



Quoting & Scheduling for Build-To-Order Companies

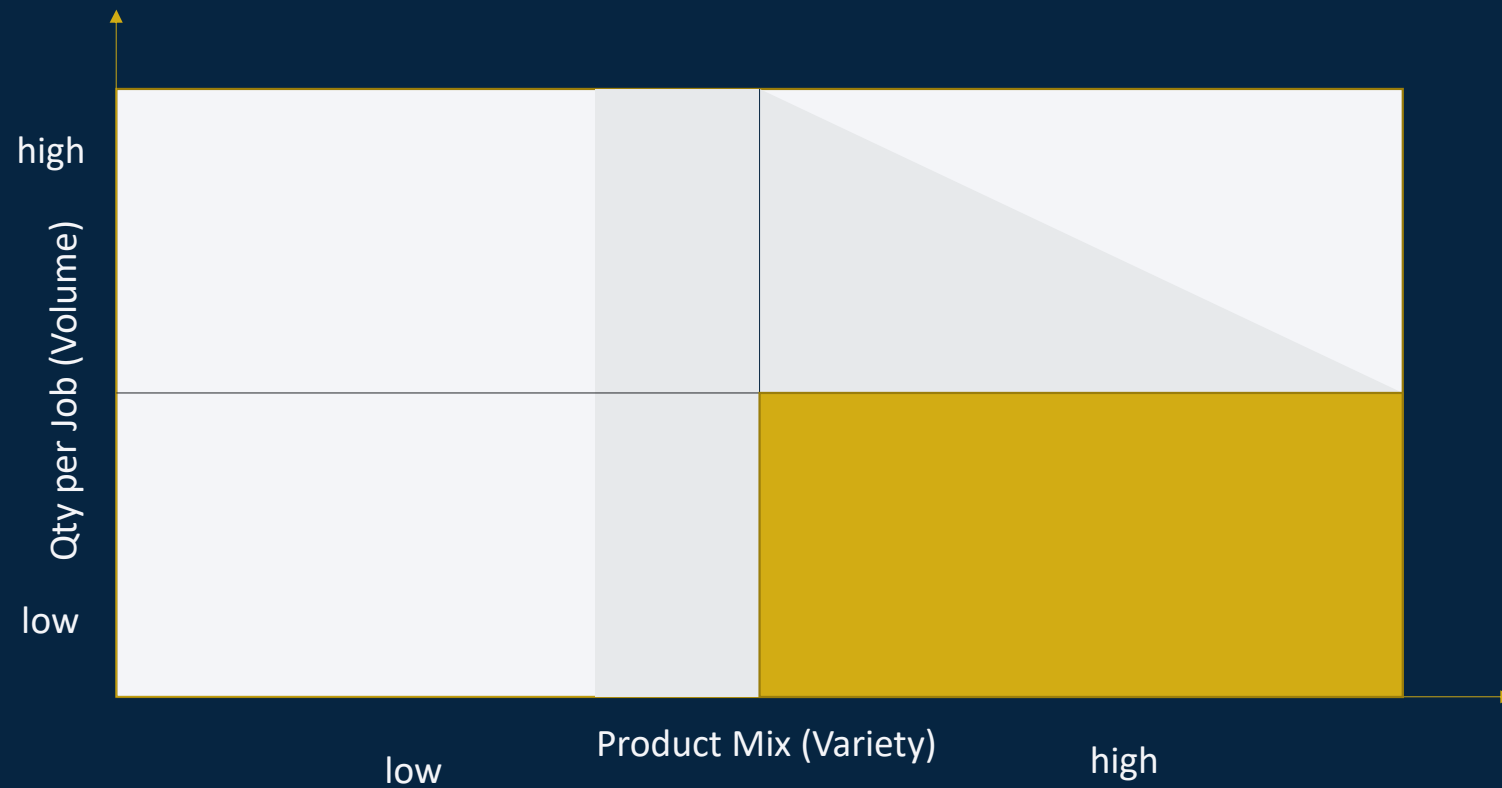


February 2023

<https://www.twdigital.us>



Solution Focus



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Process / Today (Excel)

Many small businesses manage their quoting process in Excel

Mistake prone

Difficult to impossible to “learn” from historical orders vs product features to improve estimating precision

ERP is **NOT** the solution for the make-to-order business

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Process / Today (Excel) / Features

Quote	Attributes				
	QTY	MATERIAL	RAWWEIGHT_LB	HEATREAT	COMPLEXITY (1,2,3)
Q1000	6	STEEL1	16	YES	3
Q1001	9	STEEL3	15	NO	1
Q1002	3	STEEL1	22	YES	1
Q1003	1	STEEL2	18	YES	2
Q1004	9	STEEL2	25	YES	3
Q1005	8	STEEL2	24	YES	3

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Process / Today (Excel) / Time & Cost

Quote	Per Unit Task Time [min]										
	CUT	MACHINE	HEATREAT	RECEIVE	INSPECT	GRIND		SHIP	CUT	MACHINE	HEATREAT
Q1000	12.0	31.0	38.0		7.0	38.0	10.0		\$ 11.00	\$ 28.42	\$ 3.00
Q1001	5.0	30.0	33.0		9.0	38.0	9.0		\$ 4.58	\$ 27.50	\$ 3.00
Q1002	36.0	105.0	99.0		30.0	105.0	30.0		\$ 33.00	\$ 96.25	\$ 9.00
Q1003	16.0	70.0	62.0		20.0	60.0	18.0		\$ 14.67	\$ 64.17	\$ 5.00
Q1004	12.0	32.0	37.0		8.0	36.0	5.0		\$ 11.00	\$ 29.33	\$ 3.00
Q1005	36.0	99.0	96.0		27.0	90.0	24.0		\$ 33.00	\$ 90.75	\$ 8.00
Q1002	36.0	105.0	99.0		30.0	105.0	30.0		\$ 33.00	\$ 96.25	\$ 9.00
Q1004	12.0	32.0	37.0		8.0	36.0	5.0		\$ 11.00	\$ 29.33	\$ 3.00

Process / Today (Excel) / Pricing

Material Cost	Cost			Pricing		Profit
	Qty	Total Unit Cost	Extended Cost	Unit Price	xtended Price	Gross Margin
6.40	6	\$ 380.40	\$ 2,282.40	\$ 494.52	\$ 2,967.12	23%
10.50	9	\$ 118.67	\$ 1,068.00	\$ 154.27	\$ 1,388.40	23%
8.80	3	\$ 131.63	\$ 394.90	\$ 171.12	\$ 513.37	23%
9.00	1	\$ 273.00	\$ 273.00	\$ 354.90	\$ 354.90	23%
12.50	9	\$ 339.75	\$ 3,057.75	\$ 441.68	\$ 3,975.08	23%
12.00	8	\$ 391.50	\$ 3,132.00	\$ 508.95	\$ 4,071.60	23%
15.00	8	\$ 301.20	\$ 3,135.00	\$ 208.22	\$ 4,011.60	53%
15.20	8	\$ 330.12	\$ 3,021.12	\$ 401.98	\$ 3,212.08	53%

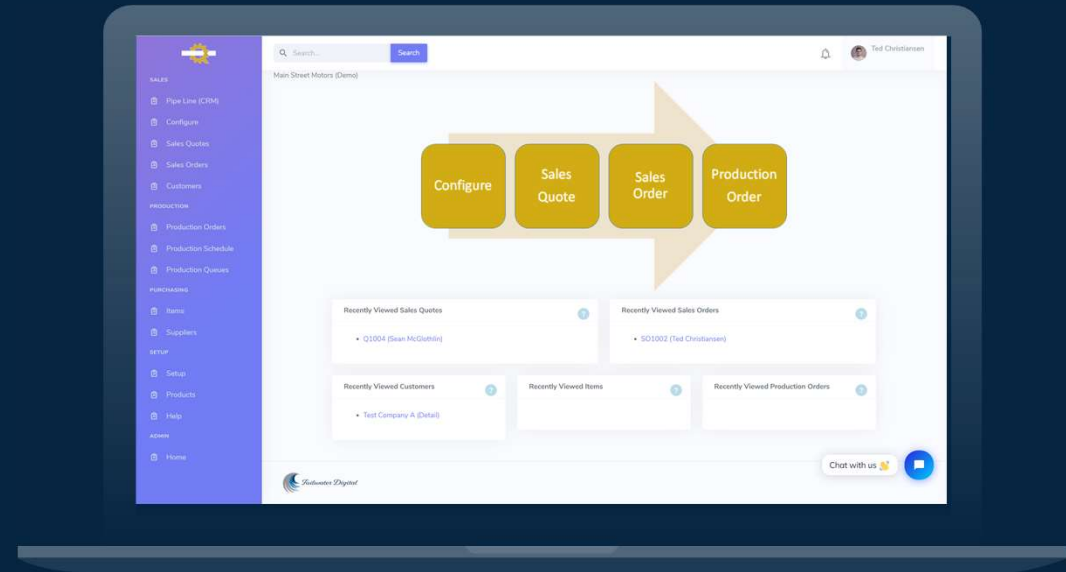
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Process / DashQ

Smart Quote

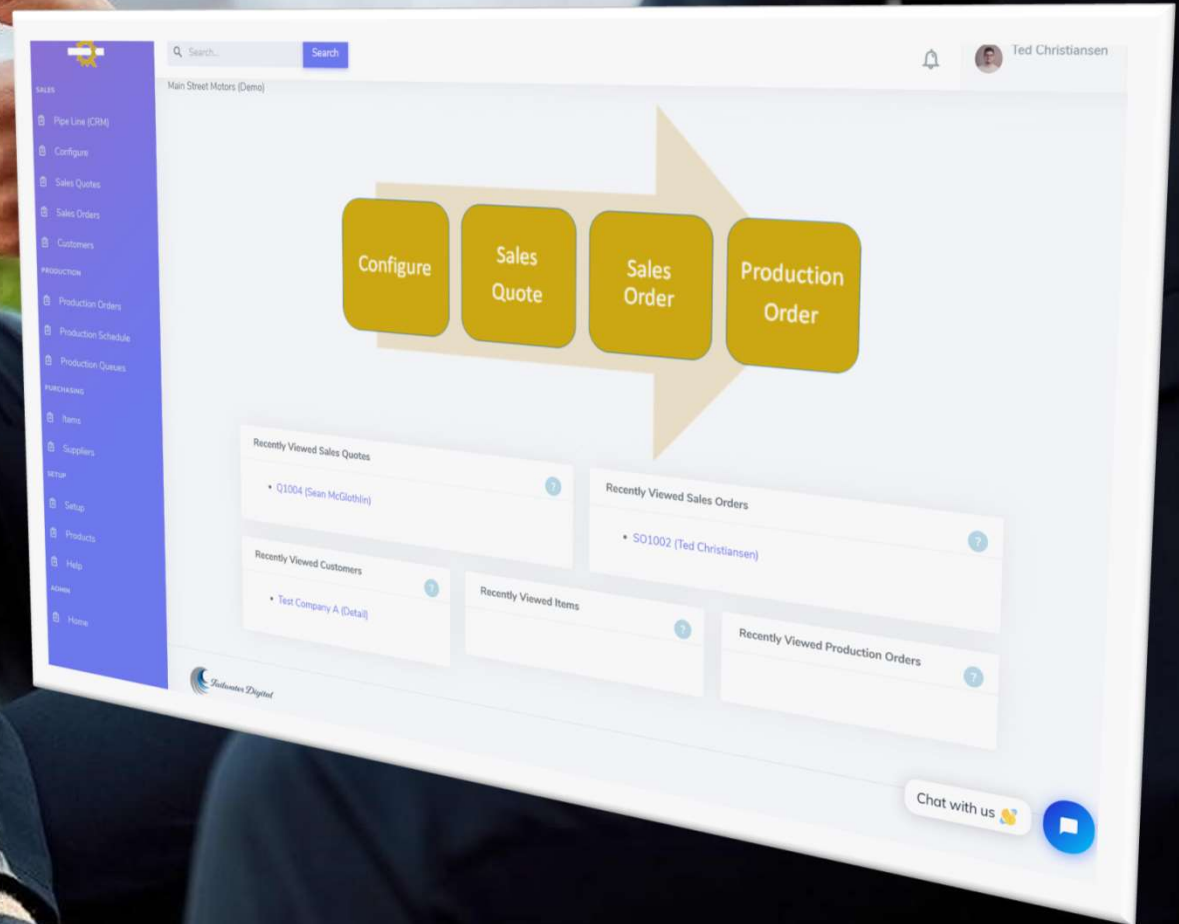
Sales (Q + O)

Production



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Transform Your Business

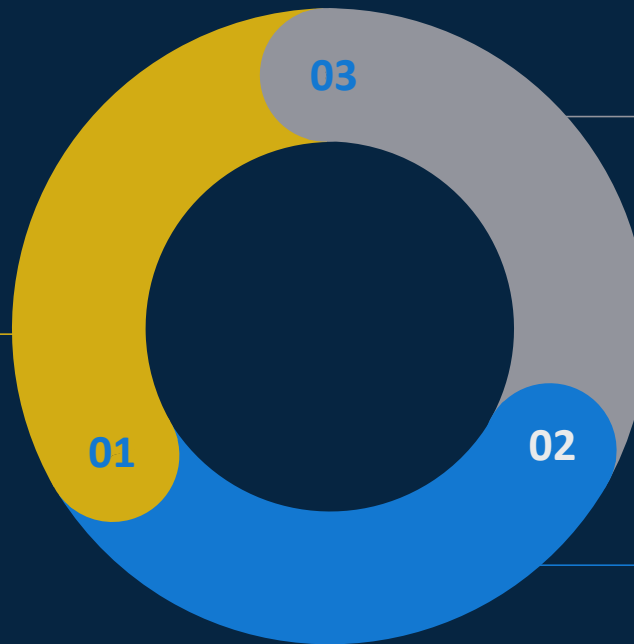


Transform Your Business

Smart Quote

Create quotes and in **minutes**
rather than hours

Eliminate Excel and Word



Grow and Improve Profit

Win more orders through understanding win/loss and profitability via AI

Scheduling

Automatic schedule calculation

Production order management and time clocking via tablets for shop personnel

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Benefits



Modules

- Pipeline (CRM)
- Smart Quote
- Line Item Builder
- Sales Orders
- Production Orders
- Inventory

Optional Module

<https://www.twdigital.us>





Sales

Pipeline (CRM)



The screenshot shows the 'Sales Pipeline (Any)' interface. At the top, there's a search bar and a user profile for 'Ted Christiansen'. Below this, a horizontal flowchart shows the stages: Prospect (red), Lead (orange), Opportunity (yellow), Quoted (light green), Pending (green), and Won/Lost (grey). Underneath the flowchart is a table with columns for #, Status, By, P(WIN), Description, Industry Description, Last Contact, and Last Updated. The table contains three rows of data, all with 'Opportunity' status and 'Dave Luckner' as the contact. The interface also features a left sidebar with various modules like SALES, PRODUCTION, ITEMS, and COMPANY, and a bottom logo for 'Tailwater Digital'.

Optional Module

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Price in Sixty Seconds w/Smart Quote

The screenshot displays the 'Qty & Material' form within the Tailwater Digital Smart Quote application. The interface features a purple sidebar with navigation links for SALES, PRODUCTION, and ITEMS. The main content area includes a search bar, a breadcrumb trail (Home > Smart Quote (Machining) > Qty & Material), and a user profile for Ted Christiansen. The form itself is divided into three main sections: 'Quantity' with a text input for 'QTY' containing the value '1'; 'Material' with a dropdown menu for 'MATERIAL' showing 'STEEL1'; and a 'Next' button. Below these is an 'Attributes' section with a table for 'Attribute' and 'Value'. At the bottom of the form are tabs for 'Setup', 'Pages', 'Attributes', 'Rules', 'Tasks', and 'Item Mapping'. The Tailwater Digital logo is visible in the bottom left corner of the application window.

SALES

- Pipe Line
- Smart Quote
- Quotes
- Orders
- Promotions
- Customers

PRODUCTION

- Orders
- Schedule
- Queues

ITEMS

- Items
- Inventory
- Locations
- Suppliers

COMPANY

- Analysis
- Setup
- Products
- Tasks

Search...

Search

Home > Smart Quote (Machining) > Qty & Material

Qty & Material

Quantity
QTY

1

Material
MATERIAL

STEEL1

Next

Attributes

Attribute	Value
-----------	-------

Setup Pages Attributes Rules Tasks Item Mapping

Tailwater Digital

<https://www.twdigital.us>



Smart Quote

- Generates:
 - Router
 - BOM
 - Cost
 - Pricing
 - Estimated Delivery
- Add to existing or new Sales Quote or Sales Order

The screenshot displays the 'Smart Quote' software interface. The left sidebar contains a navigation menu with categories: SALES (Pipe Line, Smart Quote, Quotes, Orders, Promotions, Customers), PRODUCTION (Orders, Schedule, Queues), ITEMS (Items, Inventory, Locations, Suppliers), and COMPANY (Analysis, Setup, Products, Tasks). The main content area is titled 'Pricing' and shows a 'Price per Unit' table with a 'Base' price of \$196.45 and a 'Total' price of \$196.45. Below this is a 'Routing' section with a table showing tasks, processes, times, and costs. The 'Bill of Materials' section is partially visible at the bottom. On the right, there are buttons for 'Add To Sales Quote', 'Add To Sales Order', 'Create Promotion', and 'Estimated Delivery'.

Price per Unit	
Description	Price (Gross)
Base	\$196.45
Total	\$196.45

Routing				
Task	Process	Time [min]	Cost	Price (Gross)
CUT	Cut Raw Material	21.5	\$23.29	\$27.95
MACHINE1	Machining	20.0	\$21.67	\$26.00
Total		41.5	\$44.96	\$53.95

Bill of Materials		
Unit Cost	Extended	Extended

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Quote – Configuration Added

The screenshot displays the 'Sales Quote Detail' page. On the left is a purple sidebar with a navigation menu. The main content area has a top header with a search bar and user profile. Below this is a progress bar showing 'Draft', 'Offered', and 'Accepted' stages, with 'Draft' being the current stage. A row of action buttons includes 'Update Status', 'View (PDF)', 'Send To User', 'Send to Customer', and 'Duplicate'. A table lists quote details: Status (DRAFT), Number (Q1000), Customer (Customer #1), Postal Code (77005), Sales Order, and Lead Time (0 weeks). Below this is a 'Profitability' section with a table showing Price Gross (\$196.45), Discount % (0.0), Price Net (\$196.45), Cost (\$158.96), and Net Margin % (19.1). Another row of action buttons follows. The 'Line Items' section shows one item (Position 10) with a description of 'Machining Base' and detailed specifications. The item's unit price is \$196.45 and the quantity is 1.0, resulting in an extended price of \$196.45.

SALES

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- Suppliers

COMPANY

- Analysis
- Setup
- Products
- Tasks

Search... Search

Ted Christiansen
ABC Machining (Demo)

Home > Sales Quotes > Detail

Sales Quote Detail

Draft Offered Accepted

Update Status View (PDF) Send To User Send to Customer Duplicate

Status	Number	Customer	Postal Code	Sales Order	Lead Time (Weeks ARO)
DRAFT	Q1000	Customer #1	77005		0

Profitability

Price Gross	Discount %	Price Net	Cost	Net Margin %
\$196.45	0.0	\$196.45	\$158.96	19.1

Update Discount Update LeadTime History Notes Update Delivery Meta Data Delete

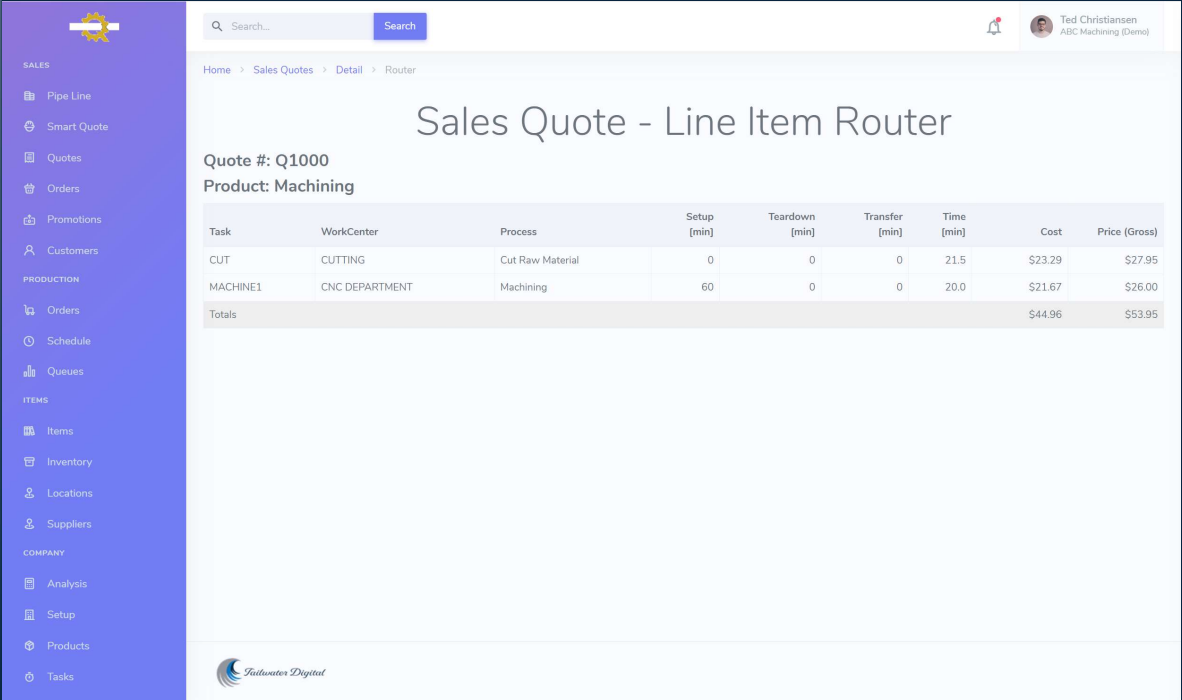
Line Items (1 total)

Add Smart Quote

Position	Description	Unit Price Net	Quantity	Extended Price Net
10	Machining Base QTY=1, MATERIAL=STEEL1, RAWLENGTH_X=10 (IN), RAWWIDTH_Y=10 (IN), RAWHEIGHT_Z=10 (IN), FINLENGTH_X=9 (IN), FINWIDTH_Y=9 (IN), FINHEIGHT_Z=9 (IN)	\$196.45	1.0	\$196.45

Actions

Quote Line Item Router



The screenshot displays the 'Sales Quote - Line Item Router' interface. On the left is a purple sidebar with a navigation menu. The main content area features a search bar, a breadcrumb trail, and a table of routing tasks for Quote # Q1000.

Navigation Menu (Left Sidebar):

- SALES
 - Pipe Line
 - Smart Quote
 - Quotes
 - Orders
 - Promotions
 - Customers
- PRODUCTION
 - Orders
 - Schedule
 - Queues
- ITEMS
 - Items
 - Inventory
 - Locations
 - Suppliers
- COMPANY
 - Analysis
 - Setup
 - Products
 - Tasks

Main Content Area:

Search: Search

Home > Sales Quotes > Detail > Router

Sales Quote - Line Item Router

Quote #: Q1000
Product: Machining

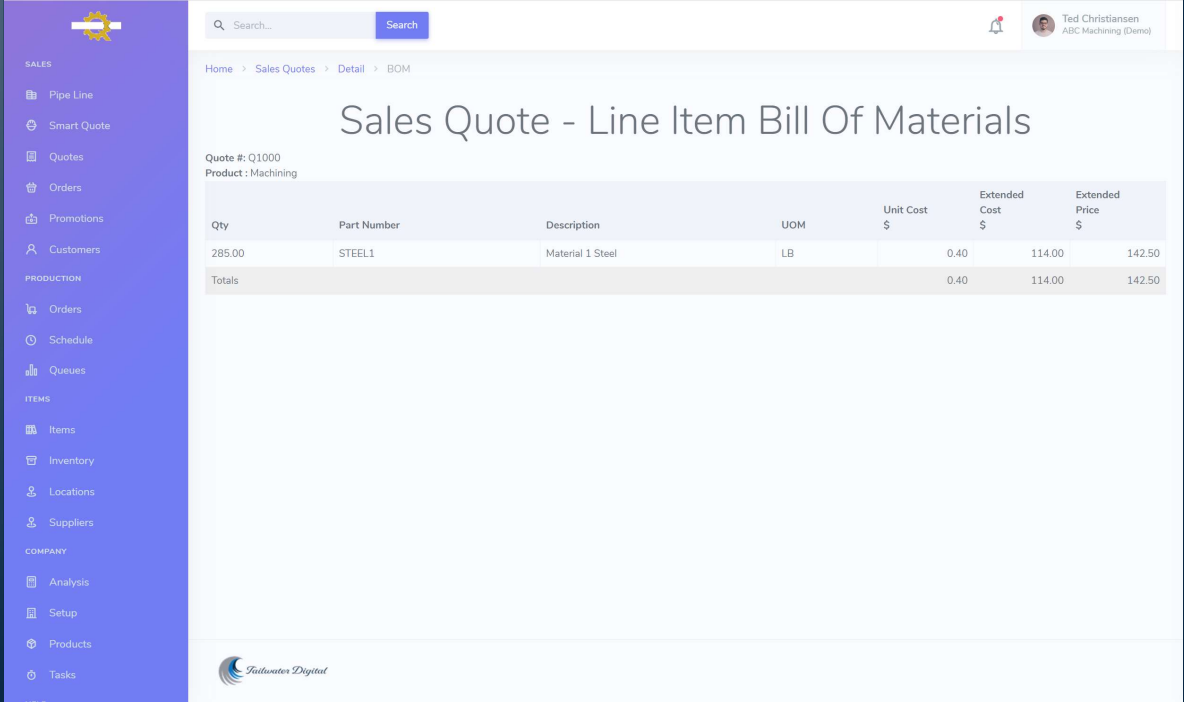
Task	WorkCenter	Process	Setup [min]	Teardown [min]	Transfer [min]	Time [min]	Cost	Price (Gross)
CUT	CUTTING	Cut Raw Material	0	0	0	21.5	\$23.29	\$27.95
MACHINE1	CNC DEPARTMENT	Machining	60	0	0	20.0	\$21.67	\$26.00
Totals							\$44.96	\$53.95

Tailwater Digital

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Quote Line Item Bill Of Materials



Search... Search

Home > Sales Quotes > Detail > BOM

Ted Christensen
ABC Machining (Demo)

Sales Quote - Line Item Bill Of Materials

Quote #: Q1000
Product: Machining

Qty	Part Number	Description	UOM	Unit Cost \$	Extended Cost \$	Extended Price \$
285.00	STEEL1	Material 1 Steel	LB	0.40	114.00	142.50
Totals				0.40	114.00	142.50

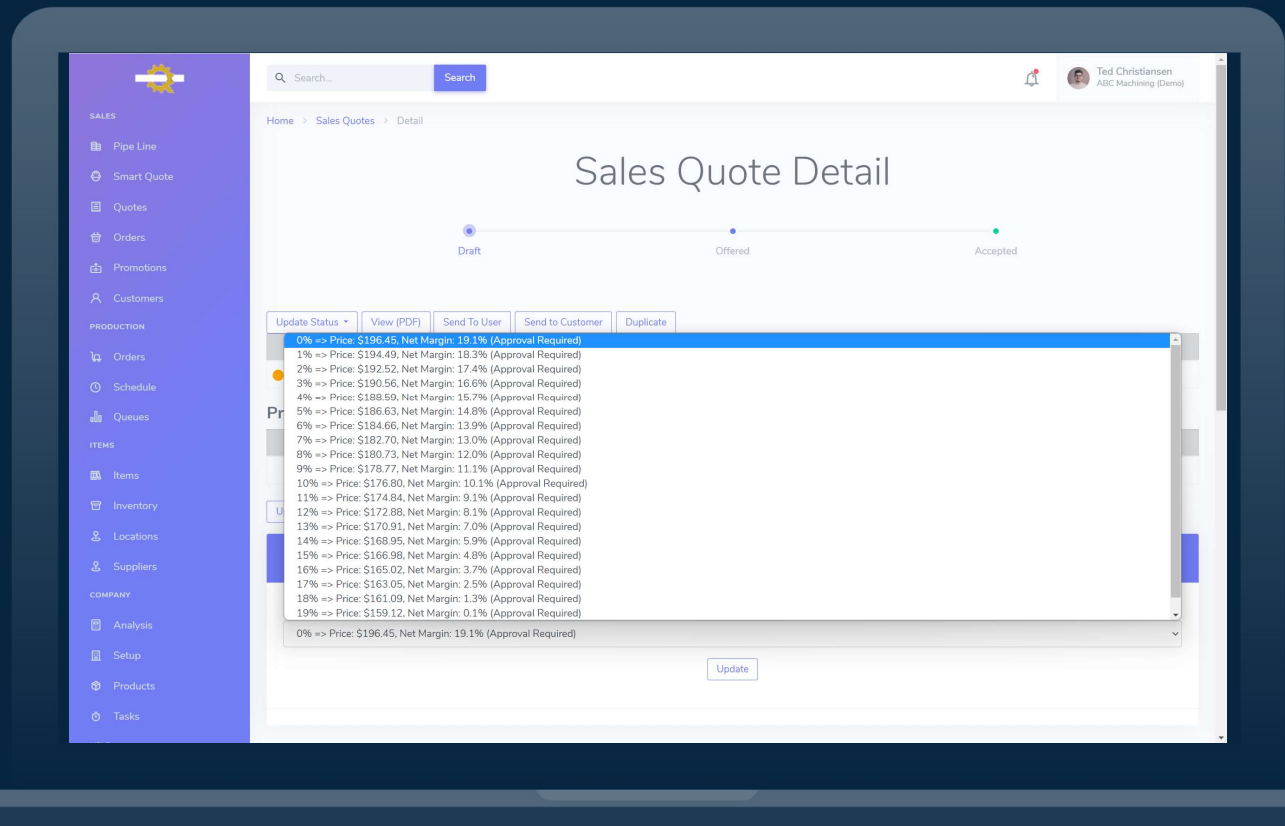
Tailwater Digital

<https://www.twdigital.us>



Quote Discounting

- Automatic calculation of net margin for each discount option



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Line Item Editor

- Allows for manual creation of router and BOM
- Can also be used with Smart Quote to make changes
- Supported on Quotes and Orders

Search...

Home > Sales Quotes > Detail > Line Item Edit

Sales Quote Line Item Edit

Update Basics **Reset** Time Units [MIN] Overtime [1.0]

Summary

Customer	Product Name	Description
Customer #1 / Target GM: 20%	Machining	

Profitability

Unit Cost	Unit Price	Gross Profit	Gross Margin
\$158.96	\$196.45	\$37.49	19.1%

Process (Tasks)

Task #	Name	Description	Time [MIN]	Unit Cost	Unit Price	GM %
10	CUT	Cut Raw Material	21.500	\$23.29	\$27.95	16.7
22	MACHINE1	Machining	20.000	\$21.67	\$26.00	16.7
Totals			41.500	\$44.96	\$53.95	16.7

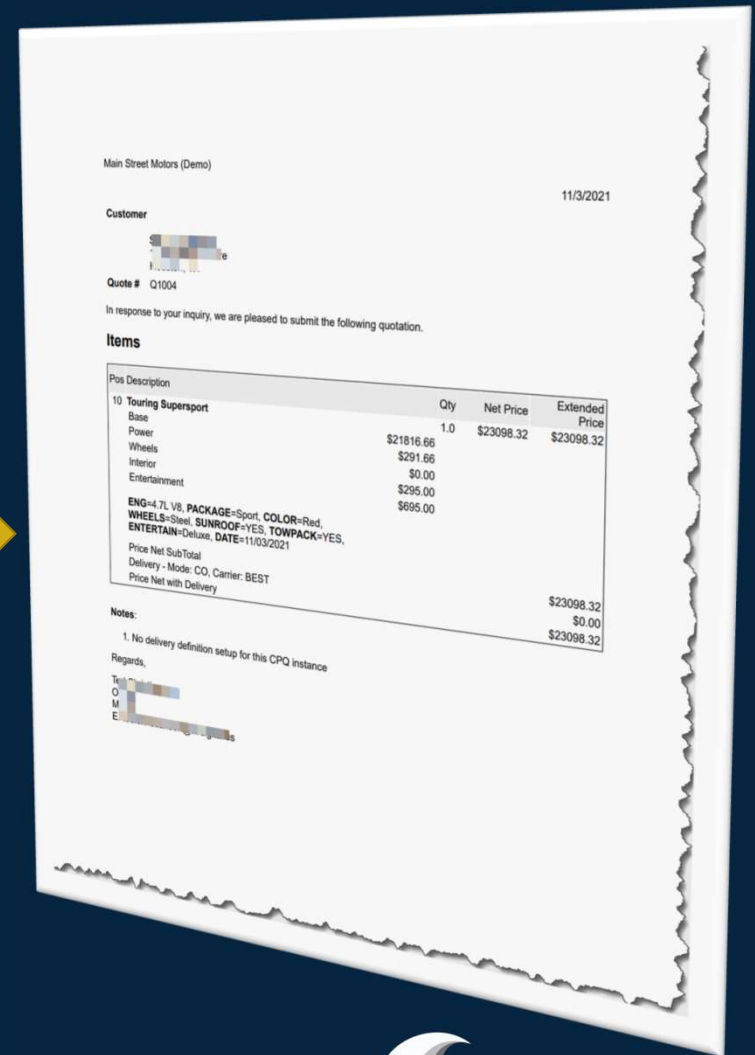
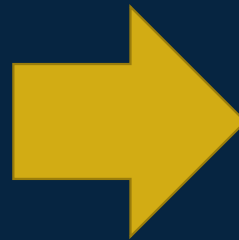
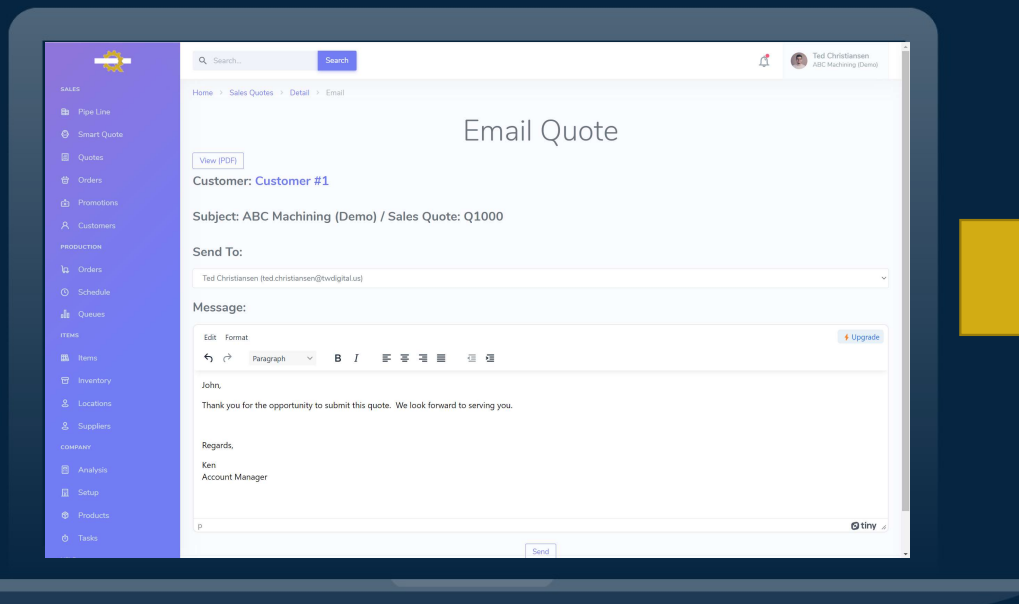
Add NRE [ENG] Task (FINITE capacity) detail... Task time... Task cost...

Add HEATTRE Task (INFINITE capacity) detail... Task time... Task cost...

Notes:
1. External tasks are not scheduled and have infinite (unknown) capacity. The Task time (INFINITE capacity) is the total time required - both touch and non-working. The cost is the cost to have the external task (service) performed

Materials

Quote Sharing

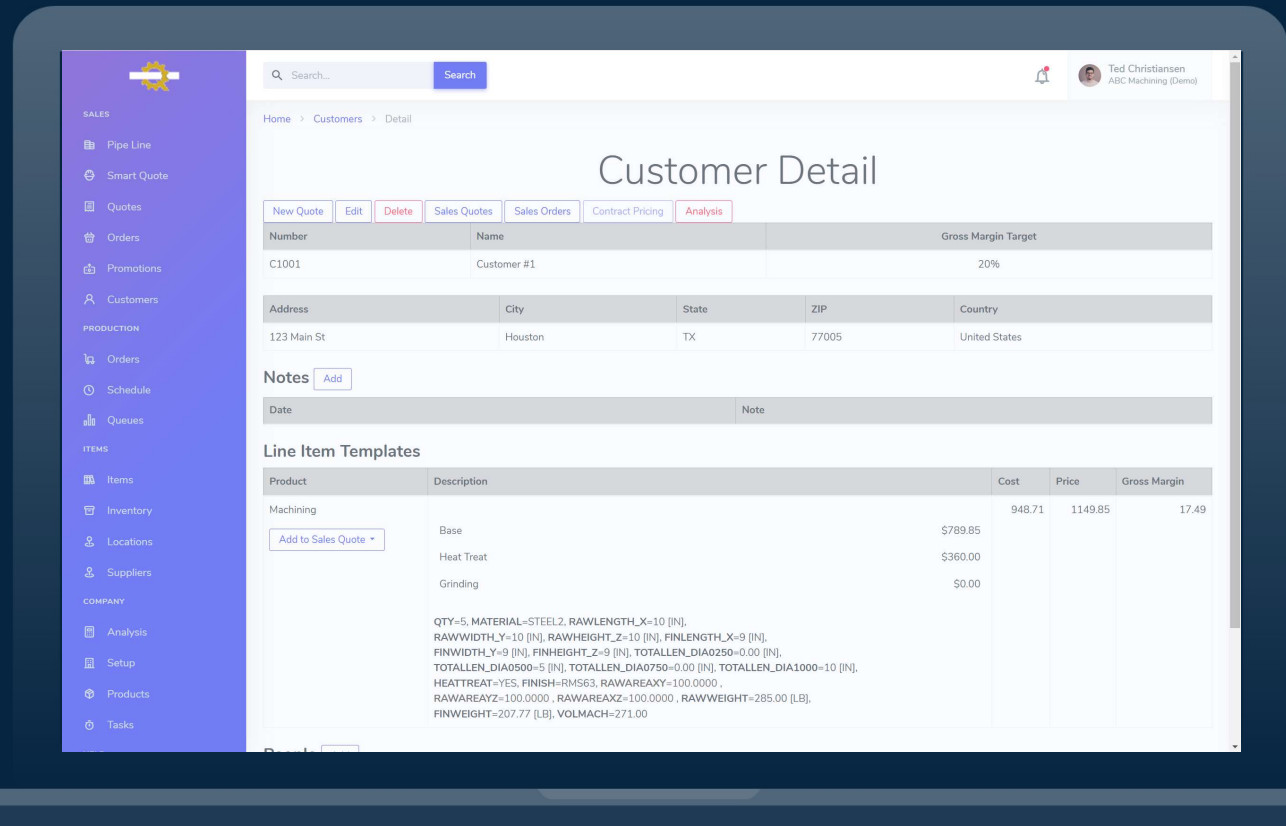


<https://www.twdigital.us>



Customers

- Can be managed within DashQ OR
- Synced with another source
 - Import (Excel, CSV)
 - QuickBooks (Online)



The screenshot displays the 'Customer Detail' page in the DashQ application. The interface includes a left-hand navigation menu with categories like SALES, PRODUCTION, ITEMS, and COMPANY. The main content area shows the customer's information, including a table for 'Line Item Templates' with columns for Product, Description, Cost, Price, and Gross Margin. The customer details for 'Customer #1' are visible, including address, city, state, ZIP, and country.

Customer Detail

Number	Name	Gross Margin Target
C1001	Customer #1	20%

Address	City	State	ZIP	Country
123 Main St	Houston	TX	77005	United States

Notes

Date	Note
------	------

Line Item Templates

Product	Description	Cost	Price	Gross Margin
Machining	Base	\$789.85	948.71	1149.85
	Heat Treat	\$360.00		
	Grinding	\$0.00		

QTY=5, MATERIAL=STEEL2, RAWLENGTH_X=10 [IN], RAWWIDTH_Y=10 [IN], RAWHEIGHT_Z=10 [IN], FINLENGTH_X=9 [IN], FINWIDTH_Y=9 [IN], FINHEIGHT_Z=9 [IN], TOTALLEN_DIA0250=0.00 [IN], TOTALLEN_DIA0500=5 [IN], TOTALLEN_DIA0750=0.00 [IN], TOTALLEN_DIA1000=10 [IN], HEATTREAT=YES, FINISH=RMS63, RAWAREAXY=100.0000, RAWAREAYZ=100.0000, RAWAREAXZ=100.0000, RAWWEIGHT=285.00 [LB], FINWEIGHT=207.77 [LB], VOLMACH=271.00

Customers / Line Item Templates

- Save any lineitem as a template to a Customer
- Makes repeat orders faster to setup

The screenshot shows the 'Customer Detail' page in the Tailwater Digital software. The sidebar on the left contains navigation links for Sales, Production, Items, and Company. The main content area displays customer information for 'Customer #1' and a table of 'Line Item Templates'.

Customer Detail

Home > Customers > Detail

Search... Search

Ted Christiansen
ABC Machining (Demo)

Customer Detail

Number: C1001, Name: Customer #1, Gross Margin Target: 20%

Address: 123 Main St, City: Houston, State: TX, ZIP: 77005, Country: United States

Notes Add

Date: Note:

Line Item Templates

Product	Description	Cost	Price	Gross Margin
Machining		948.71	1149.85	17.49
	Base	\$789.85		
	Heat Treat	\$360.00		
	Grinding	\$0.00		

QTY=5, MATERIAL=STEEL2, RAWLENGTH_X=10 [IN],
RAWWIDTH_Y=10 [IN], RAWHEIGHT_Z=10 [IN], FINLENGTH_X=9 [IN],
FINWIDTH_Y=9 [IN], FINHEIGHT_Z=9 [IN], TOTALLEN_DIA0250=0.00 [IN],
TOTALLEN_DIA0500=5 [IN], TOTALLEN_DIA0750=0.00 [IN], TOTALLEN_DIA1000=10 [IN],
HEATTREAT=YES, FINISH=RMS63, RAWAREAXY=100.0000 ,
RAWAREAYZ=100.0000 , RAWAREAXZ=100.0000 , RAWWEIGHT=285.00 [LB],
FINWEIGHT=207.77 [LB], VOLMACH=271.00

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Promotions

- Save any lineitem as a Promotion (ADMIN role)
- Promotions can then be added to Quotes

The screenshot displays the 'Customer Detail' page in the Tailwater Digital software. The left sidebar contains a navigation menu with categories: SALES (Pipe Line, Smart Quote, Quotes, Orders, Promotions, Customers), PRODUCTION (Orders, Schedule, Queues), ITEMS (Items, Inventory, Locations, Suppliers), and COMPANY (Analysis, Setup, Products, Tasks). The main content area shows the 'Customer Detail' for 'Customer #1'. It includes a search bar at the top right, a user profile for 'Ted Christiansen' (ABC Machining (Demo)), and a breadcrumb trail: Home > Customers > Detail. The customer information is presented in a table with columns: Number, Name, and Gross Margin Target. The data row shows 'C1001', 'Customer #1', and '20%'. Below this, there is a table for customer address details: Address, City, State, ZIP, and Country. The data row shows '123 Main St', 'Houston', 'TX', '77005', and 'United States'. A 'Notes' section with an 'Add' button is also present. The 'Line Item Templates' section features a table with columns: Product, Description, Cost, Price, and Gross Margin. The 'Machining' product is listed with a cost of \$789.85, a price of \$1149.85, and a gross margin of 17.49. The 'Add to Sales Quote' button is visible next to the 'Machining' product. The interface is clean and professional, with a blue and white color scheme.

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Sales Orders

- Same functionality as Quotes:
 - Creation
 - Editing
 - Status Management
 - Viewing

The screenshot displays the 'Sales Order Detail' page in a web application. On the left is a purple sidebar with a navigation menu categorized into SALES, PRODUCTION, ITEMS, and COMPANY. The main content area features a search bar, a breadcrumb trail (Home > Sales Orders > Detail), and a user profile (Ted Christiansen, ABC Machining (Demo)). A progress bar at the top shows the order status: Draft (active), Finalized, and Completed. Below this is a table of order metadata with columns for Status, Number, Customer, Zip Code, Promise Date, From SalesQuote, and Ext Reference. The current order is a DRAFT with number SO1000, customer Customer #1, zip 77005, promise date 03/20/2023, and from sales quote Q1000. A 'Meta Data' section follows with a table of labels and values. The 'Profitability' section contains a table with columns for Price Gross, Disc %, Price Net, Cost, and Net Margin %. Below this are buttons for History, Notes, Change Orders, External Reference, Update Promise Date, and Delete. The 'Line Items (1 total)' section includes an 'Add' button and a 'Smart Quote' button, followed by a table with columns for Line #, Description, Unit Price Net, Quantity, and Extended Price Net. The first line item is Line # 10, Description Base, Unit Price Net \$196.45, Quantity 1.0, and Extended Price Net \$196.45.

SALES

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- Orders
- Promotions
- Customers

PRODUCTION

- Orders
- Schedule
- Queues

ITEMS

- Items
- Inventory
- Locations
- Suppliers

COMPANY

- Analysis
- Setup
- Products
- Tasks

Search...

Search

Home > Sales Orders > Detail

Sales Order Detail

Draft Finalized Completed

Update Status View (PDF) Send To User Send to Customer Duplicate

Status	Number	Customer	Zip Code	Promise Date	From SalesQuote	Ext Reference
DRAFT	SO1000	Customer #1	77005	03/20/2023	Q1000	

Meta Data

Label	Value

Profitability

Price Gross	Disc %	Price Net	Cost	Net Margin %
\$196.45	0.0	\$196.45	\$158.96	19.1

History Notes Change Orders External Reference Update Promise Date Delete

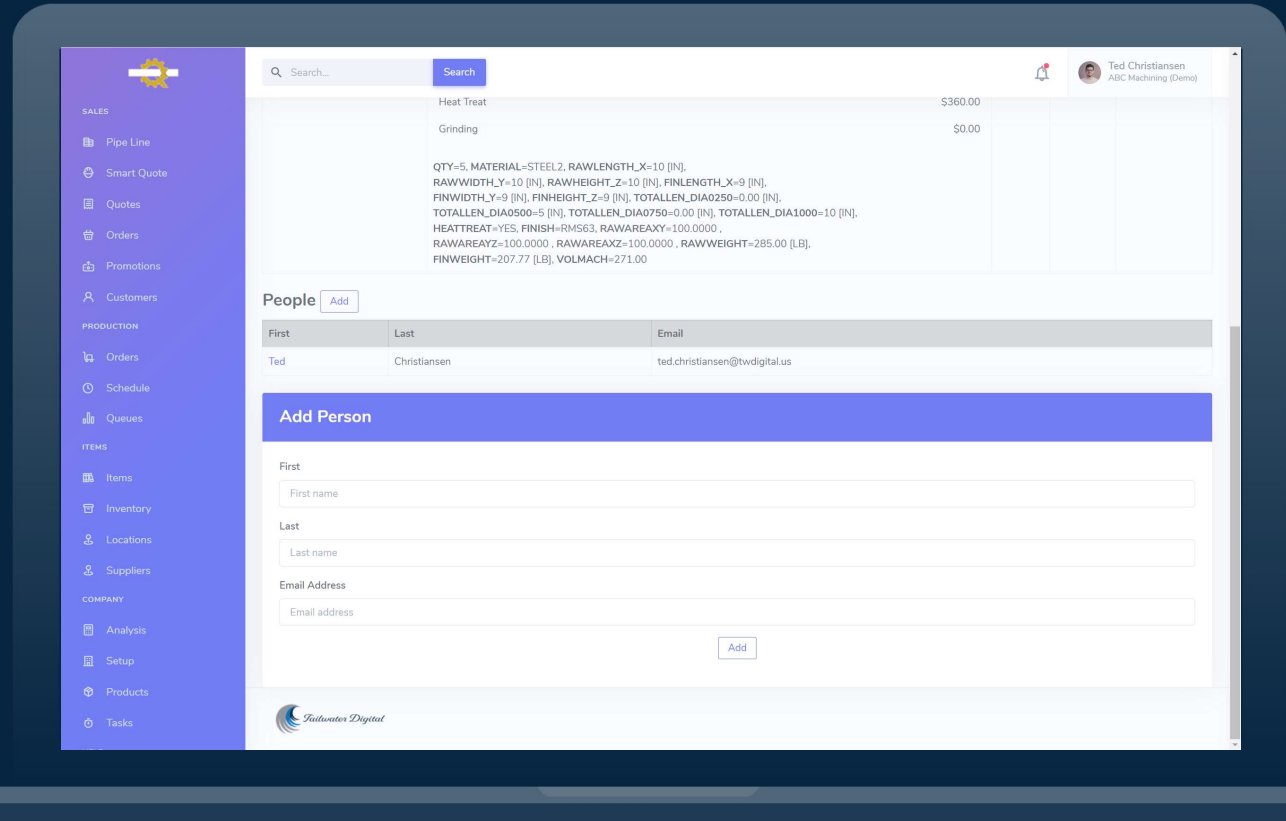
Line Items (1 total)

Add Smart Quote

Line #	Description	Unit Price Net	Quantity	Extended Price Net
10	Base	\$196.45	1.0	\$196.45

People

- People are associated with Customers
- Used for emailing of Quotes and Orders directly from within DashQ



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The background features a light blue-grey gradient. On the right side, there is a large, stylized yellow gear. To the left of the gear, there is a horizontal yellow rectangle. A dark blue vertical bar is positioned on the far left, partially overlapping the yellow rectangle.

Items

Item Detail

- Item Number
- Description
- Cost
- Price
- Attributes
- Added to BOM dynamically via Smart Quote

The screenshot shows a web application interface for 'Item Detail'. On the left is a purple sidebar with a navigation menu. The main content area has a top bar with a search bar and a user profile. Below this is a breadcrumb trail 'Home > Items > Detail'. The title 'Item Detail' is centered. A horizontal toolbar contains buttons: 'Inventory' (highlighted), 'Receive', 'Ship', 'Edit', 'Router', 'Suppliers', 'Duplicate', and 'Delete'. Below the toolbar is a table with columns: 'Item Number', 'Description', 'Group', 'Pricing Comp', 'UOM', 'IsInventory', 'Unit Cost (\$)', and 'Unit Price (\$)'. The first row shows 'C.10018', 'GRD: P110 / CON: LTC / OD: 7.625 (in) / WT: 0.290 (lb) / LEN: 43 (ft)', 'Casing', 'Base', 'EA', 'Y', '1245.68', and '1868.52'. Below the table is a 'LeadTime [Days]' field with the value '0'. The 'Attributes' section follows, with a table of 'Attribute' and 'Value' pairs: OD (7.625), WT (0.29), CON (LTC), GRD (P110), LEN (43), XAREA (6.68264), LBPERFT (23.175), and LEADTIMEWD (40). The 'History' section has a table with 'Date' and 'Description' columns. At the bottom is a 'References (Attributes)' section.

SALES

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- Customers

PRODUCTION

- Orders
- Schedule
- Queues

ITEMS

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- Inventory
- Locations

COMPANY

- Analysis
- Setup
- Products
- Tasks

HELP

Search...

Search

Home > Items > Detail

Item Detail

Inventory Receive Ship Edit Router Suppliers Duplicate Delete

Item Number	Description	Group	Pricing Comp	UOM	IsInventory	Unit Cost (\$)	Unit Price (\$)
C.10018	GRD: P110 / CON: LTC / OD: 7.625 (in) / WT: 0.290 (lb) / LEN: 43 (ft)	Casing	Base	EA	Y	1245.68	1868.52

LeadTime [Days]

0

Attributes

Attribute	Value
OD	7.625
WT	0.29
CON	LTC
GRD	P110
LEN	43
XAREA	6.68264
LBPERFT	23.175
LEADTIMEWD	40

History

Date	Description
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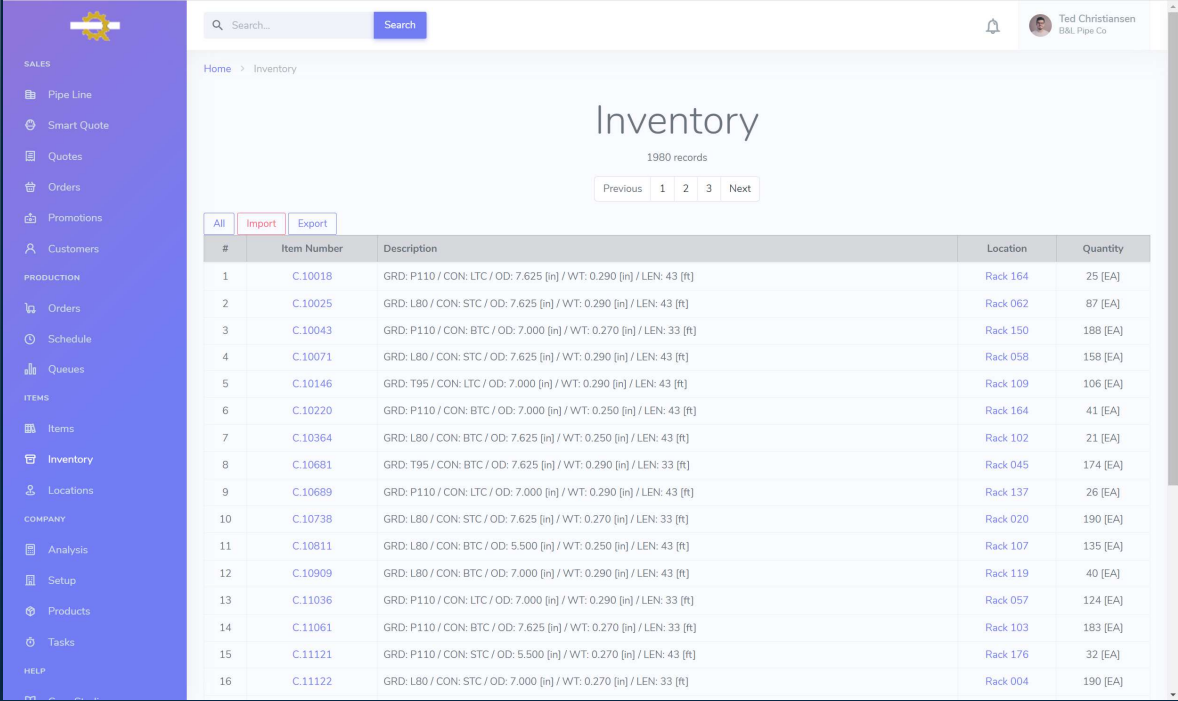
References (Attributes)



Inventory

Inventory

- ▣ Defineable locations, i.e
 - ▣ YARD
 - ▣ WHSE



Home > Inventory

Inventory

1980 records

Previous 1 2 3 Next

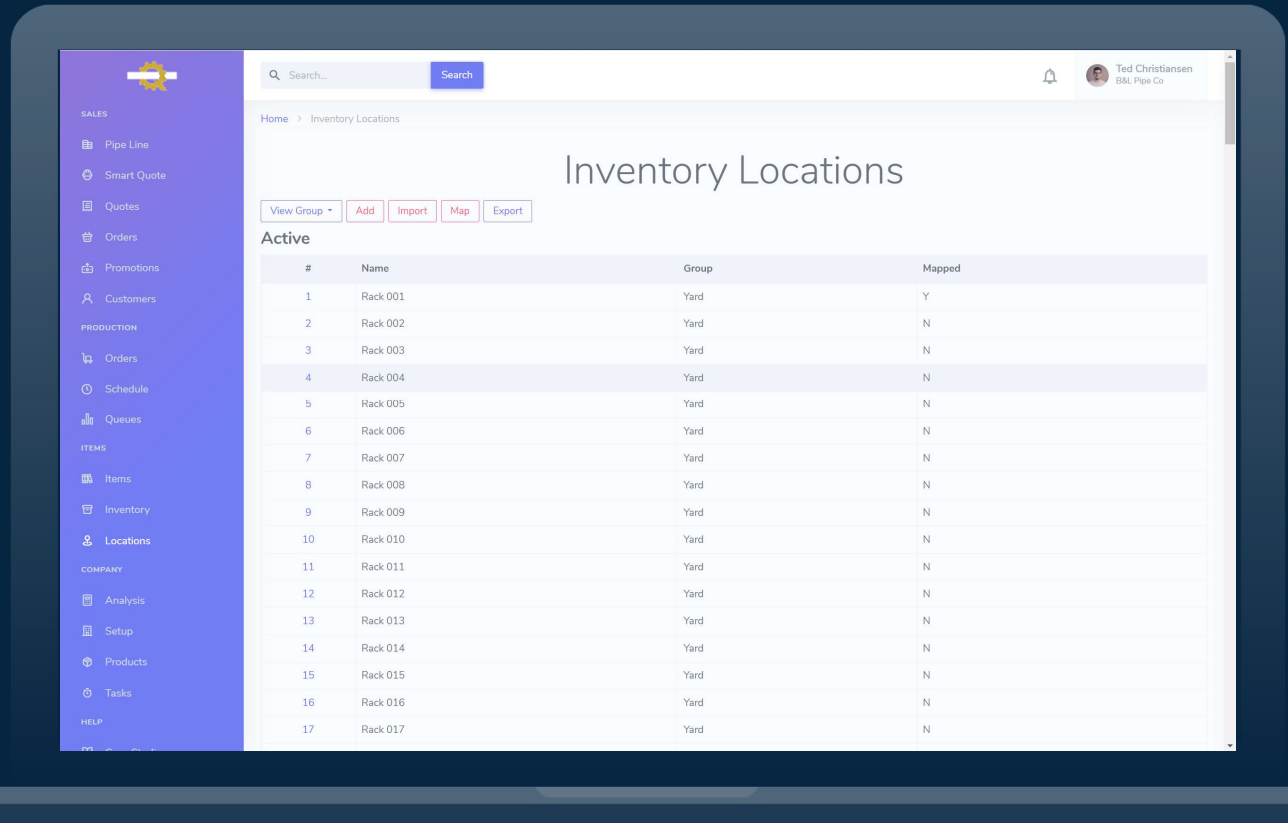
#	Item Number	Description	Location	Quantity
1	C.10018	GRD: P110 / CON: LTC / OD: 7.625 [in] / WT: 0.290 [in] / LEN: 43 [ft]	Rack 164	25 [EA]
2	C.10025	GRD: L80 / CON: STC / OD: 7.625 [in] / WT: 0.290 [in] / LEN: 43 [ft]	Rack 062	87 [EA]
3	C.10043	GRD: P110 / CON: BTC / OD: 7.000 [in] / WT: 0.270 [in] / LEN: 33 [ft]	Rack 150	188 [EA]
4	C.10071	GRD: L80 / CON: STC / OD: 7.625 [in] / WT: 0.290 [in] / LEN: 43 [ft]	Rack 058	158 [EA]
5	C.10146	GRD: T95 / CON: LTC / OD: 7.000 [in] / WT: 0.290 [in] / LEN: 43 [ft]	Rack 109	106 [EA]
6	C.10220	GRD: P110 / CON: BTC / OD: 7.000 [in] / WT: 0.250 [in] / LEN: 43 [ft]	Rack 164	41 [EA]
7	C.10364	GRD: L80 / CON: BTC / OD: 7.625 [in] / WT: 0.250 [in] / LEN: 43 [ft]	Rack 102	21 [EA]
8	C.10681	GRD: T95 / CON: BTC / OD: 7.625 [in] / WT: 0.290 [in] / LEN: 33 [ft]	Rack 045	174 [EA]
9	C.10689	GRD: P110 / CON: LTC / OD: 7.000 [in] / WT: 0.290 [in] / LEN: 43 [ft]	Rack 137	26 [EA]
10	C.10738	GRD: L80 / CON: STC / OD: 7.625 [in] / WT: 0.270 [in] / LEN: 33 [ft]	Rack 020	190 [EA]
11	C.10811	GRD: L80 / CON: BTC / OD: 5.500 [in] / WT: 0.250 [in] / LEN: 43 [ft]	Rack 107	135 [EA]
12	C.10909	GRD: L80 / CON: BTC / OD: 7.000 [in] / WT: 0.290 [in] / LEN: 43 [ft]	Rack 119	40 [EA]
13	C.11036	GRD: P110 / CON: LTC / OD: 7.000 [in] / WT: 0.290 [in] / LEN: 33 [ft]	Rack 057	124 [EA]
14	C.11061	GRD: P110 / CON: BTC / OD: 7.625 [in] / WT: 0.270 [in] / LEN: 33 [ft]	Rack 103	183 [EA]
15	C.11121	GRD: P110 / CON: STC / OD: 5.500 [in] / WT: 0.270 [in] / LEN: 43 [ft]	Rack 176	32 [EA]
16	C.11122	GRD: L80 / CON: STC / OD: 7.000 [in] / WT: 0.270 [in] / LEN: 33 [ft]	Rack 004	190 [EA]

☒ Import / ☒ Export

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Inventory Locations



The screenshot displays the 'Inventory Locations' page within a web application. On the left is a purple sidebar with a navigation menu. The main content area has a white background with a search bar at the top right and a breadcrumb trail 'Home > Inventory Locations'. Below the breadcrumb, the title 'Inventory Locations' is centered. A row of action buttons includes 'View Group', 'Add', 'Import', 'Map', and 'Export'. A table titled 'Active' follows, containing 17 rows of inventory data. The table has four columns: '#', 'Name', 'Group', and 'Mapped'. The first row is highlighted in light blue.

#	Name	Group	Mapped
1	Rack 001	Yard	Y
2	Rack 002	Yard	N
3	Rack 003	Yard	N
4	Rack 004	Yard	N
5	Rack 005	Yard	N
6	Rack 006	Yard	N
7	Rack 007	Yard	N
8	Rack 008	Yard	N
9	Rack 009	Yard	N
10	Rack 010	Yard	N
11	Rack 011	Yard	N
12	Rack 012	Yard	N
13	Rack 013	Yard	N
14	Rack 014	Yard	N
15	Rack 015	Yard	N
16	Rack 016	Yard	N
17	Rack 017	Yard	N

☒ Import / ☒ Export

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Inventory Location Detail

The screenshot displays the 'Inventory Location Detail' page within a web application. The interface includes a purple sidebar with navigation links for SALES, PRODUCTION, ITEMS, COMPANY, and HELP. The main content area features a search bar, a breadcrumb trail (Home > Inventory Locations > Detail), and a title 'Inventory Location Detail'. Below the title are 'Edit' and 'Duplicate' buttons. A table shows the location details for 'Rack 164' in the 'Yard' group. An 'Inventory' table lists 9 items with their numbers, descriptions, and quantities. The footer includes the Tailwater Digital logo.

Inventory Location Detail

[Edit](#) [Duplicate](#)

Name	GroupName	Coordinates
Rack 164	Yard	

Inventory

#	Item Number	Description	Quantity
1	C.10018	GRD: P110 / CON: LTC / OD: 7.625 [in] / WT: 0.290 [in] / LEN: 43 [ft]	25
2	C.10220	GRD: P110 / CON: BTC / OD: 7.000 [in] / WT: 0.250 [in] / LEN: 43 [ft]	41
3	C.40073	GRD: T95 / CON: BTC / OD: 4.500 [in] / WT: 0.290 [in] / LEN: 33 [ft]	102
4	C.43608	GRD: T95 / CON: STC / OD: 7.000 [in] / WT: 0.270 [in] / LEN: 43 [ft]	65
5	T.21369	GRD: P110 / CON: BTC / OD: 2.375 [in] / WT: 0.125 [in] / LEN: 33 [ft]	198
6	T.35927	GRD: T95 / CON: STC / OD: 4.000 [in] / WT: 0.125 [in] / LEN: 33 [ft]	160
7	T.41845	GRD: P110 / CON: STC / OD: 4.000 [in] / WT: 0.188 [in] / LEN: 33 [ft]	143
8	T.47136	GRD: L80 / CON: LTC / OD: 2.875 [in] / WT: 0.150 [in] / LEN: 33 [ft]	72
9	T.48067	GRD: L80 / CON: STC / OD: 2.875 [in] / WT: 0.125 [in] / LEN: 33 [ft]	170

Tailwater Digital

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Inventory Map

- Defineable GPS coordinates for any inventory location

The screenshot displays the 'Inventory Location Detail' page of a web application. On the left is a purple sidebar with a navigation menu. The main content area features a search bar at the top, followed by the title 'Inventory Location Detail'. Below the title are 'Edit' and 'Duplicate' buttons. A table lists location details for 'Rack 001' in the 'Yard' group, with coordinates 29.84625557494923, -95.12892040495574. A map section shows a satellite view of an industrial yard with a red pin. Below the map is an 'Inventory' table listing items with their numbers, descriptions, and quantities.

Navigation Menu:

- SALES
 - Pipe Line
 - Smart Quote
 - Quotes
 - Orders
 - Promotions
 - Customers
- PRODUCTION
 - Orders
 - Schedule
 - Queues
- ITEMS
 - Items
 - Inventory
 - Locations
- COMPANY
 - Analysis
 - Setup
 - Products
 - Tasks
- HELP

Inventory Location Detail

Search... Search

Home > Inventory Locations > Detail

Inventory Location Detail

Edit Duplicate

Name	GroupName	Coordinates
Rack 001	Yard	29.84625557494923, -95.12892040495574

Map

Map Satellite

Inventory

#	Item Number	Description	Quantity
1	C.16645	GRD: L80 / CON: BTC / OD: 7.000 [in] / WT: 0.270 [in] / LEN: 33 [ft]	100
2	C.25549	GRD: P110 / CON: BTC / OD: 7.000 [in] / WT: 0.290 [in] / LEN: 43 [ft]	24
3	C.35309	GRD: T95 / CON: BTC / OD: 4.500 [in] / WT: 0.250 [in] / LEN: 33 [ft]	62

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Store

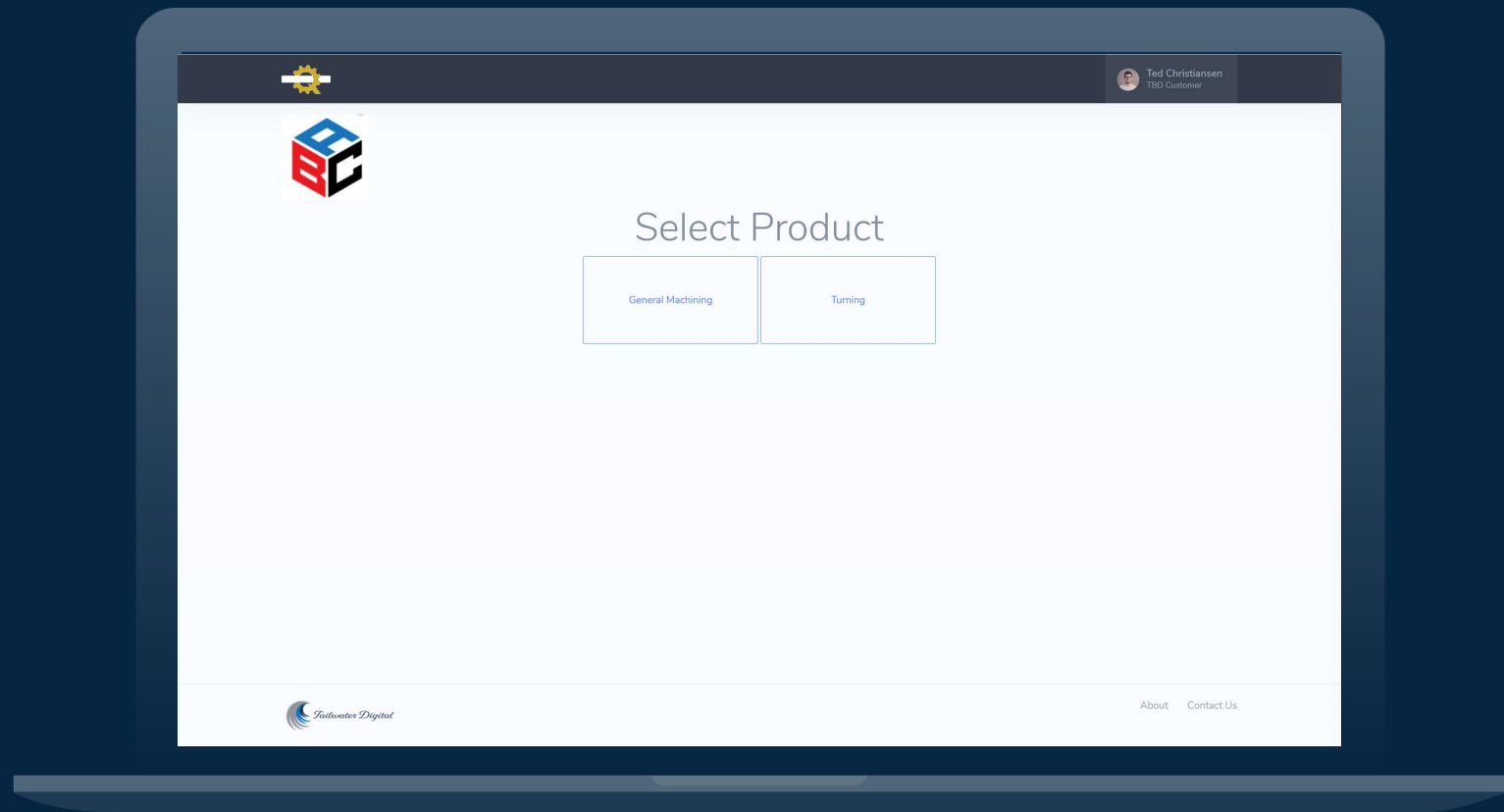
Customer accessible Configurator!



Configurator for Customers (Store)

- Uses the same Setup (pages, attributes, etc) as internal that Sales staff uses
- Once “Submit Order” is pressed:
 - ACCEPTED sales quote is created
 - DRAFT sales order is created
 - Confirmation email sent to customer
 - Email sent to defined list of people internally
- Sales Order (DRAFT) is ready for review and submittal to production
- A history of every configuration is saved
 - Allows for analysis of options chosen

Store – Product Selection



<https://www.twdigital.us>



Store - Configure

- Customer chooses options
- Same Pages & Attributes as internal Configurator for Sales team

The screenshot displays a web-based configuration interface. At the top, there is a navigation bar with a gear icon and a user profile for 'Ted Christiansen, TBD Customer'. Below this, the breadcrumb trail reads 'ABC Machining (Demo) > General Machining > Qty & Material'. The main content area is titled 'Configure' and contains two primary configuration blocks. The first block, labeled 'QTY' and 'Quantity', features a text input field with the number '1' and a button labeled 'Available/Valid'. The second block, labeled 'MATERIAL' and 'Material', features a dropdown menu currently showing 'STEEL1'. To the right of these blocks is a blue 'Next' button and an 'Attributes' section with two columns labeled 'Attribute' and 'Value'. The footer of the page includes the 'Tailwater Digital' logo on the left and 'About' and 'Contact Us' links on the right.

<https://www.twdigital.us>

Store - Configure

ABC Machining (Demo) > General Machining > Qty & Material > Dimensions

Configure

RAWLENGTH_X [IN] Raw Material Length (X) [IN]	RAWWIDTH_Y [IN] Raw Material Width (Y) [IN]	RAWHEIGHT_Z [IN] Raw Material Height (Z) [IN]
<input type="text" value="10"/> Available/Valid	<input type="text" value="10"/> Available/Valid	<input type="text" value="10"/> Available/Valid
Length (X) of raw material	Width (Y) of raw material	Height (Z) of raw material

FINLENGTH_X [IN] Finished Part (X) [IN]	FINWIDTH_Y [IN] Finished Part Width (Y) [IN]	FINHEIGHT_Z [IN] Finished Part Height (Z) [IN]
<input type="text" value="9"/> Available/Valid	<input type="text" value="9"/> Available/Valid	<input type="text" value="9"/> Available/Valid
Length (X) of finished part	Width (Y) of finished part	Height (Z) of finished part

[Next](#)

Attributes	
Attribute	Value
QTY	1
MATERIAL	STEEL1

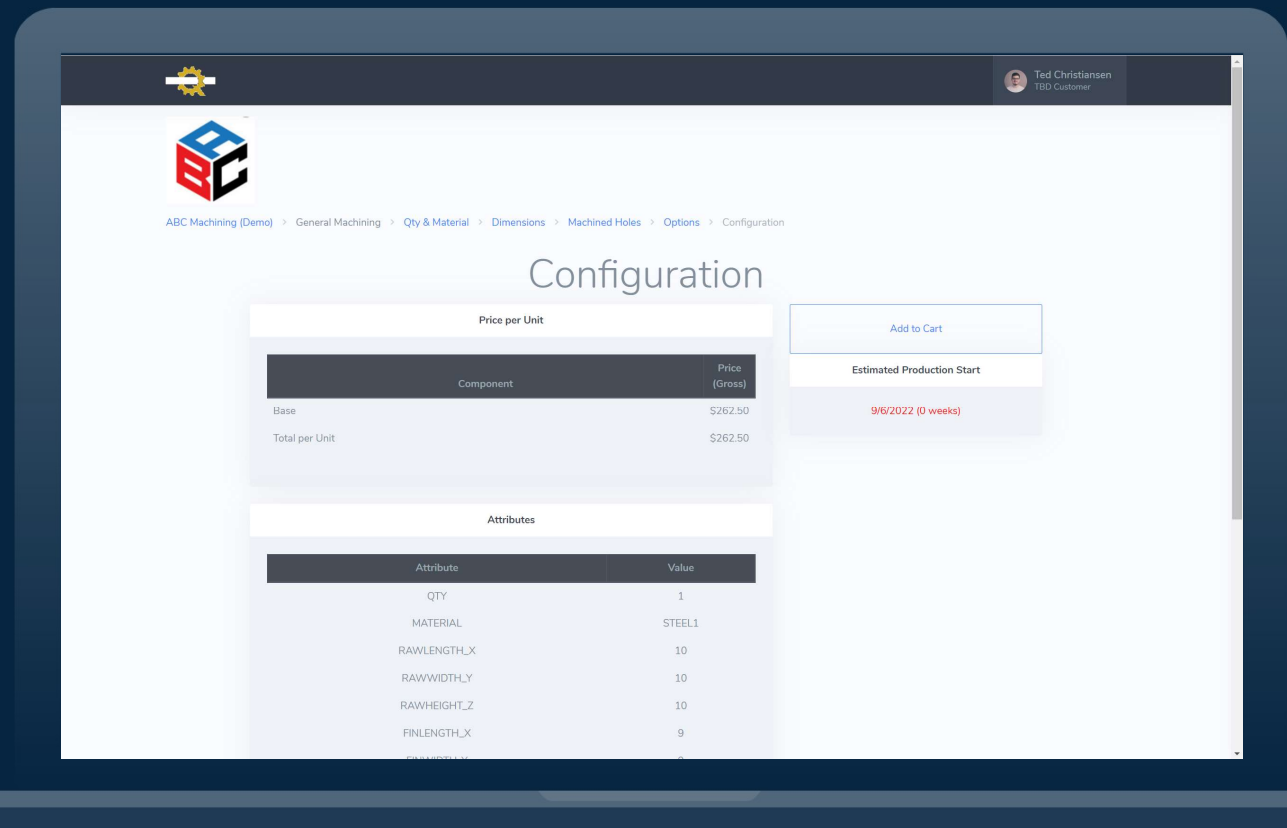
[About](#) [Contact Us](#)

<https://www.twdigital.us>



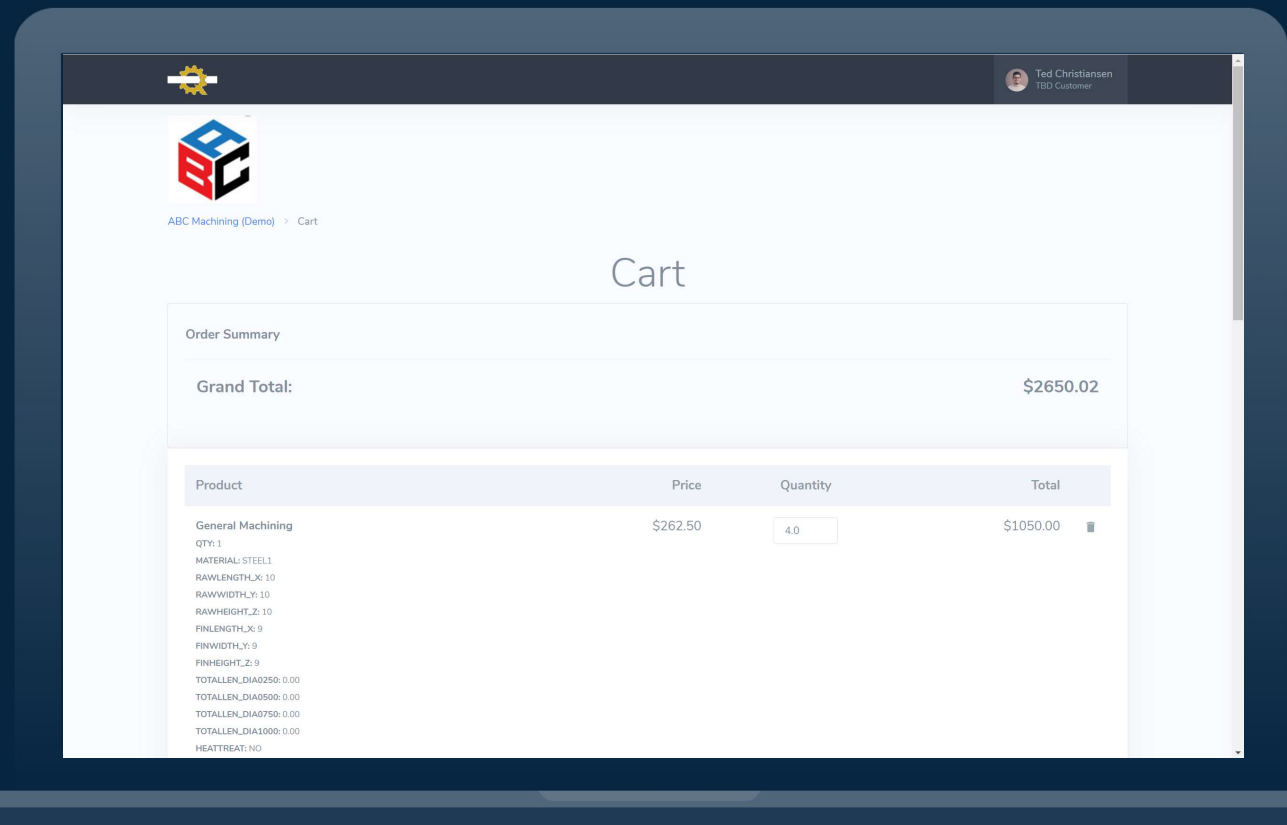
Store – Configuration >> Add to Cart

- Estimated start of Production is shown
- This date comes from the DashQ scheduler



Store - Cart

- Customers can change quantities and delete items from the cart
- Continue Shopping allows customer to configure additional products



Store - Cart

■ Checkout

ABC Machining (Demo) > Checkout

Hyper > eCommerce > Checkout

Checkout

Billing Info Shipping Info Payment Info

Billing information
Fill the form below in order to send you the order's invoice.

First Name: Enter your first name
Last Name: Enter your last name
Email Address *: Enter your email
Phone *: (xx) xxx xxxxx
Address: Enter full address
Town / City: Enter your city name
State: Enter your state
Zip / Postal Code: Enter your zip code
Country: Select Country

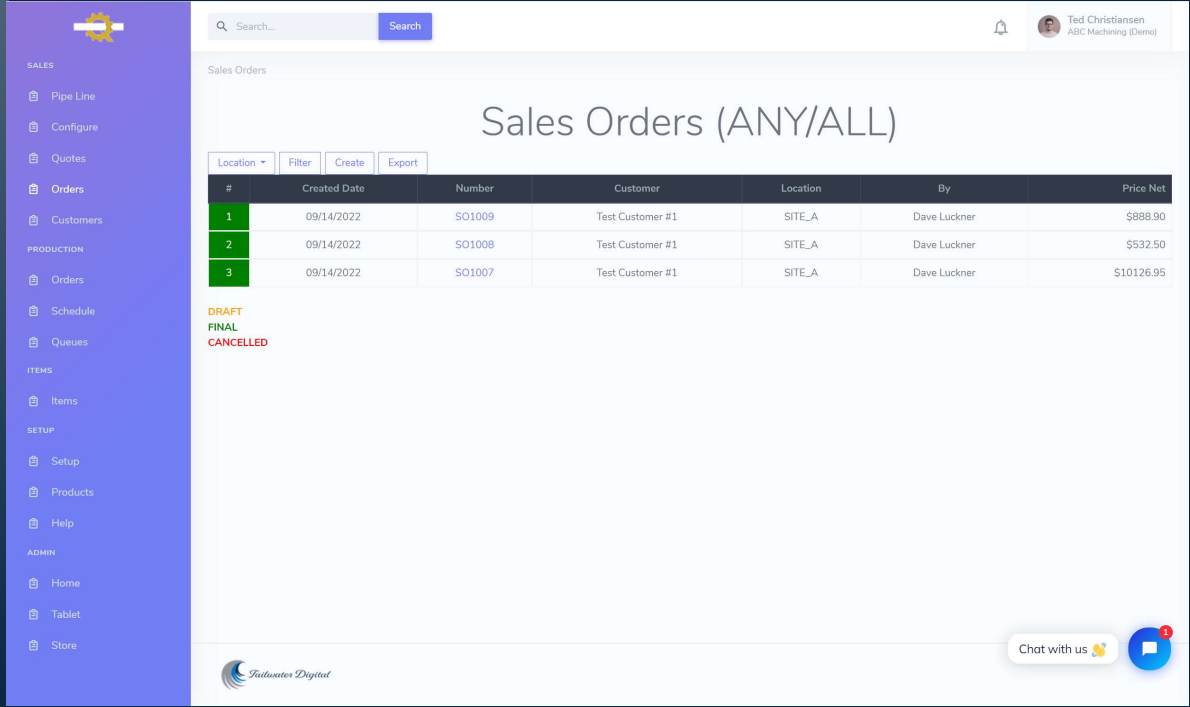
ORDER SUMMARY

Amazing Modern Chair 5 x \$148.66	\$743.30
Designer Awesome Chair 2 x \$99.00	\$198.00
Biblio Plastic Armchair 1 x \$129.99	\$129.99
Sub Total:	\$1071.29

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Store – Order Confirmation

- Email sent to Customer and to Sales team
- ACCEPTED Sales Quote created
- DRAFT Sales Order created – ready for review and release to Production



The screenshot displays the 'Sales Orders' page in the Tailwater Digital system. The page features a sidebar with navigation options: SALES (Pipe Line, Configure, Quotes, Orders, Customers), PRODUCTION (Orders, Schedule, Queues), ITEMS (Items), SETUP (Setup, Products, Help), and ADMIN (Home, Tablet, Store). The main content area is titled 'Sales Orders (ANY/ALL)' and includes a search bar, filters, and a table of orders. The table has columns for #, Created Date, Number, Customer, Location, By, and Price Net. Three orders are listed, all with a status of 'DRAFT'.

#	Created Date	Number	Customer	Location	By	Price Net
1	09/14/2022	SO1009	Test Customer #1	SITE_A	Dave Luckner	\$888.90
2	09/14/2022	SO1008	Test Customer #1	SITE_A	Dave Luckner	\$532.50
3	09/14/2022	SO1007	Test Customer #1	SITE_A	Dave Luckner	\$10126.95

Legend: DRAFT (orange), FINAL (green), CANCELLED (red).

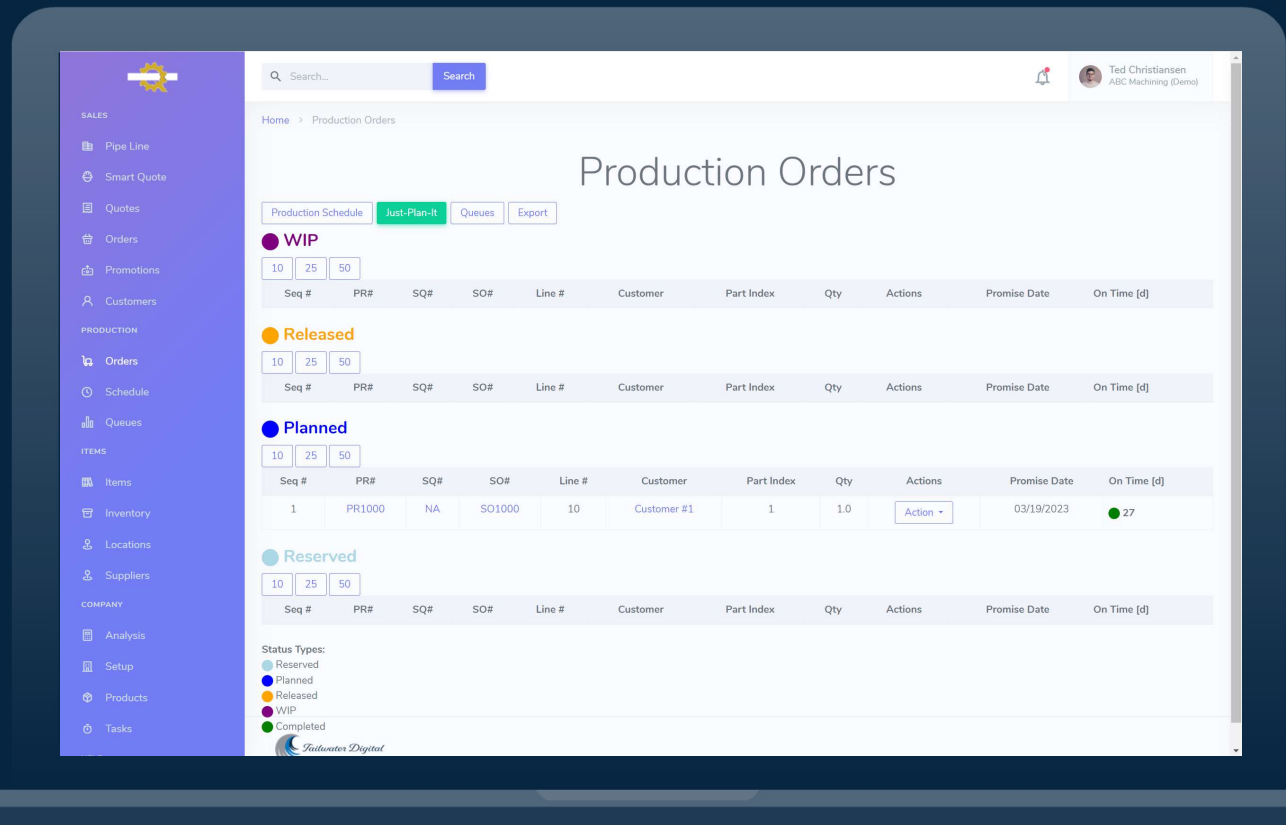
Footer: Tailwater Digital logo and a 'Chat with us' button.



Production

Production Orders

- Sales Order Line Items become Production Orders



Production Orders

Production Schedule Just-Plan-It Queues Export

WIP

Seq #	PR#	SQ#	SO#	Line #	Customer	Part Index	Qty	Actions	Promise Date	On Time [d]
10	25	50								

Released

Seq #	PR#	SQ#	SO#	Line #	Customer	Part Index	Qty	Actions	Promise Date	On Time [d]
10	25	50								

Planned

Seq #	PR#	SQ#	SO#	Line #	Customer	Part Index	Qty	Actions	Promise Date	On Time [d]
1	PR1000	NA	SO1000	10	Customer #1	1	1.0	Action	03/19/2023	27

Reserved

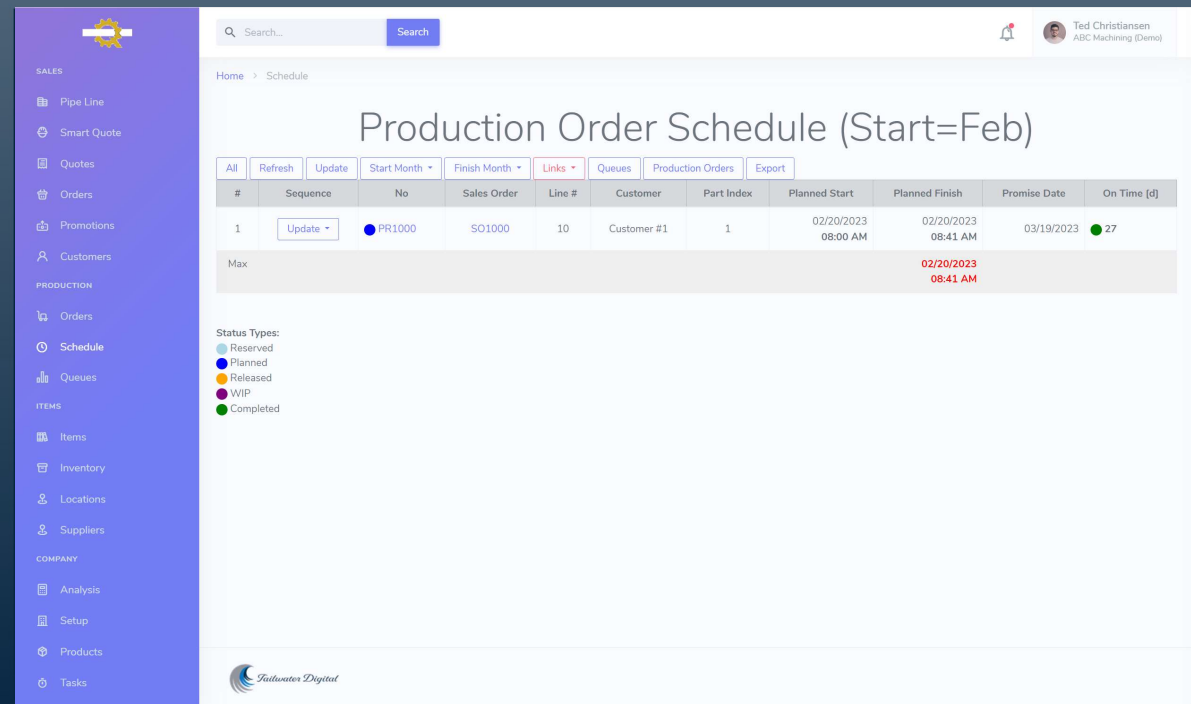
Seq #	PR#	SQ#	SO#	Line #	Customer	Part Index	Qty	Actions	Promise Date	On Time [d]
10	25	50								

Status Types:

- Reserved
- Planned
- Released
- WIP
- Completed

Production Schedule

- Sales Order Line Items become Production Orders



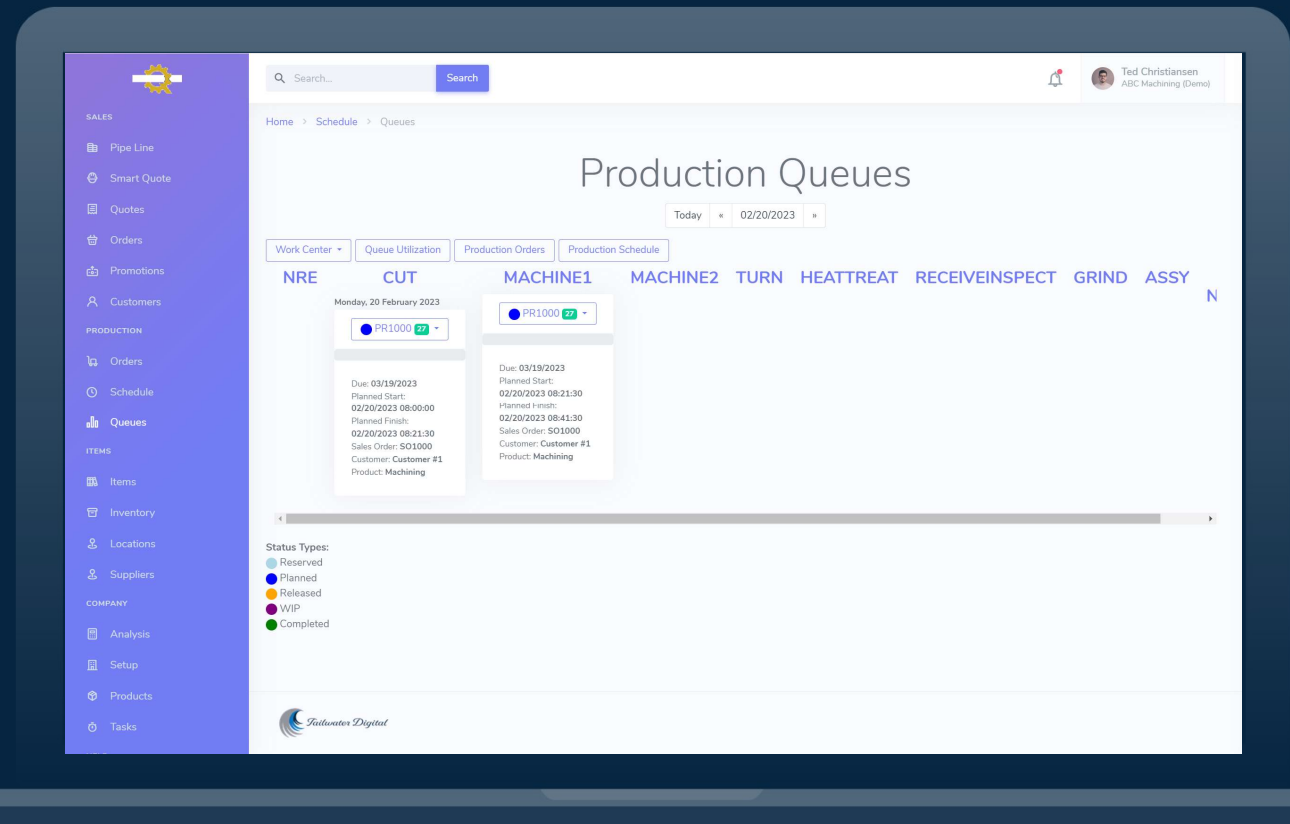
#	Sequence	No	Sales Order	Line #	Customer	Part Index	Planned Start	Planned Finish	Promise Date	On Time [d]
1	Update	PR1000	SO1000	10	Customer #1	1	02/20/2023 08:00 AM	02/20/2023 08:41 AM	03/19/2023	27
Max								02/20/2023 08:41 AM		

Status Types:
Reserved
Planned
Released
WIP
Completed

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Production Task Queues

- Dashboard of tasks by Queue



<https://www.twdigital.us>

Production Queue by Task

- Production Orders for a Task

The screenshot displays the 'Production Queue (CUT)' page in the Tailwater Digital software. The interface includes a left-hand navigation menu with categories like SALES, PRODUCTION, ITEMS, and COMPANY. The main content area shows a search bar, a breadcrumb trail (Home > Queues > CUT > Detail), and a title 'Production Queue (CUT)'. Below the title, a 'Schedule' section provides summary statistics: First Production Order (PR1000 / Start: 02/20/2023 08:00:00), Last Production Order (PR1000 / Completion: 02/20/2023 08:41:30), Total Available Hours (8), Hours Used (0.4), and Utilization % (5%). A table with two tabs, 'Production Orders' and 'Production Schedule', is shown. The 'Production Schedule' tab is active, displaying a table with columns: #, Prod Order, Sales Order, Customer, Start, Duration [min], NonWorking [min], and Finish. The table contains one data row for item 1 and two summary rows for Totals [min] and Totals [h].

#	Prod Order	Sales Order	Customer	Start	Duration [min]	NonWorking [min]	Finish
1	PR1000	SO1000	Customer #1	02/20/2023 08:00:00	22	0	02/20/2023 08:21:30
Totals [min]					22	0	
Totals [h]					0.4	0	

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Production Task Detail

The screenshot displays the 'Production Task Detail' page of a web application. The interface includes a purple sidebar with navigation links for SALES, PRODUCTION, ITEMS, and COMPANY. The main content area shows task details for 'Task: CUT' with 'Production Order Number: PR1000'. The status is 'Planned' and 'Percent Complete' is 0%. A table lists task metrics: Setup [min], Teardown [min], Transfer [min], Duration [min], Plan Start, and Plan Completion. Below the table are sections for Notes and History, each with an 'Add' button. A legend for Status Types is provided at the bottom left of the main area.

Task Detail

Task: CUT
Production Order Number: PR1000
Status: ● Planned
Percent Complete: 0%

Queues | Send To User

Setup [min]	Teardown [min]	Transfer [min]	Duration [min]	Plan Start	Plan Completion
0	0	0	22	02/20/2023 08:00:00	02/20/2023 08:21:30

Notes
Add

Date	By	Note
------	----	------

History

Date	By	Activity
------	----	----------

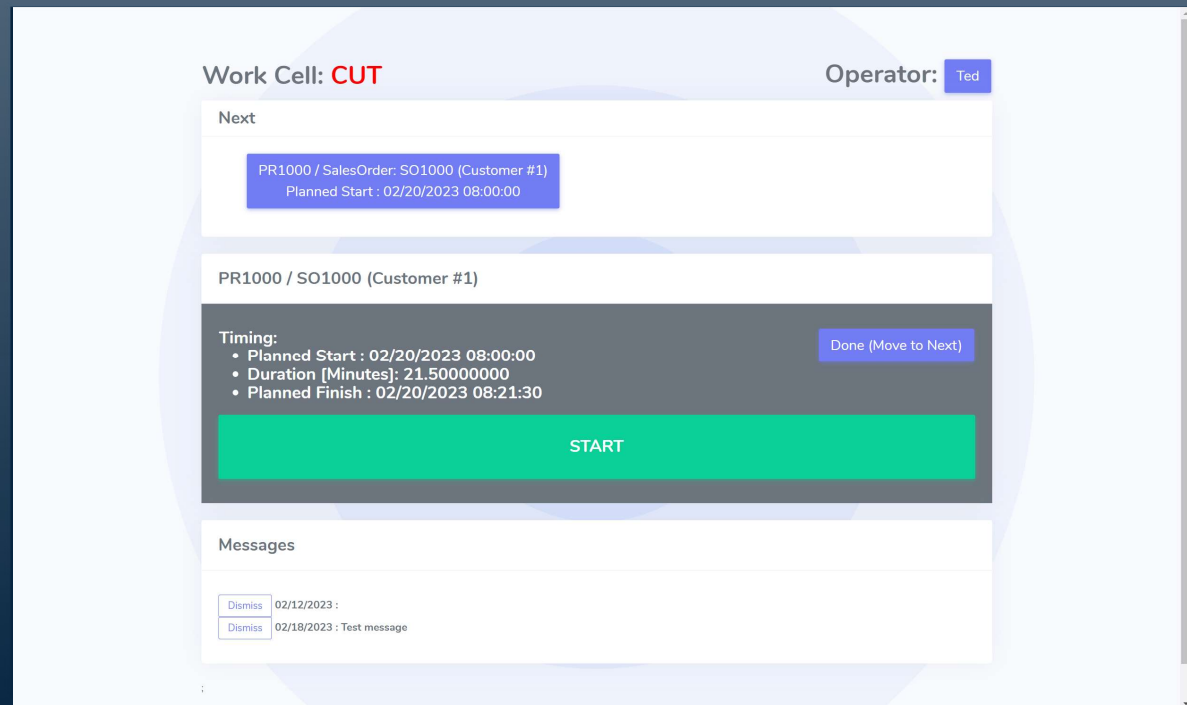
Status Types:
● Reserved
● Planned
● Released
● WIP
● Completed

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Production Time Clocking

- Provide operators a way to clock time to Production Orders and know what is next in the Queue



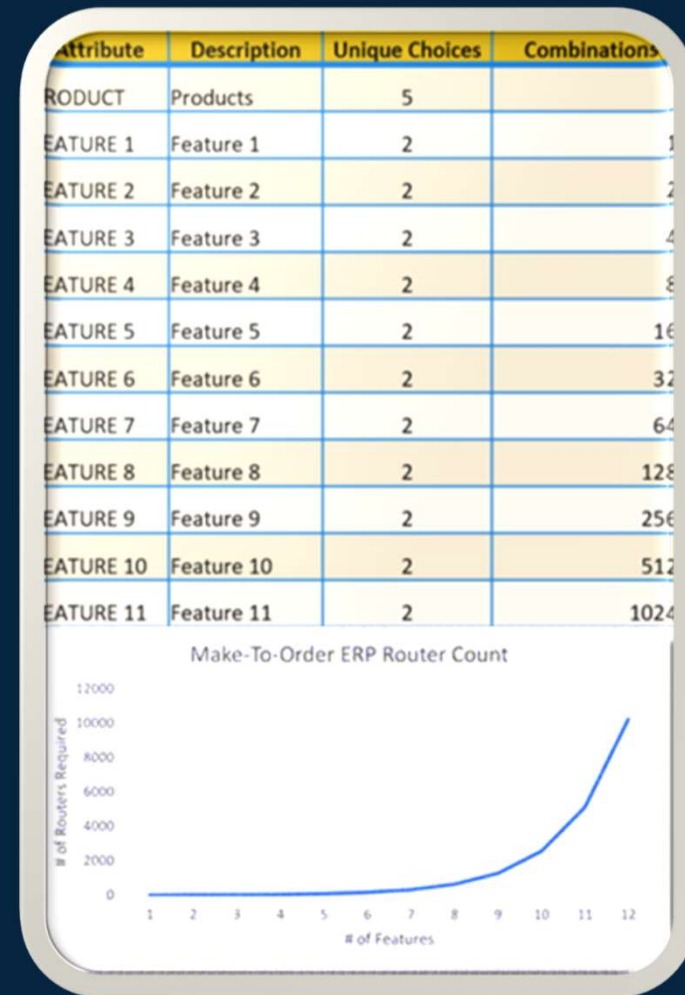
The screenshot shows a web application interface for production time clocking. At the top, it displays 'Work Cell: CUT' and 'Operator: Ted'. Below this, there is a 'Next' section with a blue button labeled 'PR1000 / SalesOrder: SO1000 (Customer #1)' and 'Planned Start : 02/20/2023 08:00:00'. The main section is titled 'PR1000 / SO1000 (Customer #1)' and contains a 'Timing' section with a list of details: 'Planned Start : 02/20/2023 08:00:00', 'Duration [Minutes]: 21.50000000', and 'Planned Finish : 02/20/2023 08:21:30'. A green 'START' button is prominently displayed below the timing information. To the right of the timing details is a blue button labeled 'Done (Move to Next)'. At the bottom, there is a 'Messages' section with two messages: '02/12/2023 : ' and '02/18/2023 : Test message', each with a 'Dismiss' button.



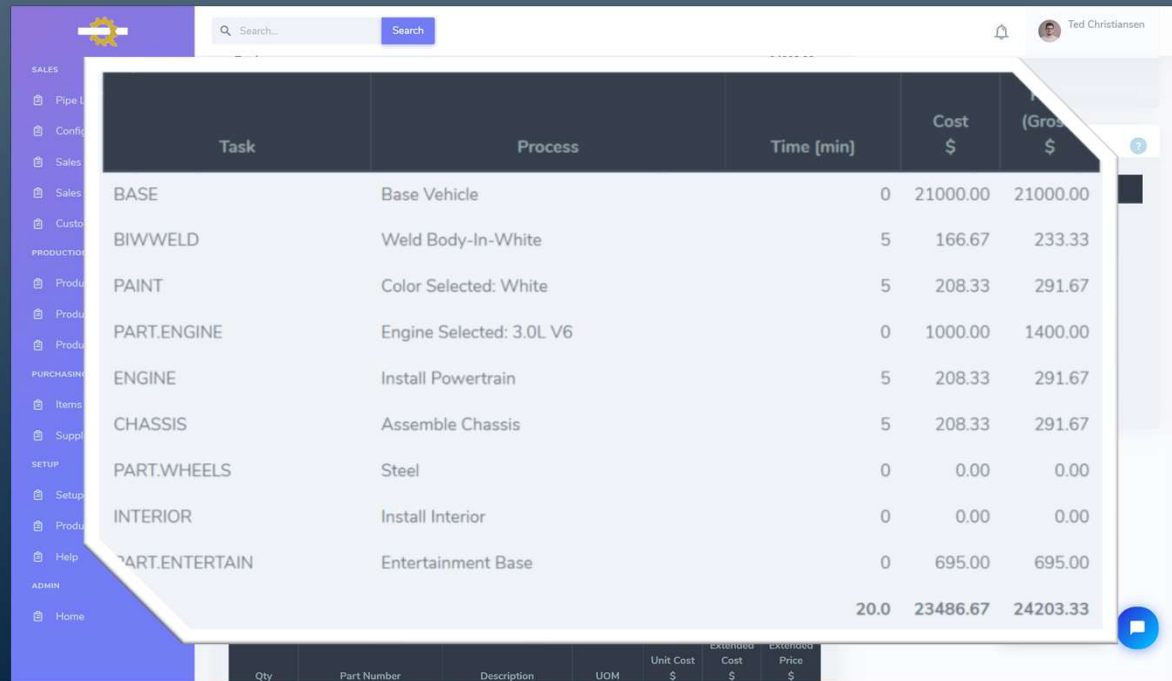
Setup

Router Complexity

- To know the process cost accurately, each line item on every SalesQuote and Sales Order, a router and BOM unique to this line item is required
- Whether a router and BOM are done in Excel or ERP – the effort required to create them is the same
- The time in each router step varies by the complexity of the product features (attributes) – which must be estimated for each step



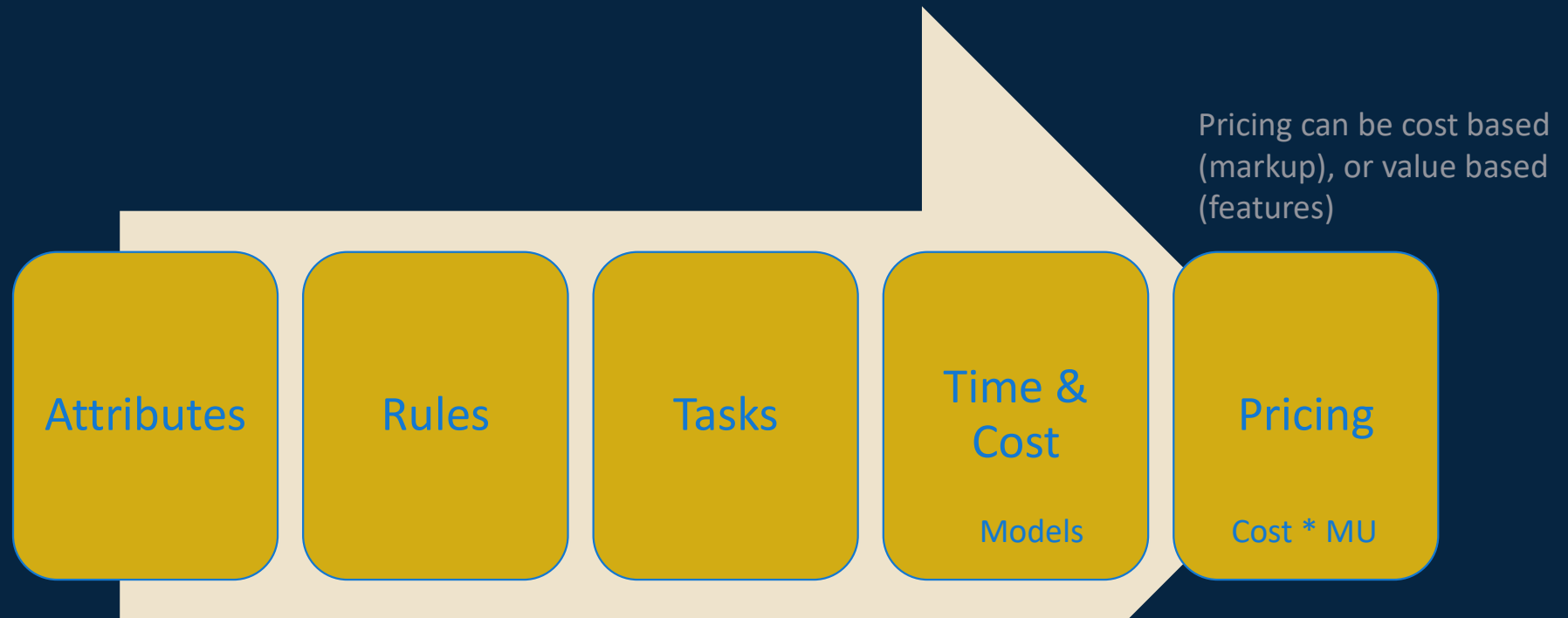
Example Router



Task	Process	Time [min]	Cost \$	(Gross) \$
BASE	Base Vehicle	0	21000.00	21000.00
BIWWELD	Weld Body-In-White	5	166.67	233.33
PAINT	Color Selected: White	5	208.33	291.67
PART.ENGINE	Engine Selected: 3.0L V6	0	1000.00	1400.00
ENGINE	Install Powertrain	5	208.33	291.67
CHASSIS	Assemble Chassis	5	208.33	291.67
PART.WHEELS	Steel	0	0.00	0.00
INTERIOR	Install Interior	0	0.00	0.00
PART.ENTERTAIN	Entertainment Base	0	695.00	695.00
		20.0	23486.67	24203.33

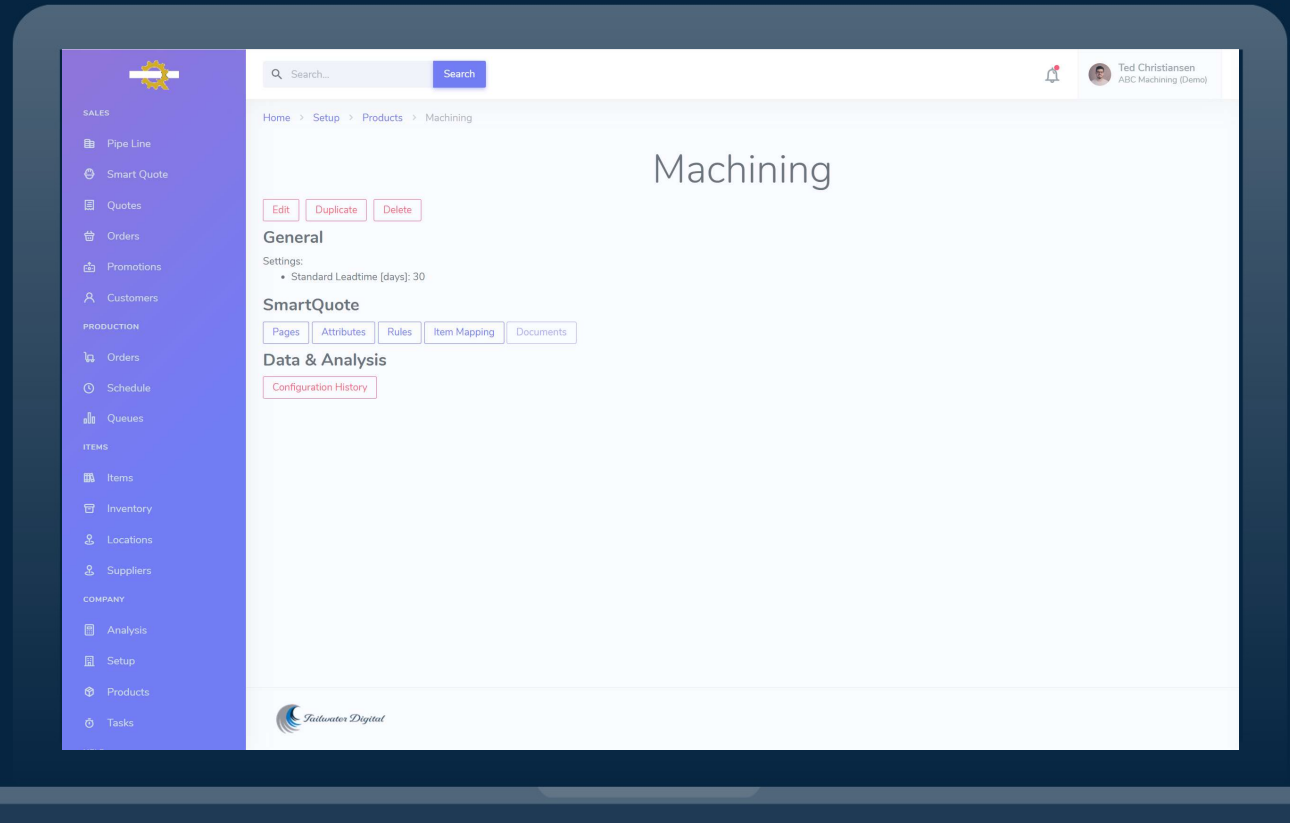
<https://www.twdigital.us>

No Router Creation or Maintenance!



Products

- Each Product has set of
 - Pages
 - Attributes
 - Rules
 - Item Mapping



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Attributes

- ▣ Defines the way in which the customer would choose the options for the product

Attribute Detail

Edit Delete Duplicate

Name	Description	Sel Type	Data Type	Units	Show On Quote	Active
QTY	Quantity	SELECTED	INT		Y	Y

Page	Seq #	Selection Type	Hint	Show On Quote
Qty & Material	10	ENTRY		Y

Default Value	Valid Values
1	<button>Add Query</button>

Last Updated By	Last Updated
Ted Christiansen	10/25/2022

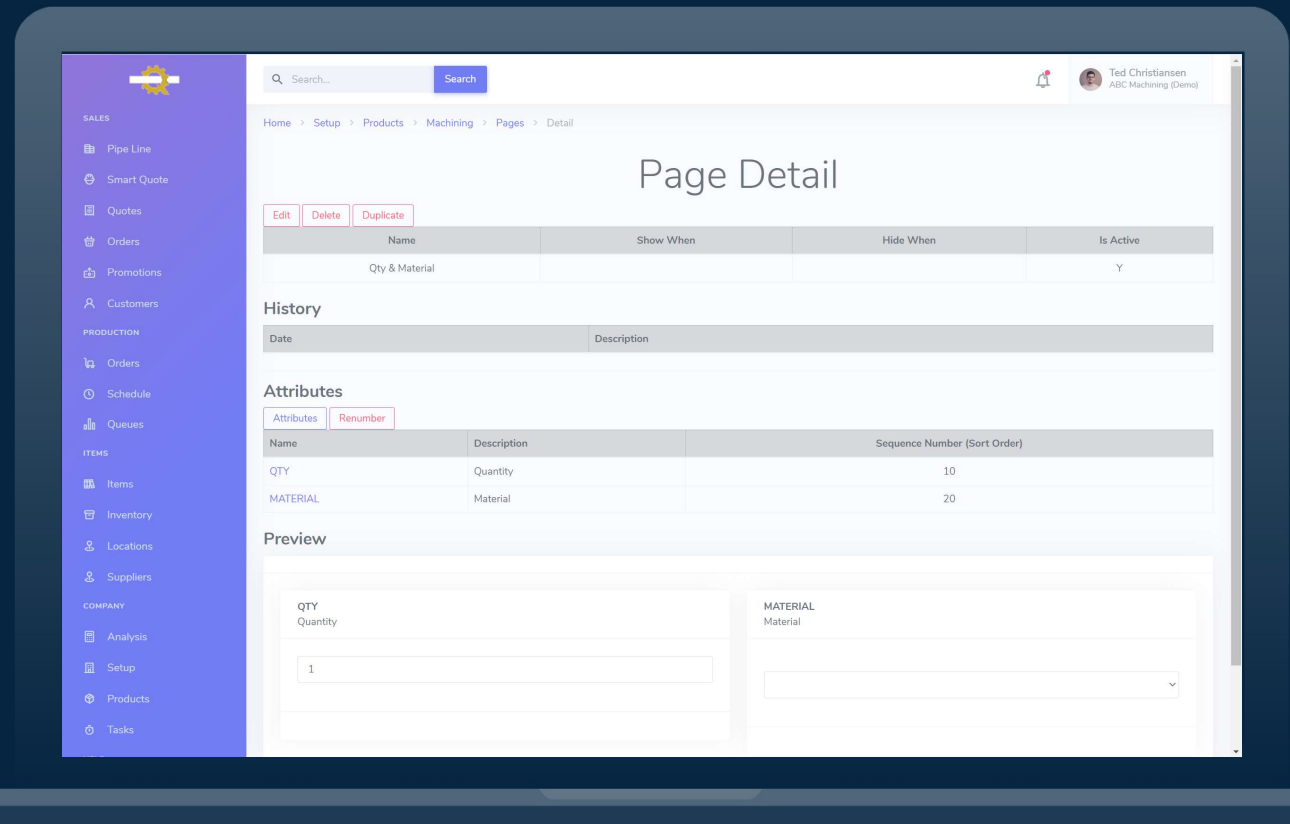
History

Date	Description
------	-------------

Tasks (References)

Pages

- Defines the way in which the Attributes are displayed



Rules

- ▣ Enables dynamic creation of Router and BOM

Search...

Home > Setup > Products > Machining > Rules > Detail

Rule Detail

Edit Delete Duplicate

Rule Name	Group name to which this rule is assigned Group Name	Rule evaluation in increasing Order Group Priority	Rule evaluation in decreasing Order Rule Priority	Selects whether rule is evaluated (Y) or not (N) IsActive
Cut	Process	2	100	Y

Purpose	Last Updated By	Last Updated
	Ted Christiansen	11/03/2022

Rule

when

```
var config = Configurator();
```

then

```
config.AddTask("CUT");
```

History

Date	Description
------	-------------

Notes:

- Group Priority - order in which the rule group should be evaluated (increasing order)
- Priority - larger number rules are evaluated first (decreasing order)

Tailwater Digital

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Item Mapping

- Enables the automatic creation of BOM based on Attributes selected

Item Mapping (Add)

Category	Item & Qty	Attributes & Values
For filtering	One per line. [qty]@item[item]	One per line. [attribute]=[value]
Casing	1@ABC 2@XYZ	COLOR=RED SIZE=L

Add

#	ItemNumber	Description	UOM
1	C.10018	GRD: P110 / CON: LTC / OD: 7.625 [in] / WT: 0.290 [in] / LEN: 43 [ft]	EA
2	C.10025	GRD: L80 / CON: STC / OD: 7.625 [in] / WT: 0.290 [in] / LEN: 43 [ft]	EA
3	C.10043	GRD: P110 / CON: BTC / OD: 7.000 [in] / WT: 0.270 [in] / LEN: 33 [ft]	EA
4	C.10071	GRD: L80 / CON: STC / OD: 7.625 [in] / WT: 0.290 [in] / LEN: 43 [ft]	EA
5	C.10146	GRD: T95 / CON: LTC / OD: 7.000 [in] / WT: 0.290 [in] / LEN: 43 [ft]	EA
6	C.10220	GRD: P110 / CON: BTC / OD: 7.000 [in] / WT: 0.250 [in] / LEN: 43 [ft]	EA
7	C.10364	GRD: L80 / CON: BTC / OD: 7.625 [in] / WT: 0.250 [in] / LEN: 43 [ft]	EA
8	C.10681	GRD: T95 / CON: BTC / OD: 7.625 [in] / WT: 0.290 [in] / LEN: 33 [ft]	EA
9	C.10689	GRD: P110 / CON: LTC / OD: 7.000 [in] / WT: 0.290 [in] / LEN: 43 [ft]	EA
10	C.10738	GRD: L80 / CON: STC / OD: 7.625 [in] / WT: 0.270 [in] / LEN: 33 [ft]	EA

Tasks

- Each production step has a task
- Per Task
 - Shop Rate
 - Markup
 - Pricing Component
- Per Task
 - Time Model OR
 - Cost Model

The screenshot shows the 'Task Detail' page in the Tailwater Digital software. The interface includes a sidebar with navigation options like SALES, PRODUCTION, ITEMS, and COMPANY. The main content area displays a 'Task Detail' form for a task named 'CUT' with various attributes like Work Center, Description, Hourly Rate, Markup, and Pricing Component. It also shows a 'just plan it Mapping' table and a 'Time Model' section with XML-like code.

Number	Name	Work Center	Description	Hourly Rate	Markup	Pricing Component	Active
10	CUT	CUTTING	Cut Raw Material	\$65.00	1.20	Base	Y

Capacity	Resource Groups	Time Type	Setup Time (min)	Teardown Time (min)	Transfer Time (min)
FINITE (UNITS)	CUTTING	WORK	0.00	0.00	0.00

Resource	Resource Groups
CUT	CUTTING CUTTING

Last Updated By	Last Updated
Dave Luckner	11/18/2022

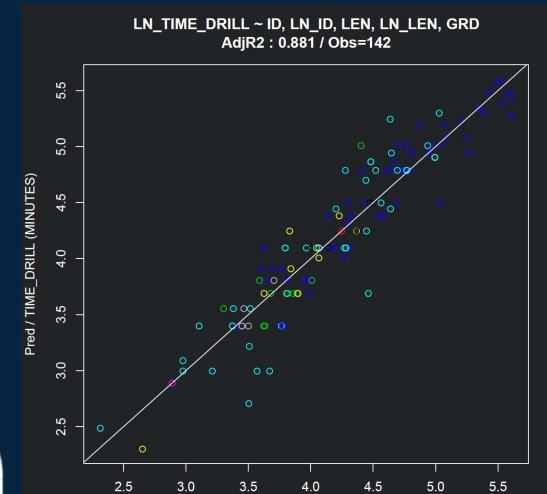
Time Model

```
<model dependent="MinutesPerPiece">
  <comments>
  </comments>
  <term type="constant">0</term>
  <term type="numeric" attribute="TIMECUT">1</term>
  <term type="bqv.text" attribute="MATERIAL" level="STEEL1">20</term>
  <term type="bqv.text" attribute="MATERIAL" level="STEEL2">30</term>
  <term type="numeric" attribute="RAWAREARY">0.005</term>
  <term type="numeric" attribute="RAWAREAZ2">0.005</term>
  <term type="numeric" attribute="RAWAREAZ2">0.005</term>
</model>
```

Task Models (Time/Cost)

- Used in Smart Quote
- Time and cost models can be a function of a number of attributes (features)
- Time and cost models can be created by hand or through multiple regression analysis of data

#	Name	Description
1	QTY	Quantity
2	MATERIAL	Material
3	X	Length [mm]
4	Y	Width [mm]
5	Z	Height [mm]
6	VOLUME	Volume CAD [mm^3]
7	SURFACEAREA	Surface Area [mm^2]
8	PARTWEIGHT	Weight [kg]
9	PAINT	Paint
10	FINISH	Primary Finish
11	EXPEDITE	Expedite

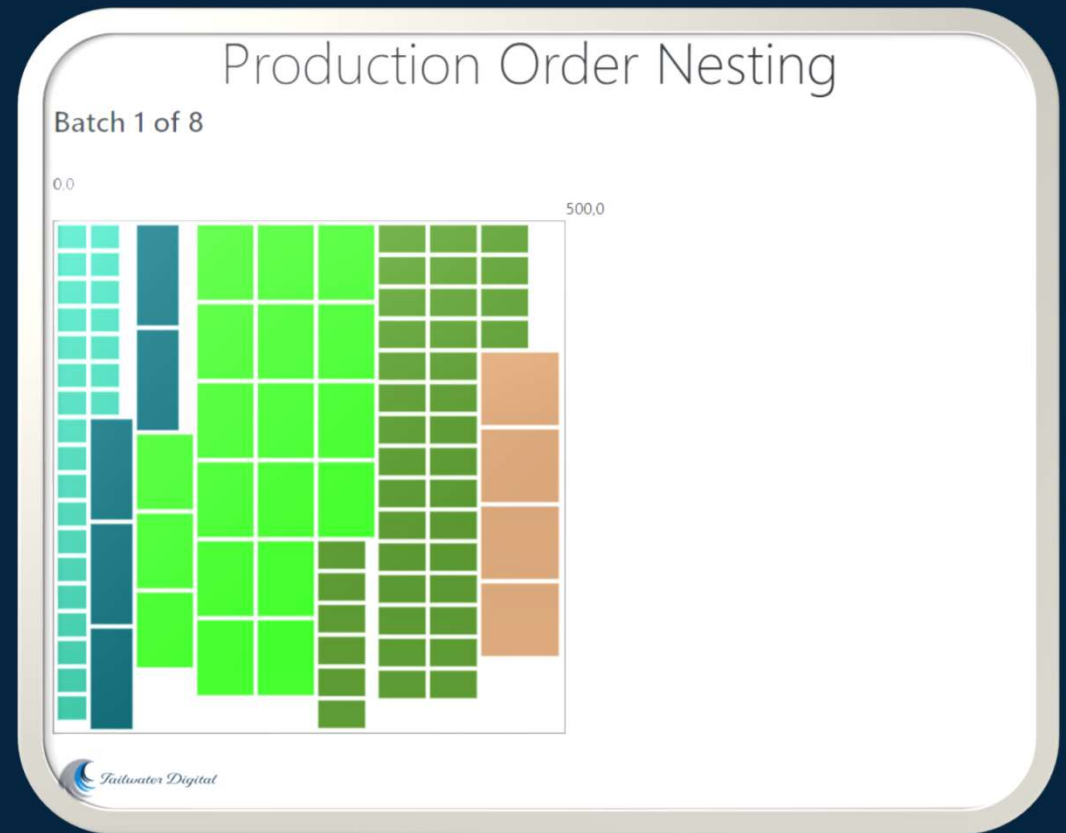


Task Capacity Types

- Capacity Types: FINITE, INFINITE
- FINITE capacity has time model (only)
 - Internal tasks where schedule is controlled
- INFINITE capacity has time and cost model
 - External tasks where schedule is unknown

Task Nesting

- ▣ Each task can be assigned a capacity limit (WEIGHT, AREA, VOL) that is used during schedule calculation
- ▣ During schedule calculation, task capacity consumption (WEIGHT, AREA, VOL) is evaluated



Process (Smart Quote)

Smart
Quote

Sales
Quote

Sales
Order

Schedule

<https://www.twdigital.us>

Process (Line Item Builder)

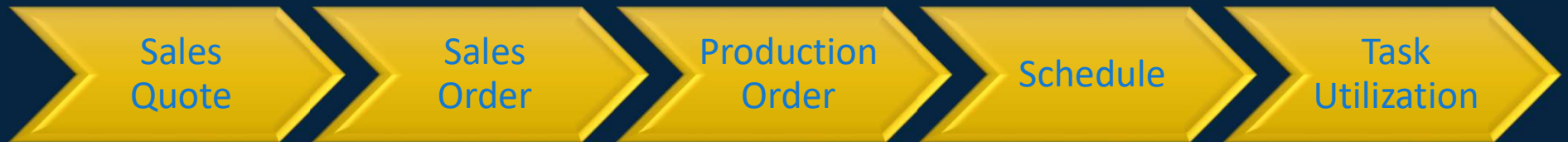
Sales
Quote

Sales
Order

Schedule

<https://www.twdigital.us>

Process Flow



<https://www.twdigital.us>

Integrations

- Just-Plan-It / www.just-plan-it.com
- Possibilities / ERP:
 - SAP
 - Microsoft Dynamics
 - Etc
- Possibilities / API:
 - “Pull” via DashQ API
 - “Push” via DashQ API
- Coming Soon:
 - Quickbooks Online





Quoting & Scheduling for Build-To-Order Companies



February 2023

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