

2019 SAVE International Value Summit

Remoting a Global Value Study

*Ayya Ganesan, VMA
Generac Power Systems, Inc.*

Generac Power Systems

- Introduction

- Founded 1959 in Genesee, Wisconsin
- A leading designer and manufacturer of a wide range of power generation equipment & other engine powered products
- Market leader in home standby generator
- About 3600 employees spread out in US, Mexico, Italy, UK, China and Brazil.

GENERAC

GENERAC | INDUSTRIAL POWER

GENERAC | MOBILE

GENERAC | **GENERAC**
Pika ENERGY neurio

selmec
A Generac Company

MOTORTECH

PRAMAC



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Generac Product Line



Generac Global Locations



OVER 250,000 M² (2.7M Ft²) OF VERTICALLY
INTEGRATED MANUFACTURING CAPACITY SERVING A
GLOBALLY DIVERSE COMMERCIAL FOOTPRINT

SERVING MARKETS IN 150+ COUNTRIES AROUND
THE WORLD

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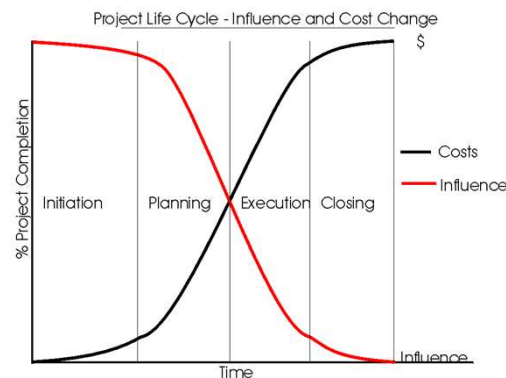
Introduction

- Global companies with global products and unique challenges
- Engineering teams, sales, marketing located across the globe
- Planning and bringing them together for a Value study has got lot harder
- Always exploring for tools to support collaboration
- Explores tools that support conducting a remote value study



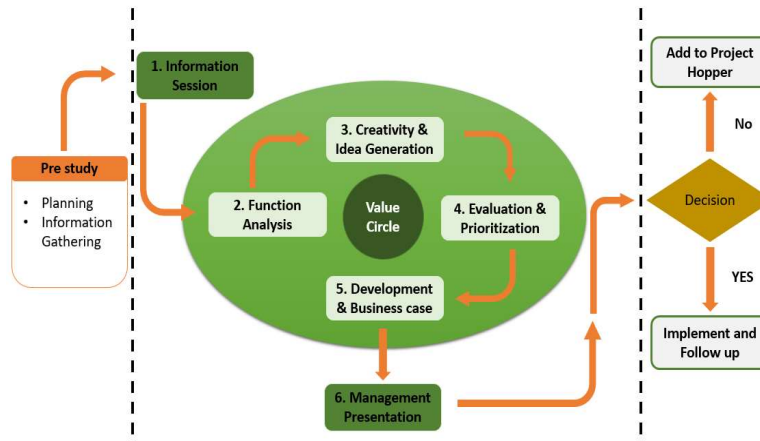
Value Engineering

- Manufacturing Industry has accepted Value Methodology as part of engineering new products with the right costs.
- With short product launches, no time for value study
- Cost to influence graph helps convincing the need for more VE then VA.



Plan for Value Study

- We follow the 3 step process for all value studies



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Pre-Study – Remoting a Value study



- Location: most sense, Access to team members, product samples, closer to manufacturing facility.



Video conference rooms

- Conference room: The conference room needs to have un-interrupted Wi-Fi connection and options to video call.

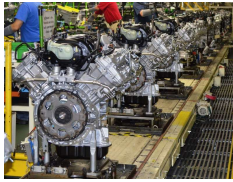


- Samples: We need to have physical samples. More than one set that will be available at all locations from where the team is going to call in.

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Pre-Study – Remoting a Value study



- Videos: Planning and shooting videos of manufacturing assembly sequence. Folks who cannot make the plant tour can understand the assembly sequence as part of Information session.



- Value specialist: Plan for having local trained AVS physically present at every location that is calling in. This helps in minimizing the communication challenges.



Pre-Study – Remoting a Value study



- Additional Time: Plan for extra time for completing Function analysis to make everyone heard and capturing the inputs.



- Shared Project folders: All the information is available online at a shared location, so the teams can access and review them independently.
- Tech Support: Please make sure the IT tech support team will be available to support on the days of study.



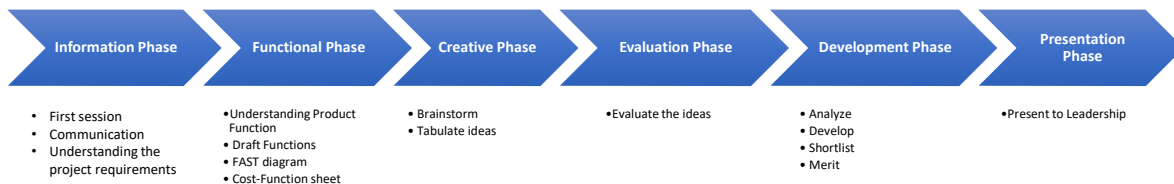
Pre-Study – Remoting a Value study



- Team: The most important factor to bring success to your study. Knowledgeable, multi disciplinary, focused

Job Plan

- Follow the 6 phases



Job Plan

- Team to follow online meeting etiquette.
- Plan extra time to introduce everyone on the call.
- Confirm availability of information (slides, components, drawings etc.) for everyone dialed in.
- Establish boundaries on how to handle questions and need to raise the hand etc.



Job Plan

Information Phase:

- Walk thru the information slides.
- Have team members present their area of representation.
- Play video's of manufacturing or assembly line for folks who cannot visit the plant.
- Plan to answer all questions before proceeding to next phase.



Job Plan

Function Analysis:

- Extract a detailed Costed multilevel BOM. This helps us understand the cost distribution btw various assemblies and sub-assemblies.
- Create functions of each multilevel assembly. This helps us establish the relationship of functions performed by that sub assembly and the cost taken to achieve it.
- Classify the functions as Basic, Secondary & tertiary etc.

Job Plan

- Listing Functions by sub assembly (Verb-Noun)

No.	Part/ Process #	Cost	Function (Verb-Noun)
1	Filter Bracket	\$2.23	Orient filter Holds assembly mount filter secure bracket
2	Top Shell	\$2.70	Contains fluid holds pressure secures centertube Seals element seals housing Actuates snap Retains snap connects outlet
3	Bottom Shell	\$1.83	Contains fluid holds pressure secures centertube Seals element seals housing Contain snap connects Inlet
4	inner element	\$0.75	filters fluid seals housing prevent bypass Direct flow seals mediapack
5	Oring	\$0.15	Resist pressure Seals housing Supports Media
6	Center tube	\$0.75	Directs flow prevent bypass provides alignment

Job Plan

- Copy the functions needed to the VB tool
- The VB tool will help create yellow Posit-its

A	B	E	F	G
Number	Function List	Create PowerPoint Post-Its		
1	Actuates snap			
2	communicate information			
3	connects Inlet			
4	connects outlet			
5	Contain snap			
6	contains contaminant			
7	Contains element			
8	Contains fluid			
9	Creates circuit			
10	Directs flow			
11	Enables incinerability			
12	Filters fluid			
13	Holds assembly			
14	Holds connectors			
15	Holds label			
16	holds pressure			
17	Improves Service			
18	mount filter			

Job Plan

Tool for FAST

- The tool has detailed VB code written to support translation of these functions into post-it in PowerPoint

```

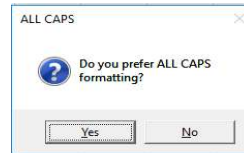
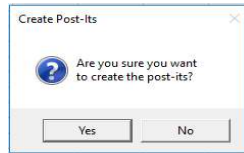
End Sub

Sub CreatePostIts()
    Dim ppt As PowerPoint.Presentation, oSlide As PowerPoint.Slide
    Dim iShapes As Long
    Dim oXlSh As Worksheet, iXN As Integer
    Dim i As Long, iRow As Long, sText As String
    'Confirm press of Create Post-Its button and formatting preference
    iXN = MsgBox("Are you sure you want" & vbCrLf & _
        "to create the post-its?", vbQuestion + vbYesNo, "Create Post-Its")
    If iXN = vbNo Then Exit Sub
    iXN = MsgBox("Do you prefer ALL CAPS" & vbCrLf & _
        "formatting?", vbQuestion + vbYesNo, "ALL CAPS")
    'Open post-its PowerPoint template
    On Error GoTo ErrorHandler
    Set ppt = GetObject(ThisWorkbook.Path & "\Functional Template.pptm")
    ppt.Application.Visible = True
    ppt.Application.WindowState = ppWindowStateMaximized
    ppt.Application.Activate
    'Delete any extra shapes from the template
    Set oSlide = ppt.Slides(1)
    Do Until oSlide.Shapes.Count = 1
        oSlide.Shapes(oSlide.Shapes.Count).Delete
    Loop
    'Transfer values from spreadsheet to powerpoint
    Set oXlSh = ActiveSheet
    iRow = oXlSh.UsedRange.Rows.Count
    For i = 2 To iRow
        If oXlSh.Cells(i, 2) <> "" Then
            sText = oXlSh.Cells(i, 2) & vbCrLf & oXlSh.Cells(i, 3) & _
                sText & oXlSh.Cells(i, 3) & vbCrLf & oXlSh.Cells(i, 4)
            iShapes = oSlide.Shapes.Count
            With oSlide
                .Shapes(iShapes).Duplicate
                .Shapes(iShapes + 1).TextFrame.TextRange.Text = sText
                .Shapes(iShapes + 1).TextFrame.TextRange.Font.Color = oXlSh.Cells(i, 2).Font.Color
                If iXN = vbYes Then
                    .Shapes(iShapes + 1).TextFrame.TextRange.ChangeCase Type:=ppCaseUpper
                End If
            End With
        End If
    Next i
    Exit Sub
End Sub

```

Job Plan

- Answer Yes to the questions asked by the VB tool



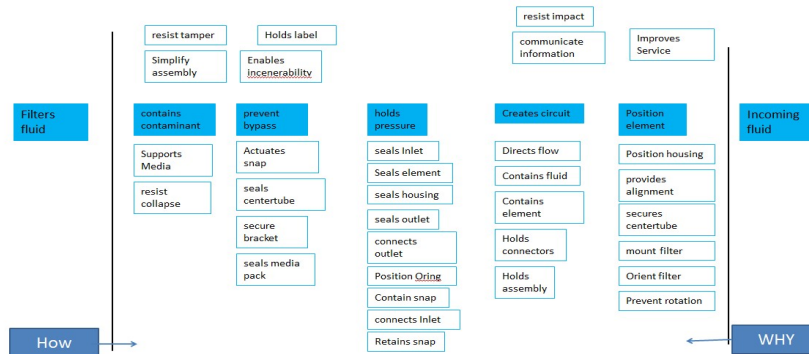
Job Plan

- Yellow post-its available on a power point slide.



Building the Fast

- Using the Template available in the power point start constructing the FAST diagram.
- A designated driver shares the screen and moves the posit to form the detailed Fast.



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Cost Function Worksheet

- Use the functions from the FAST diagram to complete your Cost Function worksheet.

			Functions																								
					contains contamina nt		prevent bypass		holds pressure		Creates circuit		Position element		Resist Impact		Improve service		Communica te informatio n		simplify assembly		Enables incenerabi lity		resist tamper		
No.	Description	Cost	% Allotted																								
1	Filter Bracket	2.23	100%	\$0.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	0%	\$1.12	50%	\$0.56	25%	\$0.56	25%	\$0.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	0%
2	Top Shell	2.70	100%	\$0.14	5%	\$0.14	5%	\$1.08	40%	\$0.27	10%	\$0.27	10%	\$0.14	5%	\$0.27	10%	\$0.03	1%	\$0.14	5%	\$0.11	4%	\$0.14	5%	\$0.11	4%
3	Bottom Shell	1.83	100%	\$0.09	5%	\$0.09	5%	\$0.73	40%	\$0.18	10%	\$0.00	0%	\$0.09	5%	\$0.18	10%	\$0.02	1%	\$0.18	10%	\$0.07	4%	\$0.18	10%	\$0.07	4%
4	inner element	0.75	100%	\$0.31	41%	\$0.31	41%	\$0.04	5%	\$0.02	3%	\$0.04	5%	\$0.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	0%	\$0.04	5%	\$0.00	0%	\$0.00	0%
5	Oring	0.15	100%	\$0.00	0%	\$0.00	0%	\$0.12	80%	\$0.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	0%	\$0.03	18%	\$0.00	2%	\$0.00	0%	\$0.00	0%
6	Centertube	0.75	100%	\$0.00	0%	\$0.23	30%	\$0.38	50%	\$0.05	7%	\$0.05	6%	\$0.00	0%	\$0.00	0%	\$0.00	0%	\$0.04	5%	\$0.02	2%	\$0.00	0%	\$0.00	0%
Total Cost			\$8.41	\$0.53	\$0.76	\$2.34	\$0.53	\$1.47	\$0.78	\$1.01	\$0.05	\$0.38	\$0.24	\$0.32													
Function % of Total			100%	6%	9%	28%	6%	17%	9%	12%	1%	5%	3%	4%													
Ranking				6	4	1	6	2	4	3	11	8	10	9													

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Paired Comparison

- Pair the functions from the critical path on FAST diagram to calculate the importance.

Pairing Chart					
A. Initiate shipping	B	A	D	E	
B. Pack Carton	B	D	E		
C. Receive carton	D	E			
D. Mfg packaging	D				
E. Design Packaging					
F.					
G.					
H.					

Count	% of Total
A	1 10%
B	2 20%
C	0 0%
D	4 40%
E	3 30%
F	
G	
H	
I	
J	
TOTAL	10 100%

- Compare Properties/
Functions at nodes cells to
establish priority.

- Calculated percentages
establish Property/Function
relative weights.

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Job Plan

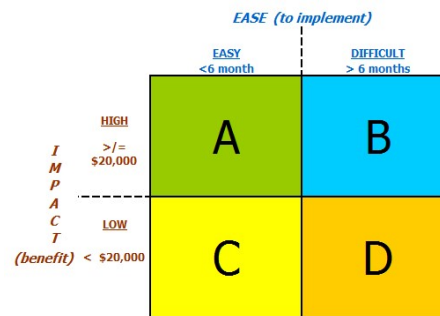
Creative Phase:

- Share the output of the Function analysis
- Complete a structured brainstorming
- Follow the tools and guidelines for conducting a successful ideation

Job Plan

Evaluation Phase:

- Use the simple 4 blocker to rank the ideas based on estimated savings and time needed



Job Plan

Development & Management Phase:

- Identify the top A projects and develop the idea with all details required for a decision
- The top ideas are presented to Extended team and Management

Conclusion

- Follow the three step process
- Accommodate people from other locations
- Enables more participation during function analysis
- Remoting FAST to reality
- Schedule more time for function analysis



Questions



<https://www.youtube.com/watch?v=kNz82r5nyUw>

