shelf-life. There is also a concern that training content is focused on the vendor's

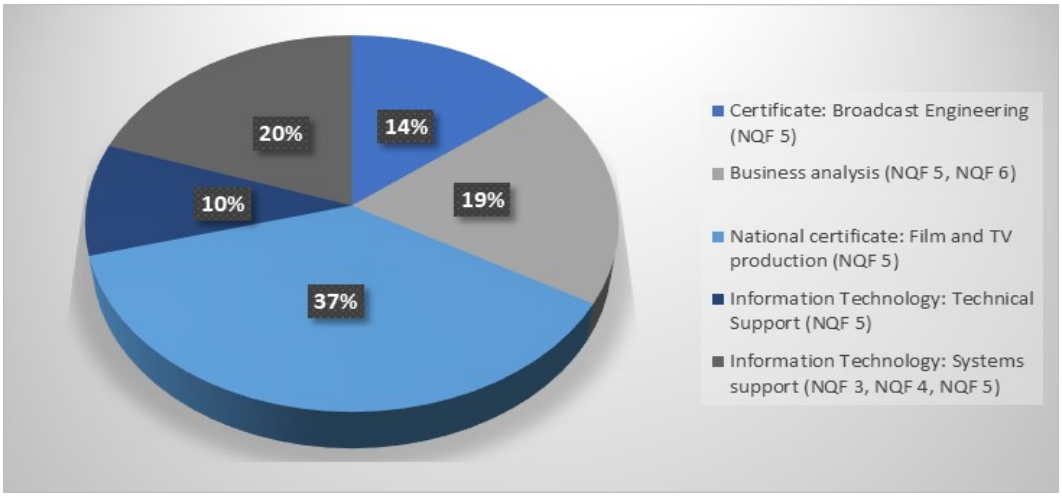
products and therefore not generic enough to educate on the underlying principles. Consequently, there has been an apparent increase in the demand for customised training solutions rather than more comprehensive off-the-shelf training that covers a broader range of technology solutions. At the same time, stakeholders in the sector reported that employers increasingly want employees to cross-certify with multiple vendors. Having multiple skills is becoming an inherent job requirement lately, with certified skills such as CompTIA A+, Network+, MCSA, MCSE, Azure, CISCO, etc. being the third most in-demand skills for midlevel to senior employees[1] across the sector. These skills also rank in the top 10 skills gaps in Telecommunications across occupational groups (MICT SETA SSP Survey, 2020). To respond to the persistent demands for vendor certificates, the MICT SETA continues to map these programmes against existing NQF qualifications.

3.5 Extent of Occupational Supply in the sector

An analysis of the total learnerships and skills programmes population in 2020 as reflected below indicates that a significant portion of total enrolment has been in the following five qualifications:

- National certificate: Film and TV production (NQF 5)
- Information Technology: Systems Support (NQF 3, NQF 4, NQF 5)
- Business analysis (NQF 5, NQF 6)
- Certificate: Broadcast Engineering (NQF 5)
- Information Technology: Technical Support (NQF 5)

Figure 19: Top 5 Qualifications enrolled for, 2020



Source: MICT SETA QMR, 2020

A 2014 study by Collins and Snowball points to a lack of government support for training initiatives in film, which together with the short-term, precarious nature of employment contracts, means that only children from wealthy families are likely to choose film as a career. The short-term project-based nature of the industry was a disincentive for firms to invest in training since staff might leave at the end of a short contract. However, as shown in the figure above, the NQF Level 5 qualification in Film and TV production drew the biggest proportion of learners in 2020. The establishment of new, small-scale firms and cooperatives in film production in rural areas and townships has opened up opportunities for skills development especially where they have been able to access DTI funding. But, stakeholders in the sector have noted that many training courses at film schools were not SAQA accredited.

[1] The OFO major group classifications do not consider seniority by experience or rank. Thus, "midlevel" and "senior" include junior to senior technicians and professionals, for example.

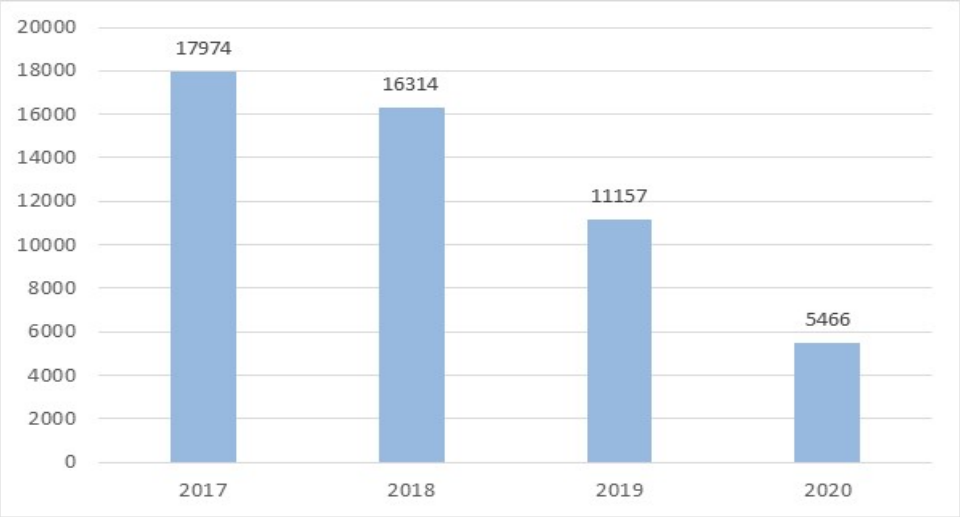
The NQF Level 5 Information Technology programmes do match demand for occupations in high demand within the sector.

Stakeholders in the advertising sub-sector raised concerns over the lack of training in advertising. Since specialised advertising courses were mainly offered by private colleges, there was very little access for young black people without financial backing. Compounding this problem was the lack of awareness of advertising as a career amongst township youth and the immense pressures of the industry for new entrants. Mentoring may be a solution to help induct young people into the industry, but it is not normally accounted for as 'billable-time'.

3.5.1 Enrolments in MICT SETA qualifications

Over the past 5 years, over 50,000 learners have enrolled for an NQF qualification registered with the MICT SETA. The figure below shows that enrolment in learnership and skills programmes have declined consistently over the past 4 years, decreasing from 17 974 learners in 2017 to 5 466 learners in 2020.

Figure 20: Learnerships & Skills Programmes Enrolment 2017-2020

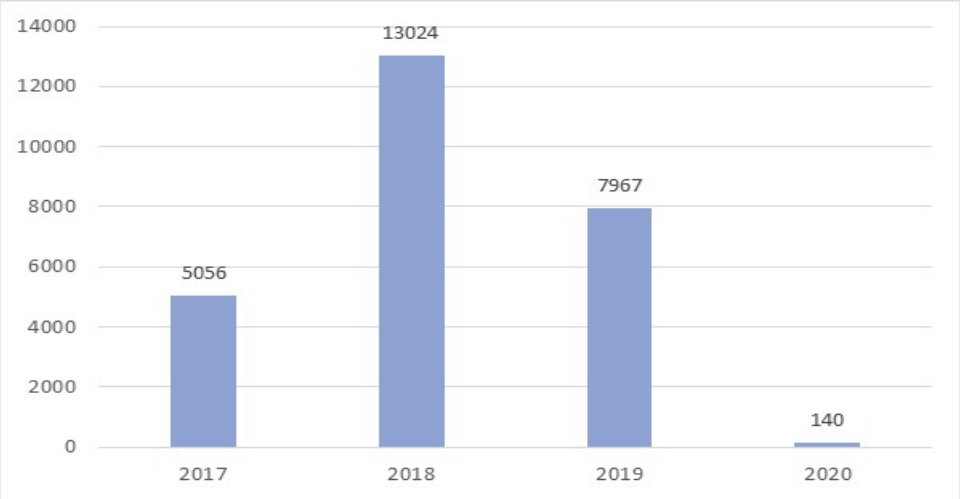


Source: MICT SETA QMR, 2020

3.5.2 Completions of MICT SETA qualifications

Figure 21 below shows the total number of completed learnerships and skills programmes from 2017 to 2020. While there was significant growth in the number of completions of learnerships and skills programmes from 2017 (5 056) to 2018 (13 024), completions decreased to 7 967 in 2019 and further to 140 in 2020.

Figure 21: Learnerships & Skills Programmes Completions 2017-2020



Source: MICT SETA QMR, 2020

3.5.3 Equity Demographics

The NSDP seeks to promote equity. The MICT SETA programmes appear to have consistently managed to attract black women into the sector. Stakeholders in the sector confirmed that there was a rise in the number of women in learnerships, especially in ICT technical areas which were traditionally dominated by men. However, it was noted that there were very few black candidates being trained as "creatives" in both the Advertising and Film and Electronic Media sub-sectors.

3.5.4 Qualifications Under Development

The MICT SETA is now at the final stages of developing ten (10) 4IR qualifications, this is in collaboration with the QCTO. These qualifications have been submitted for verification by QCTO, and the final process is now with SAQA for approval and registration. A thorough consultative process was followed in this regard before reaching this final stage, industry experts were also consulted so as to make this an evidence informed development. Below are the ten (10) 4IR qualifications that have been developed:

- Artificial Intelligence
- Cybersecurity
- Cloud computing
- Data science
- Software development
- Internet of things
- Robotic Processing Automation
- Design thinking
- Quality engineering Automation
- e-waste

Moreover, a number of qualifications are under development and are being realigned to various occupations. These include: the Further Education and Training Certificate (FETC): Advertising, National Certificate (NC): Advertising, NC: 2D Animation, NC: 3D Animation and Visual Effects, FETC: Music Industry: Sound Technology, NC: Music Industry: Sound Technology, NC: Business, NC: Business Analysis Support Practice and FETC: Computer Programming (QCTO, 2020).

3.5.5 Assessment of Education and Training

In 2021, the SETA conducted a tracer study to assess the relevance and effectiveness of the learning programmes the SETA implements. The study aimed to determine the destinations of learners who have completed learnerships, internships, skills programmes, short learning programmes and bursary programmes; to understand the factors associated with employment/unemployment; to understand the intricacies of the articulation of qualifications into occupations; and to determine the nature of employment of learners who received employment.

Key findings from the MICT SETA tracer study include:

- **Relevance.** 74% of the respondents reported being satisfied with the MICT SETA learning programmes. Similarly, 78% reported that the MICT SETA learning programmes are relevant to their needs.
- **Employment.** Employment levels improved from 8% before MICT SETA training to 24% after the MICT SETA training. The Gauteng Province accounted for the largest proportion of employed graduates after training. Majority (80%) of the employed graduates undertook Learnerships and Internships programmes. The largest proportion of the employed graduates were in Information Technology learning programmes. The vast majority of the employed graduates reported their highest qualification as being a post-secondary certificate, Diploma or Degree.
- **Self-employment**. A relatively small proportion (11%) of the respondents have established their own businesses after the completion of their MICT SETA learning programmes. Of the learners who have ventured into business operations, the majority (70%) took a year or more to set it up. They used their own funds and/or loans/grants from family (76%) to set up their businesses.
- **Income.** Average income increased from R1 257 before training to R2 322 per month after MICT SETA training.
- **Impact.** The biggest reported impact and benefit of the MICT SETA training undertaken is related to skills acquisition:
    - 60% of respondents indicated that their life changed for the better post training;
    - 58.1% feels more independent following their training;
    - 77.7% feels more confident about future employment due to acquired skills;
    - 90.8% reports having acquired better/more skills; and
    - 92.5% will apply the skills acquired in future work.
- **Reason for unemployment.** Respondents reported a lack of jobs in the market as the principal explanation for being unemployed and/or starting their own businesses. Some learners also cited the effects of the Covid-19 pandemic as one of the key barriers to securing employment or stating their businesses (MICT SETA, 2021).

3.5.6 Supply problems facing employers

- **Lack of soft skills.** Employers found that ICT graduates lack the specified skills required by industry. These skills required include practical project implementation skills and soft skills. Industry further expressed the difficulties they face in recruiting suitably skilled and qualified ICT graduates.
- **Emigration of skills.** South Africa continues to lose highly skilled ICT professionals to international organisations. At times, this is after the employer invested in upskilling employees. This is often seen as a negative factor when employers are considering

upskilling its employees. And upskilling workers is seen as a necessity in the ever-changing technological environment.

- **Poor state of education in South Africa.** The country has a very low number of learners achieving competence in science, technology, engineering and mathematics subjects. These are crucial subjects that form part of the entry requirements for many of the ICT learning programmes. Whether school pupils go on to university, to the work environment or whether they go into vocational training, they must be competent to move into that environment.
- **Lack of funding for training**. Due to the nationwide lockdown implemented because of the Covid-19 pandemic, many businesses suffered a loss in productivity and income. Because of this, the businesses are faced with a need to cut non-essential costs to stay in operation. The training budget is often at the top of the list. Employers would either train less or not at all. In addition to this, the 4-month levy break that government gave to employers significantly impacted the available funds the SETA has for programme implementation. This too could have a negative impact on the number of people trained in the near future.

3.5.7 Qualification and Occupation Mapping

In 2016, the MICT SETA initiated a process of mapping key occupations in the sector to various qualifications and learning pathways to understand how employers were replenishing the skills sets in their industries. The stakeholders across various MICT sub-sectors engaged with the MICT SETA to inform the most appropriate learning programmes for addressing the key occupations in the sector. Table 14 below provides a list of possible qualifications mapped to occupations in the sector. From these mapping exercises the MICT SETA gained intelligence and insight from the sector in terms of how to address key occupations in the sector. It is anticipated that the PIVOTAL interventions identified will help address the skills shortages in the sector, as well as enable the employers in the sector to bridge the gap between skills demand and supply.

Table 14: Possible Qualifications mapped to Occupations

Qualification	Career Prospects/Job Roles
BSc. or Nat. Dipl majoring in: – Business Computing – Computer Engineering – Computer Science/ Studies/ Systems – IT (Web Design & Development) – Information Systems/ Technology	– ICT Systems Analyst – Web Technician – Systems Administrator – Computer Network Technician – Software Developer – Computer Network and Systems Engineer – ICT Security Specialist
B. Arts/Learnerships majoring in: – Acting – Drama and Performance Studies – Film and Television	– Actor – Director
B. Arts/Learnerships majoring in: – Audio-Visual Communication – Translation and Professional Writing – Creative writing	– Scriptwriter – Creative Director
BTech or Nat. Dipl. majoring in: – Motion Picture Production – Multimedia – Film and Video Technology	– Multimedia Specialist – Film and Video Editor

Qualification	Career Prospects/Job Roles
B.Com or Nat. Dipl majoring in: – IT Management – Applied Information Systems	– Chief Information Officer – ICT Project Manager – IT Manager
B.Com/BTech/Dipl. majoring in: – Business Management/ Management Sciences – Project Management	– Management Consultant – Business Analyst – Service Solutions Project Manager
B.Engineering/Nat. Dipl/Learnership majoring in: – Electronic Engineering – Computer Engineering	– Computer Network and Systems Engineer Developer Programmer – Software Developer – Telecommunications Technologist – Electronic Engineering Technician
BA Honours in: – Film and Documentaries – Media and communication – Development and communication – Digital Media Design	– Editor – Director – Content producer
B.Com/Nat.Dipl/Learnership majoring in: – Strategic Brand Management – Digital Marketing – BA Creative Brand Communications – Marketing Management/ Communication	– Brand Strategist – Brand Auditor – Digital Marketing Strategist – Copywriter – Social Media Coordinator
Diploma/Learnerships/Higher Certificates in: – Marketing & Advertising Communications – Art Direction Diploma – Graphic Design – Copywriting	– Creative Director – Campaign Coordinator – Graphic Designer – Digital marketer
Dipl./Learnerships/Nat. Certificates in: – Electronic/ Engineering Studies – Information Technology (Networking) – Telecommunications – Information Systems	– Telecommunications Technician – Computer Network Technician – Systems Administrator – Electronic Engineering Technician

Source: DHET, The National Career Advice Portal, 2020

3.6 Sectoral Priority Occupations and Interventions (PIVOTAL)

PIVOTAL interventions are defined as programmes that are vocational, occupational, technical and or academic in nature. Part of the sector skills planning research process is to identify a list of PIVOTAL programmes that address skills gaps and hard to fill vacancies within the sector. In Table 15, the current list of the MICT SETAs strategic priority occupations is provided.

3.6.1 Methods employed in identifying occupations in the list of strategic priority occupations

The compilation of the Sectoral Priority Occupations (SPO) list follows a process that combines both quantitative and qualitative inputs. This involves analysis of WSPs, employer surveys, desk-based research as well as validation through interviews with stakeholders in the sector and focus groups. Interviews are conducted with a number of stakeholders, which include industry bodies and professional associations, government stakeholders, trade unions and other key informants. Interviews focused on developments in the sector, emerging trends as well as future skills needs. Given the dynamic nature of the MICT sector, these interviews helped to identify new trends regarding new occupations as well as future skills needs in the economy.

With regard to the quantitative analysis, occupations and specialisations flagged as hard to fill in WSP/ATR submissions were tested for prioritisation against systemic and volumetric considerations via surveys and interviews. Appropriate interventions were then determined per occupation based on prior and planned skills development for those occupations, adjusted based on SETA experience. The quantity to be supported by the SETA was determined based on planned APP targets per type of intervention and distributed across the occupations based on the extent of sector demand as reported in the WSP/ATR submissions.

Given the central role that 4IR plays in the MICT sector, important 4IR-related skills requirements were particularly taken into account in the determination of hard to fill vacancies and the SPO list. Consultations sought to unpack the business and skills fundamentals underpinning 4IR. The occupations in the SPO list are linked to 4IR change drivers articulated in Chapter 2. Following the production of the draft SPO list, input is incorporated from deliberations at Executive Committee and Board level, and the final SPO list is signed off by the MICT SETA Board.

The limitation of the data presented is that even though it takes into account other sources such as employer surveys, interviews and focus groups, the input data from employer WSPs is not without challenges. Stakeholders who formed part of the validation processes reflected that OFO codes were vague and confusing with several overlaps in occupational descriptions. In some instances, OFO codes did not exist for their desired occupations.

The SETA is, however, confident that based on the rigorous, practical and balanced approach adopted for the determination of the MICT sector SPO list, and that the identified priority occupations and interventions will help underpin the skills development planning and implementation required to address skills issues and opportunities in the sector; including critical areas such as 4IR.

The following table presents the SPO List and the interventions planned thereof.

Table 15: Top 10 Sectoral Priority Occupations List for the MICT sector

SETA Name	Period	Occupation Code	Occupation	Specialisation/ Alternative Title	Intervention Planned by the SETA	NQF Level	NQF Aligned	Quantity Needed	Quantity to be supported by the SETA
MICT SETA	2022/ 23	2019-251201	Software Developer	-Software Architect -Information Architect Software -Software Designer -Software Engineer -ICT Risk Specialist	Bursary (diploma)	6	Y	3245	2500
					Bursary (degree)	7 8	Y		
					Internship	6 7 8	N		
					MCSD Certification	5	N		
					Scrum Certification	6	N		
MICT SETA	2022/ 23	2019-252301	Computer Network and Systems Engineer	-Computer Systems / Service Engineer -Systems Integrator -Computer Systems Integrator -Network Engineer -Communications Analyst (Computers) -Systems Engineer -Network Support Engineer -ICT Customer Support Officer -Network Programmer / Analyst -Computer Network Engineer	Bursary (diploma)	6	Y	2500	1700
					Bursary (degree)	7 8 9	Y		
					Internship	6 7 8	N		
					CISCO Certification	5 6 7	N		
					CompTIA Network+ Certification	5	N		
MICT SETA	2022/ 23	2019-251101	ICT Systems Analyst	-Computer Analyst -ICT Systems Contractor -ICT Systems Coordinator -Capacity Planner Computing -LAN / WAN Consultant / Specialist -ICT Systems Architect -Systems Programmer -Internet Consultant / Specialist -ICT Systems Consultant -ICT Business Systems Analyst -ICT Systems Specialist -ICT Systems Advisor -ICT System Designer -ICT Systems Strategist	Bursary (diploma)	6	Y	1730	1400
					Bursary (degree)	7 8	Y		
					Internship	6 7 8	N		
					MCSA Certification	5	N		
					MCSE Certification	5	N		
					Work integrated Learning	4 5	Y		
MICT SETA	2022/ 23	2019-242101			Bursary (diploma)	6	Y	2460	700
					Bursary (degree)	7 8	Y		

SETA Name	Period	Occupation Code	Occupation	Specialisation/ Alternative Title	Intervention Planned by the SETA	NQF Level	NQF Aligned	Quantity Needed	Quantity to be supported by the SETA
			Management Consultant (Business Analyst)	-Management Consulting Specialist -Superannuation Transitions Specialist -Technology Development Coordinator -Operations Analyst -Service Solutions Project Manager -Small Business Consultant / Mentor -Capital Expenditure Analyst -Commercial Analyst -Corporate Planner -Farm Management Consultant -Business Coach -Financial Systems Advisor -Resource Development Analyst -Purchase Advisor -Business Support Project Manager -Strategic Developer / Facilitator -Business Consultant -Management Reporting Analyst -Business Turnaround Management Consultant -Ecommerce Programme Manager	IIBA Certification (BABOK)	5 6	N		
					Work integrated Learning	4 5	Y		
MICT SETA	2022/ 23	2019-252901	ICT Security Specialist	-Internet Security Architect / Engineer / Consultant -Security Administrator -ICT Security Architect -Database Security Expert -Information Technology Security Manager	Bursary (diploma)	6	Y	748	300
					Bursary (degree)	7 8	Y		
					Internship	6 7 8	N		
					CompTIA Security + Certification	5 6	N		
					CISSP Certification	5 6	N		
					Work integrated Learning	4 5	Y		

SETA Name	Period	Occupation Code	Occupation	Specialisation/ Alternative Title	Intervention Planned by the SETA	NQF Level	NQF Aligned	Quantity Needed	Quantity to be supported by the SETA
MICT SETA	2022/ 23	2019-251301	Multimedia Specialist	-Digital Media Specialist -Multimedia Developer -Graphical Programmer -Computer Games Programmer -Multimedia Programmer -Animation Programmer	Bursary (diploma)	6	Y	523	390
					Bursary (degree)	7 8	Y		
					Internship	6 7	N		
MICT SETA	2022/ 23	2019-243403	ICT Sales Representative	-Computer Consultant -Computer Software Support Consultant -Computer Systems Consultant	Bursary (national certificate)	5	Y	95	60
					Short Programme	5	N		
					Internship	8	N		
MICT SETA	2022/ 23	2019-251202	Programmer Analyst	-Software Configuration / Licensing Specialist -Designer (Hardware - Digital / Software) -Architect (Applications / Call Centre / Computing / Desktop / Ecommerce) -Education Systems Coordinator -Computing (Development / Field) Engineer -Cross Enterprise Integrator -Engineer (Applications / Content / IT / Software / Systems / WAN) -Architect (Enterprise / Internet / IT / Network / Software / Unix / Web) -Database Designer	Bursary (diploma)	6	Y	925	350
					Bursary (degree)	7 8	Y		
					Internship	6 7 8	N		
					Work integrated Learning	4 5	Y		
MICT SETA	2022/ 23	2019-251203	Developer Programmer	-ICT Developer -ICT Programmer -Applications Developer	Bursary (diploma)	6	Y	451	250
					Bursary (degree)	7	Y		
					Internship	6 7	N		
					MCSD Certification	5	N		
MICT SETA	2022/ 23	2019-133102	ICT Project Manager		Bursary (degree)	7 8 9	Y	217	150

SETA Name	Period	Occupation Code	Occupation	Specialisation/ Alternative Title	Intervention Planned by the SETA	NQF Level	NQF Aligned	Quantity Needed	Quantity to be supported by the SETA
				-ICT / IT / Computer Service Manager -ICT / IT / Computer Marketing Executive -ICT / IT / Computer Support Manager -Hardware Development Manager -ICT Project Director -ICT / IT / Computer Operations Manager	PRINCE2 Certification	6 7	N		

Most of the occupations identified in the table above are characterized by Design thinking. Design thinking can be defined in a number of ways, one college offering a course in Design thinking defines it as "a human-centered and systematic approach to innovation grounded in the true understanding of customer needs" (ThinkAgile, n.d). A teacher defined it as "an analytic and creative process that engages a person in opportunities to experiment, create and prototype models, gather feedback, and redesign" (Gupta, 2019). Some of the world's leading brands, such as Apple, Google, Samsung and GE, have speedily adopted the Design thinking approach. In simple terms, it is an iterative process that teams use to understand consumers, challenge assumptions, redefine problems and create innovative solutions to prototype and test (Interaction Design Foundation, n.d). It typically involves five phases, empathise, define, ideate, prototype and test. The first phase – empathise – involves researching the users needs; the second phase – define – involves stating the users needs and problems; the third phase – ideate – involves challenging existing assumptions and create new ideas; the fourth phase - prototype – involves creating solutions in an experimental manner; and the fifth phase – test – involves trying out the solutions experimented. It is an iterative process, so getting to the final phase does not mean the process is complete, the team could go back to previous phases until satisfactory results are obtained (Interaction Design Foundation, n.d).

But 4IR does not only relate to ICT, sub-sectors such as Film & Electronic Media are also called to the fore by occupations such as Multimedia Specialist and their importance in *Virtual and Augmented Reality* and 4D animation. To sell 4IR to consumers, ICT Sales Representative with strong product and technical knowledge will be involved across the entire spectrum of 4IR. But "there is no 4IR without *5G*" (Carew, 2019), the telecommunications sub-sector will thus have increasing input in this regard, as well as network and systems occupations such as Computer Network and Systems Engineer. With between 25% and 31% of MICT companies developing products in AI, Cloud Computing (used by 66% of companies in the sector), Big Data, 5G and IoT (MICT SETA SSP Survey, 2020), ICT Project Managers are required to deliver the projects and make benefiting from 4IR an achievable reality.

3.7 Conclusion

This chapter examined the extent and nature of demand for skilled labour in the MICT sector and explored the types and extent of training available to the sector. While it may be difficult to gauge the extent of the impact of Covid-19, given that the country is still in the midst of the pandemic, it is undeniable that skills development has been affected. The MICT sector has been under cost-saving measures since the Covid-19 pandemic and subsequent lockdown, and that has in turn increased demands on employees to be multi-skilled across a number of technologies, with convergence adding to that trend. So, while there are employment opportunities in the sector, these tend to be for high-skilled professionals. Informants in the ICT sub-sector reported that with the shortage of skilled developers (especially in scarce coding languages such as Python or Java), there is fierce competition for talent amongst employers, and this raises salaries to levels many companies cannot afford. This is further compounded by the financial challenges presented by the Covid-19 pandemic.

Matching demand for skilled people with supply is difficult in a sector that is changing so quickly. Long-term predictions on occupations with hard to fill vacancies are not that reliable on the shifting sands of technology, and as a result there has been a call to speed up accreditation processes and recognise vendor programmes on the NQF. Similarly, short, highly varied online courses that cater to specific employer requirements have become especially useful during the pandemic and lockdown. To this effect, employers urge speedy recognition of online learning on the NQF or at least a mechanism for such programmes to be funded more.

Regarding enrolments in MICT qualifications, Universities and Universities of Technology are the main sources of highly qualified MICT graduates and, according to stakeholders in the sector, the main supply of internship candidates. Despite historical bias towards private colleges, the placement of public TVET graduates is gradually increasing across the MICT sub-sectors.

Chapter 4: SETA Partnerships

4.1 Introduction

This chapter describes and assesses current partnerships facilitated by the MICT SETA. Such partnerships are intended to establish linkages between the labour market, employers and education and training providers to achieve a number of objectives in the skills supply chain. These include the placement of learnerships and apprenticeships in workplace experience as well as to ensure that curricula reflect the changing needs of a dynamic industry.

The MICT SETA has entered into partnerships covering the following typologies:

- Partnerships with TVET colleges
- Partnerships with Universities
- Partnerships for Special Projects
- Partnerships with Industry Vendors
- Partnerships with SMMEs
- Partnerships with Research Institutions

4.2 Existing Partnerships

What follows is a discussion on the SETAs existing partnerships. At the end of each partnership group, the successes and/or challenges of those particular partnerships are discussed.

4.2.1 Partnerships with TVET colleges

The table below lists the existing partnerships with TVET colleges. These mainly support Work Integrated Learning (WIL) placements, but also provide for other workplace-based learning opportunities, such as learnerships and internships. Furthermore, they respond to the NSDP Outcome 2: Linking education and workplace. The reality is that TVETs are not well placed to identify the opportunities for partnership formation. Furthermore, they may lack the resources or skills needed to facilitate the development of partnerships. As a result, the MICT SETA plays a key role in proactively initiating these partnerships and getting sector employers involved in providing WIL opportunities.

Table 16: Partnership with TVET Colleges

Name of TVET	Term and Duration	Objectives of Partnership
Buffalo City TVET College	May 2021 –Mar 2022	These partnerships focus on Work Integrated Training and Internships. The purpose of these partnerships is to ensure that there is equitable participation of people from different backgrounds. They are about being responsive to the low to middle level skills demands of the sector, serving as one of the many mechanisms in which education and training can become more responsive to employers, learners and the overall socio-economic needs of the country. The value lies with addressing broad sectoral low to middle level skills issues that stimulate opportunities for job creation and poverty reduction. They contribute to the transformational agenda in terms of prioritisation of race, gender, disability and geographical location.
King Hintsa TVET College	May 2021 –Mar 2022	
King Sabata Dalindyebo TVET College	May 2021 –Mar 2022	
Umfolozi TVET College	May 2021 –Mar 2022	
South West Gauteng TVET College	May 2021 –Mar 2022	
Coastal KZN TVET	May 2021 –Mar 2022	
Buffalo City TVET College	May 2021 –Mar 2022	
King Hintsa TVET College	May 2021 –Mar 2022	With the urgent need to respond the existing skills gaps, the SETA has partnered with the mentioned TVETs on Skills and learnership programmes. These partnerships aim aims to provide students with the opportunity to apply their learning from academic studies to relevant experiences and reciprocate learning back to their studies.
Northlink TVET College	May 2021 –Mar 2022	
King Sabata Dalindyebo TVET College	May 2021 –Mar 2022	

Name of TVET	Term and Duration	Objectives of Partnership
		The value lies in developing professional identity of students, enhance their employability through partnerships between employers and TVETs.

Source: MICT SETA Commitment Registers, 2020/21/2021/2022

There have been challenges in establishing partnerships with TVET colleges especially in rural areas that are lacking in skilled lecturers, infrastructure and alternative centres of excellence. Thus, TVET colleges may at times lack delivery capacity, which impacts negatively on the timeous implementation of programmes.

4.2.2 Partnerships with universities

University partnerships, as outlined below, provide WBL opportunities. While bursaries have been the main partnering mechanism, key developmental and transformational imperatives remain at the heart of the abovementioned partnerships. Learners from previously disadvantaged backgrounds become better positioned to acquire high-level skills in programmes such as Honours, Masters and PhDs, which enables them to compete with those from more affluent backgrounds.

Table 17: Partnership with Universities

Name of University	Term and Duration	Objectives of Partnership
Nelson Mandela Metropolitan University	February – Dec 2021	These are bursary partnerships, the objective of the partnerships with universities is to ensure that support is offered to learners from disadvantaged communities to afford them the same opportunities as their counterparts from affluent backgrounds, while at the same time exposing them to occupations and high level skills that meet the labour market needs. These partnerships improve the supply of skilled people in the sector and afford learners from previously disadvantaged backgrounds opportunities to acquire high level skills critical to industry development and growth, thus creating employment for those graduates.
University of Johannesburg	February – Dec 2021	
Walter Sisulu University	February – Dec 2021	
Cape Peninsula University of Technology	February – Dec 2021	
Mangosuthu University of Technology	February – Dec 2021	
North West University	February – Dec 2021	
Rhodes University	February – Dec 2021	
University of Cape Town	February – Dec 2021	
University of Pretoria	February – Dec 2021	
University of Free State	February – Dec 2021	
University of Venda	February – Dec 2021	
Durban University of Technology	February – Dec 2021	This is a skills programme partnership with the aim to equip graduates with the necessary ICT skills to navigate a digital career. Focusing on programmes such as python, java and software development.

Source: MICT SETA Commitment Registers, 2020/21/2021/2022

The challenge with partnerships with Universities is often an administrative one especially when excessive deliberation on and reviewing of SLAs result in delays with the implementation of programmes. Partnership challenges with employers are often rooted in employers delegating to training providers who are not able to deliver on the mandate of the SETA. As a way of mitigating the risks of unsuccessful partnerships, the MICT SETA will ensure that selected employers have the necessary capacity to deliver on SLA requirements - support will be offered through constant programme Monitoring and Evaluation, from inception to completion.

4.2.3 Partnerships for Special Projects

The table below highlights some of the Special Projects Partnerships which are aimed at maximising the provision of job opportunities and the transformational agenda.

Table 18: Special Project Partnerships

Industry Vendor	Term and Duration	Objectives of Partnership
Deviare	April 2021 - Mar 2022	This partnership is aimed at provision of new technology and innovation skillsets, particularly in relation to 4IR, while at the same time exposing beneficiaries to job opportunities within and beyond the MICT sector. It is intended to ensure beneficiaries have innovative skills to compete globally. Through this partnership, the SETA supported 1000 learners for Short Programmes and Skills Programmes some of whom are already in employment while others are still in training. Below are the programmes supported by the SETA: – Cybersecurity – Data Science – Drone Piloting – Software Development This partnership better prepares beneficiaries for 4IR, effectively propelling them into innovation environments and exposing them to employment opportunities at both national and international levels.

Source: MICT SETA Commitment Registers, 2020/21/2021/2022

The Deviare partnership has been a success. It was aimed at the provision of new technology and innovation skillsets, particularly in relation to 4IR, while at the same time exposing beneficiaries to job opportunities within and beyond the MICT sector. It is no doubt that the shortage of highly sophisticated 4IR skills such as cyber security is hampering SA's ability to put measures in place to prevent and mitigate advanced threats. IT is currently presented as a male-dominated field, there is a comparative lack of presence, inclusion and mentorship for women in the ICT sector. This partnership recognised the gap and hence it sponsored 1000 learners on 4IR related training such as Cybersecurity, Data Science, Drone Piloting, and Software Development. Through this partnership, the SETA recognised that 4IR is a solution and tool to be harnessed, hence, there was a need to better prepare beneficiaries for 4IR, effectively impelling them into innovation environments and exposing them to employment opportunities at both national and international levels.

4.2.4 Partnerships with Industry Vendors

The table below highlights partnerships with industry vendors for the mapping of vendor programmes back to MICT SETA registered programmes.

Table 19: Partnerships with Industry Vendors to Map Qualifications

Industry Vendor	Term and Duration	Objectives of Partnership
QCTO	April 2012 – December 2023	The objective of the partnership is to develop occupational qualifications. The value lies in the development of occupational qualifications to ensure that the system is more responsive to labour-market skills needs.

Source: ETQA, 2019/20

Since the emergence of 4IR, the MICT sector is witnessing a major shift in the higher education landscape. Thus, the MICT SETA understands that partnering with industry vendors who have high expertise is of paramount importance – furthermore, by partnering with vendors, the MICT SETA has the opportunity to develop meaningful relationships with them.

Table 20: Partnerships with SMMEs

SMMEs	Nature of Partnership	Term and Duration	Objectives of Partnership
143 SMMEs (please see Annexure A, attached)	Work Integrated Learning, Internships, Learnerships, Skills Programmes, Short Programmes	April 2021 – March 2022	The purpose of these partnerships is to ensure that there is equitable participation of people from different backgrounds. They are about being responsive to the low to middle level skills demands of the Sector, serving as one of the many mechanisms in which education and training can become more responsive to employers, learners and the overall socio-economic needs of the country.

Source: MICT SETA Commitment Registers, 2021/22

As illustrated in the table above, SMMEs are well placed as critical foundations for the development of skills and the creation of employment opportunities. SMMEs are responsible for up to 70% of formal employment (Francis, 2019). The partnership challenge with SMMEs mainly relates to poor financial and project management on their side and the SETA has over years tried to mitigate such challenges and made it a priority to capacitate them.

4.2.5 Partnerships with Research Institutions

The table below highlights partnerships with research institutions.

Table 21: Partnerships with Research Institutions

Research Institution	Term and Duration	Objectives of Partnership
Mzabalazo Advisory Service	May 2021 – March 2022	The objective is to increase the SETA's research capacity to develop the SSP. This partnership will help the SETA to have a more nuanced, grounded long-range view on how the MICT sector is changing.

Source: SSP, 2021/22

This has been a successful partnership mainly to help the SETA to be able to conduct research, enabling it to identify occupations in high demand, also identifying the trends in the sector, ultimately informing the strategic planning of the SETA.

4.3 Planned Partnerships

The following table highlights the SETA's planned partnerships as well as the main objectives of the partnerships including the gaps that the partnerships are aimed to address in the sector.

Table 22: MICT SETA's Planned Partnerships

Industry Partner	Objectives of Partnership
Youth Media Development Movement	The aim of the partnership is to introduce the South African youth to development outcomes at local, provincial, and national levels. This partnership proposes Implementation of skills development in areas of Drone (Manufacturing of Drones) Piloting and 3d Printing. The value of this partnership promises to bring increased access to occupationally directed programmes.
South West Gauteng TVET College (Public College)	This partnership caters for learning opportunities and developmental needs of TVET lecturers to successfully acquire the competency level in fields that lead to professional registration within the MICT sector. This partnership has the value to redress past social separation and its effects. It is about enabling those eligible to register and upgrade to a professional status within the MICT sector. This will also increase and improve workplace capacity in TVET colleges to produce relevantly skilled graduates
Gauteng Film Commission	The aim of this partnership is to advantage young emerging film makers and producers within closed business environments, enable them to learn from more experienced professionals where networking and personal links are very strong, also neutralize gender bias. This will be supplemented by Learnership programmes that will run for 12 months, where qualifying learners will be trained on the production of films and television programmes. This partnership has the value to equip learners with the necessary skills that can enable them to compete or evolve further at a national, regional or international level
The Innovation Hub	The aim of this partnership is to help the South African youth to participate in the digital economy, in areas such as "Big data" analytics, cloud computing and mobile applications. This partnership will help bridge the gap of skills that are in demand. The value of this partnership lies in enhancing skills development, knowledge and experience, with the potential to reduce high rate of unemployment within the ICT environment by making unemployed graduates employable
ZA Domain Name Authority (ZADNA)	The SETA understands that SMMEs are positioned to provide job opportunities and to contribute significantly to the GDP. They are key to job creation and also be the mechanism to generate new jobs in society. This partnership aims to contribute to SMME Development and Registration of Domains, it will enable new enterprises to benefit by protecting their fledgling online identities. This is specifically important for graduates that aim to start their own business after going through the SETA system. This partnership contributes to the SETA's

Industry Partner	Objectives of Partnership
	key strategic priority on the sustainability and growth of SMMEs, Entrepreneurship, Cooperatives and community-based organizations and also the NSDP outcome 6, which is aimed at providing support to SMMEs.

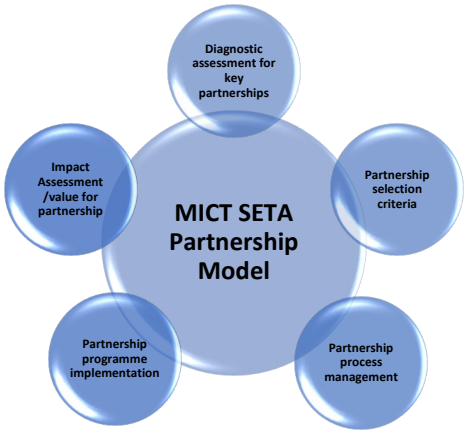
Source: MICT SETA Commitment Registers, 2021/22

Developing relevant and high-quality skills and competencies is the foundation upon which the MICT SETA bases its partnerships on. These planned partnerships respond directly to the gaps that exist in the sector and serve as responsive mechanisms to 4IR and priorities of the Economic Reconstruction recovery Plan.

4.3.1 SETAs partnership model

The model that the SETA uses across all partnerships begins with applying the selection criteria for partnerships, identifying the right partnerships and a vetting process. In the implementation phase the service provider is guided by the terms of the Service Level Agreement. Post-implementation, the SETA assesses the impact of the initiatives and to see if there is value of money from the implementation. The role played by the SETA as skills development facilitator is mainly to fund programmes that are in demand, whereas providers have a programme or project management role to play in the model.

Figure 22: SETA Partnership Model



4.5 Conclusion

With the need to tackle the impact of the pandemic and to mitigate the negative effects of labour market change, there is a need to strengthen access to skills development and promote upskilling and reskilling in the sector. Consequently, there has never been a more important time for the MICT SETA to focus on collaboration and partnerships that build a more inclusive and resilient response. The SETA understands that these partnerships should be undertaken with the NDP Vision 2030 in mind. Through these partnerships, the SETA will continue to build capacity, ensuring efficient and effective implementation. Transformational imperatives will continue to be a priority – this includes race, gender and people with disabilities. Through these partnerships, the SETA will continue to increase the participation of previously disadvantaged people, especially in rural areas. The partnerships highlighted above show that the MICT SETA is a reflective organisation which has learnt to prioritise quantifiable.

Chapter 5: SETA Monitoring and Evaluation

5.1 Introduction

The MICT SETA considers itself as a reflective organisation, using Monitoring and Evaluation (M&E) to provide information that is credible and useful, enabling it to learn and base its decisions on evidence. This includes M&E of the design, relevance and implementation of its programmes and strategies to identify the factors that contribute to successful skills development interventions and challenges that should be avoided in future interventions.

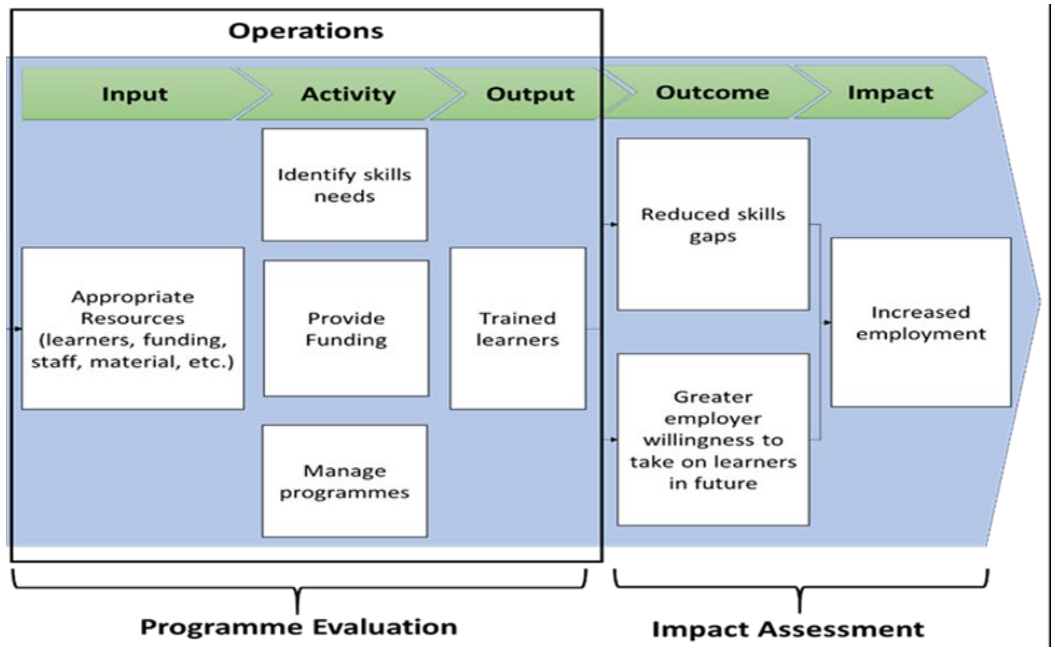
This chapter reflects on MICT SETA's approach to M&E, with a focus on the three core divisions: Sector Skills Planning (SSP), Learning Programmes Division (LPD) and Education and Training Quality Assurance (ETQA). It will reflect on the previous financial year's strategic priorities and assess the extent to which those priorities were addressed. It will also identify the mechanisms that are in place to address priorities that were not achieved in the previous financial year.

5.1 Sector Skills Planning Reflections

5.1.1 SETA's Approach to Monitoring and Evaluation

From a MICT SETA perspective, the process of monitoring involves a routine process of collecting data to provide information against set Strategic Plan targets. The process is systematic and on-going, proving early indications of progress, achievements, and challenges in programmes' implementation (Frankel & Gage, 2007) (Gage & Dunn, 2009).

Figure 23: Risk Informed Monitoring and Evaluation model

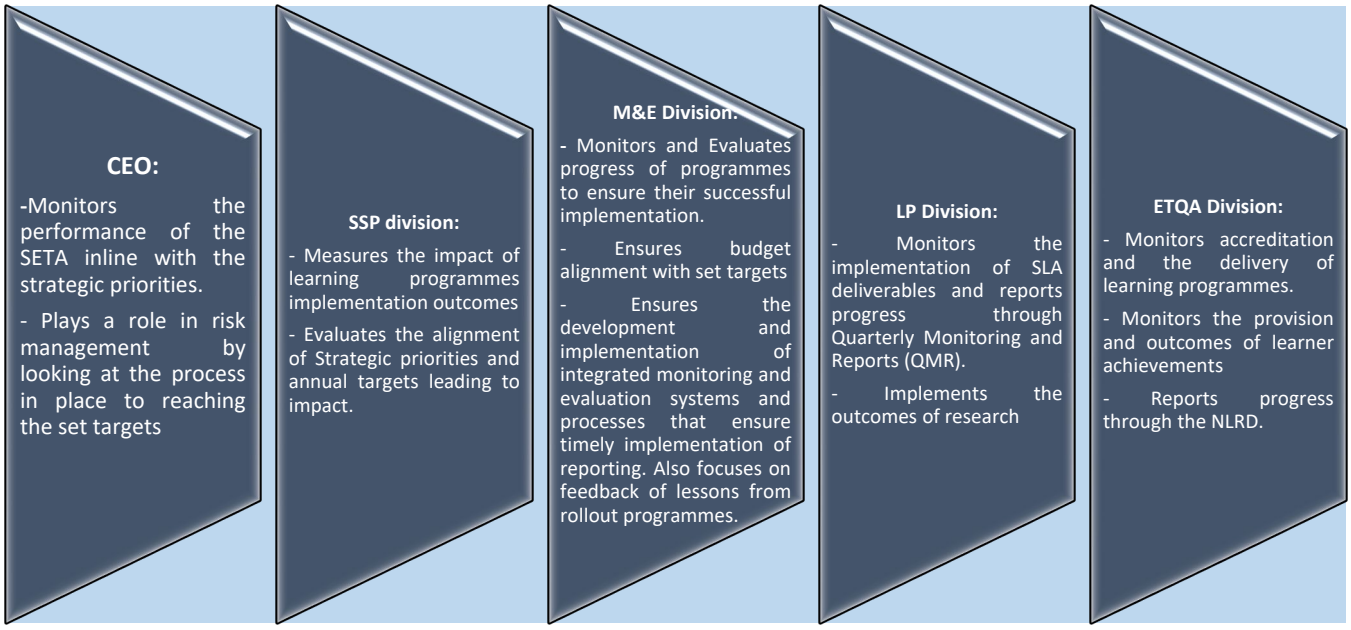


Evaluation is used to measure the outputs, outcomes and impact of programmes and projects. Evaluation is to be understood as a systematic and objective process that focuses on the success of predetermined objectives, examining the results chain (inputs, activities, outputs, outcomes, and impacts), processes, contextual factors and causality in order to understand achievements or the lack thereof (Frankel & Gage, 2007) (Gage & Dunn, 2009).

Taking note that Risk Management plays a key role in organisational success, the SETA uses the Risk Management Strategy across all its core and support functions. It is about controlling as much as possible on what might affect the organisation and act accordingly rather than reactively. Monitoring is an integral part of the risk management decision making processes, meaning that every step of the risk management process may be related to the monitoring. The model is shown in Figure 24.

The SETA has recently established a distinct M&E division to ensure a more systematic and objective approach towards the attainment of strategic objectives and the assessment of their impact. The figure below is a depiction of the SETA's approach to M&E.

Figure 24: MICT SETA's Approach to Monitoring and Evaluation



The **CEO's Office** plays an oversight monitoring role, which goes hand in hand with the principles of risk management. This means that it monitors the organisation against its priority targets by looking at internal and external risks that may delay the organisation in reaching targets. The governance role played by this office is premised on the understanding that without proper risk management, the MICT SETA will not be able to achieve its goals for the future. There is thus an inter-relationship between all the divisions, with the SSP division and the M&E division working closely with the CEO's office to define measurable strategic outcomes for the SETA.

The **SSP Division** measures the impact of learning programmes implementation outcomes. This is done through the annual Tracer and Impact (medium to long-term) studies. In addition, the division ensures the alignment of the three strategic Documents: Sector Skills Plan, Strategic Plan, and Annual Performance Plan.

The **M&E Division** has been recently established. It ensures a more systematic and objective approach towards the attainment of strategic objectives and the assessment of their impact, plays the role of evaluating programmes at regular intervals to ensure their successful implementation, and will report on lessons learnt from the rollout of the programmes.

The **LP Division** implements the outcomes of research (Sectoral Priority Occupations List). It monitors the implementation of deliverables and tracks progress against targets outlined in

the Service Level Agreement through Quarterly Monitoring Reports (QMR) submitted to DHET.

The **ETQA Division** monitors the provision and the outcomes of learner achievements, culminating in certification. Other monitoring functions performed by the ETQA include: monitoring of accreditation, the delivery of learning programmes, learning outcomes of learner achievements, verification processes and reporting through the NLRD.

5.1.2 Monitoring and Evaluation Data to Support Research and Planning

The following table demonstrates the data used by the three core divisions and the CEO's office:

Table 23: Data Used by Three Core Divisions

Division	Monitoring and Evaluation Data
CEO's Office	• Divisional Management Committee (MANCO) reports • Risk Management Quarterly reports
Sector Skills Planning	• Workplace Skills Planning/Annual Training Reports (WSPs/ATRs)Learning Programmes Impact Study reports
M&E Division	• Quarterly Monitoring Reports (QMR), Fact file reports • Divisional Management Committee (MANCO) reports • Learning Programmes Impact Study reports
Learning Programmes Division	• Quarterly Monitoring Reports (QMR) • Learner Placement reports • Site Vetting Reports
Education, Training and Quality Assurance Division	• Quality Assurance on delivery of learning outcomes • Accreditation/Re-accreditation reports

The monitoring data that is submitted to the CEO's office by the 3 core divisions is used for strategic planning and adjustment where risks are identified. The data is used to identify risks, so that strategies may be conceived and executed to guard against these risks. Through data submitted, management identifies and prioritises critical risks that may have an adverse impact on the SETA.

Monitoring data from the LPD and ETQA divisions is submitted to the SSP division for evaluation and reporting. The LPD submits QMR reports to the SSP division to undertake Tracer and Impact studies, and the ETQA data is used in research documents such as the SSP - an example of this data is the NLRD data. These studies help the SETA to determine if the programmes implemented are producing the intended results. Learning from past implementations, the SETA prepares mitigation strategies for future implementation. Moreover, ETQA monitors the relevance of qualifications and works with the Quality Council for Trades & Occupations (QCTO) in this regard. This exercise of reporting complements the QMR produced by the LPD, as it allows the SETA to distinguish which qualifications are relevant, thus informing the SETA's funding priorities for qualifications.

5.1.3 Extent to Which Previous Strategic Priorities Were Addressed

In the previous financial year, the MICT SETA had six strategic priority areas and these were aligned to the targets of the SETA's Strategic Plan. The table below highlights the status of implementation of these strategic priority areas:

Table 24: Status of Implementation of Strategic Priority Areas for 2020

Strategic Priority	Status of Implementation
1. Support the sustainability and growth of SMMEs, Entrepreneurship, Cooperatives and community-based organizations	In addressing this priority, the SETA funded 385 beneficiaries in SMMEs, Entrepreneurship, Cooperatives and community-based organizations. This was to create skills development programmes that are accessible to the aforementioned beneficiaries. It was noted that small companies have difficulty in meeting requirements for learning programmes implementation, the aim was to create a model in which there are key partnerships where large companies mentor and provide incubator opportunities to smaller less well established businesses. This priority responded to the NSDP outcome 6, which is aimed at providing support to SMMEs. Even though there were successful areas of implementation with regards to this strategic priority, there was poor participation by the industry to train young people on entrepreneurship programmes which resulted a partial achievement of this target.
2. Ensure good corporate governance and a productive workforce.	This strategic priority action was realized to focus on MICT SETA internal systems and processes for effective corporate governance. Ensuring the elimination of fraud and corruption by putting in place effective fraud management plan strategies and policies as part of Risk Management. This priority has been partially achieved, with few Irregular Expenditure identified on 3 of 99 procurements.
3. Increase and improve labour market information that accurately identifies occupations in high demand.	In implementing this strategic priority action, the SETA had to ensure that the labour market information signalling the demand and supply of skills was thoroughly triangulated to improve the trustworthiness of data used for skills planning purposes. This was achieved through a systematic and in-depth research in collaboration with industry bodies, universities and acclaimed research institutions. There were career guidance initiatives implemented by the SETA in partnership with industry and various learning institutions, the career guide distribution was mainly through various online platforms. The targeted audience were unemployed learners and those already in employment seeking to progress to identified occupational shortages and skills gaps to ensure meaningful and sustainable Employment. The SETA partially achieved this target, due to the Covid-19 pandemic being an inhibiting factor to some key output indicators.
4. Increase focused skills development interventions for rural and marginalized communities to ensure inclusivity	The SETA implemented 35 rural development projects in the 2020/2021 financial year, over achieving by 3 programmes. This can be attributed to the demand by stakeholders to implement programmes in rural areas. The SETA's implementation in this aspect is linked to its rural strategy and also to the NSDP outcome 8, which is aimed at increasing access to occupationally directed programmes for rural and previously disadvantaged communities (including townships).
5. Increase access to, and delivery of industry and occupationally directed priority programmes and work placements.	With this strategic priority action, the SETA had committed to the development of skills that enable 4IR occupations and Specialisations such as network and systems engineering and cybersecurity specialists. Through its implementation in this aspect, the SETA has successfully achieved this priority with 571 as it final reach, over achieving by 37. This can be attributed to high enrolments in the financial year and the collaboration with the industry. This implementation was also addressing the NSDP outcome 1, 2 and 8. Outcome 1 focusing on the identification and increasing production of occupations in high demand, Outcome 2 addressing linking education and the workplace, and lastly Outcome 8 focusing on support of career development services.
6. Improve the quality of education to address programmes in high demand within the MICT sector.	The SETA has been successful in addressing this strategic priority, the focus being on the identification and development of occupational qualifications through the QCTO for occupations in high demand in consultation with the sector. Moreover, putting in place mechanisms to prioriotise 4IR related qualifications, the SETA has identified 30 4IR qualifications and 10 are at the final stages of development, they are now sitting with the QCTO.
7.Enablement of the Fourth Industrial Revolution (4IR)	The SETA has successfully achieved this priority through a systematic and in-depth research in collaboration with industry bodies, universities and acclaimed research institutions. Through its implementation it was able to fulfil the objective of the NSDP outcome 1, which calls for the identification and increase in the production of occupations in demand (examples of which include Cloud Architects in the Cloud Computing space and AI Specialists in the Artificial Intelligence space). Moreover, the identified and the developed 4IR qualifications are an indication that the SETA is moving towards the right direction to respond to the needs of the sector, especially when the impact of Covid-19 in relation to this strategic priority area cannot be ignored.
8. Enable the growth of the public college	The SETA identified TVETs with the potential for meaningful collaboration. These partnerships have recognized some of the TVETs as Centres of Specialization, linking them with industry and ensuring that

Strategic Priority	Status of Implementation
system through sectoral partnerships in the delivery of learning interventions.	programmes offered are in alignment with identified skills gaps for ease of learner placement on programmes such as WIL. To date, the SETA has 9 offices established and maintained in TVET colleges on an annual basis.

It is evident from the table above that the SETA committed itself to the implementation of its key strategic priority areas. The MICT SETA ensured that the above mentioned key strategic priorities interphase with its key strategic outcomes, that all these priority areas were integrated with performance indicators, enabling measuring and reporting on their achievement. In essence, the key strategic priorities were captured in the Strategic Plan and Annual Performance Plan. The SETA has met most its targets with few partially achieved targets relating to the delivery of industry and occupationally directed priority programmes. However, the SETA will continue to focus on strategic priority areas through strategic partnerships with critical interest groups to ensure that occupational shortages and skills gaps are addressed, and their impact measured for continuous improvement.

5.2 Plan of Action

5.2.1 Mechanisms that need to be in place to address key Strategic Priority Areas

M&E is important for organisations such as the MICT SETA to assess programmes and projects. However, key factors noted in the previous implementation have to do with programme planning that needs to be strengthened, dealing with the norm of having purely administrative relationships with stakeholders. The MICT SETA, will capitalise on the benefits offered by M&E, including the SETA being able to track, analyse and report on relevant information and data throughout programmes implementation, as a result creating greater transparency and accountability.

The monitoring element from the core divisions, specifically the LPD and ETQA will be assessed from an input, process/activities and up to an output level. Moreover, risk management will be key in monitoring and reporting. The SSP and M&E division will assess the data submitted at both the outcome and impact level, this will be the level where evaluation will be implemented.

5.2.2 Measures to ensure current priorities are achieved

M&E and Strategic Management should not be viewed as two separate functions, as they are both concerned with supporting fundamental decisions and actions which shape and guide the organisation. The SETA will establish innovative and strategic partnerships with public institutions, centres of specialisation, SMMEs and industry at large for maximum impact on sectoral growth and sustainability. Key Priority Areas will be aligned to the Annual Performance Plan, which could translate into an SLA between the MICT SETA and DHET. Moreover, the SETA will ensure that there are up to date and fit for purpose programmes which respond to skills development needs at hand, with a special focus on 4IR and the ERRP.

5.3 Conclusion

This chapter highlighted the SETA's approach to M&E and demonstrated how data in relation to the concept is applied - this was useful in understanding how decisions are made, and to establish whether the existing M&E function contributes to decision making.

Chapter 6: Strategic Skills Priority Actions

6.1 Introduction

Although there has been widespread transformation of the sector's labour market, in particular the nature of skills demanded, there is some ambiguity about the extent to which these are fundamental shifts in the sectoral structure of the economy, and what the response from the training and education perspective should be. This section summarises the key findings that have emerged from the 2022/23 SSP, which in turn point to the strategic objectives of the MICT SETA and its stakeholders over the next period. This chapter is informed by the 5 preceding chapters, which are in turn informed by consultations and literature review. The recommended priority actions were drafted with strategic input from MICT SETA senior management and policy directives such as the NSDP and the ERRP.

6.2 Key Skills Findings from Previous Chapters

In Chapter 1 it was outlined that the MICT sector is made up of 35 569 employers, the vast majority of which are small businesses. This will have an impact on training opportunities. Although there are fewer large and medium sized employers, resulting in limited large-scale learnership and internship programmes, smaller companies are perceived to be intensive incubators and mentors for entrants in the sector.

The Information Technology sub-sector is the largest sub-sector, accounting for 51% of employers. Overall, the number of levy-paying employers increased from 7 207 in 2020 to 9 093 in 2021. In terms of employment, the MICT sector experienced a decline in employment from 206 615 employees in 2020 to 187 585 employees in 2021. Employment in the Information Technology sub-sector is the largest of the sub-sectors with 50% of employees.

Chapter 2 illustrated that the MICT sector is dynamic and in constant technological flux. Thirteen 4IR technologies were studied as drivers of change in the sector, with Artificial Intelligence (AI), Cloud Computing, Big Data, 5G and the Internet of Things (IoT) coming up strongly as the biggest change drivers in the sector. From the drivers of change, the challenges and implications for skills development, with a focus on change brought about by the fourth industrial revolution (4IR), were identified. South Africa still lags behind in terms of adopting 4IR technologies and a major contributor to this is the lack of appropriate qualifications in 4IR related fields. Thus, 4IR introduces new opportunities for training and as new hardware and software products appear on the market, these need to be accompanied with the upgrading of courses.

In Chapter 3 it was highlighted that the predominant skills gaps in the sector include: Communication skills, Leadership skills, Technical skills, Project management skills, and Certified skills (CompTIA A+, Network+, MCSA, MCSE, Azure, CISCO, etc.). The most hard-to-fill-vacancy is Software Developer, followed by Computer Network and Systems Engineer. Completing the sectoral priority occupations list is ICT Sales Representative.

Enrolments and completions in MICT qualifications decreased in 2020, however, the NQF Level 5 qualification in Film and TV production drew the biggest proportion of learners in 2020. The SETA is working on developing a number of up-to-date qualifications, including those that speak to 4IR related occupations.

There continues to be a high demand for vendor programmes and online courses. These include both short courses that have high price tags and longer, more generalised, courses

that can be accessed through TVET colleges and HEIs. The MICT SETA has begun a process of mapping vendor programmes against NQF levels.

In Chapter 4, the various partnerships that MICT SETA has entered into with professional, academic and government partners were discussed. These include partnerships to provide learning programmes and increase research capacity and access to learning programmes.

Chapter 5 explored the SETA's M&E approach and articulated the functions of the various divisions of the SETA in M&E. Although all three core divisions play, to some extent, a monitoring function, the SSP division consolidates the three divisions and conducts evaluations as well. M&E is also intrinsically linked to Risk Management as handled by the Office of the CEO. A plan of action was also presented on how the SETA intends to achieve its priorities.

6.3 Recommended Priority Actions

The following sets out the proposed broad skills development objectives for the sector. These areas are intended to include efforts made broadly by MICT sector stakeholders.

Table 25: Recommended Priority Actions

Outcome/Priority Area	Description
1. Credible labour market information that accurately identifies occupations in high demand.	The MICT SETA will ensure that the labour market information signalling the demand and supply of skills is thoroughly triangulated in order to improve the trustworthiness of data used for skills planning purposes. Such systematic and in-depth research will be achieved through collaboration with industry bodies, universities and acclaimed research institutions. Of equal importance will be the management and dissemination of research outcomes on occupations in high demand and incremental building of career guidance in partnership with industry and various learning institutions through a number of platforms, with online distribution being the main platform. The targeted audience will be unemployed learners and those already in employment seeking to progress to identified occupational shortages and skills gaps to ensure meaningful and sustainable employment.
2. Enablement of the Fourth Industrial Revolution (4IR).	The MICT sector key skills change drivers articulated in Chapter 2 are all centred on 4IR technologies. In response to the change brought about by 4IR, the SETA will provide support to enable the sector to play a key role in the development of technologies and products related to 4IR. This will be achieved through support by the SETA for the development of the skills required to research, develop and commercialise 4IR technologies and products. In recognising and planning for occupations that are on the National List of Occupations in High Demand-and linked to 4IR-this priority action fulfils NSDP outcome 1, which calls for the identification and increase in the production of occupations in demand (examples of which include Cloud Architects in the Cloud Computing space and AI Specialists in the Artificial Intelligence space), and outcome 2, which speaks to linking education and the workplace. In addition, the SETAs strategy to provide support to enable the sector to play a key role in the development of technologies and products related to 4IR directly contributes to the principles and enablers of the ERRP. The ERRP highlights a number of principles including strengthening the productive capacity of the economy. This is to be achieved through key enablers such as skills development and a population that is equipped for the new normal as well as enhancement of the communications and digital economy. The ERRP states that "necessary policy interventions will be put in place in order to ensure the building digital skills, digital capacity and competitiveness". Specifically, an Artificial Intelligence Institute will be established, necessary interventions will be made in order to increase broadband connectivity and creation of the virtual classroom to 152 schools, and providing learners and workers with tools and training to be able to learn and work online, amongst others. Furthermore, the impact of Covid-19 in relation to the enablement of 4IR cannot be ignored therefore, in implementing 4IR priority programmes, companies that have been, and will be impacted by Covid-19 are also accounted for in SETA strategies. This is seen through its inclusion

Outcome/Priority Area	Description
	in the SETA's 2022/23 Strategic Plan and Annual Performance Plan – going forward, Covid-19 considerations will be integral to the planning process for the SETA.
3. Increased access to, and delivery on occupationally directed priority programmes that link education and the workplace.	The SETA will set realistic targets in collaboration with industry, ensure implementation through the allocation of discretionary grants and monitor delivery of Service Level Agreement deliverables as a way of addressing sectoral occupational shortages and skills gaps. This will prioritise the development of skills that enable 4IR occupations and specialisations such as network and systems engineering and cybersecurity specialists. The Covid-19 phenomenon has been taken into consideration with regard to the SETA's strategic planning and has been acknowledged as a catalyst for the necessary 4IR related skills development. One of the key strategies the SETA will employ is the expansion of opportunities for Work Integrated Learning and Internship programmes as they provide effective bridges into employment and the general world of work. Furthermore, the SETA will support uptakes on short and targeted programmes focused on addressing specific and immediate skills gaps that stimulate direct employment and sustainable growth. The SETA needs to look into funding more professional qualifications as part of learnerships and skills programmes as they afford learners a greater chance of employability, such programmes include CISCO and CompTIA A+ which are linked to Technical Support and Systems Support programmes. Addressing NSDP outcome 8, learning pathways need to be communicated with learners in schools, colleges and universities as well as those already employed in the sector who wish to seek entry to occupations that present other opportunities for employment in the sector. This will be done through the publication of the MICT SETA career guide as well as through partnerships with industry stakeholders. Online platforms and tools will be utilised to expand on this. Improved access and awareness of MICT sector programmes in previously disadvantaged areas will also be a focus for the SETA, speaking to NSDP outcomes 1 and 2.
4. Support growth of the public college system through sectoral partnerships in the delivery of learning interventions.	The SETA will identify TVETs with the potential for meaningful collaboration and enter into partnerships with them. These partnerships will recognise some of the TVETs as Centres of Specialisation, linking them with industry and ensuring that programmes offered are aligned to identified skills gaps for ease of learner placement on programmes such as WIL. Furthermore, the SETA will award bursaries to college lecturers and training opportunities on curriculum related studies to college managers for their continuous development and for them to be adept with industry technological advancements. The SETA will establish offices in some TVET colleges to ensure accessibility and reach, ensuring that those TVETs are duly accredited to offer the SETA's high-demand occupational qualifications. In all this, the development of skills that enable 4IR occupations and specialisations will be the main focus. All these initiatives will ensure gradual growth of the public college system, eventually ensuring that TVETs become fit for purpose skills development providers and institutions of choice.
5. Increased and focused skills development for rural and marginalised communities to ensure inclusivity through technology skills development.	The MICT SETA's rural strategy, linked to NSDP outcome 8, is aimed at increasing access to occupationally directed programmes for rural and previously disadvantaged communities (including townships). The MICT SETA is also in support of the ERRP in that the interventions that form part of the South African Economic Reconstruction and Recovery Plan will be geared towards promoting greater participation by black people, women, youth and persons with disability at all economic levels. In addition, the MICT SETA strategy aims to respond to the President's Youth Employment Service, which is known as the "YES initiative". It aims to address the most pressing socio-economic challenges in the country, particularly around poverty and unemployment among the youth. There are currently more males (58%) employed in the MICT sector than females (42%). This gap is slowly closing, and the SETA will continue encouraging transformation in the sector by placing focus on providing increased funding and skills development opportunities to African and female learners. This priority intends to scope the skills development needs and priorities of rural communities, provide career and vocational guidance, support government in addressing e-governance issues and assist aspirant training providers to attain accreditation and deliver MICT SETA programmes.

Outcome/Priority Area	Description
	The SETA will thus collaborate with developmental organisations such as USAASA and industry in initiating and implementing focused Rural Development Projects on an annual basis.
6. Support for SMMEs, Entrepreneurship and community-based organisations, particularly in relation to 4IR cross-sectoral partnerships and projects for sustainable growth.	In developing interventions for SMMEs and community-based organisations, the SETA will make considerations such as: the ability of an SMME to obtain funding for skills development; whether or not it is a levy paying company; the flexibility and accessibility of programmes that recognises the difficulty that small companies have in releasing staff for long periods; the difficulties that small companies have in meeting requirements for learning programmes implementation; and the potential for established larger companies in the sector to mentor and provide incubator opportunities to smaller less well established businesses. Furthermore, the SETA needs to intentionally formalise partnerships with other SETAs through meaningful engagements in order to synchronise contrasting mindsets and interests. This will assist in reaching common ground for both parties to work together to reach a common outcome and long-term viability for stakeholders. These partnerships are especially important now, during the Covid-19 phenomenon (the impact of which will outlast the pandemic) as SMMEs are in a more vulnerable position attempting to keep up with 4IR trends and technology in order to stay relevant in the current MICT sector environment. These partnerships will play an imperative role in enabling these SMMEs to sustain their businesses. Addressing NSDP outcome 6, as well as the ERRP objective to focus on SMME development, training interventions focused on developing key skills relating to 4IR will be made available to SMMEs and community-based organisations to allow for those active in 4IR or related fields to develop more specialised or adjacent skills. This will help further innovation and commercialisation of 4IR technologies in South Africa, further encouraging local production and gradually increasing exports.
7. Improved quality of education to address programmes in high demand within the MICT sector.	The focus will be on the identification and development of occupational qualifications through the QCTO for occupations in high demand in consultation with the sector. These include occupations such as software tester, network engineer and ICT security specialist. Furthermore, the SETA will put in place mechanisms to prioritise 4IR related qualifications and increase the number of accredited skills development providers offering occupational qualifications in high demand on an annual basis. Such 4IR occupations which require qualification development are in cloud computing, cybersecurity, artificial intelligence, data science and robotics and automation, amongst others. Where the relevant qualifications and training courses exist, the SETA will encourage enrolment in them, particularly for middle and high-level skills. Where qualifications and courses need to be developed, the SETA will work with industry, relevant academic and research institutions and other critical interest groups to map-out and develop programmes that respond to such new technological imperatives for sustainable growth of the sector.

6.4 Measures Planned to Support National Strategies and Plans

The MICT SETA works with its various partners to support the achievement of the NDP objectives. Through continued funding of bursaries at research level, the SETA endeavours to propel the sector's innovation system. The MICT SETA strives to be a reliable skills development partner that promotes growth in requisite skills (this is especially important now with the occurrence of Covid-19 and the catalyst effect it is having on the enablement of 4IR). To the effect of attaining the NDP objectives, the MICT SETA will leverage its partnerships with industry to drive innovative research and offer opportunities to small business, to enable them to play a significant role in the country's manufacturing and technology ecosystem. Equal focus will be channelled towards continued support for SMEs through more focused internships and incubation programmes. The table below shows this effort by the SETA.

Table 26: MICT SETA's Efforts to Support National Strategies and Plans

Planning Priority	*Priority Action*
National Development Plan	The MICT SETA together with stakeholders in the NSI will engage in processes to help commercialise research. The SETA strategic plan emphasises provision of financial and non-financial support to SMMEs, NGOs, NLPEs, CBOs. Partnerships with stakeholders like SEDA to encourage incubation would play a key role in achieving sustainability and growth of small businesses in the sector.
White Paper on Post Schooling Education and Training	The White paper calls for an integrated post schooling and education system and an efficient skills development system. Many of the targets identified in the White Paper have found expression in the NDP. The MICT SETA will ensure expanded access to TVET and University education through bursaries.
National Skills Development Plan (NSDP)	In the new planning cycle, the MICT SETA responds to the NSDP outcomes by determining and addressing occupations in high demand, strengthening TVETs, CETs and work integrated learning (WIL), increasing the number of workers trained and supported and supporting SMMEs, Cooperatives and rural learners. These outcomes are pursued by the SETA in the Recommended Priority Actions above. In addition, there are efforts to mainstream provision of vendor type as well as SETA accredited programmes, especially at NQF 4 through partnerships with TVET colleges.
Strategic Integrated Projects (SIPs)	There is a need for a skill development package that includes skills programmes for those who will be entrusted with managing the broadband infrastructure. MICT SETA will, through its skills development interventions, endeavour to support the SIPs.
New Growth Path (NGP)	The MICT SETA in line with the NGP places emphasis on the development of ICT skills, as well as the increased supply of highly skilled labour in the economy.
Industrial Policy Action Plan (IPAP)	Some of the programmes identified in IPAP find expression through the Strategic Integrated Projects. As stakeholders in the sector start to engage in these programmes, the MICT SETA's role as a skills development partner will become more pronounced, ensuring that requisite skills are developed.
National Integrated ICT Policy White Paper	The MICT SETA seeks to support this planning priority through managing supply-side issues and infrastructure roll-out, including supporting work done in scarce resources such as spectrum and interventions to facilitate open access and rapid deployment of infrastructure. The SETA commits itself to facilitating multi-stakeholder participation in the drive for an inclusive digital economy.
Economic Reconstruction and Recovery Plan and Skills Strategy	In terms of the Principles of the ERRP, the MICT SETA finds expression in the Principle: Strengthening the productive capacity of the economy. And key enablers relevant to the MICT SETA include: Skills development and a population that is equipped for the new normal; as well as the enhancement of the communications and digital economy. In support of the ERRP, the Skills Strategy was developed because of the urgency for a well-coordinated strategy of skills development to support both the management of Covid-19 pandemic and the economic and social recovery. The Skills strategy contains ten interventions to ensure the effective implementation of the ERRP. The SETAs, including the MICT SETA, finds expression in six of the interventions. The MICT SETA plans to directly contribute to each of these interventions including: • Intervention one: Embedding skills planning into sectoral processes. • Intervention three: Increased access to programmes resulting in qualifications in priority sectors. • Intervention four: Access to targeted skills programmes • Intervention six: Supporting entrepreneurship and innovation. • Intervention seven: Retraining/up-skilling of employees to preserve jobs. • Intervention ten: Strengthening the post-school education and training system.

6.5 Conclusion

The MICT SETA will continue to strive towards the continuous improvement of planning and implementation efforts, as well as the constant monitoring of sector-related changes and developments. Currently, two of the most important sector-related developments being taken into account by the SETA, is that of Covid-19 and 4IR with regard to its impact on skills development and the stakeholders within the sector. Therefore, the skills development interventions that the MICT SETA will be implementing provide the most relevant and up-to date learning programmes that afford learners the opportunity to acquire skills that are appropriate to economic and societal needs. The priority actions identified in this plan find expression in the MICT SETA Strategic Plan and Annual Performance Plan and will serve as a guide for the SETA in support of national and sectoral objectives in the best manner possible.

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