

New Innovation in Technical Skills Development- a SA Tooling Industry Case Study

**7TH INTERNATIONAL
BRICS FOUNDRY FORUM**

**Presented by Dirk van Dyk
CEO – National Tooling Initiative
Programme**

14 MARCH 2017



Overview of Discussion



CONTENT

Management Summary

Re-Industrialization and Global Competitiveness



Skills- and Supplier Development in SA –
Background and perspective



Current and future TDM sector-Approach and
Strategy



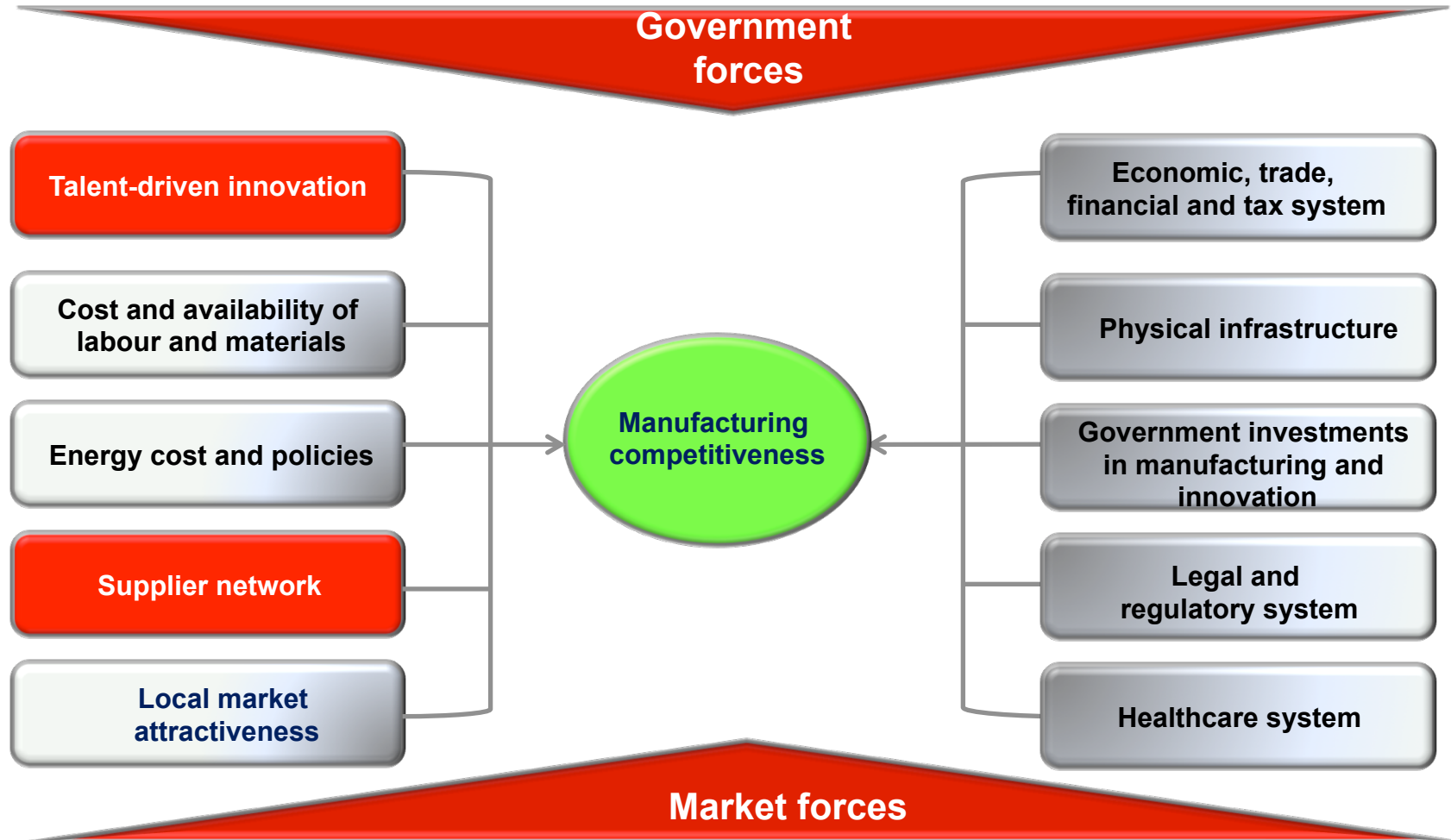
Multi stakeholders partnerships



Operating Model and Life-cycle Value Chain



Sustainability in SA Tooling Sector through focus on key - Global Competitiveness Drivers



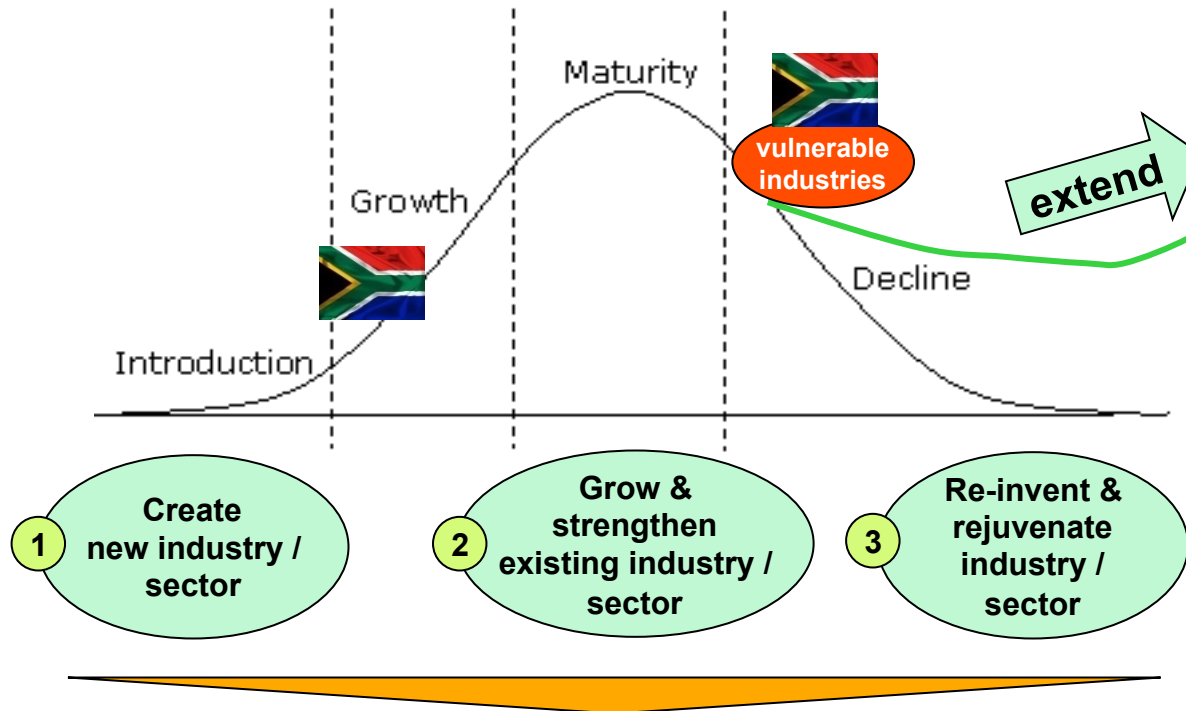
"Source- Deloitte Global Manufacturing Competitiveness Report"

Sustainable Manufacturing in SA

Goal: Re-industrialization of South Africa



Product (Industry) Life Cycle stages

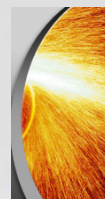


Goal: Re-industrialization of South Africa

SA Re-industrialization Focus areas:

	Industry growth and development
	Supplier-base & Small business Development
	Talent and Human Resource Development
	Sector and Export Support measures

SA Context – TDM Sector’s Goal: Support for Re-industrialization of SA



SA Re-industrialization Focus areas:



**Goal:
TDM Sector Support for
Re-industrialization of SA**

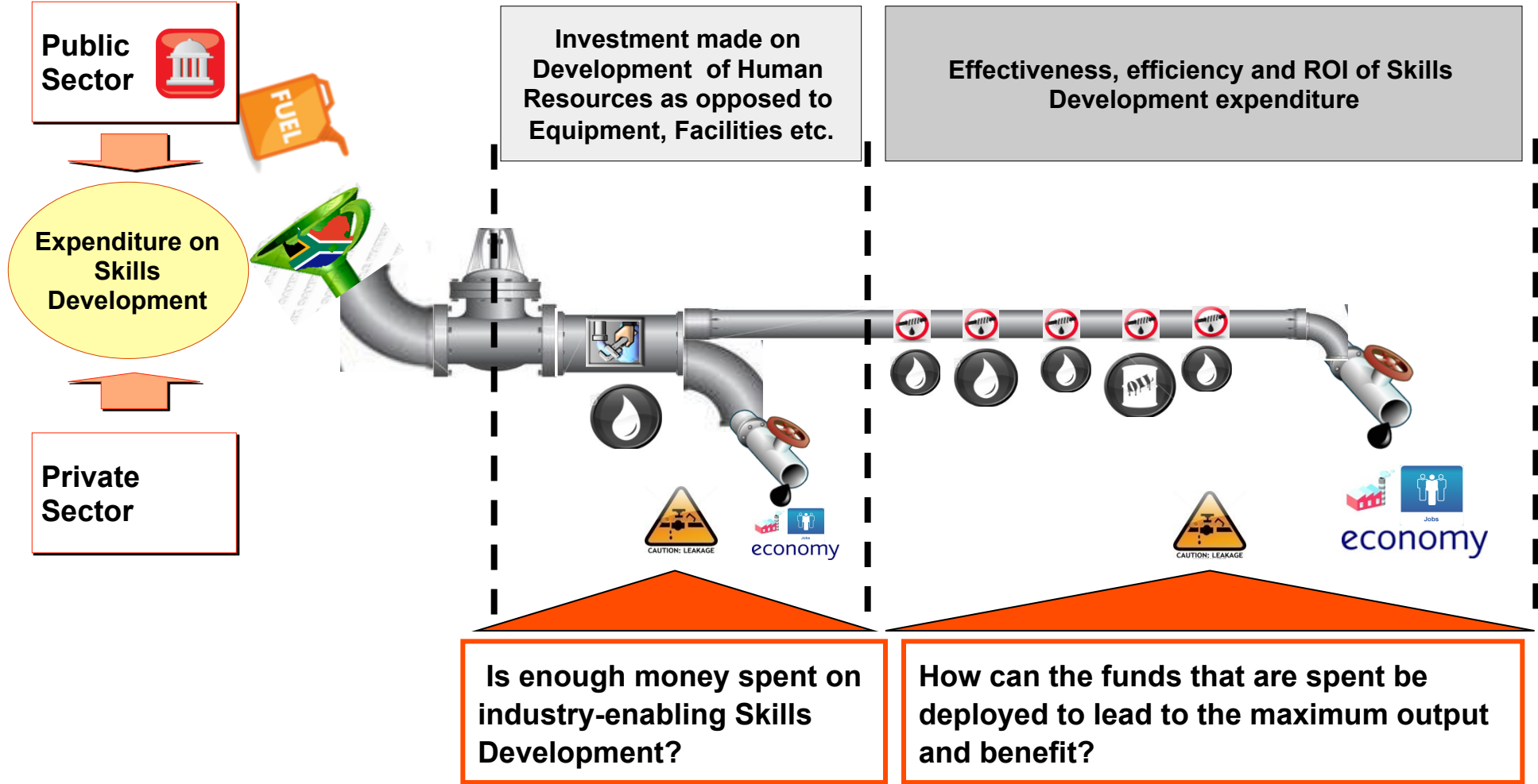
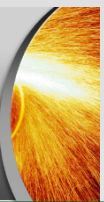


- **Initial Focus: Tool-making Industry**
- **Support:**
 - Skills Development
 - Supplier Development

Next wave:

1. Expansion of proven concept to other Skills / Sectors
2. Sustainable and scalable Talent & SD Growth Solution
3. Expansion of Supplier Development support

SA Context – Dilemma: Non-optimal ROI on SA Skills Development spend today



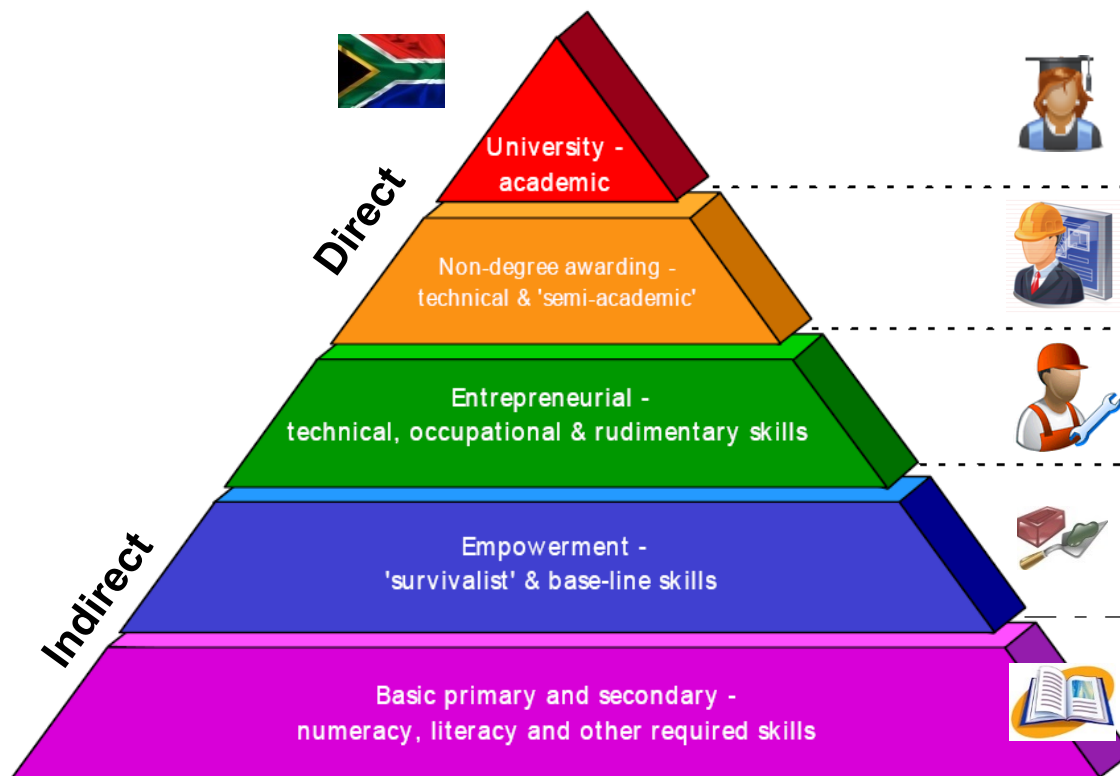
SA Context – Re-industrialization: Talent / Skills Development as one focus area



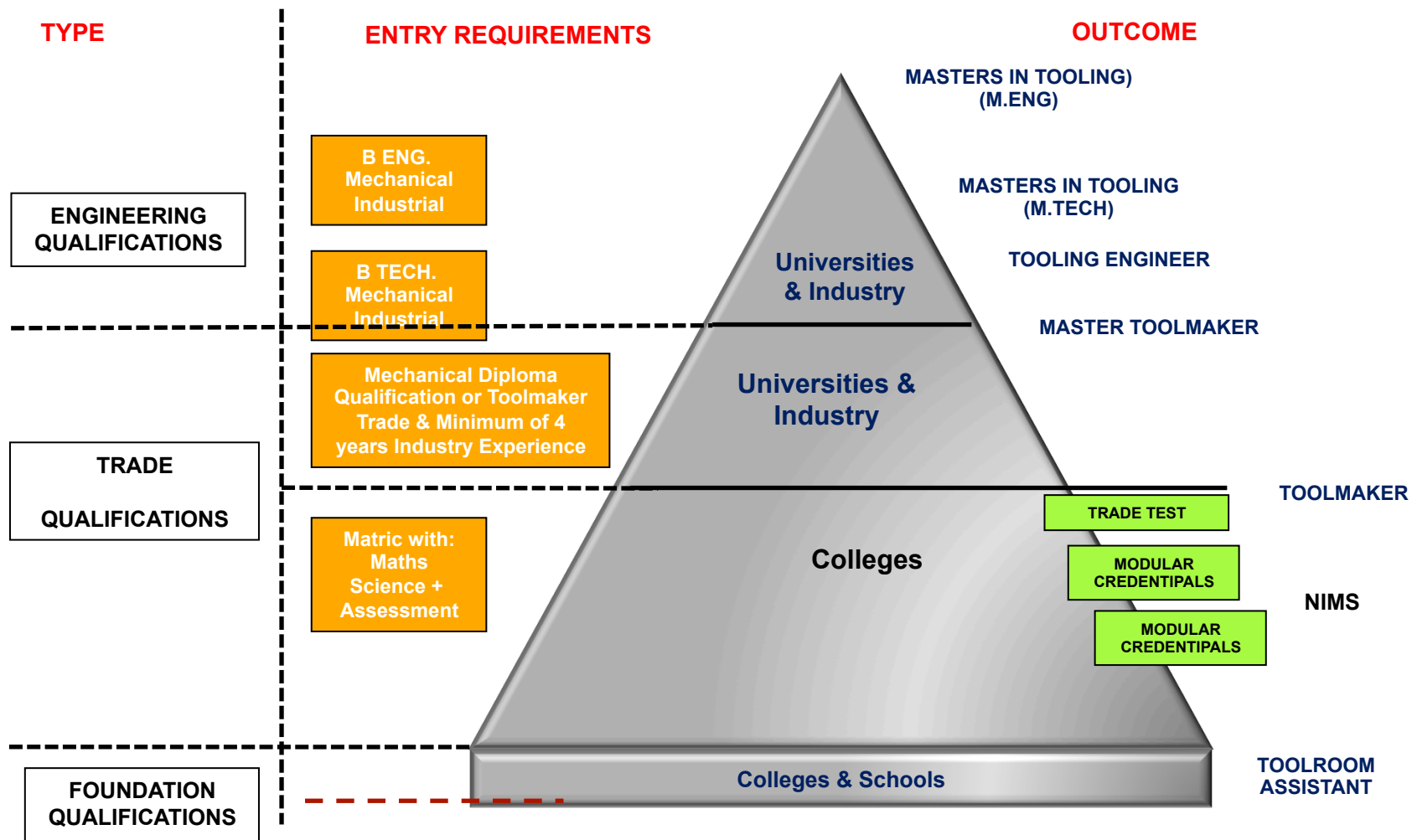
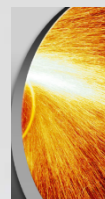
SA Re-industrialization Focus areas:



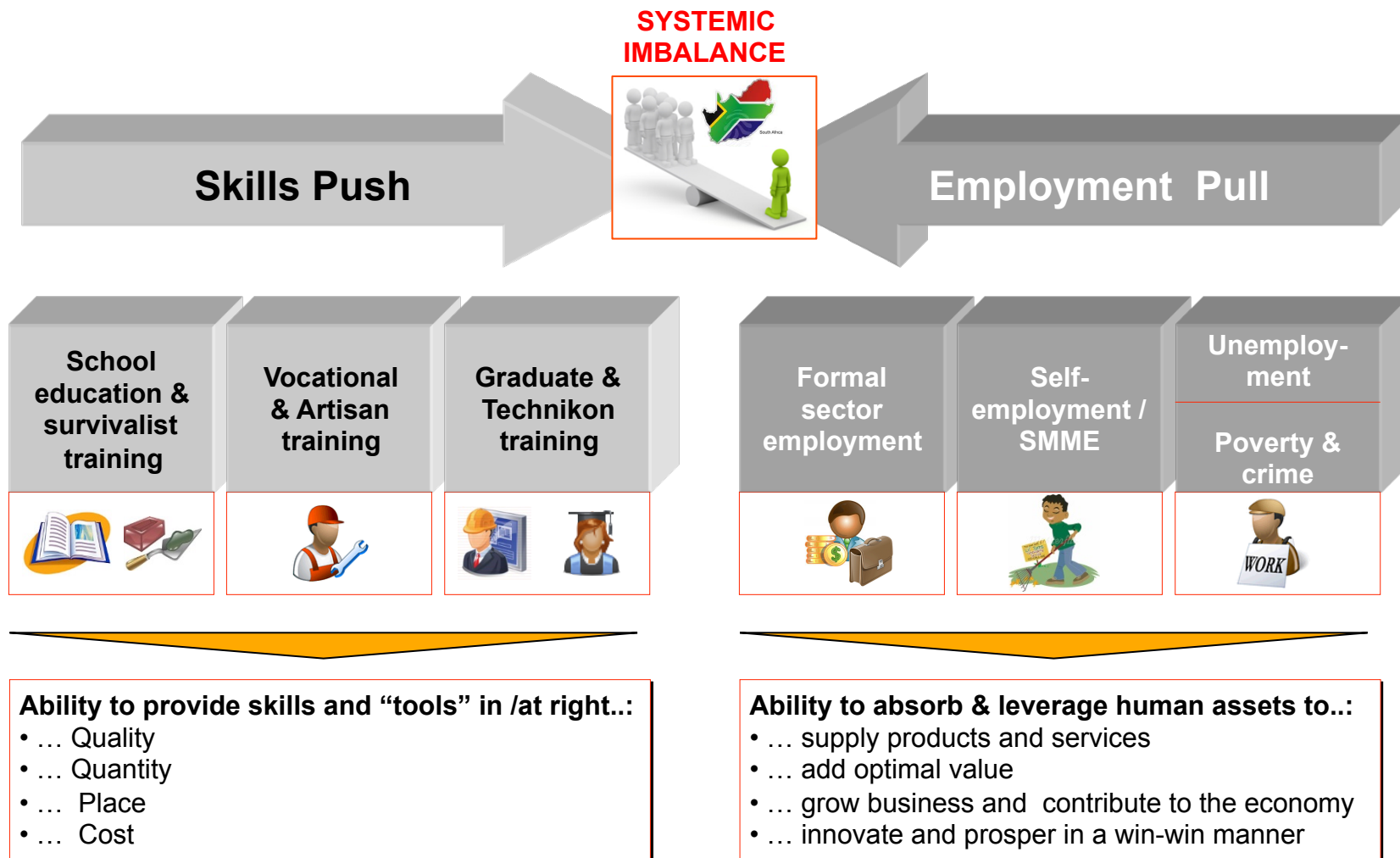
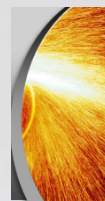
Development of Talent / Skills as critical Re-industrialization Enabler:



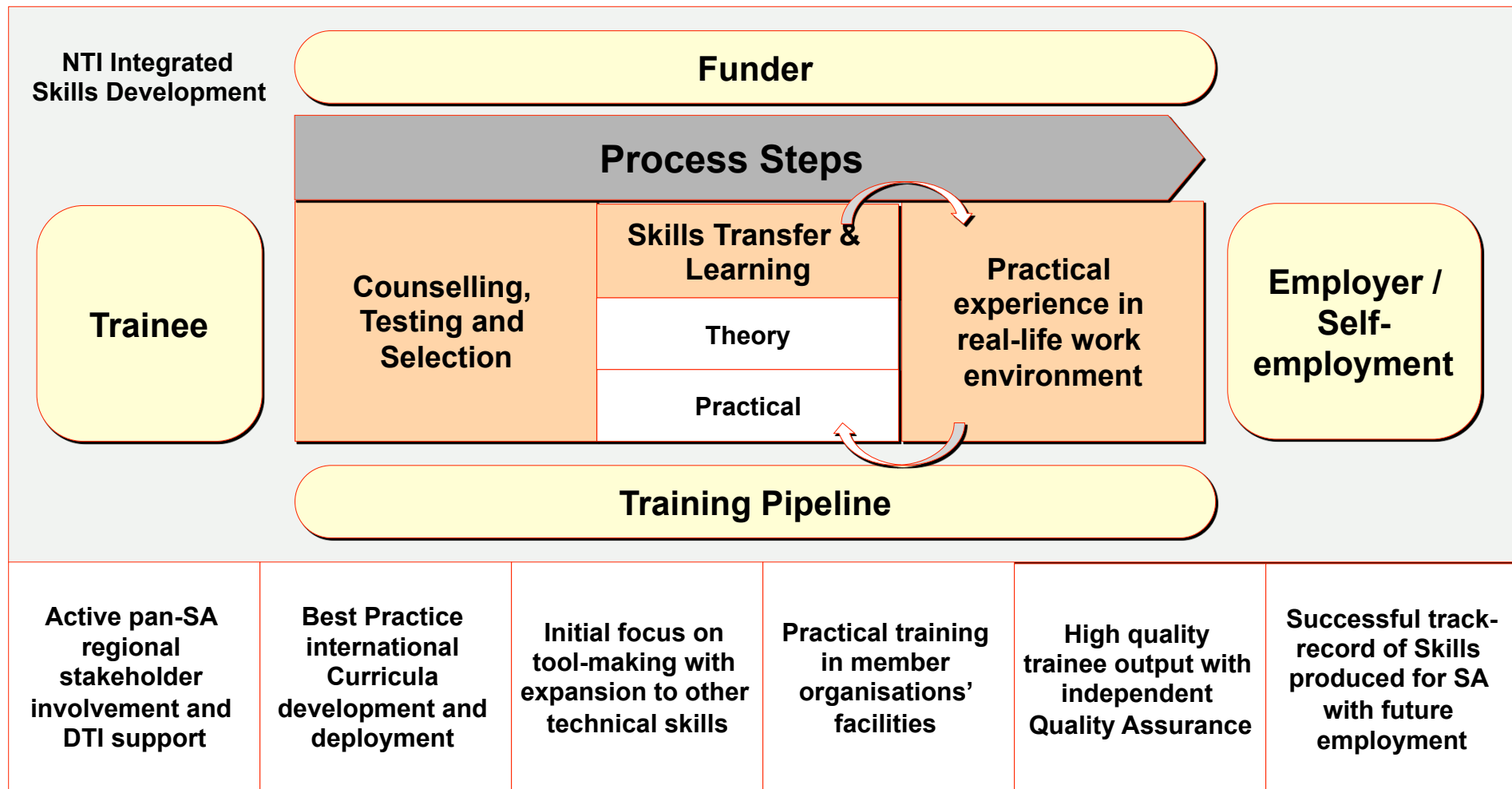
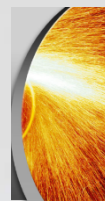
NTIP - TDM Powered Qualifications Structure



SA Context – Massive imbalance of Skills “Push” vs Employment “Pull”

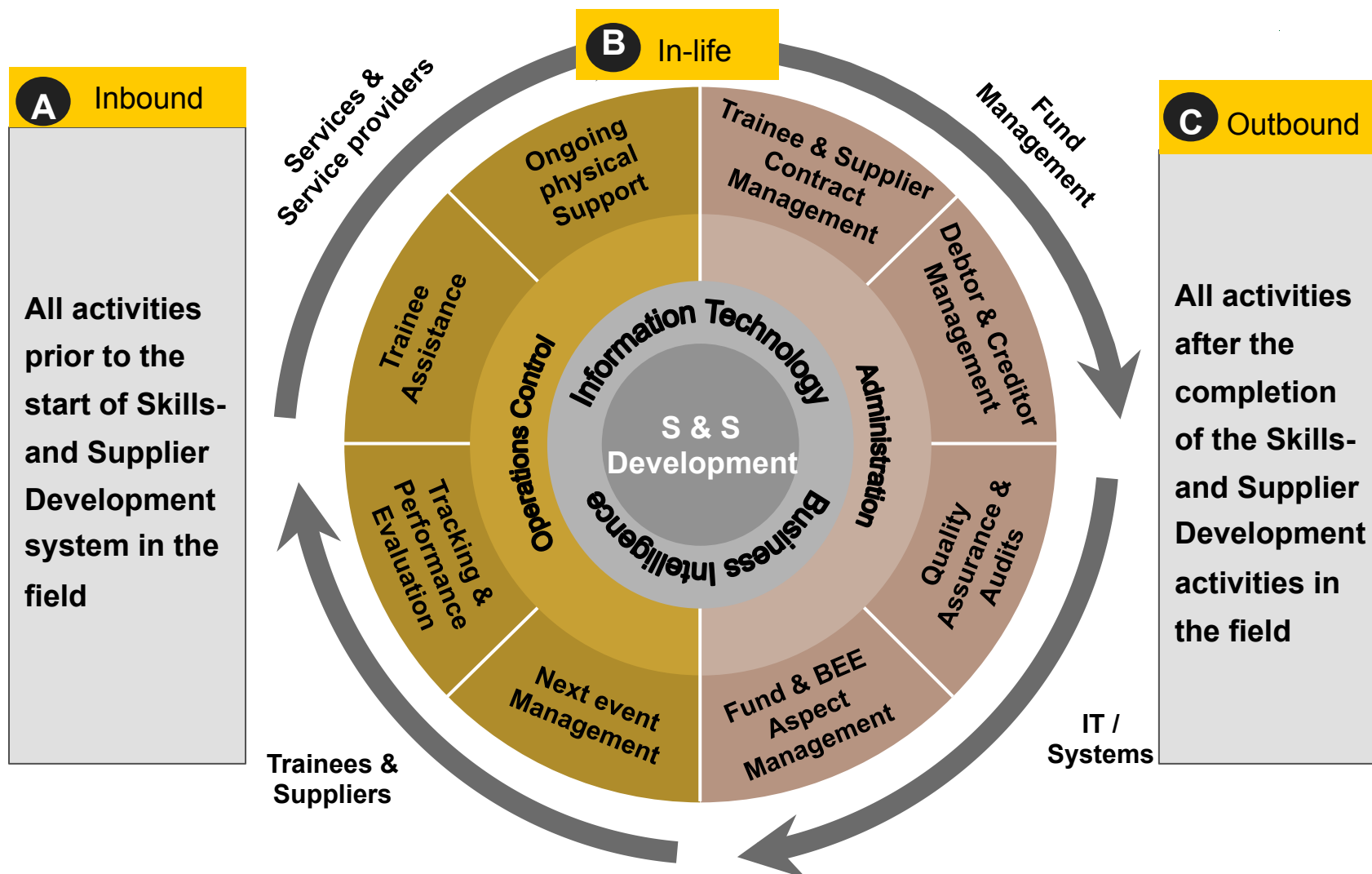


Tooling sector overview – Philosophy: Integrated & multi-stakeholder Skills Development

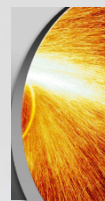


Tooling Sector Solution overview –

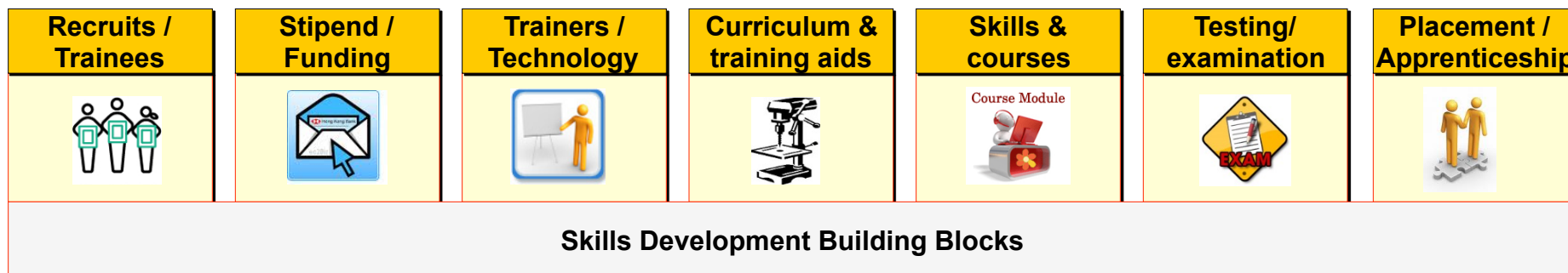
Element 1: End-to-end Life-cycle perspective



NTI Skills Development Solution – System perspective: Optimal “conversion “ Value Chain of Skills



National Tooling Initiative Programme (NTIP) : Operating Principle of Skills Development System Engineering Approach



Training Centres of Excellence



Advanced Tooling Sector Practical Training



PARTNERSHIPS – SKILLS CLUSTERS

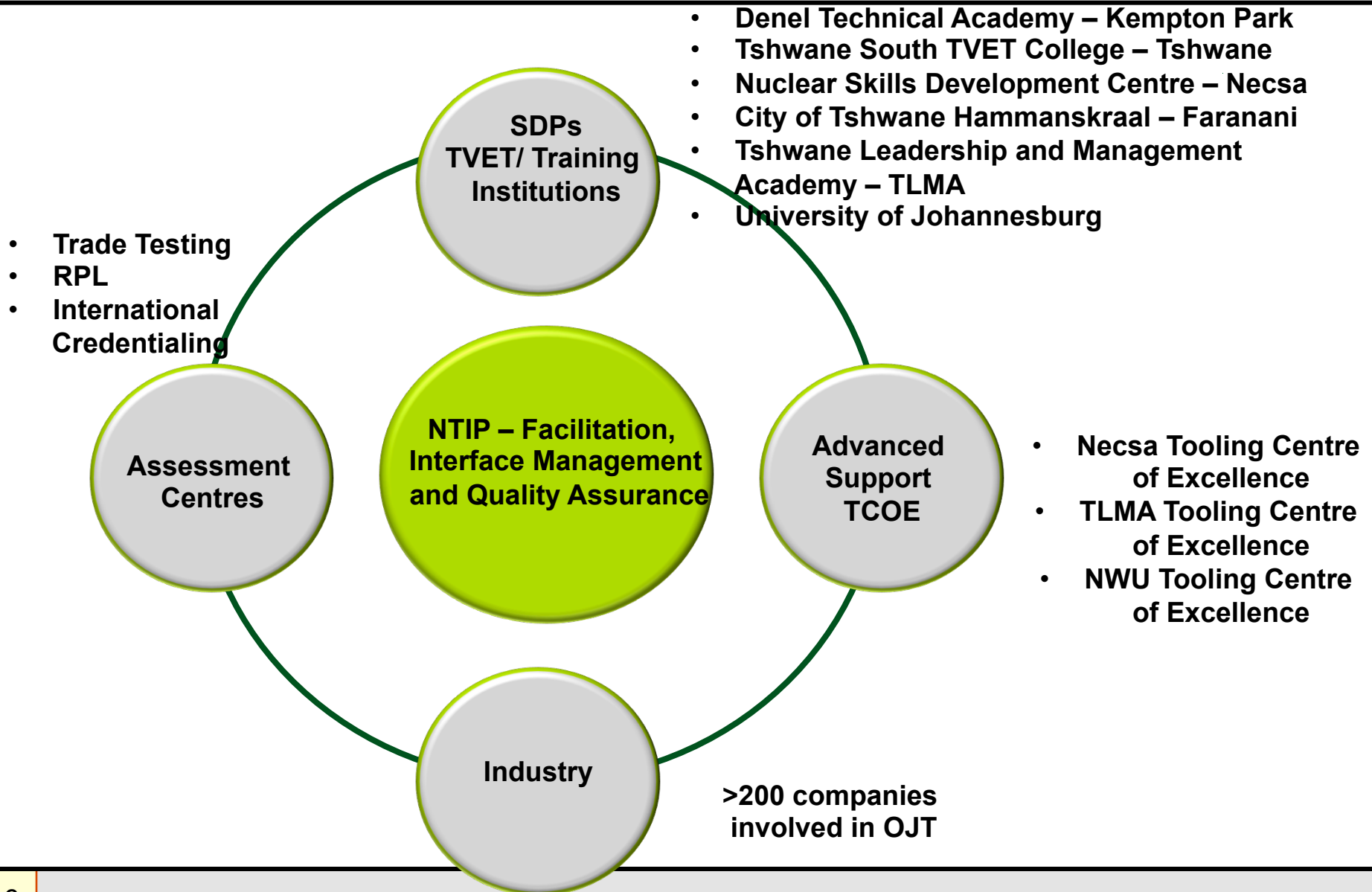


Formation of 6 Provincial Tooling Sector Skills Clusters:

- **Gauteng**
- **Western Cape**
- **Kwazulu Natal**
- **Eastern Cape**
- **Mpumalanga**
- **Limpopo**

Comprising multiple Skills Development partnerships, cooperating to create capacity for Tooling sector skills development and migration of skilled workers into industry.

Example: Gauteng TDM Skills Development Cluster



NTIP - USA Partnership



**SKILLS
DEVELOPME
NT**

Scope/Access to

Competency based modular
credentialing system & international
accreditation

- CNC Technical Education center development
 - CNC Trainer Development
- Equipment supply and maintenance

Institutions

**NIMS (National Institute of
Metalworking Skills)**



HAAS



NTIP - Germany Partnership



**SKILLS
DEVELOPME
NT**

**ENTERPRISE
DEVELOPME
NT**

Scope/Access to

**Modular credentialing & accreditation
for:**

- Master Artisan
- Expert-in-Tooling
- Master-in-Tooling Engineering

- Benchmarking
- Internal database
- Intervention Projects & Consultation Assistance
 - Knowledge Transfer
- Research & Development Support

Institutions

WBA



WBA



NTIP - South Africa Partnership



LOCAL

Scope/Access to

Research & Development:

- Laser Cutting
- CNC Machining

Training:

- Master Artisan
- Expert-in-Tooling
- Master Artisan

Research & Development:

- Extrusion Technology
- CNC Machining

Training:

- Master Artisan
- Expert-in-Tooling
- Master Artisan
- Artisan

Research & Development:

- Artisan
- ### Training:
- Artisan
 - Expert

Institutions

University of Stellenbosch



UNIVERSITEIT
STELLENBOSCH
UNIVERSITY

University of North-West



NORTH-WEST UNIVERSITY
YUNIBESITI YA BOKONE-BOPHIRIMA
NOORDWES-UNIVERSITEIT

TUT/IAT

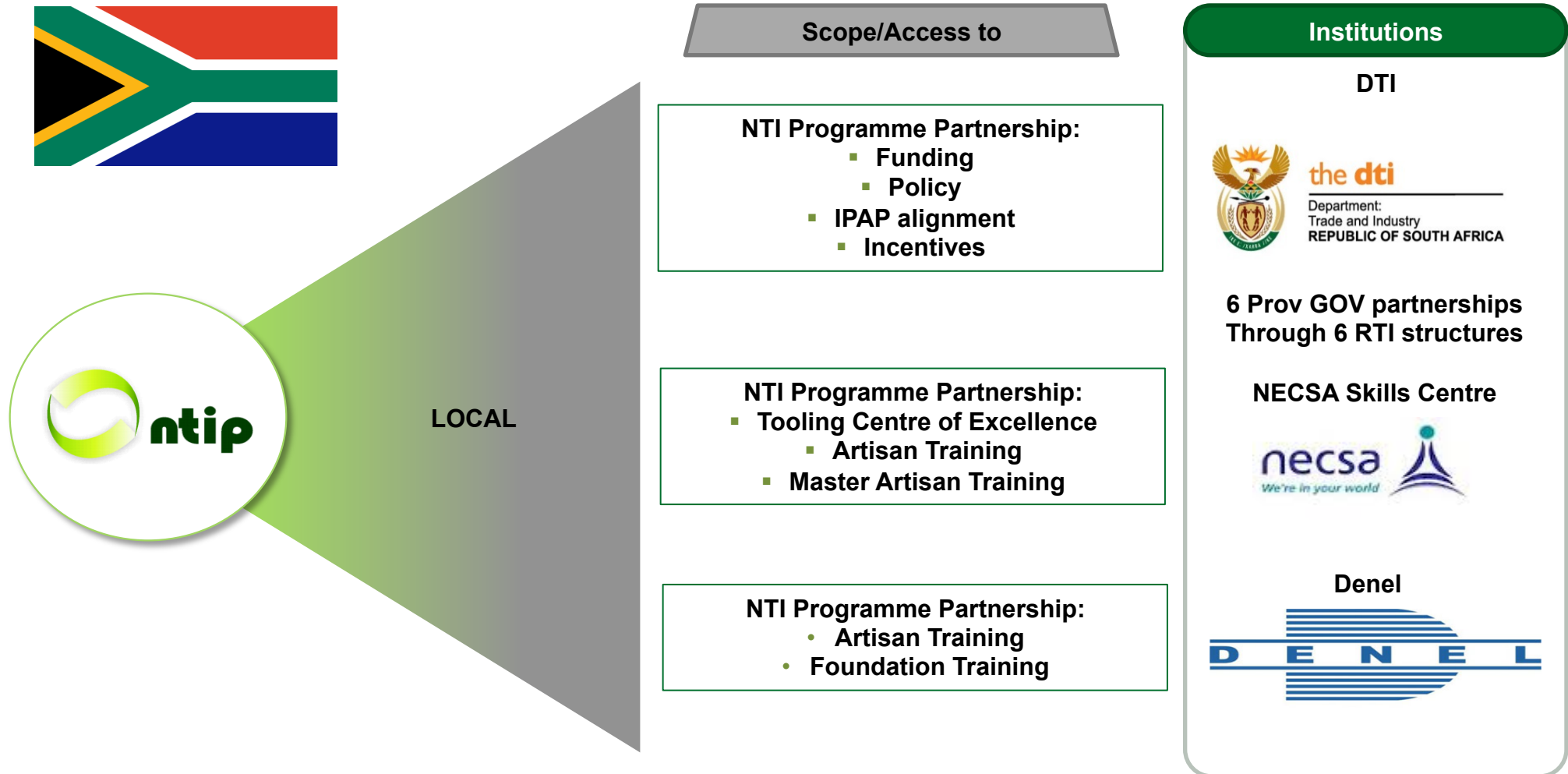


Tshwane University
of Technology
We empower people



Institute for
Advanced Tooling
Promoting Sustainable Tooling

NTIP- South Africa Partnership continued...



NTI - South Africa Partnership continued...



LOCAL

Scope/Access to

NTI Programme Partnership:

- ...Artisan Training
- ...Foundation Training

Institutions

Name

- Northlink TVET College – Wingfield
- College of Cape Town TVET College – Cape Town
- Coega Training Centre – Coega
- Border Training Centre – East London
- Umgungundlovu TVET College
- Coastal TVET College – Durban
- Ekurhuleni East TVET College - Kwa-Thema
- Nuclear Skills Development Centre at NECSA
- Steelpoort

NTIP - South Africa Partnership continued...



LOCAL

Scope/Access to

NTI Programme Partnership:

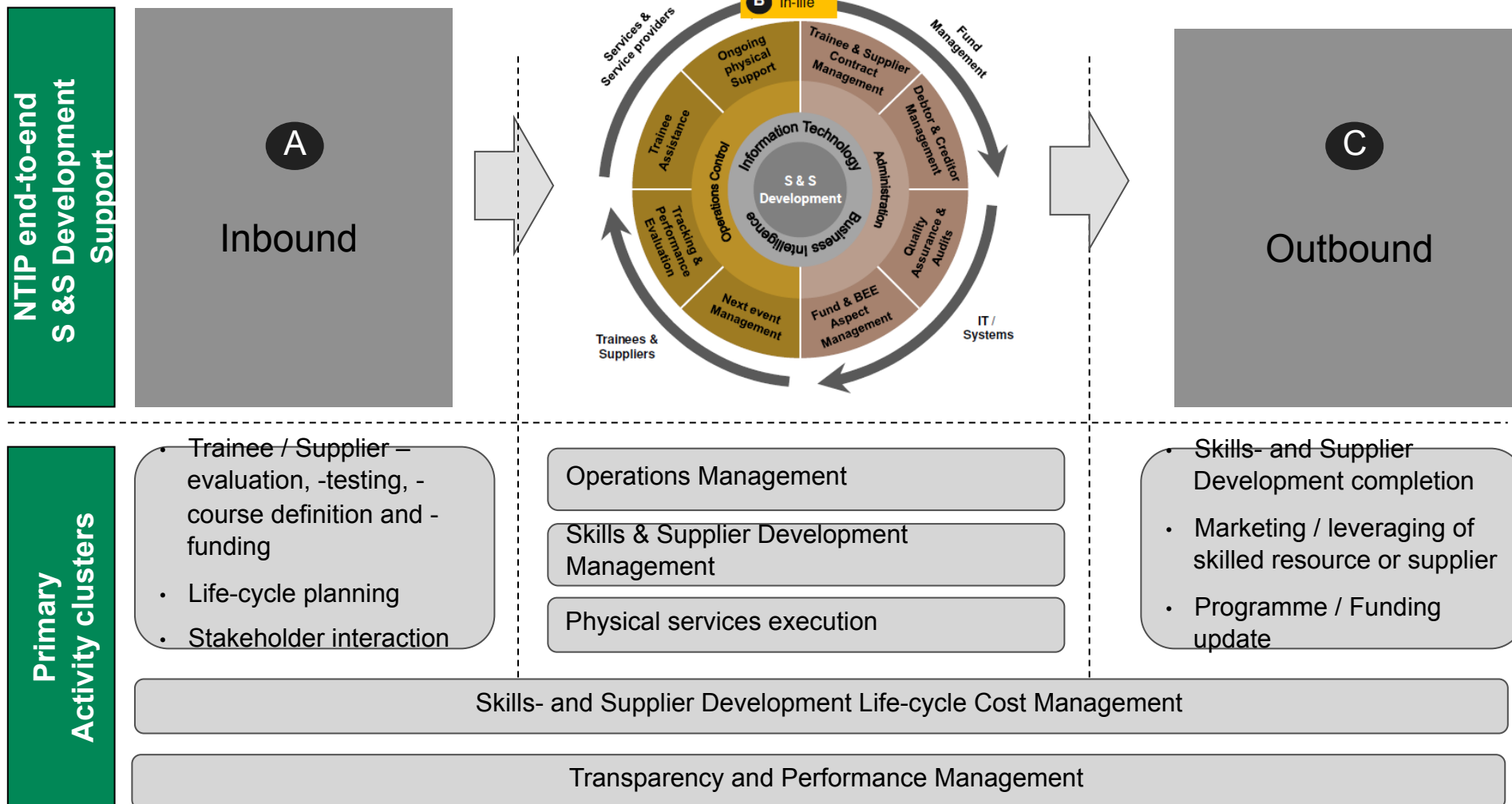
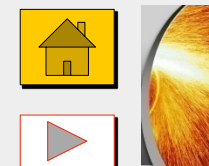
- ...Artisan Training
- ...Foundation Training

Institutions

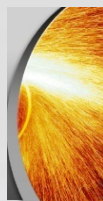
- Denel Technical Academy – Kempton Park
- Tshwane South TVET College – Tshwane
- Tshwane Leadership and Management Academy – Pretoria West
- City of Tshwane Hammanskraal – Faranani
- Lephalale TVET College – Lephalale
- Nkangala TVET College – Nkangala
- ELTC Glencore - Eastern Limb Training Centre – e

NTIP Solution overview –

Element 1: Execution of all process in Life-cycle



CONCLUSION



Creation of a National supply line of highly skilled workers from entry level factory workers, machine operators, machinists, programmers, toolmakers, master toolmakers, experts in tooling, tooling engineers and post graduate MSc and PHD tooling support engineers will ensure future **SUSTAINABILITY of innovation and competitiveness improvement in the SA TDM sector, leading to a new generation of young entrepreneurs and business owners that will transform the SA Tooling and Manufacturing sectors to become a significant supplier into global supply chains.**

WE THANK YOU FOR YOUR INTEREST IN OUR NATIONAL PROGRAMME