Growth and Transformation of the South African Defence Industry: A State Owned Enterprise Perspective

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Apex State Shareholder Mandate Context

Ensure commercially viable **defence materiel** (Defence Review Policy)**,** providing **stable electricity supply**, national **transport infrastructure** and **industrial research** aligned to national security requirements and key international markets.

Critical contribution towards **building a dynamic industrial cluster** and to act as a catalyst for the proliferation of advanced industrial and manufacturing capabilities. Facilitate **growth and wealth creation** in private business sector.

Contribute to socio-economic objectives including transformation, skills development, job creation and environmental sustainability in line with the National Development Plan.

Legislative Framework: Public Finance Management Act (PFMA).
Compliance with local and international policies, regulations and treaties as well as regulations and laws of the jurisdictions of where SOE's conduct business.

NATIONAL POLICY FRAMEWORK & DENEL

Defence Policy Review 2015: Defence Sector Charter

National Development Plan [NDP] – 2030: 10 Year Innovation Plan Objectives:

- Development of **Human Capital.**
- Developing self **sustaining SMMEs and Transformation.**

National Industrial Policy Framework [NIPF] Objectives:

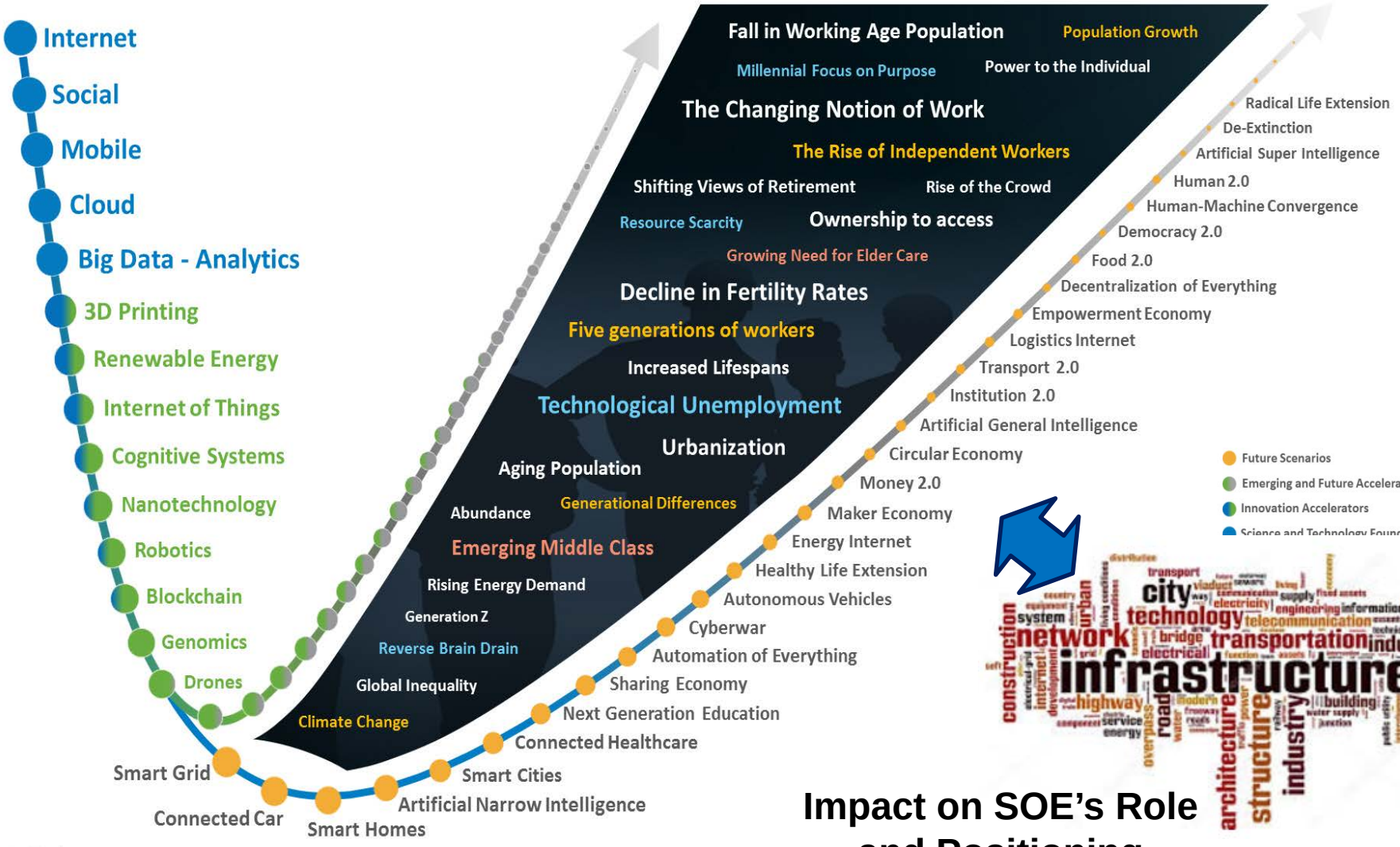
- Intensification of **Industrial Processes**.
- Movement to a '**Knowledge Economy**'.
- Contributing to '**Industrial development in Africa**'
- Strong emphasis on building '**regional productive capabilities**'.

Industrial Contribution

- Strong export orientation - more than **R5bn export revenue**
- More than **75% localisation**
- **R&D** and intellectual property development investment of **R550m to R800m annually**
- **62% of our employees are black** and about 30% of our local procurement spend were to black suppliers.
- Knowledge-based value added advanced manufacturing **A400M**
- Partnerships with **global OEM's**
- Rejuvenating **space capability** via **Spaceteq**
- Diversification: **Cyber and Maritime**
- Contribution through **Rooivalk** in peacekeeping initiatives
- **Africa Truck and SARA**

Entrench Transformation as a Key Policy Objective in your Business South Africa requires all its Human Resources to grow our country

Introduction: Innovative Growth through Partnerships – Changing Environment



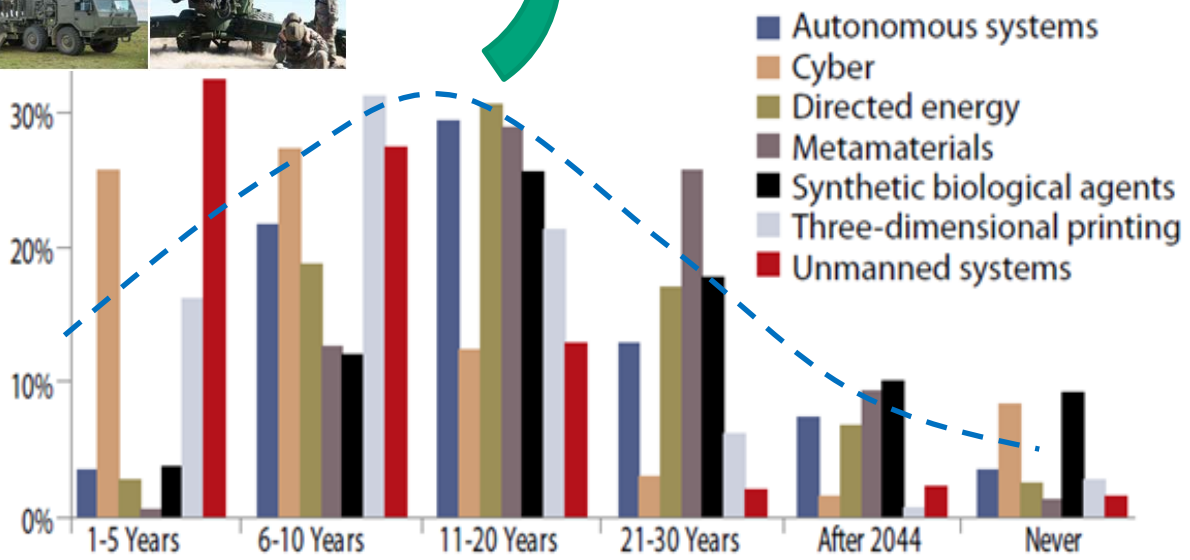
Impact on SOE's Role and Positioning

Impact Of Disruptive Technologies On Product Portfolio And Future Focus Areas

?

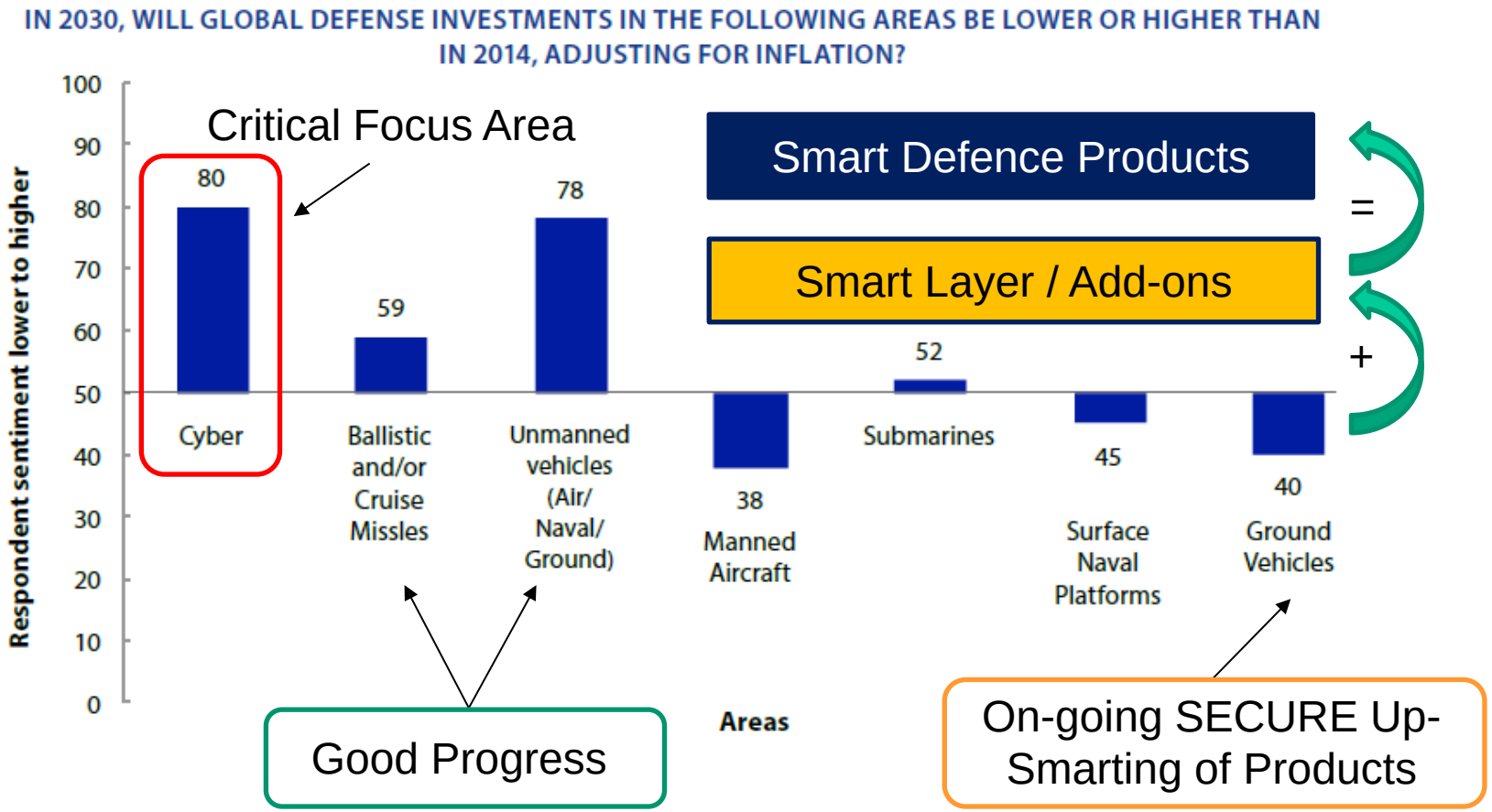
IMPACT ON PRODUCTS AND EXPORT SUSTAINABILITY

RAPID GROWTH IN DISRUPTIVE TECHNOLOGY MATURITY



Source: Center for a New American Security Creative Disruption Survey - 2014

Shift In Defence Investments & Smart Layer Add-ons



- Shift in R&D Investments towards Disruptive Technologies
- Deployment of “up-smarting” potential for future Product competitiveness and differentiation?

Change Means Defence-related Innovation

Key Defence Sector Issues:	
Cyber Crime / Cyber Warfare / Cyber Terrorism	
Internet as Radical Proliferator	
Asymmetric Command, Control and Delivery	
Fast pace of R&D and Innovation	

The next industrial (r)evolution: What implications for the security and defence sector?

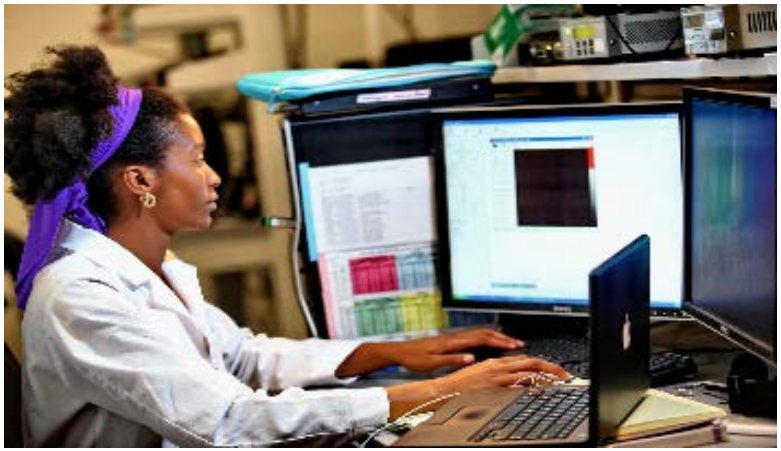
Change ahead for defence innovation

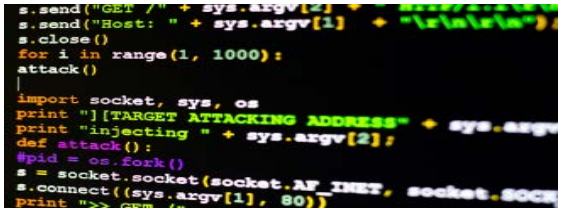
Innovate or risk disappearing

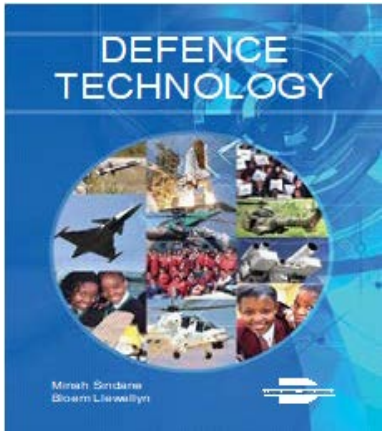
NATIONAL POLICY FRAMEWORK – A NEW INDUSTRY

National Development Plan [NDP] – 2030:

- Aims to **eliminate poverty** and **reduce inequality** by 2030.
- Growth and **jobs, education and skills.**
- The economy is **unsustainably resource intensive**.







Denel operates in a high tech and heavy engineering manufacturing sector with more than 3 300 engineers, Scientists and technicians.

New industries - the developmental opportunities are great.
Invest in **establishment of highly trained cyber engineering resource pool** for the country - young bright people

State owned Enterprises – Potential for greater South African beneficiation?

SA Industrial Policy and strategic objectives

State owned Enterprises including Denel individually

Fundamental Goals:

- Job Creation
- Economic Growth
- BBBEE
- Sector Development

Overall SoE Perspective

CSIR | Armscor | Other | Denel | Transnet

Areas of collective Improvement Potential

1. National Security
2. Developmental Programmes
3. Improved Return on all Investments
4. Exports and competitiveness
5. Economic Beneficiation
6. Capacity and Capability expansion
7. Innovation and transition towards 4th Industrial Revolution

State owned Enterprises – Proposed Improvement Assessment Framework

Collective SoE Improvement Opportunity Framework

Supply / Enablement

- Industrial Policy Growth Sector Alignment
- Supplier & Development Alignment

Execution Capabilities

- Large-Project Programme Management Capability
- Industry 4.0 capable PLM* / Digital Platforms
- Demand / Export-driven Alignment of Responsibilities and actions relating to Innovation, Industrialization, Production and Business Development

Demand / Exports and Partnerships

- Country-to-Country and Business Trade agreements for off-take boost and continuity
- Partnerships with other SoEs for Supply Chain Demand

Exports are critical for the necessary Business scale, sustainability and viability. Key to success is to leverage ***SA SoE investments*** to achieve export volumes. This requires strong functional **industry alignment.**

*PLM = Product Life-cycle Management

Supply / Enablement – Alignment of High-growth and –potential Sectors

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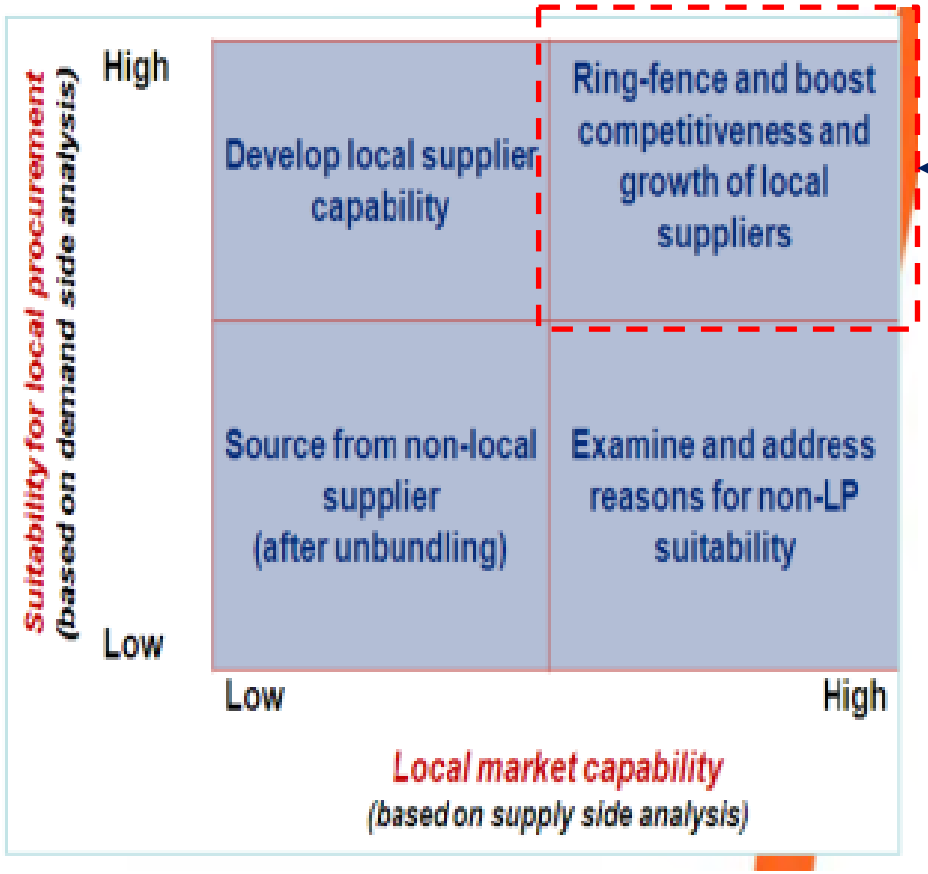
Department: Trade and Industry
REPUBLIC OF SOUTH AFRICA

Aligned Procurement & Capability Development



1. Leverage Scale for…:
   1. Economic Growth;
   2. Competitiveness;
   3. Export requirement fulfilment;
   4. Leveraging of Investments &
   5. Transformation
2. Opportunity for development of world-class Role-players

Consolidated SoE Perspective

CSIR | Armscor | Other | Denel | Transnet

Execution Capabilities – Strengthen of Product Life-cycle Management

Overall SoE Perspective

CSIR | Armscor | Other | Denel | Transnet

Commonality:

1. Large-scale Projects based on Systems-Engineering Principles
2. Hi-volume Investments
3. Need for specialised expertise across full Product Life-cycle
4. On going Supplier Interaction
5. Goal of securing high local content and Solution inclusion of local R&D or Innovation

Ability to collectively strengthen Execution Capabilities for Product Life-cycle Management

Large-Project Programme Management Capability

- Alignment of Systems Engineering approach and Training
- Development of Engineering Talent and inter-operability of resources
- Inter-compatibility of PLM Systems e.g. viz. ability to transmit files

Industry 4.0 capable PLM / Digital Platforms

- Alignment of digital Integration of Suppliers to systematically evolve Industry 4.0 interaction capabilities
- Supporting Supplier base in growing Systems Engineering capabilities and Talent

Product Lifecycle Management (PLM)

CAPABILITY is a function of QUALIFICATION, EXPERIENCE and OPPORTUNITY

LOW **Broad Spectrum System Task Experience** HIGH

LOW **Level of Task Definition** HIGH

"Focussed Learning at Task Level" Quick entry into competency-based task environment Focus is on process tools Task definition not in place at present	**"Systems Learning"** Highly structured systems approach Good for cross divisional skills application Lacks multi-skill strength
"Disillusioned" **High Barrier to entry** Complex to engage productively due to complex and unstructured task environment Requires multi-skilling upfront	**"Experienced Hands"** Quick to Prototype stage High level of Reworks Certification Challenges IP in the minds of people

Product Lifecycle Management (PLM)
CAD/CAM
State Diagrams

Tools and training required for this process

Industry needs to migrate its systems engineering processes towards a more structured and coordinated life-cycle environment without losing innovative multi-skilling dimension

Augmented route

Current Industry Model

Execution Capabilities – Alignment and Governance for Sustainability

Non-optimal Process ito Sustainability

- Local Demand and Requirement e.g. Recapitalisation Investment
- SoE as fulfilment party for satisfaction of local demand (only)
- R&D and Industrialization driven by local demand and often volumes that limit global competitiveness
- Delivery of local demand by SoE
- Consideration of the need to export or expand volume-base
- Re-engineering of Products System and Value Chain for (after-the-fact) export consideration

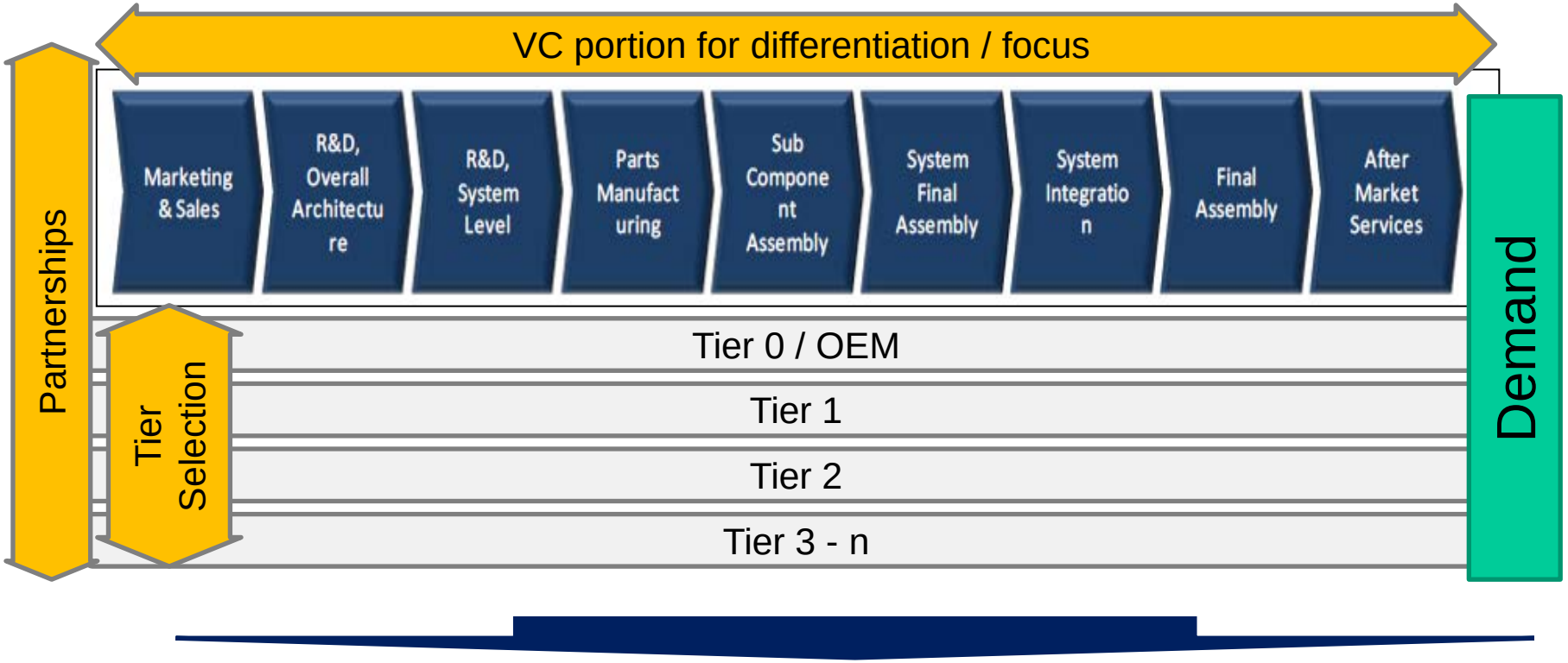
✗ Exports not sustainable

Optimized Sustainability Process (e.g. Defence Sector)

Local Demand and Requirement e.g. Product Systems Recapitalisation	DOD
Definition of Requirements for satisfaction of SA and global market	Armscor & Denel
R&D and Industrialization driven by global demand requirements and sustainable total volume	Denel & CSIR
Delivery of local demand by SoE as Phase 1; in parallel Business Dev.	Armscor & Denel
Exports as additional boost for volumes with global partnerships	Denel
Improvement of Products System and Value Chain for on going competitiveness enhancement	Denel & CSIR

✓ Local supply and exports complementary

Demand / Exports and Partnerships – Alignment for optimal Value Creation



Value Creation Alignment	Selection of Value Chain element(s) to focus on	Selection of Tier level to focus on	Selection of Partnerships	Ensuring Demand either directly or indirectly

State owned Enterprises – Summary

Significant Alignment Potential is believed to exist across certain SoEs

1. National Security
2. Developmental Programmes
3. Improved Return on all Investments
4. Exports and competitiveness
5. Economic Beneficiation
6. Capacity and Capability expansion
7. Innovation and transition towards 4th Industrial Revolution

Possible Next Steps

Further Assessment / validation of Potential and confirmation by stakeholders

Selection and prioritisation of Improvement interventions in terms of criteria such as alignment cost, complexity etc. versus Return / Savings

Definition of a solution Framework and mechanism to drive Alignment activities and allow for benefits to be achieved

End

Thank You