Reporting & Analytics

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1 Shrinkage Report Improvements

1.1 Summary

Building on the feature set of the Shrinkage Report described in [1] and feedback from the stakeholders of the report resulted in an updated set of requirements:

- Shrinkage Categories to be in line with Capacity Planning & Budgeting
- Removing Lunch from Shrinkage calculations
- Incorporating Unproductive Hours to get a more accurate view of shrinkage data
- Incorporating Occupancy metrics into the Shrinkage report to get a better view on scheduling efficiency

In addition to these requirements, I had to collaborate with a member of the Reporting Team whose responsibility it was to apply these same metrics on an Agent level. It was critical that the algorithms and calculations used were uniform at the group level that I was reporting on and the individual level that my colleague was reporting on.

1.2 Features

1.2.1 Previous Feature set

- Calculation of Shrinkage Hours and therefore Actual Scheduled Hours at a 30 minute resolution
- Shrinkage calculations that take into effect the sub groupings of our call centre staff and hence matched to our channel, site, language and skilling models.
- Ability to leverage static group information administered by Workforce rather than the Dynamic activity based capability information maintained by Genesys. This allowed us to compensate for potential errors in the activities generated by Genesys.
- Timeframes that ranged from midnight to midnight and accurate handling of timeframes that cross day boundaries. (e.g. overnight staff)
- Granular shrinkage buckets and a grouping of shrinkage types allow us to drill down from higher level groupings when needed.
- A snapshot feature where we generate actual shrinkage and scheduled hours at the start of the day and are able to compare that snapshot to updated shrinkage and scheduled hours throughout the day.

- A “Settings” feature where we are able to add/remove/modify grouping information and shrinkage bucket information through mapping tables and not through code.
- Easy to use with the ability to correct user errors with relatively little effort.
- Ability to consolidate Shrinkage into daily, weekly, monthly, annual reports at an overall and sub grouping level with comparisons of forecast/actual shrinkage.
- High performance where large datasets can be processed in relatively short periods of time

1.2.2 New Feature Set

In addition to the features above, these are the new features below:

- Shrinkage categories updated to be in line with Capacity Planning & Budgeting
- Lunch time frames removed from shrinkage calculations to keep in line with Industry Standards
- Ability to calculate the actual productive time that an Agent gave the company versus the productive time that the schedule indicates. This allows us to be able to account for discrepancies where Agent schedules’ are not in sync with the actual events of the day
- The ability to calculate Sign-in percentages with the newly available actual vs scheduled productive time
- Pulling in Agent state data from the Genesys database also allowed us to generate occupancy metrics that we could use to determine schedule efficiency
- The new Unproductivity shrinkage category which allows us to calculate FTE gain/loss to the company
- Bug fixes, accuracy improvements resulting from collaboration with a member of the Reporting Team

1.3 Evolution

The evolution of the Shrinkage Report started with the usual algorithm that I follow for all my projects. Larger issues are broken down into smaller issues and they are further broken down into even smaller issues. When I am tackling small issues, it tends to be easy and the solutions form the blocks for the bigger problems.

Many of the core algorithms were developed and outlined in [1]. The fine-tuning of many of the algorithms was necessary because I was drawing in data from multiple sources and some of these sources had large volumes of data to parse through. Many iterations and combinations of sorting/filtering through data had to be tested to create an acceptably performing solution.

1.3.1 Multi channel Productivity Calculator

One algorithm that I want to highlight here is the solution for calculating productive time with multi channel Agents, i.e. Agents that work on multiple channels of client interaction at any one time.

Agent	Channel	Start Time	End Time
Agent 1	Email	15:00	15:10
Agent 1	Social Media	14:55	15:15

Table 1: Multi channel Agent state

In this situation [Table 1], if we add the time frames on each of the rows above, we over estimate the productive time of the agent as they overlap. The algorithm [Figure 1] instead does the following:

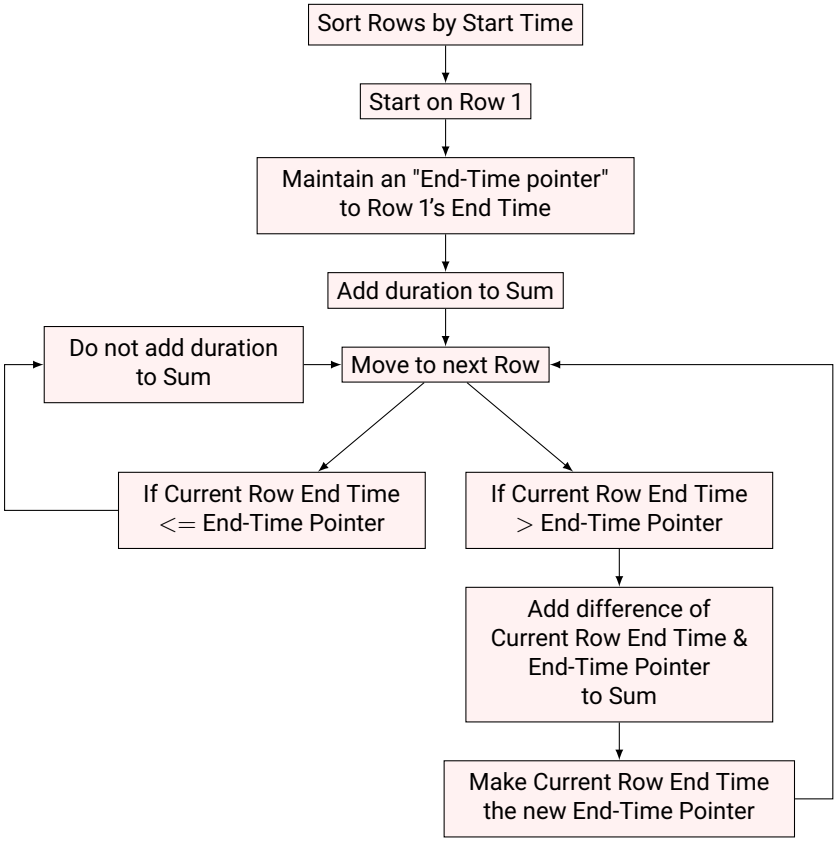


Figure 1: Algorithm $\rightarrow$ Multi channel productivity calculator

The multi-channel productivity calculator is also used in the Multi-channel Stats Calculator Report [Section 6]

1.4 Collaboration

One of the more enjoyable aspects of this project was collaborating with my colleague James Arseneault from the Reporting Team. We approached the same problem sometimes in very different ways and this helped us fix bugs that cropped up quite easily. We were able to start at the output that was sometimes not in sync and reverse our course back to see where the divergence was happening. We were both commended on the cross functional nature of our collaboration.

1.5 Award

I was recognized for the work I did on Shrinkage and it's integration with our Intra-day Service Status Report (ISSR) [Section 2] on May 2017 as a winner of the Support Hall of Fame. I have attached a snippet of the article in our monthly Tangerine Service & Sales publication [Figure 2].

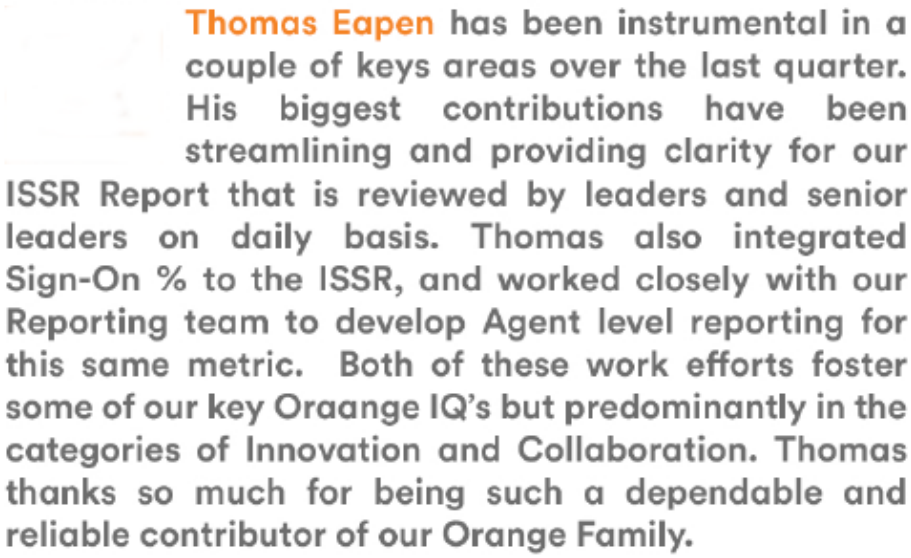
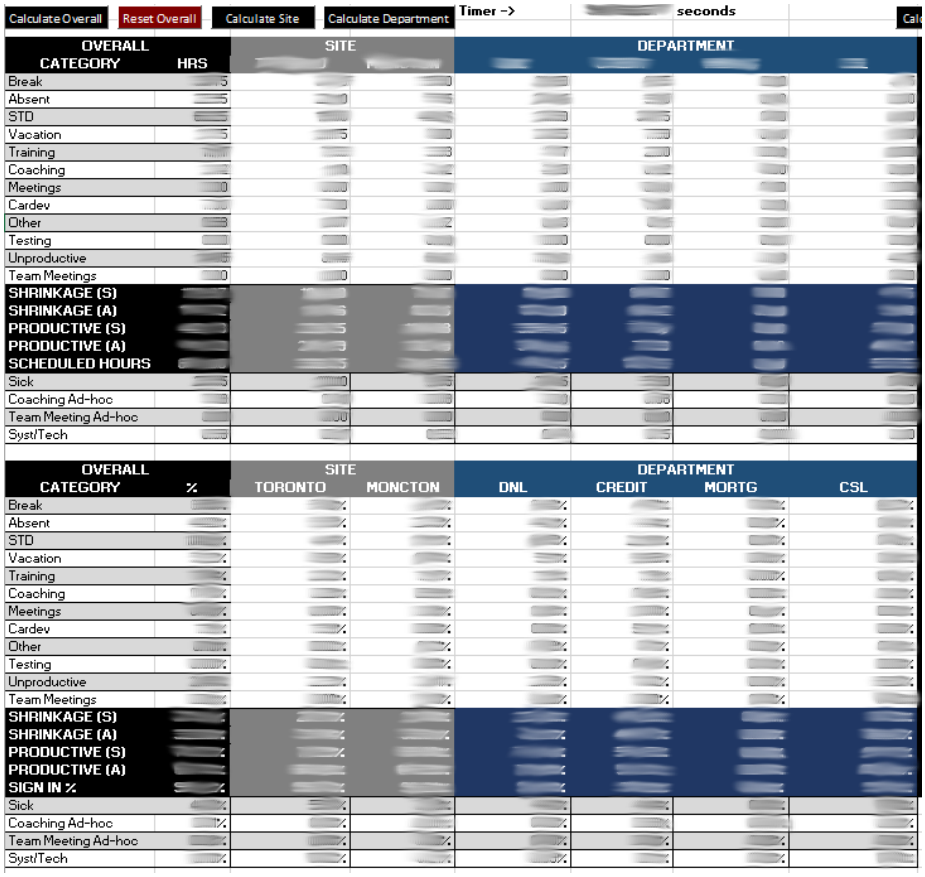

Thomas Eapen has been instrumental in a couple of keys areas over the last quarter. His biggest contributions have been streamlining and providing clarity for our ISSR Report that is reviewed by leaders and senior leaders on daily basis. Thomas also integrated Sign-On % to the ISSR, and worked closely with our Reporting team to develop Agent level reporting for this same metric. Both of these work efforts foster some of our key Oraange IQ's but predominantly in the categories of Innovation and Collaboration. Thomas thanks so much for being such a dependable and reliable contributor of our Orange Family.

Figure 2: May 2017 Support Hall of Fame Winner

1.6 Screenshot

The screenshot below [Figure 3] shows the generated shrinkage at the overall, site and department level include the various sub-categories. In addition, we see productive time and sign-in% calculations done at the same levels.



Calculate Overall | Reset Overall | Calculate Site | Calculate Department | Timer -> [redacted] seconds

OVERALL CATEGORY	HRS	SITE		DEPARTMENT			
Break	[redacted]						
Absent							
STD							
Vacation							
Training							
Coaching							
Meetings							
Cardev							
Other							
Testing							
Unproductive							
Team Meetings							
SHRINKAGE (S)							
SHRINKAGE (A)							
PRODUCTIVE (S)							
PRODUCTIVE (A)							
SCHEDULED HOURS							
Sick							
Coaching Ad-hoc							
Team Meeting Ad-hoc							
Syst/Tech							

OVERALL CATEGORY	%	SITE		DEPARTMENT			
		TORONTO	MONCTON	DNL	CREDIT	MORTG	CSL
Break							
Absent							
STD							
Vacation							
Training							
Coaching							
Meetings							
Cardev							
Other							
Testing							
Unproductive							
Team Meetings							
SHRINKAGE (S)							
SHRINKAGE (A)							
PRODUCTIVE (S)							
PRODUCTIVE (A)							
SIGN IN %							
Sick							
Coaching Ad-hoc							
Team Meeting Ad-hoc							
Syst/Tech							

Figure 3: Screenshot of Shrinkage data

2 Intra-day Service Status Report Improvements

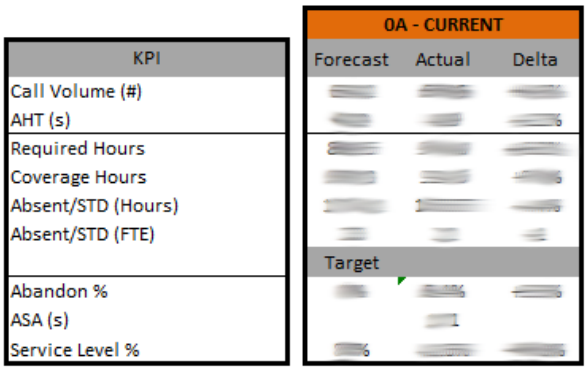
2.1 Summary

The purpose of the Intra-day Service Status Report (ISSR) is to give a high level overview to the executive team about the health of the call centre.The health of the call centre is defined in the Summary & Features section of [2]. The purpose of the re-design is to:

1. Incorporate the new Schedule Metrics being reported on in the updated Shrinkage Report [Section 1]
2. Incorporate shrinkage forecast metrics from the newly created Shrinkage Forecast Report [Section 3]
3. Increase clarity in sections of the report based on feedback from the Executive Team

2.2 Features

In addition to the Features set outlined in the Features section of [2], these are the new features below:



KPI	0A - CURRENT		
	Forecast	Actual	Delta
Call Volume (#)			
AHT (s)			
Required Hours			
Coverage Hours			
Absent/STD (Hours)			
Absent/STD (FTE)			
	Target		
Abandon %			
ASA (s)			
Service Level %			

Figure 4: ISSR → Summary

Coverage Hours are now a more accurate reflection of the number of hours expected to be in the call centre taking into account the expected shrinkage for the day.

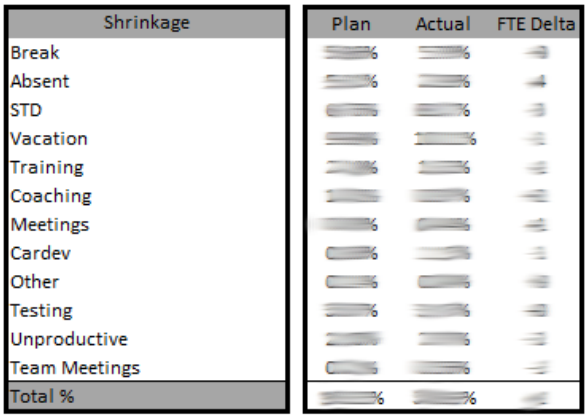
In addition in [Figure 4], we compare Forecasted vs Actual values on multiple metrics including Call Volume, Average Handle Time, Required Hours & Absenteeism.

KPI targets and Actual values should reflect the story that the other metrics portray.

In [Figure 5] we have the new shrinkage categories in line with our capacity plan represented in the ISSR.

Shrinkage Plan is taken from the Shrinkage Forecast Report and the Total% plan is used to calculate Coverage Hours.

The Delta between Plan and Actual Shrinkage is represented in FTE to indicate a net gain/loss in FTE due to actual events of the day.



Shrinkage	Plan	Actual	FTE Delta
Break			
Absent			
STD			
Vacation			
Training			
Coaching			
Meetings			
Cardev			
Other			
Testing			
Unproductive			
Team Meetings			
Total %			

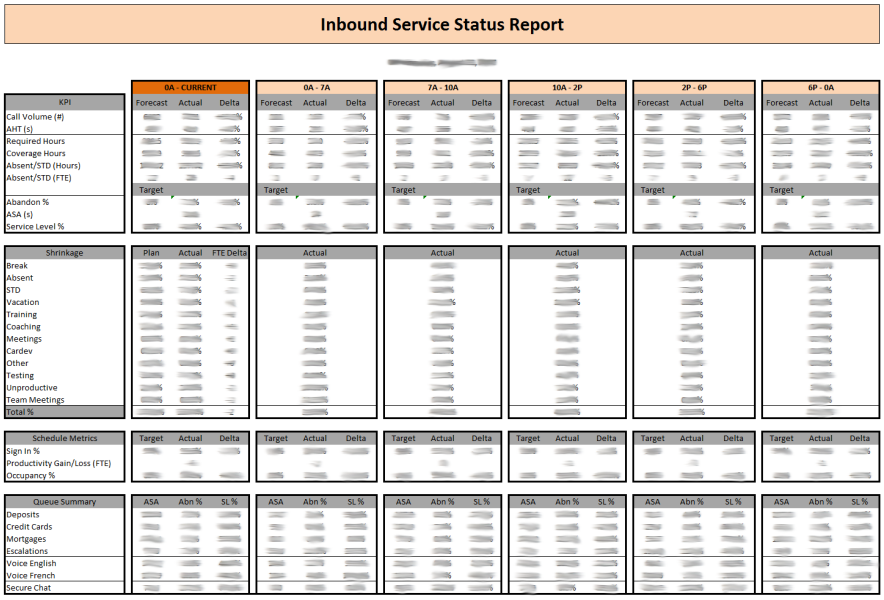
Figure 5: ISSR → Shrinkage

Schedule Metrics	Target	Actual	Delta
Sign In %			
Productivity Gain/Loss (FTE)			
Occupancy %			

Figure 6: ISSR → Schedule Metrics

The new schedule Metrics integrated from the updated Shrinkage Report are displayed indicating Target to Actual Sign in percentages and the translation of the delta into Productivity Gain/Loss FTE for meaningful comparisons.

The primary purpose of the ISSR is to tell a story, to view a flow of events that happened as the day progressed. [Figure 7] is a screenshot of an example ISSR



Inbound Service Status Report

KPI	0A - CURRENT			0A - 7A			7A - 10A			10A - 2P			2P - 6P			6P - 0A		
	Forecast	Actual	Delta	Forecast	Actual	Delta	Forecast	Actual	Delta	Forecast	Actual	Delta	Forecast	Actual	Delta	Forecast	Actual	Delta
Call Volume (#)																		
AHT (s)																		
Required Hours																		
Coverage Hours																		
Absent/STD (Hours)																		
Absent/STD (FTE)																		
	Target			Target			Target			Target			Target			Target		
Abandon %																		
ASA (s)																		
Service Level %																		

Shrinkage	Plan	Actual	FTE Delta	Actual	Actual	Actual	Actual	Actual
Break								
Absent								
STD								
Vacation								
Training								
Coaching								
Meetings								
Cardev								
Other								
Testing								
Unproductive								
Team Meetings								
Total %								

Schedule Metrics	Target	Actual	Delta	Target	Actual	Delta	Target	Actual	Delta	Target	Actual	Delta	Target	Actual	Delta	Target	Actual	Delta
Sign In %																		
Productivity Gain/Loss (FTE)																		
Occupancy %																		

Queue Summary	ASA	Abn %	SL %	ASA	Abn %	SL %	ASA	Abn %	SL %	ASA	Abn %	SL %	ASA	Abn %	SL %	ASA	Abn %	SL %
Deposits																		
Credit Cards																		
Mortgages																		
Escalations																		
Voice English																		
Voice French																		
Secure Chat																		

Figure 7: ISSR → Screenshot

3 Shrinkage Forecast Report

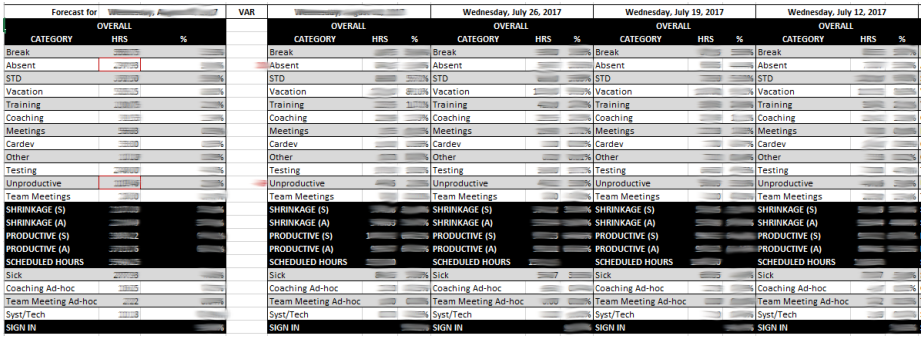
3.1 Summary

The purpose of the shrinkage Forecast Report is to look at historical shrinkage and calculate a forecast. This replaced the practice of using a shrinkage snapshot where we compared shrinkage calculated at the start of the day versus the shrinkage calculated at the end of the day.

3.2 Features

- Forecasted shrinkage is an average of actual shrinkags on days similar to the interested day. For example: the shrinkage forecast on Wednesday, Aug 9 will be a combination of up to the last 7 Wednesdays.
- We can ignore days from being used for the Forecast in some cases such as stat holidays
- There is the capability to adjust the forecast in such cases where the historical averages are not in sync with the values expected in the budget or capacity plan

[Figure 8] shows an example of how the Shrinkage Forecast for Wednesday, Aug 9 is using historical data from prior 4 Wednesdays and the red colored font indicates the manual adjustments made to the forecast to be in sync with budget or capacity planning rules.



Forecast for [redacted]			VAR	[redacted]			Wednesday, July 26, 2017			Wednesday, July 19, 2017			Wednesday, July 12, 2017		
OVERALL				OVERALL			OVERALL			OVERALL			OVERALL		
CATEGORY	HRS	%		CATEGORY	HRS	%	CATEGORY	HRS	%	CATEGORY	HRS	%	CATEGORY	HRS	%
Break	[redacted]			Break			Break			Break			Break		
Absent				Absent			Absent			Absent			Absent		
STD				STD			STD			STD			STD		
Vacation				Vacation			Vacation			Vacation			Vacation		
Training				Training			Training			Training			Training		
Coaching				Coaching			Coaching			Coaching			Coaching		
Meetings				Meetings			Meetings			Meetings			Meetings		
Cardev				Cardev			Cardev			Cardev			Cardev		
Other				Other			Other			Other			Other		
Testing				Testing			Testing			Testing			Testing		
Unproductive				Unproductive			Unproductive			Unproductive			Unproductive		
Team Meetings				Team Meetings			Team Meetings			Team Meetings			Team Meetings		
SHRINKAGE (S)				SHRINKAGE (S)			SHRINKAGE (S)			SHRINKAGE (S)			SHRINKAGE (S)		
SHRINKAGE (A)				SHRINKAGE (A)			SHRINKAGE (A)			SHRINKAGE (A)			SHRINKAGE (A)		
PRODUCTIVE (S)				PRODUCTIVE (S)			PRODUCTIVE (S)			PRODUCTIVE (S)			PRODUCTIVE (S)		
PRODUCTIVE (A)				PRODUCTIVE (A)			PRODUCTIVE (A)			PRODUCTIVE (A)			PRODUCTIVE (A)		
SCHEDULED HOURS				SCHEDULED HOURS			SCHEDULED HOURS			SCHEDULED HOURS			SCHEDULED HOURS		
Sick				Sick			Sick			Sick			Sick		
Coaching Ad-hoc				Coaching Ad-hoc			Coaching Ad-hoc			Coaching Ad-hoc			Coaching Ad-hoc		
Team Meeting Ad-hoc				Team Meeting Ad-hoc			Team Meeting Ad-hoc			Team Meeting Ad-hoc			Team Meeting Ad-hoc		
Syst/Tech				Syst/Tech			Syst/Tech			Syst/Tech			Syst/Tech		
SIGN IN				SIGN IN			SIGN IN			SIGN IN			SIGN IN		

Figure 8: Shrinkage Forecast → Screenshot

4 Shrinkage Summary Reports

4.1 Summary

The Shrinkage Report described in [Section 1] allows us to view Shrinkage information down to a 30 minute resolution for the entire centre and 30 subgroups based on Department, Language, Site and Level. The Shrinkage Summary sheets provide a higher level view where we can view the data for all groups at a daily, weekly, monthly and annual level. This report is primarily used by the Capacity Planning and Budgeting Teams for long term planning.

4.2 Features

- Provides a high level overview of Shrinkage data at the daily, weekly, monthly and annual level
- Easy procedures to update data weekly with the summaries of the week before
- Provides schedule metric data such as sign-in and occupancy summaries in addition to shrinkage summaries
- Can be easily audited with source data for percentages shown at the daily, weekly, monthly and annual level

Please find screen shots below showing the daily & weekly view [Figure 9] and monthly and annual view [Figure 10]

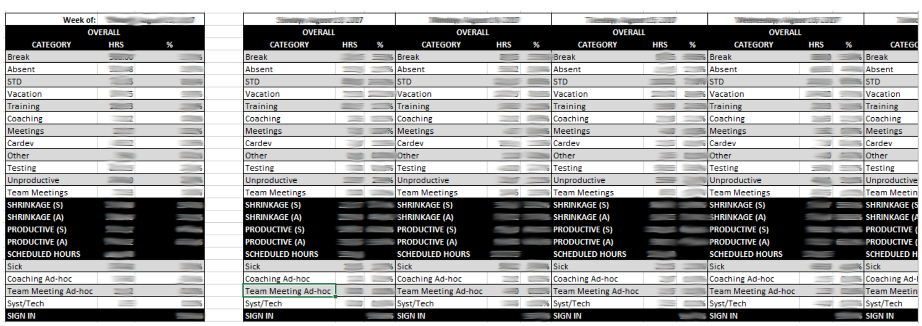


Figure 9: Shrinkage Summary → Daily & Weekly view

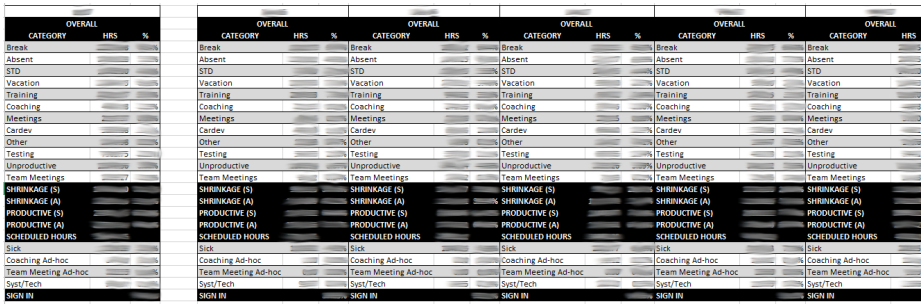


Figure 10: Shrinkage Summary → Monthly & Annual view

4.3 Weekly Shrinkage Forecast Summary

Shrinkage Forecasts are also aggregated at a weekly level to use for comparison in the Shrinkage Presentation [Section 5].

5 Shrinkage Presentation

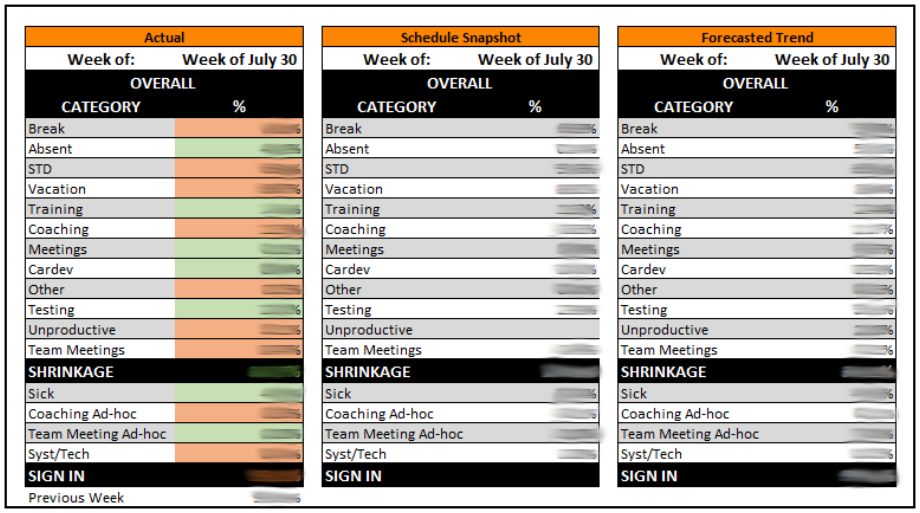
5.1 Summary

The Shrinkage Presentation is the central weekly view presented to the executive team on how events of the week affect Shrinkage data.

5.2 Features

- Comparison of Weekly Shrinkage Forecast vs Weekly Snapshot vs Actual Weekly Shrinkage
- Visual color cues on whether we met or did not meet Shrinkage Targets
- Visual view of Sign-in data for the week

The screenshot below shows an example weekly Shrinkage Presentation [Figure 11]



Actual		Schedule Snapshot		Forecasted Trend	
Week of:	Week of July 30	Week of:	Week of July 30	Week of:	Week of July 30
OVERALL		OVERALL		OVERALL	
CATEGORY	%	CATEGORY	%	CATEGORY	%
Break	[redacted]	Break	[redacted]	Break	[redacted]
Absent	[redacted]	Absent	[redacted]	Absent	[redacted]
STD	[redacted]	STD	[redacted]	STD	[redacted]
Vacation	[redacted]	Vacation	[redacted]	Vacation	[redacted]
Training	[redacted]	Training	[redacted]	Training	[redacted]
Coaching	[redacted]	Coaching	[redacted]	Coaching	[redacted]
Meetings	[redacted]	Meetings	[redacted]	Meetings	[redacted]
Cardev	[redacted]	Cardev	[redacted]	Cardev	[redacted]
Other	[redacted]	Other	[redacted]	Other	[redacted]
Testing	[redacted]	Testing	[redacted]	Testing	[redacted]
Unproductive	[redacted]	Unproductive		Unproductive	[redacted]
Team Meetings	[redacted]	Team Meetings	[redacted]	Team Meetings	[redacted]
SHRINKAGE	[redacted]	SHRINKAGE	[redacted]	SHRINKAGE	[redacted]
Sick	[redacted]	Sick	[redacted]	Sick	[redacted]
Coaching Ad-hoc	[redacted]	Coaching Ad-hoc	[redacted]	Coaching Ad-hoc	[redacted]
Team Meeting Ad-hoc	[redacted]	Team Meeting Ad-hoc	[redacted]	Team Meeting Ad-hoc	[redacted]
Syst/Tech	[redacted]	Syst/Tech	[redacted]	Syst/Tech	[redacted]
SIGN IN	[redacted]	SIGN IN	[redacted]	SIGN IN	[redacted]
Previous Week	[redacted]				

Figure 11: Shrinkage Presentation

5.3 Credits

Credits to my colleagues below on help with the visual design of the report:

- Kim Taylor
- Sheri Momenghalibaf
- Dheeraj Malik

6 Multi-channel Stats Calculator

6.1 Summary

This report was completed for use by the Reporting Team to calculate schedule metrics such as Sign-in and Occupied Time for multi-skilled Agents such as the e-Services & IF Teams. Having open channels of communication, the Reporting Team were aware that I had built the multi-channel productivity calculator [Subsection 1.3.1].

Since we like to follow the DRY principle (Do not repeat yourself), the Reporting Team asked if I could build the Stats Calculator for them and I was more than happy to oblige.

6.2 Evolution

The first iteration of the report allowed source data for 1 day to be input with the Report calculating the required output.

Based on feedback from the first iteration, it was decided that source data had to be run for multiple days at a time with the input calculator compiling the data from all days input.

Building on the first iteration, a second version of the report was developed to handle source data from multiple days which was accepted by the Reporting Team for daily use.

This lifecycle model of:

- Release early
- Release often
- Repeat based on customer feedback

is my usual sequence when developing projects for internal or external clients. [Figure 12] shows sample output of the Multi-channel stats calculator

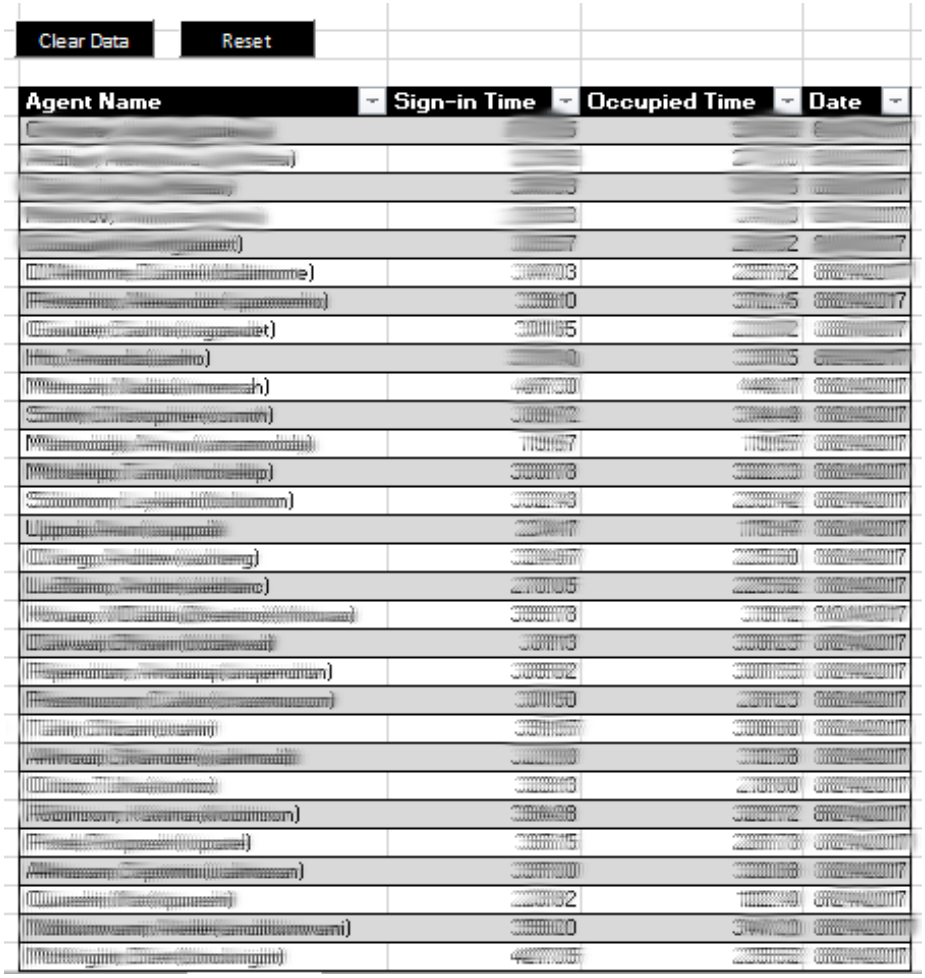


Figure 12: Multi-channel Stats Calculator

7 Automated Absence-Late check

7.1 Summary

In December 2015, The Tangerine call centre began the “My Evolution” (MEVO) phase and moved from the Aspect WFM platform to the Genesys WFM platform. At this point in time, a lot of the reporting frameworks that were used by the IDA and Workforce teams became invalid due to the incompatibilities in the raw data structures and workflow processes of the two systems.

With the changeover, the Intra-day Team began to manually check Absenteeism & Lates 3 – 4 times a day by ticking off names on a printed out report matched against a Login/Logout report generated by Genesys.

Since this solution does not scale and it was unnecessarily creating a lot of manual work for the Team, I began work on the Automated Absence-Late Report.

7.2 Features

- The report pulls in data from multiple sources and maps them through intermediate datasets
- It is designed to be used by multiple members where Agents that have been checked will be marked as such so there is no overlap of work by members of the IDA Team
- The report has the ability to check against potential Lates & Absences
- Reduces the time taken from 1.5 – 2 hours down to 10 – 15 minutes
- The ability to audit the absence & late checks by the IDA Team to locate discrepancies if any.

7.3 Evolution

One of the challenges in automating the report was that schedule data was maintained in a separate system (GWFM) while Login/Logout data reporting was maintained in the Interactive Insight reporting Tool. In addition, there was no key that we could relate the two data sets on so we had to pull in a third data set maintained by a separate team that we could use to map the data in the two primary data sets

The first iteration of the tool was given to the IDA Team to test and they were able to see an immediate savings in time and effort over the then current manual method.

The feedback did not stop there though. A few of the team members were able to deep dive into the report and were even able to uncover a couple of bugs. I made sure that their bug hunting skills were recognized and in this way, they became as invested in the success of this report as I was. I find it important to keep an open mind and not make too many assumptions of the capabilities of anyone. I find in this way, people can approach me with a lot of flexibility and there is mutual benefit. [Figure 13] shows an example of the automated check output and [Figure 14] shows a sample audit screen.

Figure 13: Automated Absence-Late checker → Screenshot

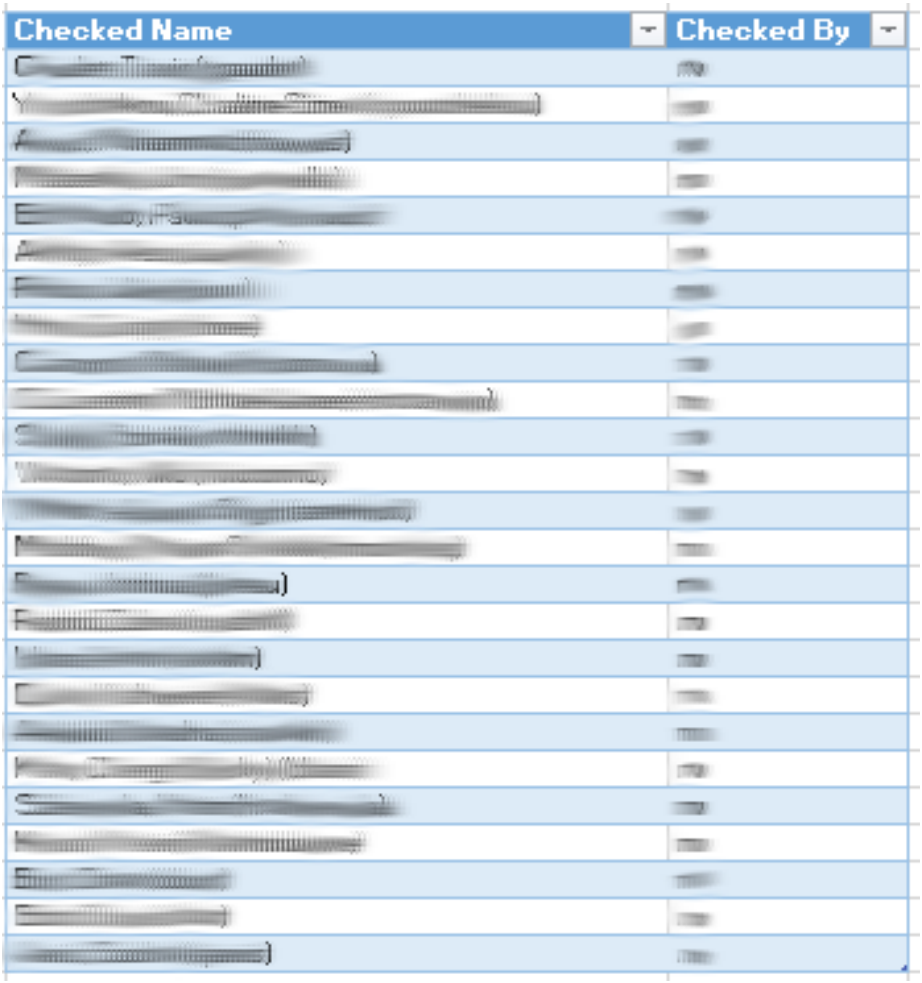


Figure 14: Automated Absence-Late checker → Audit

References

[1] Thomas Eapen, `Shrinkage Report`, `https://www.nowlabs.net/files/resume/Shrinkage_Report.pdf`

[2] Thomas Eapen, `Intra-day Service Status Report`, `https://www.nowlabs.net/files/resume/Intraday_Service_Status_Report.pdf`

[3] Thomas Eapen, `Intra-day Stats Report`, `https://www.nowlabs.net/files/resume/Intraday_Stats.pdf`