



Embracing the “China opportunity”

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- *Managing Director, Comau China*
- *2016 PMI Congress*



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Industry Transformation

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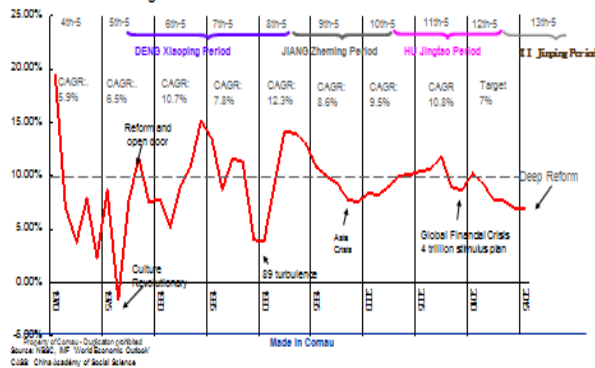
Building for the future

The China Opportunity

Many Faces of China Opportunity during *past decades*

China GDP Historical Growth

Figure : China GDP Growth 1970-2015

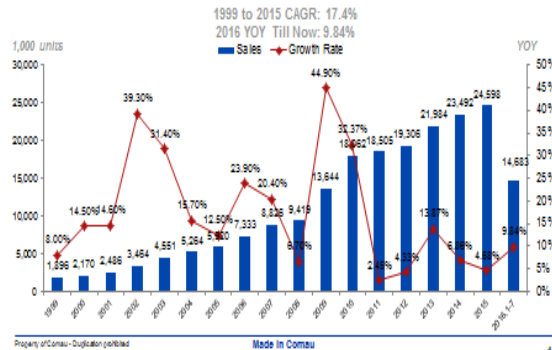


- Mass production with low labor cost



- Huge Available market

China Automotive Industry History Sales



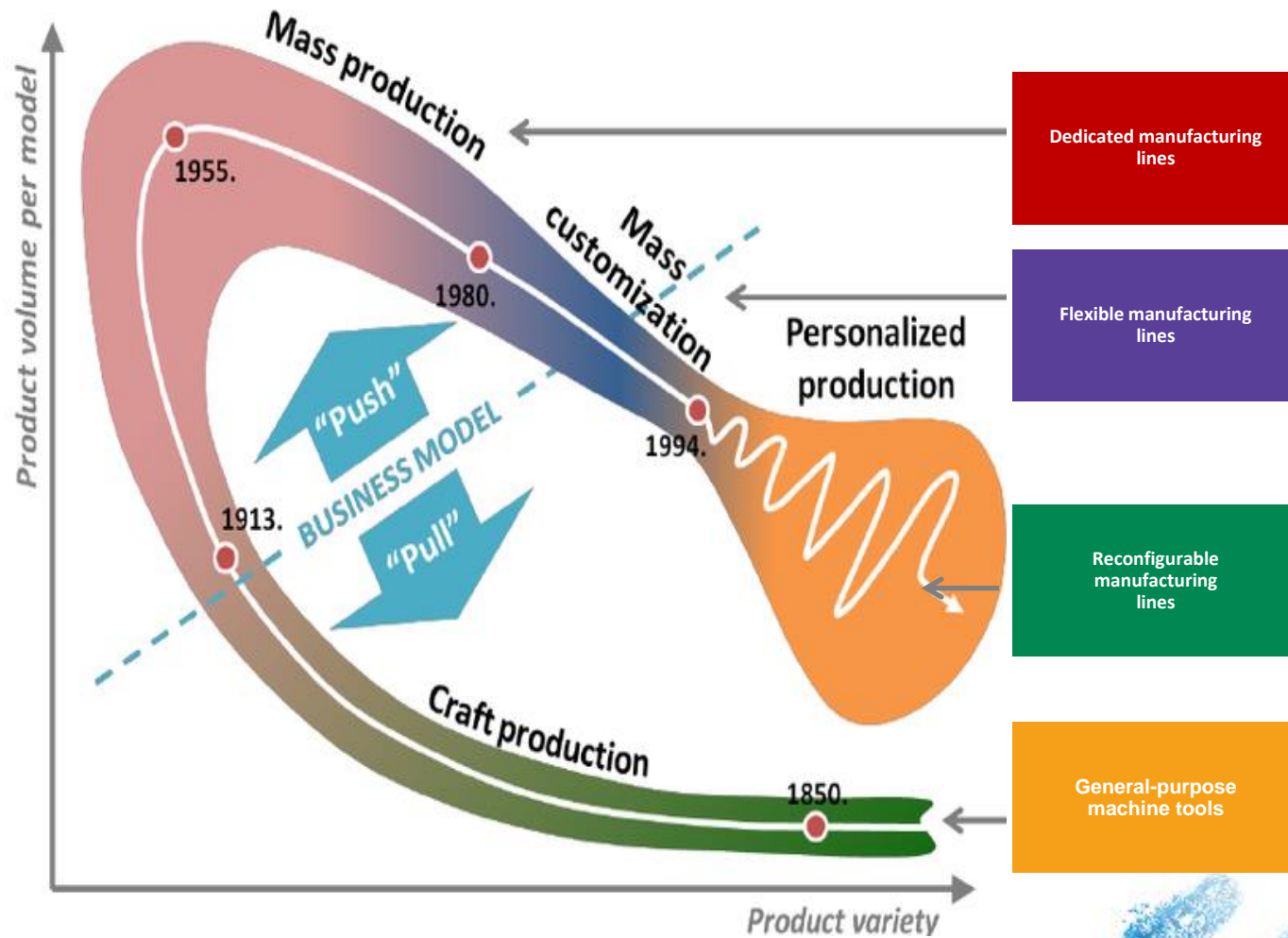
- Strong Capacity Growth - Demand



- New Opportunities in Advanced Manufacturing Sector



The China Opportunity – Industry In Transformation



The China Opportunity – Changing Customer Needs

Six core principles of reconfiguration

Customization

Scalability

Convertibility

Integrability

Modularity

Diagnosability

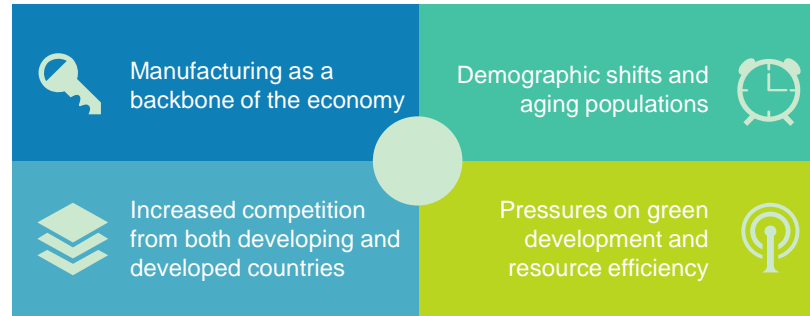
Customized Production:

- Continuously shortening product life cycles.
- Rapid quantity fluctuation.
- Small batch sizes up to make-to-order production and at the same time a large number of variants.
- High degree of alteration in the part spectrum .
- Raising product quality demand.

Reconfigurable Manufacturing Systems represent the solution with an important contribution from Robotics.



Government Driving Change



COMMON GOAL

Strengthen the competitiveness and productivity of national manufacturing in the increasingly competitive global market.

KEY SOLUTION

“Intelligent Manufacturing” is the key solution



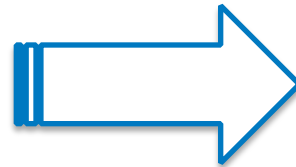
Advanced Manufacturing Technologies Will Fuel Competitiveness

Ranking of future importance of advanced manufacturing technologies

Advanced Manufacturing Technologies	US	CHINA	EUROPE
Predictive analytics	1	1	4
Smart, connected products (IoT)	2	7	2
Advanced materials	3	4	5
Smart factories (IoT)	4	2	1
Digital design, simulation, and integration	5	5	3
High performance computing	6	3	7
Advanced robotics	7	8	6
Additive manufacturing (3D printing)	8	11	9
Open-source design/Direct customer input	9	10	10
Augmented reality (to improve quality, training, expert knowledge)	10	6	8
Augmented reality (to increase customer service & experience)	11	9	11

SOURCE: Deloitte Touche Tohmatsu Limited and US Council on Competitiveness, 2016 Global Manufacturing Competitiveness Index

Factory of Today



Factory of the Future



- Preprogrammed machines to execute assigned tasks.
- Preventive maintenance systems.
- Highly configurable and flexible production cells operated by robots.
- Optimization through systematic feedback from the production machinery.

- Real-time production optimization through integration with simulation techniques.
- Predictive analytics through pattern recognition methods.
- Encryptions in data packets to enhance cyber security.
- Automatic capturing, modeling, and optimizing of production systems.

SOURCE: F&S, September 2016 - Revisited

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How Comau grasp the opportunity:

Comau Approach



1, Product

Comau robot and Automation products



2, System

Comau System to support our Solution



3, Solution

Comau Solution for "Intelligent manufacturing"

Competence is the KEY

Technology, **Project Management**, Comau People.

Comau Products for “Intelligent Manufacturing”

Industrial Robots			Service Robots			Autom. Products				
<i>Articulated</i>			<i>Scara</i>	<i>Collaboratives</i>	<i>Wearable</i>	<i>Logistics (Mfg AGV)</i>	<i>Educational</i>	<i>Welding Guns</i>	<i>Hybrid Laser Source</i>	<i>Others</i>
<i>Low & PAL</i>	<i>NJ & NJ4 (Med/High/Heavy)</i>	<i>Arc - Heavy I.</i>								



Comau Competence: Project Management

Comau's project management ensure coherence between strategy and execution:

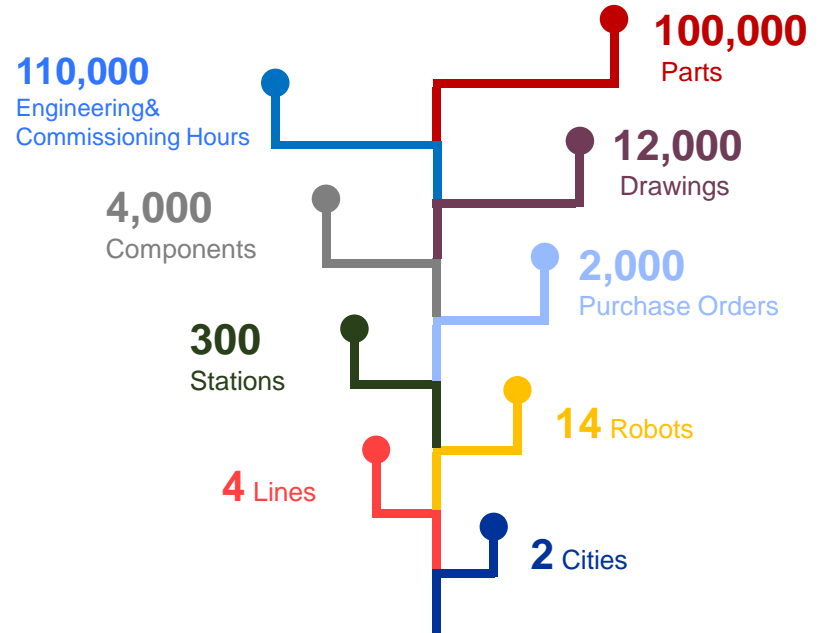
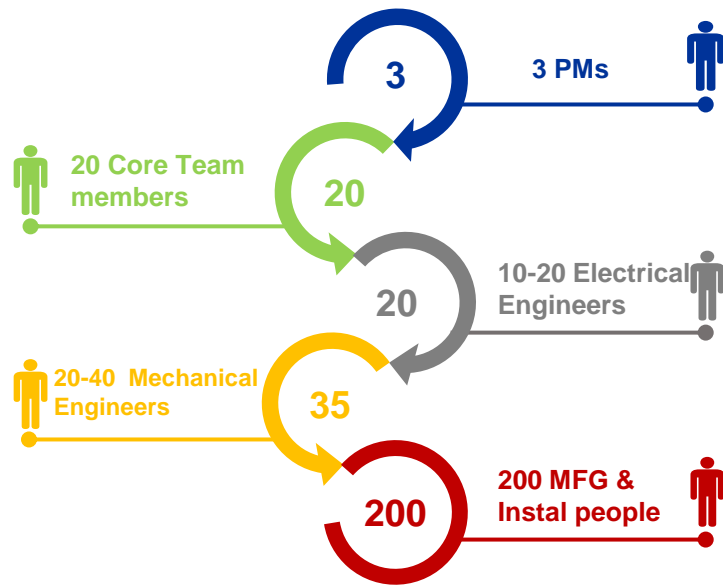
- PMO (Project Management Office)
- Risk Management



Complexity of



Project



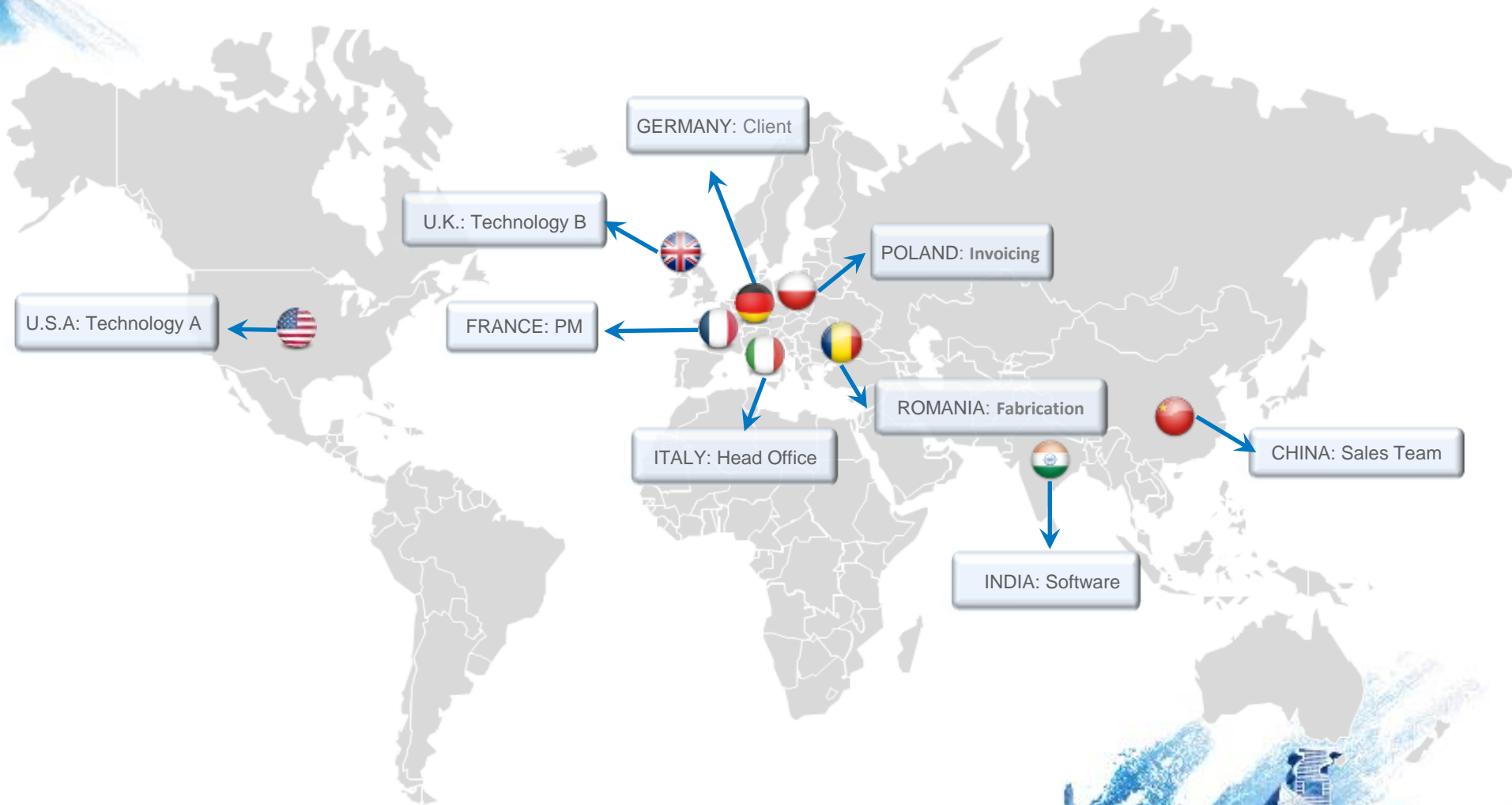
Engineering/Purchasing & Manufacturing/Installation for PA/
Shipping /Installation/Commissioning /Try run/Mass production

Total Length of line: **1,000** Meters

Complexity of



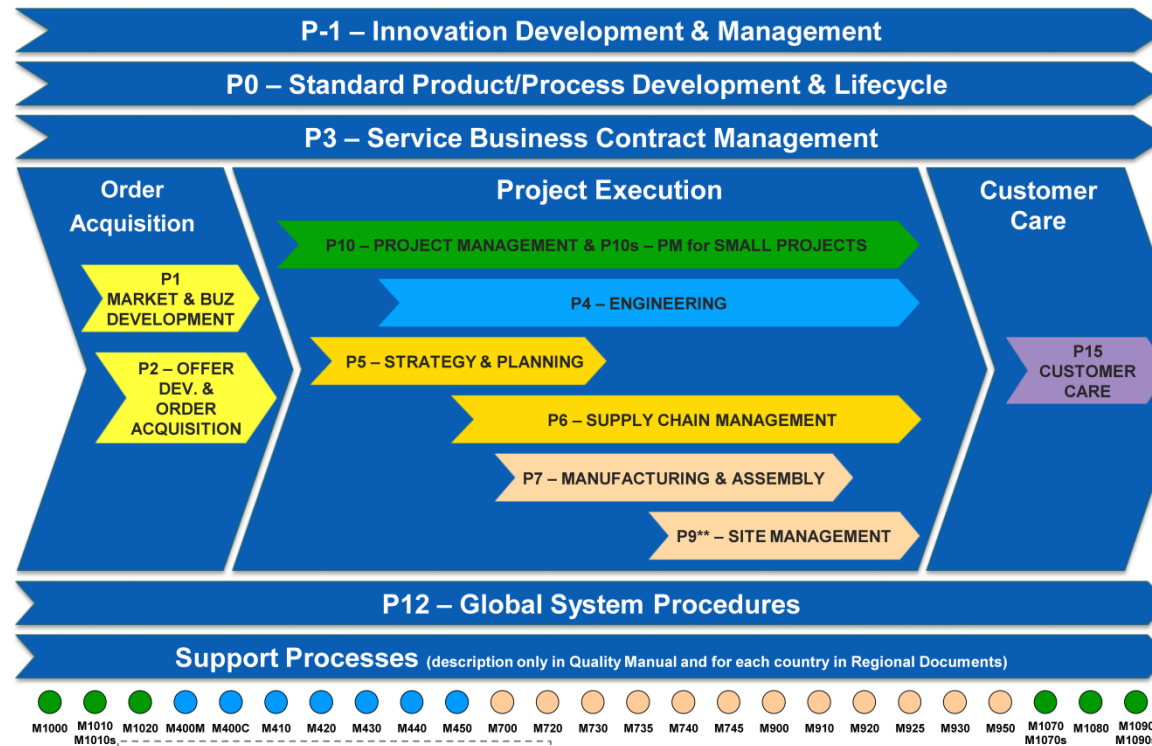
Project



PRODUCTION SYSTEMS			
Orugiasco, July 26 th 2013			
POLICY N. 16 - rev2/13			
POLICY OBJECT			
PROJECT EXECUTION PROCESS - GUIDELINES			
REPLACES POLICIES		P016 rev1/2007	October 30 th 2007
WRITER BY		VERIFIED BY	
Sector Contract & Project Management		Sector Quality Sector Chief Financial Officer Sector Human Resources	
APPROVED		RESPONSIBLE FOR THE CONTROL	
Sector CEO		BU/Plant Center/Regional COO	
APPLICATION PERMITTER		RESPONSIBLE FOR THE APPLICATION	
COMAU Sector - Systems Business		Plant Center COO and Project Management Directors	
P016rev2_13 Project Execution_Guidelines			
1/10			
strictly confidential			



Process General Overview





Decision Support System

Projects



Projects Performance Report (PPR)



Open Projects List



Projects by Country



Global Portfolio

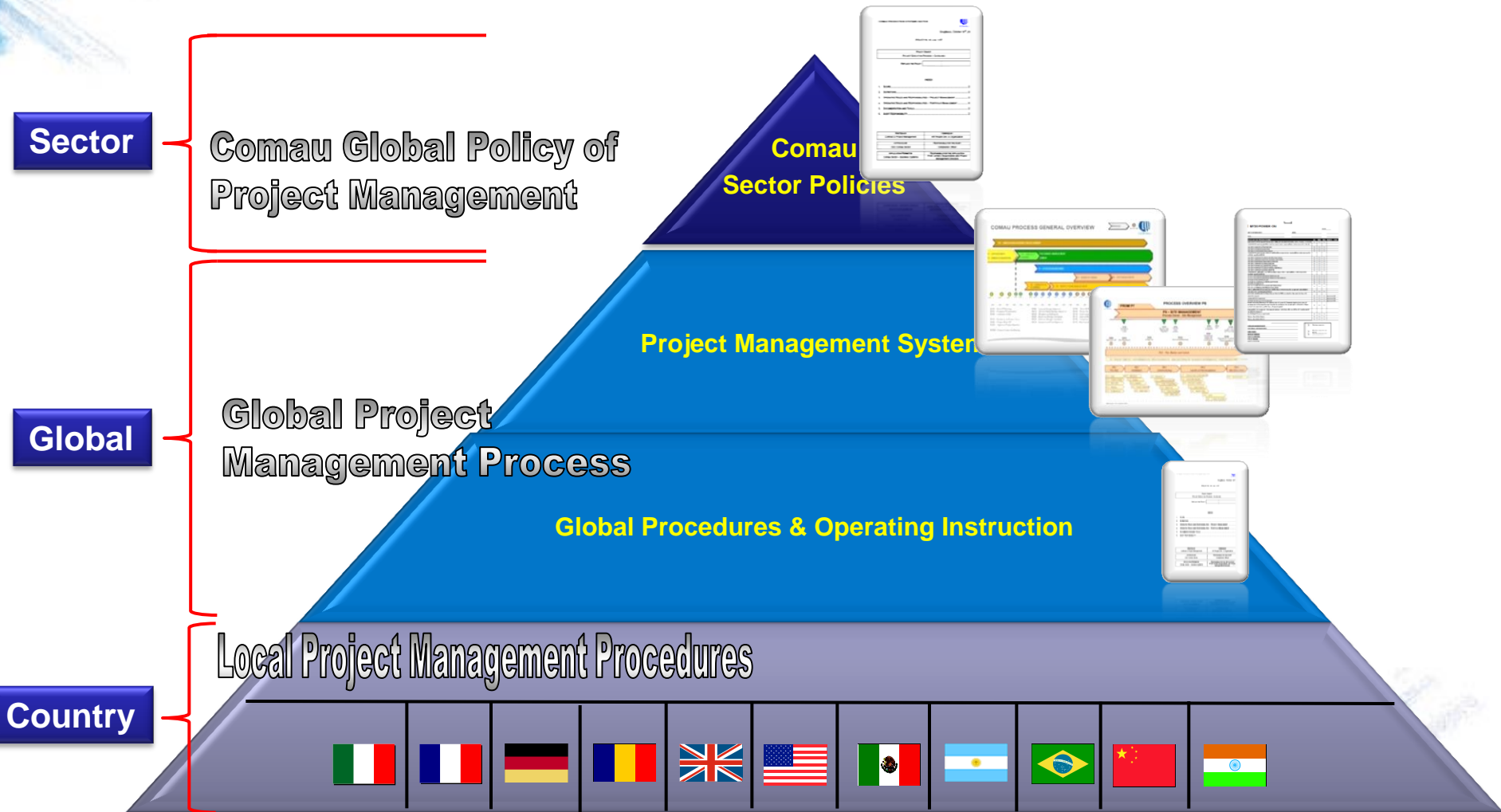


Risks & Contingencies



PPR ProjectCost





A Project Risk Management Process aimed to **standardize, simplify and make it more effective**, in a multicountry and complex environment.

- **Unique Work Place** for PMTeams housed in Sharepoint
- **Integrated** with Comau's Data Management Systems
- **Drives PMT** to follow stepwise the RM process



ProjectRisk Register Portal
SharePoint

Risk Register Portal

Risk ID	SEVERITY	Risk Name	Status
20	High	Site safety for COP starting and assistance after PTS	Analysed
26	High	Infrastructure on track expansion	Response planned
24	High	SB-CHACTED Subcontract on site for assistance	Closed
22	High	SB-CHACTED Subcontract on SIM	Closed
16	High	TCD	Response planned
8	High	New Dealer general specs UGSLD	Closed
18	High	Technical assistance on module 1	Response planned
17	High	Software overruns	Closed
17	High	Software overruns	Closed
17	High	Software overruns	Closed

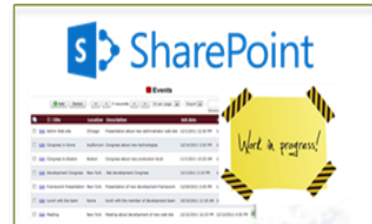
PROJECT Risk Management



PORTFOLIO Risk Management



Risk-Related LESSON LEARNT



Project Execution Risk Management

A New Process and a Project Risk Register Portal used globally by the PM professional Family



Project Financial Data



Input from Projects Exec



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Comau's most important assets are our people and their competencies

Our Comau Academy's forty plus years of experience allow us to play a leadership role in competency development

3 branches of Comau Academy:

- **PROJECT MANAGEMENT ACADEMY**
- **INDUSTRIAL AUTOMATION University Master**
- **MANUFACTURING AUTOMATION & DIGITAL TRANSFORMATION Executive Master**





Comau **PM Academy** was established to develop **Project Management culture and skills** and enhance the PM Family knowledge and culture. Academy Trainers are Comau Employees.



Since 2008, Comau PM Academy is a **PMI® Global R.E.P.**, Global Registered Education Provider.

Comau PM Academy is a **Center of Excellence** about project management for all FCA Group.



Comau PM Academy supports Project Managers with training to **get the PMP® Certification**



COMAU
Academy

INDUSTRIAL AUTOMATION University Master

2 year Master's Degree highly oriented to experiential learning and designed according to Comau's main business processes

- Certificate 2nd level University Master
- Students from the best universities around the world
- 5 editions with more than 90 international participants

MANUFACTURING AUTOMATION & DIGITAL TRANSFORMATION Executive Master

The only one in the market, aim to develop talents who can Deal with the automation field both from the technical & managerial points of view.

- Class room + Company Experiences + Real Project Work
- Be prepared for the digital transformation

Sharing Knowledge by Publishing books



First Comau's publication on Project Management, published globally in English, Chinese and Italian



Second Comau's book on Intercultural Management.

“Chinese version available now!”



- Comau's study case is presented in Dr. Kerzner's latest book on Best Practices in Project Management



Advanced Manufacturing

Digital Factory

Intelligent Manufacturing

Competence

CSR

Project Management

Simulation

Robot

Innovation Solution

Manufacturing automation

Industrial 4.0

Made in China 2025



One Team, Many Talents



Xie Xie Ling Ting
谢谢聆听