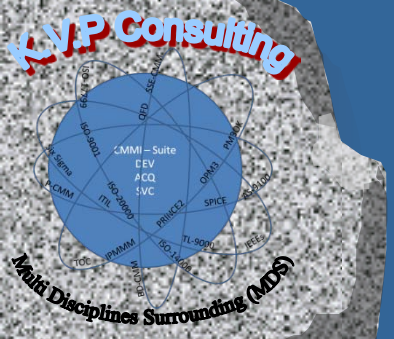
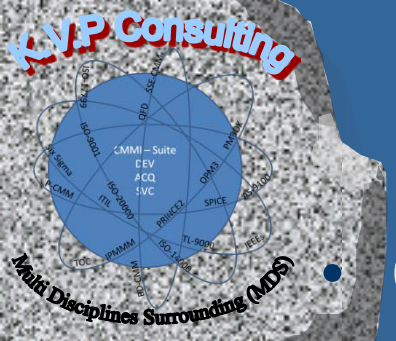


A Process Performance Models Case Study

Based on sample (from) 450 project feasibility checks

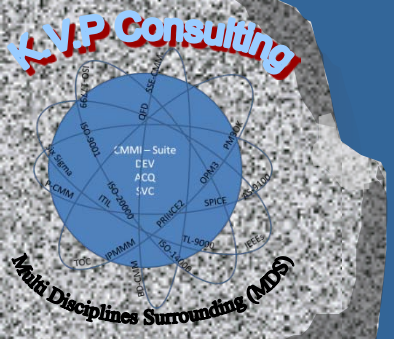
and

Presented with practical usage and implementation tips



Agenda and Topics

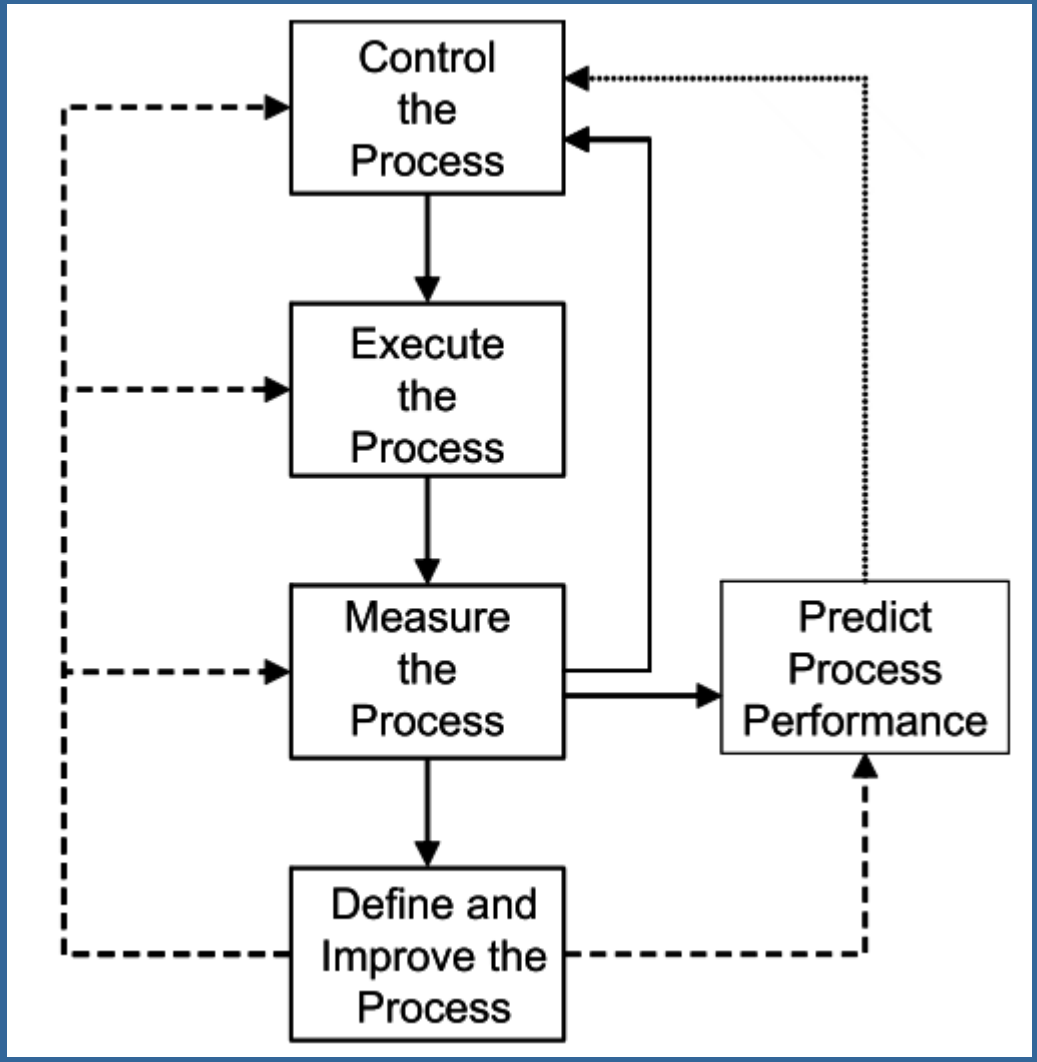
- Opening
- Organizational Background and Process ROI
  - Project Idea and Proposal Preposition Development
  - Quality Audits and Progress Check Calibration
  - Call and Incident Center Performance
- Case Studies and High Level Process
  - Project Idea and Proposal Preposition Development
  - Quality Audits and Progress Check Calibration
  - Call and Incident Center Performance
- Main Questions for High Maturity Process Improvement
- Pilot Lessoned Learned

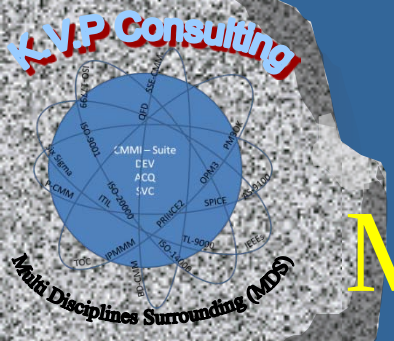


Definition of Process

- A set of interrelated activities, which transform inputs into outputs, to achieve a given purpose.

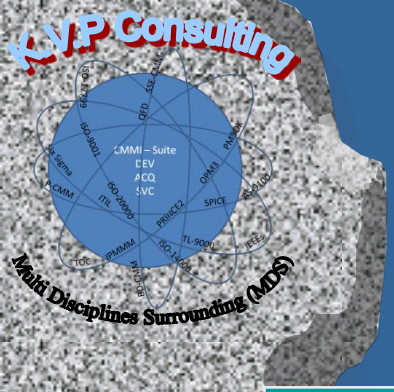
Process Control





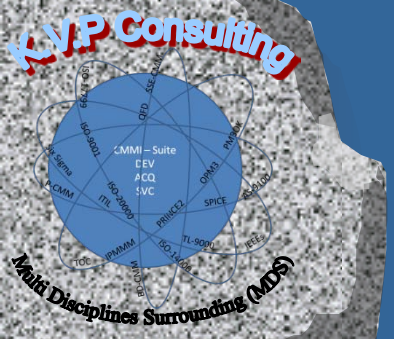
Measuring Process Performance

- Key Questions
  - What is the current performance?
  - Is this value "good"?
  - Is it changing?
  - How can I make the value “better”?
- Candidate Attributes
  - Definition (completeness, compatibility)
  - Usage (compliance, consistency)
  - Stability (repeatability, variability)
  - Effectiveness (capability)
  - Efficiency (productivity, affordability)
  - Predictive Ability (accuracy, effects of tailoring and improvements)



Some Examples

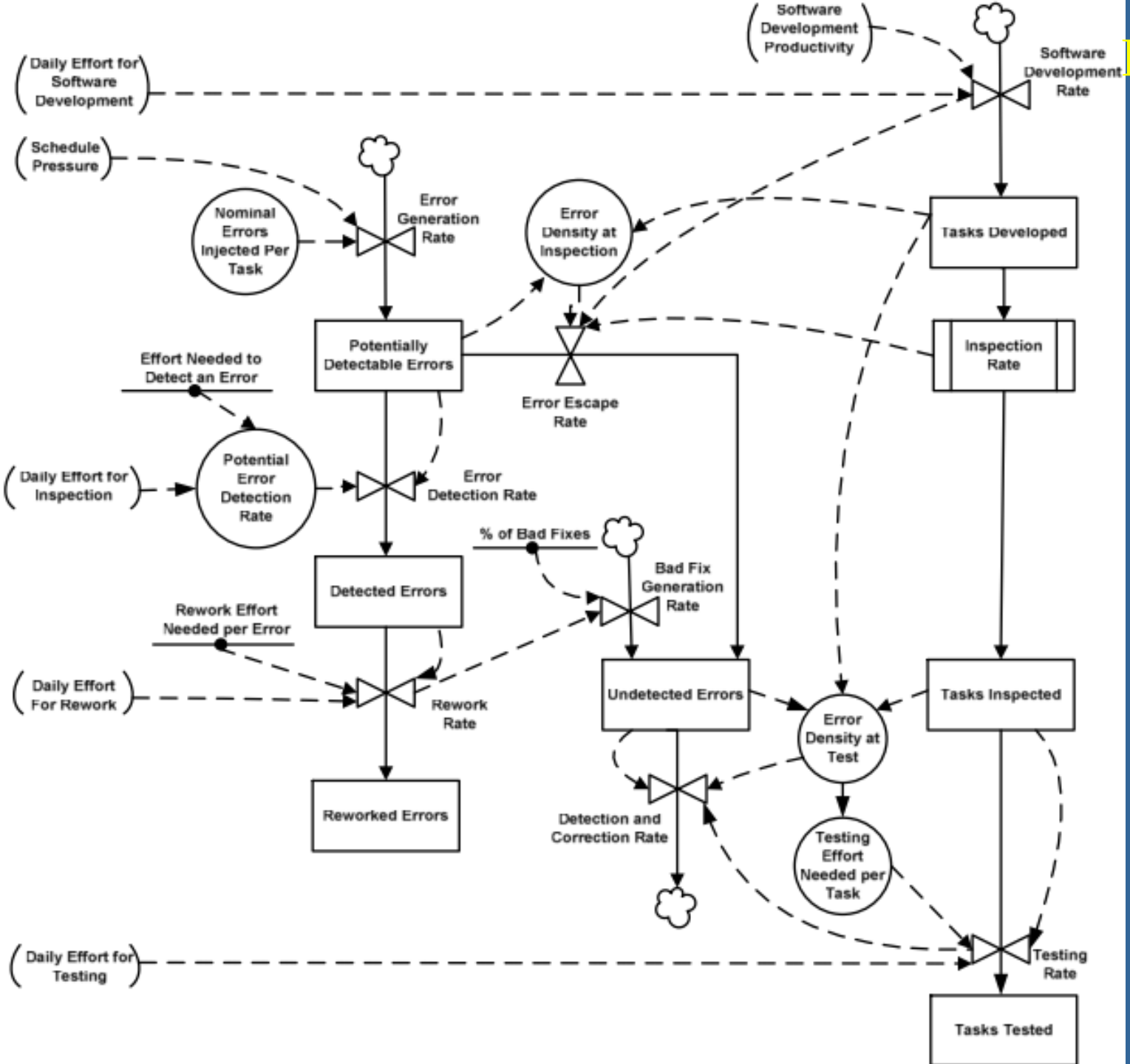
Goal	Measure
Completeness	The number of process elements added, changed, and deleted during tailoring.
Compliance	Number of discrepancy reports generated by Quality Assurance audits
Stability (volatility)	The number of process elements changed within a specified time interval.
Effectiveness	Product quality
Effectiveness	Defect leakage to subsequent phases
Efficiency	Productivity (or production coefficient)
Efficiency	Rework as a fraction of total effort
Predictability	Probability distribution for an estimated quantity or related population statistics

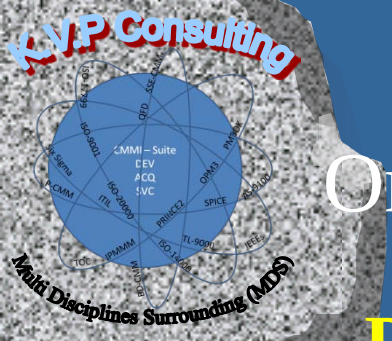


Opening

- Typically when one read the CMMI-SVC he may think on the classic service provider organization
- The model provides guidance for the application of CMMI best practices by the service provider organization.
- Best practices in the model focus on activities for providing quality services to the customer and end users.
- In this presentation the ‘services’ is a project feasibility checks provided by a dedicated group

Relationships for CoQ





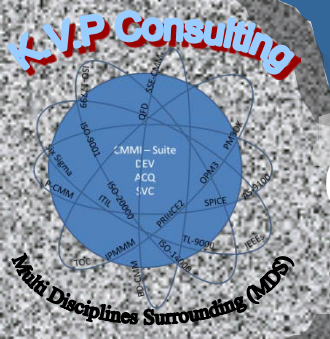
Organizational Background and Process ROI

Project Idea and Proposal Preposition Development

- If an average developer day cost is ~7000
- The total Program effort was 10220 day (100%)
- The testing phase was 1480 day (14.5%)
- Defect that are the result of documentation are 69% of all defects

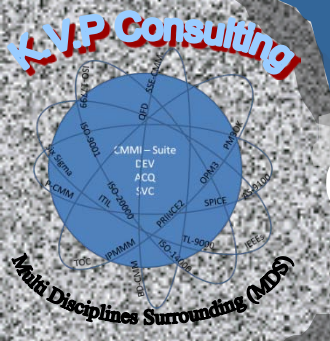
- If we will assume the to correct 69% of all defects will take around 40% of the testing duration; ☞ means that:
  - that will be 740 day
  - With the overall cost of 518000
- However to add 100 review days in the static tests and another 20 of code inspection will end with the cost of 2100000

- And still we have saved at least 3080000 (440 days)
- Means that we ware able to reduce 4.5% of the project time



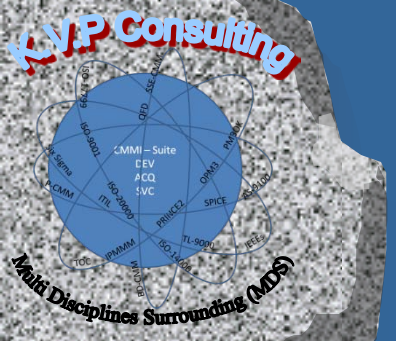
Organizational Background and Process ROI

- **Quality Audits and Progress Check Calibration**
  - As for today most of major industries which runs and mange large and complex programs need to comply with more than just one quality standards in many disciplines (e.g. HW, optics, software) use large groups of internal and external assessors that perform implementation checks, progress checks, readiness reviews and formal appraisals.
  - These communities are typically composed from groups of very experienced and professional individuals that have the best knowledge in their professional domain but not necessarily on how to conduct an efficient and effective appraisal which provide meaningful results
  - The combination of the effort and expected resources increase the risks on qualification of auditors, domain knowledge, and calibration of results and findings effectiveness



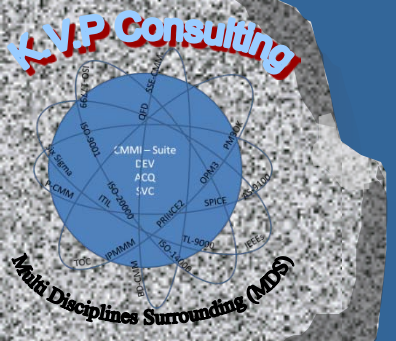
Organizational Background and Process ROI

- **Quality Audits and Progress Check Calibration**
  - By measuring the following attributes, we were able to increase usability of the progress checks by 47%, and quality of deliverables by 37%
    - Role based profile and criteria
    - Calibration mechanism and criteria
    - Evaluation mechanism and criteria
    - Leveling the different quality engineers and ‘auditors’
    - Flowing specific trainings (on different levels) as personal development and qualification criteria
    - Listing specific performances as indicators for leveling justifications
    - Structuring the different audits and reporting guidelines in a single mandatory to follow process,



Main Steps for High Maturity Process Improvement

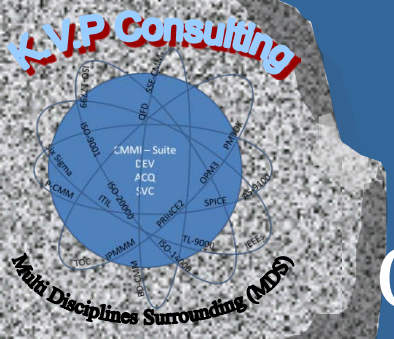
- During our analysis and planning, we were able to identify improvement targets in main lifecycle areas such as
  - operations,
  - information,
  - governance,
  - people
  - organizational structure,
  - portfolios,
  - project execution,
  - finance.
- And as in core process that are critical to the system success such as stakeholder management, technical interfaces and integration.



Main Steps for High Maturity Process Improvement

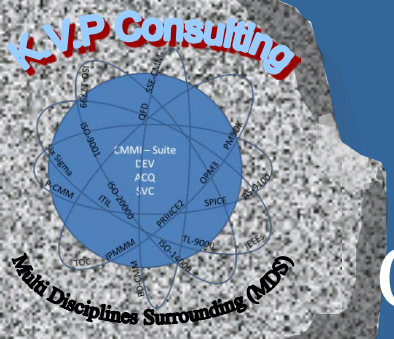
As the result of this observation we have built an action plan,

- Then in the second step we have built a services roadmap using the CMMI-SVC, that allow companies to begin the improvement journey, and manage the transformation to maturity by building on each successive step, and ultimately delivering the benefits expected:
  - service reuse,
  - improved perception
  - response time,
  - interoperability,
  - business agility.
- Service performance and its impact on the organization governance is a significant part of that journey



Organizational Background and Call and Incident Center Performance

- The service provider provides a large number of services to its customers, which are mainly departments from a sibling organization.
- To manage the communication with customers regarding those services, the department has implemented helpdesk management and problem management processes.
- The implementation of these processes has been based on the CMMI-SVC with elements of other CMMIs (for the organization maturity) and ITIL (for the individuals' education).

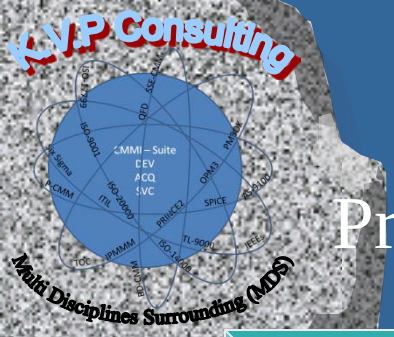


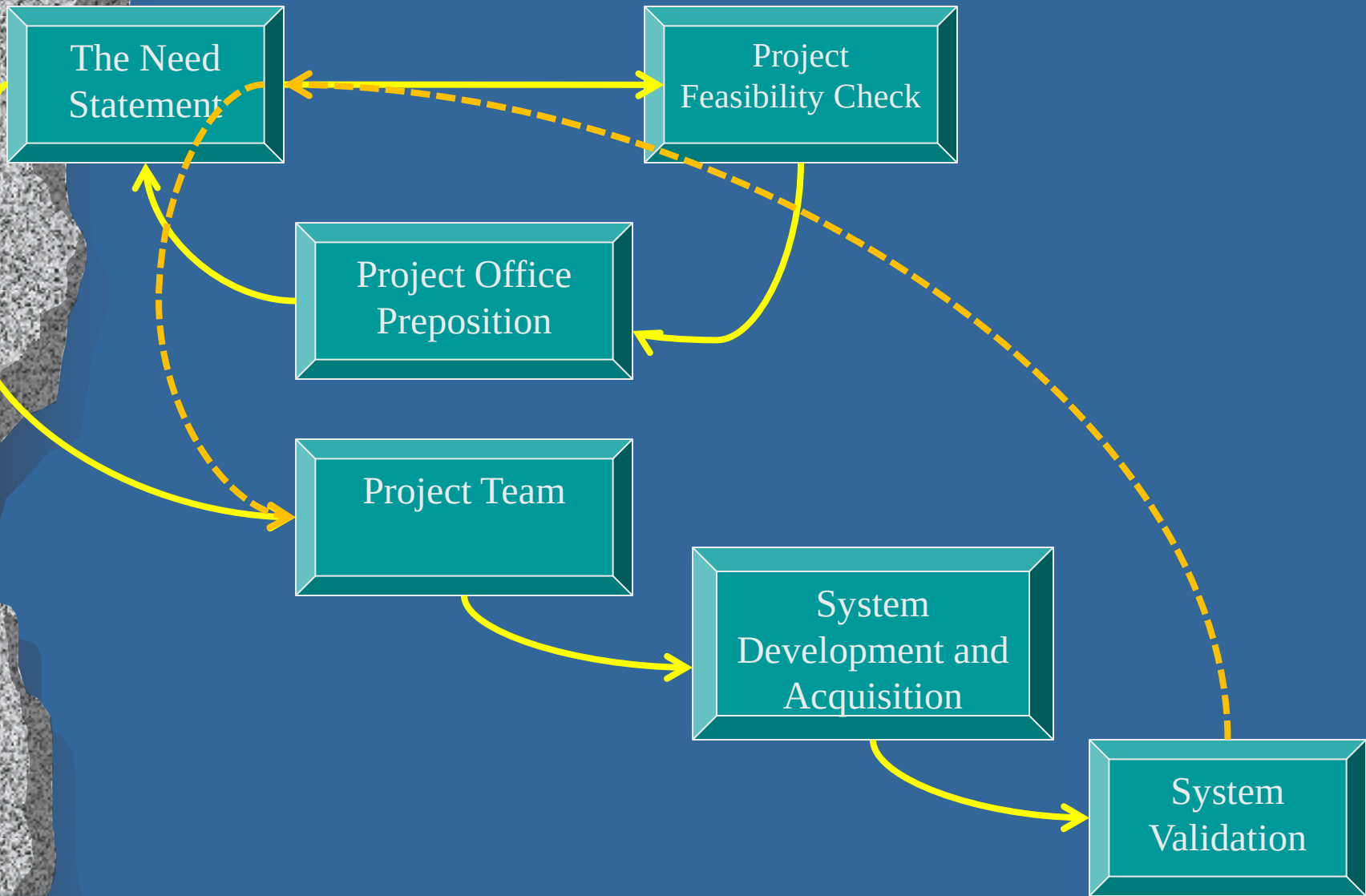
Organizational Background and Call and Incident Center Performance

- Program Management Office is used to guarantee the continuity of services, while Analysts Management Team is used to improve the level of service in the future. So, PMO deals with *requests*, whereas Requirements Management Team is concerned with solving the *challenges* that cause these requests.
- The goal of this case study was to assess the quality and performance of the feasibility checks Management process.

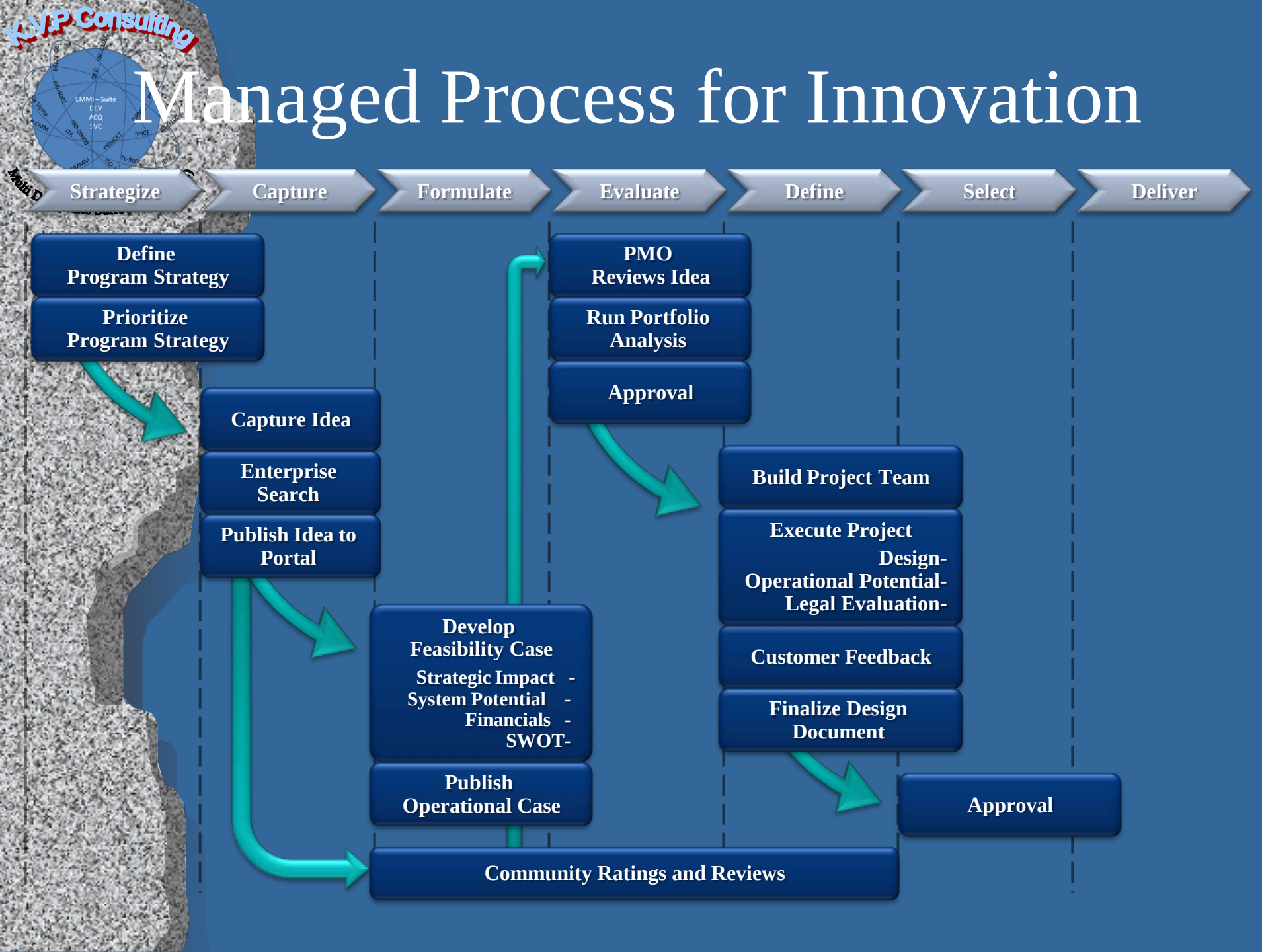
Process

Project Idea and Proposal Preposition Development

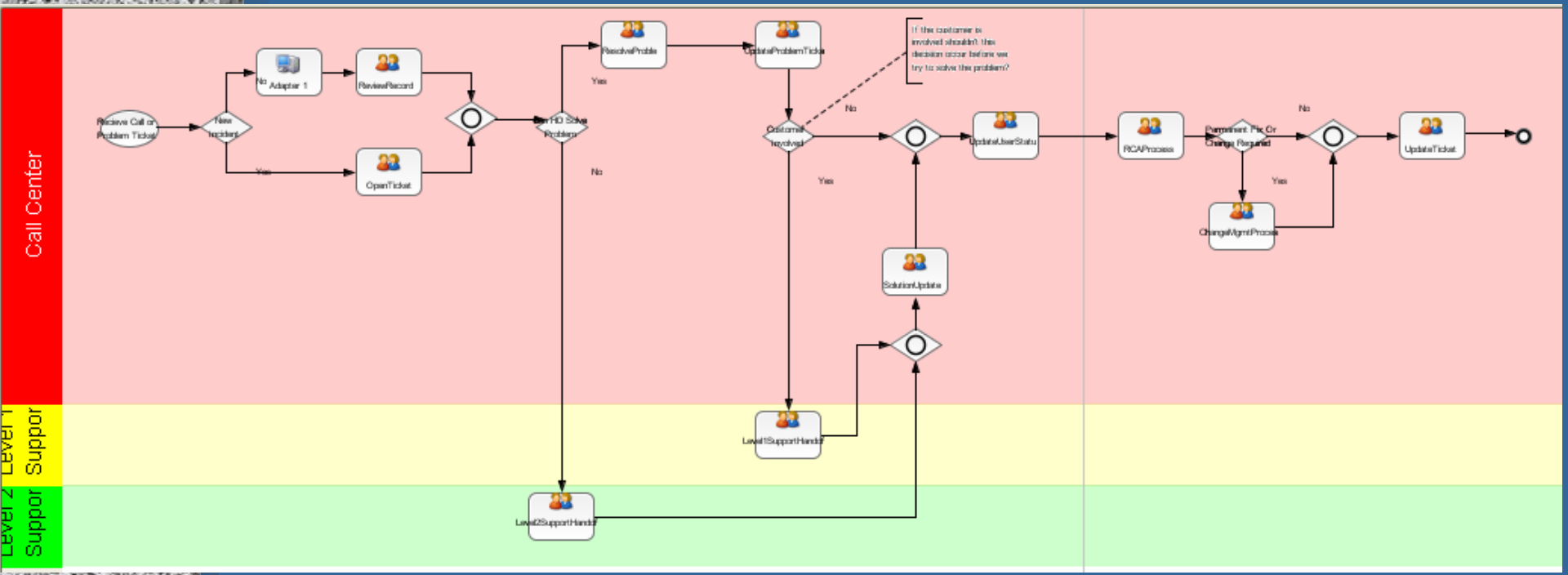




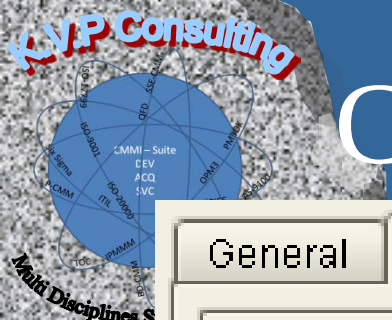
Managed Process for Innovation



Case Study


Call Center
Level 1 Suppor
Level 2 Suppor
Recieve Call or Problem Ticket
New Incident
No
Adapter 1
ReviewRecord
Yes
OpenTicket
Can HD Solve Problem
Yes
No
ResolvePrblm
UpdateProblemTicket
If the customer is involved shouldn't this decision occur before we try to solve this problem?
Customer Involved
No
Yes
UpdateUserStatu
SolutionUpdate
Level1SupportHandoff
Level2SupportHandoff
RCAProcess
Prominent Fix Or Change Required
No
Yes
ChangeMgmtProcess
UpdateTicket

Case Study



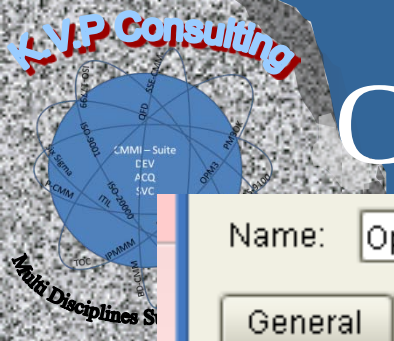
General | Fields | Simulation

Dataslot: AllDataslots

	Name	Type	Label	Editable	Required
✓	HDResolution	Boolean	H d resolution	✓	
	ScheduledDate	Date	Scheduled date	✓	
	Attachments	Document	Attachments	✓	
A	CustomerConta...	String	Customer conta...	✓	
A	CustomerName	String	Customer name	✓	
A	Description	String	Description	✓	
A	EstimatedDurat...	String	Estimated durat...	✓	
A	Installation	String	Installation	✓	
A	Skid	String	Skid	✓	
A	TicketPriority	String	Ticket priority	✓	

Dataslots

Case Study



Name: OpenTicket

General | Fields | Simulation

Scenario: (default)

Work Time: 2 hours ...

Randomize duration using: Normal Distribution (StDev=(none)) ...

Resources

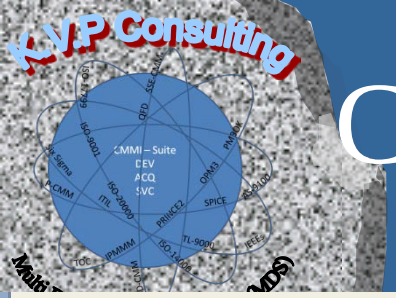
Name	Value	Unit	Cost per unit	Threshold

Modify...

Reset

OK | Cancel | Help

Case Study



General | Fields | Simulation

Scenario:

Work Time:

Randomize d

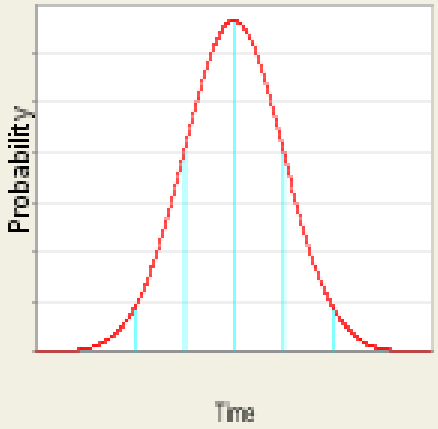
Resources

Name

Modify...

Reset

Distribution of Probability



Type: Normal

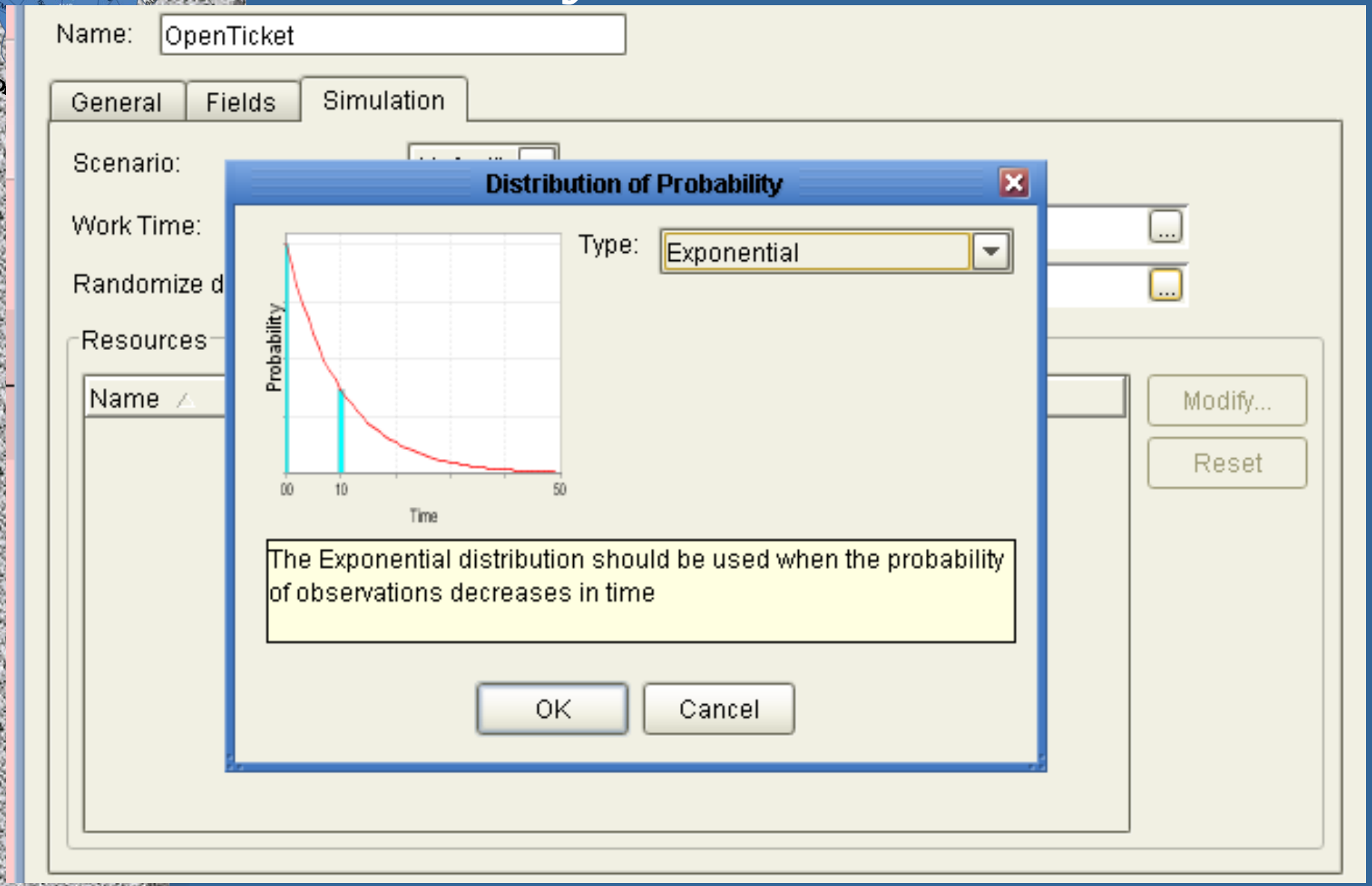
StDev:

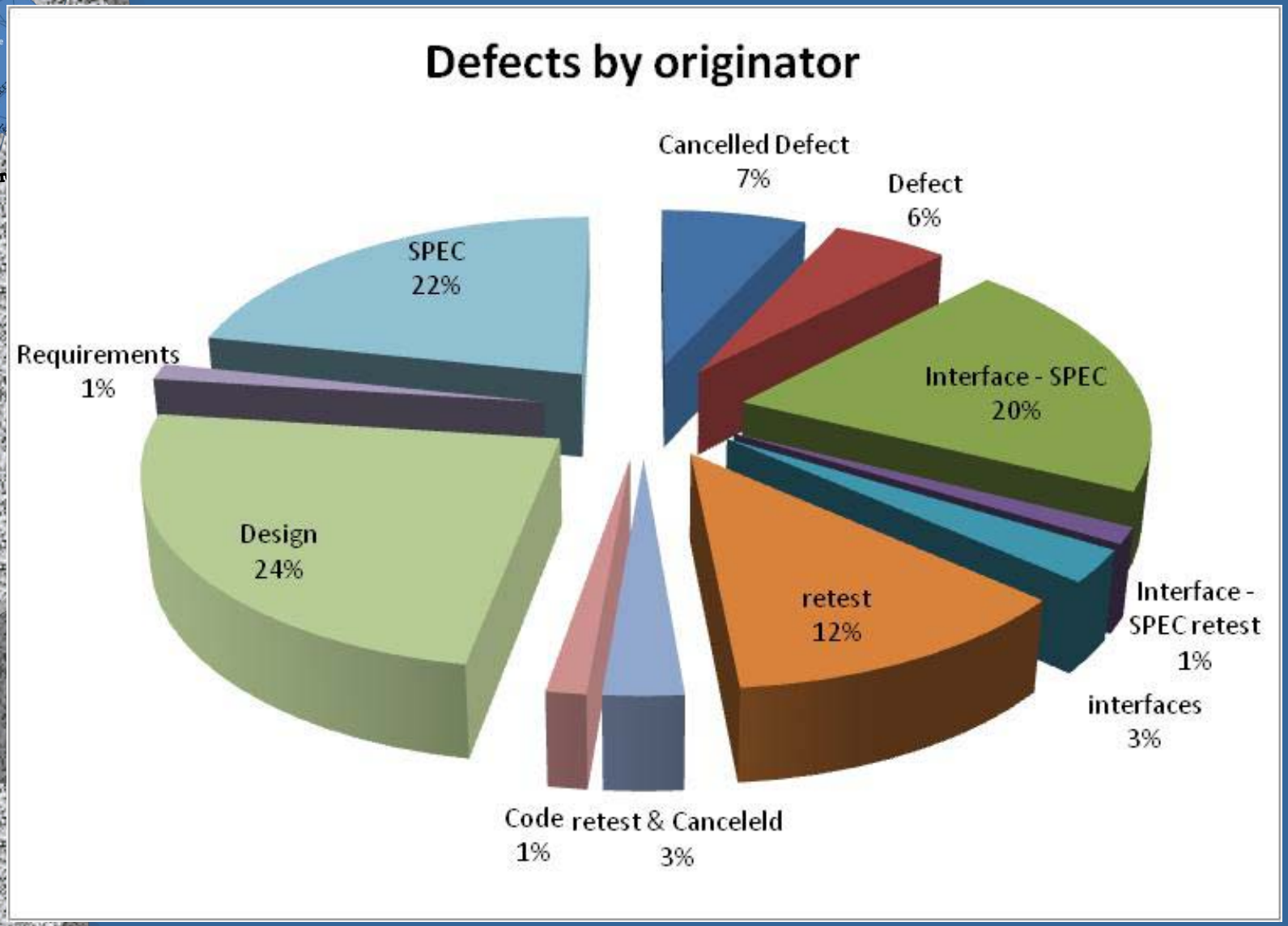
- Constant
- Exponential
- Normal

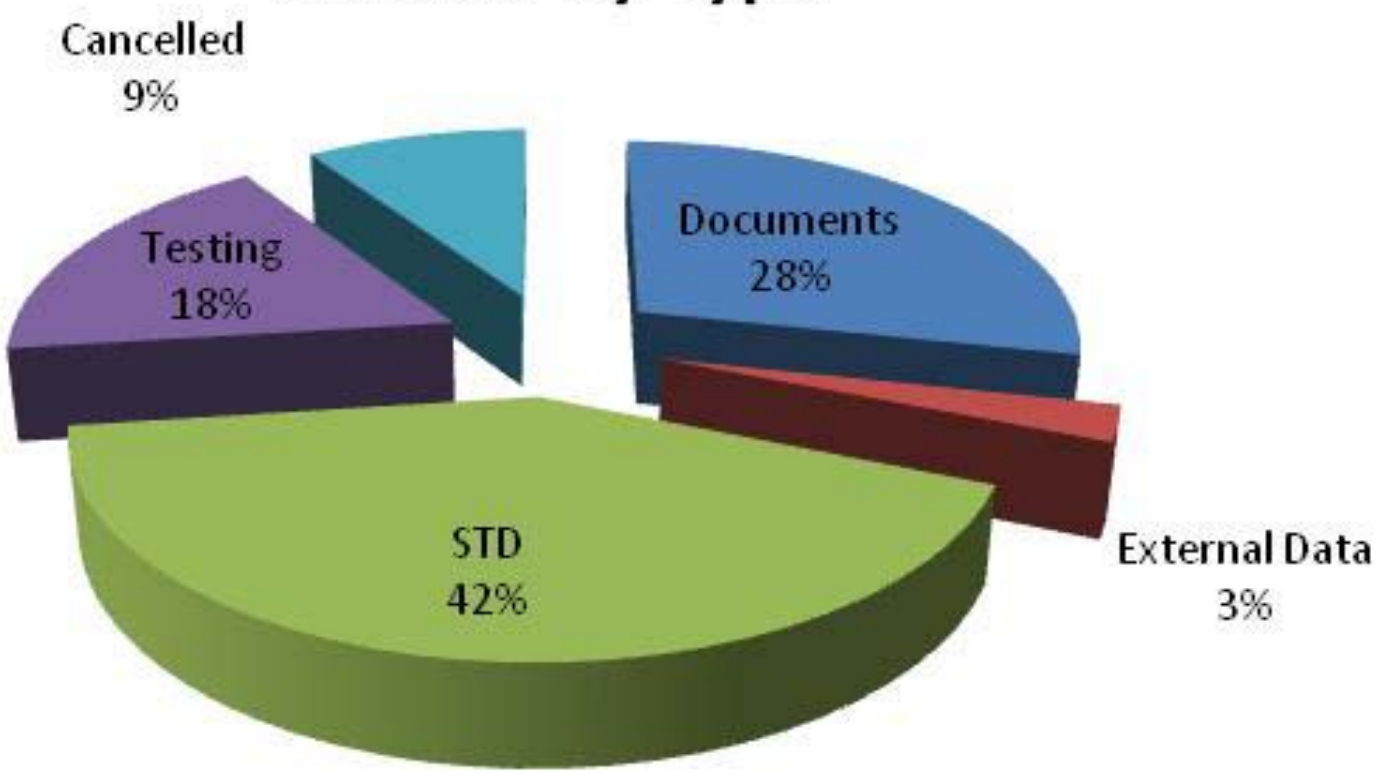
The Normal Distribution should be used when observations tend to accumulate around a particular value rather than spread evenly across a range of values

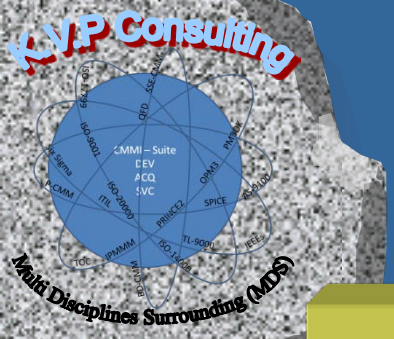
OK | Cancel

Case Study


Name: OpenTicket
General
Fields
Simulation
Scenario:
Work Time:
Randomize d
Resources
Name
Modify...
Reset
Distribution of Probability
Type:
Exponential
Probability
00
10
50
Time
The Exponential distribution should be used when the probability of observations decreases in time
OK
Cancel


Defects by originator
Cancelled Defect
7%
Defect
6%
SPEC
22%
Requirements
1%
Interface - SPEC
20%
Design
24%
retest
12%
Interface -
SPEC retest
1%
interfaces
3%
Code
1%
retest & Canceleld
3%





Process

Quality Audits and Progress Check Calibration

Plan Assessment

Prepare for Assessment

Gather Data

Consolidate Data
Organize and Combine Data

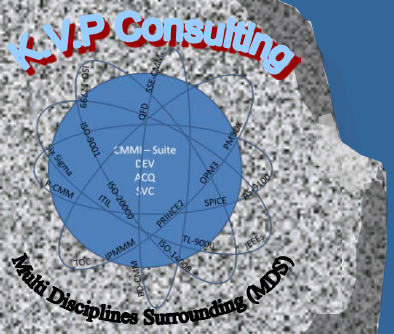
Determine Data Sufficiency

Review and Revise Data Gathering Plans

Make Rating Judgments

Report Results

Process
Quality Audits and Progress Check Calibration



Ratings

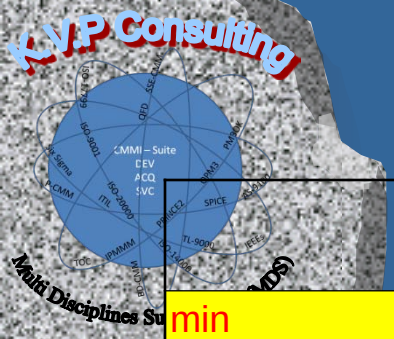
Findings

Observations

Notes

Interviews **Doc Review** **Instruments** **Presentations**

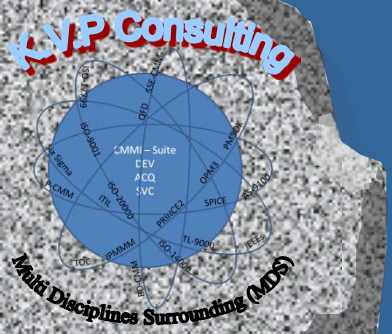
Data



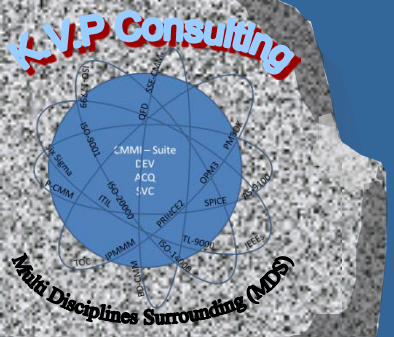
Center	
min	0%
max	100%
ave	50%
sample Projects	104
% From ORG	100.00%
Sample Practices	19629
% From Sample	100.00%
is 0	2649
% of is 0	13.50%
>4	9147
% of >4	46.60%
<4	7828
% of <4	39.88%
is 4	2654
% of is 4	13.52%
>6	4818
% of ≥6	24.55%
mean	#NUM!
median	4
mode	8
VAR	7.279

Areas

	A1	A2	A3	A4	A5	A6	A7
min	0%	0%	0%	0%	0%	0%	0%
max	100%	100%	100%	100%	100%	100%	100%
ave	50%	50%	37.5%	62.5%	50%	50%	75%
sample Projects	22	6	3	13	23	13	24
% From ORG	21.15%	5.77%	2.88%	12.50%	22.12%	12.50%	23.08%
Sample Practices	3733	957	647	2069	4961	2914	4348
% From Sample	19.02%	4.88%	3.30%	10.54%	25.27%	14.85%	22.15%
is 0	526	127	154	195	914	378	355
% of is 0	14.09%	13.27%	23.80%	9.42%	18.42%	12.97%	8.16%
>4	1575	476	213	1092	1850	1413	2528
% of >4	42.19%	49.74%	32.92%	52.78%	37.29%	48.49%	58.14%
<4	1626	347	322	705	2358	1165	1305
% of <4	43.56%	36.26%	49.77%	34.07%	47.53%	39.98%	30.01%
is 4	532	134	112	272	753	336	515
% of is 4	14.25%	14.00%	17.31%	13.15%	15.18%	11.53%	11.84%
>6	779	211	82	579	775	733	1659
% of >6	20.87%	22.05%	12.67%	27.98%	15.62%	25.15%	38.16%
mean	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
median	4	4	4	5	4	4	6
mode	2	6	0	6	0	6	8
VAR	7.058	6.898	6.750	6.853	6.654	7.142	7.265


V.P Consulting
CMMI – Suite
DEV
ACQ
SVC
Multi Disciplines Surrounding (MDS)

Questions ?



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