

ALTRAN AUTOMOTIVE EXPERTISE

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Automotive Competences

Process Engineering

- Process flow charts
- Assembly documentation sheets
- Work cell layouts
- Plant layouts
- Cycle time studies
- production start-up assistance

Body Shop

- Tools development
- Try-out

Product and Process Quality

- Audit Suppliers Quality
- 8D, PDCA (Plan -Do- Check- Act)
- FMEA (Failure Modes and Effects Analysis)
- PPAP (Production Part Approval Process)
- Kaisen
- ISO TS
- Quality Assurance

Logistics

- Supply Chain Management
- Import/Export
- Import of Prototype parts
- Study of location of distribution centers

Automotive Competences

Engineering of Materials

- DSC – Differential Scanning Calorimetry
- Infrared Characterization
- Optics Microscopy allied to Light Polarization
- Electronic Scanning Microscopy
- X ray Diffraction
- Melt Flow Index / Melt Volume Rate

Project Management

- PMO / PMI
(project/program management office)

Computer Aided Engineering

- Failure Mode Analysis
- Finite Element analysis
- Structural Analysis
- Fatigue Analysis
- Safety Assessment

Embedded Software Development

- Assembly C++, Pascal
- SMD and PTH
- Implementation of SMT (Surface Mount Technologies)

Coordination the Program of Nationalization of Parts

Project PSA



Context

- New car models in Brazil
- Car manufactured in Brazil similar to that manufactured in France
- High costs due imported parts

Business Objectives / Challenges

- Reduce number of imported parts
- Increase number of national parts
- Adequacy kits for country situation

Solution

- Develop local suppliers
- Adequacy of drawings
- Follow-up of development and try-outs

Methods / Organization

- Contact with same suppliers in France
- Research potential suppliers in Brazil
- Verification of the functional characteristics in France and Brazil
- Evaluation of the necessity of products with same functionalities (ex.: double airbag module)

Results

- Approximately 2 years project, increase the participation of national suppliers with reductions of costs.
- Development products together suppliers, that attend Brazilian needs.

Purchase Management

Project PSA



Context

- New car model in Brazil
- First platform of development in country for new markets

Business Objectives / Challenges

- Purchase of tools and parts
- Develop suppliers in set with the engineering of products

Solution

- Develop news sources
- Negotiation with suppliers
- Costs reduction

Methods / Organization

- Research potential suppliers
- Team divided per commodities
- Meetings with manufacturing engineering and quality engineering for definition of suppliers

Results

- We already got reduction of costs with development of suppliers
- In progress project
- Agility and focus in purchases for project.
- Team with more than 20 consultants

Stamping / Press Shopping

Project PSA



Context

- Development of new metal parts (face lift) or new version of actual model
- Follow up of the development of tools
- Follow up of the schedule and cost of the project

Business Objectives / Challenges

- New partners

Solution

- Follow up of development of the stamping tools
- Follow-up tools industrialization
- Follow up of Try-out

Methods / Organization

- Project Management
- Accompaniment the development o tools
- Weekly meetings with suppliers
- Weekly meetings with client
- Audit in the suppliers
- PPAP
- APQP

Results

- Tools deliver in the date
- Tools answered the production cadence

Development of Plastic Parts

Project Renault



Context

- The client needed to develop Brazilian suppliers for plastic parts
- It was necessary a Product Engineering Team

Business Objectives / Challenges

- Elaboration of Specification Book
- Project follow up

Solution

- Build a specialists' team in the plastic area able to offer the needed technical solutions
- Meetings with the suppliers for follow the project up.

Methods / Organization

- Integration of the Altran's team and client's sharing the responsibilities.
- Try-outs attendance with the suppliers.

Results

- Project finished at proposed time;
- Productivity earnings

Industrial Process Project Renault



Context

- Changes to assembly line for new vehicles
- Assembly of new vehicles

Business Objectives / Challenges

- Implementation of new Facilities

Solution

- Assembly Validation Study
- Ergonomic and lay out studies;
- Homologation and improvement of the processes.

Methods / Organization

- Assembly Time Study
- Ergonomic Study
- New Lay-out Study
- MTM, *Chrono-analysis*
- Work activities balance.

Results

- New work cell lay-out
- Decreasing of vehicles' assembly time.

International Logistics

Project Renault



Context

- The client needed prototypes parts from Europe
- Simultaneous development in Brazil and France

Business Objectives / Challenges

- Time Chronogram Coordination
- Supply Warranty
- Logistic planning for the prototypes.

Solution

- Suppliers Follow-up
- Technical meetings with the suppliers;
- Drawing up of supply contracts.

Methods / Organization

- Supply Chain Coordination
- Synergy of Altran's consultants in Brazil and France;
- Improvement of the logistic process for prototype.

Results

- Shipping time reduced
- Decreasing of transportation and projects costs ;
- Client satisfaction recognized for reports of project follow up.

Automation Process Project Renault



Context

- Purchase of robots to assembly and paint new vehicles

Business Objectives / Challenges

- Integration between assembly robots

Solution

- Redrawing Electric Plant
- Robots software's adjustment
- Technical solutions development;
- Study of impacts on the assembly line.

Methods / Organization

- Meetings with suppliers and clients for study of robots' applications;
- Management of the project together with the automation suppliers;
- Validation of the different steps of the project.

Results

- Productivity earnings
- Best integration among the robots used in the process.

Stamping / Press Shopping

Project Renault



Context

- Development of new metal parts (face lift) or new version of actual model
- Follow up of the development of tools
- Follow up of the schedule and cost of the project

Business Objectives / Challenges

- New partners

Solution

- Develop the stamping tools
- Follow-up tools industrialization
- Try-out

Methods / Organization

- Project Management

Results

- Supply on time

Assistances Facilities

Project Renault



Context

- New assembly vehicle was necessary
- Tooling Development

Business Objectives / Challenges

- Coordination of Facilities Suppliers
- Assembly prototypes vehicles

Solution

- Time chart for the activities;
- Making technical documents for stuff acquisition;
- Follow up of the installation approval.

Methods / Organization

- Meetings with facilities suppliers and clients – to analyse the impact on the assembly line.
- Balance of the operations on the assembly line;
- *Crono-analysis* of the operations and machine time.

Results

- Decreasing and improvement around 10% in the time of the operations in the assembly.

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