CASE STUDY

ERP Software
for
Aluminium Die Casting Industries

Roadmap IT Solutions (P) Ltd.

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ABOUT ROADMAP

Roadmap IT Solutions with more than two decades of experience has successfully implemented "Roadmap ERP" in 150+ companies in 20+ vertical across India and KSA. Roadmap Business Process experts understand the complexities, unique challenges in aluminum die casting industries and constantly enhances its ERP software functionality to further streamline business processes in aluminum die casting manufacturing. With its gaining expertise in aluminum die casting manufacturing, Roadmap provides powerful, industry-specific features designed to address unique needs of aluminum die casting industries.

Salient Features

- **Multi Unit Support (Highly Scalable):** Roadmap ERP supports the organizations having one or multiple plants/units in different locations. The plants/units may produce various finished product, subassemblies or may do specific processes only.

- **Multi-Level Bills of Material (BOM):** Supports organization to maintain product routing and multi level bill of material with machine and tool required details.

- **Tools:** Tools and its output products & quantity can be mapped easily. Tool utilization details getting update when the production takes place with the tools.

- **Material Requirement Planning:** Planners can run the MRP at any time by loading demands from customer schedule (Firm, Tentative and Firm & Tentative), Sales Orders and generate the material requirements.

- **Planned Order Release:** Procurement Orders such as purchase request for the raw materials (aluminum ingots), bought out components and production order can be raised from the MRP Release.

- **Production Plan:** Monthly/Weekly/Daily production plan can be easily generated from the system.

- **Holding Furnace:** Furnaces with Die Casting Machines and Holding Furnaces can be mapped easily.

- **Machine / Tool Setting Approval:** User can enter the machine & tool setup details and get approval before production.

- **Furnace Log:** Enables the user to enter furnace details, material loading start time & end time, melting start time, melting end time, power consumed, fuel consumed, aluminum ingots consumed etc

- **Die Casting:** Die Casting molding business process helps the user to capture machine & tool used, hourly shots, dry shots, o/p products, accepted, self qc rejection, First Piece, Last Piece sample quantity, power consumed and enables the user to forward accepted quantity to QC department for further QC.

- **Heat numbers:** Facilitate to capture Daily Heat No. (DH No.), Line Heat No (LH No.), Melt heat No. (MH No,) in the system

- **Melt Lab Analysis:** Facilitates to register the spectro meter analysis for the melt samples in the system .

- **Material Consumption:** User will have an option of adding, consuming the materials which are not part of standard bill of materials such as runner items apart from the raw materials.

- **Scrap Note Approval:** Scrap can be moved to scrap area through scrap note approval if actual scrap percentage exceeds the standard/allowed percentage.

- **In Process Inspection:** Organization can take the samples randomly during aluminium casting on certain frequencies and register the QC observation.

- **Process Wise Inspection:** Organization can have option to do the inspection at the time of production process completion.

- **Final Product Inspection:** Organization can optionally have Final Product Inspection.

- **Pre-Dispatch Inspection:** This kind of inspection normally required before dispatching. FG is stored in separate warehouse, where pre-dispatch inspection is requested, FG is moved to PDI warehouse, upon completion of the warehouse material moved to shipping warehouse from where the material can be invoiced and shipped to customer

- **Outside Process:** Organization can send the processed material to subcontractor for outside processing such as powder coating, heat treatment, machining and option to receive the completely processed, partially processed and scrap materials from the subcontractor.

- **Heat Treatment:** Provision to register the batch processing details of different products and process in single run such as heat treatment, vibro finishing etc.

- **Traceability Report:** Organization can track raw material lot/batch numbers, melting, die casting details from FG lot and invoice number.

- **Repair/Rework:** Through Repair/Rework functionality, rejected materials can be repaired, disassembled or scrapped.

- **Production Monitoring System:** User can track the FG materials in shop floor by production order number wise, process wise, lot number wise and work center wise.

- **Costing:** Standard cost for the FG can be calculated and fixed. Actual cost /batch/item can be tracked by different cost elements such as material, labor, machine, overheads etc.

- **Scheduling:** Organization can effectively schedule the machines against the production orders and products.

KEY OPERATIONAL REPORTS

Dispatch
- Dispatch Plan

Planning
- Aluminum Die Casting - Plan
- Machining - Plan

Machine/Die Setup
- Die pre loading inspection report & Setup approval report
- Die unload report & Production lot last piece inspection
- Machine Process Parameter Card
- Die history card

Casting
- Furnace Log Report
- Melting Report
- Casting Report
- Die Casting Rejections
- Daily Final Inspection Report
- Scrap Report
- Yield Report

Production
- Production Plan - Weekly
- Production details - shift wise
- Production details - Machine wise
- Subcontract long pending.
- Production log book
- Production Day book
- Production Summary details
- Production summary die wise
- Production Shortage details
- Rejection Report
- Inward Register
- Tonnage report

Fettling
- Production Planning - Fettling
- Fettling area production log
- Daily Production Details Fettling

Grinding
- Grinding Area Production log
- Production Planning Grinding
- Grinding area production details

Power/Fuel Consumption
- Power /Fuel Usage Report Machine wise
- Genset Usage Report

Material Consumption Report
- Aluminum Ingots Consumption Report
- Oil Consumption
- Store consumption report

Sales
- Delivery critical (schedule or due date)
- Sales Details (Qty, Value, Weight Tonnage)

Inventory
- Raw material Stock Reports
- Stage wise stock
- Consumables stock details
- Alert - Min, Max, Safety stock

OEE & QR Report
- OEE & QR Report Monthly / Machine wise
- OEE & QR Report Monthly / Operator wise
- Machine Idle Hour/Day
- Machine Idle Time Monitoring Sheet
- Process Parameter setting check list
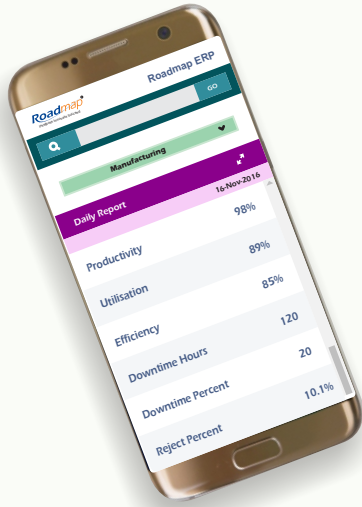- Machine breakdown requisition slip
- Machine history card

Die Production
- Tool cost Estimation
- Tool Development time plan
- Tool room production planning
- Tool Room Production Log

Die Maintenance
- Die break down requisition Slip
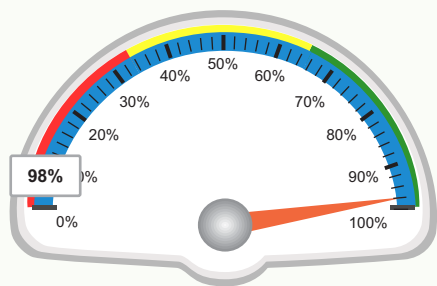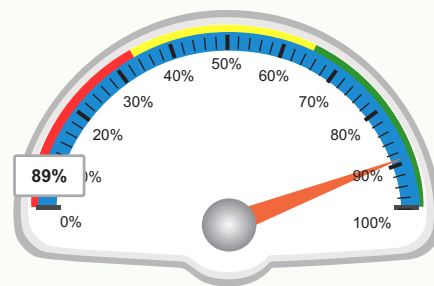- Die Maintenance Record

DASHBOARDS / KPI

Dashboards provide executives with real-time, visually attractive and easily interpreted displays of critical information about the operation of the company and the plant. Commonly called Key Performance Indicators (KPIs), these measurements offer a high level but targeted view of the business — sales, products, operations, inventories, financials, etc.

Designed primarily for top-level executives, dashboard KPIs can also be configured to focus in on particular parts of the business for mid-level executives and managers. The importance of KPIs and dashboards is that they make critical information available in an easy-to-interpret format. Further detail is readily available (drill-down) for analysis and decision-making
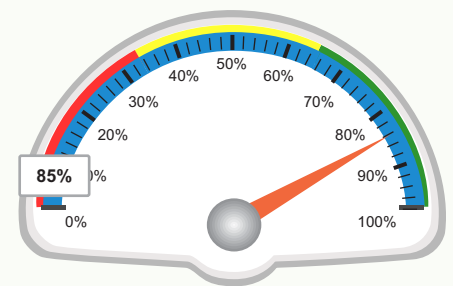
Productivity

98%

Utilisation

89%
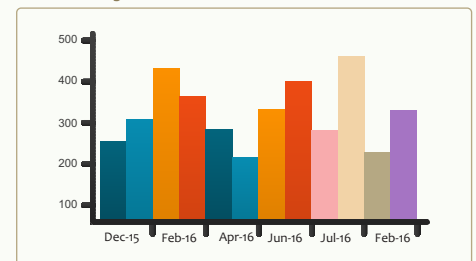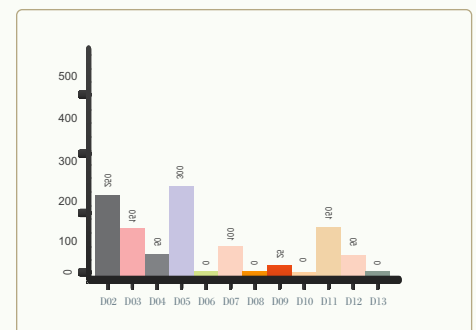
Efficiency

85%

Critical Information

This goes to the heart of measurement systems in general — you must measure those things that are important to the success of the business. Any other measurement, not aligned with company objectives, is likely to drive activities and decisions in the wrong direction. So dashboard KPIs must relate to corporate goals and performance in support of customer service (On-time Delivery, Production Profitability, Orders Booked and Shipped).

Naturally, KPIs will differ based on the nature of the business being measured. A Aluminium die casting industrialist will be more concerned with the effective utilization of expensive plant and equipment resources (Production Capacity, Efficiency, and Downtime). Top-level executives in a Aluminium die casting company will certainly want to watch the same financial indicators that any other manufacturer watches — things like sales, profit, and return on investment. When it comes to operational measurements, the focus will be on meeting schedules, having the right inventories to support production and customer demand, and quality, among others.

No. of Rejections

No. of Defects

A Aluminium Die Casting Industrialist's dashboard would likely have operational performance indicators for some or all of the following by day, week or month:

- ⏶ Percent of Production Capacity realized
- ⏶ Downtime
- ⏶ Scrap by type or cause
- ⏶ Shift Profitability
- ⏶ Current Inventory value
- ⏶ Sales booked by group or process
- ⏶ On-time delivery
- ⏶ Cash Flow
- ⏶ AP/AR by company, currency
- ⏶ Actual yield with warning levels set around standard yield
- ⏶ Quality measurements specific to the processes and types of products
- ⏶ Inventory turns, both raw materials and finished goods

Easy to Interpret

Roadmap Dashboard/KPI's are to quickly identify of anything that may need attention and the point is to quickly eliminate any concerns about aspects of the business that are performing properly and allow the executive to focus on where their attention is really needed without having to run multiple reports or even log into the business solutions software.

Busy executives will have less time to dig into the ERP system to track performance and analyze the business – nor should they have to. Roadmap dashboard summarizes and displays relevant information that allows the executive to 1) Configure their independent dashboard highlighting their most relevant KPI's and 2) focus quickly on the overall operations of the business and where his or her attention is most needed – and can do best.

Properly defined Roadmap KPIs can provide early warning of developing situations and help companies prevent serious challenges by alerting decision-makers to the opportunities to avert a problem before it hurts customer service, sales or profit.

Roadmap Dashboards thus allow companies to easily analyze data and identify potential gaps or opportunities within the business.

MODULES

Roadmap ERP, an end-to-end business solution, by being integrated with all modules, can fit into any manufacturing and services industry. It is a strategic business solution that integrates all business functions, including manufacturing, finance, and distribution.

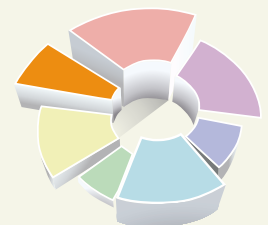| Financial Management	General Ledger Management	Accounts Payables Management	Accounts Receivables Management	Cash Management	Fixed Assets Management	Taxation
Sales & Distribution	Inventory Control Management	Purchase Order Management	Subcontract Order Management	Gate Entry Management	Transportation	Sales Order Management
Planning & Manufacturing	Routing / Bill of Material (BOM) / Demand Management	Master Production Schedule	Material Requirement Planning	Manufacturing Resource Planning	Shop Floor Control (SFC)	Manufacturing Schedule
Quality Management	Inspection	SPC	Auditing	MSA		
HR & Payroll	HR-Planning	HR-Recruiting	HR-Employee Portfolio	HR-Orientation	HR-Training & Development	HR-Appraisal / HR-Leave & Time Management
	HR-Loan Management	HR-Business Trip	HR-Ticketing	HR-Medical	HR-Self Service	HR-Government Relations / HR-Payroll
Add-on modules	Plant Maintenance	Engineering R & D	Project Management	Cost Management	CRM	
Portals	Supplier Portal	Customer Portal	Employee Attendance	Employee Self Service Portal		
Mobile Apps	Marketing CRM	Workflow Approval				

INDUSTRY VERTICALS

Industrial Equipment & Machinery Manufacturers

Aluminum Die Casting Industries

Iron Casting Manufacturer

Plastics Manufacturer/Injection Molding

Sheet Metal Industries

Ferro Alloys Manufacturers

Cast Alloys Manufacturers

Lead Alloys Manufacturers

Tools & Dies Manufactures

Auto Component Manufacturers

Valves Manufacturers

Electrical Panel Manufacturer

UPS Manufacturers

Food Products Manufacturers

Cosmetics Manufacturers

Bi-Metal Bearing Manufacturers

Gelatine Manufacturers

Garments Manufacturers

Heat Exchanger Manufacturers

Façade Industries

Carbon Manufacturers

Pump Industries

Packing Industries

Spinning Industries

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Integrate Innovate Succeed

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