

Apparel manufacturing is a process that gets complicated quickly at a large scale. Maximizing profits and at the same time, not losing quality by optimally allocating resources are the realtime challenges. The main driving factor here is that most resource allocation is done with rudimentary tools which often offer minimal insight into the actual profits.

ProFit aims to solve this problem of resource allocation through state-of-the-art algorithms with the use of Operations Research and Artificial Intelligence Techniques.

Objectives of ProFit

- Accept Customer Orders with Color-Size Breakups and Quantities
- Generate Optimal Cut Plan for Marker Making.
- Fabric Grouping based on Shade, Shrinkages on Warp and Weft
- Generate Optimal Marker - Fabric Plan for Markers To Fabric Groups / Widths
- Based on Plan, CAD Dept need to Provide Marker Length & Width for Markers
- Optimally Allocate Fabric Rolls to Markers to Maximize Roll Utilization and to Minimize End Bits.
- Generate Pick List and Lay Slips for Markers for Spreading..
- Real Time Lay and Cut Production Data Capture
- Define more effective use of Spreading and Cutting department resources.
- Provide Transparency in Cutting Room Processes
- Real Time Dashboard for all Cutting Room Processes
- Work in Process Monitoring at all Levels.

Modules of ProFit

Order Management

Input all the Data related to an Order like Order No, Date, Fit, Destination, Ex-Factory date, Shipment date and Color-Size Breakups with Quantities into the system and track the order easily.

Fabric Configuration

Configure Types of Fabric used for a Style with their average consumption per garment or Standard consumption for every size.

Cut Order Plan

ProFit uses state-of-art Algorithm to Generate Minimum number of Markers with Size Ratios which maximizes number of plies and number of Garments per Ply to complete the Maximum Order Quantity to minimize the Spreading / Cutting Time.

Fabric Receipts

Receipts of Fabric Rolls from Suppliers is stored in Warehouse / Stores with location information.

Cut Order Plan

Select	Seq No	P.O No	P.O. Date	Reference	Destination	Exp Date	Ship Date	29	30	31
	1	PO_001	19-Apr-2023	51	US	05-Jan-2023	08-Jan-2023	59	78	15
	2	PO_002	19-Apr-2023	52	UK	05-Jan-2023	08-Jan-2023	283	283	11
	3	PO_003	19-Apr-2023	53	CA	05-Jan-2023	08-Jan-2023	40	40	2
	4	PO_004	19-Apr-2023	54	IN	05-Jan-2023	08-Jan-2023	223	223	9
	5	PO_005	19-Apr-2023	55	RU	05-Jan-2023	08-Jan-2023	9	9	9
	6	PO_006	19-Apr-2023	56	UE	05-Jan-2023	08-Jan-2023	2	2	2
		Total Qty						605	605	24

Cut Order Plan

Shrinkage Grouping

Pattern Shrinkage	Shrinkage Group No	Width (inch)	Shade	RollNo	GSM	Warp (%)	Weft (%)	Length (Mtrs)	Stock
1 [L: -3.00% X W -20.00%]	1	4.00	-2.00	-3.00	-21.00	-19.00	-20.00	29	3126.00
2 [L: -3.00% X W -17.00%]	2	4.00	2.00	-3.00	-19.00	-16.00	-17.00	25	2154.00
3 [L: -0.50% X W -18.50%]	3	1.50	0.50	-0.50	-19.50	-17.50	-18.50	25	2545.40
Grand Total	3							75	7829.0

Grouping of Fabric Rolls

Marker - Fabric Plan

SI No	Marker No	Plies	Garments/Ply	Avg Cons	SM Length	Roll Length	Roll Width	Op Stock	Plies	Mtr	
1	M-001 [1]	100	8	1.200	9.600	960.000	1 [L: -3.00% X W -20.00%]	66.500	1825.000	100	960.00
2	M-002 [2]	100	8	1.200	9.600	960.000	2 [L: -0.50% X W -18.50%]	66.500	1433.000	100	960.00
3	M-003 [3]	100	8	1.200	9.600	960.000	1 [L: -3.00% X W -20.00%]	66.500	1351.600	100	960.00
4	M-004 [4]	100	8	1.200	9.600	960.000	2 [L: -3.00% X W -17.00%]	66.500	2057.600	100	960.00
5	M-002 [5]	100	8	1.200	9.600	960.000	2 [L: -3.00% X W -17.00%]	66.500	1397.600	100	960.00
6	M-003 [6]	100	8	1.200	9.600	960.000	2 [L: -3.00% X W -17.00%]	64.000	96.400	10	96.00
7	M-003 [7]	100	8	1.200	9.600	960.000	3 [L: -0.50% X W -18.50%]	66.500	925.600	90	864.00
	Total										960.00

Marker - Fabric Plan

Fabric Shrinkage Grouping

Grouping of Fabric Rolls based on Shade, Shrinkages on Warp, Weft is done with ease.

Marker - Fabric Plan

ProFit Generates an Optimal Fabric Usage Plan for Markers by Allocating Fabric Rolls that Fits the Marker Plies with Minimum Shrinkage Patterns and Widths

Input from CAD Department

Based on the Fabric Plan, CAD Department to provide Marker Length & Width for the Markers with Shrinkage Patterns.

Fabric Roll Allocation

ProFit uses the state-of-art Algorithm to optimally allocate the Rolls to Markers that Fits Marker Plies in Roll(s) leaving minimal END-Bits . Pick List is generated by the system to Pick the appropriate Rolls from the Warehouse / Stores using Location Information.

Planning for Laying & Cutting

Lay & Cut planning is vital in ensuring maximum cutting room productivity. Easily generate the optimal plans based on the availability of machines, tables, and labor with time slots.

Lay & Cut Production

Monitor Lay & Cut production in real-time and make timely decisions to reschedule Lay & Cut plan as required.

Bundle Generation

Generate bundles with bundle tickets and issue them to supermarket/ sewing line for production based on cutting production.

Printing & Embroidery

Monitor operations on CUT Parts that are performed before sewing.

Key Features

- Centralized Real time Cutting Room Production Monitoring Tool
- Provides the real time Dashboard for all the processes in the cutting room.
- Maintains Sequential Integrity of all Operations
- Real time updates on Laying / Cutting / Roll operations are done thru PC / TAB / MOBILE.
- Accountability of On-Standard time viz, Worked minutes and Produced minutes.
- Accountability of Off-Standard time viz, Idle time, NoWork Time and BreakDown Time.
- Work in Process monitoring at all levels.
- Seamless Integration to other application systems
- Fully Integrated with **ProCon** real time production monitoring system
- Features and Validations of this system are user configurable



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