



# SUCCESS STORY OF WRENCH IMPLEMENTATION AT

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## **Larsen & Toubro Limited** **Machinery & Industrial Products Division** **LTM Business Unit, Chennai.**





# LTM Chronology

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- 1972 Established as a JV between L & T Limited and McNeil Akron Inc, USA under the name L&T-McNeil Limited
- 1974 Commenced Production of Tyre Curing Presses
- 1988 Technical Collaboration with Mitsubishi for Tyre Building Machines & Bias Cutters and with Demag for Plastics injection moulding machines
- 1995 L&T buys the complete shares of McNeil Akron Inc in L&T- McNeil Limited and forms a wholly owned business unit of L&T for Rubber & Plastics machineries
- 2001 JV with Demag for Plastics machinery
- 2003 Collaboration with Kobe for manufacture of latest range of Curex S1 series Hydraulic Tyre Curing Presses



# Growth

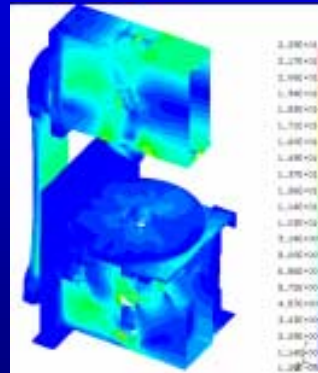
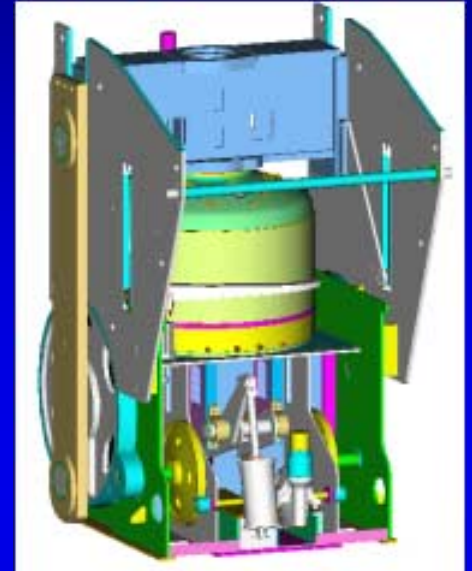
Rs. Million





# Mechanical Tyre Curing Presses

## From 24" to 104"





# Some of our major Customers





# LTM presence in the World ...



USA

CUBA

VENEZUELA

ECUADOR

BRAZIL

CHILE

ARGENTINA

SOUTH AFRICA

TANZANIA

EGYPT

ISRAEL

MOROCCO

ITALY

U.K

SPAIN

FINLAND

SYRIA

NEPAL

SRILANKA

INDIA

MALAYSIA

KENYA

CHINA

PHILIPPINES

THAILAND

VIETNAM

INDONESIA



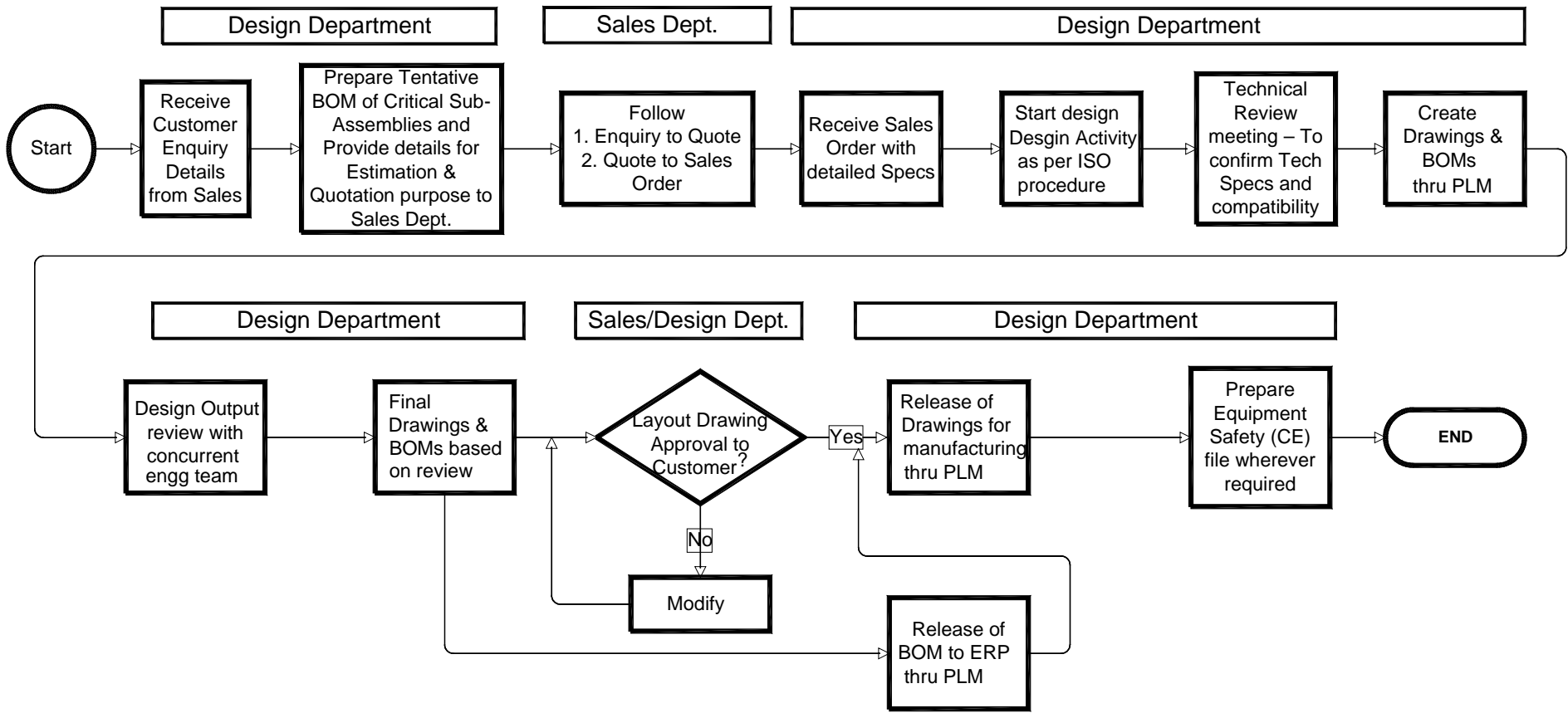
# PRODUCT DEVELOPMENT PROCESS

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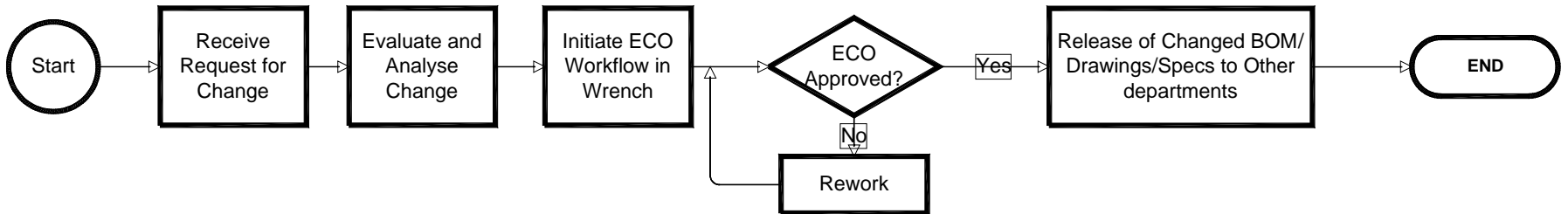
- **NEW PRODUCTS**
- **PRODUCTS VARIANTS TO CUSTOMER NEEDS RESULTING IN**
  - **MAJOR DESIGN MODIFICATIONS TO EXISTING PRODUCTS**
  - **MINOR MODIFICATIONS**
- **PRODUCT CONFIGURATION TO MEET CUSTOMER REQUIREMENTS**



# PEOCCESS FLOW FOR PRODUCT DEVELOPMENT



## ECO PROCESS FLOW





# Problems Faced before WRENCH implementation

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- Total dependency on individuals.
- 25 to 30% time spent for searching for data.
- Mismatch of revision numbers between ERP data and actual drawings
- No system to prevent usage of drawings to old revisions.
- Delay in issue of drawing prints due to manual processs and uncontrolled
- No link between drawings and BOMs and manual entry of BOM for MRP
- No control over multiple copies of the same drawing.
- Lack of security on intellectual data being copied out.



# Problems Faced before WRENCH implementation

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- Errors in product configuration due to manual process and time consuming.
- No collaboration among cross functional departments.
- No sharing of massive volume of digital product data available with different departments like Engg,Marketing,Purchase,Manufacturing,Service,etc.
- Poor visualization for the users as there was no tools to access the 3D solid models created by design department.
- Product history not captured and maintained systematically.
- Most of the learnings /design calculations during product development lost.
- Change management was manual , slow and not communicated to end users well in time



# Problems Faced before WRENCH implementation

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**To overcome these problems many adhoc procedures/ systems were adopted like**

**Print request program.**

**Centralised storage of drawings with defined File naming procedure.**

**View access for cross functional departments for drawings stored in R&D server.**



# VISION for an Ideal Design Environment





# Challenges faced

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- **Brain storming to list out the requirements for an ideal single window access system for design.**
- **Evaluation of available softwares to short list based on the following priorities**
  - Meeting the requirements as per the vision statement
  - Seamless interface with the existing MRP-II system
  - Customisation skills to follow good practices being followed
  - Cost of implementation and maintenance
  - Possibility for future upgrades / addition of new modules
- **Conversion of Legacy data built over many years to digital data.**
- **Understanding the existing MRP-II system and interfacing.**
- **Training and smooth change over to the new system.**



# Benefits after implementation of WRENCH

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- 50% Faster product development due to on-line availability of design data, re-use of existing variants & flexible search capabilities
- 15 times faster product configuration due to BOM variant concept
- Single window access for design engineers & Immediate access to JDEdwards ERP without consuming the license of ERP package
- No manual keying-in and duplication of engineering data into ERP
- On-line access to the latest drawings with defined security
- Concurrent engineering during design stage.
- 40% Reduction in number of drawing prints
- Automatic work flow management for Draw/Check and Approval



# Benefits after implementation of WRENCH

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- Automatic print management
- Complete security for design data in server
- Faster change management.
- Linking of Design calculations, FEA, Mom's, check sheets, test data & customer feed back to part master/work orders.
- Possibility to view and mark 200+ file formats
- Sharing of information between departments
- Better visualisation of the part by users by viewing the solid models
- Quick review of project status with color codings of status



## WHAT NEXT

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1. Extend access to Sales and branch offices.
2. Non conformance management.
3. Provide online spare part catalogue.
4. Extend product data to vendors with restricted access.
5. Online capture of customer feedback on products.
6. Extract knowledge from real time ECO & NC data.



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**Thank You**  
**Have a nice day !**