

Implementing Lean Six sigma

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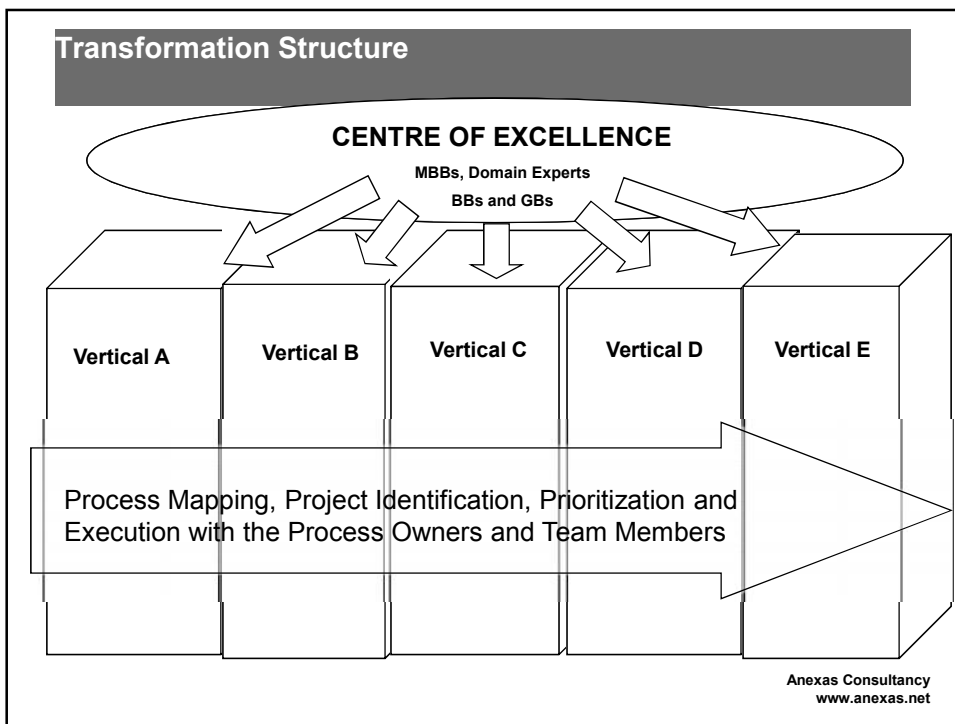
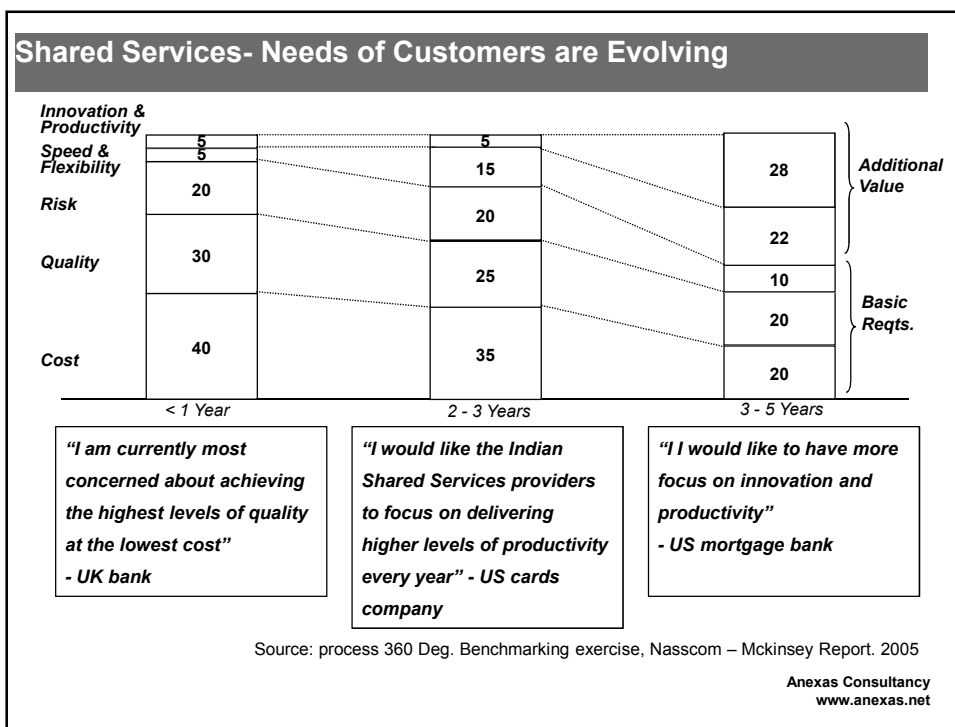
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Agenda

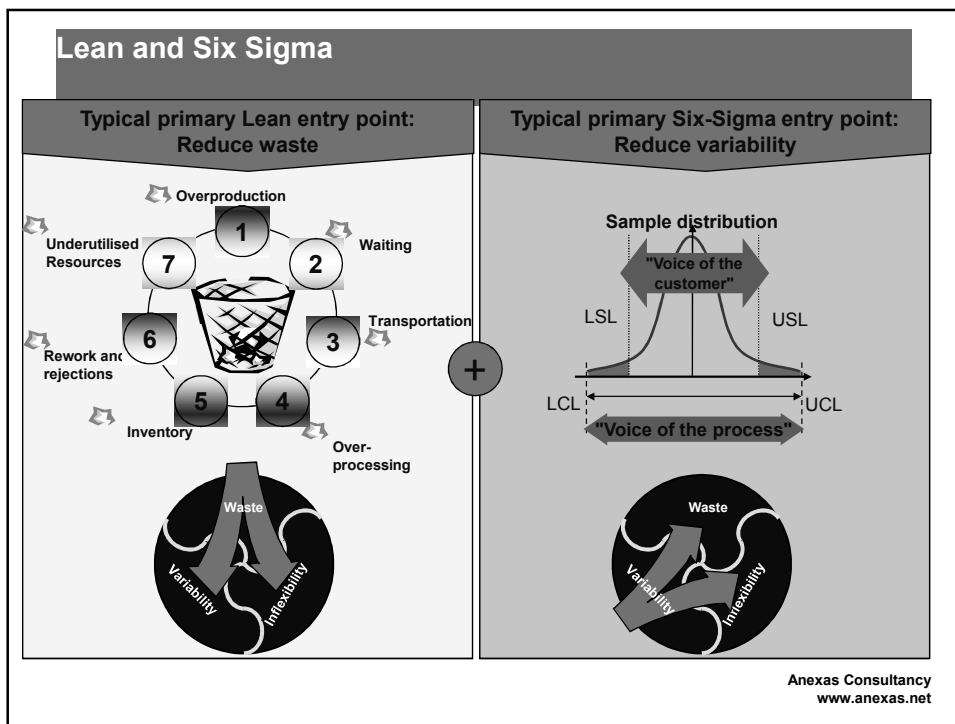
- 1** Transformation Roadmap
- 2** Maintaining Momentum and Energy Levels
- 3** Statistical Applications in Efficiency Programs
- 4** Conclusion

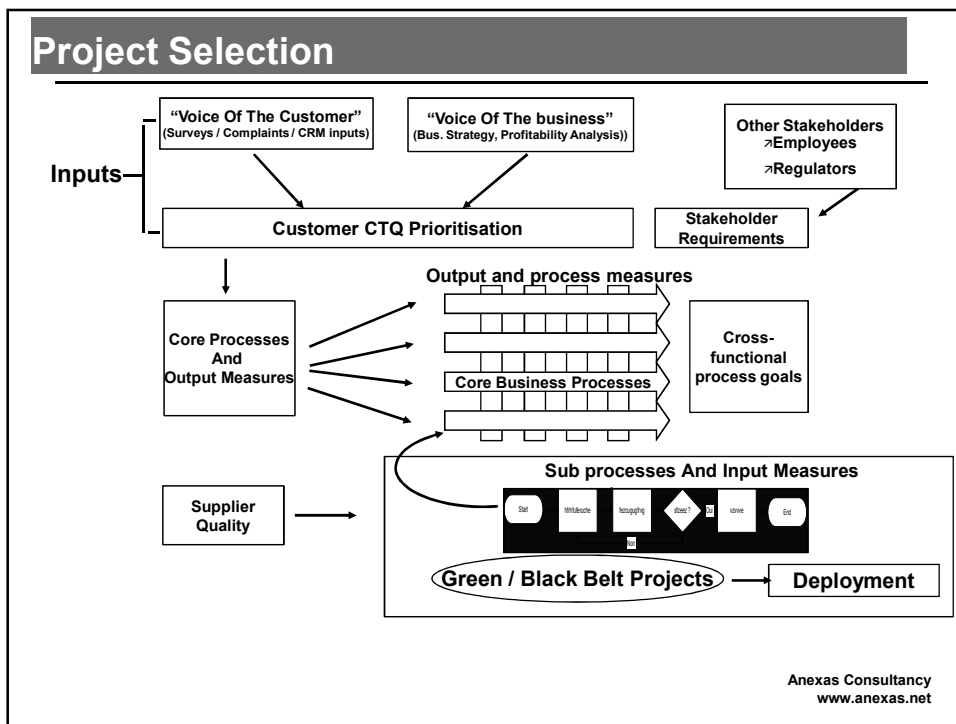
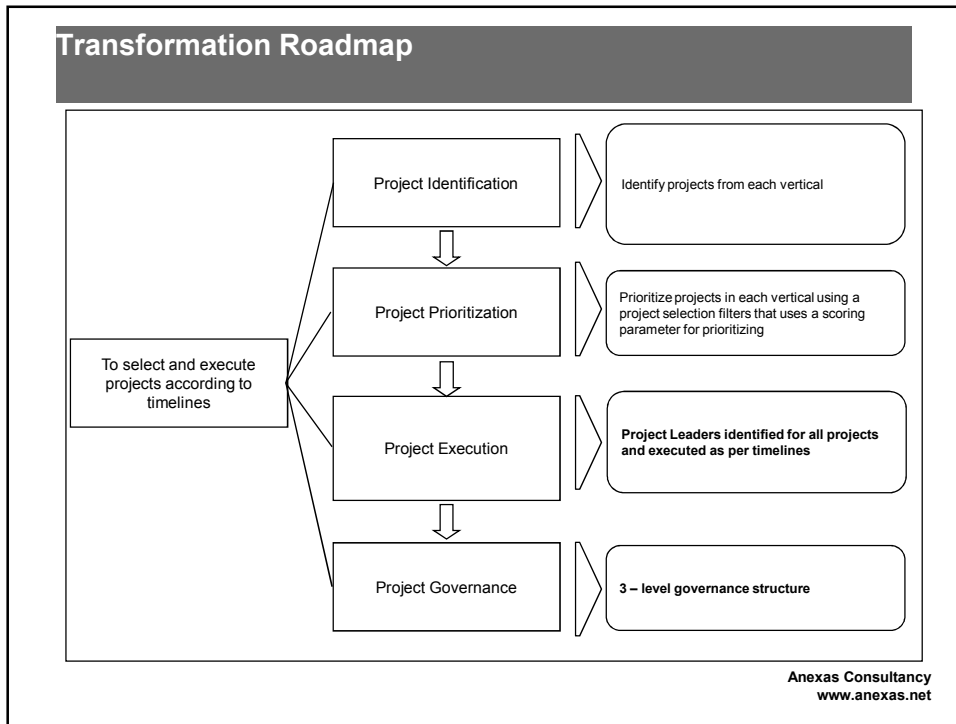
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Companywide Efficiency Programs			
Nature of Project	Process Reengineering / Technology Change	Structured Process Improvements	Generic Improvements
Methodology Used*	• DMADV	• DMAIC	• Lean / Kaizen
Capability Building	• TRIZ • Six Sigma • Process Knowledge	• Six Sigma • Lean • Structured Problem Solving Methodologies	• Innovation • Creativity
Change Management	End to end	DBOI focussed	Localized teams
Project Management	• (15 - 20%) of effort • Requires higher level of project management • Completely customized to specific project	• (5 - 10%) of effort • Project management handled by BB / MBB from Transformation team. GB / BB mentored on project management skills so that they are able to manage milestones, estimate sizing, use MS project, etc. • Some amount of customization (Multiple iterations like DMADMAIC, etc.)	• No PM effort • Excel, Access based tool to capture benefits and communicate
Coverage	6 - 8 projects in a year	5 - 10% of employees	60 - 80% of employees

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Transformation Opportunity Document	
<p>Business Case</p> <p><i>Why is the project worth doing?</i></p> <p><i>Why is it important to do it now?</i></p> <p><i>What are the consequences of NOT doing the project?</i></p> <p><i>How does it fit with the business initiatives and target?</i></p> <p><i>What is the business impact of the project?</i></p> <p><i>What must the team deliver to be successful?</i></p> <p><i>Required deliverable dates</i></p>	<p>Type of Project</p> <p>(Tick whatever is appropriate)</p> <p><input type="checkbox"/> Standardization</p> <p><input type="checkbox"/> Value Addition</p> <p style="margin-left: 20px;"><input type="checkbox"/> Revenue Generation</p> <p style="margin-left: 20px;"><input type="checkbox"/> Cost Reduction and avoidance</p> <p style="margin-left: 20px;"><input type="checkbox"/> Customer Satisfaction</p> <p style="margin-left: 20px;"><input type="checkbox"/> Risk Mitigation</p> <p><input type="checkbox"/> People Development</p> <hr/> <p>Contact Person</p> <p><i>Sponsor/Reviewer – Who is the owner of the project/process from Business?</i></p> <p><i>SME – Who are the subject matter experts on the process?</i></p>
<p>Scope</p> <p><i>Which are the processes team will focus on?</i> <i>What is off limits (in-scope / out-of-scope)?</i></p>	

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Output Sigma
Understanding the Capability of the process

Double click on the spreadsheet and enter data in the shaded cells.

Define the following

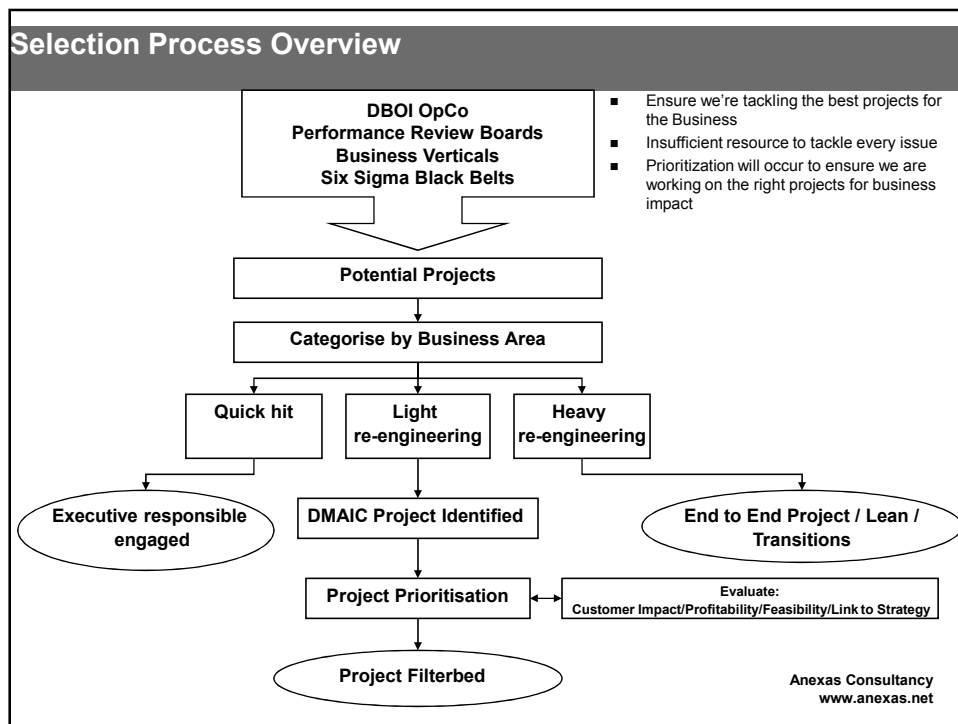
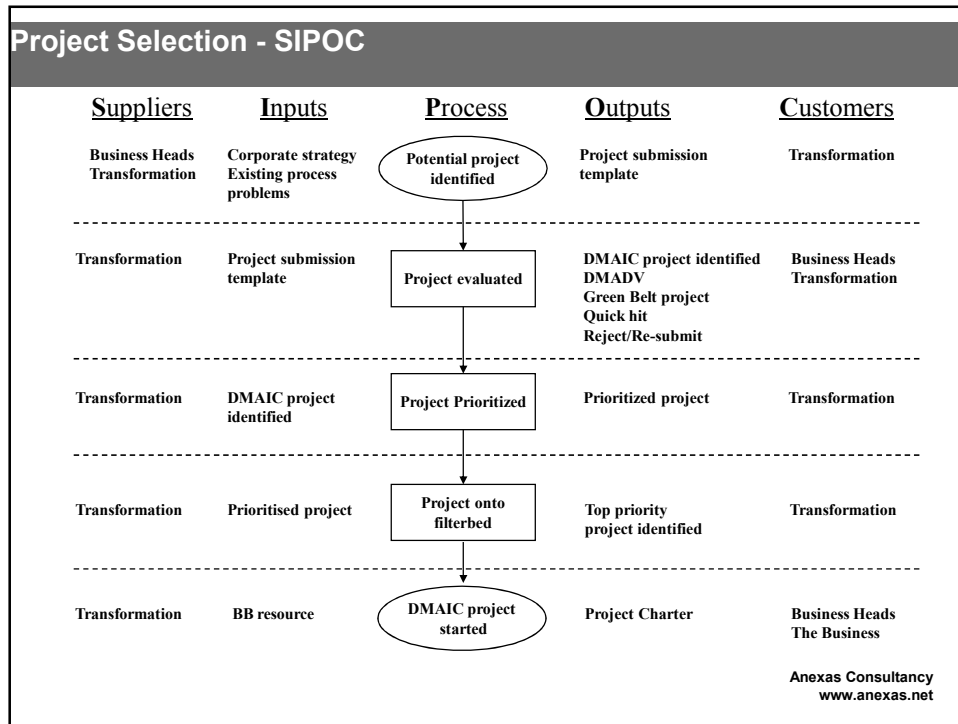
CTQ: Your CTQ
Target: Your customer required target
Defect: Describe here how you would identify a defect
Unit: How do you define a unit
Opportunity: What is the rationale behind the # of opportunities

DPMO

1 Number Of Units Processed			enter
2 Total Number Of Defects Made (Include Defects Made And Later Fixed)	N=	0	
3 Number Of Defect Opportunities Per Unit	D=	0	
4 Solve For Defects Per Million Opportunities	O=	0	
5 Sigma will calculate			#DIV/0!
	Sigma=		#DIV/0!

You may need to do more than one sheet (or consolidate in a table) to show other Baseline calculations or summary sigma. Explain any sampling as appropriate. Hint: Update your problem and goal statements. Did they change based on your findings?

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Project Prioritization Matrix

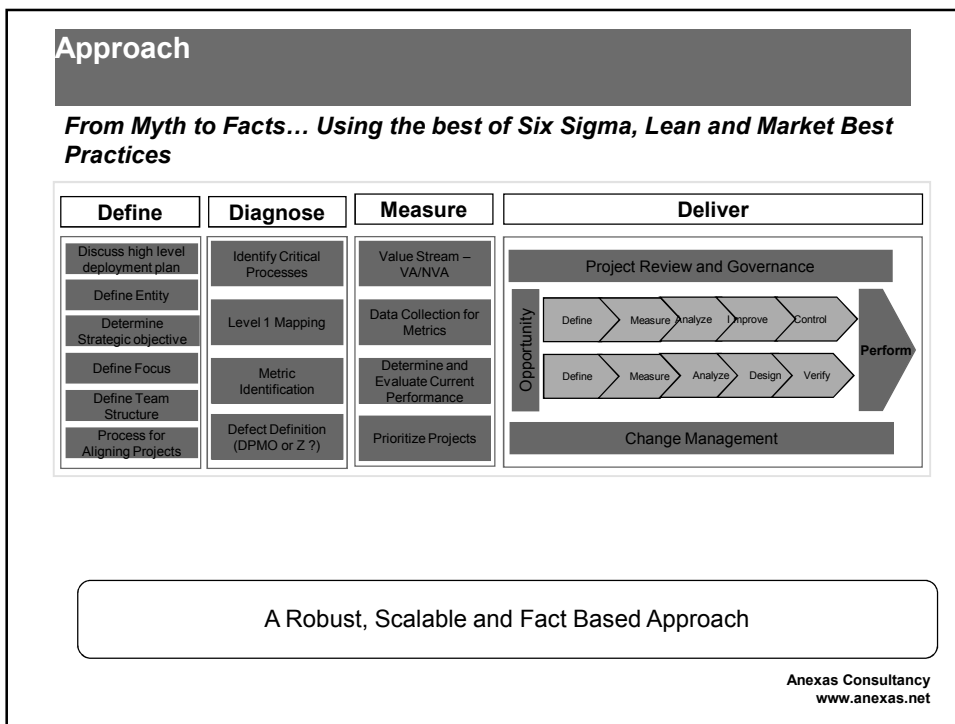
Criteria	Return On Investment	Contribution to Strategic Business Objectives	Addresses Voice of the Customer	Change Management Effort	Overall Rating
Weighting	4	3	2	1	
Scoring Guidelines	> 50% = 5 50% – 20% = 3 < 20% = 1	High = 5 Medium = 3 Low = 1	Yes = 5 Some = 3 No = 1	Easy = 5 Moderate = 3 Hard = 1	
Project 1	3	5	1	1	30
Project 2	5	5	5	3	48
Project 3	5	1	3	3	32
Project 4	5	3	1	5	36
Project 5	3	5	5	1	38

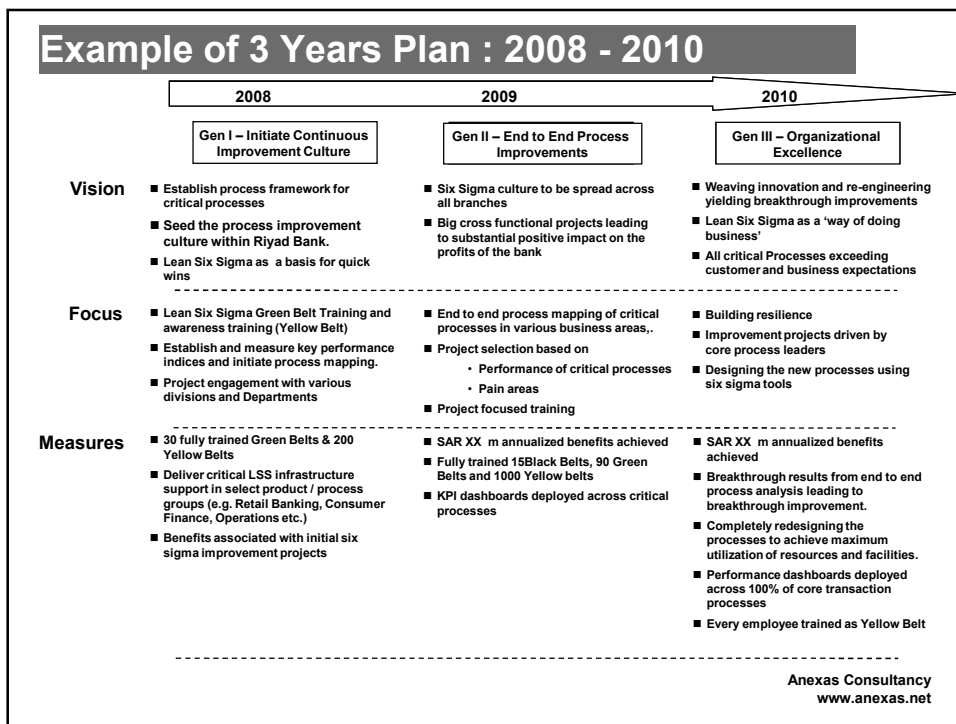
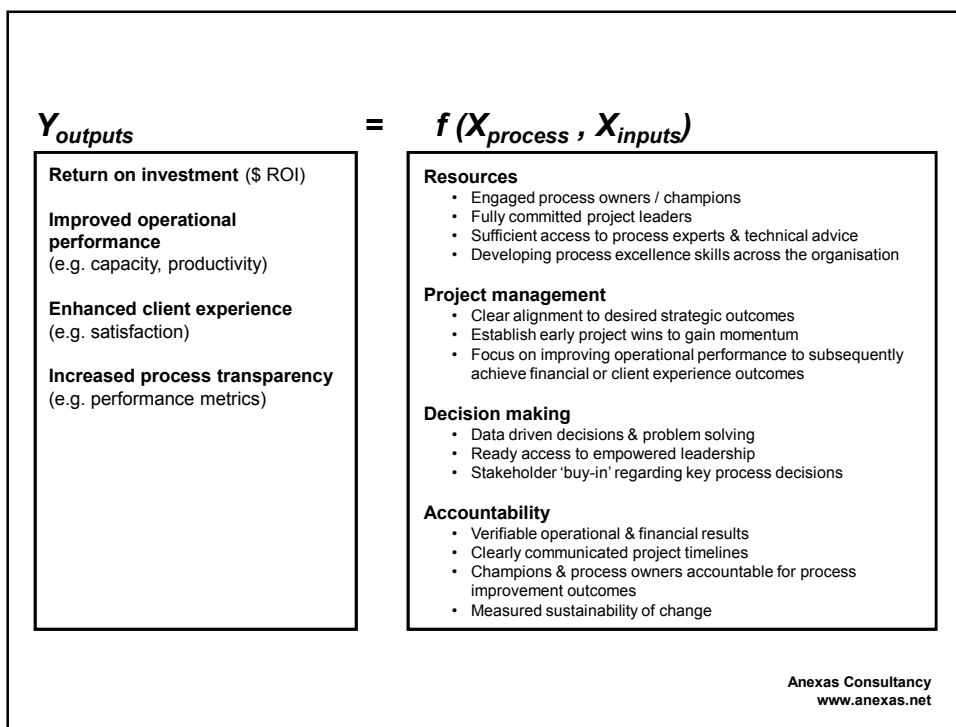
Projects with highest scores addressed on a priority

O = C x F

O : Opportunity
C : Condition
F : Favorability

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Maintaining Momentum and Energy Levels

- Quick wins through process mapping and automation
- Companywide involvement
- Efficient project governance and reviews
- Project duration under control
- Roadmap created for at least next 3 years
- Efficient training programs and enthusiastic trainers
- Certifications and importance attached to them
- Six Sigma and Best Practices Forum as periodic events
- Publicizing Success
- Updating Senior Management on the results of efficiency programs
- Ensuring that adequate resources are available
- Measuring Benefits
- Statistical applications to process improvement programs

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Quick Wins through Process Mapping

Start with all critical processes

Why only Critical Processes ?

Based on empirical experience, it is expected that 20 – 30 % of processes will contribute towards bulk of business value. We should focus on these processes.

How do we know, if a process is critical ?

This should be a joint decision driven by the Process Owners, Six Sigma Transformation Team and Business representatives. Processes identified will be evaluated against its impact on customer value and business value for that business division.

Outsourced processes to 3rd parties.

Review SLAs, identify critical processes and determine process capabilities using SLA metrics/ updated CT tree.

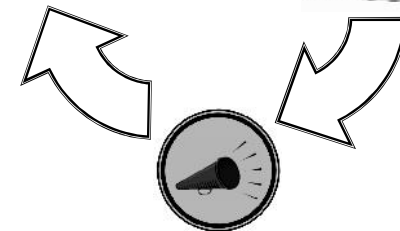
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Process Mapping

VISUALIZE



ANALYZE



COMMUNICATE

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Process Mapping – Shared Services Context

Efficient Process Mapping means:

- All Processes mapped on system
- Linkage shown between similar :
 - Process steps
 - Roles
 - Activities
 - Resources
 - Applications
 - Skill levels
 - Information consumption
- Linkages amongst resources, applications and activities
- Trend analysis of the operating parameters
- KPIs mapped with processes
- Simulation of processes for optimization
- Linkages of the processes to the objectives
- All the above published on web for global accessibility

$$U = (T - K) / T$$

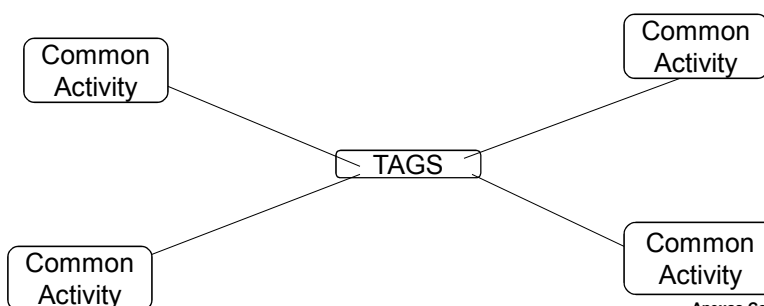
U : Uncertainty
T : Total
K : Known

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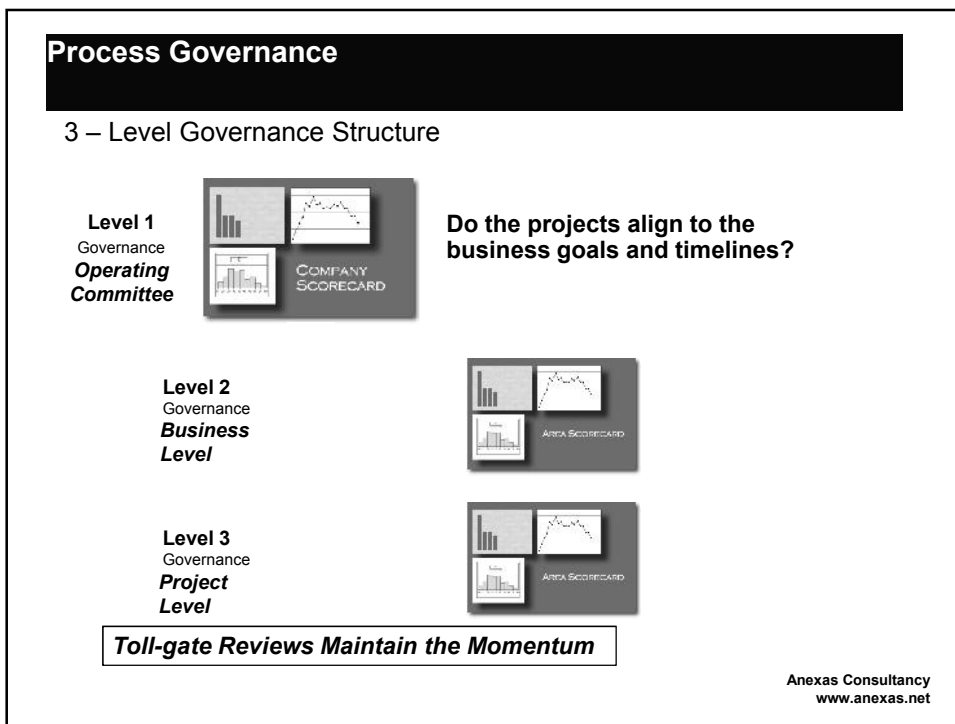
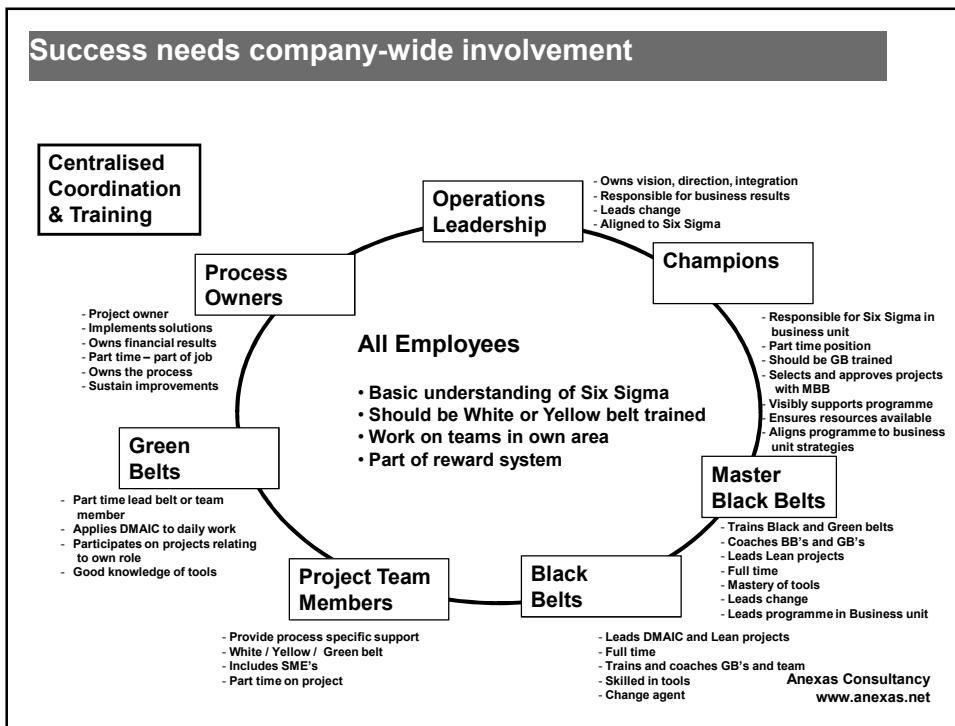
System Architect

Approach for Spotting : TAGGING

- A Common Tag which is placed to all the similar Processes.
- The Tag name is kept in a layer of abstraction or based on a common thread of the process definition.
- Each activity definition has a property called TAG where there is a facility to link the activity to one or Multiple TAGS.



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Project Duration

Some projects take too long, scope of projects is too broad. Six Sigma has developed a reputation for taking too long, being too complex for the value it adds

- Desire to do too much – solve all problems at once
- Some projects are “hijacked” and become vehicle for managers to pursue personal agenda
- Confusion over difference between improvement projects and process management

Maintaining the energy levels

- Focus on project charter – make sure it is always up to date and reflects reality
- Do not let new tasks to be included into the project unless they are fully reflected in the project mission, scope, timetable and financial effects
- Make sure any new tasks are related to the project and are explicitly approved by the Business Quality Council
- Check project presentations to make sure they focus just on the project

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Publicize Success

It is observed that the success of an improvement program is not adequately publicized in organizations

- Failure to identify and “package” the success of each individual project
- Too rarely do BBs stop and take stock of what they have accomplished
- When the workload increases, publicity seems like a “nice to have” when it is really a “must have”
- No full use of Communications/PR function

Maintaining the Momentum

- Monitor awareness of how the program is doing – use opinion surveys or conduct discussions with groups of employees.
- Pay attention to signals that people are unaware of what you are doing or have false understanding of what you are doing
- Publicize all successes – even small ones

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Capture the Benefits

Projects should be evaluated for their impact before they are approved i.e. you are making a business decision on how to spend company resources, so you should understand the cost/benefit of the project

- Hard** {
 - A – Impacts Income Statement or Cash Flow
 - B – Impacts the Balance Sheet (Working Capital)
- Soft** {
 - C – Avoid expense (or investment) due to known events that will occur in the future
 - D – Risk Management/Insurance projects which reduce/prevent severity of unpredictable events (also may include the ability to capitalize on a market opportunity)

***Measuring benefits objectively helps sustain the momentum .
Tangible benefits 'energize' the initiatives.***

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Impact of Project Review

A survey was conducted with 5 participating shared services organizations to study the impact of time spent on reviews on the performance of improvement projects.

The data collected is displayed:

Review time per Week HOURS	PROJECT PERFORMANCE		
	Low	Medium	High
< 0.1	17	21	12
0.1 - 1	31	53	21
> 1	17	42	71

Chi-Square test conducted to test if review time is related to project performance.

Null Hypothesis : Project performance is independent of review time, i.e. not related to time spent on reviews

Alternate Hypothesis : Project performance is related to time spent on reviews

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Project Review

Chi-Square Test: Low, Medium, High

Expected counts are printed below observed counts

	Low	Medium	High	Total
1	17 11.40	21 20.35	12 18.25	50
2	31 23.95	53 42.74	21 38.32	105
3	17 29.65	42 52.91	71 47.44	130
Total	65	116	104	285

$$\text{Chi-Sq} = 2.747 + 0.021 + 2.138 + 2.077 + 2.465 + 7.825 + 5.396 + 2.250 + 11.702 = 36.622$$

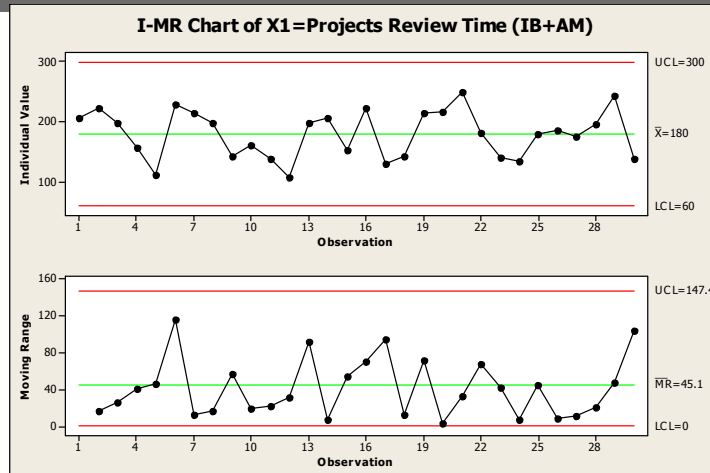
$$\text{DF} = 4, \text{ P-Value} = 0.000$$

Interpretation:

- p-value = 0.000
- p-value < α risk (0.05): reject H_0
- Infer H_a : Sufficient evidence that process improvement project performance and and time spent on reviews are dependent

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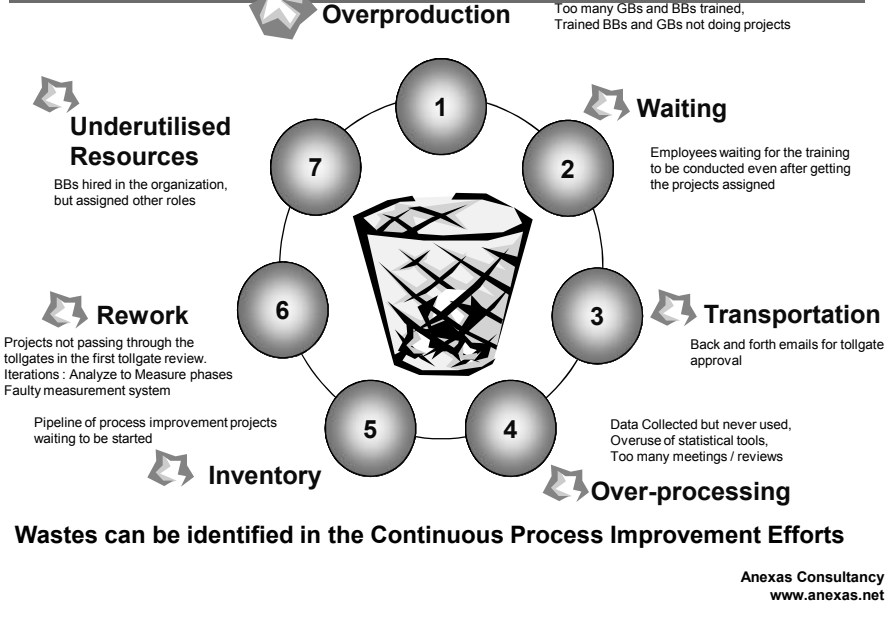
Control Charts for Review Time



- Minutes spent of project review in IB Ops and Asset Management Ops are collected on weekly basis
- The values are added to get number of minutes spent on review in DBOI
- These values are plotted on I-MR chart
- Special causes are investigated and acted upon
- Out of Control points are indicative of potential failure of improvement initiative

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Muda – The Seven Wastes



Conclusion

- A process improvement program should be designed such that it caters to the strategic objectives of the organization
- Value Stream Mapping, elimination / reduction of NVAs and spotting of similar processes delivers quick successes, which energize the transformation initiatives
- Efficient governance model is essential for transparency, timeliness and sustainability. Reviews are necessary to maintain momentum.
- Project duration should be monitored to avoid negative impact on the program due to delays
- Measuring the benefits and publicizing successes helps the initiative
- Statistical tools can be applied to continuous improvement process

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Conclusion

Know where you are going!



Always Stay Focused

Thank You!

Questions?

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