Mindtree

Welcome to possible

WHITE PAPER

Effectively managing project performance reporting.

Summary

This white paper helps project teams identify performance measures for Information Technology (IT) support and maintenance projects, which collect and report data to help track and assess project progress, product quality, project success and customer satisfaction of a project. An effective set of performance measures provide actionable information on a focused set of metrics. This in turn provides a balanced view of project performance that can be used to improve the project management process. Performance measures also provide for accountability by laying out what is expected, when it is expected and what action will be taken if planned achievements do not occur.

The white paper highlights how Mindtree partnered with a Fortune 500 bank where the basic metrics of the team's efficiency was measured and published. The Mindtree's data warehouse team demonstrated how they established a common project performance reporting process between Mindtree and the customer's IT team. They published the comparative project efficiency and team productivity metrics on a periodic basis.

Contents

1. Performance reporting

It's difficult to manage what you can't measure and document. Every project needs to answer certain questions like, "Is the project successful? Is the new process working? Is the project team efficient? Is the outsourcing cost effective?" In order to answer these questions, it is important to have actual data which can back up the story. Hence there needs to be a mechanism where the project is measured for performance and adds value to the organization.

Benefits of performance reporting

1. Customer can fine-tune efforts based on actual performance by targeting areas of low performance, in areas of quantity, quality, cost or target solutions.
2. Customer can enter into service level agreements reasonably sure of meeting the service levels.
3. The customer can quantify and prove his team's value to his organization and therefore, justify asking for more resources.

2. Performance reporting methodology – PEMARI

PEMARI (stands for measurement planning, establishing and updating measures, measuring performance, analyzing data, performance reporting and continuous improvement) is a project measurement framework which systematically approaches performance through an ongoing process of establishing metrics, collecting, analyzing, synthesizing, reviewing and reporting performance data (fig.01).

Each stage of PEMARI has to be thought with respect to the specifications of the project requirements of performance measurement and reporting in order to make it the most effective solution.

3. Mindtree – Banking and Financial Services (BFS) project case study

Project Description

Mindtree started the journey towards building a partnership with US based fortune 500 commercial banks providing a diverse spectrum of services – support, user requests, change requests and enhancements. From the customer perspective the focus of this engagement was on round the clock productivity benefits, value added insights, faster and more flexible setup of the offshore team. The range of services Mindtree provided is explained in fig. 02.

Fig.01: Performance reporting methodology – PEMARI

Measurement planning

- Identify the performance measurement team
- Identify project areas to be measured
- Identify the tools and technologies

Establishing & updating measures

- Develop a list of potential measures
- Plan for data collection
- Communicate to data source what is expected of them
- Collect data for analysis
- Ensure data quality

Measuring performance

- Identify data source
- Plan for data collection
- Communicate to data source what is expected of them
- Collect data for analysis
- Ensure data quality

Analyzing data

- Analyzing of data
- Calculate the metric values
- Analyse and validate results
- Perform benchmarking and comparative analysis

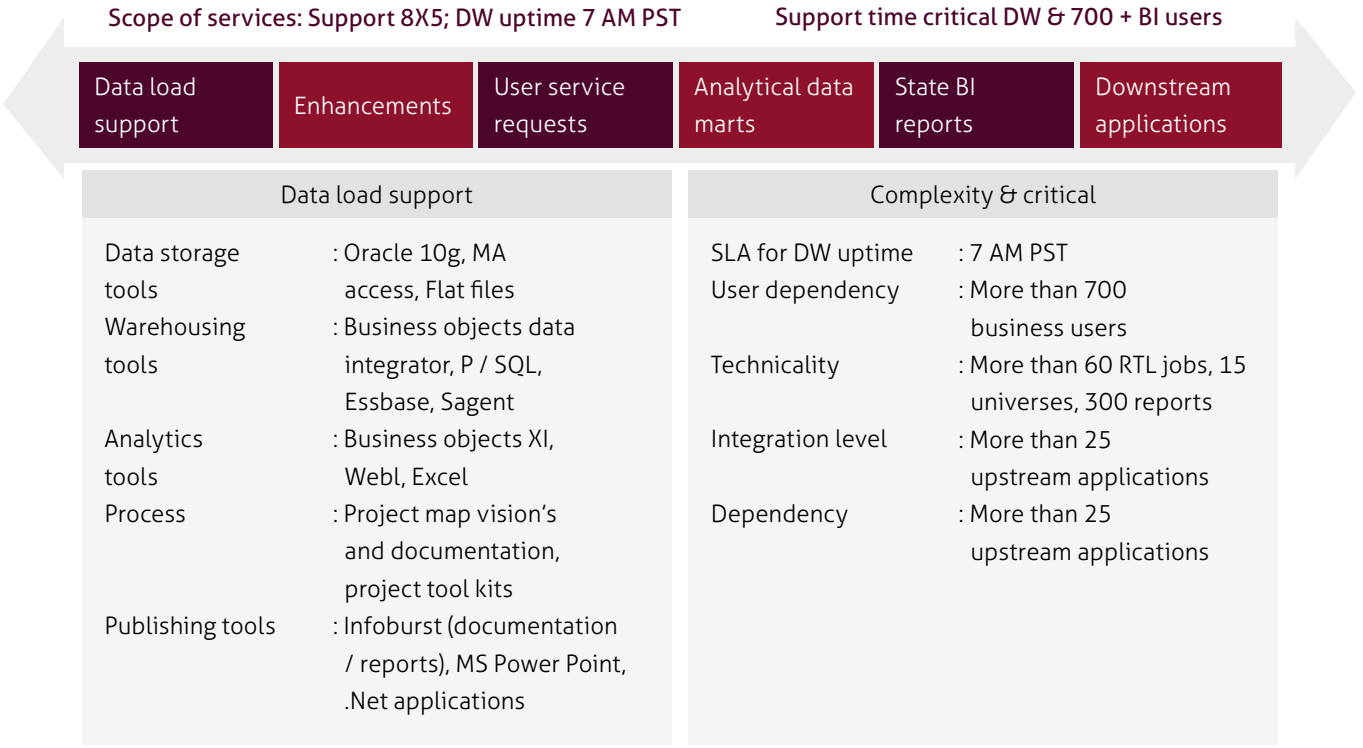
Performance reporting

- Develop a communication plan defining
  - Events
  - Target audience
  - Message
  - Objective
  - Impact
  - Comment
- Share results with stakeholders

Continuous improvement

- Review and revise the target metrics value
- Learn from feedback
- Formally collect lessons learned
- Target action items to achieve target set

Fig. 02: Range of services provided by MIndtree



3.1 Measurement planning

The Mindtree team is measured on the performance of the various deliverables as listed below:

- Production support
- Resolving user requests (tickets)
- Working on enhancements and projects

Mindtree approach for measuring team efficiency as compared to the customer is explained through the block diagram. Fig. 03.

In order to make sure that the efficiency comparison between Mindtree and customer team is base-lined on the common ground, Mindtree defined common tools to support metrics calculations. Some of those are listed below.

1) Ticket complexity – The ticket complexity code and the complexity level has been arrived after studying the six months history of tickets. The sample is attached in Fig. 04.

2) Ticket assignment SPC (Single Point of Contact) – The assignment of ticket has to be done by SPC for the entire team making sure the equal distribution is made.

3) Project estimation template – A common project estimation template has been built and agreed upon between Mindtree and customer IT team to arrive at the project work breakdown structure, deliverables and estimated effort. With this, both the teams can make sure that the estimations done at any point in time for any project will be same. The sample of splitting the deliverables / outputs for a project is shown in Fig. 05.

4) Project estimation mechanism – The project estimation mechanism is to arrive at the list of deliverable for each project. Every deliverable estimated in the estimation sheet will be assigned with the effort unit, complexity and confidence level.

5) Project complexity definition – Mindtree and client agreed upon the common complexity definition for different type of deliverables across various technologies. The table (Fig. 06) has been used to define the complexity level for every different kind of deliverables those are available in the project currently.

6) Project sizing mechanism – The complexity of project deliverables have been arrived at based on the Mindtree standard followed in the data warehouse practice for arriving at the size of the deliverable. Fig. 07 explains about the size calculation.

3.2 Establishing and updating measures

Mindtree defined and established the metrics based on the measurement criteria. Some of the key metrics have been explained in Fig. 08.

3.3 Measuring performance

Performance measurement is based on the availability of the artifacts below:

- Data sources – ticketing tool, effort logging tool, project / CR plan, tier 4 escalation log, tickets design and code review log
- Data collection – Monthly dump of all the data sources mentioned above. Mindtree derives the data for the tickets based on the static report developed for the same. Some of the data has to be manually integrated together

3.4 Analyzing data

Below are the steps involved in data analysis process:

- Analyze the data to make sure that all the required data is available in the required format to make the metrics calculation
- Calculate the metrics values for the pre-determined metrics
- Validate the results through the Mindtree quality function team to ensure all the calculations and data are correct (Fig. 09)

Sample metrics calculation

A sample metrics called "Average Ticket Cycle Time" and the calculation method has been provided below.

Step 1: Extract data from Ticket Logging Tool into a work book for the current month

Step 2: Cycle time for a ticket = Ticket closed date – Ticket created date

Step 3: Average of Cycle Time for all tickets

Step 4: Carve out the trend of the "Average Ticket Cycle Time" for both the Mindtree and customer IT team

Step 5: Build the chart for the above trend

Fig.03: Mindtree approach for measuring team efficiency as compared to the customer

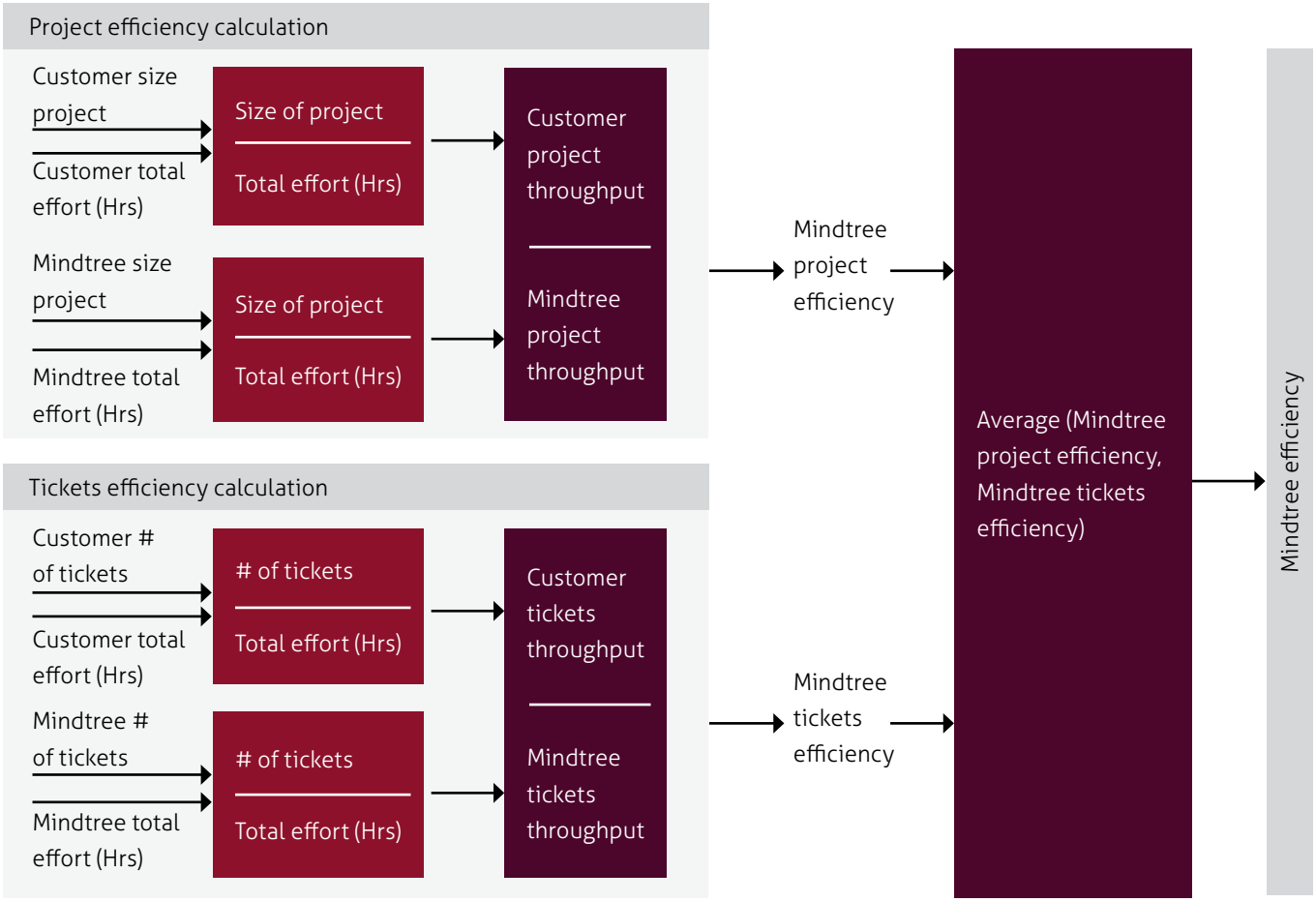


Fig. 04. Ticket complexity – sample

Complexity code	Ticket category	Ticket type	Complexity level
01	BI	Webi reports scheduling request	Simple
02	BI	Desk reports scheduling request	Medium
03	BI	Creating new reports	Complex
04	BI	Universe changes with direct object changes	Simple
05	BI	Universal changes with filter	Medium
06	BI	Universal changes with join or context changes	Complex
07	DW	Retriggering product jobs	Simple
08	DW	BODI changes (adding or modifying straight columns)	Medium
09	DW	BODI plans (creating new plans)	Complex

Fig. 05. The sample of splitting the deliverables / outputs for a project

Req. ID	Req. Sub ID	Requirement summary	D1 (Effort)	D2 (Technical complexity)	D2 (Confidence level)
01	1.1	Interface requirement	3 X effort unit	Medium	>=80%
02	2.1	Design client interface	5 X effort unit	Complex	>=80%
03	3.1	Design for accounts and balances	5 X effort unit	Complex	>=80%
04	4.1	Design staging interface	5 X effort unit	Complex	>=80%
05	5.1	Design staging to data warehouse mapping	5 X effort unit	Complex	>=80%
06	6.1	Design monthly revenue	5 X effort unit	Complex	>=80%
07	7.1	Design periodic cash payment	5 X effort unit	Complex	>=80%

Fig. 06. Complexity level for every different kind of deliverable across various technologies

Tool name	version	Tool specific unit of measurement	Featured distribution	Complexity	Size (units)
Business Object report	XI	Report	<20 objects with simple formatting for all reports, no sections, simple straight forward calculations, no prompts	Simple	1
			<40 objects, <20 objects formatting, <5 sections, multidata providers cross tab report, <10 derived objects, <2 charts, simple prompts, 1-2 derived table	Medium	2
			<40 objects with formatting, >5 sections, multi data providers, sub report drill down, <10 derived objects, >2 derived tables and customization effort	Simple	3
Business Objects web	XI	Report	<20 columns with simple formatting for all reports, no grouping, no derive tables	Simple	1
			<40 columns, <20 column formatting, <5 groups, multiple commands, cross tab report, <10 derived colums, <2 charts, simple parameters	Medium	2
			>40 columns with formatting, >5 groups, multiple commands, sub report drill down, >10 derived columns, >2 charts, security and special features (Ex, multi-lingual, cascading prompts etc.) and customization effort	Complex	3
Business Objects designer	XI	Universe	<50 tables and simple joins, OLAP data model, <5 derived objects, simple prompts, default hierarchy setup, no row level security, no loop or SQL traps, no derived tables, no aggregate awareness	Simple	1
			<10 tables and simple conditional joins, OLAP data model, <10 derived objects, simple prompts, customized hierarchy setup for drill down, row level security, <3 loops, No SQL traps, <2 derived tables, no aggregate awareness	Medium	2

Business object designer	XI	Universe	>10 tables and complex / conditional joins, OLTP data model, >10 derived objects, cascading prompts, customized hierarchy setup for drill down, row level security, >3 loops, availability of SQL traps, >2 derived tables, availability of aggregate awareness, special features (EX, multi-lingual implementation etc)	Complex	3
BODI		Data flow	One-to-one mapping, <25 transformation rules, <2 look ups, no custom functions, <3 joins	Simple	1
			<50 transformation rules, <5 look ups, <3 custom functions, <5 joins	Medium	2
			>50 transformation, >5 look ups, <3 custom functions, <5 joins	Complex	3
PL / SQL	Oracle 10g	KLOC	<500 LOC (including PL / SQL block, exception handling, comment), no analytical function, re-use existing logics	Simple	1
			<2000 LOC (including PL / SQL block, exception handling, comment), simple analytical function, simple collections	Medium	2
			<500 LOC (including PL / SQL block, exception handling, comment), complete analytical function and collections	Complex	3
Impact analysis	DART		<3 simple downstream, <10 ETL programs	Simple	1
			<10 downstream, <30 ETL programs	Medium	2
			10 downstream, >30 ETL programs	Complex	3
Data loading for downstream testing			<3 simple downstream, <10 ETL programs	Simple	1
			<10 downstream, <30 ETL programs	Medium	2
			10 downstreams, >30 ETL programs	Complex	3
Requirements analysis and design			<3 simple downstream, <10 ETL programs	Simple	1
			<10 downstream, <30 ETL programs	Medium	2
			10 downstreams, >30 ETL programs	Complex	3

Fig. 07: Size calculation table

DW practice benchmark – effort (PD)			
	Simple	Medium	Complex
BI	5	7	9
ETL	4	6	8
PL-SQL	3	5	8

DW practice benchmark – from effort benchmark (units)			
	Simple	Medium	Complex
BI	1.7	2.3	3.7
ETL	1.3	2.0	2.7
PL-SQL	0.0	1.7	2.7
	1.0	2.0	2.8
Average	1	2	3

Fig. 08: Key metrics

Service type	Metrics name	Measurement criteria / calculation formula
Tickets	Volume of over-all tickets	Resolve equal amount of tickets as compared to customer IT team
	Volume of complex, medium tickets	Resolve equal amount of complex and medium tickets as compared to customer IT team
	Cycle time for tickets	Time duration between ticket created date and closed date
	Tickets DRE	Number of tickets passed design review / total design reviews conducted
	Tickets efficiency	Number of tickets / total effort spent
Support	number of tier 4 escalations	No. of time Mindtree team escalated to customer for incident resolution (ideally zero)
Projects / CR	Support time	Show reduction in time spent by Mindtree team in production support
	Schedule variance	(Planned duration – actual duration) / planned duration
	Effort variance	(Planned effort – actual effort) / planned effort

3.5 Performance reporting

Performance reporting is the final step in reporting project performance to the management, both at Mindtree and to the customer. This primarily involves making the presentation with all the metrics values defined earlier with the scorecard of the current month's achievements against the set targets. This presentation also talks about the trend of improvements that has been seen over the period of time.

A snapshot from the presentation has been shown in fig. 10 which talks about the trending of the tickets resolution metrics. The data in the graphs below have been masked for the security reasons.

3.6 Continuous improvement

The project and the underlined operations improvement can be achieved only by establishing the continuous improvement process. As part of this project the team has taken up certain measures in order to understand the gaps in the existing processes and arrive at the steps for focusing on the continuous improvements needed. Primarily the two steps adopted by the team are listed as follows:

a) Visual display board – The visual display board is a mechanism to set the target for each individual on a monthly basis, based on the project / tickets pipeline and track it accordingly on almost near real time basis. This is an intelligent dashboard which measures the tickets resolution performance of the team at any point in time. It enables the team to re-plan, if needed, during the month in order to avoid surprises at the end of the tenure.

b) Value stream analysis – The value stream analysis is the methodology which can carve out the various stages of the process in order to capture the Cycle Time and Value Time of each of the stages in that process and bring out the difference between Cycle Time and Value Time. This methodology was applied to the Tickets resolution / projects execution process. As a result of this, the team could identify some of the stages in the process which really had a significant gap in Cycle Time and Value Time. As a next level analysis the team got the reasons behind these gaps and then worked towards mitigating the gaps. This analysis is done on monthly basis in order to identify the avenues of continuous improvement and has shown tremendous results. The sample of Value Stream analysis that was carried out for one of the months is shown in Fig. 11.

Fig. 09: Some data collected for metric calculations

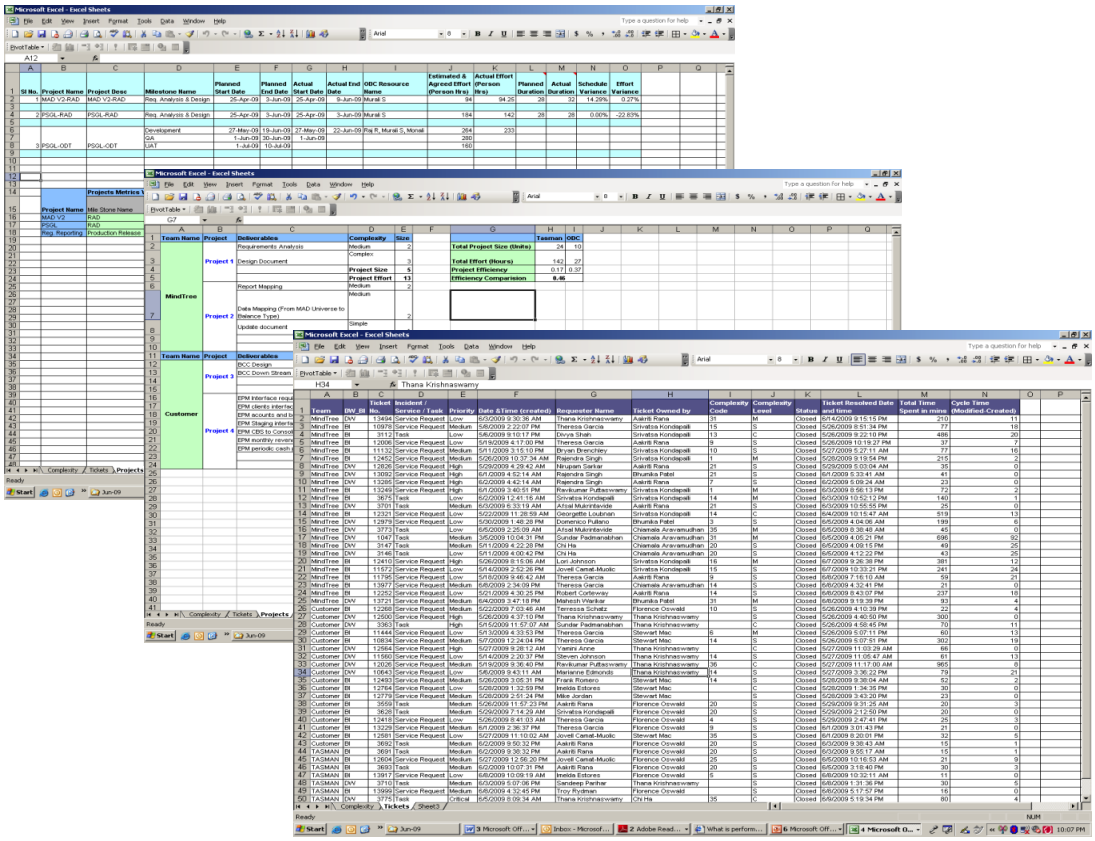


Fig. 10: A snapshot from the presentation

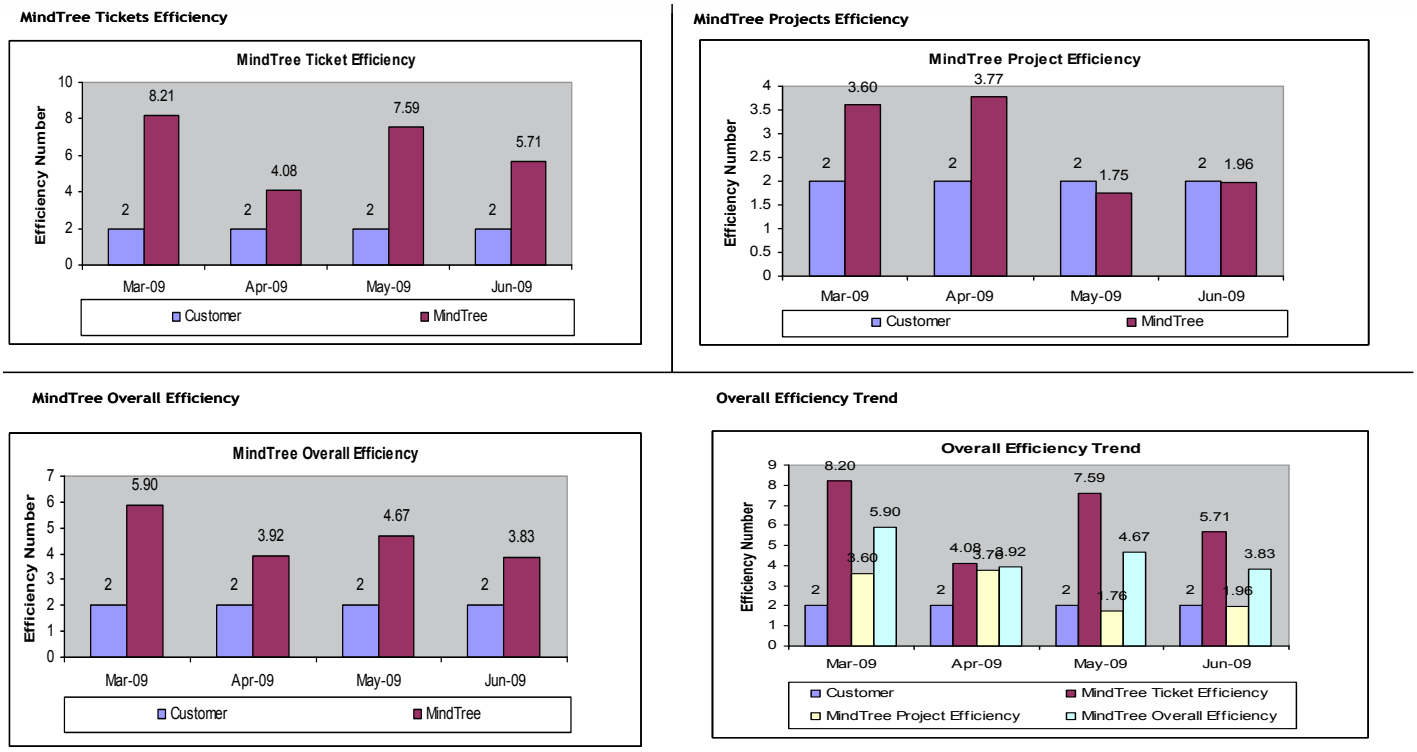
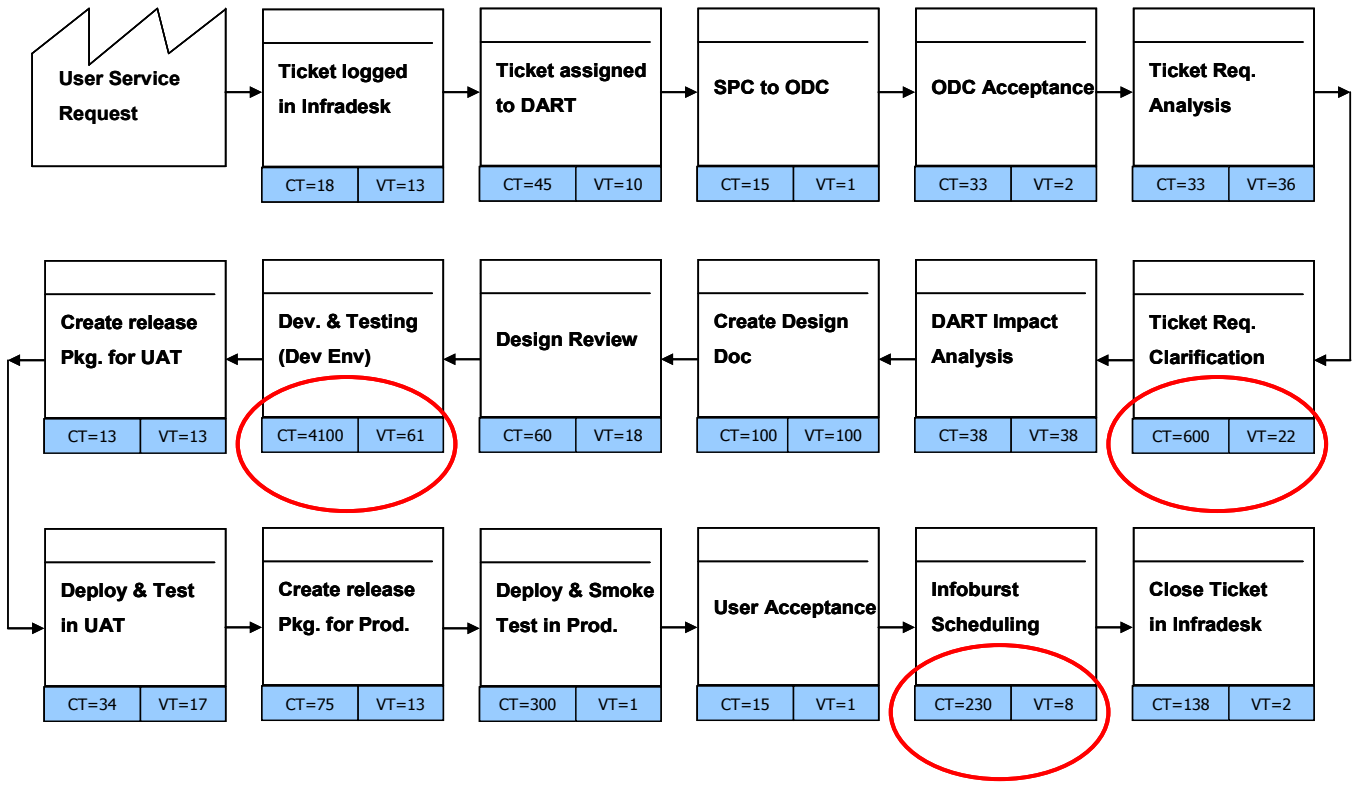


Fig. 11: The sample of Value Stream Analysis that was carried out for one of the months



Mindtree established a common project performance reporting process by the publishing the comparative efficiency and productivity metrics on a periodic basis. Mindtree made expected improvements towards the target set by customer in the defined period. This not only enabled the customer to take an intelligent decision based on our productivity, they also realized the actual cost arbitrage and recognized the value added by Mindtree's outsourcing team.

About the author:

Shubha Krishnamurthy is currently being employed in Mindtree as Program Director and has more than 14 years of IT experience in managing large scale Data Warehouse and Business Intelligence projects. She is currently managing delivery for all the Data Warehouse and Business Intelligence projects under banking and financial services and insurance industry group. Prior to Mindtree she has worked in Wipro Technologies and Patni Computers as software engineer developing data warehouse and business intelligence applications. She holds a B.E with specialization in Electronics and Computer Science stream from S.D.M Engineering College of Technology, Dharwad.

About Mindtree

Mindtree is a global information technology solutions company with revenues of over USD 400 million. Our team of 11,000 experts engineer meaningful technology solutions to help businesses and societies flourish. We enable our customers achieve competitive advantage through flexible and global delivery models, agile methodologies and expert frameworks.