INDEPENDENT EVALUATION DIVISION
OFFICE OF EVALUATION AND INTERNAL OVERSIGHT

Independent Terminal Project Evaluation

INDIA

Supporting small and medium-sized manufacturers (SMEs) in the automotive component industry in India: deepening and widening the services provided within the framework of the UNIDO-ACMA-DHI Partnership Programme

UNIDO project number: 100245

UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

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Independent Evaluation

Supporting Small- and Medium-Sized Manufacturers in the Automotive Component Industry in India: Deepening and Widening the Services Provided within the Framework of the UNIDO-ACMA-DHI Partnership Programme ("UNIDO-ACMA-DHI SME Project")

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Particular thanks are extended to the Evaluation Officer (Ms. Thuy Thu Le) and Project Manager (Mr. Tomoyoshi Koume) at UNIDO Headquarters in Vienna; SME Development and Liaison Officer (Ms. Rekha Jain), UNIDO Representative in India (Mr. René van Berkel) and their team in New Delhi, and the management and counsellors within the Automotive Component Manufacturers Association (ACMA) for their precious time, support, and the organisation of the field mission conducted in India during 22 January to 2 February 2018.

The quality of reflection and level of engagement that was evident on the part of all parties has allowed for the development of robust findings, lessons learned, and recommendations that can usefully guide and inform the future design and implementation of projects within the domains of supplier performance improvement, resource efficient and cleaner production, and beyond.

Evaluation team:

Ms. Joyce Miller, International Evaluation Consultant and Team Leader
Mr. Hemant Verma, National Evaluation Consultant

Abbreviations and Acronyms

5S	Refers to Japanese words that describe the steps of workplace organisation process Seiri (sort), Seiton (straighten, set); Seiso (shine, sweep); Seiketsu (standardize); Shitsuke (sustain)
ACMA	Automotive Component Manufacturers Association
CAPEX	Capital expenditure
COP	(UN Climate Change) Conference of the Parties
GDP	Gross Domestic Product
GHG	Green House Gas (Emissions)
HR	Human Resources
IoT	Internet of Things
KPI	Key Performance Indicator
M & E	Monitoring and Evaluation
M / SDG(s)	Millennium / Sustainable Development Goal(s)
MoHI / DHI	Ministry of Heavy Industries and Public Enterprises / Department of Heavy Industry
NMEM	National Mission for Electric Mobility
PIR	Project Implementation Report
R & D	Research and Development
RECP	Resource Efficient and Cleaner Production
Rs.	Indian Rupees
SCM	Steering Committee Meeting
SIAM	Society of Indian Automobile Manufacturers
SME(s)	Small- and Medium-Sized Enterprise(s)
TE	Terminal Evaluation
TOC	Theory of Change
ToR	Terms of Reference
UNIDO	United Nations Industrial Development Organization
USD	US dollar
ZED	Zero Defect Zero Effect

Glossary of Evaluation-Related Terms

Term	Definition
Baseline	The situation, prior to an intervention, against which progress can be assessed.
Effect	Intended or unintended change directly or indirectly due to an intervention.
Effectiveness	The extent to which the development intervention's objectives were achieved or are expected to be achieved.
Efficiency	A measure of how economically resources/inputs (funds, expertise, time, etc.) are converted to results.
Impact	Positive and negative, intended and non-intended, directly and indirectly, long term effects that represent fundamental durable change in the condition of institutions, people and their environment brought about by the Project.
Indicator	Quantitative or qualitative factors that provide a means to measure the changes caused by an intervention.
Intermediate States	The transitional conditions between the Project's outcomes and impacts which must be achieved in order to deliver the intended impacts.
Lessons learned	Generalizations based on evaluation experiences that abstract from the specific circumstances to broader situations.
Logframe (logical framework approach)	Management tool drawing on results-based management principles used to facilitate the planning, implementation and evaluation of an intervention. It involves identifying strategic elements (activities, outputs, outcomes, impacts) and their causal relationships, indicators, and assumptions that may affect project success or failure.
Outcomes	The likely or achieved short- to medium-term behavioural or systemic effects to which the Project contributes, which help to achieve its impacts.
Outputs	The products, capital goods, and services that an intervention must deliver to achieve its outcomes.
Relevance	The extent to which an intervention's objectives are consistent with beneficiaries' requirements, country needs, global priorities and partners' and donor's policies.
Risks	Factors, normally outside the scope of an intervention, which may affect the achievement of an intervention's objectives.
Sustainability	The continuation of benefits from an intervention, after the development assistance has been completed.
Target groups	Specific entities for whose benefit an intervention is undertaken.

Map of India's Automotive Component Manufacturing Clusters

Figure 1: The 25 Key Automotive Component Manufacturing Clusters Engaged in the Project

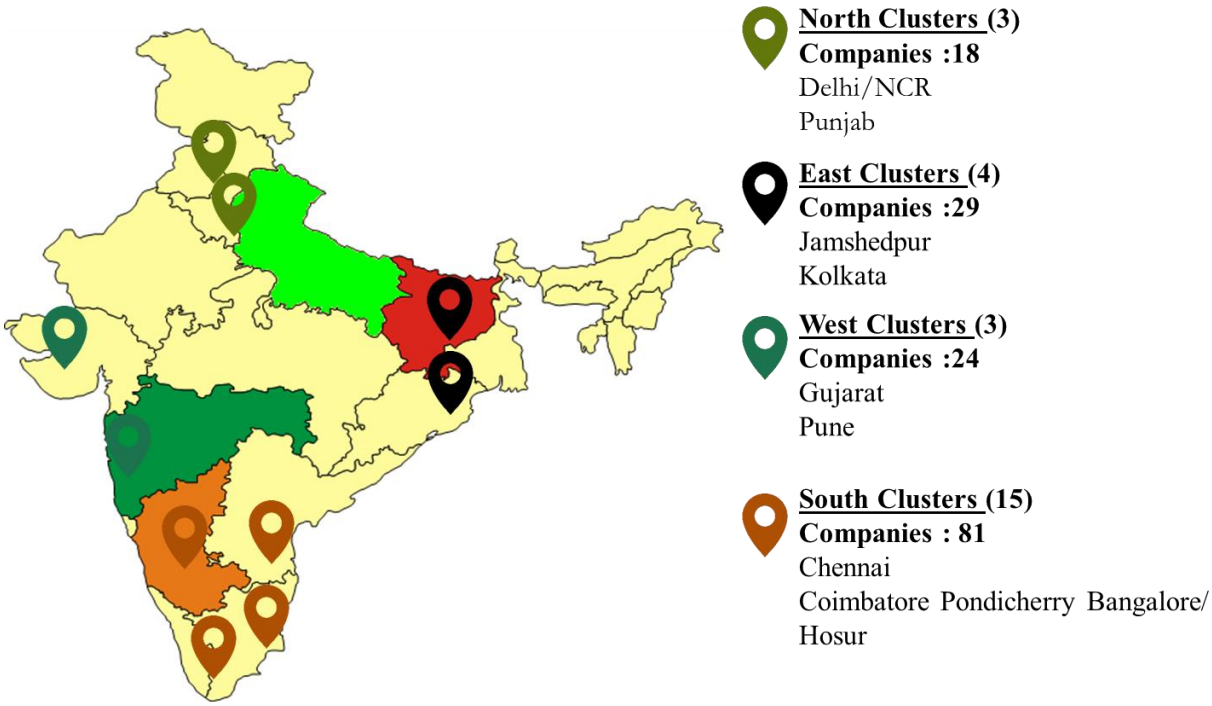
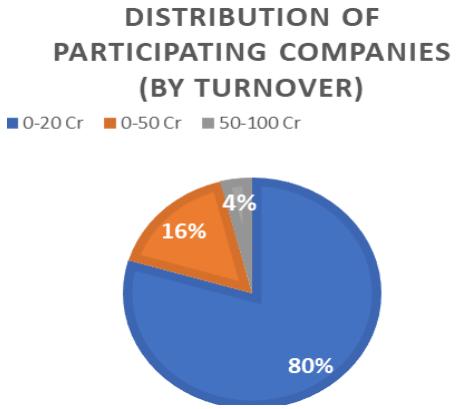


Figure 2: Distribution by Turnover of 152 Companies Engaged in the Project



India's 2006 Micro, Small and Medium Enterprises Development (MSMED) Act set out the following classifications:

Classification	Annual Turnover
Micro Enterprise	Less than or equal to Rs. 5 crore[1]
Small Enterprise	More than Rs 5 crore but not exceeding Rs. 75 crore
Medium Enterprise	More than Rs. 75 crore but not exceeding Rs. 250 crore

[1] 1 crore = 10 million Indian Rupee (Rs.)

Executive Summary

Evaluation Background and Methodology

This document represents the final report of the Terminal Evaluation (TE) of "Supporting Small- and Medium-Sized Manufacturers (SMEs) in the Automotive Component Industry in India: Deepening and Widening the Services Provided within the Framework of the UNIDO-ACMA-DHI Partnership Programme" (hereafter, UNIDO-ACMA project). Approved in December 2013, building on a predecessor phase, this project was initiated on 1 July 2014 by UNIDO in collaboration with India's Automotive Component Manufacturers Association (ACMA), in partnership with the Indian Ministry of Heavy Industries and Public Enterprises (MoHI), for a three-year duration, later extended to 30 June 2018. This Report describes the project's context, evaluation approach and its findings, conclusions, lessons learned, and recommendations. Detailed background information is in the Annexes.

This TE assessed the project's performance in terms of effectiveness, progress to impact, relevance, efficiency, and the sustainability of its benefits. The TE's main purposes were to (i) assess the project performance and results achievement; (ii) develop a series of findings, lessons and recommendations for enhancing the design of new and implementation of ongoing projects by UNIDO.

Summary of the Main Evaluation Findings

Effectiveness and Impact

This project adequately incorporated environmental, economic and social safeguards. Evidence of progress-to-impact was observed through the project's achievement (at times, over-achievement) of all three of its envisaged outcomes. Moreover, the project actively sought build on existing concepts and structures in the beneficiary companies and is especially credited with enabling company staff to understand and leverage their value in a way that previous interventions had not achieved. In light of the scale of the challenges in the auto component manufacturing sector, given the significant legacy of predecessor projects under the UNIDO-ACMA partnership programme, the question needs to be asked: could a significantly higher impact have been achieved from a more open and ambitious approach, which is arguably needed for a project having as its core objective to upscale?

Project Design

The project was adequately resourced to pursue its objectives, an appropriate governance structure was foreseen, and the lead responsibility for M&E to ensure effective project implementation was suitably assigned. While the project's components were linked to the expansion and sustainability of the partnership programme, this relatively inward focus created a risk at the level of design that the meaningful engagement with other partners and institutions needed to assure the sustainability of project results would be backgrounded.

Relevance

Filling a critical gap not covered by other mechanisms, this project's support for strengthening the performance of lower tier component manufacturers (the so-called weakest link in the value chain) was highly relevant for their needs and aligned with the international/regional/national priorities and UNIDO's mandate for promoting Inclusive and Sustainable Industrial Development.

Efficiency

The project operated adequately from the viewpoint of efficiency. The originally allocated resources allowed for servicing 27% more enterprises than originally targeted as well as to assure smooth implementation between phases.

Sustainability of Benefits

The project was conceived as a first phase in a 3-phase partnership programme between UNIDO and ACMA. A Concept Document for the next phase was under preparation although funding had not yet been committed at the time of the TE. Coming to an arrangement that would assure the continuation of activities is seen as a key aspect for sustaining the project's benefits and results. Moving forward, the inclusion of fees from private sector beneficiaries can be expected to reduce financial risk. Further willingness from Tier-1 and Tier-2 component manufacturers to co-finance continuous improvement initiatives would further reduce risk. The project's benefits and results could be further sustained by assuring M&E design and knowledge management on the side of ACMA, outreach to further national partners, and building up a counselor pool to facilitate upscaling.

Gender Mainstreaming

Although the project did not explicitly integrate gender mainstreaming considerations into the project design, during the project's implementation, there was evidence that women who are provided with suitable jobs need to have the same chances as their male colleagues to excel in leadership roles and that companies can tangibly benefit from their capabilities and performance.

Performance of Partners

UNIDO carried out its implementation role and duties in a responsible manner. Its participation and contributions were highly valued by all stakeholders. ACMA adequately played its role as national executing partner, engaging both member and non-ACMA firms in the supplier performance improvement programme. Further efforts to expand the counsellor pool beyond ACMA and development of linkages with other relevant institutions would provide valuable future support to accelerate the adoption of best practices. As donor, MoHI/DHI's contribution and timely disbursement of funds served to bridge gaps in resources, capabilities and played a catalytic role through the project for the further development of capacities to foster resource efficiency and enhance prospects for reaching Zero Defect Zero Effect in the auto component manufacturing sector.

Other Factors on Performance

The project benefited from a well-designed, well-resourced, and diligently implemented M&E system under UNIDO's leadership. The project steering structure was constituted by relevant actors and had high legitimacy and functioned like an executive review mechanism. The implementing project teams in both ACMA and UNIDO adopted a results-based management approach, keeping the focus on progressing activities, outputs, and outcomes according to the project's results framework. The dedication and collaboration of the implementing teams inside ACMA and UNIDO are recognized as positive contributing factors to achieving the project's outcomes and impact.

Rating of Project Performance

Overall, the project is rated as "satisfactory". Table 1 provides an overview of the ratings[2].

[2] According to the evaluation criteria and 6-point scale stipulated in the evaluation's Terms of Reference: Highly

Continued…

Table 1: Summary of Evaluation Ratings

Evaluation criteria	Rating
Progress toward impact	**Satisfactory (S)**
Project design	**Satisfactory (S)**
• Overall design	Satisfactory (S)
• Logframe	Satisfactory (S)
Project performance	**Satisfactory (S)**
• Relevance	Highly Satisfactory (HS)
• Effectiveness	Highly Satisfactory (HS)
• Efficiency	Satisfactory (S)
• Sustainability of benefits	Moderately Likely (ML)
Cross-cutting performance criteria	
• Gender mainstreaming	Satisfactory (S)
• M&E: ✓ M&E design ✓ M&E implementation	Highly Satisfactory (HS)
• Results-based Management (RBM)	Satisfactory (S)
Performance of partners	
• UNIDO	Satisfactory (S)
• National counterparts	Moderately Satisfactory (MS)
• Donor	Satisfactory (S)
Overall assessment	**Satisfactory (S)**

Summary of Recommendations

The following recommendations are offered to UNIDO, ACMA, and the Government of India:

Recommendation #1: Department of Heavy Industry and UNIDO should secure the funding for the envisaged next phase/s as soon as possible to assure continued momentum, sustain the achieved benefits and results, retain project staff, and allow for getting the elements in place to assure the achievement of long-term impact.

Recommendation #2: Department of Heavy Industry, UNIDO and the PMU should ensure that the design and implementation of any future phases include plans and resources for a mechanism to replicate and upscale the UNIDO-ACMA methodology to significantly more SMEs in the automotive industry. This would foster and accelerate broader adoption of the continuous improvement practices and culture that have been verified to drive cost competitiveness, quality, and productivity.

Recommendation #3: UNIDO and ACMA should identify and meaningfully engage with relevant strategic actors to expand outreach, build additional needed cascading capacity, and accelerate the scaling up of supplier performance improvement.

These recommendations are elaborated in the Report's final chapter and are offered in the spirit of pragmatically and usefully informing future programme architecture.

Satisfactory, S); Satisfactory (S); Moderately Satisfactory (MS); Moderately Unsatisfactory (MU); Unsatisfactory (U); Highly Unsatisfactory (HU). Sustainability and Benefits is rated from Highly Likely (HL) to Highly Unlikely (HU)

1 Introduction

1.1 Evaluation Introduction, Scope, and Objectives

1. The project "Supporting Small- and Medium-Sized Manufacturers in the Automotive Component Industry in India: Deepening and Widening Services Provided within the Framework of UNIDO-ACMA-DHI Partnership Programme" (hereafter, UNIDO-ACMA project) was initiated on 1 July 2014 by UNIDO, in collaboration with the Automotive Component Manufacturers Association (ACMA), funded by the Indian Ministry of Heavy Industries and Public Enterprises (MoHI), with its Department of Heavy Industry (DHI) as the government coordinating agency.

2. This Terminal Evaluation (TE) was carried out during January-March 2018 with two objectives:

   - Independently assess project performance in terms of relevance, effectiveness, efficiency, sustainability of benefits, and progress to impact
   - Develop findings, lessons, and recommendations that could be used to enhance the design and implementation of ongoing projects of UNIDO

3. The Evaluation Team was composed of Ms. Joyce Miller and Mr. Hemant Verma. Guided by a Terms of Reference (ToR) provided by UNIDO (see Annex 1); the team independently carried out its activities following the UNIDO Evaluation Policy[3] and UNIDO Guidelines for the Technical Cooperation Project and Project Cycle[4]; used a participatory approach informing and consulting stakeholders throughout the process; liaised with UNIDO's Independent Evaluation Division on methodological issues and conduct. In terms of scope: this TE assessed the project's performance over the duration of this first phase[5] (which includes a 1½ year "no-cost" extension), approved in 12/2013, anticipated to complete on 31/3/2018, with reference to its predecessor programme (implemented in three phases during 1999-2009). This legacy is expected to help the Evaluation Team understand the current project's design, objectives, implementation approach, and desired impacts.

4. This TE assessed the extent to which the current project achieved its main purpose (to broaden and deepen the scope and outreach of already established programme services and to further strengthen Indian small- and medium-sized (SME) automotive component suppliers to meet Tier-1 requirements, thereby facilitating their inclusion in domestic and global automotive supply chains). The likelihood of the project's results being sustained following completion of this phase was also gauged. This involved looking into the extent to which the project: i) helped put in place conditions likely to address drivers and overcome barriers to SME development within the target sector in view of current and evolving market conditions[6]; ii) yielded direct outcomes that are already being utilized, or could be expected to be used in the near future, to enable the target beneficiaries to apply relevant state-of-the-art methodologies leading to meaningful productivity and performance improvement; iii) institutionalized the outputs and results to assure local ownership and anchor the sustainability of the project's

[3] UNIDO. (2015). Director General's Bulletin: Evaluation Policy (UNIDO/DGB/(M).98/Rev.1)
[4] UNIDO. (2006). Director-General's Administrative Instruction No. 17/Rev.1: Guidelines for the Technical Cooperation Programme and Project Cycle (DGAI.17/Rev.1, 24 August 2006)
[5] With a 3-year time horizon, this project was conceived from the outset as the first phase of a 3-phase programme with Phase 1: 2013-2016 covering 120 firms; Phase 2: 2016-2018, covering 170 firms; Phase 3: 2018-2019: covering 170 firms.
[6] Project Document described these in terms of access to factors (finance, technology, skills, management processes) and markets (logistics, standards compliance, access to quality certification services, product range, branding, marketing, etc.)

benefits. In this light, the evaluation considered the extent to which the UNIDO-ACMA project was a suitable instrument for achieving its multi-pronged aims.

1.2 Overview of the Project Context

5. The Indian auto component industry is well-recognised globally. It has deep forward and backward linkages with key segments of the national economy, contributing nearly 2.3% to India's GDP and 4% to national exports. With about 11,000 enterprises (nearly 8% are in the organised sector; 92% in the informal sector[7]), this industry provides direct employment to over 1.5 million people. Its USD 43.5 billion turnover (2016/17) is expected to rise to USD 100 billion by 2020. With significantly fewer firms in number, the organised sector accounts for 85% of total industry turnover, caters to Original Equipment Manufacturers (OEMs), and consists of high value-added precision instruments. The unorganised sector caters mostly to the aftermarket category and is comprised of lower value-added products.

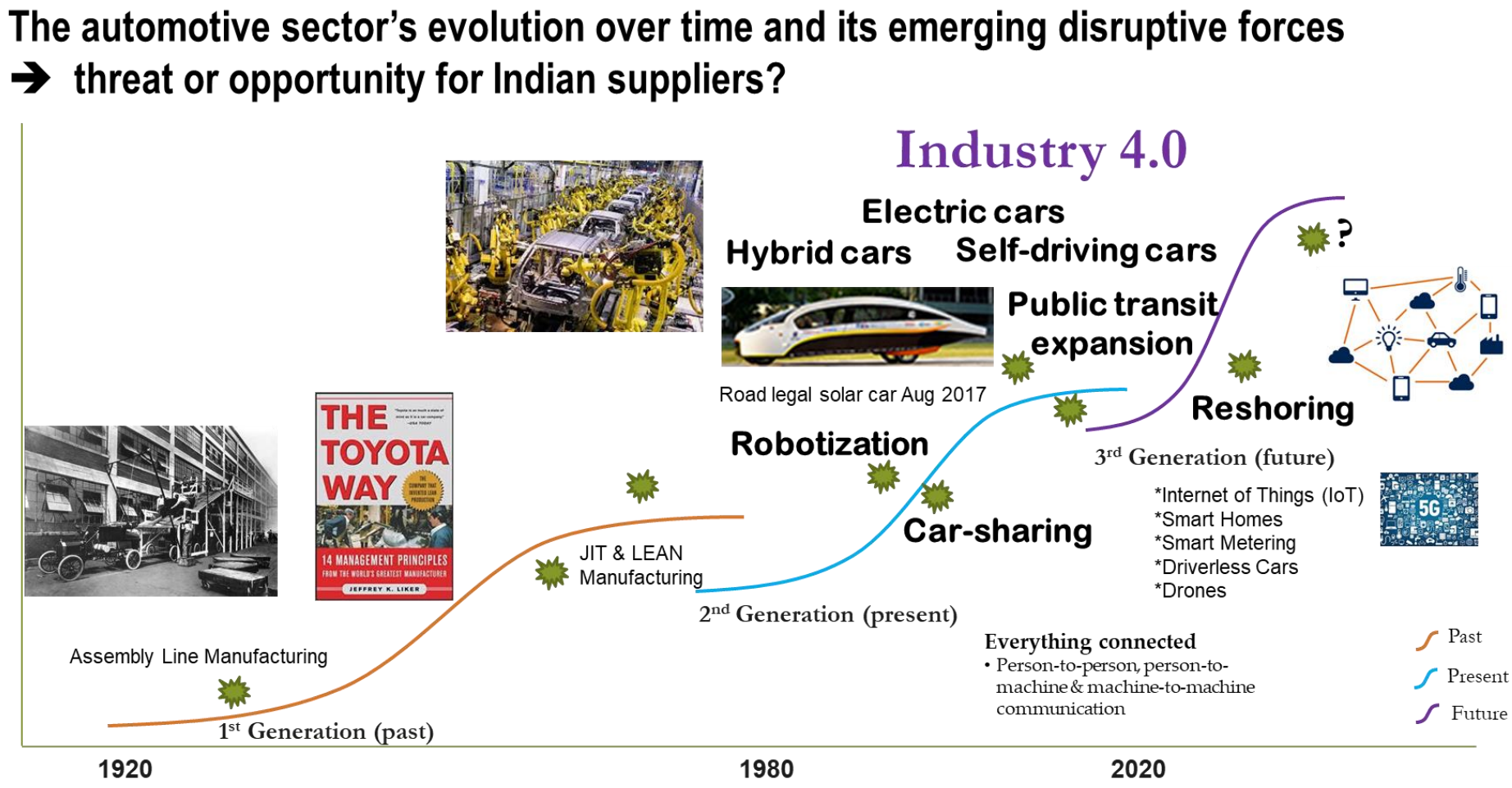
6. The Indian government's Automotive Mission Plan 2006–2016 laid down elements to ensure the industry's initial growth. The subsequent Automotive Mission Plan 2016-2026 aims to sustain growth. It offers strong support for R&D and provides for 100% foreign direct investment under an automatic route, targeting a double-digit contribution of the auto industry to India's GDP through a USD 80 billion investment aimed at creating 100 million jobs. Indian auto component makers are well-positioned to benefit from the globalisation of the sector as export potential could increase up to four times, to USD 40 billion by 2020.

7. Globally, manufacturing is witnessing a 4th industrial revolution where 'real' and 'virtual' worlds are becoming seamlessly connected, giving rise to cyber-physical production systems. Traditional processes are undergoing enormous transformation, which will change the way that companies approach manufacturing. According to respondents interviewed for this evaluation, "*Industry 4.0 is important and is seen to be revolutionary in the era of information technology and open market operations*". Respondents pointed to increasing automation, the advent of electric vehicles, the threat of re-shoring, and lack of adequate skillsets as factors in the industry's continuing evolution and challenges related to increasing market volatility, shorter product lifecycles, higher product complexity, and global supply chains (see Figure 3).

8. In this light, Tier-2 and Tier-3 suppliers need to get ready for the next growth cycle. These (SME) suppliers face various challenges within the fast-transforming global business landscape. As market pressures on OEMs augment, they tend to pass the pressure in terms of price reductions and quality requirements onto their suppliers. The toughest challenges facing SMEs are linked to technology/innovation, credit availability, cost of finance, availability/retention of skilled manpower, capacity utilisation, buyer pressure to cut costs and increase product quality, combating counterfeit parts, R&D competence and international trade-related issues.

[7] CARE Rating - Industry research on 'Automobile Components: Structure and Prospects', Issue 27 March 27 2017

Figure 3: Disruptive Forces Sparking the Evolution of the Automotive Sector over the Past Century



Developed by Ms. Joyce Miller; contained in presentation of preliminary findings delivered on 31 January 2018 to DHI and UNIDO

9. The Ministry of Heavy Industries and Public Enterprises' Department of Heavy Industry (DHI) has created a USD 200 million fund providing an interest subsidy on loans and investment in new plant/equipment. DHI has also provided export benefits to intermediate suppliers of auto components against the Duty-Free Replenishment Certificate (DFRC). Both Indian and global manufacturers have invested in new capacities/programmes to build long-term advantage. Merger and acquisition activity and private equity investment in the auto sector in 2018's 1st quarter stood at USD 91.65 million[8]. It is estimated that the Indian auto component sector will invest around USD 4.5 billion to upgrade products and keep up with new industry regulation.

10. Against this background, two target groups were identified as being in a position to greatly benefit from project support and were expected, in turn, to play a catalytic role in demonstrating and fostering the adoption of globally-accepted best practices to enhance the sector's competitiveness and assure its continued inclusion in global supply chains:

- Target Group #1: indigenous Tier-2 and Tier-3 automotive component suppliers and other (lower tier) SMEs in the automotive value chain, located in key clusters
- Target Group #2: experts of business support and advisory institutions (including local government authorities; technical schools; district-based industrial associations and their training centres; quality/research/training/educational institutions; service providers), who would be equipped to provide specialized technical services, advice, and support

1.3 Overview of the Project

11. This project built on predecessor interventions undertaken during the period of 1999-2010 by UNIDO and ACMA as implementing partners, with funding from MoHI, in coordination with DHI (refer to Table 2). From these earlier interventions, automotive component manufacturers and national experts/counsellors[9] benefitted from international expert visits and training on productivity, quality, and scalability issues.

12. Beneficiaries' feedback was overwhelmingly positive. Continuing support was requested to sustainably anchor the gains realised and to replicate/extend counselling services to a larger number of companies.

Table 2: Current Project in Context of the UNIDO-ACMA Partnership Programme 1999 to 2019

Phase	Years	Scope
UNIDO-ACMA Phase 1	1999-2002	Piloted upgrading and promotional activities for 20 SMEs in the Indian automotive component sector. Delivered classroom training sessions on quality management, cost efficiency, deliver; industry experts analysed production processes and provided recommendations based on international best practice.
UNIDO-ACMA Phase 2	2002-2004	Expanded to cover 40 companies in 4 regions. Continued to deliver technical assistance and training to engineers, creating "pool of expertise" within ACMA.
UNIDO-ACMA Phase 3	2004-2009/10	Further expansion to upscale activities and reach out to a larger set of beneficiaries. In this light, 76 companies in 12 different clusters were supported.
UNIDO-ACMA-DHI (100245)	2014-2018	Targets 460 automotive component suppliers to be upgraded in three phases: **Phase I:** 2013 – 2016 (preparatory phase and counselling cycle I, covering 120 firms)

[8] India Brand Equity Foundation, 2018 Report Indian Auto Component Industry www.ibef.org/industry/auto-components-presentation
[9] From1999 to March 2010, 133 component manufacturers in 17 different clusters were upgraded under UNIDO-ACMA's partnership programme, which also trained over 50 counsellors, company experts, and quality staff.

		Phase II: 2016 – 2017 (counselling cycle II, covering 170 firms) **Phase III:** 2018 – 2019 (counselling cycle III, covering 170 firms)

13. In this light, the current project initiated in July 2014 was conceived from the outset to consist of three phases (see Footnote 5). It aimed to further strengthen SME automotive component suppliers' abilities to meet increasingly demanding requirements of vehicle and Tier-1 automotive component manufacturers in India. The project pursued three core objectives:

- enhance the performance of domestic SMEs in the automotive component industry to facilitate their inclusion into national, regional and global supply chains and meeting relevant supply chain requirements (quality, cost, and delivery, as well as OHS, energy efficiency and environmental management standards);
- enhance the sustainability of the Partnership Programme through the consolidation of the institutional set-up, expansion of the UNIDO-ACMA methodology and the extension of the pool of well-trained national experts and counsellors;
- expand the outreach of the Partnership Programme to upgrade and enhance the competitiveness of an increasing number of target companies along the supply chain in India, including lower tier suppliers.

14. With respect to these three objectives, 2 outcomes were specified, as follows:

- A broad range of Indian automotive component manufacturers in target clusters/localities will apply state-of-the-art methodologies for process, productivity, environmental and social improvement, and become more resource efficient, productive, and competitive in the marketplace.
- Trained national experts and business support institutions (public and private) will provide high-quality, sustainable services to local automotive component suppliers in the fields of continuous improvement, quality issues, lean manufacturing tools, social and environmental sustainability and energy efficiency.

15. These outcomes were backed up by 6 outputs (see Table 3) constituted by a further 30 activities.

Table 3: Project Outputs with Assignment of Lead Responsibility

Output #	Description	Lead Responsibility
Output 1	The programme's progress and effectiveness are assessed on a continuous basis through a well-defined M&E framework.	UNIDO
Output 2	New target clusters have undergone a mapping/baseline assessment, including determination of possible partner institutions for participation in Programme.	UNIDO
Output 3	A revised, adapted UNIDO-ACMA methodology includes modules relating to new issues of particular relevance to auto component industry, including cleaner production, energy efficiency, occupational health and safety; is available to Project Team and counterparts.	UNIDO
Output 4	National experts and representatives of business support and educational/training institutions have capacity to organize and facilitate trainings on enhanced UNIDO-ACMA methodology (continuous improvement, lean manufacturing methodologies) and other relevant methodologies.	ACMA
Output 5	Selected clusters/suppliers receive continuous assistance over a 24-month period and apply above-mentioned methodologies to their production and skills development processes.	ACMA
Output 6	Effectiveness of Partnership Programme has been rigorously assessed against national/international practices, related policy recommendations formulated.	UNIDO

1.3.1 Implementation Arrangements and Project Partners

16. Following the March 2013 approval, the project was officially kicked off in July 2014 with a 36-month duration. Table 4 outlines the key milestones related to project implementation.

Table 4: Milestones and Key Dates in Project Implementation

Milestone	Date
Project Approval (Phase I) granted during Auto Cess Meeting	March 2013
Project Document signed between UNIDO, ACMA, Department of Heavy Industries	September 2013
Trust Fund Agreement Signed	December 2013
First tranche of funds transferred	June 2014
Official kick-off of Project; hiring of National Experts, Local Counsellors, etc.	July 2014
Hiring of National Project Coordinator	September 2014
Hiring of SME Liaison Officer	December 2014
Hiring of Administrative Assistant	March 2015
1st Steering Committee Meeting and 2015 Technical Screening Committee Meeting (Auto Cess)	March 2015
Ad hoc Steering Committee Meeting and Second Tranche of funds transferred	June 2015
2nd Steering Committee Meeting	September 2015
Study Tour to Japan	November 2015
3rd Steering Committee Meeting	April 2016
Sanctioning Committee Meeting 2016	July 2016
4th Steering Committee Meeting	November 2016
Third tranche of funds transferred	December 2016
Final instalment of funds transferred	June 2017
5th Steering Committee Meeting	July 2017
Hiring of Project Associate	July 2017
Training of enterprises and counsellors organised by ILO on workplace cooperation	August 2017
Pune Site Visit by Secretary Mr. Girish Shankar	August 2017
Pune Site Visit by Joint Secretary Mr. Vishvajit Sahay	September 2017
2017 Technical Screening Committee meeting (Auto Cess) convened	November 2017
Project Phase I ends	June 2018

17. The following counterparts and stakeholders played key roles in the project:

- Department of Heavy Industry (DHI), which promotes the development and growth of capital goods, auto, power equipment manufacturing and engineering industry in India.
- Automotive Component Manufacturers Association of India (ACMA), representing over 750 firms; promotes trade, technology upgrading, quality enhancement. Since 1998, ACMA has been a key Indian partner in the Partnership Programme with UNIDO.
- The existing UNIDO-ACMA team of counsellors and national experts, which had accumulated expertise in implementing upgrading and training activities for automotive component suppliers through the Partnership Programme.
- Subcontractors: UNIDO initiated the development of modules on Resource Efficient and Cleaner Production (RECP). In this context, UNIDO, ACMA, and DHI agreed to i) develop environmental management and energy efficiency-related content/materials of the UNIDO-ACMA methodology (Component B); ii) provide counselling services to at least 10 Indian auto component manufacturers on implementation of sustainability (Component C). In this light, UNIDO hired "STENUM Asia" to undertake the required tasks.

18. A Steering Committee was formed under MoHI's chairmanship, with members drawn from UNIDO, DHI, ACMA. Convened bi-annually, this structure was informed on progress achieved, approved workplans, and was expected to provide overall steering and substantive guidance.

19. The project was financed by MoHI through cash contributions and also benefited from in-kind

contributions from UNIDO and ACMA as partners. See Table 5. This indicative budget was based on a target number of 120 firms to be supported. Further information concerning financial planning is available in Section 5.3.2.

Table 5: Financing Inputs by Source (planned), 2013-2016

Source	Total Amount (USD)
UNIDO inputs	909,674
Support costs 13%	118,258
Total: funded by MoHI / DHI	1,027,931
ACMA inputs (funded by MoHI / DHI)	1,165,715
Industry Contribution (planned)	1,131,086
Total Project Financing (cash and in-kind)	**3,324,732**

Source: Project Document

1.4 Evaluation Methodology

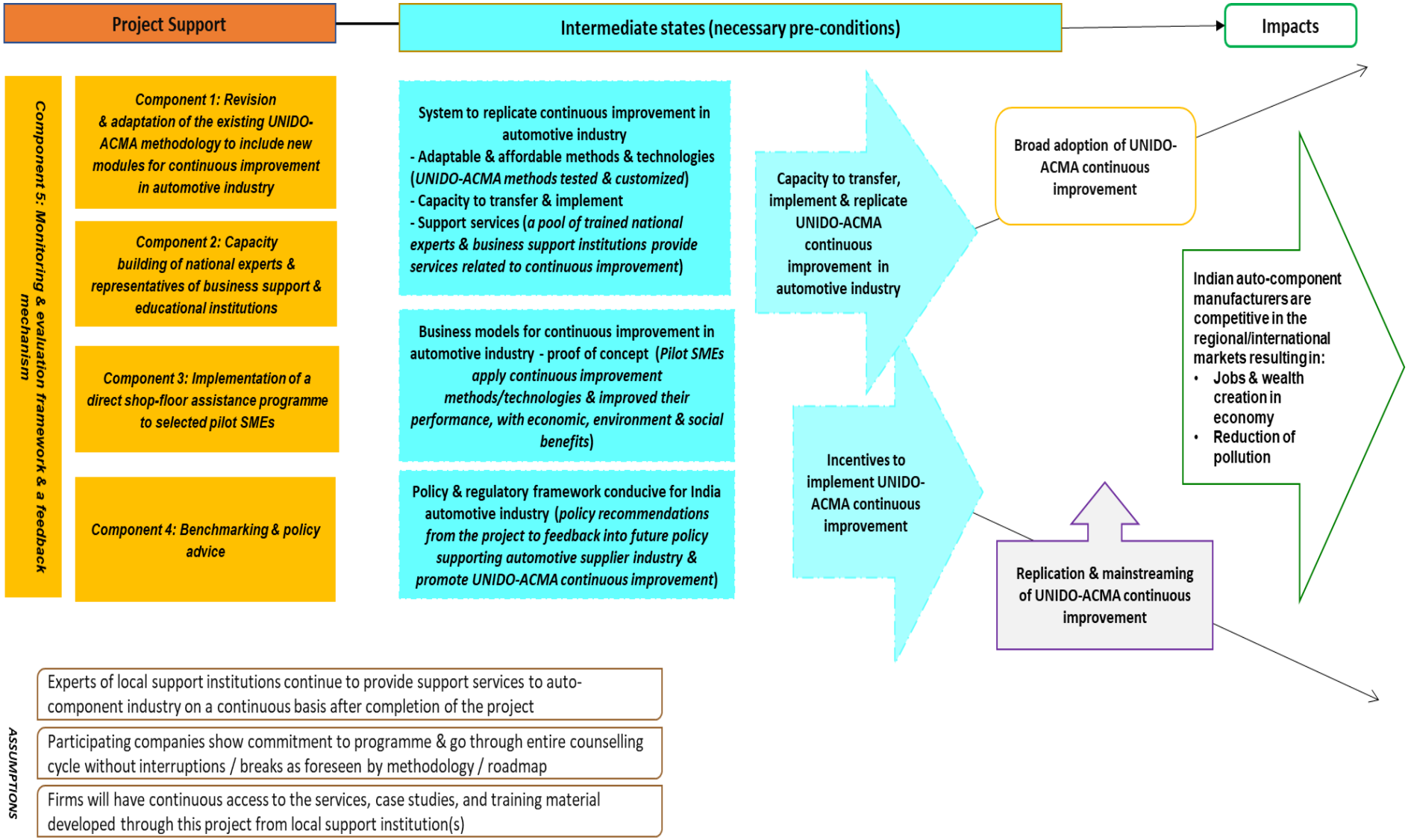
20. To assure a robust approach, an evaluation framework was developed and discussed with UNIDO in the initial phase, which also included an Inception Report. The project's Theory of Change (TOC) was reconstructed (see Figure 4) to support the Evaluation Team's analysis, conclusions, and assigned ratings. The TOC was used as a starting point to understand the project's underpinning logic, identify key elements that should be evaluated, develop the evaluation approach, and generate evaluation questions. Sources of data expected to yield evidence of achieved results and impacts were also identified.

21. Qualitative and quantitative data-gathering approaches were used to develop insights into strengths/shortfalls, crystallize the findings, and extract relevant lessons for organisational learning and operational improvement. Data was collected using multiple means:

- Desk study: of key project documentation; e.g. Project Document, Steering Committee (SC) minutes, annual work plans, Progress Reports, mid-term Review Report, company reports, audit reports, case studies, Customer Satisfaction surveys, market research reports, training materials, benchmark reports, correspondence, other resource materials. See Annex 3.
- Field visit: in New Delhi, Pune, Chennai, which allowed for direct observations and meetings with Project Teams in UNIDO and ACMA, the donor (MoHI/DHI), ACMA Counsellors whose capacities were enhanced through the project and 10 suppliers of 3 clusters, seen to be illustrative of the performance improvements attributed to this project's support.
- Remote interviews: were carried out with relevant UNIDO staff in Vienna headquarters and international Technical Consultants engaged by the project.
- Survey regarding Industry 4.0: carried out with 10 enterprises visited, 7 ACMA Counsellors, and 2 (Tier-1) customers of firms visited, which helped to deepen understanding of the context in which the supplier performance improvement programme is being implemented.

22. Project teams in UNIDO and ACMA identified/arranged meetings with relevant actors, who were interviewed face-to-face or remotely (see Annex 4). This consultation of a cross-section of stakeholders was used to gather a range of perspectives to deepen understanding, triangulate the data, and allow for evidence-based conclusions and recommendations.

Figure 4: Reconstructed Theory of Change - Supporting Small and Medium-Sized Manufacturers in the Automotive Component Industry Programme in India



23. Steps were undertaken to enhance stakeholder engagement and the quality of their consultation: i) respondents were informed about the TE's aims and guided in their input through a semi-structured protocol; ii) well-formulated, open-ended questions and further probes were used to promote balanced reflection, generate new insights, and yield higher quality data (as opposed to yes/no questions or an 'audit' approach), as it was considered that input to this evaluation required contextualisation, complex description, and explanation; and iii) respondents were assured of the anonymity and confidentiality of their input.

24. The quality of data analysis was assured by using a software tool to systematically code, cross-reference, and comment the data gathered through interviews and written input, with a clear trace back to the evidence underpinning the findings.

1.5 Limitations of the Evaluation

25. While it would have been ideal to have direct input from all actors involved in implementing activities over the project's entire duration, due to budget and time constraints, only a limited number of those involved in and impacted by the project could be consulted. It is hoped that the actors chosen for this intensive consultation provided a sufficiently representative view, thereby facilitating a balanced assessment of the project's intended outcomes and impacts.

26. Ten factory sites identified by the Project Team from within the 152 companies that benefited from the project's support were visited as part of the evaluation effort. These were selected based on their geography (2 from Western Region: Pune; 6 from Southern Region: Chennai; and 2 from Northern Region: Delhi), annual turnover (1 Medium Enterprise; 7 Small Enterprises; 2 Micro Enterprises: see Figure 2), included two companies that implemented RECP practices, and included companies having comparatively larger gender equality. While it would have been ideal to visit more companies and gather further perspectives, it is hoped that the chosen sites provided an illustrative, representative view of the project's results and impacts.

27. The extent to which expected outcomes were achieved and the extent to which their achievement depended on the delivery of project outcomes was assessed by looking at the project's causal pathways.

2 Project's Contribution to Development Results: Effectiveness and Impact

2.1 Project's Achieved Results and Overall Effectiveness

28. The project's effectiveness was assessed by looking at the extent to which its outcomes and their underpinning outputs have been achieved, or can be expected to be achieved in the near future, taking into account their relative importance.

Outcome 1: Trained national experts and business support institutions (public and private) provide high quality, sustainable services to local automotive component suppliers in the fields of continuous improvement, quality issues, lean manufacturing tools, social and environmental sustainability and energy efficiency.

29. Table 6 details the status of the programmed outputs aimed at achieving this outcome, together with an assessment regarding their achievement.

Table 6: Summary of the Project's Success in Producing Outputs under Outcome 1

Capacity-building has enabled local counsellors and business support institutions to provide high quality, sustainable services		
Target/Indicators		*Assessment and Status as at December 2017*
- # of local experts/institutions offering support services to automotive component suppliers in the mentioned areas (target: at least 10 additional experts available)		*Over-Achieved* 17 local experts offering support services to auto component suppliers in the mentioned areas
- Improvement of levels of satisfaction amongst local component suppliers with the services offered by support institutions in the mentioned areas. (target: at least 35% of companies indicating enhanced satisfaction levels)		*Over-Achieved* Company satisfaction survey undertaken with 152 suppliers showed 100% are willing to continue the journey; 90% rated overall effectiveness between 4 (good) and 5 (very good); 82% rated counselors' performance as very good; 50% of respondents willing to enroll in advanced programme
- # of services offered by institution/service provider		Services offered are within the context of the project
Outputs	*Target/Indicators*	*Assessment and Status as at December 2017*
A revised and adapted UNIDO-ACMA methodology includes modules relating to new issues of particular relevance to automotive component industry, including e.g. cleaner production, energy efficiency, occupational health and safety, **and is available to the Project Team and counterparts** (Output #3 in logframe)	- # of modules (and issues) of the existing UNIDO-ACMA methodology codified for the training and upgrading activities (target: all subjects that formed part of the original approach) - # of modules (and issues) added to the UNIDO-ACMA methodology prior to the training and upgrading activities (target: at least 3 new subjects)	*Achieved* 13 modules (and issues) within existing UNIDO-ACMA methodology have been codified for training and upgrading activities *Over-Achieved* 4 modules (and issues) have been added to the UNIDO-ACMA methodology prior to the training and upgrading activities

National experts and representatives of business support and educational and training institutions have the capacity to organize and facilitate trainings on the enhanced UNIDO-ACMA methodology (continuous improvement/lean manufacturing methodologies) as well as other methodologies of relevance (Output #4 in logframe)	- # of experts/counsellors and institutions trained and capacitated in relevant technical areas (target: at least 10 experts and 3 institutions) - # of experts from relevant support institutions participated in project activities, meetings, study tours (target: at least 20 different experts participated in project activities) - # of service portfolios/training curricula adapted throughout the project (target: at least 3 new services introduced) - Increase in # of experts/counsellors and institutions offering support services to automotive component suppliers in the mentioned areas (target: 8-10 experts) - Increase in # of experts/counsellors and institutions providing support services to suppliers in mentioned areas (target: 8-10 experts)	*Over-Achieved on number but…* 17 experts/counsellors were trained in relevant technical areas *Achieved* 20 experts from relevant support institutions participated in project activities, meetings and/or study tours *Over-Achieved* 4 service portfolios/training curricula have been adapted during the project *Achieved* 10 experts/counsellors are offering support services to auto component suppliers in the mentioned areas *Achieved* 10 experts/counsellors and institutions are providing support services to auto component suppliers in the mentioned areas

30. The project succeeded in building the competence of more than the targeted number of local counsellors, wholly drawn from ACMA with a background/focus on Quality and Productivity, to apply the UNIDO-ACMA methodology. Counsellors indicated that peer support, mentoring, and regional/national exchange mechanisms contributed to their professional development and ACMA's organisational development. The counsellor pool was appreciated by the target group: "*we appreciated the seriousness of the counsellor in following-up, taking feedback from staff; the counsellor was involved in checking on all aspects of quality and delivery*". This appreciation translated into positive customer satisfaction levels gauged through surveys.

31. While the project's results framework specified a numerical target for capacitated local counsellors, the Project Document outlined an intention to engage and skill up primarily junior counsellors, with 1 junior assigned to each cluster/company sub-group[10], to total 14 junior TQM counsellors and 2 juniors on environmental management/cleaner production. Most of the 15 local counsellors engaged were superannuated (age 65+), drawn from relatively senior ranks of the Indian vehicle manufacturing sector (seen to provide the legitimacy to engage with top leadership of target beneficiaries to convince them to join/continue in the program. However, this profile put them far away in professional background and age from the young shop-floor workers, who were a key leverage point for driving improvement. Only a couple of juniors appeared to have been identified and capacitated under the project. This approach has implications for the institutional sustainability of the project's results (¶92).

32. The extremely well-prepared and well-executed study tour to Japan was a valuable instrument for changing mindset, which research shows is the most effective level of intervention with the power to totally transform a system. Described as "*a big eye opener*", the study tour influenced the way that the participating counsellors and company staff subsequently looked at Indian operations, implanting new ways of imagining the world and paving the way for faster adoption of the best practices underlying the UNIDO-ACMA methodology.

[10] Project Document, pg. 16

33. The project supported the development of materials for the UNIDO-ACMA methodology and a more advanced RECP approach. However, there was limited success in building the capacity of a subset of counsellors on RECP, introduced in 10 sites. While trained and exposed to best practice examples, there was insufficient opportunity for them to develop understanding on how to adapt the knowledge into different contexts, explained as, "*RECP is not a question of employee involvement; it's about understanding and ownership by company management; it's an internal business strategy. It takes 5-6 years to learn how to apply RECP. The counsellors and companies see improvement through RECP, but then they fall back into old patterns*".

Outcome 2: A broad range of Indian automotive component manufacturers in target clusters/localities will apply state-of-the-art methodologies for process, productivity, environmental and social improvement, and become more resource efficient, productive, and competitive in the marketplace.

34. Table 7 details the status of the programmed outputs aimed at achieving this outcome, together with an assessment regarding their achievement.

Table 7: Summary of the Project's Success in Producing Outputs under Outcome 2

Target beneficiaries have applied relevant methodologies with gains in resource efficiency, productivity and competitiveness		
Target/Indicators		*Assessment and Status as at March 2018*
- # of local automotive component suppliers with documented continuous improvement processes in place (target: increase of 10% at Tier 2 level – OEM supply)		*Over-Achieved (in number of engaged firms, by 27%)* The results achieved by 152 auto component suppliers were documented and assessed 5 local experts/partner institutions for project implementation were identified
- # of local automotive component suppliers that show improvements of key performance indicators covering all planned dimensions (e.g. stock turnover, delivery schedule achievement, value added per person, labour productivity, accident frequency, absenteeism, equipment effectiveness, floor space utilization, operational cost savings, defects per million, energy consumption /savings, emissions reduction, waste reduction) (target: 120 firms)		*Over-Achieved* 152 local auto component suppliers were assessed and show improvements against defined KPIs (stock turnover, delivery schedule achievement, value added per person, labour productivity, accident)
Outputs	*Target/Indicators*	*Assessment and Status as at December 2017*
New target clusters have undergone a mapping/ baseline assessment including determination of partner institutions for participation in program (Output #2 in logframe)	- # local automotive component suppliers and clusters/groups assessed (target: min. 5 groups) - # of local experts/partner institutions determined for project implementation (target: at least 1 institution per group/location)	*Achieved* 5 local automotive component suppliers and clusters/groups were assessed 5 local experts/partner institutions for project implementation were identified
Selected clusters/supplier companies receive continuous assistance over a 24-month period and apply the above-mentioned methodologies to their production and skills development processes (Output #5 in logframe)	- Increase in # of companies with documented continuous improvement processes in place after project finalization (target: 120 firms) - Increase in # of companies showing KPI improvements (value added per person, stock turnover, delivery schedule achievement, labour productivity, accident frequency, equipment effectiveness, floor space utilization, operational cost savings, defects per million, energy savings, waste reduction after counselling cycle (target: 120 firms)	*Over-Achieved* 152 companies have documented continuous improvement processes in place after project finalization *Over-Achieved* 152 companies showed improvements of KPIs (as above, with respect to stock turnover, delivery schedule achievement, value added per person, labour productivity, accident)

35. The project built on concepts and structures already established in the companies (e.g. red tag analysis, Kaizen, Zone Structure) and can be credited, through the support of local counsellors and the provided roadmaps, with enabling company staff to leverage their value in a way that previous interventions had not achieved. Company respondents and counsellors alike attributed the bulk of improvements to employee engagement and culture change: "*The culture that has been built makes operators feel more responsible for their machines and areas, and this leads to productivity improvement, which is supported by recognition/awards. This programme helped to put a focus on things that were previously overlooked*".

36. The feedback from customer satisfaction surveys showed appreciation of improved workforce morale and process ownership, aesthetic changes in the plant, and improved organisation (e.g. tools). The programme's content was deemed especially useful regarding issues related to quality management, 5S, and productivity improvement.

37. The Supplier Impact Assessment Report[11] indicated that the project had made an important inroad in improving ACMA firms' total cost competitiveness profile (although still behind comparators). While improvements were observed, further efforts in the areas of quality, people management, and value chain stock were identified as the most significant area for further gains, which are needed to move the target beneficiaries towards the lean performance that is needed to meet increasingly tougher customer requirements.

Outcome 3: Partnership programme is deepened and extended through consolidation of the institutional set-up, expansion of the UNIDO-ACMA methodology, and the extension of the pool of well-trained national experts and counsellors.

38. Table 8 details the status of the programmed outputs aimed at achieving this outcome, together with an assessment regarding their achievement.

Table 8: Summary of the Project's Success in Producing Outputs under Outcome 3

Consolidated institutional set-up facilitates upscaling of local counsellor capacity and enhanced application of UNIDO-ACMA methodology		
Outputs	*Target/Indicators*	*Assessment and Status as at December 2017*
The programme's progress and effectiveness is assessed on a continuous basis **through a well-defined M&E framework** (Output #1 in the project's logframe)	- Availability of M&E system - # of baseline indicators and figures defined (target: 10-15 core indicators) - # of indicators tracked over the programme implementation (target: 10-15 indicators) - # of firms/institutions covered by the M&E system (target: 120 firms)	*Overachieved* M&E system has been established and is running 23 baseline indicators have been defined 23 indicators have been tracked throughout programme implementation 152 firms and institutions are covered by the M&E system
The effectiveness of the Partnership Programme has been rigorously assessed against	- Benchmarking methodology has been developed and the assessment scheme established. - # of firms benchmarked throughout	*Achieved and very positively evaluated* Benchmarking methodology has been developed and assessment scheme established *Overachieved*

[11] Undertaken by B&M Analysts (Nov 2017). Regarding **Cost Competitiveness**: Positives: Overall cost competitiveness profile of ACMA firms improved by 13.3%, notably from improved quality (i.e. customer returns), HR (absenteeism, overtime), inventory (mainly finished goods). Negatives: Despite improved cost competitiveness position, performance remains behind that of Thailand, South Africa, and US firms; the areas where ACMA firms have made notable progress (quality, inventory, HR) remain areas of notable disadvantage, despite the improvement. Regarding **Productivity**: Positives: progress, albeit limited, is evident, supported by healthy CAPEX, training and commitment profile. Negatives: value-added levels per employee for ACMA firms remains far lower than for relevant comparators, although this should be viewed in context of relative labor costs. Absenteeism, despite improvements, is still comparatively weak amongst the ACMA firms.

national/international practices, and relevant policy recommendations (for improvement and financing of the programme) formulated (Output #6 in the project's logframe)	the programme and associated benchmarking reports completed (target: minimum of 10) - Availability of policy recommendations submitted to government authorities (target: at least 1 consolidated document submitted)	12 firms benchmarked throughout the programme and associated benchmarking reports completed *Achieved* Submission of Indian Value Chain Development Policy Recommendations, prepared by B&M Analysts

39. According to the above assessments, all 3 outcomes and their underpinning outputs have been achieved, or in some cases, overachieved. In the case of the 10% targeted increase at Tier-2 level-OEM supply (re: Outcome 2), it was not easy to relate the available data to this target due to the over-generalized formulation contained within the results framework and the lack of clarity regarding the comparison (which OEM supply?).

40. One important achievement relates to the fact that the project intended to cover 120 enterprises. In total, 152 companies benefitted from project's support, 27% more than the original target. Given estimates putting the number of Tier-2 enterprises and lower in the overall sector of interest at around 10'000, and the breadth of competitiveness challenges afoot, the question could be raised as to whether this level of impact was ambitious enough.

41. The development of a standardised benchmarking tool that was also applied in this project context to objectively quantify and compare baseline performance to post-intervention impact and international comparators, is seen as an extremely useful approach. The search for underpinning drivers for growth, cost competitiveness and productivity is viewed as having relevance for this project, and beyond. The provision of a benchmarking report as a holistic reference document and capacity-building of high-level officials associated with project oversight to facilitate a robust understanding of the benchmarking methodology, project plan, and how project activities supported programme delivery is seen as a very effective approach.

42. The inclusion of policy recommendations contributed to positive ratings on effectiveness and project design (¶65). On the one hand, it was heartening to discover that these policy recommendations were developed in the context of baseline and impact assessment findings and offered in light of beneficiaries' operation in a global supply chain. On the other hand, the strong focus on assessing participating firms' performance improvements led primarily to recommendations related to optimising design of the subsequently envisaged project, already in development at the time of the TE, with less apparent reflection made on the wider and broader policy implications drawn from the results and lessons learned of the current project.

43. In summary, all envisaged outputs and outcomes were achieved, at times over-achieved driven primarily by the over-achievement on the target for the engaged enterprises (152 versus 120). This is an excellent contribution with respect to "effectiveness".

The rating for project effectiveness is "highly satisfactory"

2.2 Progress Towards Impact

2.2.1 Behavioural Change

44. Development organisations are increasingly asked to provide evidence-based impact for their interventions. UNIDO has pragmatically addressed this request by focussing on 3 impact dimensions: economic performance, safeguarding environment, and social inclusiveness. Accordingly, the Project Document identified social and environmental (including climate change) risks that might prevent the project's objectives from being achieved. These risks were

evaluated (rated) and suitable mitigation measures were proposed from the outset.

2.2.1.1 Economically Competitive - Advancing Economic Competitiveness

45. Regarding economic performance: India's auto component industry is considered to be one of the country's most competitive sectors. Firms face stringent controls on product cost, quality and delivery from higher tier customers and OEMs as well as competitive pressures from players in the unorganised sector, making economic performance improvement a top priority.

46. SMEs interviewed by the Evaluation Team confirmed that they have realised direct economic gains through their participation. These gains can be confidently attributed to their implementation of improvement measures following the UNIDO-ACMA methodology. Most companies achieved shop floor improvement in terms of waste minimization, better capacity utilisation, better quality and delivery performance, and higher employee productivity. Additionally, the interviewed companies expressed gains on their employees' capability and confidence levels towards taking up newer performance targets and self-dependence.

47. Companies recorded their economic gains in terms of sales growth, higher profit margins, saving in manufacturing overhead costs through various improvement measures implemented within their operations and the same were shared internally to motivate the workers and management staff. As shared by the companies, these economic gains directly helped the participating companies in improving their competitiveness and thereby achieving more business with their existing customers, as well as in acquiring new customers. In some firms, a portion of economic gains were shared with employees and resulted into higher retention.

48. These qualitative remarks were triangulated with preliminary impact findings from 35 participating firms (2016 Mid-Term Review Report) and 2017 impact data available from the sampling of 78 firms[12]. Findings regarding growth, productivity, and cost competitiveness were reviewed. The evaluation team took note of their description that these were "*impressive outcomes in a range of areas, given the limited timeframe of engagement at enterprise level*".

2.2.1.2 Environmentally Sound - Safeguarding Environment

49. With respect to environmental safeguarding: the project contributed to this aspect by encouraging and supporting target beneficiaries to improve their resource efficiency through the adoption of globally-accepted best practices. Most of the interviewed companies pointed to waste minimisation achievements through better material utilisation within their production process and improved shop floor organisation and documentation.

50. Additionally, under the project, a select group of 10 companies were engaged in implementing RECP, supported by an international consultant and a subset of ACMA Counsellors who were exposed to RECP practice. The participating companies were guided towards implementing measures to reduce energy use and energy costs. Through implementing RECP, the participating companies increased their awareness about how to safeguard the environment and apply "green" industry measures within their operations.

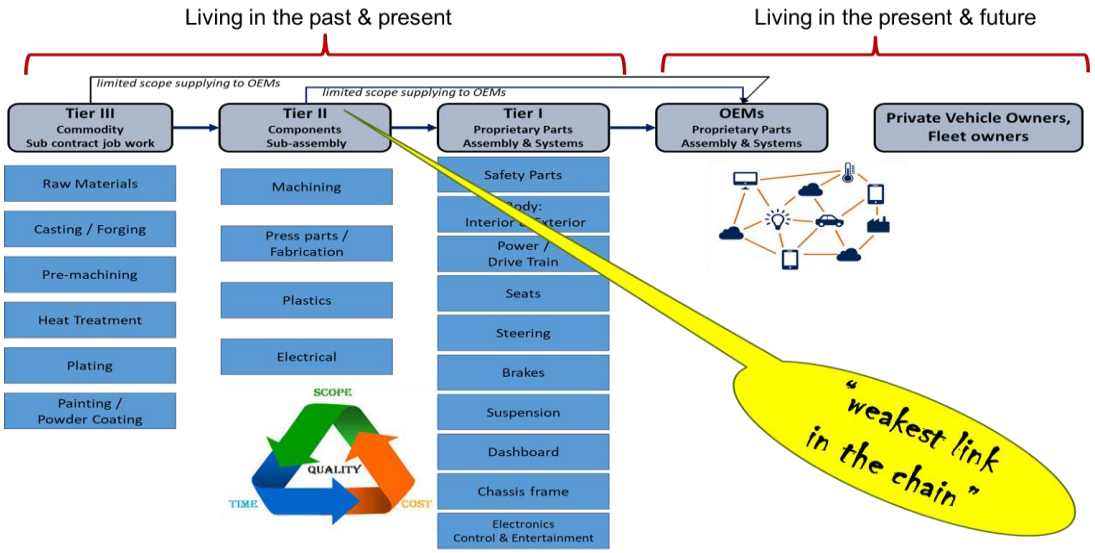
2.2.1.3 Socially Inclusive - Creating Shared Prosperity

51. Regarding social inclusiveness: the project was designed to enhance the performance of local SMEs to ensure their sustainable inclusion in domestic and international supply chains, with a

[12] Benchmarking Study undertaken by B&M Analysts, submitted to UNIDO-ACMA in March 2018, building on Supplier Impact Assessment Report for Phase 1 (November 2017).)

follow-on impact of expanding/sustaining higher levels of employment, production and exports, eventually contributing to income generation and broad-based development. This programme architecture underpins the notion of creating shared prosperity. Participation was open to ACMA members and non-members. Furthermore, as the project specifically targeted Tier-2 suppliers, described by respondents as "the weakest link in the chain" (see Figure 5), the social inclusiveness aspect of the project is strengthened.

Figure 5: Value Chain within the Indian Automotive Component Manufacturing Sector



52. The project exposed participating SMEs to Occupational Health and Safety/Social Standards in the workplace, thereby contributing in a small additional way to social inclusion.

53. Within the TE's resources and scope, it was not possible to look into the inclusion of socially disadvantaged groups, which represents a further dimension to gauge social inclusiveness. A perspective on gender mainstreaming is included under Section 3.3.

2.2.2 Broader Adoption

2.2.2.1 Mainstreaming

54. With respect to mainstreaming, the project architecture contained one deliverable related to incorporating information, lessons, or specific results into the country's laws, policies, regulations, and programs. As already mentioned (¶41), policy recommendations were included as part of the benchmarking report. Given that the report was only available at project closure (March 2018), presumably its insights and recommendations would need to be taken up in a subsequent phase.

55. Regarding the development of the SME sector, India has various support programmes operated by a variety of government departments and agencies. Under these schemes, which provide financial assistance to SMEs to implement modernisation initiatives, there is a mainstreaming opportunity for developmental initiatives that target the SME sector. For example, the National Manufacturing Competitiveness Programme's Lean Manufacturing component has a fair overlap, which seems to so far not have been recognized and leveraged by the UNIDO-ACMA project. In its inquiry with key stakeholders and beneficiaries, the Evaluation Team could not find any initiatives by the project towards linking and utilising the financial support under the Lean Manufacturing programme for the target beneficiary SMEs.

2.2.2.2 Replication

56. Looking to replication, referring to previous activities undertaken within the context of the UNIDO-ACMA Partnership Programme (see Table 2), the current project represents an important step in reproducing activities in further regions, moving from 40 companies in 4 regions (covered under 2002-2004 activities) and 76 companies in 12 clusters (under 2004-2010 activities), to the 152 SMEs in 25 clusters that implemented improvement activities (2014-2017).

57. The success stories generated by this set of beneficiaries, backed up by the Benchmarking Report's findings related to growth, productivity, and cost-competitiveness (¶48), should constitute a viable replication mechanism. Given the legacy of previous phases of the UNIDO-ACMA programme, the likeliness for replication could be expected to be high. However, the Evaluation Team found that many of the interviewed beneficiaries were obliged to participate by their customers higher up in the supply chain and/or seemed to require a lot of persuasion and follow-up to join the performance improvement initiative. Looking at the UNIDO-ACMA methodology and its implementation, the question needs to be asked: in which way do target beneficiaries evaluate its benefit-to-cost ratio, the simplicity and compatibility of the offer; are there possibilities to trial and observe? If each of these five aspects are in place and positively perceived, the likelihood of adoption is very high[13].

2.2.2.3 Scaling-up

58. The project had an explicit objective to scale up in so far as that one of its core objectives (¶0) was to expand the outreach of the UNIDO-ACMA Partnership Programme. Scaling up, in the sense of "expanding, adapting and sustaining successful policies, programs and project on different places and over time to reach a greater number of people" could be seen, albeit in a limited way, through the project's replication efforts (¶56).

59. Outputs #2 and #4 (refer to Table 7 and Table 6) specifically directed the project to identify potential partner institutions and engage and build the capacities of representatives from business support and educational/training institutions, respectively, which would presumably have the capacity to organise and facilitate training on the enhanced UNIDO-ACMA methodology, following project closure. As the main implementation partner, ACMA has its own institutional set-up to reach out to its 800+ member SMEs with the project's methodology to implement a systematic improvement agenda and is thereby well-positioned to support scaling-up aspects based on the foundation laid by this project. However, outreach to institutions beyond ACMA appeared to be limited. Indeed, the framing of Outcome 3 to focus wholly on deepening and extending the Partnership Programme (¶68) seems to have backgrounded the priority on identifying additional disseminating mechanisms and linkages.

60. The project did a good job in terms of addressing the three impact dimensions identified by UNIDO to support behaviour change, which relate to economic performance, safeguarding environment, and social inclusiveness. In mapping the project's outcomes (and their underpinning outputs and activities) against a framework for identifying leverage points within a system[14], it was found that these variously touch on Operations, Management, Policy, and

[13] Drawn from Everett Rogers' seminal work, *Diffusion of Innovations* (1963) who identified 5 stages of the adoption process: Knowledge, Persuasion, Decision, Implementation, Confirmation https://en.wikipedia.org/wiki/Diffusion_of_innovations

[14] This conceptualisation was developed by CAPRESE (Ms. Joyce Miller and Eli De Friend, 2016) in a Green Paper on Scaling Up of MED TEST II Activities for European Union, UNIDO, SwitchMed Networking Facility, utilised in framework of SwitchMed programme implemented by UNIDO and Sustainable Consumption and Production Regional Activity Centre (SCP RAC) https://www.unido.org/sites/default/files/2016-06/SwitchMed_MED_TEST_II_Scaling_Up_Green_Paper_EN-1_0.pd

Mindset. Given the scale of challenges faced by the target sector, more work is needed to strengthen the foundation for mainstreaming, replication, and scaling-up that would foster broader adoption and use of the enhanced UNIDO-ACMA methodology.

The overall rating for progress towards impact is "satisfactory"

3 Project's Quality and Performance

3.1 Project Design

3.1.1 Overall Design

61. The project was built on three substantive components and intended to engage 120 firms within its current phase: 1) enhancing the performance of domestic SMEs to meet supply chain requirements for quality, cost, and delivery, OHS, energy efficiency, environmental management standards; 2) enhancing the sustainability of the Partnership Programme through consolidating the institutional set-up, expanding the UNIDO-ACMA methodology, and extending the national experts/counsellors resource pool; 3) expanding the outreach of the Partnership Programme to upgrade an increasing number of target companies, including lower tier suppliers. From a design point-of-view, in light of the arguably modest achievements wrought over the previous 15 years (see Footnote 9) and the magnitude of the upgrading task at hand (¶7), a question regarding the level of the project's ambition could be raised.

62. The project design implies a special purpose vehicle, described as "a joint venture between the public sector and the companies it is designed to service". Such a model is difficult to implement. The Project Document acknowledged this in its risk assessment, identifying a delay in implementing the envisaged partnership approach between UNIDO, ACMA, and various private- and public sector actors as a "medium risk". Mitigation measures were mentioned. Presumably these were included in the project's activities, but these could not be easily traced.

63. By design, the project focussed on the expansion and sustainability of the partnership programme between the two executing partners, integrated into the core objectives. From the design side, this created a risk that opportunities to meaningfully engage with other partners to extend the pool of trained national experts and counsellors, as foreseen in the Project Document (¶4) would be overlooked. Likewise, with such a formulation as part of the design, an "exit strategy" for the implementing partners was evidently not considered or specified.

64. The Project Document indicated that there would be close coordination between UNIDO and ACMA; however, the design did not explicitly make links with other UNIDO projects (e.g. RECP Programme, RECP*net*) or relevant initiatives of other development actors (e.g. GIZ, EU) and the Indian government (e.g. Skill India), which could be leveraged as dissemination channels to enhance sustainability of results. While one deliverable was linked to policy, its format was not necessarily designed to support the mainstreaming of the project's results into ongoing policy discussions within the current project's operating timeframe.

65. The project was adequately resourced to pursue its objectives, a suitable steering and governance structure was foreseen (¶6) together with a component dedicated to M&E under UNIDO's lead responsibility, with the aim of ensuring effective project implementation. The project drew additional design strength from the concept of using Monthly Review Meetings with participating companies and key stakeholders to discuss progress and ongoing challenges.

The rating for overall design is "satisfactory"

3.1.2 Logframe

66. A standard results framework was utilized and was adequately described within the Project Document. The results chain had a logical sequencing. Outputs were stated and suitably backed up by relevant sets of activities (¶5), with broad timelines for implementation and responsibilities clearly indicated amongst the various actors and implementing partners (see Table 3). In this respect, the outputs could be expected to produce the envisaged deliverables.

67. The project's logframe mentioned indicators for the outcomes and outputs, specified targets, and documented various means of verification. Assumptions underpinning the delivery of the outcomes and outputs were also mentioned, complemented by a risk assessment for the overall endeavour, including mitigation measures. This format represents good practice.

The rating for the logframe is "satisfactory"

68. In summing up the above analysis, the project's design incorporates important elements that offer strength. While the logframe was coherent and sufficiently detailed, the design was relatively inward-focussed on the institutional partnership and thereby missed out on aspects that could have oriented the implementing team towards looking to outside actors as sources of collaboration, inspiration, and partnership in the pursuit of its objectives. Combining these aspects has a resulted in a "satisfactory" assessment of overall project design.

The overall rating for project design is "satisfactory"

3.2 Project Performance

3.2.1 Relevance

69. In so far that quality, cost, delivery occupational health and safety, resource efficiency, cleaner production and environmental management standards have been identified as important engines and instruments to deal with the challenges of operational improvement and achieving zero defect to meet increasingly demanding supply chain requirements, the project's purpose is fully consistent with global, regional, and national development needs and environmental priorities. The project makes a pertinent contribution to the Paris Agreement and Millennium Development Goals (MDGs)[15]/Sustainable Development Goals (SDGs), which embody the world's commitment to safeguarding the global commons.

70. The project is fully aligned with the donor's priorities. The project's relevance was emphasized in discussions with MoHI/DHI in relation to this evaluation as well as in Steering Committee Meetings (SCMs). This initiative was in line with India's national interests to increase sustainable economic development, and open regional cooperation and trade. The project supported the national government's priority to increase the competitiveness and size of India's automotive sector, embedded within its Automotive Mission Plan (2016-2026). The Report of the Working Group on Automotive Sector for the 12th Five Year Plan (2012-2017) specifically mentions the envisaged process and productivity improvements under the UNIDO-ACMA programme as one of the government's key interventions and underlines the relevance of this intervention.

71. In this light, the project filled a crucial gap through the provision of services to lower tier

[15] The Project Document describes its contribution to MDG 8 (Global Partnership for Development), MDG 7 (Ensure Environmental Sustainability) and MDG 1 (Eradicate Extreme Poverty and Hunger)

component manufacturers, who typically lack sufficient resources and were characterised by many respondents interviewed as "*the weakest link in the chain*". Project support was designed to help them overcome challenges related to low productivity and insufficient/inconsistent quality. While much attention on Skill Development was channelled through other programmes, this project brought in a missing aspect related to improving productivity to become more efficient, reliable, cost-effective suppliers.

72. Respondents in visited factories described the value of the program in terms of "*giving a systematic approach*" and "*they remind us of key, important practices*". Another representative perspective comes from an interviewee within a Faridabad-based supplier: "*We joined the programme to learn what's going on outside. Continuous improvement is ongoing. We have many different facilities, so we get lost sometimes...this is for our own improvement. We appreciate that the counsellors and mentors devote time to find the problems and bring other perspectives. It's really important to have this fresh perspective*".

73. The project draws on UNIDO's longstanding experience in India's automotive sector and other clusters through which the organization has acquired deep understanding of the Indian context and established a relevant network of technical experts and collaborating institutions. This project is well-aligned with UNIDO's mandate for Inclusive and Sustainable Industrial Development, which is reflected in the project's purpose to improve employment opportunities for people in the regions where the targeted clusters are located. UNIDO has drawn on relevant experience in implementing similar automotive cluster support programmes in Russia, South Africa, and Serbia.

74. Under this project, UNIDO was able to leverage its Resource Efficient and Cleaner Production (RECP) knowledge and international network of technical experts to support Indian SMEs in implementing measures to address challenges brought about by evolving market conditions and improve their competitiveness vis-à-vis cost, quality, delivery, and engineering know-how. According to UNIDO respondents in the evaluation, its upcoming Country Program is expected to have a high focus on productivity and resilience for SMEs. Consequently, subsequent phases of the current project will become even more relevant in the future.

75. Given that the project was highly pertinent to global/regional/national priorities, the target group's needs, national (donor) priorities, and UNIDO's mandate, competences, and strategy for inclusive and sustainable industrial development[16], the project is assessed as highly relevant.

The rating for relevance is "highly satisfactory"

3.2.2 Efficiency

76. The project underwent a 1 year "no cost" extension upon the decision of UNIDO, ACMA, and MoHI/DHI. Hence, the budget planned for a 36-month project was stretched over a 48-month period. While acknowledging that the project exceeded its planned timespan by 33%, the originally allocated resources were used to deliver more services than initially imagined in that 152 enterprises (27% above target) were engaged and benefitted from project support.

77. The project included a cost-sharing mechanism, arguing that "willingness to pay for a service

[16] The combination of technical (business assistance), policy review/support, and capacity-building is seen as a winning combination for promoting private sector development and expanding private sector engagement in meeting national commitments of international environmental conventions and agreements (e.g. UNFCC)

shows a firm's commitment to the improvement process" and that "a fee attaches a value to a service and will lead to a higher esteem"[17]. Such a notion would, in principle, add to the project's efficiency rating, as private sector contribution was to be used as a means to cover national expert/counsellor expenses and local travel costs. While noble intentions were outlined in the Project Document, these seemed less feasible in implementation (¶122).

78. The project teams of UNIDO and ACMA were embedded within existing facilities, which provided valuable efficiencies in terms of access to infrastructure as well as facilitating regular contact with other institutional activities to explore and leverage potential synergies.

The rating for project efficiency is "satisfactory"

3.2.3 Sustainability of Benefits and Results

79. The Project Document did not mention an exit strategy. While not a formal requirement at the time of design, current good practice puts priority on this aspect from the outset. The Mid Term Review (2016) pointed out the need for a clear exit strategy and HR strategy for the local counsellors to assure the sustainability of project results. The extent to which preparatory steps in this direction were undertaken during the project's remaining tenure was not clear.

80. Given that Phase II of the current project was already conceived in the context of the ongoing UNIDO-ACMA partnership programme (see Table 2) and a Concept Document was in its final stage at the time of this evaluation, it seems fairly certain that an arrangement will be put in place for continuing activities, which, in the absence of an established exit strategy, will be key to assuring the probability and continuation of benefits following project closure.

81. The proposal for the foreseen Phase II extension/expansion of the programme was approved by MoHI's Additional Secretary Mr. Anshu Prakash during the 3rd SCM (April 2016), by MoHI's Joint Secretary in the 4th SCM (Nov. 2016), by Mr. Vishvajit Sahay(July 2017) in the 5th SCM. Normally, such early and repeated approvals would bode well for assuring the programme's continuation and sustaining its results. To date, the funding has not yet been confirmed.

82. The overall rating for sustainability of benefits and results is "moderately likely". This rating is based on a review of the project's financial risks, socio-political risks, institutional framework and government risks, and environmental risks, as reviewed in more detail below.

3.2.3.1 Financial Risks

83. Private sector participation through fees was included in the project's design (¶77). A range of services were to be provided by ACMA counsellors, supported by training materials and roadmaps, linked to a service cost to be charged to an individual company (see Table 9). It appeared that a limited number of services (if any) were taken up by the participating companies, beyond the Preparatory Cluster Level 1. Such a low level of uptake has serious implication for the financial sustainability of the program and the sustainability of its results.

Table 9: Fee-Based Services to be Provided by ACMA Counsellors

#	Service	Description	Duration	Cost per Company (as of Feb 2016)
1	Preparatory Cluster (Level 1)	Basic inputs	12 months (1 visit / month)	Rs. 65'000-125'000

[17] Project Document, pg. 21

2	Advanced Cluster (Level2)	Lean Manufacturing inputs	12 months (15-18 visits)	Rs. 125'000+
3	Yield Improvement / Resource Efficiency	Input resources including raw materials, consumables, compressed air, electricity, multiskilling/versatility. Output data to monitor efficiency parameters, etc.	9-12 months	Rs. 75'000
4	Waste Elimination	Training inputs on 7 wastes, identification of wastes in all areas, elimination projects	6-9 months	Rs. 50'000
5	Projects for Improvement	Covering all functional areas: identification of problem areas, problem-solving tools and techniques	2 months of inputs and identification, then periodic visits	Initially Rs. 30'000 followed by Rs. 10'000 per visit
6	Cost Sensitivity	Elements of cost, cost versus price, zero-based costing, activity-based costing, product costing, etc.	6-9 months	Rs. 95'000 for non-ACMA members
7	Management Systems / Sustenance	Dynamic Waste Management (DWN), KPIs, target setting, monitoring, reviews, etc.	3-6 months	Rs. 10'000 per visit
8	Level II for SMEs (tentative)	Sustenance Management, Waste Elimination, Productivity, Inventory Management, Quality Management, Safe Work Environment, Visual Factory	12 months	No price (yet) set for these services, which were envisaged for inclusion in Phase II
9	Foundry specific program	Process, cost, yield, rejections, etc.	12 months (18 visits)	
10	Performance sustenance, management of continuous improvement	Daily work management, monitoring, reviews, target setting of KPIs, continuous improvement culture, etc.	3-6 months (with need-based visits)	Initially Rs. 30'000; Rs. 10'000 per subsequent visit
11	Projects-Improvements (Quality, Productivity, Inventory, Wastes)	a) Training inputs on all functional areas b) Periodic visits to identify problem areas, problem-solving tools, techniques, results	6 months of training inputs/identification, then periodic visits	Initially Rs. 30'000; Rs. 10'000 per subsequent visit
12	Rubber / Plastics specific program	Process, cost, yield, rejections, etc.	12 months (18 visits)	Still to be decided

84. The Evaluation Team found evidence that the participating firms and buyer enterprises indeed appreciated the benefits of improvement measures undertaken by their supplier SMEs under the context of the UNIDO-ACMA project. While the Project Document indicated that Tier-1 and Tier-2 component manufacturers must begin to support or better manage lower tier structures and capabilities, there appeared to be little willingness on their part with respect to coming forward with adequate co-financing of continuous improvement initiatives (¶123). The absence of an exit strategy (¶79) may be a factor in the backgrounding of discussion to seriously strengthen private sector contributions.

85. Although the Phase II proposal was submitted several times and it has been foreseen from the outset that the current project would consist of three phases, at the time of this evaluation, the funding had not yet been committed from the side of DHI. This project constitutes a very small financial impact within DHI's overall portfolio, which could be expected to be an advantage for securing commitment. However, a high level of organisational turnover combined with time delays associated with bureaucratic procedures increases the risk that expected funding to facilitate a seamless continuation of benefits will not be materialised as soon as the current phase is completed.

86. This situation risks repeating an earlier scenario, following the end of the 2004-2009 programme, when the anticipated funding did not come through and the significant capabilities that had been developed on the part of the counsellors and the momentum that had been built amongst the participating companies was lost.

The rating for financial risks is "moderately likely"

3.2.3.2 Socio-Political Risks

87. Although largely beyond the control of the Project, its implementing partners, and other key stakeholders, socio-political stability has a direct link to positively influencing the realisation of the project's intended impacts. While it was reported that there is regularly a high level of organisational changes in government agencies, which presents a challenge for continuity, key strategy documents of Indian government institutions stress the importance of sustainable economic growth. In this light, the project makes valued contributions through regional and cluster development. The project also supports better functioning SMEs, which is a tangible support for the government's Make in India campaign (¶6) and the Zero Defect Zero Effect (ZED) initiative launched by the Ministry of Micro, Small, and Medium Enterprises in 2014.

88. The social inclusiveness of the project whereby participation was open to ACMA and non-ACMA members alike (¶51) is another factor that lessens the project's socio-political risk.

The rating for socio-political risks is "likely"

3.2.3.3 Institutional Framework and Government Risks

89. The sustainability of the project's results can be gauged by looking at the extent to which it identified and worked with institutional structures that would retain the knowledge and skills developed under the project. Given ACMA's apex role within the Indian auto component industry (¶104), involving ACMA as the key local executing partner provided significant strength in terms of anchoring the institutional framework. Several other contributing elements are worth noting: engagement of a National Programme Coordinator employed by UNIDO; establishment of a material repository within ACMA; organisation of regional/national exchange amongst local counsellors; and the project is linked to ongoing supplier development initiatives, many of which are carried out under the ACMA umbrella.

90. Under UNIDO's lead responsibility for M&E (see Table 3), standardized reporting templates were developed. While these were used by ACMA and the counsellors, it was not clear to the Evaluation Team how this design and division of responsibilities would adequately equip ACMA itself to design and implement a structure to support knowledge management purposes (¶112), which is a factor for assuring the sustainability of the institutional framework.

91. Taking up its assigned responsibility, ACMA identified 15 local counsellors whose capacities were built and/or further strengthened to organise/facilitate training on the enhanced UNIDO-ACMA methodology. The conditions under which these consultants are engaged, in the Evaluation Team's view, may represent a risk factor for sustaining results. To guarantee continuing access to their skills/knowledge, an ongoing contract is needed; it is immaterial as to whether this is an employment contract or a service maintenance contract whereby a certain amount is provided per annum to be available to consult and deliver services. In an employment relationship, the employer has a legal obligation to maintain the relationship with the employee; a retainer contract with an external supplier may not be regulated so rigorously. This does not guarantee that the employer-employee relationship will serve the talent- and knowledge-management needs of ACMA any better than a relationship with external suppliers, but there is a stronger chance of this happening in such a context.

92. As mentioned, the counsellor pool, composed of primarily superannuated gentleman, has an average age of 50 years (¶31). Respondents mentioned having a 3-year time horizon for their engagement, ahead of full retirement. Despite their high level of motivation and engagement in the programme, the Evaluation Team would question the sustainability of continuing with such a strategy and profile of the key resources for upscaling and moving forward.

93. By design, the project focussed on deepening and extending the partnership between the two executing parties. Accordingly, there was a strong focus on institutional engagement with ACMA. The risk highlighted in relation to project design (¶63) materialised in that opportunities to meaningfully engage with other partners and institutions, beyond ACMA, to extend the pool of trained national experts and counsellors, were neglected (¶107).

94. In the project's final months, meetings were organised with other entities (Automotive Skills Development Council, Economic Development Board of Government of Andhra Pradesh), which appear to show a realisation of the need to strengthen the project's outreach to assure the use and sustainability of project results.

95. The project steering structure was constituted by relevant actors and had high legitimacy; however, it appeared to function more like an executive review mechanism and missed out on the opportunity to provide meaningful and substantive steering and guidance. At the time of the evaluation, no SCM had been convened since July 2017 (¶116).

The rating for institutional framework and government risks is "moderately likely"

3.2.3.4 Environmental Risks

96. The activities supported under the project are aimed at operational improvement and achieving zero defect, seen as highly relevant for the target group and fully fitting the priorities of the national government, e.g. ZED (¶70, ¶87). Project activities inherently lead to improvements in resource efficiency and the reduction of waste and GHG emissions.

The rating for environmental risks is "highly likely"

97. In summarizing the project's overall sustainability of benefits: awareness and positive perceptions of relevant stakeholders confirm the project's potential to spread the concept to further enterprises in the sector. However, the resources for sustaining the project's results and benefits beyond the current funding phase have not been confirmed and aspects related to the institutional framework need to be strengthened to assure the continuation of long-term benefits and resilience.

The rating for sustainability of benefits is "moderately likely"

3.3 Gender Mainstreaming

98. The UN has a mandate to address human rights and gender equality in all interventions to promote social justice and equality[18]. Beyond any general information and resources available to all UN staff, it was not clear whether any staff awareness-raising and capacity-building initiatives were undertaken that could have given the Project Team specific tools and strategies through which gender could be mainstreamed in project implementation.

99. Although the Project Document did not mention gender mainstreaming, one of the criteria used to select the 10 factories for the Evaluation Team to visit related to those having relatively larger gender equality (¶26). It was observed in these factories that women had been offered suitable jobs and were appreciated for their capabilities and performance. There were several instances where women had received awards (e.g. Best Inspector), and had been appointed as Zone Supervisor, which qualified them, alongside men, for further capacity-building and positions of shop floor leadership within their respective factories.

[18] Guidance Document: Integrating Human Rights and Gender Equality in Evaluations, UN Evaluation Group, Aug 2014, pg19

The rating for gender mainstreaming is "satisfactory"

4 Performance of Partners

4.1 UNIDO

100. As one of the two designated implementing partners, UNIDO held the lead responsibility for the project's design, timely implementation, delivery of planned outputs, monitoring the achievement and evaluation of expected outcomes (see Table 3). UNIDO was also (jointly with ACMA) accountable for other funding resources provided by the private sector. It is judged that UNIDO undertook these duties in a responsible and adequate manner.

101. The participation and reputation of UNIDO was highly valued by all stakeholders. During interviews, UNIDO's co-implementing partner, ACMA, expressed strong appreciation for UNIDO's contributions which have enabled the organisation to strengthen its capacities. Respondents also highlighted the contribution of UNIDO's Project Manager in headquarters in supporting the participating companies, local counsellors, and fostering the adoption of best practices that the project sought to disseminate.

102. Technical backstopping was conducted by experts identified/engaged by UNIDO and included in their ToR. These international experts were perceived as highly competent and their support was highly appreciated, which reflects very well on UNIDO's performance in the project.

103. On the one hand, there appeared to be a missed opportunity to leverage all the value available from the international experts due to the rigidity of the provided ToRs. Moreover, consciously or unconsciously, there were silos amongst the involved international experts. While contributing their separate parts to the overall endeavour, there was no encouragement to be in communication with each other, which could have enhanced impact. On the other hand, UNIDO's project management and supervisory roles were experienced by other actors as responsive and competent, with the Project Manager and local team described as "responding in a very satisfactory way with information, data, and relevant examples; the inputs that UNIDO brought are valued".

The rating for UNIDO's performance is "satisfactory"

4.2 National Counterparts

104. ACMA is the apex body representing the interests of the Indian auto component Industry with more than 800 members representing over 85% of the auto component industry's turnover in the organised sector. ACMA has been a key partner in the Partnership Programme with UNIDO in India since 1998, and jointly developed the UNIDO-ACMA methodology to support systematic implementation of improvement measures and best practices. ACMA has an institutionalised set-up to provide various support services on continuous improvement and lean manufacturing best practices for their members to enhance growth and competitiveness.

105. ACMA held lead responsibility for identifying/engaging individuals and institutions whose capacities would be built through the project as well as the beneficiary enterprises to be supported with these capacities. ACMA took up its role in a satisfactory manner. It reached out to SMEs from both within the ACMA membership as well as non-members, which enhanced social inclusiveness (¶51). Because of ACMA's credibility in the auto component industry and a long-standing background in professional services, ACMA could over-deliver on the target of engaging 120 suppliers in performance improvement activities.

106. As an association, ACMA operates on a not-for-profit basis. It leveraged this project's support to reach Tier-2 enterprises in a highly subsidized manner and engaged them in shop-floor improvement. These firms were not able to benefit, for the most part, from ACMA's existing services aimed at manufacturing excellence targeted at Tier-1 firms, which are typically larger and could afford to pay.

107. One shortfall observed was that ACMA focussed on developing its own counsellors, with insufficient outreach to engage representatives of business support and educational and training institutions in the cluster locations, so as to build their capacity to organize and facilitate trainings on the enhanced UNIDO-ACMA methodology as well as other methodologies of relevance. The Evaluation Team did not find evidence of the involvement of other relevant institutions, as instructed by the Project Document. Other institutions that could have been tapped include: Quality Council of India, National Productivity Council, Auto Cluster Development and Research Institute, SIAM, Confederation of Indian Industry and its related Centres of Excellence, or certain government agencies (e.g. Office of Development Commissioner in the Ministry of Micro, Small and Medium Enterprises).

108. Balancing these commitments, the strengths and weaknesses on the dimensions described above, the performance of the national counterparts is deemed adequate for its role.

The rating for National Counterparts' performance is "moderately satisfactory"

4.3 Donor

109. Despite internal changes within DHI, there was a timely disbursement of project funds to support the envisaged activities and outcomes. MoHI's financial contribution of USD 2'193'646 and the coordination provided through its Department of Heavy Industry was acknowledged, very appreciated by all stakeholders, and perceived to be highly relevant assistance.

110. Project supervision from the donor side functioned adequately. SCMs took place bi-annually with documented Minutes. The review of these Minutes showed clear interest in the project, with questions designed to spur further reflection and action in the direction of the national government's priorities. The project's Progress Reports and Mid-Term Review were accepted.

The rating for the donor is "satisfactory"

5 Factors Facilitating or Limiting Achievement of Results

5.1 Monitoring and Evaluation

5.1.1.1 M & E Design

111. In terms of design, an M&E plan was prepared with detailed steps defined to provide visibility of the progress of results. A project Progress Report (PIR) framework was drawn up to guide documentation, share progress on outputs and outcomes, and track activities against the work plan approved by the Steering Committee. This approach equipped the Project Team to take corrective measures in case of deviations between the work plan and its implementation.

112. The EXCEL sheet developed for the local counsellors, with 38 indicators, including 23 mandatory KPIs and 15 "optional parameters" is judged to be a highly useful instrument to monitor cluster and individual company performance and feed relevant data into the benchmarking study that allowed for evaluation and comparison of the overall endeavour.

113. SCMs were also designed to function as an M&E device, providing supervision and strategic

guidance. Designed to facilitate information exchange, networking, and peer learning, the Monthly Review Meetings were also designed as an M&E device. A Mid-Term Review and independent TE were part of the project's design, and designed to facilitate reflection, promote discussion regarding content, scope, and resourcing of activities, provide an opportunity for recalibration, and evaluate the project's progress-to-impact and achievements.

5.1.1.2 M & E Implementation

114. UNIDO held the lead responsibility for M&E, which was expected to represent a significant part of its Project Team's workload. It was observed that monitoring was undertaken regularly and diligently. Progress Reports were compiled on a basis that ranged from 5 months to 1 year, structured according to the results framework. This approach served the purpose of formally documenting and communicating the project's progress in achieving its outcomes against the key performance indicators specified in the planning documents. Within this framework, the Project Team carried out self-ratings, with justifications for these assessments, and highlighted risks and potential mitigation measures. Implementation and execution issues were noted.

115. Progress Reports covering the periods of 25 June 2014 to 28 February 2015, 13 March -31 August 2015, 1 September 2015 to 31 March 2016, 1 April -15 November 2016, November 2016-June 2017, July 2017-March 2018 were made available to the Evaluation Team. These reports were clear, detailed, and constituted an extremely useful monitoring instrument.

116. With DHI, ACMA and UNIDO as members, SCMs were convened bi-annually. In all, 5 SCMs were held during the project's implementation, including an ad hoc meeting convened at an early stage which presumably functioned to more regularly inform project stakeholders and build momentum. SCM Minutes for 2015, 2016, and 2017 were available to the Evaluation Team. A next SCM took place in May 2018, the first SCM meeting convened since 3 July 2017, almost a year before the closing of the current phase.

5.1.1.3 Budgeting and Funding for M&E Activities

117. A detailed budget was planned and allocated for M&E activities, which included continuous monitoring of project execution and tracking progress towards milestones. The overall budget of 80'000 Euros allocated for M&E activities followed common practice for this size of a project.

The rating for M & E implementation is "highly satisfactory"

5.2 Results-Based Management

118. The implementing teams in UNIDO and ACMA maintained focus on progressing activities, outputs, and outcomes according to the project's results framework. The M&E system put in place tracked progress on activities, outputs, and outcomes according to the results framework. Information collected on specific indicators throughout the implementation period (¶112) supported results-based management.

The rating for results-based management is "satisfactory"

5.3 Other Factors

5.3.1 Preparation and readiness / quality at entry

119. The project was developed based on lessons learned from the design and implementation of previous activities under the UNIDO-ACMA partnership as well as the broader assessment of

the India Country Service Framework and evaluation of UNIDO's technical assistance projects in India. UNIDO's experience in resource efficient and cleaner production, and with SMEs, combined with ACMA's privileged standing within the Indian automotive component manufacturing industry and its experience in running Tier-1 supplier performance improvement programmes, set the stage for quality and readiness at entry.

5.3.2 Financial Planning

120. The project was financed by MoHI through cash contributions and also benefited from in-kind contributions from UNIDO and ACMA as partners. The overall financial plan summary and its breakdown by outcomes contained within the approved Project Document.

121. At project start, co-financing partners signed commitment letters totalling USD 2'650'000. The planned level of resources and in-kind contributions are judged to be fully adequate to implement the project and support its envisaged outcomes.

5.3.3 Effect of Co-Financing on Project Outcomes and Sustainability

122. At the time of project endorsement, it was foreseen that the private sector would contribute through fees for participation in the training program. The industry contribution was expected to reach an average of 35% over the duration of the project. The foreseen target was not achieved. Respondents estimated that the cost eventually charged to the participating companies represented about one tenth of the financial benefits they eventually reaped.

123. ACMA and the SMEs that benefited from the project acknowledged that co-financing support from the private sector would give a massive boost to project outcomes and their sustainability. This would enhance the significance of the project's 'outcomes and productive value added' for the entire automotive sector and advance its global competitiveness ranking. During field interviews, the Evaluation Team explored possibilities of co-financing from the private sector, both from beneficiary SMEs as well as from the enterprises higher up in the value chain. While the UNIDO-ACMA programme directly helped the beneficiary SMEs in improving their competitiveness to a reasonable extent, it also indirectly supported them in strengthening the competitiveness of the enterprises that are buyers of these SMEs, being further up in the auto component value chain. As already mentioned (¶84), there appeared to be little willingness to extend any support in the form of co-financing of such continuous improvement initiatives.

5.3.4 Implementation Approach

124. The project was managed by UNIDO staff in Vienna, which supervised the Project Team housed in UNIDO's regional office in New Delhi, which had the benefit of providing access to infrastructure. Throughout the project, continuous communication between the Indian government, UNIDO headquarters, the ACMA teams located in New Delhi and Pune, and other involved actors functioned to ensure a smooth and successful implementation.

125. According to the responsibility specified in the Project Document, UNIDO established the planning and M&E system, which assured the project's effective functioning. A results-based management approach was used (¶118). The project particularly benefitted from the recruitment of project management capabilities within the local Project Team, an effective M&E design, and its diligent implementation. The Project Team developed and presented a detailed timeline with relevant activities during the first and subsequent SCMs. The respective workplan and timeline were subsequently endorsed by the SC. Monitoring verified activities. The PIRs were used to document and share information as well as indicate corrective action.

126. The Project Team made efforts to identify, involve, and manage relevant stakeholders through regular information-sharing and consultation. The dedication and collaboration of the implementing teams inside ACMA and UNIDO are recognized as positive contributing factors to achieving the project's outcomes and impact.

5.4 Overarching Assessment and Rating Table

127. Overall, the project's performance is rated as "satisfactory". Strong project management and M&E, suitable financial resources, planning and management, and extremely strong technical backstopping were put in place. While the project is judged to be highly relevant, operated relatively effectively and efficiently, and showed potential for replication, some aspects could nevertheless be reinforced to accelerate scaling up and assure the continuation and resilience of long-term benefits.

The overall rating for project performance is "satisfactory"

6 Conclusions and Recommendations

6.1 Conclusions

128. Regarding the project's **overall effectiveness**: all envisaged outputs and outcomes were achieved, or even over-achieved considering the above-target performance for the number of engaged enterprises (152 engaged versus 120 planned). However, the question needs to be asked: could a significantly higher impact have been achieved from a more open (¶68) and more ambitious approach (¶40, ¶61) that is arguably needed for a project having a core objective to upscale (¶58)?

129. Looking at **progress-to-impact**, the evidence observed confirms that the intervention contains environmental safeguards [project activities enhanced environmental protection by encouraging/supporting target beneficiaries to improve their resource efficiency through the adoption of globally-accepted best practices (¶49)]; supported economic performance improvements [project activities boosted the functioning of Tier-2 suppliers (¶47), the weakest link if the value chain)]; and promoted social inclusiveness [by enhancing the performance of SMEs to ensure their sustainable inclusion in domestic and international supply chains (¶51)].

130. The project's **mainstreaming potential** could have been boosted by linking with institutions, beyond ACMA that target the SME sector (¶55), and by putting more resources and priority on the policy component, and ensuring the involvement of relevant actors and generation of inputs to ongoing policy processes as part of the project's design (¶64).

131. Looking to **replication**: the project successfully reproduced activities in further regions, beyond the predecessor program. Despite compelling case studies available, target beneficiaries nevertheless appeared to require a lot of persuasion/follow-up (absorbing project resources which could have arguably been better used otherwise) to join this performance improvement initiative (¶57), many only doing so at the behest of their customers higher up the value chain. This is a normal process of making changes, especially behaviour changes.

132. The project had an explicit **scaling up** objective and was directed to identify potential partner institutions and engage/build capacities of representatives from business support and educational/training institutions, which would presumably have the capacity to organise and facilitate training on the enhanced UNIDO-ACMA methodology, following project closure. There are nearly 1,000 SMEs in the organised sector of auto component industry and

thousands in the unorganised sector (¶5). In 4 years, the current project was able to cover 152 of these firms with a team of 15 local counsellors and international experts. It is therefore vital to work out a mechanism for replication and upscaling in the design of the next phases of the umbrella UNIDO-ACMA programme that will be needed to mainstream and expand the support to SMEs not yet engaged in this project phase.

133. In terms of **design**: the project was adequately resourced to pursue its objectives, a suitable governance structure was foreseen (¶6), and UNIDO's lead responsibility for M&E was under to ensure effective project implementation. The project's components were linked to the expansion and sustainability of the partnership programme between the two executing partners. While understandable in the context of instantiating the ongoing partnership, this created the risk that meaningful engagement with other partners and institutions to extend the pool of trained counsellors, as foreseen in the Project Document (¶4), would be overlooked. This was to a large degree due to the inward focus built into the project at design level.

134. The project was **highly relevant** for international/regional/national priorities (¶69) and target group needs (¶72) and aligned with the donor's priorities (¶70) and UNIDO's mandate (¶73). The project bridged a gap (¶71) not covered by other mechanisms in that its support was available to lower tier component manufacturers to strengthen this weakest link in the value chain and assure their sustainable inclusion in domestic and international supply chains (¶51).

135. The project **operated adequately from the viewpoint of efficiency**, based on its achievement in stretching the resources originally allocated for 36 months to engage 27% more enterprises than targeted, albeit over a 48-month period, 33% longer than originally anticipated.

136. While reducing **environmental risk** and supporting the Indian government's ambition to achieve ZED and positively perceived by relevant stakeholders thereby generating potential to spread the concept to further enterprises in the sector (¶97), aspects related to the **institutional framework** (¶93) and profile and pool of local counsellors (¶92) should be addressed to assure the sustainability of the project's results. The extent to which the project is linked to other key government initiatives (e.g. Make in India campaign, ZED) would positively contribute to the continuation of its benefits. To sustain the project's results and benefits, the commitment and resources must be clarified for a follow-up phase designed into the current programme architecture as well as for the period beyond the funding of MoHI/DHI.

137. Although the project did not explicitly target **gender mainstreaming**, several of the visited factories had women with suitable jobs appreciated for their capabilities and performance. The project was open to both non-ACMA and ACMA members, and it was designed to enhance their performance to ensure their sustainable inclusion in domestic and international supply chains. The follow-on impact of expanding and sustaining higher levels of employment, production, and exports, eventually contributing to income generation and broad-based development, underpin the very notion of creating shared prosperity (¶51).

138. **UNIDO** carried out its assigned responsibilities (see Table 3) in a responsible manner (¶100). The agency's association with the project was positively perceived and had the result of building valuable prestige and attracting stakeholder interest in and support for the project, as well as contributing key elements related to technical backstopping and support of international experts. **ACMA** adequately played its role as national executing partner (¶108), reaching out to SMEs from both within the ACMA membership base as well as non-members, which enhanced social inclusiveness (¶51) and over-delivered on the target of engaging 120 suppliers in performance improvement activities. Efforts to develop linkages with other

relevant institutions (¶107) and expand the pool of counsellors beyond its own umbrella would strengthen the sustainability of the project's results (¶91). **MoHI/DHI's performance** was satisfactory (¶110). The Ministry's contribution and timely disbursement of funds served to bridge gaps in resources, capabilities and played a catalytic role throughout the project for further development of capacities to foster resource efficiency and enhance prospects for reaching zero defect in the auto component manufacturing sector.

139. An **M&E system** was well-designed, resourced, and implemented and complemented by Steering Committee Meetings and Monthly Review Meetings, which, in addition to generating monitoring data, provided a valuable venue for information exchange and peer learning. The implementing teams within UNIDO and ACMA adopted **results-based management**, progressing activities, outputs, and outcomes according to the project's results framework. The project leveraged UNIDO's tried and tested **implementation approach**. The dedication and collaboration of the implementing teams inside ACMA and UNIDO are recognized as positive contributing factors to achieving the project's outcomes and impact.

140. Overall, the project's performance is rated as satisfactory (¶127). Table 10 provides a summary of the evaluation findings, justifications, and ratings[19].

Table 10: Summary of Findings and Ratings by Evaluation Criteria for the UNIDO-ACMA-DHI Project

Evaluation criteria	Key assessment	Rating
Progress toward impact	Evidence of progress towards impact was observed and is consistent with the project's targets; further efforts that strengthen the foundation for mainstreaming, replication, and scaling-up would foster broader adoption of the continuous improvement that the project sought to disseminate. The project adequately incorporated environmental, economic and social safeguards.	**Satisfactory (S)**
Project design	The overall project design is logical, with adequate formulations of outcomes in terms of seeking a change in behaviour and attitude	**Satisfactory (S)**
• Overall design	The approach was conceptually sound, adequately resourced with a functioning governance structure, foresaw the development of junior counsellors and introduction of RECP concepts to a small pool of (10) participating enterprises to lead others in this more advanced direction.	Satisfactory (S)
• Logframe	Adequate and detailed, including indicators and means of verification	Satisfactory (S)
Project performance		**Satisfactory (S)**
• Relevance	Highly pertinent for national priorities and target group needs; fully consistent with donor priorities and fully aligned with the mandate of UNIDO and ACMA.	Highly Satisfactory (HS)
• Effectiveness	Over-achieved results for number of enterprises (152 versus planned 120) to apply the UNIDO-ACMA methodology	Highly Satisfactory (HS)
• Efficiency	Efficient in use of allocated resources to deliver more than initially envisaged achievements, albeit over a time horizon that	Satisfactory (S)

[19] Highly Satisfactory (HS); Satisfactory (S); Moderately Satisfactory (MS); Moderately Unsatisfactory (MU); Unsatisfactory (U); Highly Unsatisfactory (HU). Sustainability and Benefits is rated from Highly Likely (HL) to Highly Unlikely (HU)

Evaluation criteria	Key assessment	Rating
	exceeded planning by 42% due to the 1.5 year no cost extension	
• Sustainability of benefits	Relevant stakeholders' positive perceptions give potential to spread concepts to more enterprises in the sector. Yet the results achieved so far need further follow-up to sustain in the long run (the pool of national experts, services provider institutions, in-company expertise in continuous improvement, private sector engagement and contribution). Commitment and resources for follow-up phases designed into the current UNIDO-ACMA programme were not fully clear at the time of this evaluation. While judged to be highly relevant, some aspects of the programme could nevertheless be strengthened to assure the continuation of long-term benefits and their resilience.	Moderately Likely (ML)
Cross-cutting performance criteria		
• Gender mainstreaming	This aspect was not mentioned in the Project Document. Awareness of opportunities to leverage women in certain jobs was evident at company level.	Satisfactory (S)
• M&E: ✓ M&E design ✓ M&E implementation	UNIDO's M&E approach was designed, implemented, adequately resourced, and fed into a benchmarking study that allowed for evaluation and comparison of the overall endeavour against relevant global comparators. Project monitoring activities constituted a major portion of project workload. Monthly Review Meetings proved a particularly effective, including M&E device as well as facilitating information exchange, networking, peer learning. A mid-term Review was undertaken, which confirmed envisaged performance improvements. SCMs were convened bi-annually.	Highly Satisfactory (HS)
• Results-based Management (RBM)	The implementing teams within UNIDO and ACMA maintained focus on progressing activities, outputs, and outcomes according to the project's results framework.	Satisfactory (S)
Performance of partners		
• UNIDO	UNIDO adequately performed its implementation role and M&E duties. The agency's participation was valued by all stakeholders and its supervision and technical inputs supported project results.	Satisfactory (S)
• National counterparts	ACMA adequately performed its implementation role, although a preference for involving superannuated actors in counsellor roles seems to have backgrounded priority on identifying and developing junior counsellors, as foreseen in the Project Document.	Moderately Satisfactory (MS)
• Donor	MoHI/DHI's contribution was relevant and appreciated. The timely disbursement of project funds effectively supported envisaged activities and outcomes.	Satisfactory (S)
Overall assessment	The project's overall performance is satisfactory. Strong project management, M&E, technical backstopping and suitable financial management were put in place. While the project is judged to be highly relevant, operated satisfactorily in terms of effectiveness and efficiency, and showed some potential for replication, some aspects could nevertheless be reinforced to accelerate scaling up and assure the continuation and resilience of long-term benefits.	**Satisfactory (S)**

6.2 Recommendations

141. Based on the TE's conclusions, some recommendations are offered with the aim of sustaining the project's results and reaching its desired impact:

Recommendation #1: Department of Heavy Industry and UNIDO should secure the funding for the envisaged next phase/s as soon as possible to assure continued momentum, sustain the achieved benefits and results, retain project staff and allow for getting the elements in place to assure the achievement of long-term impact.

142. The project is highly relevant for international/regional/national priorities (¶134). Significant investment has been made to put an institutional framework and project infrastructure in place in the context of the UNIDO-ACMA partnership programme.

143. Given that it was envisaged from the outset that the next two phases under the same UNIDO-ACMA programme would be rolled out, this architecture backgrounded focus on exiting from the initiative at this stage, and all of the elements that would be needed to assure the sustainability of the project's benefits and results have not yet been put in place. The commitment and funding must be secured as soon as possible to maintain momentum and increase the likelihood to reach desired impacts related to supplier performance improvement and employment.

Recommendation #2: Department of Heavy Industry, UNIDO, and the PMU should ensure that the design and implementation of any future phases include plans and resources for a mechanism to replicate and upscale the UNIDO-ACMA continuous improvement methods to significantly more SMEs in the automotive industry. This would foster and accelerate broader adoption of the continuous improvement practices and culture that have been verified to drive cost competitiveness, quality, and productivity.

144. Building on what was achieved in Phase I and following the substantial legacy of predecessor activities since 1999, it could be argued that this initiative risks to lose credibility should the envisaged next phases fall short in making substantial inroads to facilitate broader adoption (¶58) of the best practices that benchmarking (¶48) and implementation (¶46) have shown can make a meaningful performance difference, which the target beneficiaries desperately need to remain competitive and be sustainably included in the larger value chain (¶45).

145. While the current project made a step forward through replication (¶131), moving from 40 firms in 4 regions (through 2002-2004 activities) to 76 firms in 12 clusters (2004-2010), to 152 firms in 25 clusters that implemented improvement activities (2014-2017); a step is needed to address the scale of challenges faced by the target sector (¶7, ¶8) with an estimated 10'000 enterprises in Tier-2 and below. The next phases need to contain elements that build the capacity to achieve meaningful upscaling (¶60, ¶132). This notion involves setting a higher ambition level (¶128), designing an intervention that takes account of leverage points that can lead to system change (¶60), and focussing on a few key areas that drive cost competitiveness, quality, and productivity[20], which, together, seem to constitute the difference that will make the difference in bringing the "weakest link" (¶51) up to the needed requirements, while also securing their sustainable inclusion in the value chain. With respect to designing and implementing subsequent capacity-building, Roger's Model (¶57) could be used to assure that needed aspects are in place and positively perceived to increase the likelihood of adoption.

[20] In this light, the Supplier Impact Assessment Report (Nov 2017) commissioned by the project gives very useful insights into the driving elements and offers robust, actionable recommendations which the Evaluation Team endorses

146. Caution is offered with respect to further development of RECP offers within the context of this project. The reported approach and its results (¶33) from the 10 sites where this "advanced programme" was introduced in the context of the current project suggest that significantly more thought needs to be put into building and deploying local RECP capacities. This will require significantly more time and resources, as well as choosing a different profile than that of the bulk of the current local counsellors. The international experts engaged by the project are a valuable source of experience and guidance in this respect (¶103).

Recommendation #3: UNIDO and ACMA should identify and meaningfully engage with relevant strategic actors to expand outreach, build additional needed cascading capacity, and accelerate the scaling up of supplier performance improvement.

147. The project had an explicit objective to scale up (¶132) and was directed to identify potential partner institutions and engage/build capacities of representatives from business support and educational/training institutions (¶59). Such links were foreseen as part of the project design (¶107) to establish the potential for broader adoption. Initial outreach efforts observed towards the end of the project phase (¶94) should continue and be expanded (¶55).

148. From what was reported, most of the currently engaged suppliers were obliged to participate by their customers (¶57). Even with this "encouragement", they still needed significant persuasion to join and continue in the programme. This effort drained project resources and dispersed energy that could otherwise have been channelled into more constructive endeavours (¶130). The project is recommended to take the lessons learned from "viral marketing": *when it comes to getting a message out with little time, minimal budget, and maximum effect, nothing on Earth beats a virus*"[21]. Creating a viral marketing epidemic entails finding the right people to spread the message[22]. Within the context of the present project, the "right people" would certainly include the top management of participating companies. It is recommended to identify and enrol highly-networked, respected senior company leaders in the targeted clusters to not only advocate, promote, and endorse, but also to invite, encourage, entice and incentivize their peers into joining supplier performance improvement activities.

6.3 Lessons learnt

The intervention was designed to have three phases till 2021 and this project was the first phase. As the funds for follow-up phases were not secured hundred percent, the sustainability of the project results is not guaranteed. In the future, it would be better to design projects with multiple phases in a way that the results and sustainability strategy are ensured and implemented within the duration of the phase.

[21] The Virus of Marketing, Jeffrey Rayport, 12 December 1996 www.fastcompany.com/27701/virus-marketing

[22] Two Hearts in Three-Quarter Time: How to Waltz the Social Media/Viral Marketing Dance, A. Kaplan and M. Haenlein, Business Horizons (2011) 54, pg. 253-263; summarized on Wikipedia as: Three specific types of messengers are required to ensure the transformation of an ordinary message into a viral one: market mavens, social hubs, and salespeople. Market mavens are individuals who are continuously 'on the pulse' of things (information specialists); they are usually among the first to get exposed to the message and who transmit it to their immediate social network. Social hubs are people with an exceptionally large number of social connections; they often know hundreds of different people and have the ability to serve as connectors or bridges between different subcultures. Salespeople might be needed who receive the message from the market maven, amplify it by making it more relevant and persuasive, and then transmit it to the social hub for further distribution. Market mavens may not be particularly convincing in transmitting the information https://en.wikipedia.org/wiki/Viral_marketing

Annex 1. Evaluation Terms of Reference (ToR) – available online

Independent terminal evaluation of UNIDO project:

Supporting small and medium-sized manufacturers in the automotive component industry in lndia: Deepening and widening the services provided within the framework of the UNIDO-ACMA-DHl partnership programme

UNIDO SAP ID: 100245

December 2017

PROJECT BACKGROUND AND CONTEXT23

Project factsheet

Project factsheet:

Project title	Supporting small and medium-sized manufacturers in the automotive component industry in India: Deepening and widening the services provided within the framework of the UNIDO-ACMA-DHI partnership programme
SAP ID	100245
Region	Asia and Pacific
Country	India
Project donor(s)	India
Project approval date	December 2013
Project implementation start date	1 July 2014
Expected duration at project approval	3 years
Expected implementation end date	31 March 2018
Executing partners	Automotive Component Manufacturers Association of India (ACMA)
Donor funding	2,193,647 funded by Indian Department of Heavy Industry (DHI) (including 13% of supporting cost)
UNIDO input (in kind, USD)	
Co-financing:	1,131,086 (from the industrial sector)
Total project cost (USD)	3,324,732
Planned terminal evaluation date	Jan 2017 – March 2018

(Source: Project document)

Project context

RATIONALE

The overall objective of the UNIDO project "Supporting small and medium-sized manufacturers in the automotive component industry in India: Deepening and widening the services provided within the framework of the UNIDO-ACMA-DHI partnership programme" is to broaden and deepen the scope and outreach of already established programme services (implemented in a predecessor project over the period 2005-2009), and to further strengthen Indian small and medium-sized automotive component suppliers to meet the requirements of vehicle and Tier-1 automotive

[23] Data in this chapter is to be validated by the Consultant against the project document and any changes should be reflected in the evaluation report.

component manufacturers.

The Indian automotive component-manufacturing sector encompasses more than 570 firms in the organized sector and around 31,000 enterprises in the unorganized sector, and provides direct employment to about 500,000 people, accounting for over 4.7% to India's GDP and 19% to India's indirect tax revenue. SMEs across India typically operate in the context of industrial clusters, or geographic concentrations of firms producing similar goods. Despite delivering a substantial share of industrial employment, output and exports, SME clusters are impeded in their development process by a number of constraints: access to factors (finance, technology, skills, and supporting management processes) and to markets (logistics, compliance with standards, access to quality certification services, product range, packaging, branding, marketing, etc.).

Due to its long-standing involvement in the automotive sector and other clusters in India, UNIDO has acquired an in-depth understanding of the Indian context and established a relevant network of technical experts and collaborating institutions. Consequently, UNIDO has both the mandate and the necessary expertise to establish linkages between foreign firms and domestic SMEs, and to support them in designing and implementing the necessary measures to overcome these constraints.

Within the context of the automotive sector, as national and international car manufacturers and Tier-1 suppliers are demanding increasingly high standards with regard to cost, quality, delivery, and engineering know-how, UNIDO seeks to support SMEs in their endeavor to follow this demand.

ORIGIN OF THE PROJECT

The project was approved at the end of 2013, started in the beginning of July 2014 and is expected to complete on 31st March 2018. It builds on the results and the achievements of the UNIDO-ACMA Partnership Programme; implemented in 3 different phases between 1999 and 2009. The Programme aimed at strengthening the capacity of Indian small and medium-sized automotive component manufacturers to meet the quality requirements of vehicle manufacturers, thus enhancing their productivity and performance levels to facilitate their inclusion into both the domestic and the global automotive supply chains.

During its different phases, the Programme provided training sessions on quality management, cost efficiency and delivery, along with visits from industry experts. Throughout a process of training of engineers and industrial experts, the Programme delivered technical assistance to help companies in the automotive component industry meet the challenges brought by current Indian market conditions and to increase sustainability.

The feedback received from participating companies, national experts and technical counsellors of the Programme was overwhelmingly positive, stressing the importance of continuity in support to lock in the gains already realized and of providing counseling services to a larger number of companies.

Project objective

Aiming at strengthening Indian small and medium-sized automotive component suppliers to meet the requirements of vehicle and Tier-1 automotive component manufacturers, the project pursues the following core objectives:

Enhancing the performance of domestic SMEs in the automotive component industry to facilitate their inclusion into national, regional and global supply chains and meeting relevant supply chain requirements (quality, cost, and delivery, as well as OHS, energy efficiency and environmental management standards).

Enhancing the sustainability of the Partnership Programme through the consolidation of the

institutional set-up, expansion of the UNIDO-ACMA methodology and the extension of the pool of well-trained national experts and counselors.

Expanding the outreach of the Partnership Programme to upgrade and enhance the competitiveness of an increasing number of target companies along the supply chain in India, including lower tier suppliers.

The project has the following outcomes:

- A broad range of Indian automotive component manufacturers in the target clusters/localities will apply state-of-the-art methodologies for process, productivity as well as environmental and social improvement, and become more resource efficient, productive, and competitive in the marketplace.

- Trained national experts and business support institutions (public and private) will provide high-quality, sustainable services to local automotive component suppliers in the fields of continuous improvement, quality issues, lean manufacturing tools, social and environmental sustainability and energy efficiency.

Six main outputs are expected to be produced, with 30 main activities:

Output 1: The programme's progress and effectiveness is assessed on a continuous basis through a well-defined M&E framework.

Lead Responsibility: UNIDO

Output 2: New target clusters have undergone a mapping/baseline assessment, including the determination of possible partner institutions for participation in the Programme.

Lead Responsibility: UNIDO

Output 3: A revised and adapted UNIDO-ACMA methodology includes modules relating to new issues of particular relevance to the automotive component industry, including e.g. cleaner production, energy efficiency, occupational health and safety, and is available to the project team and counterparts.

Lead Responsibility: UNIDO

Output 4: National experts and representatives of business support and educational and training institutions have the capacity to organize and facilitate trainings on the enhanced UNIDO-ACMA methodology (continuous improvement/lean manufacturing methodologies) as well as other methodologies of relevance.

Lead Responsibility: ACMA

Output 5: Selected clusters/supplier companies receive continuous assistance over a 24-months period and apply the above-mentioned methodologies to their production and skills development processes.

Lead Responsibility: ACMA

Output 6: The effectiveness of the Partnership Programme has been rigorously assessed against national/international practices, and related policy recommendations formulated.

Lead Responsibility: UNIDO

Project implementation arrangements

The team of national staff recruited by ACMA is responsible for the organization of (a) all trainings and workshops for the junior counsellors related to the productivity upgrading, continuous improvement, as well as environmental, energy and labour/workplace-related issues in the

automotive component industry, and (b) the monthly review meetings (MRMs) for selected supplier clusters.

ACMA also provides equipment and supplies to cover the costs for ICT (laptops, cameras, beamers, etc.) and transport of national experts.

The national expert team cost is supposed to be covered by the industry contribution to be generated and collected by ACMA, which influences the overall size and composition of the expert team as well as of the duration of the contracts.

Under the responsibility of ACMA, it is foreseen to raise an industry contribution of an average of 35% over the entire duration of this project, which is mainly envisaged to cover national expert/counselor expenses and local travel costs. This contribution is generated on the basis of the existing payment system of the UNIDO-ACMA Partnership Programme, which charges 0.1% of the turnover of participating automotive component manufacturers.

UNIDO is responsible for hiring a full-time international expert in charge of overall coordination, reporting, documentation, awareness raising and communication with other relevant international and industry-specific organizations globally to promote the approach, M&E and building of linkages/synergies (cross-fertilization and learning) to other UNIDO supported automotive component supplier development projects.

UNIDO's component also foresees the issuance of sub-contracts for the identification, development, and codification of additional training materials targeting Training of Trainers as well as company recipients (scans and self-learning materials) on the basis of the existing UNIDO methodology. The project also envisages subcontracts for the provision of technical assistance for the adaptation and expansion of the UNIDO-ACMA methodology/training material/roadmap.

UNIDO is also responsible for (a) the provision of training programmes to relevant support institutions related to the productivity upgrading, continuous improvement, as well as environmental, energy and labour/workplace-related issues in the automotive component industry and (b) organize awareness seminars for OEM representatives on this project.

At the same time, it is foreseen to undertake study tours for counselors, policy makers and selected experts of local support institutions to other clusters and companies assisted through similar UNIDO projects in other countries or particularly successful auto cluster examples to experience the application of the cluster development methodology in the field, exchange experiences with other experts and peers, and learn from best practice.

Budget information:

Table 1. Financing plan summary[24]

#	Items	UNIDO	ACMA	Industry (tentative)	TOTAL
11	International expertise	270,000	-	-	270,000
17	Support staff	20,700	78,840		99,540
15	Project travel	10,000	140,000	348,600	498,600
16	Mission costs	32,400	-		32,400
17	National expertise	235,200	692,800	728,800	1,656,800
21	Sub-contracts	190,000	-		190,000

[24] Source: Project document.

#	Items	UNIDO	ACMA	Industry (tentative)	TOTAL
30	Study tours, training & conference	62,000	49,140	53,686	164,826
43	Office Premises	-	39,132		39,132
45	Equipment	-	53,803		53,803
51	Miscellaneous	9,374	112,000	-	121,374
80	M&E	80,000	-	-	80,000
	Total	909,674	1,165,715	1,131,086	3,206,475

Table 2. Co-Financing source breakdown

Name of Co-financier (source)	Classification	Type	Total Amount ($)
Industry contribution	Private sector	Cash	1,131,086
Total Co-financing ($)			1,131,086

Source: Project document

Table 3. UNIDO budget expenditure

Item	2014	2015	2016	2017	Total Expenditure ($)
Contractual Services	109,805	67,518	751	27,125	205,199
Local travel	0	9,544	4,686	12,149	26,379
Nat.Consult./Staff	13,706	70,120	68,462	75,890	228,177
Evaluation (measured per Output, i.e. 100245-1-53-01)	4,498	3,638	9,991	62,494	80,620
Staff & Intern Consultants	28,002	48,681	77,546	57,770	211,999
Staff Travel	2,022	7,051	5,502	14,614	29,189
Train/Fellowship/Study	357	49,455	8,843	0	58,656
Miscellaneous	-30	-167	238	-142	-100
Premises	0	0	0	15,800	15,800
Equipment	0	0	0	2,164	2,164
Support Cost IDC	20,002	32,787	21,584	26,636	101,009
Grand Total	173,864	284,990	187,613	232,006	878,472

Source: Source: SAP, December, 2017 (as on 4 December 2017)

Evaluation purpose and scope

The purpose of the evaluation is to independently assess the project to help UNIDO improve performance and results of future programmes and projects.

The evaluation has two specific objectives:

(i) Assess the project performance in terms of relevance, effectiveness, efficiency, sustainability and progress to impact;

(ii) Develop a series of findings, lessons and recommendations for enhancing the design of new and implementation of ongoing projects by UNIDO.

The independent terminal evaluation (TE) will cover the whole duration of the project from its starting date in to the estimated completion date in 31/3/2018.

Evaluation approach and methodology

The TE will be conducted in accordance with the UNIDO Evaluation Policy25 and the UNIDO Guidelines for the Technical Cooperation Project and Project Cycle26.

The evaluation will be carried out as an independent evaluation using a participatory approach whereby all key parties associated with the project will be informed and consulted throughout the evaluation. The evaluation team leader will liaise with the UNIDO Independent Evaluation Division (ODG/EVQ/IEV) on the conduct of the evaluation and methodological issues.

The evaluation will use a theory of change approach and mixed methods to collect data and information from a range of sources and informants. It will pay attention to triangulating the data and information collected before forming its assessment. This is essential to ensure an evidence-based and credible evaluation, with robust analytical underpinning.

The theory of change will identify causal and transformational pathways from the project outputs to outcomes and longer-term impacts, and drivers as well as barriers to achieve them. The learning from this analysis will be useful to feed into the design of the future projects so that the management team can effectively manage them based on results.

Data collection methods

Following are the main instruments for data collection:

Desk and literature review of documents related to the project, including but not limited to:

The original project document, monitoring reports (such as progress and financial reports, mid-term review report, output reports, back-to-office mission report(s), end-of-contract report(s) and relevant correspondence.

Notes from the meetings of committees involved in the project.

Stakeholder consultations will be conducted through structured and semi-structured interviews and focus group discussion. Key stakeholders to be interviewed include:

UNIDO Management and staff involved in the project; and

Representatives of donors and counterparts.

Field visit to project sites in India (e.g. New Delhi, Pune and Chennai)

[25] UNIDO. (2015). Director General's Bulletin: Evaluation Policy (UNIDO/DGB/(M).98/Rev.1)
[26] UNIDO. (2006). Director-General's Administrative Instruction No. 17/Rev.1: Guidelines for the Technical Cooperation Programme and Project Cycle (DGAI.17/Rev.1, 24 August 2006)

Evaluation key questions and criteria

The key evaluation questions are the following:

What are the key drivers and barriers to achieve the long term objectives? To what extent has the project helped put in place the conditions likely to address the drivers, overcome barriers and contribute to the long term objectives?

How well has the project performed? Has the project done the right things? Has the project done things right, with good value for money?

What have been the project's key results (outputs, outcome and impact, if possible)? To what extent have the expected results been achieved or are likely to be achieved against the project design? To what extent the achieved results will sustain after the completion of the project?

What lessons can be drawn from the successful and unsuccessful practices in designing, implementing and managing the project to feed in the next phase?

The evaluation will assess the likelihood of sustainability of the project results after the project completion. The assessment will identify key risks (e.g. in terms of financial, socio-political, institutional and environmental risks) and explain how these risks may affect the continuation of results after the project ends. Table 11 below provides the key evaluation criteria to be assessed by the evaluation. The details questions to assess each evaluation criterion are in annex 2.

Table 11. Project evaluation criteria

#	Evaluation criteria	Mandatory rating
A	Impact (or progress toward impact)	Yes
B	Project design	Yes
1	Overall design	Yes
2	Logframe	Yes
C	Project performance	Yes
1	Relevance	Yes
2	Effectiveness	Yes
3	Efficiency	Yes
4	Sustainability of benefits	Yes
D	Cross-cutting performance criteria	
1	Gender mainstreaming	Yes
2	M&E: M&E design M&E implementation	Yes
3	Results-based Management (RBM)	Yes
E	Performance of partners	
1	UNIDO	Yes

#	Evaluation criteria	Mandatory rating
2	National counterparts	Yes
3	Donor	Yes
F	Overall assessment	Yes

Rating system

In line with the practice adopted by many development agencies, the UNIDO Independent Evaluation Division uses a six-point rating system, where 6 is the highest score (highly satisfactory) and 1 is the lowest (highly unsatisfactory) as per Table 5.

Table 5. Project rating criteria

Score		Definition	Category
6	Highly satisfactory	Level of achievement clearly exceeds expectations and there is no shortcoming.	SATISFACTORY
5	Satisfactory	Level of achievement meets expectations (indicatively, over 80-95 per cent) and there is no or minor shortcoming.	
4	Moderately satisfactory	Level of achievement more or less meets expectations (indicatively, 60 to 80 per cent) and there are some shortcomings.	
3	Moderately unsatisfactory	Level of achievement is somewhat lower than expected (indicatively, less than 60 per cent) and there are significant shortcomings.	UNSATISFACTORY
2	Unsatisfactory	Level of achievement is substantially lower than expected and there are major shortcomings.	
1	Highly unsatisfactory	Level of achievement is negligible and there are severe shortcomings.	

Evaluation process

The evaluation will be implemented in four phases which are not strictly sequential, but in many cases iterative, conducted in parallel and partly overlapping:

Desk review and data analysis;

Interviews, survey and literature review;

Field visits;

Data analysis and report writing.

Time schedule and deliverables

The evaluation is scheduled to take place from January 2018 to March 2018. The evaluation field mission to the project sites in India is tentatively planned for 22 January – 2 February 2018. At the end of the field mission, there will be a presentation of the preliminary findings for all stakeholders involved in this project.

After the evaluation field mission, the evaluation team leader will visit UNIDO HQ for debriefing and presentation of the preliminary findings of the terminal evaluation. The draft TE report will be submitted to UNIDO 3 weeks after the end of the mission. The draft TE report is to be shared with

the UNIDO IEV, UNIDO Project Manager and other stakeholders for comments and verification of factual and interpretation errors. The TE leader is expected to revise the draft TE report based on the comments received, edit the language and form and submit the final version in accordance with UNIDO ODG/EVQ/IEV standards.

Table 6. Tentative schedule

Timelines	Tasks
2 January 2017 – 22 Jan 2018	Desk review and preparation of inception report
5-6 March 2018 (to be confirmed with the Evaluation Manager)	Briefing with UNIDO Project Manager and experts based in Vienna (through Skype)
22 January – 2 February 2018	Field visits in India (New Delhi, Pune and Chennai)
February 2018	Preparation of first draft evaluation report
5-6 March 2018 (the exact date to be agreed with the Evaluation Manager in mid-January 2018)	Debriefing in Vienna
March 2018	Internal peer review of the report by the UNIDO ODG/EVQ/IEV and other stakeholders comments to draft evaluation report Final evaluation report

Evaluation team composition

The evaluation team will be composed of one International Evaluation Expert acting as the Team Leader and one National Evaluator. The evaluation team will possess relevant strong experience and expertise on evaluation and on private sector development. Both consultants will be contracted by UNIDO.

The tasks of each team member are specified in the job descriptions annexed to these terms of reference.

According to UNIDO Evaluation Policy, members of the evaluation team must not have been directly involved in the design and/or implementation of the project under evaluation.

An evaluation manager from UNIDO ODG/EVQ/IEV will provide technical backstopping to the evaluation team and ensure the quality of the evaluation. The UNIDO Project Manager and national project teams will act as resourced persons and provide support to the evaluation team and the evaluation Team Leader. The UNIDO Project Manager and the project team in New Delhi and Pune will provide logistical and administrative support the evaluation team to prepare for the field visits. The project team will provide a proposed list of stakeholders (e.g. government officials, private sector representatives and other relevant individuals) to the evaluation team who will make the final decision on who to consult. The project team will prepare a field visit schedule and arrange the meetings for the evaluation team, in coordination with the evaluation team, prior to the field visit.

The evaluation team will maintain close liaison with the representatives of UNIDO, other UN agencies as well as with the concerned national agencies, and with national and international project staff. The evaluation team is free to discuss with the authorities concerned anything relevant to its assignment. However, it is not authorized to make any commitments on behalf of the Government, the donor or UNIDO.

Reporting

Inception report

This Terms of Reference (ToR) provides some information on the evaluation methodology, but this should not be regarded as exhaustive. After reviewing the project documentation and initial interviews with the project manager, the Team Leader will prepare, in collaboration with the team member, 1) an evaluation framework which streamlines the specific questions to address the key issues in the TOR, specific methods that will be used and data to collect in the field visits, 2) and a draft theory of change for field work. It will be discussed with and approved by the responsible UNIDO Evaluation Manager.

Evaluation report format and review procedures

The draft report will be delivered to the Independent Evaluation Division (IEV) (the suggested report outline is in Annex 4) and circulated to UNIDO staff and national stakeholders associated with the project for factual validation and comments. Any comments or responses, or feedback on any errors of fact to the draft report provided by the stakeholders will be sent to IEV for collation and onward transmission to the project evaluation team who will be advised of any necessary revisions. On the basis of this feedback, and taking into consideration the comments received, the evaluation team will prepare the final version of the terminal evaluation report.

The evaluation team will present its preliminary findings to the local stakeholders at the end of the field visit and take into account their feedback in preparing the evaluation report. A presentation of preliminary findings will take place at UNIDO HQ after the field mission.

The TE report should be brief, to the point and easy to understand. It must explain the purpose of the evaluation, exactly what was evaluated, and the methods used. The report must highlight any methodological limitations, identify key concerns and present evidence-based findings, consequent conclusions, recommendations and lessons. The report should provide information on when the evaluation took place, the places visited, who was involved and be presented in a way that makes the information accessible and comprehensible. The report should include an executive summary that encapsulates the essence of the information contained in the report to facilitate dissemination and distillation of lessons.

Findings, conclusions and recommendations should be presented in a complete, logical and balanced manner. The evaluation report shall be written in English and follow the outline given in annex 1.

Quality assurance

All UNIDO evaluations are subject to quality assessments by UNIDO ODG/EVQ/IEV. Quality assurance and control is exercised in different ways throughout the evaluation process (briefing of consultants on methodology and process of UNIDO ODG/EVQ/IEV, providing inputs regarding findings, lessons learned and recommendations from other UNIDO evaluations, review of inception report and evaluation report by UNIDO ODG/EVQ/IEV).

The quality of the evaluation report will be assessed and rated against the criteria set forth in the Checklist on evaluation report quality, attached as Annex 4. The applied evaluation quality assessment criteria are used as a tool to provide structured feedback. UNIDO ODG/EVQ/IEV should ensure that the evaluation report is useful for UNIDO in terms of organizational learning (recommendations and lessons learned) and is compliant with UNIDO's evaluation policy and these terms of reference. The draft and final evaluation report are reviewed by UNIDO ODG/EVQ/IEV, which will submit the report to the donor and circulate it within UNIDO together with a management response sheet.

Annex 2. Evaluation Framework

Sample Questions were elaborated according to Specified Evaluation Categories

Relevance

- How does the project fulfil the urgent target group needs?
- To what extent is project aligned with national development priorities (national poverty reduction, sector development)?
- How does project reflect donor policies and priorities?
- Is the project a technically adequate solution to the development problem? Does it eliminate the cause of the problem?
- To what extent does the project correspond to UNIDO's comparative advantages?
- Are original project objectives (expected results) still valid/pertinent to target groups? If not, have they been revised? still valid ?

Efficiency

- How economically are the project resources/inputs (concerning funding, expertise, time…) being used to produce results?
- To what extent were expected results achieved within the original budget and timeframe? If no, please explain why.
- Are the results being achieved at an acceptable cost? Would alternative approaches accomplish the same results at less cost?
- What measures have been taken during planning and implementation to ensure that resources are efficiently used? Were the project expenditures in line with budgets?
- Could more have been achieved with the same input? Could the same have been achieved with less input?
- How timely was the project in producing outputs & outcomes? Comment on delay or acceleration of implementation period.
- To what extent were project's activities in line with schedule of activities as defined by Project Team and annual Work Plans?
- Have inputs from donor, UNIDO, Govt/counterpart been provided as planned; were they adequate to meet the requirements?

Effectiveness

- What are the main results (mainly outputs & outcomes) of the project? What have been the quantifiable results of the project?
- To what extent did the project achieve their objectives (outputs and outcomes), against the original/revised target(s)?
- What are the reasons for the achievement/non-achievement of the project objectives?
- What is the quality of the results? How do the stakeholders perceive them? What is the feedback of the beneficiaries and the stakeholders on the project effectiveness?
- To what extent is the identified progress result of the project attributable to the intervention rather than to external factors?
- What can be done to make the project more effective?
- Were the right target groups reached?

Progress to impact

- Mainstreaming: To what extent information, lessons or specific results of the project are incorporated into broader stakeholder mandates and initiatives such as laws, policies, regulations and project?
- Replication: To what extent the project's specific results (e.g. methodology, technology or lessons) are reproduced or adopted
- Scaling-up: To what extent the project's initiatives and results are implemented at larger geographical scale?
- What difference has the project made to the beneficiaries?
- What is the change attributable to the project? To what extent?
- What are the social, economic, environmental & other effects, either short-, medium- or long-term, on a micro- or macro-level?
- What effects are intended or unintended, positive or negative?

The 3 UNIDO impact dimensions are:

Safeguarding environment: To what extent the project contributes to changes in the status of environment?
Economic performance: To what extent the project contributes to changes in the economic performance (for example finances, income, costs saving or expenditure) of individuals, groups and entities?
Social inclusiveness: To what extent the project contributes to changes in capacity and capability of individuals, groups and entities in society, including vulnerable groups, and hence generating employment and access to education and training?

Sustainability

- Will the project results and benefits be sustained after the end of donor funding?
- Does the project have an exit strategy?
- To what extent the outputs and results have been institutionalized?

Financial risks:

What is the likelihood of financial and economic resources not being available once the project ends?

Socio-political risks:

Are there any social or political risks that may jeopardize the sustainability of project outcomes?
What is risk that level of stakeholder ownership (including ownership by govts, other key actors) will be insufficient to allow for the project outcomes/benefits to be sustained?
Do the various key stakeholders see that it is in their interest that project benefits continue to flow?
Is there sufficient public/stakeholder awareness in support of the project's long-term objectives?

Institutional framework and governance risks:

Do the legal frameworks, policies, & governance structures and processes within which the project operates pose risks that may jeopardize the sustainability of project benefits?
Are requisite systems for accountability and transparency and required technical know-how in place?

Environmental risks:

Are there any environmental risks that may jeopardize the sustainability of project outcomes?
Are there any project outputs or higher-level results that are likely to have adverse environmental impacts, which, in turn, might affect the sustainability of project benefits?

1. Source: Draft UNIDO Evaluation Manual, 4 August 2017

The Project was also assessed through the Lens of Scaling Up Leverage Points

As stated on the Project Document's summary page:

"the overall objective of this project is to broaden and deepen the scope and outreach" of the predecessor project which was conducted 2005-2009"

Subsequently, the Project Document further elaborates that the objectives therefore:

"... increase the scope and coverage of the Partnership Programme to provide practical services to SMEs in order to achieve the following inter-related sub-objectives:

- Enhancing the performance of domestic SMEs in the automotive component industry to facilitate their inclusion into national, regional and global supply chains and meeting relevant supply chain requirements (quality, cost, and delivery, as well as OHS, energy efficiency and environmental management standards).
- Enhancing the sustainability of the Partnership Programme through the consolidation of the institutional set-up, expansion of the UNIDO-ACMA methodology and the extension of the pool of well trained national experts and counsellors.
- Expanding the outreach of the Partnership Programme to upgrade and enhance the competitiveness of an increasing number of target companies along the supply chain in India, including lower tier suppliers."

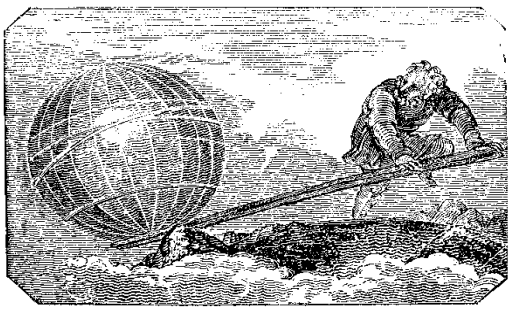
To summarize, the current project is an endeavour to scale up the previous project along multiple dimensions, e.g. quantitatively, geographically, institutionally. Indeed, many of the programme's Outputs and Activities facilitate this scaling up, without necessarily contributing to any specific Outcome, meaning that the elaboration of outcomes in the project document was so economic that certain elements were not necessarily stated. In this light, the Evaluation Team has made explicit a third Outcome within the Reconstructed Theory of Change.

Through this Terminal Evaluation, progress on this Outcome 3 and the overall objective of scaling up the predecessor programme will be assessed partly through the framework of leverage points, which can be described as places to intervene in a system.

Exploring the Notion of Leverage Points

The concept of leverage is one of the most powerful in all of science, reaching back to Archimedes who said "give me a place to stand and with a lever, I will move the world.

In systems thinking, a leverage point refers to a place within the system's structure where a solution element can be applied. Change force refers to the effort required to prepare and make a change.[27]



If a small amount of change force causes a *small* change in system behaviour, this is called a low leverage point. If a small amount of change force causes a *large* change in system behaviour, this is referred to as a high leverage point.

Places to Intervene in a System

[27] From http://www.thwink.org/sustain/glossary/LeveragePoint.htm

Meadows (1999)[28], an environmental scientist and systems analyst, published arguably the most popular work on how to spot leverage points. She defined these as "places within complex systems where a small shift in one thing can produce big changes in everything". However, we need to beware of falling into the trap of expecting to find these almost magical ways of shifting a system easily. Meadows herself pointed out that the notion of leverage points is embedded in legend: the silver bullet, the miracle cure, the secret passage, the magic password, the nearly effortless way to cut through or leap over huge obstacles. We not only want to believe that there are leverage points, we want to know where they are and how to get our hands on them.

In elaborating her concept, Meadows identified 12 places to intervene in a system and she ordered these from the least to the most effectiveness. Table 12 offers a simplified view of this leverage point framework, which has been developed by CAPRESE as a way of introducing the overall concept[29].

Table 12: Leverage Points for Intervening within a System Illustrated by Areas and Activities Relevant to the UNIDO-ACMA-DHI Partnership Programme

Level of Intervention	Area of Activity	Examples of activities that would support scaling up of RECP
Mindset	Influencing the way that people think about the system	Implanting sustainable production and consumption attitude and behaviour
Policy	Developing an enabling framework	Establishing goals, programs, policies Developing shared commitment Establishing rules, rewards, penalties Stimulating demand for RECP from Tier 1 and 2 manufacturers, suppliers and the authorities
Management	Linking guiding and operational levels through information flows	Providing information about RECP benefits Creating feedback loops (e.g. verification of results) Providing expertise (e.g. technical assistance) Marketing RECP (which is similar to an information flow)
Operations	Enhancing capacities and services	Building RECP skills Developing absorption capacities within enterprises Improving the quality of RECP services and service mix Doing client acquisition for RECP Facilitating access to finance (based on the policy and rules to provide it)

Within Table 12 and Table 13, CAPRESE has translated Meadows' conceptualisation into what we hope will be more easy-to-understand terminology and we have organised these within four levels of intervention, together with illustrative examples pertinent to the UNIDO-ACMA Partnership Programme.

The elaboration of the leverage points (within Table 12) has been done bearing in mind that the main purpose is to scale up the previous Partnership Programme.

In elaborating her concept, Meadows introduced the notion of a hierarchy of leverage points, ordered from least to most effectiveness. She infers that, for example, changing the rules of the system (incentives, penalties) is much more effective (her leverage point #5 in Table 13) than simply altering physical infrastructures (related to her leverage points #10-11) or information flows (related to leverage point #6). According to Meadows, intervention at the lower leverage points, while potentially easier and more

[28] Meadows, D. (1999). **Leverage Points: Places to Intervene in a System**. The Sustainability Institute. Hartland, Vermont

[29] This conceptualisation was originally developed by CAPRESE (Ms. Joyce Miller and Eli De Friend, 2016) within a Green Paper on Scaling Up of MED TEST II Activities for the European Union, UNIDO, and SwitchMed's Networking Facility and utilised within the framework of the SwitchMed programme implemented by UNIDO and Sustainable Consumption and Production Regional Activity Centre (SCP RAC) https://www.unido.org/sites/default/files/2016-06/SwitchMed_MED_TEST_II_Scaling_Up_Green_Paper_EN-1_0.pdf

accessible, cannot deliver substantial system shifts. It is only by intervening in systems at the highest levels (e.g. at the level of changing mindset or paradigm, i.e. leverage points #1-2) that we hit a leverage point that totally transforms the system.

Table 13: Twelve Specific Leverage Points and Illustrative Examples

Level of intervention in a system, as assigned by CAPRESE (2016)	Leverage points from least to most effectiveness, based on Meadows (1999)	Short description	Possible examples of application within UNIDO-ACMA Partnership Programme
Operations	**12) Identifying optimisation opportunities**	The lowest leverage point in Meadows' concept, this is about identifying which of the physical constraints of the system can be altered and therefore optimized.	Adjusting quantity and implementation priority of identified RECP measures according to their different effects. Adjusting the time between individual phases of the UNIDO-ACMA methodology implementation, while a beneficiary becomes accustomed to the changes. Optimising the number of company staff interacting with the ACMA Counsellor.
	11) Optimising material storage	This leverage point relates to adapting volumes (including storage) to the flow through the system.	Increasing or decreasing the number of Counsellors equipped (certified?) to deliver the UNIDO-ACMA methodology. Adjusting the size of companies targeted to apply the UNIDO-ACMA methodology.
	10) Optimising material flows	This leverage point is about ensuring that only the necessary materials or content are flowing through the (production) system according to its capacity (not too much, not too little). In the case of an international development programme, "materials" could be understood as experts, companies, training events, etc.	Adapting the UNIDO-ACMA methodology to the social, cultural, and economic context of the various regions and cultures in which the Indian automotive industry actors are based.
Management	**9) Optimising process duration to rate of process change**	Optimising decision-making and intervention activities requires taking into consideration inherent delays in a system or realising that some delays can potentially be shortened to facilitate more timely management activities. For example, if a programme budget changes, it typically requires a couple of years for this to filter through and won't actually impact the end beneficiaries for some time after that.	For a UNIDO-ACMA programme beneficiary company, in a context where procurement is performed every month, revising the material ordering system on an hourly basis is not necessary, but it might be appropriate to reduce the timeframe for the delivery of material from the loading bay to the factory floor. This leverage point is more about the timeframes rather than the material volumes.
	8) Taking corrective action based on negative feedback loops	Use of M&E processes to identify where a part of the system is performing differently to expectations and the remedial action taken to get back on track. This approach is reflected in Plan/Do/Check/Act.	Promoting the installation of information systems on resource efficiency within companies; this is the level that is a source of information for leverage point #6.
	7) Deriving benefit from positive feedback loops (information	While Leverage Point #8 keeps your system on track and on target, this leverage point looks at options to achieve more or better than forecast, by exploiting or leveraging information and positive	Introducing and/or reinforcing financial schemes that support the implementation of resource efficiency measures. Providing rewards to individual company staff who were responsible for achieving

	flows)	experiences within the system. Some of this can be designed, some may be more opportunistic. The important thing is to seek to capture the positive information and have processes in place to take this positive information into consideration when deciding on subsequent action.	verified improvements At the level of the beneficiary companies and the economy at large, the more savings from implementing RECP, the more money will be available to invest in RECP.
	6) Improving the structure of information flows	To be able to respond efficiently, effectively and appropriately, the right information must be in the right place at the right time. This is achieved by developing robust and effective processes by which information is captured, interpreted, validated, structured, communicated, in other words an information management system.	Developing an information system to monitor resource efficiency improvements Introducing systematic, regular and timely cross-national sharing of experiences. Another example: through proper baselining, implementation of an information system, and M&E, beneficiaries will be encouraged to continue in their RECP practices as they see their system performing more effectively.
Policy	**5) Changing the rules of the system**	The rules of a system, along with the rewards and punishments that can be applied to enforce these rules, can be adapted to encourage specific behaviour by the actors involved.	
	4) Changing the structure of the system	By changing the structure of the system, one changing the nature of the system itself, the way it is built, from its foundations to the materials with which it is constructed. This still applies in the figurative sense.	
	3) Setting and achieving system goals	By the time we get to adapting system goals, there is an inherent risk that the system will no longer resemble its former self. Still this may be necessary, if the factors influencing the goals have been inadequately assessed or have evolved over time.	The goal of the UNIDO-ACMA project could be reframed to be increasing profit, creating jobs or protecting the environment. Environmental protection and/or increased profitability can be used as motivations as long as we know what the goal is. A profit-oriented programme is likely to have different governance structures, different stakeholders and different processes to a similar environment-oriented programme.
Mindset	**2) Changing the paradigms that govern the system**	A paradigm can be described as a system of beliefs, values, principles that guide the way we perceive the world around us, make decisions and take action. This leverage point is about the ability to shift paradigm or adopt a new paradigm. Paradigm change will most likely have an influence on the system goals or what we are trying to achieve.	For example, it may require a paradigm shift for a company owner to accept the concept that spending less is a more effective path to greater profits than increasing revenue. From a UNIDO-ACMA implementation perspective, if there is a general belief amongst lower tier automotive component manufacturers that Tier 1 and 2 companies have lists of preferred suppliers that never get reviewed, the lower tier firms will be unlikely to be motivated to change their practices with a view to having their company included on the list.
	1) Transcending the paradigms that govern the system	This is the highest leverage point. It's about using paradigms consciously and mastering them. This is the ability to use trends, systems, and paradigms wittingly	To bring this leverage point to bear on the UNIDO-ACMA project, we can say that by revising the methodology and making policy recommendations on the one hand and delivering training on proven

		and not be entrapped by them. The important thing is that this is a state of mind. It is a way of engaging with the external environment. This is about meta-belief.	approaches in the meantime, the project is not putting all of its eggs in one basket. Perhaps success will come from policy change, perhaps through case studies or word of mouth or other intangible forces that affect collective consciousness. The important point here is that the project is consciously exploiting all of the wisdom within this table of leverage points.

Table 14: Mapping of Project Activities to Leverage Point Levels

Activity # in Project Document	*Description of the Activity within the UNIDO-ACMA Partnership Framework*	*Level of Intervention in a System*
1.1	Development of an M&E framework tailored to the specific programme context and definition of roles and responsibilities in terms of data collection	4, 5
2.4	Organization of focus group meetings hosting representatives of the identified core institutions with the objective to (a) discuss the findings and recommendations outlined in the assessments/mapping; (b) gather feedback and suggestions from the stakeholders; (c) define the concrete role/involvement of each participating institution in this project component; and (d) present the UNIDO-ACMA Programme approach.	6
3.1	Gather expert inputs to codify the current methodology and expand it to cover additional modules on Organizational Health and Safety (OHS), social/workplace issues, environmental management and energy efficiency.	3
3.2	Carry out consultation meetings with relevant educational and training institutions to (1) validate the codified and expanded methodology, and (2) identify available services and material on subjects related to the abovementioned issues to complement the toolkit.	6
3.3	In cooperation with interested and relevant institutions, complement and adapt available material to fit the automotive-SME context, and develop expanded modules on the abovementioned subjects to complement the UNIDO-ACMA methodology.	3
4.4	Organization of a study tour to other UNIDO supported clusters (in India and/or abroad)	2
4.5	Organization of site visits to previously upgraded companies to learn from practical examples and the experiences company staff with the programme	2
5.2	Development of an overall training and counselling work plan to coordinate the roll-out and clearly set responsibilities and targets of individual experts/participating cluster firms.	4
5.4	A “continuous improvement team” will be identified in each company (number of members depending on firm size) and a team leader will be appointed. The team will consist of members of all kinds of hierarchical levels (from management to machine operator) and departments.	4
5.6	Implementation of the counselling roadmap as agreed, including counselling on new modules/topics, as appropriate.	6
5.8	Development of a market-based external feedback system to help companies determine their progress and identify new areas for improvement. Findings integrated into future project activities.	6
6.1	Development of benchmarking methodology and definition of approach	5

Annex 3. List of Documents Reviewed

Project Documentation

	Document Type/ Category	Document Title, Author, Version/date
1.	**Project Documents:** ProDoc, Inception Report, Logframe/results framework	- Project Document - Logframe/result framework - Outputs and Outcomes - Achievements
2.	**Progress Reports:** Quarterly/Half- Yearly/Yearly reports on- - Project Physical and Financial progress - Project Implementation reports - Yearly Progress on approved Work plans - Technology demonstration by technology provider - Community development process by facilitating agencies - Regular M&E plan/activities reports - Outward/inward missions' reports	**Progress Reports:** Corresponding to 5 bi-annual Steering Committee Meetings, 5 Progress Reports • - Progress Report I (Reporting Period: 25 June 2014 –28 February 2015) - Progress Report II (Reporting Period: 13 March 2015 –31 August 2015) - Progress Report III (Reporting Period: 1 September 2015 –31 March 2016) - Progress Report IV (Reporting Period: 1 April 2016 – 15 November 2016) - Progress Report V (Reporting Period: Nov 2016 – June 2017) - Mid-Term Evaluation Report (from June 2014 to March 2016) - Project Monitoring Sheet
3.	**Technical Documents/Studies** - Feasibility survey/studies / Technical Audits - Key Policy notifications/related documents - Procurement related documents/ contracts - Testing/Installation/Commissioning related documents/ToRs/Guidelines - Training/Knowledge management related documents - Ongoing O&M related performance monitoring reports - Outreach/Impact/sustainability assessment studies/documents - Documents related to Gender Mainstreaming specific activities outcomes	- Case studies of RECP clusters - Energy Audit Reports of 10 RECP companies - Internal Audit of project performed on 24 April2015 - Market Research Report on challenges in supplier management - Tier I/OEM perspective - SIAM Policy Brief - FICCI White Paper Skill Development for Industry 4.0 - Benchmarking: Supplier Assessment Baseline Report - Trainings imparted to the counsellors - Trainings given by the counsellors - Cluster Closing Reports - Customer Satisfaction Survey Reports - Company Profiles - Training Material - Guidelines - Procurement contracts: B&M Analysts, Stenum Asia, Sunrise Computers, ChausenRen, ILO
4.	**Meeting minutes:** Various minutes of important	**Steering Committee Meetings:** - Minutes of First Steering Committee Meeting held on 12.03.2015

	meetings to record significant processes of decision-making, viz. - Project Steering and Technical committees etc. - Meetings with key stakeholders, project partners, institutions/agencies, government bodies, communities/ beneficiaries etc.	- Minutes of Ad Hoc Steering Committee Meeting held on 25.06.2015 - Minutes of Second Steering Committee Meeting held on 01.09.2015 - Minutes of Third Steering Committee Meeting held on 08.04.2016 - Minutes of Fourth Steering Committee Meeting held on 24.11.2016 - Minutes of Fifth Steering Committee Meeting held on 03.07.2017 **Auto Cess Meetings:** - Auto Cess Committee Meeting held on 11.03.2015 - Auto Cess Committee Meeting held on 13.05.2015 - Auto Cess Committee Meeting held on 19.07.2016 - Auto Cess Committee Meeting held on 02.11.2017
5.	**Dissemination materials:** Awareness generation on project activities and achievement - Newsletter, brochure, webpage, seminar/workshops/community training modules on awareness, do's & don'ts on technology, Key presentations, Media/news articles, conference /workshop papers and film	- Presentations of all 5 steering Committee Meetings - Presentations of monthly review meetings - Presentation on Benchmarking - Cluster Closing Presentations - Baseline Benchmarking Presentation - RECP Presentation - Auto News - AutoRECP CRM Event Report - Media Clippings
6.	**Other project-related material** - List of Project staff/Expert involved during the Project life - List of SCM/ Technical committee members etc. - Details on key stakeholders/partner •	- List of Project Staff - List of SCM members - List Key Stake holders - List of service providers and subcontracts

Guidance Documents Consulted

Evaluation Manual (draft), UNIDO Independent Evaluation Division, August 2017
Evaluation Report Format Guidance, UNIDO Independent Evaluation Division, September 2017
Integrating Human Rights and Gender Equality in Evaluations – Guidance Document (United Nations Evaluation Group, August 2014)
Introduction to Theory of Change / Impact Pathways, the ROtl Method and the ROtl Results Score Sheet (UNEP, last updated December 2015)
Likelihood of Impact Assessment Decision Tree (UNEP, last revised 23 January 2017)

Annex 4. List of Stakeholders Consulted

Related to UN Agencies

Name	Organisation	Position	Location
Freya Gruenberg	UNIDO	Project Associate	Vienna
Anders Isaksson	UNIDO	Project Manager	Vienna
Rekha Jain	UNIDO	SME Liaison Officer	New Delhi
Tomoyoshi Koume	UNIDO	Project Manager	Vienna
René Van Berkel	UNIDO	UNIDO Representative, Regional Office India	New Delhi

International Actors

Name	Role	Organisation
Douglas Comrie	Managing Director	B and M Analysts
Arthur David	Technical Expert	
Markus Moeller	Technical Expert	STENUM Asia
Suresh Babu	Director, Rivers, Wetlands and Water Policy	WWF India
Raghu Babu Nukala	Sustainable and Environment-friendly Industrial Production, Sustainable Urban and Industrial Development Project Director	GIZ India
Widhoon Chiamchittrong	Director	Thai PREMAnet
Malai Chomphuka	Vice Director	Thai PREMAnet

Related to National Agencies

Name	Position	Organisation	Location
N.L. Goswami	Senior Development Officer	Department of Heavy Industry	New Delhi
Vishvajit Sahay	Joint Secretary	Department of Heavy Industry	New Delhi

ACMA Staff and Counsellors

Name	Function, Assigned Cluster
Vinnie Mehta	Director General
K Chandrasekhar	National Coordinator
Rajan Ramanathan	Counsellor, Chennai
Parthiban	Counsellor, Chennai
Umdevi	Counsellor, Chennai
J. Manuelraj Nenry	Counsellor, Chennai
Dinesh Vedpathak	ACMA Centre for Technology, Pune
KPS Raghu	Counsellor, New Delhi
Arun Bage	Counsellor, Chennai

Participating Companies

Company	Tier Level	Location
Chaphekar Engineering	2	Pune

Company	Tier Level	Location
Pooja Castings PvT	2	Pune

Company	Tier Level	Location
Delta Controls	2	Chennai

Company	Tier Level	Location
Magal Engg Tech Private	1	Lanchipram (Chennai)

Company	Tier Level	Location
Ital Plastic Compounds	2	Irrungattukottai (Chennai)

Company	Tier Level	Location
Nandani Rubber Incorporators	2	Pudhuper Village (Chennai)

Company	Tier Level	Location
VNM Polymers	3	Faridabad (New Delhi)

Company	Tier Level	Location
EMDET	2	Jamshedpur (New Delhi)

Company	Tier Level	Location
Premier Press Parts	1	Chennai

Company	Tier Level	Location
Admach	2	Chennai

Annex 5. Data from Evaluation Survey

Stakeholder #, cohort		**Q1: How do you view Industry 4.0? What are the key elements that you see affecting the automotive components manufacturing sector in India?**	**Q2: Is it a threat or an opportunity for:** ➢ OEMs ➢ Tier 1 suppliers ➢ Tier II suppliers ➢ Tier III suppliers ➢ Tier IV, V…	**Q3: In this light, what investments do you see being planned (or already invested) by actors (e.g. are they increasing their own R&D to deal with the threat and/or seize the opportunity?) in:** ➢ OEMs ➢ Tier 1 suppliers ➢ Tier II suppliers ➢ Tier III suppliers ➢ Tier IV, V…	**Q4: Where do you see innovation will come from to address the challenges and opportunities of Industry 4.0 ?**
1	ACMA1	• We're very engaged and aware of this. We have an automation industry association. Together with Indian Institute of Technology, we set up a centre of excellence for automation. We will run cluster programs to deploy 4.0 techniques in the industry. We signed the MoU 2 months ago. We're working on the methodology to deliver • Government: Dept of Industrial Planning and Promotion. ACMA is giving input into this • Tier1s will know about this concept; others may not; they may mention low-cost automation (in case they don't know what is Industry 4.0). This Indian sector is price-sensitive;	• The industry doesn't look at in this way. Automation is helpful in case of repeat jobs, to avoid manpower fatigue. We also face a lot of industrial unrest. Low-cost automation will allow us to address these challenges.	• If customer says to do it, then the company will do it (i.e. companies are reactive) • Especially for SMEs, which are resourced-strapped • Cost of borrowing of capital for larger companies is 11%. For SMEs: 12-14% or the banks won't even give	• As a nation, our innovation quotient is very poor • Industry spend on R&D is poor: .5%-1% of turnover on R&D • Culturally, it's not such an innovation-driven industry although people may want it to be • One of the biggest challenges is related to "culture" • Generically speaking, for smaller companies which are resource-strapped and can't get good people, cost of capital (can't buy technology, don't have access to technology). Customer gives you a design; this is a no brainer, you manufacture what they ask. It's Job work. Build to print. There are no capacities for innovation. • Whatever automation or Industry

		we are a poor country.			4.0 solution will be recommended by their supplier • India is the 5th largest car manufacturer. We make 20 million motorcycles, 3.5 million cars, 700k commercial vehicles, 6500 tractors • As we're just 25 years old, we don't have a whole industry to back us up • The industry-academia connect is very poor. They think we're idiots; we think they're idiots.
2	ACMA2	• It could bring value by way of improvement in "Operations" as well as in "Business". • Key elements would be breakthrough improvements across the business - in Efficiency, Effectiveness, Agility, Response Speed, Customer Focus, Data Analysis and thereby in Competitiveness.	• More of an opportunity for OEMs. • Both a threat and opportunity across the supply chain	• OEMs: Perhaps only at planning stage and also restricted to German OEMs at present. • Tier 1s: not evident as yet • Tier 2s and below: Not aware as yet of "Industry 4.0"	• The trigger for innovation would be from the OEMs and some Tier 1s. • With spread of awareness, we could also expect some local level innovation at Tier2 companies too.
3	ACMA3	• After seeing changes thru Industry 1.0, 2.0 and now experiencing 3.0, the change thru Industry 4.0. is INEVITABLE: Its better get prepared than wondering what is going to happen... • The structure of Auto Industry will be SIMPLIFIED after 4.0. combined with electric vehicle, Self-Driven,3D printer and UBER concepts: drastic changes will	• Opportunity for OEM to grow in size. • Tier-1 will shrink and will look like current tiny MSE, Tier-2 • All lower levels existing now will vanish. • Even Tier-1 will have huge R and D	• Silent revolution is happening in Tier-2 towards processing EV-parts and Aero Space parts by investing in Digitisation like Lap Tops, Mobiles, Internet, WIFI, QR Codes, Remote Control, Mobile Phone Techniques, etc. New gadgets will look simple in size, occupy less space and weight is very less: But more COSTLY for INNOVATION investment. Hence promotes innovation every where • Luckily Digitisation uses lots of software and much less hardware, people started investing in simple	• Most of the innovations will be from WITHIN and self-generated. • FANCY and Out of Box Thinking ideas will be generated all over the world. Technical supremacy of USA, Germany, Japan will be lost. • Internet and Website will drive the Industry 4.0

		happen: OEMs from shrunken size now, will regain in scale and grow bigger and Tier-1 will eat away Tier-2 and 3 because reduction in number of parts to 10% level in EV + self-driven. • Tier-1 and 2 will become more high-tech with low cost automations and use of more telecom techniques in manufacturing through mobile: World in Palm will be realised. R and D will grow in size: More and more Super-skilled people will be required to invent new innovations to get" NEW THINKING and NEW POSSIBILITIES" EVERY DAY: Today's innovation will be obsolete TOMORROW. • RE-SHORING is another threat from MNC Auto OEMs • Lot of Tier-1 will migrate to Aero and Astro Space parts manufacturers • *India Railways so far neglected, will become more Efficient and powerful to handle Pollution, EV, Self-Driven, UBER issues: Railways will be privatised and utilization will grow MIN.100 (ONE HUNDRED)-times from current level.	set up and OEM will be after TIER-1 to get technology. • Between Industry and Technical Institutions close tie-up will happen to win in the technology rat race.	digitisation thru programming on their own: Because DREAMS cost nothing. • *The cost of Innovation is more because of encashing intellectual ideas: But the investment required for innovation is very much less: That is why ALL multinational auto OEMS have shifted their R&D to India.	

4	ACMA4	• World is changing very fast. To keep pace with change, we have to change .and 4.0 is going to help Industries to change • OEMs will grow more compared to Tier I • Maximum threat to Tier II and Tier III if they do not change • More opportunities to Tier I industries to diversify and change	• Maximum opportunity to OEMs and to some extent to Tier I but threat to Tier II, III, etc. if they do not become more cost effective by going for automation, semi automation would be difficult to survive.	• Very few Tier II companies are adding new technologies in Process and quick-change approach to improve productivity as well as repeatability in desired quality through improved processes • Investment on R&D will increase. • What is best today will be obsolete tomorrow…	• Future is very challenging. Digitisation, software will play big role in driving changes. Industry will be benefitted by 4.0
5	ACMA5	• Current trend in automation and data exchange in manufacturing using cyber-physical systems, the Internet of things, cloud computing. • Lack of adequate skill-sets /awareness/knowledge to march towards fourth industrial revolution • General reluctance to change by stakeholders • Loss of many jobs to automatic processes and IT-controlled processes, especially for lower educated parts of society	• Opportunity to OEM for optimising operations to improve business opportunities • If planned and executed rightly, opportunity for supply chain or else threat	• OEM: Just initiating few thoughts for awareness. • Supply chain: Nowhere near awareness.	• OEM to take a step forward/lead and do handholding of supply chain.
6	ACMA6	**View of Industry 4.0** • Industry 4.0 view creates Smart Factory • Digitization, Analysis of the data • Automation and data exchange in manufacturing technologies.	• It is an opportunity for the OEM as the need for customer services has increased with several non-	• OEMs are making the move to Industry 4.0 with investment in R&D and they are planning to make the transition soon, some of them are already in progress with seize of opportunity with technological upgradation.	• Industry 4.0 is important and is seen to be revolutionary in the era of information technology and open market operations. • Industry 4.0 mitigates the burden of current challenges for manufactures

		• Internet of Things, Monitoring physical processes and Energy • Important for the penetration of Electric vehicles increase **Key Elements affecting the automotive components manufacturing sector** • Industry 4.0 will change the way humans work • Investment plays a major role • Minimising job loss with adoption to automatic processes &IT-controlled processes, especially for lower educated parts of society. • Need to avoid any IT snags • Lack of adequate skill-sets to expedite • General reluctance to change by stakeholders • Reliability and continuous productivity	automotive companies eyeing the consumer engagement beyond the point of vehicle sale. • OEMs lose significant opportunities with respect to product planning, newer services, and time-to-market reaction with the lack of customer/vehicle data feedback. • Direct interaction between an OEM and customer/vehicle will help former understand and gauge customer preferences and reduce several inefficiencies. • The consumer piece of every transaction can be monetised and manufacturers will also need to work to understanding avenues that can	• Connectivity in manufacturing facilities of Machine-to-machine (M2M) connectivity has existed for decades. • Recent technological advances are allowing manufacturers to integrate physical automation with intelligence and data, creating fully smart manufacturing facilities.	in order to make the companies more flexible and responsive to business trends. • Challenges are the one of increasing market volatility, shorter product lifecycles, higher product complexity, and global supply chains. • Smart items will bring stronger integration of top floor and shop floor and thus more intelligence and flexibility to production. • Industry 4.0 enables the transformation of modern economies to become more innovative and hence increase productivity. It is expected that the use of modern technologies such as digital chains, smart systems, and the industrial Internet will speed up innovations as new business models can be implemented much faster. • It highlights the role of consumer as a co-producer and puts them in the centre of all activities. The customization of products is the most important activity in the product value chain, and digitization will facilitate crowdsourcing, which in turn will lead to a faster design process.

			have a positive impact on internal savings and ways to improve the bottom line. • Industry 4.0 is expected to bring forth the idea that advances in manufacturing will help the industry focus on key functional pillars such as technology, collaboration, processes. • Tier 1 Suppliers have to follow OEMs, so it is an opportunity for these suppliers. • Tier II – Tier IV will take some time for adopting due to investment cost high.		
7	ACMA7	• Industry 4.0 will build a culture of on-time / online data management. Presently smaller companies face challenge for data management. It will also ensure move from manual	• I would consider this as natural cycle of change as after each decade, new methods are embraced by this	• Investments are always planned by OEMs which can be in tune of 2 to 5 % of sales. • Tier 1 would be spending in parts based on the needs and guidance available as ROI expected at OEMs can be little longer (around 2 to 3	• Innovation will come from industries as a result of product cost reduction, but it will also come from Automation service providers. Today, available sources for implementation are quite expensive

		methods to semi-auto manufacturing in India as full automation ROI is still an issue. • Key element affecting auto component industries are: Low productivity, Inventory holding cost, poor supply chain management and present processes are labour intensive and away from use of useful software for monitoring entire supply chain	world and mankind is quite knowledgeable to overcome these challenges in their own ways. • It is a biggest opportunity for those who want to lead the change and biggest threat for complacent companies who does not have ambition to grow. • Biggest beneficiaries would be OEMs • If implemented in a structured holistic way, then all tiers would benefit. This requires a complete transformation plan and not pocket improvement plan.	yrs) and Tier 1 to 3 would expect 1 to 1.5 years. • Tier 5 and 6 may not invest unless supported by their customers mostly. • Investment in R and D is happening mostly at Tier 1 in tune of 1 to 2 % of sales and future (next 2-3 years) OEM requirements are in the form of subassemblies and not components. Still, ownership of design of components lies with OEMs and it is taking time to transfer design responsibility to Tier 1 due to non-availability of required R and D setup. There are good number of examples where Tier 1 is already having Design capability, however, number is quite less. • ACMA Centre for Technology is in the process of designing BRIDGE NPD CLUSTER for companies who are in Print to Manufacture and have aspirations for design capability. This would be available by End Oct 2018	and they need to offer affordable capsules. • ACMA Centre of Technology is bringing affordable implementation program from Apr 2018 for all sizes of companies
8	Company 1 (Tier 1)	• Aware of this concept; not at all a surprise: Talked about real-time manufacturing. Smart manufacturing • More automation. Fewer people	• Threat: many jobs will be wiped out. Right now, there are a lot of machines. But in	• Not yet decided • Today we are not doing profit; that is a big challenge • When industry is coming up, not this year but	*No answer*

		being needed in factories, many jobs will be taken over by machines	near future, there will be 1 guy running all the machines. • T2s are becoming assembly companies. • Choices about whether to make itself or outsource. • Opportunity: There are technical people in the SMEs; they will always be valued. They will get absorbed into other parts of the chain	• Manufacturing – going for automation, total process integration. We've already taken off that road. To get a better quality product • Environment- we should have zero pollution, reduce emissions, water pollution • Employee education – we don't have trained manpower. Government has initiated a new program. Skill Up with MIT Ian engineering college). In that skill development program, we'll get some people. Government will take care of something. WE have to train those boys for 3 years. This is happening in many industries. The idea is you'll get trained boys from	
9	Company 2 (Tier 2)	• He wasn't taking up on this. He spoke about moving from a yearly to a monthly and now weekly basis. So he is telling customers that he only needs to know customer order for the week and then he responds and can meet the delivery with 100%. This seems to be influenced by his 1-year training program from Japanese expert	*No answer*	• Die casting to reduce chances of mistakes	*No answer*
10	Company 3 (Tier 2)	• MNCs re helping us to do more business but their attitude has	• If you are performing at	• We are not in the level of planning these investments	• The discussion centred around an idea that the "north" of India has

		been indirectly adding manufacturing cost to India (through customer requirements) that ultimately increases cost of the product • There will be changes: the manufacturing concept itself will get to a different level and there will be more AI replacing employees • In 7-10 years, there will be a major change when the electric cars will be there. It will go from 3'000 parts to 300 parts. That is going to bring a major thing. China will have a major role. Some countries are trying to plan for that not to happen. If we allow electric cars, the petroleum nations will suffer. • Now, environmental issues have become a major problem and electric cars may be allowed to happen, to become a reality • Cost of raw materials, cost of energy • We should try to adopt environmentally-friendly processes to assure tomorrow's survival	80%+ level, every challenge becomes an opportunity. If you are performing less, then every challenge becomes a threat	• We are still concentrating on the traditional technology • Our focus is on where can we find ways to bring more value to the customers • It's not our strong point to do the product development like what Chinese can do with iPad • We are concentrating on products where there is scope for better value • India: is in 10'000s. We need people catering to that level. We are not in the high volumes. WE are not in that race. We are happy to do the mid-volumes	less discipline and the "south" being more disciplined. I asked if that could imply that the "north" is a source of innovation? He got nervous about making such a leap…
11	Company 4 (Tier 2)	• The components that we are making will always be needed • Doesn't think that anything	*No answer*	*No answer*	*No answer*

		coming will affect the company			
12	Company 5 (Tier 2)	*No answer*	• It is not a threat, as our company will still be there after as the parts being produced are not affected by advent of advent or electric vehicles	*No answer*	*No answer*
13	Company 6 (Tier 1)	• Certain level of digitization, automation, connected smart metering. A big company can not afford to go through this. Smaller companies will have to exit. Consolidation in the tiers • There was an opportunity for some members of my team to travel to Bangalore to attend INTEX exhibition: this is Industry 4.0 solutions approach. Maintenance man: everybody is embracing industry 4.0 in their own perspective. The whole of Indian industry will transform. It's like a Y2K issue for industry. It's not a big deal, we will easily handle it • We will have the majority of manufacturing will still be in India. We can not compete with Stuttgart or the Midlands. They own the technology; their cost of	• Industry 4.0 will be a real challenge for our sector • Magal would be considered as a small company in the Indian context • What's next? The biggest challenge coming is birth of new technologies. We always think about investment. What we are planning to do, you can't achieve, if you don't want it. We have borrowed technologies. First level will always to maintain. We'll try to be effective. You're asking the	• We will continue to invest in the next 3-4 years. What we invested in the past 5 years, we will double this in the coming time, maybe even in 2 years • Investment in manufacturing. Brand new engine by 2019 (euro-6 engine). My future is there. Williams is investing like this. • 70-80% will be in capital: manufacturing • Rest will be in testing • 5% will be in human capital: #1 benchmarking studies • We will not be increasing employment levels • We will double our turnover in the next year, we will only have .3 indirect employment; for this, we need to have the systems in place	• Innovation will come from Indian industry. • Because the solutions coming from Europe or anywhere else will not be easy to implement. The cost will not be affordable • There is no shortage of technology here • It is just a question of mind. WE are the tortoise • We can innovate. • Our minds have been too concentrated on doing things in a frugal way. This has to change.

		technology is different. WE can't compete. We'll emerge as a top manufacturing • By 2030, we will definitely be there. (not sure if he meant India or Magal) • Aerospace will be a strategic advantage for India. By 2020, 20% of our turnover should be in this sector (remember lunch-time discussion with Counsellors is that some of the players in automotive will shift over to Aerospace)	fish to climb the tree. It's a very confused status. This is the biggest negative we have • Solution: we have to start		
14	Company 7 (Tier 2)	• In case the automotive doesn't use steel in future, then the company will need to change • They know the change is coming, but they don't know what it is and when • Steel production is growing at the moment • Steel wheels or for construction of factory	*No answer*	*No answer*	*No answer*
15	Company 8 (Tier 2)	• Stiff competition is there. The Managing Director's main preoccupation is about money, time, material. That will answer to all my challenges • Rubber parts will be there for. Whether it's an electric vehicle. We will still be there	• Automobile is an essential requirement for the human being after food, house, then a car • There is no threat coming	• He said that he has a 10-year plan • We are investing in our tool room and in developing rubber moulds • Outsourcing IT • Investing something from China. • Will give something from Thailand and give to the operator that will reduce waste • Each week there is a reduction in	*No answer*

		• Automation, technology. Industry is moving faster every day. There should be improvements from there	for the next 15 years	waste. We started doing this • We already purchase equipment. Replacing older stuff • Injection moulding, thermal plastic, some high-tech stuff based on equipment already purchased • Next 15 years: we are ready	
16	Company 9 (Tier 3)	• Not heard of this concept • Other plant is a T1 supplier to Tata. Information about what is relevant or needed will come from above.	*No answer*	*No answer*	*No answer*
17	Company 10 (Tier 2)	• Never heard about this concept	*No answer*	• Owner says that as soon as they know what is the next thing, they will buy it (*JM note: this sounded more like talk than walk…*) • See Powerpoint of the company: injection moulding, vacuum compression	*No answer*
18	OEM1	• The 4th industrial revolution, characterized by increasing digitization and interconnection of products, Value chains and business models has arrived in the industrial sector. • Digitization and interconnection of products and services (Internet of Things/Services) is a second important driver. It will contribute strongly to ensuring competitiveness and promises additional development. • Industry 4.0 not only comprises the digitization of horizontal and	• Opportunity for OEMs • Tier I and II suppliers: Convert Threat as opportunity • Tier III suppliers: Convert their weakness to threat than as opportunity to change themselves as	• Tier 1 suppliers: Already in action on their own development and Converting lot of Digitisation as to simplify manpower Involvement • Tier II suppliers: Awareness created Small level activity is on and to initiate at a large level by minimising their Wastes and Cost • Tier III suppliers: Realising the threat in market as well cost Competitiveness to meet the Customers • Tier IV, V…same as above	• The innovations will come upon realising the market threat by the Suppliers/Vendors/Manufacturers; This should give awareness by the OEM and organisations like as UNIDO ACMA Cluster program to realise their current waste and loss as to change them to meet effective Manufacturing cost, also to meet the market pricing or as to meet the Competitors • All the challenges are to be faced effectively by the Tier1 to Tier 4 by the Continual Improvement and utilising current Technology prevails

		vertical value chains but will also revolutionize the product and service portfolio of companies with the ultimate goal of better satisfying Customer/OEE needs.	to sustain in Market • Tier IV: Convert their weakness to threat than as opportunity to change themselves as to sustain in Market		and readiness to avail the forthcoming
19	OEM2	Feedback was provided as follows How did your company come to know about this program - Through ACMA event in Delhi 2. Criteria adopted for Vendors selection for cluster program - Supplier PPM, SCARs, Audit score, Supplier top management interest, Business share, Long standing relationship with our Company, Delivery performance, Rejections during Incoming Stage at BI 3. What are your expectations out of this program - Green Channel ON time supply to our Company after meeting our Company targets 4. To what percentage the expectations are met - 50 ~ 60% 5. Will your company like to recommend more New clusters - To some extent 6. Will your company recommend its vendors to go for 2nd Year LEVEL-2 program – Partially. Also it is based on Suppliers' willingness. 7. Any Suggestions for adding Value to ACMA-UNIDO program. - Review should be focused towards target objectives set by our Company and relate to system gaps and assessed critically by UNIDO 8. Any weighting given for Good Cluster companies like giving more volume in running product, Giving New Products, Green Channel opportunity etc... - Not realised the improvement across all the Suppliers 9. Any plan to convert from ordinary Vendor to STRATEGIC VENDOR etc. - Criteria for strategic vendor being worked out for suitable migration of existing vendors; Prioritization of vendors based on performance will be reflected in future business awards.			