



DMAIC

D



DEFINE

- Launch Team
- Establish Charter
- Plan Project
- Gather the Voice of the Customer
- Plan for Change

M



MEASURE

- Document the Process
- Collect Baseline data
- Narrow project focus

A



ANALYZE

- Analyze Data
- Identify Root Cause
- Identify and Remove Wastes

I



IMPROVE

- Generate Solutions
- Evaluate Solutions
- Optimize Solutions
- Pilot
- Plan and implement

C



CONTROL

- Control the Process
- Validate project benefits



Define



SIX PANEL DMAIC Project Review





Project Charter

Problem Statement and area of Opportunity

Quotation process is inefficient with inconsistent timings. Multiple bottlenecks, a lack of set processes and manual chasing results in an inefficient use of time

Business Need and Justification

Aim is to reduce quotation lead times and have a clearer general process to streamline inefficiencies, this is needed to ensure all quotation deadlines are adhered to, to ensure we remain in contention for new business

Risks and Issues

Late quotation, risk of being too late for sourcing decisions

Over promising and under delivering

Lack of filtration of projects

Over loaded process members risks likelihood of human error

Current quotation lead time does not consider project size or complexity

Assumption and Dependencies

We assume we receive all data required to kick off project

Assume quotation will take 2 weeks

Assume that resources are instantly available when quotation arrives

Assume component suppliers will instantly be available to support

Project Ownership / Approval

Project Manager Nefyn, Jaydee & Sam

Project Champion James Reece & Jason Hardy

Approval Date 14/10/2020

Project Number 1

Process Owner Reflexallen HQ

Financial Benefits / Timing

Financial Benefits

Parameter	Goal	Actual
Number of RFQ on time for the standard 14days %	50%	5%
Revenue	decrease no bid / cancelled by 50% to increase revenue	256 RFQ no bid / cancelled instances between 2018-2020
Payback Period (yrs)	1 yr	tbc

Estimated Expenses / Investment

Parameter	Goal	Actual
Expenses Incremental to Operating Budget	investent to improve quotation time by improving ticket process	TBC
Capital	The budject that the company have for investment	TBC
Other	TBC	TBC

Schedule

Parameter	Goal	Actual
Measure	18/12/2020	15/01/2020
Analyse	18/12/2020	15/01/2020
Improve	TBC	TBC
Control	TBC	TBC

Project Team

Supplier Representatives

Name	Supplier	Title
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

Internal Team

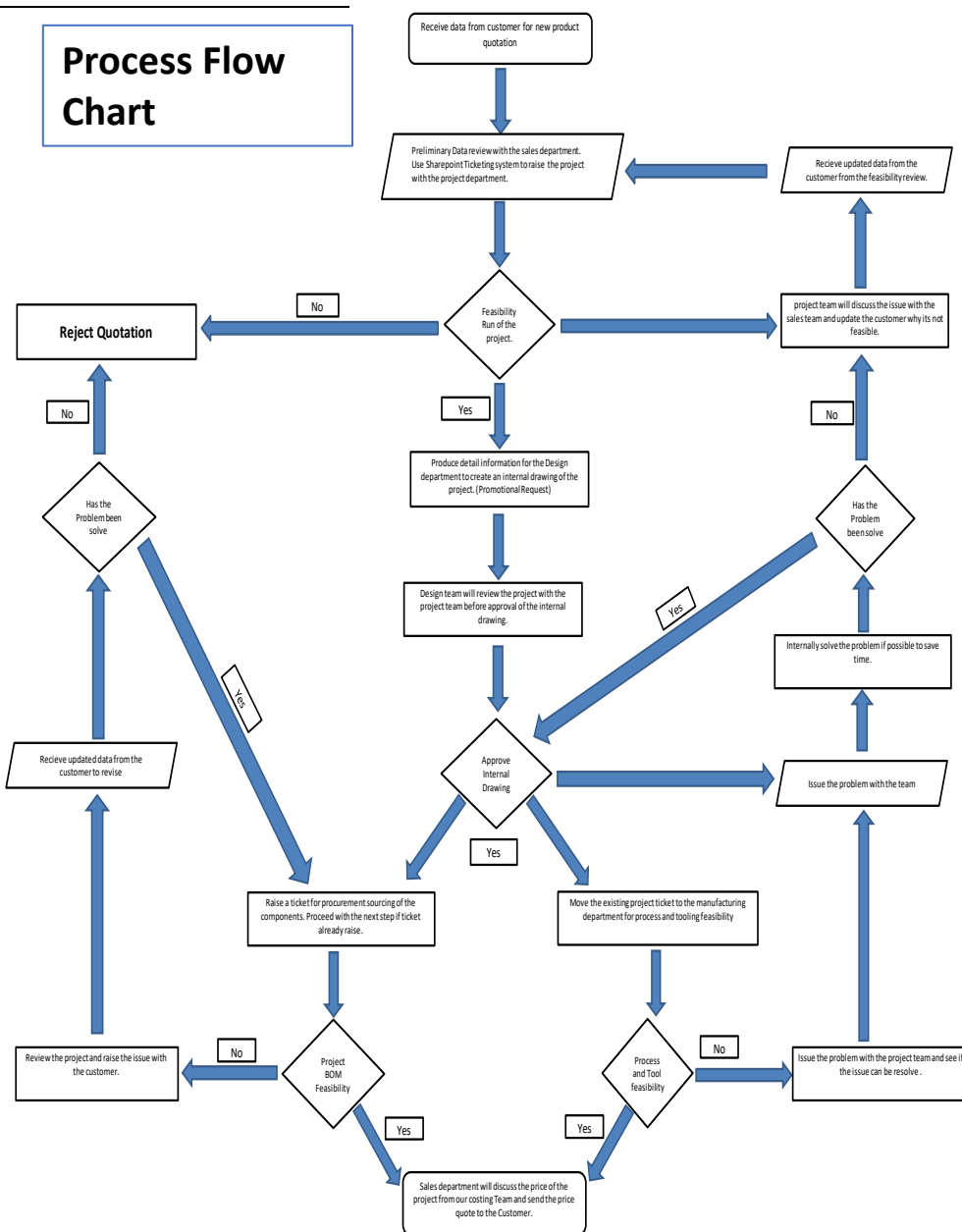
Name	Function	Role
Sam Davies	Sales	Sales Engineer
Matthew Roberts	Quality	Quality Engineer
Nefyn & Jaydee	Process	Project Manager
Ian	Logistics	N/A

Customer Representatives

Name	Function	Role
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

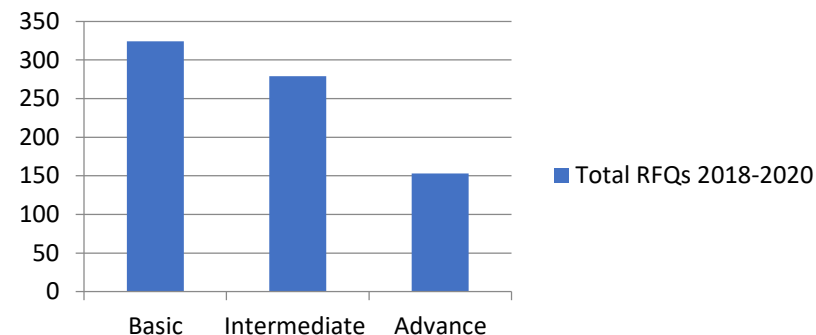


Process Flow Chart



STEP	TASK DESCRIPTION	WHO	Departments IN	Departments OUT	Tool used
1	Receive Customer RFQ	Sales / KAM	Sales / KAM	Project	SharePoint
2	Review of product scope, Log Enquiry/Create Product File	Sales / KAM	Sales / KAM	Project	SharePoint
3	RTS (Review of Technical Specification) / DQR (Drawing Quality Review) review	Project	Project	Project	SharePoint
4	Create Markup and raise PR (RFQ drawing)	Project	Project	Designer	Windchill
5	Generate Internal RA Drawing for quotation use	Designer	Designer	Project	Windchill
6	RFQ BOM creation	Project	Project	Process Engineering	SharePoint
7	Process outline / tooling quotations	Process Engineering	Process Engineering	Sales / KAM	SharePoint
8	Identify Sub Supplier Chain	Supply Chain	Supply Chain	Project	SharePoint
9	Material / Components quotations	Supply Chain	Supply Chain	Project	SharePoint
11	Feasibility Form	Project	Project	Product Manager	SharePoint
12	Review of product feasibility and inputs to costing	Product Manager	Product Manager	Sales / KAM	SharePoint
13	Quotation	Sales / KAM	Sales / KAM	Sales / KAM	SharePoint
14	Quotation Sent	Sales / KAM	Sales / KAM	Customer	SharePoint

Total RFQs 2018-2020





Method

Thorough feasibility review is not conducted when quotation arrives ||

Communications between technical and suppliers must go through sourcing |

Quotation lead time a set time, does not consider RFQ size or complexity ||||

Quotation lead time does not consider current work loads ||||

Material

Man

One person releasing all quotations within group ||||

One person responsible for UK sourcing |||

Late and inconsistent quotation lead times

A meeting was held within members of the quotation team to establish what all felt was the biggest issue, all members cast 2 votes:

Chasing for project updates completed through email, can become cluttered, based on who shouts loudest |

Ticket transfer is only visible to ticket creator and receiver (not project manager for multiple stages) ||

Sourcing, quotation and manufacturing team based outside of UK (manufacturing location) which can inhibit communications ||

Machine

Environment



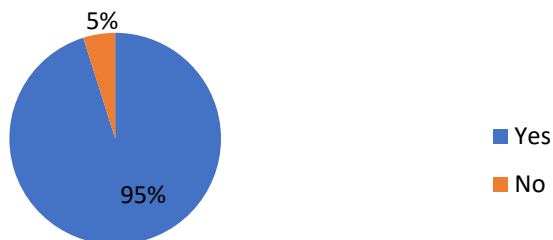
Measure



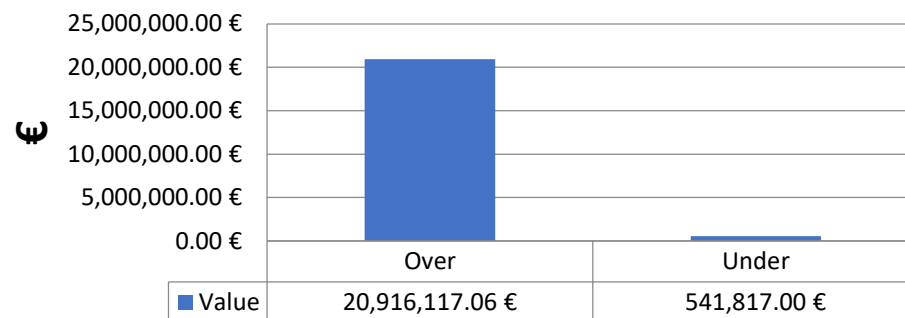
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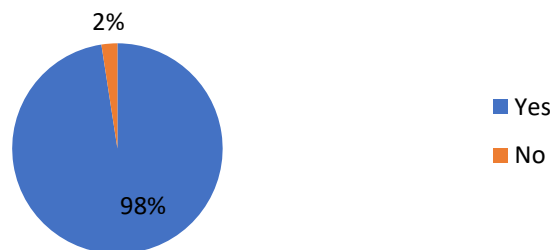
RFQ submission Over 14 days ?



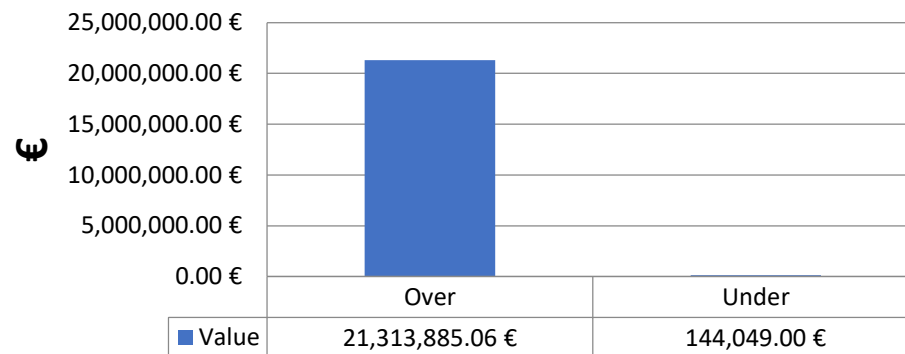
Value of RFQ submission > 14 days.



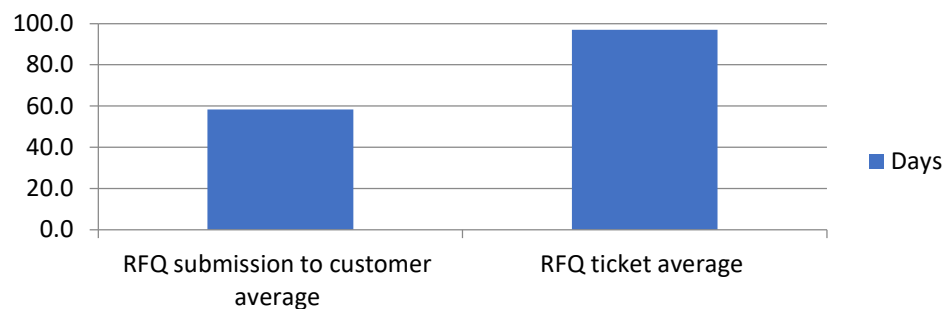
RFQ ticket Over 14 days ?



Value of RFQ ticket > 14 days



Days to complete

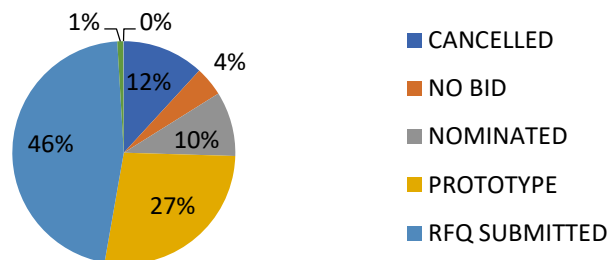
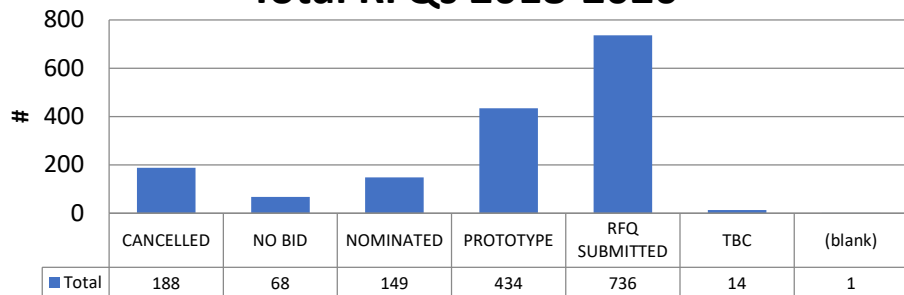


Note:

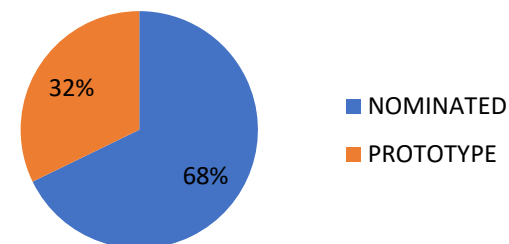
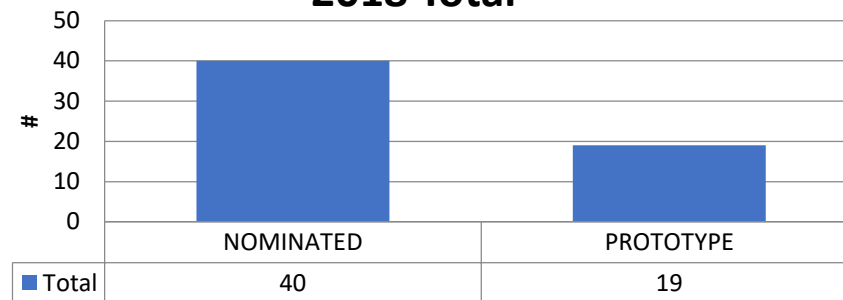
Average RFQ time to submission ~ 2 months
Average ticket closure ~ 3 months.



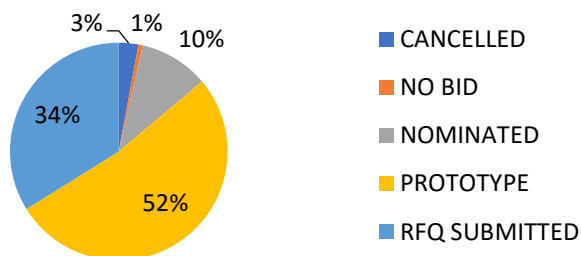
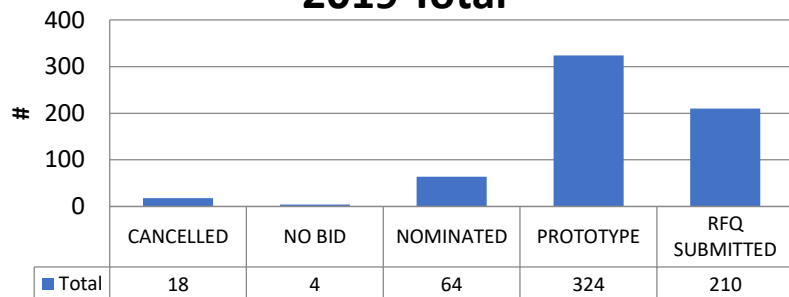
Total RFQs 2018-2020



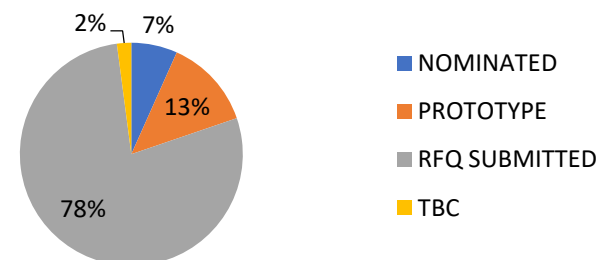
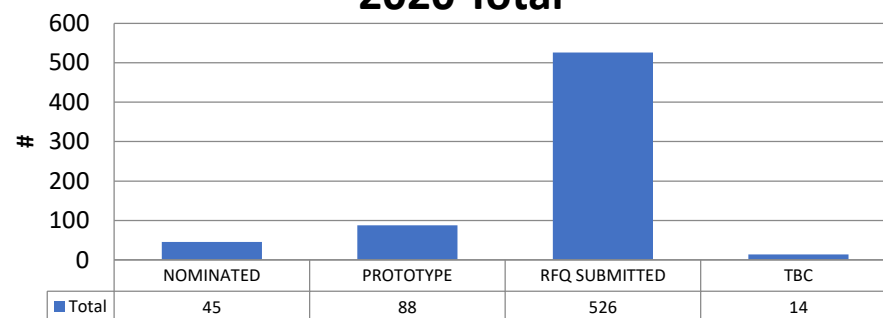
2018 Total



2019 Total



2020 Total





Analyse



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Value Stream Map

Analyse

General RFQ (Current)

Valued time: Time it takes to do the jobs
Non Value time: Time its takes to move into another job
Waste: If it ever past the 14 days lead time.

Customer

Receive Customer Data

Collecting Data

- Collect all customer data
- Check all required data had been gathered

VT: 5 Days

NVT: 2 Days

Waste: 0 Day

Project Run

- Analyse the collected data in terms of feasibility
- Create an internal drawing

VT: 7 Days

NVT: 2 Day

Waste: 0 day

Tooling & Components Feasibility

- Run RFQ project tooling feasibility
- Run components feasibility

VT: 13 Days

NVT: 5 Days

Waste: 0 Days

Finalising RFQ Data

- Collect all the studied data
- Calculate the project price

VT: 8 Days

NVT: 0 Days

Waste: 0 Days

Sending Quote to Customer

Customer

5 Days

7Days

13Days

8 Days

Value added time

2 Days

2 Days

5 Days

Non Value added Time

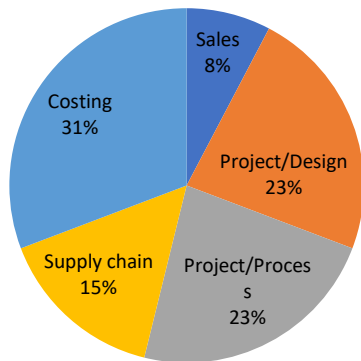
Total 42 Days



How much of working day does each team need to proceed with the quotation depending on the project complexity.

14 Days Standard Lead Time to submit a quote.

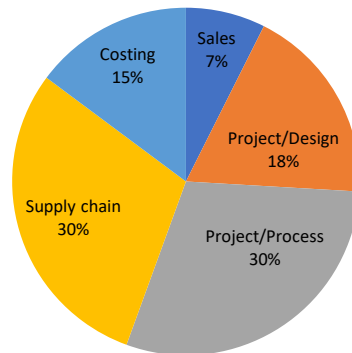
Basic Assembly RFQ



Characteristic

- *Simple and Easy Product
- *No Uncommon Components
- *Within the company product portfolio

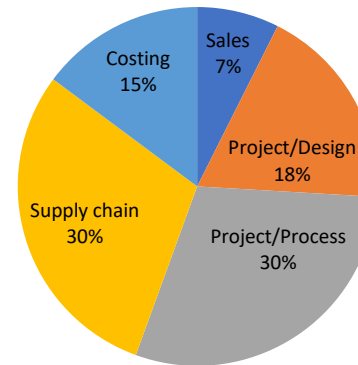
Intermediate Assembly



Characteristic

- * Slightly challenging product to produce.
- *With Uncommon Components
- *Relatively not all the product aspect is know to the company
- *High value of different parts

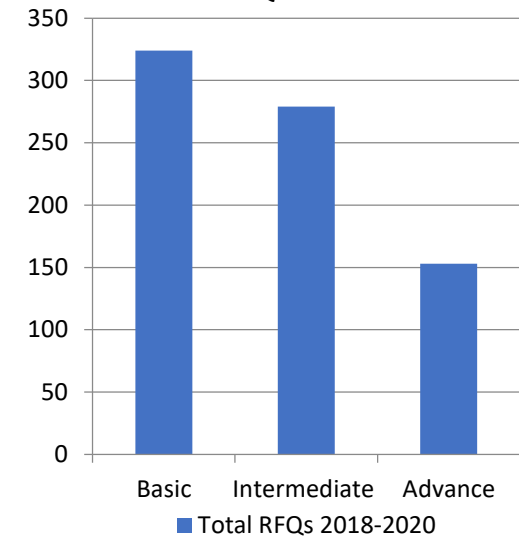
Advanced/Complex Assembly



Characteristic

- * Challenging Product
- *Most of the required components are Unique and not known
- *New type of product
- *High Value of different parts
20+ different part number

Total RFQs 2018-2020





Data vs reality

31 parts were sampled at random to measure difference between when ticketing system says the parts is quoted vs. reality:

Ticket closed X days after part was quoted	Amount of parts
0	0%
≤ 4	19%
$4 < x < 10$	73%
> 10	8%

Reality is our data appears worse than the issue is. However, taking 60 days to quote is still unacceptable.

There is no consistent time period between quoted (reality) vs. quoted (ticket system). Tickets are closed in bulk sporadically, most likely for convenience.



Economic Impact of filtering RFQs

By Filtering RFQs based on difficulty (Basic, intermediate, advanced).
We can better gauge the amount of resource each RFQ will require.

We can use this to make business decisions earlier in the RFQ process to decide if to quote or not for the parts.

We can reduce waste by rejecting RFQs earlier and we can better manage customer expectations with regards to lead time for the quotation.



Improve



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Table Process Flow Chart Category One (Basic Assembly) 14 Days

STEP	TASK DESCRIPTION	WHO	Departments IN	Departments OUT	Tool used	Total working day	Note
1	Receive Customer RFQ	Sales / KAM	Sales / KAM	Project	SharePoint	1	Customer data received (Inc 2D, 3D & applicable Standards)
2	Review of product scope, Log Enquiry/Create Product File	Sales / KAM	Sales / KAM	Project	SharePoint		Approval to proceed based on product type and market intel/Locate all received data within network file & start ticketing workflow RFQ
3	RTS (Review of Technical Specification) / DQR (Drawing Quality Review) review	Project	Project	Project	SharePoint	4	Drawing review highlighting points which need to be clarified with the customer
4	Create Markup and raise PR (RFQ drawing)	Project	Project	Designer	Windchill		Create markup of customer data to translate into internal references and identify requirements
5	Generate Internal RA Drawing for quotation use	Designer	Designer	Project	Windchill	4	Technical will approve the newly generated RA Drawing
6	RFQ BOM creation	Project	Project	Process Engineering	SharePoint		Windchill BoM / 2D approved
7	Process outline / tooling quotations	Process Engineering	Process Engineering	Sales / KAM	SharePoint		Initial process concept / considerations & quotes
8	Identify Sub Supplier Chain	Supply Chain	Supply Chain	Project	SharePoint		Sourcing of none standard components identified via 2D mark-up, Standard components can be process quicker.
9	Material / Components quotations	Supply Chain	Supply Chain	Project	SharePoint		Latest component / material quotations (New components & considering increased volume)
11	Feasibility Form	Project	Project	Product Manager	SharePoint	1	Team feasibility
12	Review of product feasibility and inputs to costing	Product Manager	Product Manager	Sales / KAM	SharePoint	4	LTA / profitability to be approved by Product Manager before passing to KAM for final approval
13	Quotation	Sales / KAM	Sales / KAM	Sales / KAM	SharePoint		Compile quotation (Customer Specific Requirements)
14	Quotation Sent	Sales / KAM	Sales / KAM	Customer	SharePoint		Compile quotation (Customer Specific Requirements)

Table Process Flow Chart Category 2 (Intermediate Assembly) 21 Days

STEP	TASK DESCRIPTION	WHO	Departments IN	Departments OUT	Tool used	Total working day	Note
1	Receive Customer RFQ	Sales / KAM	Sales / KAM	Project	SharePoint	2	Customer data received (Inc 2D, 3D & applicable Standards)
2	Review of product scope, Log Enquiry/Create Product File	Sales / KAM	Sales / KAM	Project	SharePoint		Approval to proceed based on product type and market intel/Locate all received data within network file & start ticketing workflow RFQ
3	RTS (Review of Technical Specification) / DQR (Drawing Quality Review) review	Project	Project	Project	SharePoint	6	Drawing review highlighting points which need to be clarified with the customer
4	Create Markup and raise PR (RFQ drawing)	Project	Project	Designer	Windchill		Create markup of customer data to translate into internal references and identify requirements
5	Generate Internal RA Drawing for quotation use	Designer	Designer	Project	Windchill	8	Technical will approve the newly generated RA Drawing
6	RFQ BOM creation	Project	Project	Process Engineering	SharePoint		Windchill BoM / 2D approved
7	Process outline / tooling quotations	Process Engineering	Process Engineering	Sales / KAM	SharePoint		Initial process concept / considerations & quotes
8	Identify Sub Supplier Chain	Supply Chain	Supply Chain	Project	SharePoint		Sourcing of none standard components identified via 2D mark-up, Standard components can be process quicker.
9	Material / Components quotations	Supply Chain	Supply Chain	Project	SharePoint		Latest component / material quotations (New components & considering increased volume)
11	Feasibility Form	Project	Project	Product Manager	SharePoint	1	Team feasibility
12	Review of product feasibility and inputs to costing	Product Manager	Product Manager	Sales / KAM	SharePoint	4	LTA / profitability to be approved by Product Manager before passing to KAM for final approval
13	Quotation	Sales / KAM	Sales / KAM	Sales / KAM	SharePoint		Compile quotation (Customer Specific Requirements)
14	Quotation Sent	Sales / KAM	Sales / KAM	Customer	SharePoint		Compile quotation (Customer Specific Requirements)

Table Process Flow Chart Category One (Advance and Complex Assembly) 28 Days

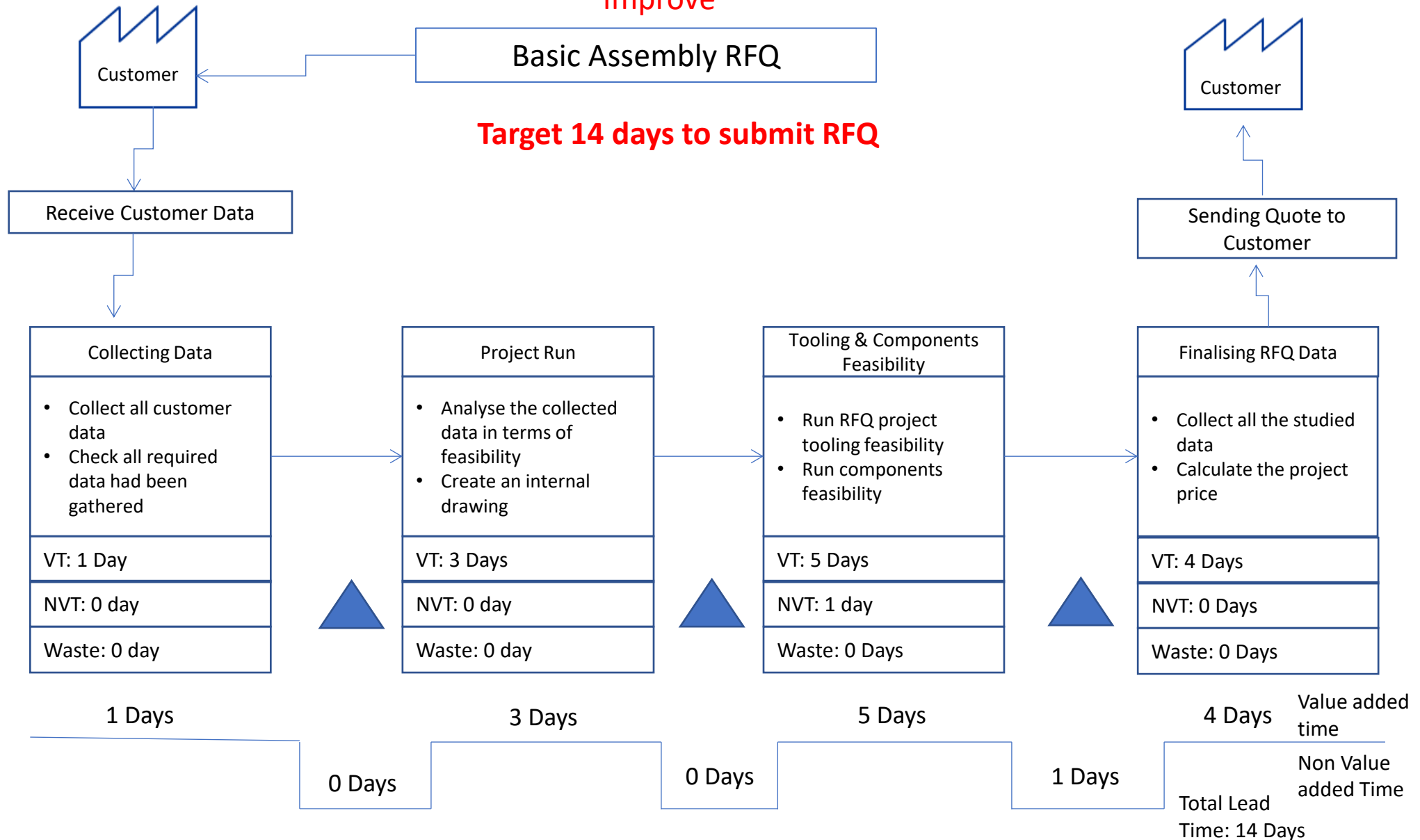
STEP	TASK DESCRIPTION	WHO	Departments IN	Departments OUT	Tool used	Total working day	Note
1	Receive Customer RFQ	Sales / KAM	Sales / KAM	Project	SharePoint	3	Customer data received (Inc 2D, 3D & applicable Standards)
2	Review of product scope, Log Enquiry/Create Product File	Sales / KAM	Sales / KAM	Project	SharePoint		Approval to proceed based on product type and market intel/Locate all received data within network file & start ticketing workflow RFQ
3	RTS (Review of Technical Specification) / DQR (Drawing Quality Review) review	Project	Project	Project	SharePoint	10	Drawing review highlighting points which need to be clarified with the customer
4	Create Markup and raise PR (RFQ drawing)	Project	Project	Designer	Windchill		Create markup of customer data to translate into internal references and identify requirements
5	Generate Internal RA Drawing for quotation use	Designer	Designer	Project	Windchill	10	Technical will approve the newly generated RA Drawing
6	RFQ BOM creation	Project	Project	Process Engineering	SharePoint		Windchill BoM / 2D approved
7	Process outline / tooling quotations	Process Engineering	Process Engineering	Sales / KAM	SharePoint		Initial process concept / considerations & quotes
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13	Quotation	Sales / KAM	Sales / KAM	Sales / KAM	SharePoint		Compile quotation (Customer Specific Requirements)
14	Quotation Sent	Sales / KAM	Sales / KAM	Customer	SharePoint		Compile quotation (Customer Specific Requirements)



Value Stream Map

Improve

Target 14 days to submit RFQ

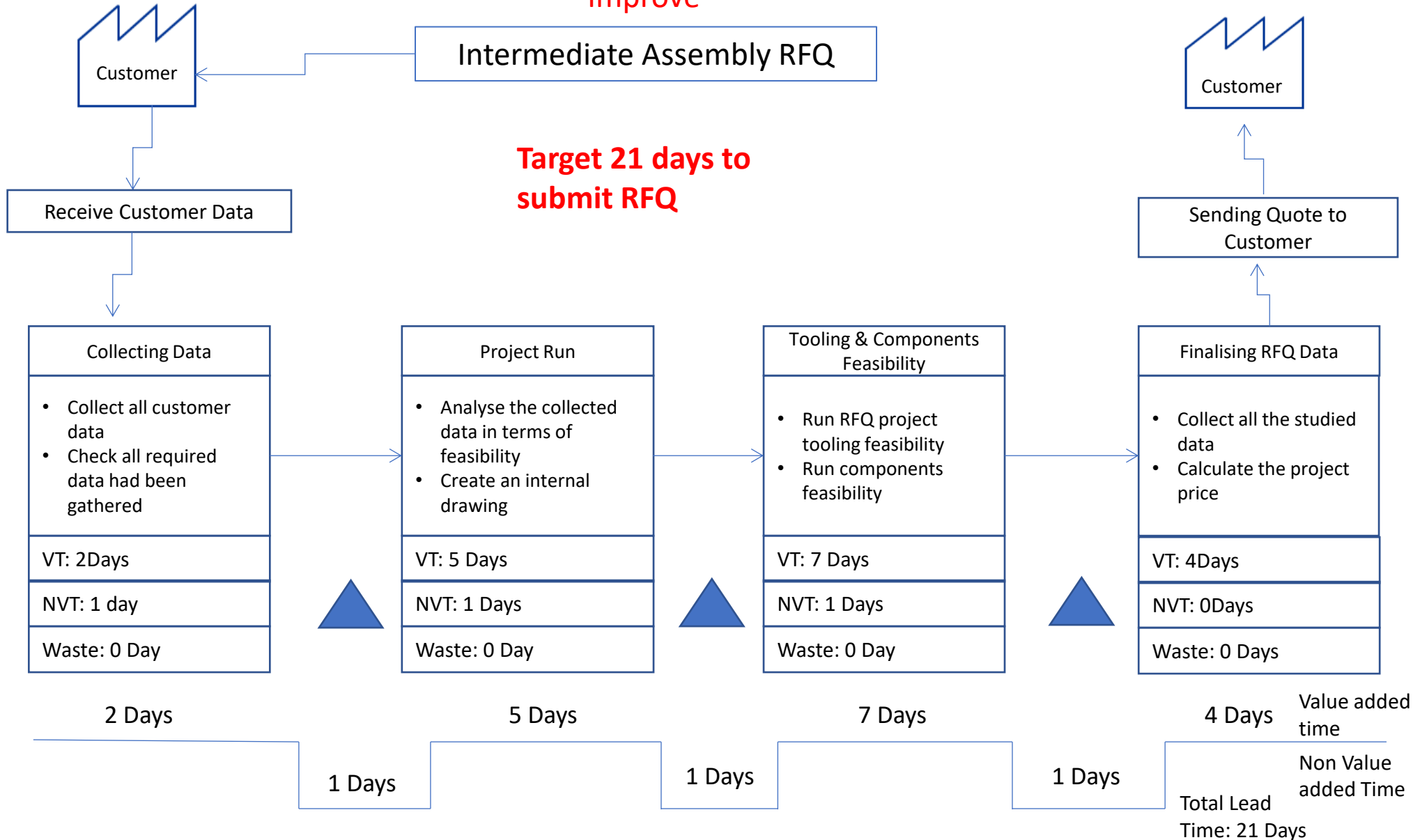




Value Stream Map

Improve

Target 21 days to
submit RFQ

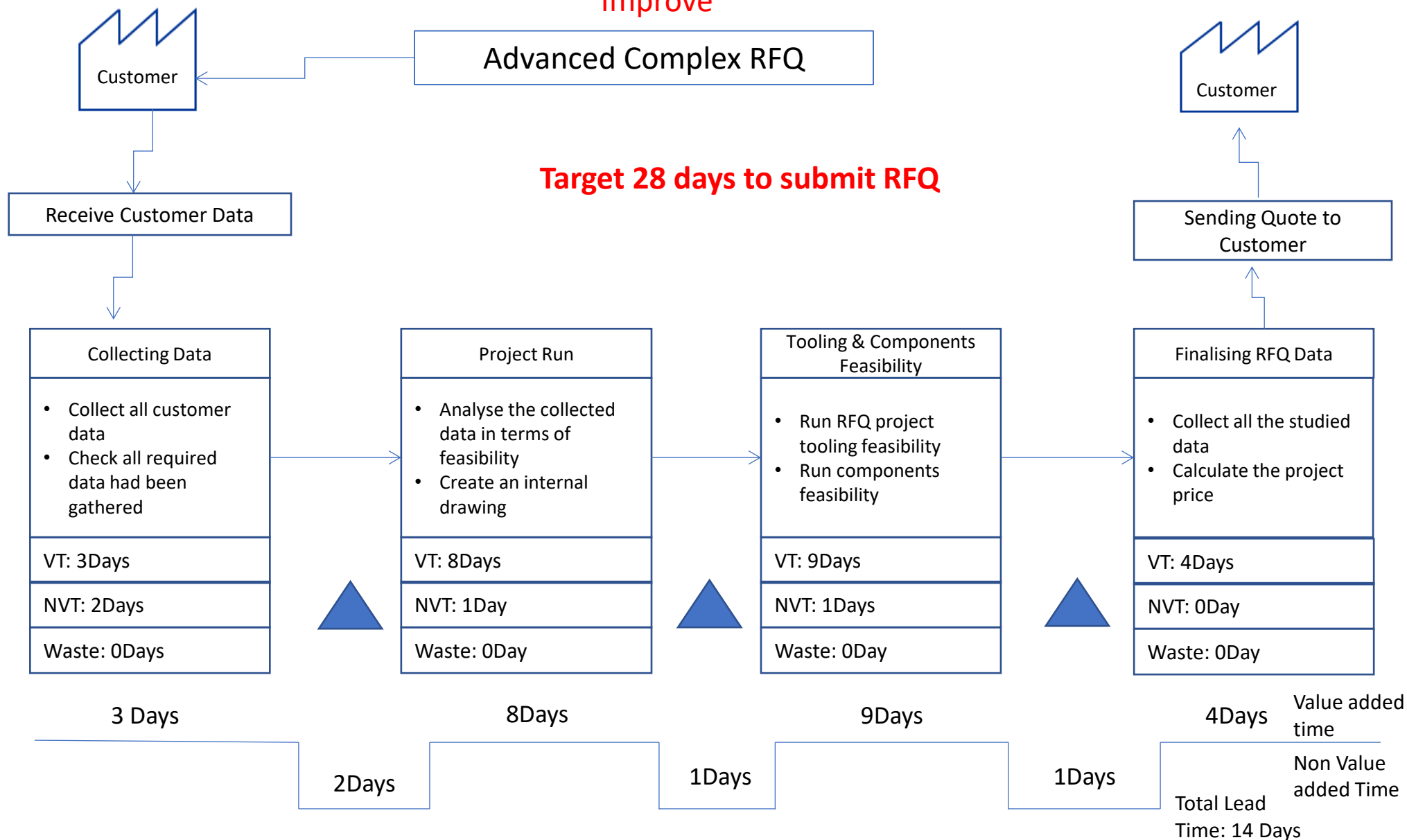




Value Stream Map

Improve

Target 28 days to submit RFQ





Ticketing system

- Increase visibility of the tickets – similar to project link used for PPAP.
- This will reduce the need to meetings and chasing emails and show live project status and responsible persons for completion of open tasks.



Control



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Control

- Introduction of tiered RFQs to improve KPIs
- Introduction of clearer ticketing system.
- Highlight bottle necks to team to reduce wastes. (e.g rfq submission).