

Business Case Guide

How to Justify CreelMT™ in Your Business

What to look for, where the value may be hiding and how to prepare a rough first-pass payback calculation.

Creeling does not need to be seen as a problem before it can contain a substantial opportunity. The business case is usually found by looking across yarn, labour, machine time, waste and inventory together.

Can CreelMT create value in your plant?

This guide is designed to help production, engineering and finance teams conduct an initial assessment before undertaking a detailed CreelMT Production Estimator and customer-specific business case.

Look for	Why it matters	Your initial view
High annual yarn expenditure	Small percentage improvements can create material savings	High / Medium / Low
Frequent pattern or colour changes	More changeovers increase labour and downtime opportunity	High / Medium / Low
Shorter production runs	Package-based creeling becomes less efficient	High / Medium / Low
Residual yarn and partial cones	May indicate avoidable material and inventory cost	High / Medium / Low
Long or labour-intensive changes	Creates labour and machine-capacity opportunity	High / Medium / Low
Demand for more machine output	Recovered hours may have immediate commercial value	High / Medium / Low
Large yarn or finished goods inventories	May create working-capital and carrying-cost opportunity	High / Medium / Low

If several of these conditions are rated High or Medium, a more detailed assessment is likely to be worthwhile.

1. Reframe creeling as a commercial system

Begin by looking beyond the creel itself. Conventional creeling affects purchasing, yarn utilisation, staffing, production availability, quality and inventory. Costs that appear small or unavoidable in one department may become commercially significant when combined.

Where the value can appear

Value area	What to look for	Evidence to gather
Yarn utilisation	Package rounding, residual cones, start-up yarn and unusable leftovers	Purchasing, consumption and waste records
Creeling labour	People, person-hours, overtime and dedicated creeling roles	Rosters, time studies and wage data
Machine availability	Time stopped for changes and demand for recovered output	Downtime and production records
Waste and rework	Placement errors, sequence errors, rewinding damage and start-up waste	Quality and waste reports
Inventory	Yarn held for flexibility, slow-moving yarn and finished goods storage cost	Inventory value, days on hand and carrying rate

If CreelMT is justified only through direct creeling labour, much of the potential value may remain invisible. Calculate each value driver separately, then combine only the benefits that can be supported.

2. Confirm that CreelMT fits the production environment

A financial opportunity is only useful if CreelMT can prepare yarn quickly enough for the machines it will support. The production configuration therefore comes before the final payback.

Initial production-fit information

Input	Your plant	Why it matters
Machine platform and number of machines	<i>Enter</i>	Defines the proposed deployment
Machine width, gauge and needle count	<i>Enter</i>	Determines yarn positions to prepare
Yarn specification and product weight	<i>Enter</i>	Influences winding requirement
Typical production-run length	<i>Enter</i>	Influences consumption time
Pattern changes per machine	<i>Enter</i>	Influences preparation demand
Machines potentially supported by each CreelMT	Modra to assess	Major driver of investment utilisation

3. Establish a defensible baseline

Use recent, representative operating data. Where exact information is unavailable, use an agreed estimate or range and identify it clearly. Finance should confirm all cost and contribution assumptions before the result is presented as a business case.

Baseline checklist

Baseline item	Required measure	Source / owner	Status
Yarn	Annual spend, consumption and avoidable loss rate	Purchasing / production	Known / estimate / unknown
Changeovers	Changes per year and current machine downtime	Production	Known / estimate / unknown
Labour	Person-hours per change and loaded labour rate including on costs	Operations / finance	Known / estimate / unknown
Capacity	Usable contribution per recovered machine hour	Finance / sales	Known / estimate / unknown
Waste	Annual creeling-related scrap and rework cost	Quality / finance	Known / estimate / unknown
Inventory	Yarn and carpet inventory value and annual carrying rate	Supply chain / finance	Known / estimate / unknown
Investment	Equipment and associated project cost	Modra / engineering	Known / estimate / unknown

Keep three types of value separate

Value type	Meaning	How to treat it
Direct saving	Expenditure genuinely reduced or avoided	Include in recurring annual benefit
Recovered capacity	Labour or machine time made available	Include when it can be used or avoids another cost
Working-capital release	Cash no longer tied up in inventory	Show separately from annual operating benefit

4. Calculate the five value drivers

The following worksheets provide a rough first-pass calculation. Use one currency consistently. Enter annual values unless otherwise stated.

A. Yarn-utilisation benefit

Include only yarn losses that CreelMT can reasonably reduce, such as package rounding, residual yarn and agreed operational losses.

Ref.	Input or calculation	Your value	Guidance
A1	Annual yarn expenditure	<i>Enter</i>	Currency/year
A2	Current waste	<i>Enter</i>	%
A3	Expected waste with CreelMT	<i>Enter / Modra estimate</i>	%

Ref.	Input or calculation	Your value	Guidance
A4	Net improvement	<i>Calculate A2 - A3</i>	Percentage points
A5	Annual yarn benefit	<i>Calculate A1 x A4</i>	Currency/year

If annual yarn expenditure is US\$10 million and avoidable loss falls from 7% to 3%, the rough annual yarn benefit is US\$400,000.

B. Creeling-labour benefit

Ref.	Input or calculation	Your value	Guidance
B1	Machines assessed	<i>Enter</i>	Number
B2	Average changes per machine per day	<i>Enter</i>	Changes/day
B3	Operating days per year	<i>Enter</i>	Days/year
B4	Total annual changes	<i>Calculate B1 x B2 x B3</i>	Changes/year
B5	Current person-hours per change	<i>Enter</i>	People x hours
B6	Expected person-hours with CreelMT	<i>Enter / Modra estimate</i>	Person-hours
B7	Loaded labour rate	<i>Enter</i>	Currency/hour
B8	Gross annual labour value	<i>Calculate B4 x (B5 - B6) x B7</i>	Currency/year
B9	Proportion realised as cash or avoided cost	<i>Enter</i>	%
B10	Annual labour benefit	<i>Calculate B8 x B9</i>	Currency/year

C. Recovered machine-availability benefit

Ref.	Input or calculation	Your value	Guidance
C1	Total annual changes	Use B4	Changes/year
C2	Current downtime per change	Enter	Hours
C3	Expected downtime with CreelMT	Enter / Modra estimate	Hours
C4	Recovered machine hours	Calculate $C1 \times (C2 - C3)$	Hours/year
C5	Usable contribution per recovered hour	Enter	Currency/hour
C6	Proportion of recovered hours that can be used	Enter	%
C7	Annual machine-availability benefit	Calculate $C4 \times C5 \times C6$	Currency/year

D. Rework benefit

Ref.	Input or calculation	Your value	Guidance
D1	Current annual creeling rework cost	Enter	Currency/year
D2	Expected reduction attributable to CreelMT	Enter	%
D3	Annual scrap and rework benefit	Calculate $D1 \times D2$	Currency/year

E. Yarn Inventory and working-capital benefit

Ref.	Input or calculation	Your value	Guidance
E1	Current yarn inventory supporting assessed machines	Enter	Currency
E2	Expected inventory reduction	Enter	%
E3	Working capital released	Calculate $E1 \times E2$	One-off cash-flow benefit
E4	Annual inventory carrying rate	Enter	%/year
E5	Annual carrying-cost benefit	Calculate $E3 \times E4$	Recurring benefit

Finished Goods Inventory and working-capital benefit

Ref.	Input or calculation	Your value	Guidance
E6	Current carpet inventory needed to support sales	Enter	Currency
E7	Expected inventory reduction	Enter	%
E8	Working capital released	Calculate $E6 \times E7$	One-off cash-flow benefit
E9	Annual inventory carrying rate	Enter	%/year
E10	Annual carrying-cost benefit	Calculate $E8 \times E9$	Recurring benefit

5. Calculate the rough payback

Combine recurring benefits, confirm the complete program investment and keep the one-off working-capital release visible but separate.

Recurring annual benefit

Ref.	Benefit	Your annual value
F1	Yarn-utilisation benefit - A5	<i>Enter result</i>
F2	Creeling-labour benefit - B10	<i>Enter result</i>
F3	Machine-availability benefit - C7	<i>Enter result</i>
F4	Rework benefit - D3	<i>Enter result</i>
F5	Inventory carrying-cost benefit - E5	<i>Enter result</i>
F6	Total recurring annual benefit	<i>Calculate F1 + F2 + F3 + F4 + F5</i>

Complete program investment

Ref.	Investment item	Your value
G1	CreelMT equipment and trolleys	<i>Enter</i>
G2	Freight, duties and taxes	<i>Enter</i>
G3	Installation, site works and utilities	<i>Enter</i>
G4	Systems integration, training and other project costs	<i>Enter</i>
G5	Total program investment	<i>Calculate G1 + G2 + G3 + G4</i>

Payback summary

Measure	Calculation	Your result
Simple payback	$G5 / F6 \times 12$	<i>Calculate months</i>
Working capital released	E3	<i>Enter result separately</i>
Year-one cash effect, if appropriate	$F6 + E3$	<i>Calculate</i>

Your first-pass summary

Measure	Your result	Confidence
Machines assessed / CreelMT systems proposed	<i>Enter</i>	Low / Medium / High
Total program investment	<i>Enter</i>	Low / Medium / High
Recurring annual benefit	<i>Enter</i>	Low / Medium / High
Working capital released	<i>Enter</i>	Low / Medium / High
Indicative simple payback	<i>Enter months</i>	Low / Medium / High
Largest source of value	<i>Enter</i>	Low / Medium / High
Most important unresolved assumption	<i>Enter</i>	Open / resolved

What happens next?

If the rough calculation indicates a worthwhile opportunity, the next stage is to replace screening assumptions with plant-specific information and confirm the production configuration.

Stage	Activity	Output
1. Production fit	Modra assesses machine, yarn, product and run data	Proposed CreelMT configuration
2. Data validation	Operations and finance confirm the baseline	Agreed inputs and assumptions
3. Scenario modelling	Conservative, reference and higher-value cases are calculated	Payback range
4. Investment review	Benefits, risks, project costs and implementation requirements are considered	Customer-supported business case