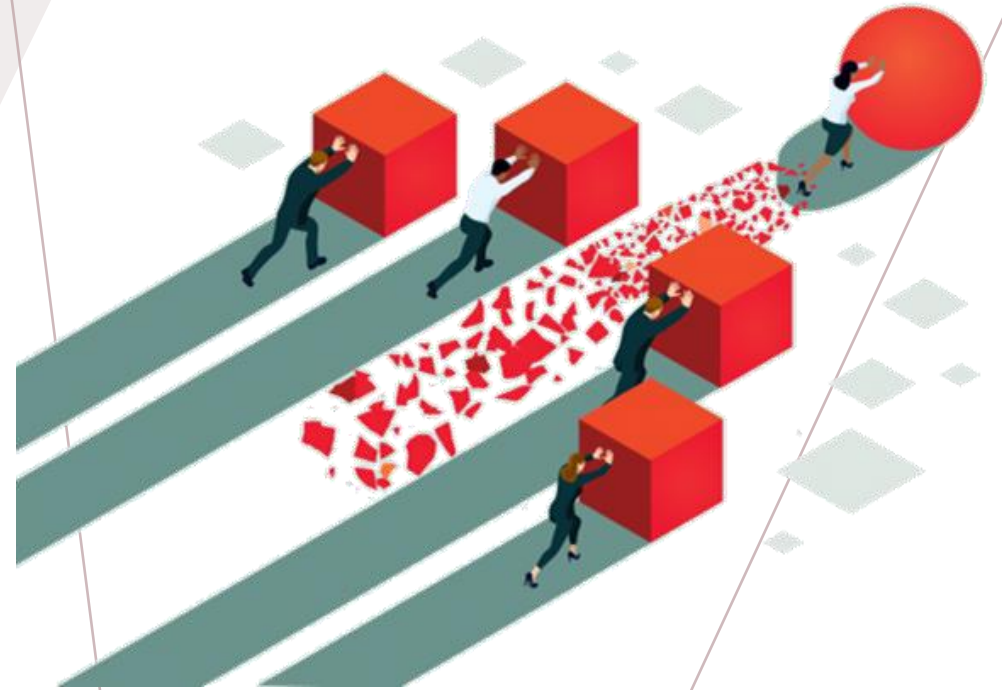


LOCALISATION AND TRANSFORMATION MASTERCLASS

ALIGNING TRANSFORMATION AND
LOCALISATION OBJECTIVES IN THE
SOUTH AFRICAN AUTOMOTIVE
COMPONENT SUPPLY BASE



SUPPLIER DEVELOPMENT: WHY IS IT SO IMPORTANT?

Globally, dynamic and expanding auto manufacturing destinations are characterised by two main factors:

- ✓ A **large and robust Tier 2/3 supply base** (majority of value addition drawn from domestic suppliers)
- ✓ Sub-tier suppliers which have an **inherently low operating cost base**

SA's challenge is that we have neither of these → Tier 2/3 base is **tiny** (and 'untransformed'), plus suppliers face a barrage of **institutional and infrastructural costs** which they cannot control:

- Logistics costs (air and sea freight)
- Electricity costs
- High costs associated with compliance (environmental; industrial relations; B-BBEE, etc.)
- High labour costs (in the context of low MVA per worker)

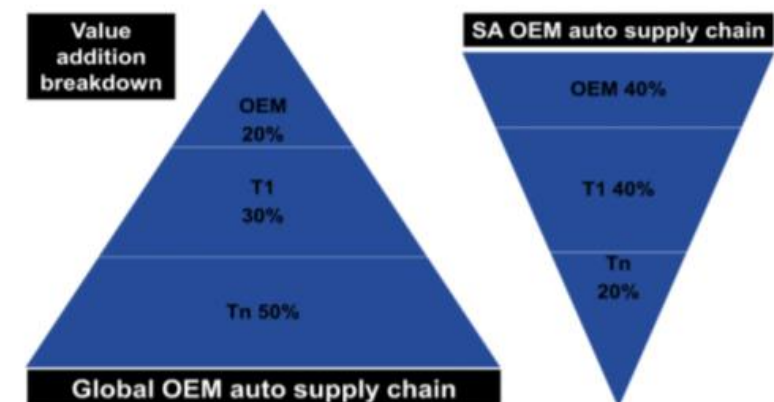
If the component suppliers expect to compete globally, they will need to 'box leaner' than competitors in low-cost destinations (Malaysia, Thailand, Mexico, etc.) who are **not encumbered by the same institutional and infrastructural costs**

→ **SA suppliers can only 'level the playing field' by seeking efficiencies in production optimisation** (where they can tightly control costs) → there is a need to radically **drive competitiveness** through adoption of WCM principles, and pro-actively identify new methods to **'unlock' greater productivity**.

SAAM consultations

One component firm noted that their entire in-house cost advantage (versus sister plants) was **offset by port and rail costs**, ensuring that the firm had **no advantage by the time the product was sea-freighted to export markets**

Figure 1: Value addition breakdown of global and South African automotive supply chains



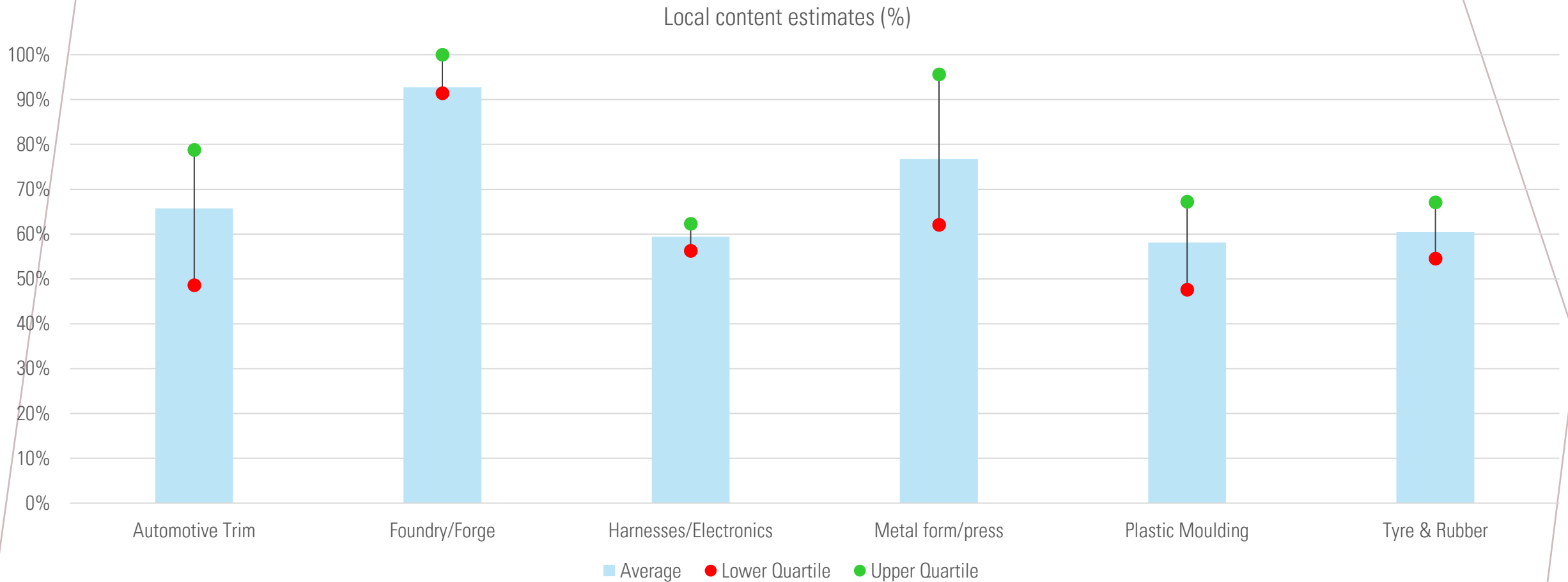
Source: Barnes (2014)²

PLATFORMS INTENDED TO SUPPORT LOCALISATION HAVE YIELDED *SUB-OPTIMAL* OUTCOMES

- Regional clusters (DAC, ECAIF, SAABC, etc.)
- OEM Purchasing Council/Localisation Committee and various off-shoots (Transformation Sub-Committee, material working groups, etc.)
- ASCCI
- AIDC Gauteng and EC
- Localisation 'supermarket'
- NAACAM Show buyer-supplier linkage meetings; localisation exhibition

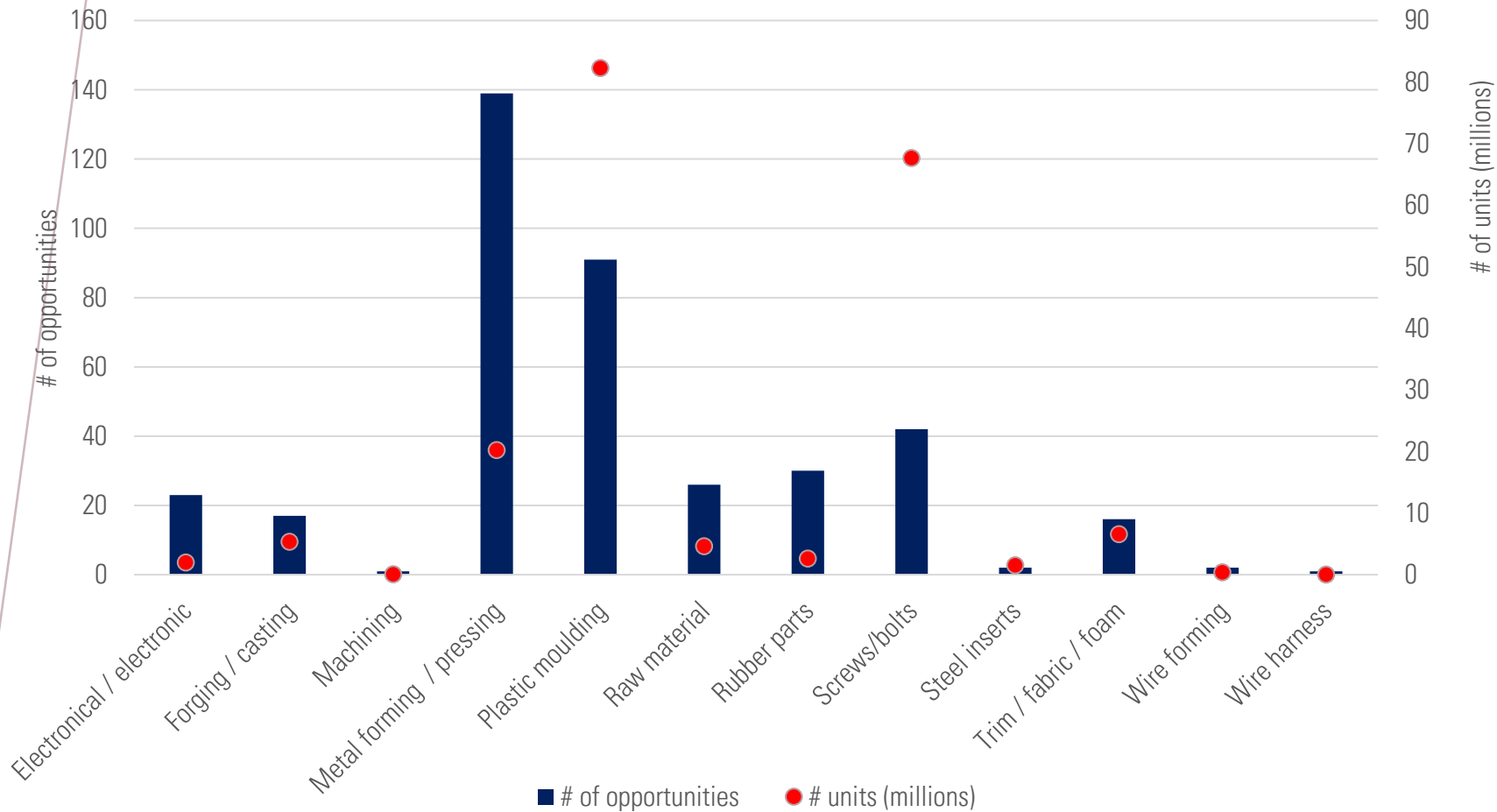
Activities usually focus on identification of opportunities and high-level matchmaking of potential suppliers (in a rather inefficient way) → **but almost never tackle the 'root cause' of failure to localise**

LOCAL CONTENT ANALYSIS: WHAT IS ACTUALLY HAPPENING ON THE GROUND?



The largest spread in local content is demonstrated by the **automotive trim** and **metal forming/pressing** sub-sectors, **BUT** these commodities constitute **declining shares of automotive value addition**, as opposed to **electronics, powertrain, telematics, and advanced safety products**

ASCCI TIER 1 LOCALISATION STUDY: HIGH-LEVEL OUTCOMES



The largest subsectors, by number of opportunities:

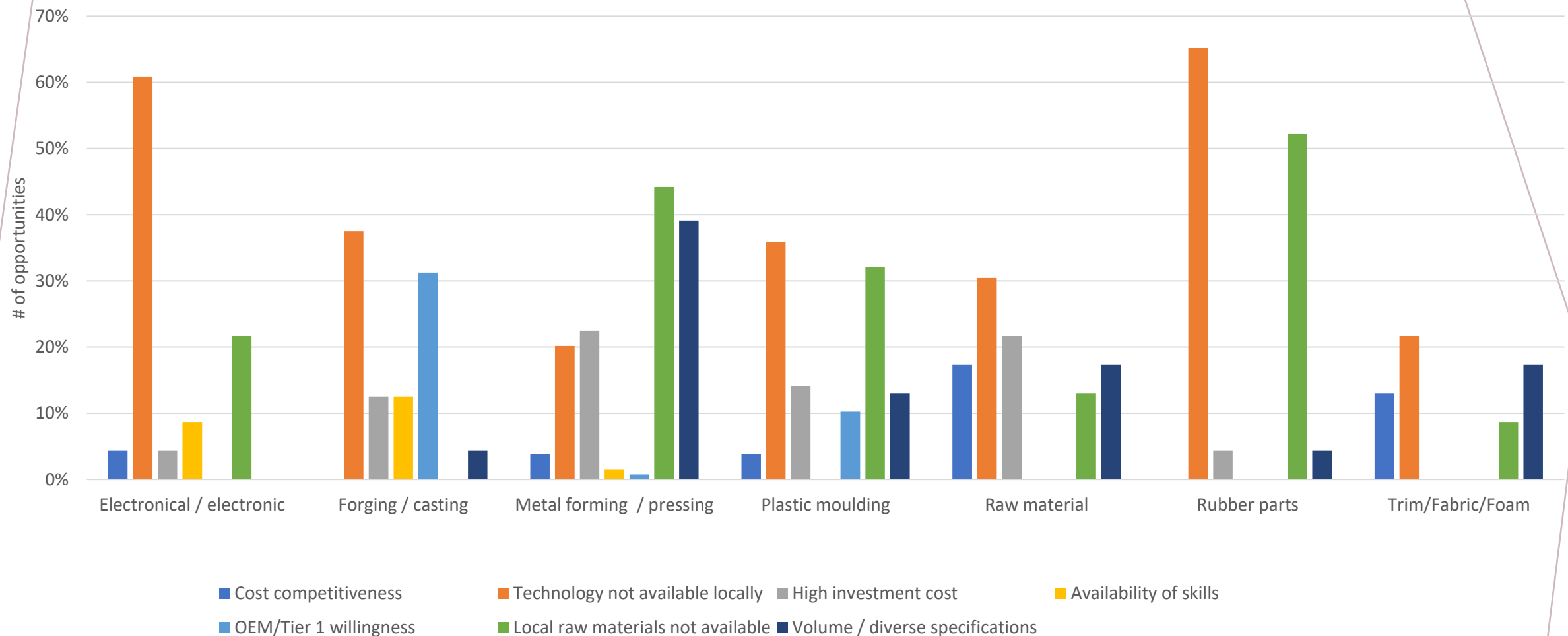
1. Metal forming / pressing
2. Plastic moulding
3. Forging / castings
4. Raw material (plastic, rubber, alu.)
5. Electrical / electronic
6. Rubber parts
7. Trim / fabric / foam

units is more important than most stakeholders think, especially in the context of localising for an individual OEM or Tier 1:

→ almost always yields a **negative business case** for the 'beneficiary'

→ is the explicit reason for existence of the OEM PC → extremely sub-optimal outcomes, primarily due to **vast spread of specifications**

TECHNICAL BARRIERS TO LOCALISATION: ACCORDING TO SUPPLIERS



- **Technology not available locally** – this encompasses “no local suppliers / capability” and “special technology required”
- High investment costs – this encompasses **capex, tooling and testing**
- **Availability of skills** – this is the current “absence of technical expertise”, as well as fundamental skills such as problem-solving

LOCALISATION SURVEY ANALYSIS SUMMARY: WHAT ARE OUR 'PAIN' POINTS?

						Barriers to localising (High / Medium / Low)				
Sub-sector	# of opp.	# parts	Est. Value	Avg. local content	Local content spread	Timelines	Locally sourced material	Shipping cost	Tech.	Barriers to localising
Electrical / electronic	23	2 Mill	High	Med	Low	High	Med	Med	High	Tech
Forging / casting	17	5.4 Mill	High	High	Low	Low	Low	Med	Med	Capex + capability
Metal forming / pressing	139	20.2 Mill	Med	High	High	Low	Med	Med	Low	Available raw materials
Plastic moulding	91	82.3 Mill	Low	Med	Med	Med	High	Med	High	Tech + raw materials
Raw materials	26	15k tons+ 4.6 Mill	High	NA	NA	Med	Low	High	High	High capex
Rubber parts	30	2.6 Mill	Low	Med	Med	Med	High	Med	High	Tech + raw materials
Trim / fabric / foam	16	6.6 Mill	Med	Med	Med	Med	Med	High	Med	Tech + Volume

BARRIER 1: TECHNOLOGY LICENSES AND AGREEMENTS



Approaches to technology acquisition across the globe:

1. Countries with large domestic markets (e.g. Brazil, China, India)

- Typically characterised **by JVs between OEMs and their MNC Tier 1 suppliers** → it is these JVs which become the vehicle manufacturers
- These vehicle manufacturers go on to engage clusters of Tier 1s which hold proprietary IP and encourage them to partner with domestic manufacturers
- JVs with domestic manufacturers are often **highly-subsidised by the OEMs and governments**, ensuring that component suppliers are **cost-competitive and more likely to be able to export**

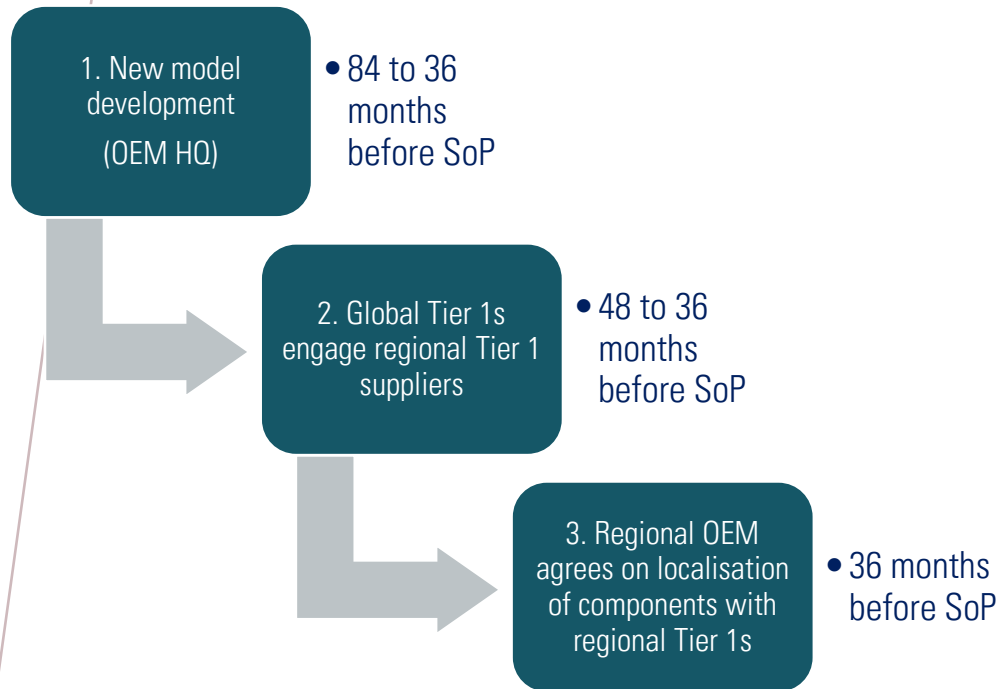
2. Developing countries with small domestic markets and a view to become regional assembly hubs (e.g. South Africa, Turkey, Thailand, Morocco)

- OEMs with assembly facilities in these regions attract their MNC Tier 1s to invest in component and sub-system supply facilities
- Determination on which Tier 1s invest, is based on **directed global sourcing contracts at OEM-level** and it is usually unlikely that specific Tier 1s can supply across multiple OEMs (possibly through **'clusters' of OEMs** – e.g. Japanese or German)
- Tier 1s usually also directed in terms of location of operations → usually clustered around OEM facilities to leverage logistics and JIT advantages

BARRIER 1: TECHNOLOGY LICENSES AND AGREEMENTS



What does technology acquisition look like in the SA autos industry?



Typically, local manufacturers in the automotive industry need to consider two types of technology transfers/acquisitions. These include:

1. **Acquiring the rights** from international automotive component manufacturers and patent holders to manufacture proprietary patented and/or design-owned products required by the OEM; or
2. **Acquiring proprietary processes and associated plant and equipment** that is required to manufacture products and components for the OEMs. The cost of acquiring the processing technology inherently includes a **license fee and technology transfer fee**.

In both instance, the technology transfer requires the local recipient to **assimilate the necessary know-how and expertise** in order to operate and maintain the proprietary production processes and testing the locally produced products to meet OEM specifications.

Important notes:

- Securing a technology license or agreement **does not directly correlate with securing a purchase order**
- License holders often deem **SA's volume to be too small to support a transfer** → agreement would imply 'pulling away' volume from a high-volume location already in existence
- Some technology licenses and agreements have **'exclusivity' clauses** preventing the recipient from supplying specific customers

BARRIER 1: TECHNOLOGY LICENSES AND AGREEMENTS



Polypropylene: A 'live' example



- Polypropylene (PP) is a **thermoplastic polymer** that can easily be formed into almost any shape, with good chemical and heat resistance. Typically found it in numerous components and systems, including 'weaving' into fabrics.
- ICE manufacturers continually looking for opportunities to boost fuel efficiency → **removing weight, and replacing components with plastics likely to become increasingly important** (L/T view on EVs → PP likely to become critical input)
- Feedstock mostly supplied by Sasol and Safripol → both supply other industrial sectors, and claim autos volume requirement is too small, therefore **prices not competitive**. Feedstock needs to be compounded according to a **special 'recipe' or formulation (proprietary IP of an OEM or Tier 1)** → **requires technology license**
- Compounded PP pellets go to Tier 1s (and Tier 2s) who extrude, mould, etc. into relevant components
- **Total OEM volumetric requirement is 14 000 tonnes per annum (excl. MBSA)**

POLYPROP: HOW FAR AWAY ARE WE FROM ACTUAL LOCALISATION?



Domestic PP compounding landscape

1. DBN-based compounder, no autos experience
 2. WC-based compounder, no autos experience
 3. **Gauteng-based compounder – autos experience (Tier 1 and OEM); ASCCI LEAN improvement project; on track to be B-BBEE level 2; current negotiations on technology licence agreement, lead by NAACAM and relevant OEM**
- Total sector volumetric requirements can only allow one compounder to operate price competitively (small batch PP compounding highly economically inefficient based on batch-size) → **amortisation of license costs further drives-down price competitiveness**
 - However, due to quantity that is currently imported by OEMs and Tier 1s – an opportunity to save **on logistics costs**, plus source from a **Black-owned supplier** could drive localisation

Status quo

- NAACAM identified OEM and Tier 1 grades of PP, which the compounder could supply → technical datasheets obtained, and compounder produced samples, underwent self-testing, plus testing by domestic Tier 1s and OEMs (**all developmental activities funded by the compounder – no indication yet on commercial opportunity, other than indicative volume**).
- **Without formally acquiring a tech license, the OEMs and Tier 1s cannot source from the compounder**
- 1 OEM approached compounder, and suggested global license holder to partner with compounder so that this OEM, and their Tier 1s could source from the compounder
- Some scenarios:
 1. Global company enter SA independently – associated costs of start-up; lack of investment incentives; cost associated with participation in AITF → **deemed unfeasible**
 2. Global company partners with local compounder – local compounder licenses technology, pushing-up price → **deemed unfeasible**
 3. Global company develops JV with SA supplier (JV would be 51% Black-owned) → **only feasible option, however commercial negotiations not viable**

BARRIER 2: TIMING



Year	Vol. p.a	'21	'22	'23	'24	'25	'26	'27	'28	'29	'30	'31
OEM 1: Model 1	160 000						L					
OEM 1: Model 2	125 000									L		
OEM 2: Model 1	30 000					L						
OEM 3: Model 1	80 000											
OEM 3: Model 2	40 000		L									
OEM 3: Model 3	60 000										L	
OEM 4	200 000											

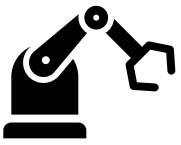
Sourcing across the model cycle

- Tier 1 suppliers usually nominated 2 to 3 years before model launch
- Tier 1s explore opportunities for cost-containment by sourcing locally and nominate Tier 2 suppliers
- Vehicle production commences
- Should an OEM or Tier 1 select to change nominated supplier (for whatever reason), **additional costs will need to be borne by the 'new' supplier:**
 - Investment in new tools
 - Investment in re-testing and validation
 - Process to motivate an engineering or material change

→ Costs will need to be covered before purchase order is placed, i.e., 'new' supplier must seek funding on the basis of no clear procurement opportunity

- Sourcing cycles determined at global OEM HQ level → no room for 'flexibility'
- SA OEMs 'bid' to manufacture new models, but are often unsuccessful as **supporting supply base is 'thin' and relatively unsophisticated** → as a result, similar types of vehicles continue to be manufactured in SA
- Should **EV manufacture** be established → almost all inputs will be imported, so no incentive, unless significant govt. subsidisation est. for OEMs

BARRIER 3: TOOLING AND TESTING



What are the costs and who should pay?

- Tooling cost associated with the localisation of components in the are usually **capitalised by the OEM as model specific investment**. It forms part of RFQ, which the Tier 1 factors into their pricing.
- Tier 1s do not factor-in tooling costs of Tier 2s and 3s → **Tier 2s and 3s have to cover their own tooling costs**.
- Domestic toolmaking capability is limited (although AIS makes greater contingency for use of domestic tools) → **fundamental capabilities do not exist**, so tools are imported from low-cost destinations, or OEM 'source' countries.
- Many domestic Tier 1 suppliers have tool rooms but are mostly used from refurb and maintenance

Purchasing cycle

Should a Tier 2 identify a localisation opportunity with a Tier 1, before PO or letter of intent is issued:

- Tier 2 must buy a tool
- Tier 2 must buy raw materials
- Tier 2 must manufacture off-tool sample for **testing**

* **No commercial agreement exists yet**

'Live' example

Tier 1 has identified opportunity to source small plastic injection-moulded parts from a domestic Black-owned supplier. Tier 1 currently imports all components from Thailand and Turkey.

- Landed price of imported component: **R 6,24 per piece**
- Intended volume to localise: **20 000 pieces per month**
- Targeted price: **R 5,89** (rationale for changing supplier)
- Total monthly procurement spend: **R 117 800**

Black supplier must:

- Commission a tool (estimated cost - R 194 000) → amortised over 3 years is **R 4,72 per part**
- Secure raw materials (challenge because Black supplier does not have LOI or LOA for raw material supplier to quote appropriate rate) → estimated input cost > **R2,80 per part**
- Develop sample (production costs) → **R 3,21 per part**
- Undertake testing of component → amortised over 3 years is **R 7,36 per part**

Total price quoted by Black supplier: R 18,09 (289% higher)

LOCALISATION: WHY DOES IT SEEM LIKE MISSION IMPOSSIBLE?

- Extremely ambitious SAAM 2035 target – **60% local content** → almost doubling of existing local content
- Often little incentive for OEMs and MNC Tier 1s to localise*:
 - Involves '**shifting**' **volume away** from sister plants in low-cost destinations → unwilling to 'upset the apple cart' in the global sourcing context
 - Purchasing teams do not have local content targets in their KPIs, but rather a **focus on cost reduction** → SA manufacturing environment 'out of the gates' does not support this goal (high cost of doing business; no access to proprietary raw materials or technology; no reliable technical infrastructure, etc.)
 - Many OEMs and Tier 1s have to abide by '**directed**' or '**imposed**' **purchasing rules** → preventing opportunities to pursue alternate sourcing patterns
 - General lack of '**earnest effort**' to unlock localisation on larger volume opportunities → lack of supplier knowledge a common excuse

LOCALISATION AND TRANSFORMATION: THE NEW ENTANGLEMENT?

What we know

OEMs and Tier 1 are now **conflating localisation with transformation**, i.e. they are willing to forego new localisation, if it does not originate from a Black-owned supplier → But we know Black suppliers, particularly **start-ups and small-volume suppliers** cannot compete with imported prices for a few reasons:

- The **volume off-take is always tiny** → OEMs and Tier 1s minimise risk by retaining dual sourcing; plus they require 'evidence' of competency before supporting engineering and material changes
- The **cash conversion cycle** is too long for them to be profitable (also they are expected to undertake R&D, prototyping and off-tool samples at their own cost → with **no indication of LOI or sourcing contract**, no funder (DFI or otherwise) will support
- They have to **amortise tooling costs** (which are free issued; sourced extremely competitively; or made by the supplier themselves in overseas manufacturing locations) → SA's reliance on imported tools inflates pricing significantly
- They don't have 'influence' over **raw material suppliers** → they are price-takers

Even if these suppliers are as 'lean as possible' they cannot compete at the out-set

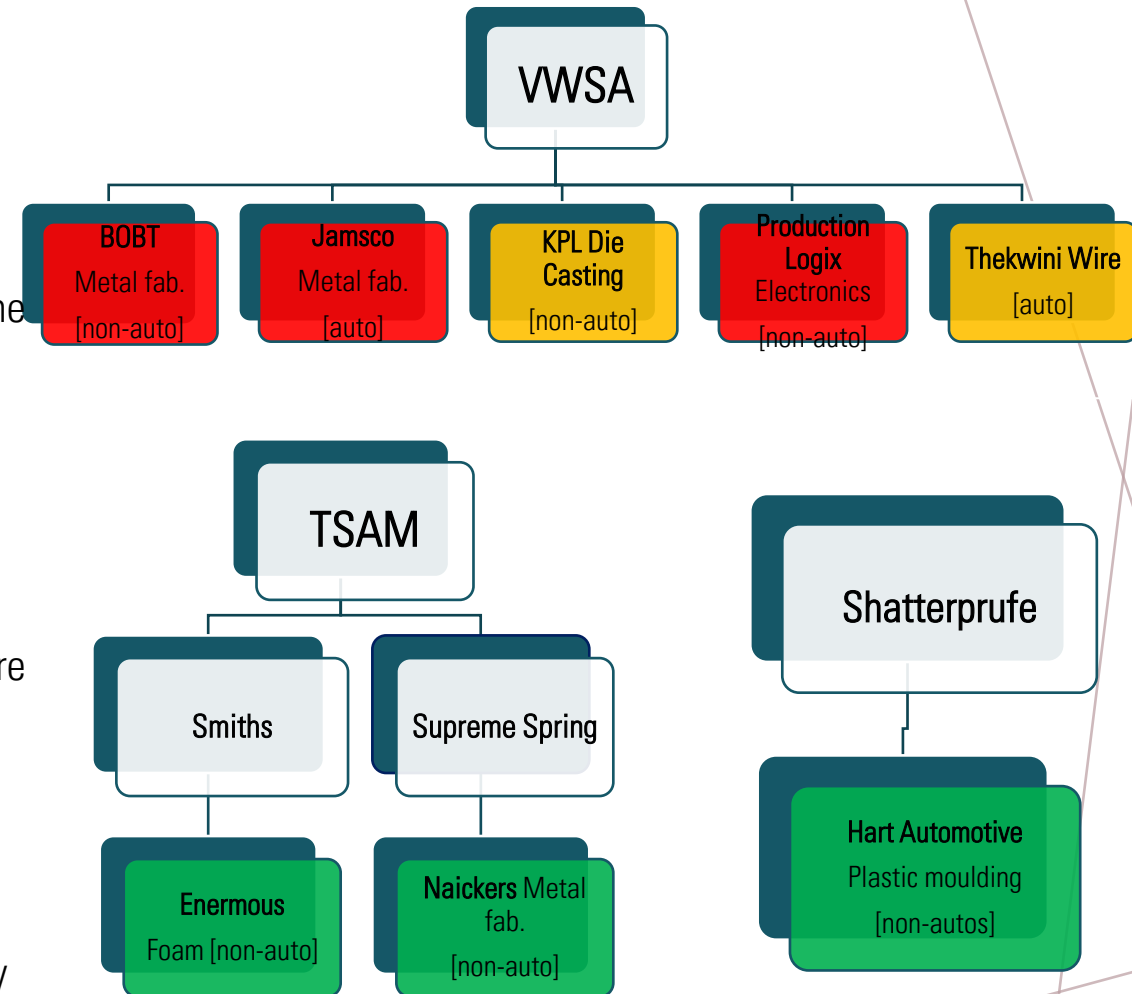
For these reasons, it is often more feasible to support Black-owned Tier 2 suppliers which:

- i. Have existing, **long-term low-volume automotive contracts** (OEM or aftermarket), or
- ii. Have existing, **'high-margin' allied industry contracts**

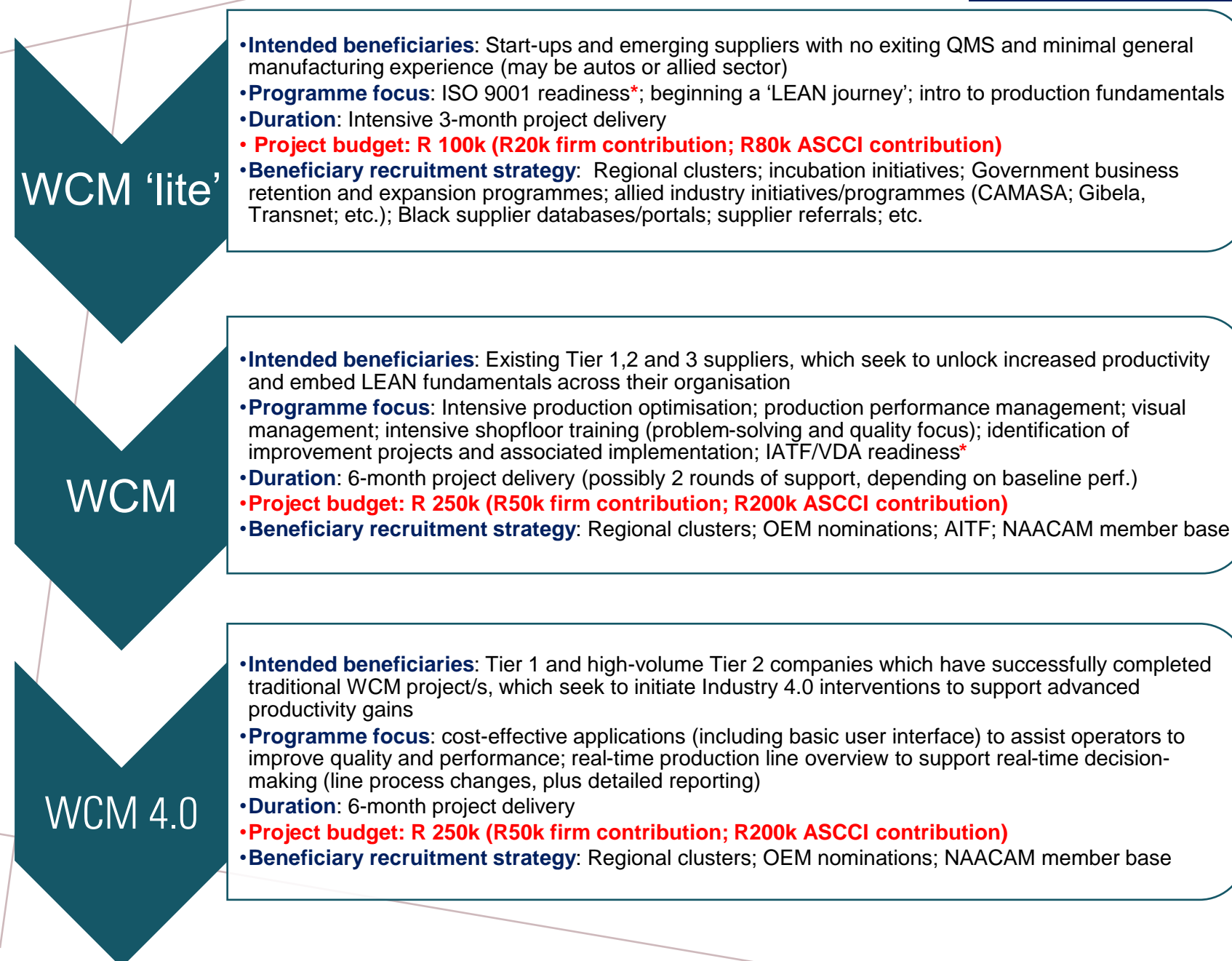
→ **commercially positions these suppliers more attractively to OEMs, Tier 1s and funders to unlock interest-free loans and free issuing of materials, tools, machines, etc.**

- i. Supplier **upgrading methodology is effective** and has propensity for 'scalability' and demonstrates good results.
- ii. Selection of BSDP participants is critically important (**most participants have no prior auto exposure, and struggle with managing quality requirements and cashflow to support pivot**).
- iii. Development of Black suppliers at **Tier 2 position** appears to be the effective implementation model. **BSDP development at Tier 1-level proven ineffective**, as the quality standard requirements are far too onerous for a supplier with limited auto exposure.
- iv. TSAM actively pursued **participation of their Tier 1s, who committed offtake at project inception** → advantage is that Black suppliers knew volume outlook, targeted pricing, delivery expectations at the outset. VW identified exploratory offtake at project inception, but by month 12, most beneficiaries were still unaware of what the commercial outlook was → **challenges in keeping beneficiaries committed and engaged**.
- v. **Multiple sponsors** should be secured per Black supplier. Two advantages:
 - ✓ **Lowers the cost and effort of participation** by OEMs and Tier 1s
 - ✓ Develops a '**critical mass**' of opportunities to support investment decisions by Black suppliers, and boosts their sustainability

Modalities encountered in pilot phase of projects(2018)



Key: ■ No auto contracting concluded ■ Auto contracting underway ■ Auto contracting concluded



Programme pivots

- Consider developing a **'spectrum' of support** under this theme, for different types of suppliers → acknowledge that 'one size' fits all approach has been unsuccessful
- Individual projects need to **purpose built** for the specific requirements of the beneficiary and/or their customer → implies flexible intensity and duration of delivery support
- Remove requirement for new business/localisation opportunity** → Sub-tier suppliers have no control over outcome, and unreasonable to expect requirements to be fulfilled over 4 to 6 month period
- Specific sub-sectors or suppliers of specific commodities could be targeted for participation on the basis of **localisation priorities** (e.g. OEM Localisation Committee; AITF; etc.)



Intervention trajectory

* ASCCI should not fund the acquisition of QMS, rather support establishment of systems to support successful certification

DEVELOPMENT SUPPORT TO BLACK-OWNED SUPPLIERS

New B-BBEE ‘operating environment’

- Automotive Industry Transformation Fund (AITF) has a mandate to support improved market access for Black-owned suppliers
- At this stage, only OEMs have contributed equity equivalents and identified ‘guaranteed offtake’ which they seek to support. The challenge is that it is likely that this offtake is high-technology and makes use of proprietary raw materials → these beneficiaries are unlikely to benefit from ASCCI BSDP
- NAACAM is leading a process to support MNC Tier 1s to contribute to the AITF in the same modality as the OEMs → **This Tier 1 ‘offtake’ is likely more suitable for an ASCCI BSDP, plus has the advantage of quantifying the commercial outcome for the beneficiary at the outset of the project**

Programme pivots

- i. **OEMs need to be more actively involved** in ‘encouraging’ the Tier 1s to nominate beneficiaries for participation
- ii. OEMs, even if not formal sponsors, need to be involved in **project steering committee** meetings to provide support for **approvals on engineering changes, material changes**, etc.
- iii. **Commercial opportunity and QMS requirements** for the Black-owned supplier must be clearly articulated at the start of the project
- iv. Historic **duration of projects** (18 months) was entirely arbitrary → consideration should be given to actual upgrading requirements versus timeline to commence supply to sponsor

* The OEM/Tier 1 may choose increase the quantum of funding to increase the scope of the project

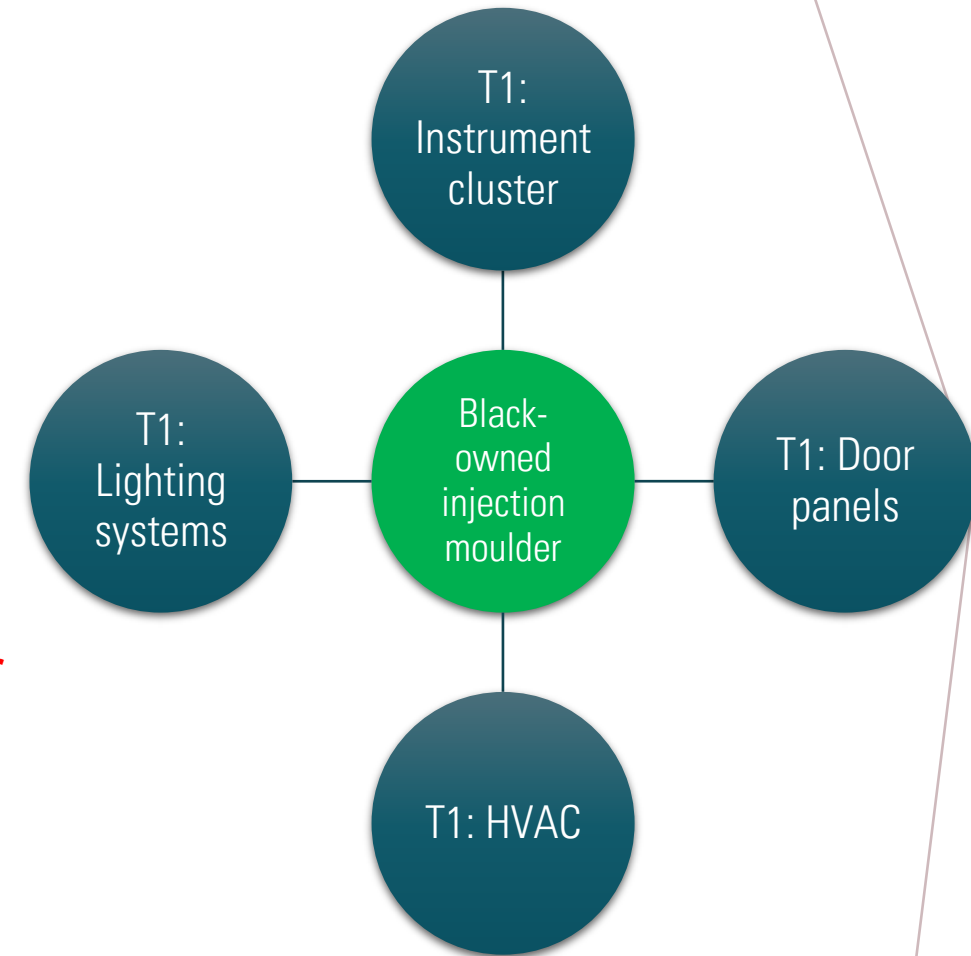
PROPOSED PROJECT FUNDING SPLIT	
ASCCI contribution	R275,000
OEM or Tier 1 sponsor contribution*	R250,000
Black-owned supplier contribution	R25,000
Total project funding	R550,000

Programme detail

- **Intended beneficiaries:** Existing small-scale Tier 2 suppliers, or start-up Tier 2s, with a focus on service primarily OEM value chains (steer away from independent aftermarket)
- **Programme focus:**
 - **Best practice manufacturing support** (focus on competitiveness improvement)
 - **General business support** (Business management support encompassing general business administration and financial management)
 - **Mentoring and business development** (Mentoring for the business owner / leadership team; strategic guidance; and business development support)
- **Duration:** 12 to 18 months (depending on the core capability of the supplier, and the allied sector they may originate from)
- **Beneficiary recruitment strategy:** Regional clusters; OEM nominations; AITF; NAACAM member base (**procurement-led**)

- LWGs constituted around the existing capability of a Black-owned supplier (e.g. plastic injection moulding; metal stamping; machining; etc.).
- Tier 1s under pressure to achieve B-BBEE level 4 under APDP 2 → likely to want to pursue localisation with Level 1 and 2 suppliers. Presents some immediate advantages:
 - ✓ Opportunity for Tier 1 to spend **ED/SD** (likely through interest-free loans) to **directly support 'unlocking' of barriers to localisation** → fund tooling, testing, etc.
 - ✓ By sourcing from 51% Black-owned business, Tier 1s can ensure greater recognition of **preferential procurement spend**
- By pooling Tier 1 opportunities and targeted a select (or group) of Black-owned suppliers, the **barrier of low volumes are somewhat mitigated**
- Once Tier 1s have assessed capability of Black-owned supplier against sourcing requirements, then **either procurement commences, or supplier is referred to Supplier Capability programme to support mitigation of any potential risks**
- **Point of departure from previous efforts → localisation facilitation is driven by existing Tier 2 capability, rather than an OEM or Tier 1 'wish list' of opportunities**

Example of LWG



Problem statement

The cost of testing presents a **cross-cutting barrier to localisation**, in terms of the actual cost of the test, plus the long-lead time related to the use of international testing facilities.

Key challenges identified:

- i. **Misalignment** between the **offerings** of testing facilities and **requirements** of industry
- ii. Testing facilities unable to invest and **upgrade capabilities** without a realistic outlook for the **sector's requirements** (info on frequency of test requirements is the key challenge)
- iii. Test facilities are often not empowered in terms of **B-BBEE**
- iv. Local testing **costs** are not competitive

Activities to date

- DAC and then ASCCI, facilitated a series of workshops with testing facilities and component suppliers
- ASCCI developed a list of testing facilities
- **Status quo remains unchanged**

'22 YE objectives

Appointment of a third-party service provider to develop a **'testing infrastructure roadmap'**. Key activities will include:

- i. Scoping of **global best practice** of testing for the automotive components sector (cost; capability; endorsement by OEMs; funding of facility upgrading, etc.)
- ii. Evaluating the current **installed testing capacity (private and public sector)** against the automotive sector's requirements (plus consideration of transformation status)
- iii. Understanding the **automotive sector's requirements** (types of tests; potential frequencies; current costs incurred; OEM 'endorsement' requirements, etc.)
- iv. Development of **'upgrading' plan** for prioritised testing facilities

'23 YE objectives

Implementation of 'upgrading' plan, with the support of relevant stakeholders

Problem statement

- Component suppliers need to consider 2 types of technology transfers/acquisitions:
 - i. **Acquiring rights** from intl. component manufacturers and patent holders, to allow them to manufacture proprietary patented or design-own products required by OEMs;
 - ii. Acquiring **proprietary processes, plant and equipment** to manufacture for OEMs
- In both instances, the technology transfer requires the local recipient to assimilate the **necessary know-how** and expertise in order to operate and maintain the proprietary production **processes and testing** the locally produced products to meet OEM specifications
- The diversity of OEMs specifications requires multiple licenses, but **exclusivity agreements** often pose a challenge
- South African Tier 2s and 3s have limited **knowledge** of and **access** to these technologies
- Due to SA's comparatively low vehicle production volumes, **license holders often do not see the merit in granting a license to SA suppliers**

'22 YE objectives

Appointment of a third-party service provider to develop a **'technology acquisition roadmap'**. Key activities will include:

- i. Identify key technology requirements associated with deeper and wider localisation opportunities, and determine specification differences between OEM value chains
- ii. Engage technology holders (in collaboration with relevant stakeholders) to determine the appetite for partnering with a South African supplier

'23 YE objectives

Facilitation of engagements between parties, undertaken by a third-party service provider. Key activities will include:

- i. Facilitation of in/outbound visit/delegation (co-funded by beneficiary firm)
- ii. Facilitate agreement for acquisition of technology and support through related ASCCI programmes to ensure optimisation of technology