



science  
& technology

Department:  
Science and Technology  
REPUBLIC OF SOUTH AFRICA



In collaboration with



# 9<sup>th</sup> African Union Private Sector Forum & NEPAD & NBF African Leaders in Dialogue Dinner

Accelerating Africa's Industrialization through  
"Digitization" & Youth "Techpreneurship"



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## 1 BACKGROUND INFORMATION

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We are at a nexus period where the global scale of the Internet, the ubiquity of mobile devices, the ever-declining cost of cloud services, an increasingly networked physical world and artificial intelligence are interconnecting people, processes and things, turning data into knowledge and knowledge into actions revolutionizing all spheres of human activity, society, politics, culture and the economy.

Coming late to industrialization, Africa and its young entrepreneurs have opportunity to be the prime beneficiaries of these digital technologies by creating a development model based on a profound understanding of their transformative potential and astounding progress. Africa will not only benefit from orders of magnitude of gain in safety, efficiency and productivity in sectors such as infrastructure, energy, manufacturing, agriculture, transports and logistics, but will also leapfrog directly into decentralized, personalized and digital health, education and government services.

For African citizens, the true promise of connectivity and digitization is the eradication of poverty, equal opportunities for all, enhanced quality of life and opportunities for entrepreneurship. People in historically disadvantaged communities can educate themselves, learn the skills they need to succeed, have access to finance and ever better healthcare.

Strengthening the African digital and technological ecosystems is paramount as they are the foundations for 21<sup>st</sup> century's knowledge economy and are key enablers of sustainable innovations and new employment opportunities. **This will require creating frameworks for supporting multi-sectoral partnerships, intergovernmental and government-private sector collaborations to connect and digitize all aspects of the African economy.**

The recent partnership between the African Union (AU) and NEPAD Business Foundation (NBF) has a vision to spearhead a vibrant, private sector driven and entrepreneurship led economy that stays on top of technology trends and that leverages the current African demographic dividend. To materialize this partnership, the AU and NBF are jointly organizing the 9<sup>th</sup> Private Sector Forum (PSF) event and the African Leaders in Dialogue Dinner (ALD), in collaboration with Andalem and hosted by the South African Government through the Department of Science and Technology.

## 2 9<sup>TH</sup> PRIVATE SECTOR FORUM & AFRICAN LEADERS IN DIALOGUE DINNER

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### 2.1 STRUCTURE & CONTENT

The 9<sup>th</sup> Private Sector Forum is a three day event with a plenary session, parallel sessions, a startup pitch and closing session. B2B, B2G and G2G interaction stands will be available throughout the event, where companies can demonstrate their technologies and explore partnerships with other companies and governments.

On the evening of the first day, the African Leaders in Dialogue dinner will be held. It is a high level working dinner between public and private sectors, African and G20 Ambassadors, and key development partners, to discuss topical African issues.

Plenary and closing sessions will hold opening and closing Keynote remarks, and general presentations with an overview of the topics of the theme and conclude on the event.

Parallel sessions will host domain specific presentations, panel discussions and will dive deep into the use of digital technologies in the sectors of focus. They will also highlight the necessary strategic partnerships and enabling environment to successfully implement digitization and incentivize techpreneurship in the chosen sectors.

The 9<sup>th</sup> Private Sector Forum will take place at the CSIR International Convention, in Pretoria, from November 13<sup>th</sup> to 15<sup>th</sup>, 2017 and the African Leaders in Dialogue Dinner on the evening of November 13<sup>th</sup>. The main theme is:

### Accelerating Africa's Industrialization through "Digitization" & Youth "Techpreneurship"

#### 2.1.1 1<sup>ST</sup> Day: Introductory Keynotes & Plenary Sessions

The objective of the 9<sup>th</sup> Private Sector Forum is to be platform for vibrant discussions **between telecoms, technology companies, local actors of Africa's industrialization and the public sector** on forging Private-Public-Partnerships to digitize the African economy and prepare it for the 4<sup>th</sup> and 5<sup>th</sup> Industrial Revolutions. It promotes both global and intra-African collaborations in order to harness the benefits of digital technologies and techpreneurship to accelerate Africa's economic transformation and sustainable development in the digital era.

After introductory remarks from the master of ceremony, and keynote speeches from AU, NBF and government officials from the hosting country, the plenary session will give an overview of the nature and progress of digital technologies and how it's affecting every aspect of our lives and our economy. It will highlight opportunities for Africa's renaissance in the digital era, and the central role of Private-Public-Partnerships to create a conducive environment for capacity building in science, technology, innovation, digitization and entrepreneurship. The following topics will be explored by domain experts.

### **2.1.1.1 The 4<sup>th</sup> Industrial Revolution: Transforming Digital Disruptions into Opportunities**

This session aims to give the audience an overview of the exponential progress of technology and its transformative potential. Internet, Sensors, Mobile, Social, Cloud, Big-Data, Additive Manufacturing, Biotechnology, Robotics and specialized Artificial Intelligence are paving the way to the 4<sup>th</sup> Industrial Revolution. They are digitizing, dematerializing, demonetizing and democratizing every aspect of the global economy and are creating opportunities to birth Africa's transformation in the digital era.

The below concepts will be explored with from Africa's perspective:

- **Africa's and Humanity's Grand Challenges:** demographic explosion, scarcity of resources, climate change, global pandemics, poverty and how technology is interconnecting us, augmenting our physical and cognitive abilities to create solutions for these problems
- **The Fourth Industrial Revolution and the Industrial Internet of Things:** connecting people, processes, data and things together and deriving unprecedented value across-the-board in all industries (Energy, Infrastructure, Transport & Logistics, Healthcare, Agriculture, Education etc.)

### **2.1.1.2 Robotics & Artificial Intelligence in the African Context**

While the 4<sup>th</sup> Industrial Revolution is all about digitization and Data-Driven safety, productivity, efficiency and sustainability in all industries, the full implementation of Robotics and Artificial General will allow full integration of all industries and maximum value creation. It is already underway with the exponential progress of technology.

A.I. is considered as the ultimate breakthrough and the last invention of humanity. The growing digital A.I. mesh created by connected systems and machine learning in all aspects of the economy and society, is creating the "A.I. of Everything". It is automating processes, accelerating breakthrough innovations and boosting the convergence of biology and technology. This session will give an overview of robotics and A.I., and how they could solve the below grand challenges.

- **Ending Poverty:** Resource allocation through satellite mapping and data analysis of poverty.
- **Ending Hunger:** With automated agricultural productivity and efficiency through vertical farming and predictive analysis from sensors.
- **Better health and wellbeing:** Decentralized and democratized healthcare for all with the rapid penetration of smartphones that will soon be able to track the onset and progression of pandemics, and to diagnose and manage diseases. Centralized healthcare management systems that leverage mountains of health data to implement A.I. backed Predictive, Preventative, Personalized and Participatory healthcare. Automated drone delivery of medicine, and ultimately, A.I. accelerating scientific research and innovation to eradicate disease.
- **A.I. Powered Personalized Education:** Personalized education that cultivates individual talent by enhancing understanding, participation and learning outcome through virtual reality and predictive mentoring.
- **A.I. Powered Cybersecurity:** Intelligent and self-learning technologies helping organizations in their fight against cyber-attacks, by detecting potential attacks at an early stage with real-time adaptive

security intelligence as well as by proactively identifying complex attack patterns that span various systems.

This session will also explore how robotics and industrial automation can affect Africa's current industrialization strategy and employment creation. The below sessions will highlight the importance of connectivity, capacity building, skills development and entrepreneurship which are essential components of digitization and Africa's readiness for the 4<sup>th</sup> Industrial Revolutions.

### ***2.1.1.3 Connectivity: Connecting Africa's Industries and Citizens to the Global Digital Economy***

Connectivity can transform African industries and give each Africans the ability to transform themselves, their community and the world at large by leveraging the world's knowledge, infinite computing and data-driven decision-making at the palm of their hands. By connecting its 800M new minds, Africa will unleash untapped intelligence, resilience, creativity, insight, and experiences that have been out of reach up until now, to solve local problems and position themselves in the global market.

This session will explore the current state of connectivity in Africa, available ICT backbone technologies and the strategy to connect African industries, government and citizens. It will focus on three essential components of connectivity: the availability of network, the accessibility/affordability of mobile devices and data plans, and the relevance of delivered content to local communities.

It will conclude with strategic partnership and policy recommendations to move this mission forward.

### ***2.1.1.4 Building Africa's Capacity in Sciences & Technology and Creating Enabling Environment for Technology Entrepreneurship***

Strengthening the African digital and technological ecosystems is paramount as they are the foundations for 21<sup>st</sup> century's knowledge economy and are key enablers of sustainable innovations and new employment opportunities.

This session will be about building Africa's capacity in Science and Technology. It will explore the creation of frameworks for regional collaborations and technological free zones. It will develop the concept of regional centers of excellence that explore synergies between emerging technologies and regional development agendas to proactively deploy technological solutions through effective policies.

This session will:

- Highlight key learnings from European Horizon 2020, the American model of innovation, the SDGs and Agenda 2063, to derive recommendations on how the public sector can incentivize Science & Technology, Innovation and Entrepreneurship at a continental level.
- Encourage global/Intra-African partnerships for Research & Development, the creation of innovation engines and incubation hubs that support digitization and entrepreneurship in all sectors

### **2.1.1.5 *The Central Role of Private-Public-Partnerships to Digitize African Industrialization and Foster Youth Entrepreneurship***

This session should flesh out the principles and elements required to form successful and high-impact private-public partnerships to bring rapid technological advances in digitization, data analytics and artificial Intelligence to turbocharge productivity, performance, efficiency and safety of African industries. Private-Public Partnerships are crucial for Africa to stay on top of emerging technology trends and harness their transformative potential to accelerate its economic transformation and sustainable development. It will highlight concrete examples of such partnerships to connect African industries, citizens and build capacity in science, technology and entrepreneurship.

### **2.1.2 1<sup>st</sup> Day Evening: African Leaders in Dialogue Dinner November 13<sup>th</sup>, 2017**

After opening and welcoming remarks and presentations from executives of main sponsor companies, the African Leaders in Dialogue will host a working dinner and panel discussion on how the private sector is driving Digitization and Techpreneurship to accelerate Africa's industrialization for an inclusive and sustainable development. The panelists will discuss Private-Public-Partnerships and enabling environments for Africa to adopt digital technologies and transform its economy by harnessing its demographic dividend.

### **2.1.3 2<sup>nd</sup> Day: Parallel Sessions**

#### **2.1.3.1 *Smart & Sustainable Energy***

With just two out of five people having access to electricity, electrifying the continent is a top priority for Africa. Grand scale and distributed small-scale renewable energy sources along with intelligent energy management systems that reduce consumption can guarantee energy security for Africa in a sustainable way.

This topic will explore digitization of developing African on and off-grid renewable energy infrastructure and how digital technologies and artificial intelligence can maximize energy distribution and efficiency for the continent. It will finish with recommendations for better investment climate, stronger private sector-government partnership and capacity building.

#### **2.1.3.2 *Smart African Cities: Smart Infrastructure, Smart Resource Management, Smart Transport & Logistics***

Form smart transport, logistics and intelligent infrastructures that report their condition, to effective management of resources and traffic, this session will explore the application of digital technologies to African cities. Cities that monitor conditions of critical infrastructures, better optimize resources, plan preventive maintenance and security while maximizing efficiency of logistics and transport to citizens that are set to double in size in the middle of the 21<sup>st</sup> century. It will present a case study of a successful Public-Private Partnerships to digitize:

- Ports
- Inland Transport and logistics systems (Railways and road transportation)
- Smart oil and gas infrastructure,
- Smart water and other resources management

### **2.1.3.3 African Inclusive Markets Excellence Center (AIMEC)**

Inclusive businesses have proven effective in creating opportunities for low-income populations. For example, the mobile money service M-Pesa offers financial services to more than 25 million customers, most of whom previously had no access to formal banking. Besides financial services, priority sectors that contribute to inclusive growth in Africa include agribusiness, energy, and information & communication technology. Inclusive market development is necessary to ensure that the benefits of growth are shared equally and to provide a conducive environment for inclusive businesses. Inclusive markets reinforce inclusive growth and regional economic integration, two explicit goals of the African Union and its partners. Inclusive businesses (IB) include the poor on the demand side as clients and customers, and on the supply side as employees, producers and business owners at various points in the value chain. Inclusive markets (IM) expand choices and opportunities for the poor and other excluded groups in their role as producers, consumers, entrepreneurs and employees.

Over the past few years, a number of effective policies and programs to support inclusive business and inclusive markets have been implemented in different countries and sectors across Africa. However, these interventions happen largely in isolation. Despite the multiplicity of actors, there is no institution that facilitates the exchange of best practice across the African continent. A Pan-African perspective could enhance the systematic replication of successful policies and programs through coordination, collaboration, public-private dialogue and knowledge exchange. This approach can significantly accelerate the establishment of inclusive markets, and hence foster inclusive growth, regional economic integration and sustainable development. AIMEC will support and facilitate the sharing of best practice and peer learning among both policy makers and implementing organizations.

It's in this context that the 9th Joint Annual Meetings of the African Union Specialized Technical Committee on Finance, Monetary Affairs, Economic Planning and Integration and the ECA Conference of African Ministers of Finance, Planning and Economic Development made the following recommendation: "Requests the African Union Commission to conduct a feasibility study on the creation of the African inclusive markets excellence center to be undertaken by an independent consultant. The findings of the feasibility study should be submitted to the consideration of the member States of the African Union". The AIMEC is intended to become the premier pan-African regional platform for thought leadership and action on inclusive business (IB) and inclusive markets (IM), identifying, facilitating and replicating good practice and innovation in IB and IM policy, programming and partnerships. Ultimately, this will foster inclusive growth and regional economic integration in Africa.

#### **2.1.3.4 Pan African Investment Code (PAIC)**

The Commission of the African Union (AUC) was mandated during the third Conference of African Ministers in charge of Integration (COMAI III) held in Abidjan, Côte d'Ivoire, on 22-23 May 2008, "to develop a comprehensive investment Code for Africa with a view to promoting private sector participation".

The overarching objective of the Code is to achieve growth that is more inclusive and widespread through promotion and protection of investments, leading not just to equality of treatment and opportunity for investors, irrespective of their nationality, but to deep reductions of investment and trade barriers and a correspondingly large increase in jobs.

Series of meeting with independent legal experts as well as Member States and Regional Economic Communities took place in order to finalize the draft PAIC. At the 9th Joint Annual Meetings of the African Union Specialized Technical Committee on Finance, Monetary Affairs, Economic Planning and Integration and the ECA Conference of African Ministers of Finance, Planning and Economic Development, the African union Commission was requested to undertake further consultation with Member States for the finalization of the code. The Commission in this regard organized a meeting with legal experts and investments experts from Member States. The Code has been finalized and adopted by the Ministers of Special Technical Committee as a guiding instrument.

#### **2.1.3.5 Digital Manufacturing & Supply Chain**

The explosion of data and new computing capabilities along with advances in production technology including 3-D printing and robotics, smart finished products and analytics across value chains, are changing how things are designed, manufactured, and serviced around the world.

This session will demonstrate the tremendous gain in efficiency, safety, productivity and waste elimination that digitization brings to manufacturing and supply chains. It will discuss how Africa should integrate digital manufacturing at the design level of its developing manufacturing industry. This session will also explore how robotics and industrial automation can affect Africa's existing industrialization strategy and employment creation.

#### **2.1.3.6 Digital Finance for All**

A recent McKinsey study showed that widespread adoption of digital finance could increase GDPs of all emerging economies by an average of 6 percent, or a total of \$3.7 trillion, by 2025. African countries with low levels of financial inclusion and digital payments have the opportunity to add 10 to 12 percent to their GDP.

A few of the many forces that are reshaping the finance industry with peer-to-peer payments, banking, investment, and loans are Cryptocurrency, Blockchain, A.I. and Crowdfunding. Artificial Intelligence is beginning to offer financial advice, while Blockchain promises to automatically secure and authenticate transactions involving currency, assets, and even legal documents.

This session will explore the impact of mobile banking in Africa and other technologies that are reshaping the finance industry. It will substantiate the opportunity for Africa to provide banking for all citizens, the necessary Private-public partnerships and enabling environment that fosters entrepreneurship to democratize finance.

### **2.1.3.7 Digital Agriculture**

The biggest challenge in agriculture is to replace the inefficient and unsustainable petrochemical-backed mechanization and agricultural intensification method by utilizing, genetic engineering, sensor technology, GIS information, vertical farming and artificial intelligence to enhance efficiency and productivity sustainably.

In Africa, research estimates that post-harvest loss between farm and table totals about 30% of all grains and 50% of all fruits that are harvested. Africa is projected to double in population over the next 30 years, accentuating the urgency to find solutions. Entrepreneurship in low-cost innovative solutions for faster food processing, solar drying, active and intelligent packaging, cold storage units and applications that link farmers to finance and markets should be fostered.

This topic will explore the current state of African agriculture and technologies that are set to revolutionize this sector through presentations, case studies, a panel discussion, and will conclude with partnerships and policy recommendations.

### **2.1.3.8 Digital Healthcare**

The global centralized and probabilistic healthcare approach is disruptively transitioning to ubiquitous and evidence-based decision-making process at a staggering speed with every component of medicine becoming information technology. With the combination of cheap and fast genome sequencing, infinite computing, sensor technology, A.I. and 3D printing, we're on our way to Predictive, Preventative, Personalized and Participatory medicine.

From mobile diagnostics platforms with the same accuracy as sophisticated medical devices to drone delivery of medicine in places difficult to access, the opportunity for Africa to accelerate affordable and best-in-class healthcare without the need for major investments in costly Hospitals, infrastructure and human resource is unprecedented.

This topic will extensively explore how to grasp this opportunity to fill the tremendous chasm of more than 15,000 patients per doctor in average to provide healthcare to the most remote places, closely monitor the outbreak of pandemics with advanced, mobile, accessible and exponentially bettering technologies.

## 2.1.4 3<sup>rd</sup> Day: Startup Pitch & Closing Session

### 2.1.4.1 *Startup Pitch: Technology Entrepreneurs with Innovative Ideas and Business Models that Tackle African problems*

This section will give an overview for the technology startups landscape in Africa, the challenges and the opportunities they face. From Energy and healthcare to agriculture and financial services African startups are bringing innovative ideas and business models that need support from the private sector and government.

Selected African Technopreneurs will pitch their startup idea, the problems they are solving, and demonstrate their technology to potential investors.

### 2.1.4.2 *Closing Session*

Closing sessions will uplift conferees and send them away feeling informed, renewed, energized and eager to continue the discussion and plan actions to put the outcome of the event into practice. After a brief summary of the main subjects of the event and recommendations on partnerships, policy recommendations and way forwards, this session will give an award for the best entrepreneurs participation presents for distinguished guests before closing the event.