Creating efficiency : Software for Glass Processors

The rapidly growing Indian float glass industry needs to make optimum use of IT tools to meet the changing demands of the market. This series of article covers different categories of software solutions available, not only to help keep pace with growth, but to be a step ahead of competition.

Introduction:

The nascent Indian float glass industry is growing at an annual rate of 15% with the processed glass sector growing even faster. The construction and automotive industries are the most important consuming sectors, consuming 83% and 15% respectively. These sectors are growing at double-digit rates. In spite of such rapid growth, the per capita per annum use of glass in India is very marginal. (Refer Fig.1). This compares unflatteringly with a consumption of more than 3.5 kg per capita per annum in countries like China, Thailand and Japan. Certainly there is ample opportunity for growth**.**

Year	2005	2006	2007	2008
Kg	0.55	0.69	0.76	0.90*

Fig.1 Per capita consumption of glass in India

Sensing tremendous potential, more players are attracted to glass processing industry. This is amply brought out in the number of tempering lines set up over the years. (Refer Fig.2). Increased competition, higher customer expectation (same products, same quality in lesser time and for lesser money) and shrinking margins are leaving processors searching for new ways to increase production while lowering costs.

Year	1998	2003	2006	2007	2009
No. of Lines.	3	12	49	65	100*

Fig.2 Number of tempering lines set up in India

Thought naturally turns to software solutions, which have evolved to address needs such as nesting, optimization, ERP, CAD/CAM, networking and communications while promising a rapid return on investment.

The glass processing industry is not as mature as say steel fabrication and is characterized by many small and medium family-run businesses.

- Need to send a quotation, the regular person it is not available – you have to wait.
- Quoted on the basis of rough sizes for irregular shapes, and poor yield consumed your margins.
- An order of templates, executed, shipped and rejected as holes were positioned wrongly.
- The customer wants to know the order status, and you have to call up production.

Sound familiar, well many such problems are caused by absence of proper information systems and can be drastically reduced by judicious use of software tools. Let us look at the requirements of a typical glass processors and how to address them.

Business Requirements of Glass Processors and Fabricators:

The general requirements for glass processors and fabricators can be broadly summed up below:

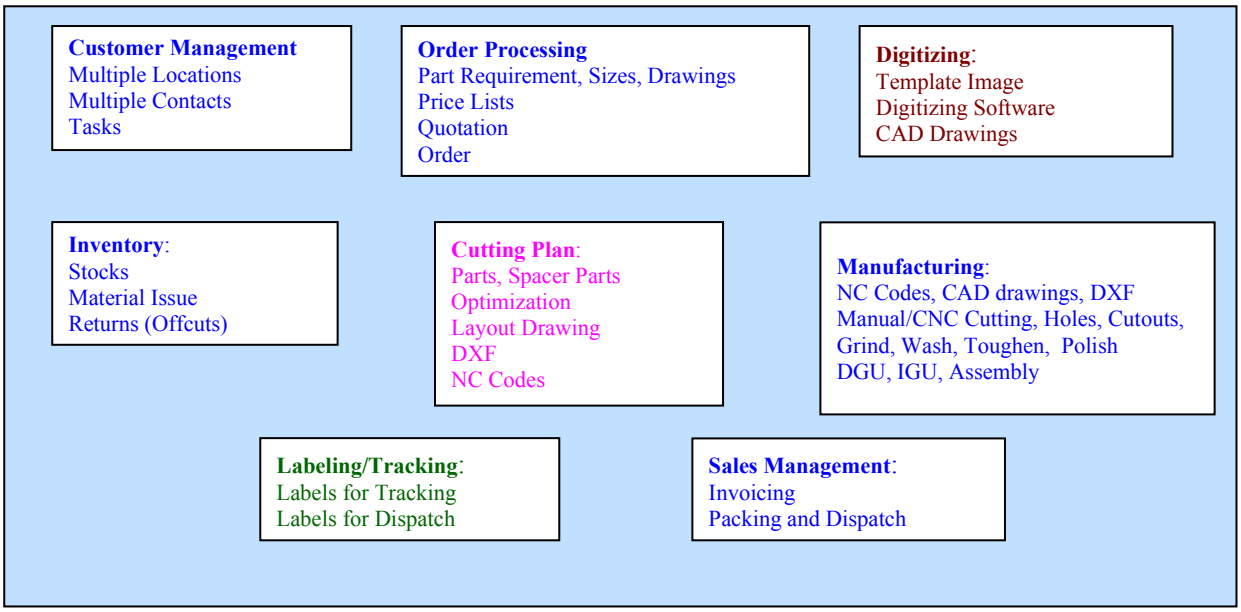
- Maintain Customers, contacts, search them quickly. Make lists to send offers, mailers and other useful information.
- Quickly and accurately prepare a quote, order.
- Reduce wastage, maximize yield by
    a. Optimization
    b. Offcut tracking system
- Raise employee productivity through :
    a. Quick and easy quote preparation
    b. Intelligent sequencing, sorting
    c. Direct CNC to reduce part programming time and errors
    d. Labeling, tracking.
    e. Digitizing templates and simplifying making of CAD drawings

- Systems to handle basic business functions – customer management, sales order processing, inventory, purchase, production planning, interfacing with invoicing, and accounting.
- Track the status of an order. Handle the information requirements of customers and management
- Support customized and personalized product requirements of customers.

We will now look at the various solutions available to meet these broad requirements.

Software Solutions Available:

The diagram below depicts the various functions handled by the different software, which can meet the requirements of glass processing industry.



1. **Glass Optimization Software**:
   An easy way of cutting cost is to cut down the wastage. Optimizers generate cutting plans which maximize yield. Additionally if you use CNC they can eliminate part programming time and errors. Some CNC based cutting tables do come with some bundled optimization software, but these are usually too limited in functionality, and can be operated on the cutting machine only. Independent software vendors have developed solutions that have lot more to offer. Hence they are not only used in production, but play a central role in the internal business system by integrating with resource planning for generating estimates, quotes etc. They also import and export a number of CAD formats. Even improving yields by only a percent can have a major impact on an organization. It is an essential tool to simplify your work, increase your productivity and give you confidence while preparing quotations. Whether you are cutting manually or using CNC, you benefit from optimization, and consequent work flow improvement.

2. **Integrated Solutions for Processed Glass Industry** :
   Integrated software solutions to handle the entire range of business functions from end-to-end are the ERP software. Starting from Sales Order Processing to Dispatch, all functions are handled by integrated software. They improve access to information, workflow and efficiency, reduce redundant data entry and processes, while cutting inventory costs resulting from better planning, tracking and forecasting of requirements. This results in customer satisfaction based on improved on-time delivery, increased quality, shortened delivery times. These systems are modular in nature – you can choose the modules that you want to implement immediately and add others later on as and when required.

3. **Digitizing Software**:
   We all know the pain and effort required to cut shapes using templates, measure accurately, trace, mark, cut, verify. There is an easier way out, with Digitizing software – that converts images to CAD drawings, to be used for further processing. Take a digital photograph of the template, import

into the digitizing software, correct for distortions and convert it into a CAD drawing. Load these on CNC cutting tables and you have your finished parts. You don't need to invest in an expensive digitizer or a digitizing table.

4. **Labeling / Tracking solution** :
   You can use Labeling software to print on wash proof labels with information about part, processes, customer etc. and paste it on each piece after cutting. With barcodes, you can interface it to your database using a simple reader to track and bring up information about drilling, cutouts, and part programming. These labels can pass through washing, but should be removed before tempering. Labeling is also useful in tracking offcuts and reusing them to increase yield. Labeling supplemented by Racking systems also adds to packing efficiency.

Choosing your Software:

Purchasing software is a long-term investment and some factors you should keep in mind during selection.

- Does it meets your requirement and will be able to handle your growth?
- Is it easy to use, or does it need skilled manpower to operate?
- Is the product competitively priced?
- Can the software integrate with supplementary systems? Can it import/export of standard formats like CAD/DXF, MS-Word, MS-Excel etc.
- Is it modular in nature? Can you choose certain modules to start with and then add others later?
- Can the software be used on a Network? What licensing options are offered?
- Does the vendor understand the glass industry and its requirements?
- Does the vendor provide adequate training and support?
- Can they customize the software to satisfy your current business demands and future needs?

Download a demo copy of the software, if available and test it or ask the vendor for a demonstration.

In the Next article we will discuss in detail the functional areas covered by an Integrated Solutions for processed glass industry.

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