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# Indian Aerospace & Defence Industry Intelligence Platform

Strategic Foresight  
Cluster and SCM Analysis  
Business Development

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## Academic Partners



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**EBS** Business School

## Why is there a need for an Indian A&D Industry Intelligence Platform?

*The Indian A&D market is among the largest and fastest growing in the world. The need of the Indian Airlines, the Armed Forces, MRO Providers and Infrastructure Operators in India during the next years and decades provides interesting business and growth opportunities for A&D companies all over the world. However, there exists only little transparency on future industry developments or the best clusters to invest for sourcing, production and R&D. Even more important, the opportunities for business development and networking are limited to large events with only little opportunities to have informal discussions among senior executives.*

*The Indian A&D Industry Intelligence Platform offers A&D companies access to exclusive local insights, expertise and networking opportunities through the collaboration of leading European and Indian business schools.*

## What does the Indian A&D Industry Intelligence Platform offer?

### **Strategic Foresight: Understanding how local A&D experts expect the future business environment in India to look like**

*The Industry Intelligence Platform conducts regular Delphi studies and local scenario development workshops with local senior executives of the A&D industry in India organized by the CFAC-HSG and CIS-HSG and hosted by the Indian Institute of Management Bangalore (IIM-B), the leading business school in India. The insights are exclusively accessible to member companies through the web-based platform.*

### **Cluster & SCM Analysis: Making the right long-term investment decisions for sourcing, production and R&D /engineering in India**

*The Industry Intelligence Platform identifies all major A&D institutions and companies in India and evaluates for each value chain step the relevant clusters with respect to their current and future strengths and weaknesses. The insights are exclusively accessible to member companies through the web-based platform.*

### **Business Development: Connecting to the right decision makers in the Indian A&D industry**

*The Industry Intelligence Platform allows member companies to participate in the local scenario development workshops in India and additional A&D symposiums in India hosted by IIM-Bangalore. These events provide the optimal setting to develop personal networks with local key decision makers from corporations and government institutions.*

## Who are the project leaders of the Indian A&D Industry Intelligence Platform?



*Prof. Dr. Moser serves as an EADS Endowed Chair Professor at the Indian Institute of Management in Bangalore, India, and is Associate of the India Center of the University of St. Gallen. He is also Assistant Professor for Strategic Management at EBS Business School, Germany. Prof. Moser has been living in Bangalore for almost four years intensively studying the Indian Aerospace and Defense as well as the Automotive industry in India.*



*Dr. Wittmer serves as the Managing Director of the Center for Aviation Competence (CFAC-HSG) of the University of St. Gallen and is project leader at the Institute for Systemic Management and Public Governance. He is also the President of the Swiss Aerospace Cluster. Prof. Wittmer is a leading European expert in Aviation and Aerospace studies.*

## How can I make use of such knowledge for my company?

The Indian A&D industry is highly intransparent and dynamic. Even local experts with decades of experience are often not sure what to expect for the future. In this context, it is even more difficult for Western A&D executives to collect reliable information to develop solid business cases and strategies for the Indian A&D market. A possible solution is to rely on consulting companies but they also have only limited insights and experiences. The Indian A&D industry Intelligence Platform provides an alternative offering Western companies the regularly and systematically collected expertise of dozens of local A&D experts in India as input for their strategy development process.

This input includes single future projection evaluations, scenario alternatives for the political, economic, social and technological environments, consistent scenario combinations and implications for key industry stakeholders.

## What kind of insights do the Delphi studies provide?

Figure 1: Probability, Consensus, Impact etc. of the 20 Projections

No	Projection	Probability	Consensus	Convergence	Impact	Desirability
1	(POB) 2020: There is no FDI limitation for foreign manufacturing companies in the Indian Defence sector.	47%	45	-5%	3.8	3.8
Political	(PO1) 2020: The offset requirements fulfillment rate of each program and its respective suppliers is automatically published on the MOD website.	60%	25.5	-12%	3.6	4
	(PO2) 2020: The Indian Defence regulations system provides substantial financial subsidies to foreign OEMs investing into the technological development of the domestic supplier base.	51%	25	-19%	3.6	3.3
	(EO1) 2020: Cutting-edge technology integration into the manufacturing processes is the key competitive criterion of the Indian Defence sector.	70%	20	-13%	4	4
Economic	(EO2) 2020: Business alliances between the major foreign and domestic Defence players are exclusive agreements.	57%	25	-8%	3.3	3.3
	(SO1) 2020: The spending of the GOI on strong defence programs is facing huge resistance from strong alliances of various opponents.	48%	20	-8%	3.3	2.3
Social	(SO2) 2020: The Defence tendering process of the GOI is 100% transparent and solely based on the best technological offer.	74%	20	-5%	3.6	3.9
	(TI0) 2020: The manpower for highly skilled manufacturing activities in the Indian Defence sector is non-existent.	43%	20	-15%	3.0	2.5
Technological	(TI1) 2020: The Indian Defence infrastructure is not ready to actually make use of the cutting-edge technology of foreign OEMs.	45%	10	-22%	3.7	2.6
	(Ca1) 2020: The Indian Armed Forces openly communicate their disadvantages to competitors to their Chinese counterparts in annual reports.	38%	17.5	-27%	3.2	3
Government	(Ca2) 2020: The key representatives of the Indian Armed Forces are publicly supporting 100% FDI for manufacturing companies in the Indian Defence sector.	51%	25	-7%	3.5	3.1
	(Su1) 2020: Private Indian vocational training institutes in collaboration with the major Defence OEMs train blue-collar workers for high-quality manufacturing activities in large numbers.	63.5%	25	-20%	3.7	3.8
Institutions	(Su2) 2020: All domestic Defence players except the PSUs are controlled and managed by less than 5 large Indian private corporations.	58%	17.5	-8%	3.4	2.4
	(Co1) 2020: Foreign and Indian OEMs have formulated a strictly followed Code of Conduct towards business ethics in the Indian Defence sector.	58%	30	-12%	3.7	3.8
Industry/OEMs	(Co2) 2020: Foreign OEMs protect their cutting-edge technology by only having managers and engineers from their home countries in the key decision roles for their operations in India.	64%	30	-1%	3.3	1.9

The on-line Delphi studies provide the basic understanding of 20 projections about the future political, economic, social and technological A&D industry environment as well as the behavior of key industry stakeholders including suppliers, customers, competitors, government and society at large. A single Delphi study involves approx. 30-40 local A&D experts in India. The input provided allows estimations about the probability, impact and degree of consensus among the experts for each future projection. Each projection serves as input for a strategy development process for the Indian A&D industry.

Input for the Technological Environment Scenario Development: Expert Panel Study 2010 on the Indian Defence Sector

**Scenario 1 (High Probability):** TO1: "Missing High-Skilled Manufacturing Manpower"; TO2: "Defence Infrastructure Not Sufficient for Requirements of Global Standards"; TO1 and TO2 combined (0.35%) - We can therefore combine them into one aspect when developing the scenario for the technological environment.

**Scenario 2 (Low Probability):** Technological Acts Alternative: GOE: "Defense R&D"

**Projection 8:** TO1 "Missing High-Skilled Manufacturing Manpower" 2020: The manpower for highly skilled manufacturing activities in the Indian Defence sector is non-existent.

**Reasons for Probability:**

- LOW Probability:**
  - DPSUs and ordnance factories already outsource 20-25% of their requirements to the private sector. The Indian defence sector is poised for growth - never as before.
  - Multiple offset programs kicking in over the next few years will enable Indian players to build strong high-skilled manufacturing base by 2020.
  - Skilled manpower is existent in the Indian Defence sector with the potential of developing into highly skilled manpower by training and exposure to advanced manufacturing technologies and principles.
  - With increasing number of educated people in the engineering disciplines, skill levels may not be restrained.
  - This availability of highly skilled manufacturing activities would enhance with time.
  - Skills required in the manufacturing can easily be trained with the existing levels.
- HIGH Probability:**
  - We still do not have the desired investment and training level in diploma level technical education. With persisting FDI limits in the sector, cross country training will be of limited scope.
  - Indian suppliers need international exposure and technology otherwise required skill exists in this sector.
  - With the increase in manufacturing unconventional and special processes also will increase. Though there is a movement in the aerospace and other defence sectors for the last 3-4 years, there is still a shortage of manpower with these skill sets. Further, private industries need to develop themselves as a supply chain and not as a job shop for the major companies to be effective in meeting the growing need of the

## What kind of insights do the Scenario Development Workshops provide?

Year	Scenario	Probability	Consensus	Convergence	Impact	Desirability
2010	Scenario 1: "Missing High-Skilled Manufacturing Manpower"	47%	45	-5%	3.8	3.8
	Scenario 2: "Defence Infrastructure Not Sufficient for Requirements of Global Standards"	60%	25.5	-12%	3.6	4
2011	Scenario 3: "Multiple offset programs kicking in over the next few years will enable Indian players to build strong high-skilled manufacturing base by 2020"	51%	25	-19%	3.6	3.3
	Scenario 4: "Skilled manpower is existent in the Indian Defence sector with the potential of developing into highly skilled manpower by training and exposure to advanced manufacturing technologies and principles"	70%	20	-13%	4	4

Based on the Delphi study results the research team conducts scenario development workshops on the campus of IIM-Bangalore with another 20-25 local senior industry experts. The outcome of such a workshop includes detailed scenario alternatives and likelihoods for the future industry environment, back-casting information for the behavior of key industry stakeholders and potential path-changing events as well as combinations of the most consistent political, economic, social and technological scenarios.

Social Environment - Analysis 1A - EXAMPLE for Scenario Description in General

**Scenario 1 - 2020: "Change Realities India's Values" - Probability: 10%**  
The Indian consumer has reached the 20th anniversary of the 1991 liberalization... The Indian consumer has reached the 20th anniversary of the 1991 liberalization... The Indian consumer has reached the 20th anniversary of the 1991 liberalization...

**Scenario 2 - 2020: "The Chinese Consumer Pattern" - Probability: 25%**  
The Indian consumer has reached the 20th anniversary of the 1991 liberalization... The Indian consumer has reached the 20th anniversary of the 1991 liberalization... The Indian consumer has reached the 20th anniversary of the 1991 liberalization...

**Scenario 3 - 2020: "Green India" - Probability: 15%**  
The Indian consumer has reached the 20th anniversary of the 1991 liberalization... The Indian consumer has reached the 20th anniversary of the 1991 liberalization... The Indian consumer has reached the 20th anniversary of the 1991 liberalization...

**Scenario 4 - 2020: "Green India" - Probability: 15%**  
The Indian consumer has reached the 20th anniversary of the 1991 liberalization... The Indian consumer has reached the 20th anniversary of the 1991 liberalization... The Indian consumer has reached the 20th anniversary of the 1991 liberalization...

The applied scenario development process is academically recognized, uses state-of-the-art software and is practice proven in the automotive industry

# Cluster / SCM Analysis (Company Info/Cluster Performance)

## How can I make use of such knowledge for my company?

There exist hundreds of companies that are active in the Indian A&D industry. Many of them are small, specialized companies that are hard to identify – especially the hidden champions. Besides the classic Aerospace clusters such as Bangalore there are currently also new clusters established in other regions. Companies that plan their long-term sourcing, production or R&D engagements in India need to be aware of the current and future strengths and weaknesses of the relevant clusters including labor cost, expertise/specialization, infrastructure, collaboration level among value chain partners and competitors etc.

The Indian A&D Industry Intelligence Platform identifies each A&D player and its production/service locations based on GPS data and lists the relevant contact and product / service information. Specific algorithms allow the identification of clusters and local experts evaluate their current and future strengths and weaknesses.

## What kind of insights does the company listing provide?

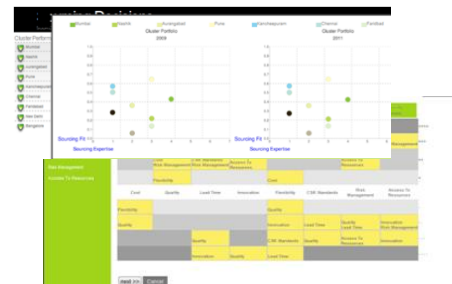


The GPS-data collection for each production location or delivery center of A&D companies and the provision of further information including contact details, products and services covered etc. allow member companies to quickly identify potential business partners and evaluate their regional environment – or do you know where Belgaum is located and what it implies to choose a business partner from there?

## What kind of insights does the cluster & SCM analysis provide?

The identified clusters for each step of the A&D value chain based on the GPS data collected are evaluated for their current and future strengths and weaknesses. This allows member companies of the Industry Intelligence Platform to prioritize their strategic objectives based on systematic approach and identify the most suitable clusters for today and the future (e.g. in five years).

The clusters are evaluated based on the qualitative perceptions of local industry experts with respect to various criteria including costs, quality, innovation and collaboration level as well as number of similar competitors. This approach allows to identify potential discontinuities that are outside the scope of other approaches and analyses of global intelligence service providers.



The applied GPS-data collection approach is tested with local experts in India. The cluster analysis approach has been developed with the Center for Cluster and Competitiveness at EBS Business School and experts from Harvard Business School as well as the Indian Institute of Management.

# Business Development (Relationship / Trust Development)

## How can the Indian A&D Industry Intelligence Platform support my business development projects in India?

India is a special place to develop business. The rules of the game are “slightly” different to European markets as the enforcement of legal contract is often difficult to achieve. Successful business development therefore often depends on mutual trust.

However, trust in India is different to how it is normally understood in Central Europe. In short, Indian senior executives are willing to engage into joint investments (in JVs or Buyer-Supplier relationships etc.) if they can be sure that both parties can hurt each other significantly due to overlapping personal or professional networks at an early stage and increasing joint economic investments at a latter stage. The neutral platforms of the involved business schools and the regular meetings of the same senior executives in the scenario and strategy development workshops provides an ideal environment to create overlapping personal and professional networks so that no involved party has in interested to “ruin” his/her reputation for a few more Rupees in a business deal.

### Knowledge creation and networking events in India hosted by



The events in India are either specialized scenario development workshops on IIM Bangalore campus and by invitation only (except for Industry Intelligence Platform members that receive automatically an invitation) or address more general A&D related topics and attract a larger audience including media. There are on average two specialized scenario and strategy development workshops per industry segment per annum.



The scenario and strategy development workshops are for senior executives only and strongly support the personal relationships building among key decision makers in the A&D industry. These events blend optimally informal knowledge exchange, systematic knowledge creation and the opportunity to regularly meet the same senior executives over time again and support the build up of mutual networks.

Other events can be used by Industry Intelligence Platform member companies to address topics (proactive issue management) towards the public and government institutions in India.

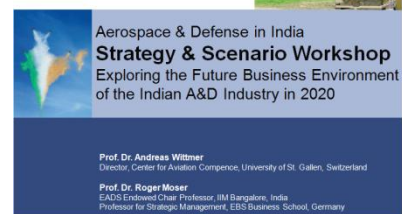
### Knowledge creation and networking events in Europe hosted by



The Industry Intelligence Platform also organizes on average two workshops per annum on the campus of the University of St. Gallen for the member companies to present the results from the Delphi/Scenario and Cluster studies and discuss their implications for strategies of the member companies.

These workshops also serve as networking and experience exchange opportunities for European A&D companies regarding their planned or ongoing engagements in India.

These workshops also serve as important input opportunities with respect to the next focus of the next Delphi/Scenario study round. The maximum number of companies per workshop is 30. If there are more companies interested the workshops are repeated as many times as necessary.



Partners





# Interested?



If you are interested in benefiting from the platform, please fill in the required information and send the page via fax, mail or e-mail to:

**Address:**

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I am **interested** in the **Indian Aerospace & Defence Industry Intelligence Platform**, please provide me with **more information**.

Name/First Name:

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Company/Function:

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