CHORUS OPEN ACCESS DEEDS OF UNDERTAKING

KEY PERFORMANCE INDICATORS REPORTING

DECEMBER 2019

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OVERVIEW OF THE REPORT

Chorus is committed to being an open access wholesaler. This includes a commitment to provide products on a non-discriminatory or equivalence of inputs (EOI) basis.

This report presents Key Performance Indicators (KPI) to demonstrate Chorus' compliance with its non-discrimination and EOI commitments for the provisioning and restoration of Chorus products. This report is provided in accordance with clauses 14.5 of our Fibre and Copper Open Access Deeds of Undertakings and clause 14.6 of our UFB2 Deed of Undertaking Commitments ("the Deeds")

This is the 32nd KPI report to be published by Chorus.

The KPI report is one part of our wider compliance programme, which includes quarterly surveys of our customers and service level reporting. Service level reports can be found here:

https://sp.chorus.co.nz/report/sla/72

Chorus meets with the Commission every quarter to discuss Chorus' compliance with the Deeds.

Report Results

For the measurements and products included in this report, the measurements indicate that Chorus is meeting its EOI and non-discrimination commitments.

While there are minor variations between customers for some products and for some metrics, these variations are within the normal range for these metrics and do not give rise to EOI or non-discrimination issues. The reasons for these variations are explained in the Results Overview section.

This report cannot be directly compared to Chorus' operational reports.

Report Period

This report covers three reporting periods:

- 1 February 2019 to 30 April 2019 (Quarter 2)
- 1 May 2019 to 31 July 2019 (Quarter 3)
- 1 August 2019 to 31 October 2019 (Quarter 4)

Measures

There have been no changes to the way we have approached the KPI report for this quarter. This means that for this quarter, for products which have met the volume threshold, we have reported the following non-discrimination and EOI measures:

Provisioning Metrics	Met Commit Rate	Did Chorus install the service when we said we would (reported as %)?
	Right First Time	Were there any faults with the service within 7 calendar days of it being provisioned (reported as %)?
	Time to Complete	From the time we received the order, how long did it take us to give service (reported as working hours, 9 hours per day) ?
Restoration Metrics	Met Commit Rate	Did we repair the service when we said we would (reported as %)?
	Repeat Fault Rate	Were there any subsequent faults raised within 7 days (calendar days excluding national holidays) of the fault being restored (reported as %)?
	Time to Complete	From the time we received the problem ticket, how long did it take for us to restore service (reported as working hours, 12 hours per day)?

Volume Threshold

We have reported on products which meet the following volume threshold for each metric:

- At least two customers ordered the product (or had product faults); and
- A minimum of five orders per customer are ordered for the quarter (or a minimum of five product faults were raised per customer for the quarter).

A product will need to meet this threshold for all of the reporting months in order to be presented. Some products may meet the volume threshold for some measurements and not others.

Selection of Customer Data

For each measurement, we have reported on the top five customers by volume (either in terms of orders or faults) where the volume threshold has been met for three consecutive reporting periods.

This data is presented on an anonymous basis. The anonymous label given to a particular customer will vary between different metrics (i.e. "Customer A" will not always be the same customer).

This quarterly KPI report includes the top five by volume at quarter ending 31 October 2019 displayed in the graphs as the column labelled Aug -19. This means that top five customers in this report, and the order in which they are shown, may differ from all three reporting periods contained in the September 2019 report.

For provisioning measures, the data will be added to the quarter in which service was given. There are instances where the service is provided before the 'service given date' in our provisioning systems. Where this occurs, the service given date is updated manually and can result in changes to data from previous quarters. For restoration measures, the data will be added to the quarter in which the order was closed.

Results Overview

For the measurements and products included in this report, the measurements indicate that Chorus is meeting its EOI and non-discrimination commitments.

This report does show minor variations between customers for some products and for some metrics. We are confident that these variations are within the normal range for these metrics and do not give rise to EOI or non-discrimination issues.

Throughout the report, we include specific commentary where the variation may be meaningful. However, there are also some general reasons why there may be natural variations between customers month-on month. We explain these below.

Results for products that did not meet the threshold for inclusion to the report are located in the Appendix.

Provisioning

There are a number of factors that may impact provisioning measurements and lead to variations between customers. These include:

- **Volume impact on systems:** bulk orders placed with significant volumes can cause Chorus' systems to slow down and can require manual intervention. While orders are still dealt with on a "first in first out basis", the slowing of the systems and the manual intervention can impact both the customer which has placed the bulk order and other customers placing an order at the same time;
- **Volume impacts:** if Chorus receives an unforecasted bulk order, this can mean that its work schedule is full to capacity. In this event, any delay due to a technician managing a complex order can have a flow on impact for subsequent orders.
- **Chorus team factors:** fluctuations in the availability of trained team members (e.g. due to unplanned events or orders taking longer than anticipated) can result in some orders having different completion times, depending on the number of orders placed. Team resource is planned to meet committed provisioning timeframes;

- **Geographic**: if a customer undertakes a promotion in a particular geographic area, this could mean that its order volumes may be concentrated in that area. These increased volumes can result in minor differences in Time to Complete results. In addition there may be fewer technicians available in rural areas as opposed to urban ones, which may also affect the Time to Complete metric; and
- **Customer factors**: there are a number of factors that fall outside Chorus' control. For example, a transfer that involves number portability can delay Chorus' ability to complete the order if the porting does not happen within expected timeframes. Errors in order entry c also impact Chorus' delivery.

Restoration

There are a number of factors outside Chorus' control that may impact restoration measurements and lead to variations between customers. These include:

- **Weather events:** weather events can increase fault volumes and impact Chorus' ability to fix faults. For example, heavy rain limits Chorus' ability to open the network without damaging the copper;
- **Chorus team**; Service Customers can have different processes and operating models which can cause small variations in fault restoration times; and
- **Customer factors:** customer factors, including incorrect fault diagnosis and customer timelines may affect timelines. Fault restoration may also require customer faults personnel to complete work, which becomes subject to their availability and may affect restoration times.

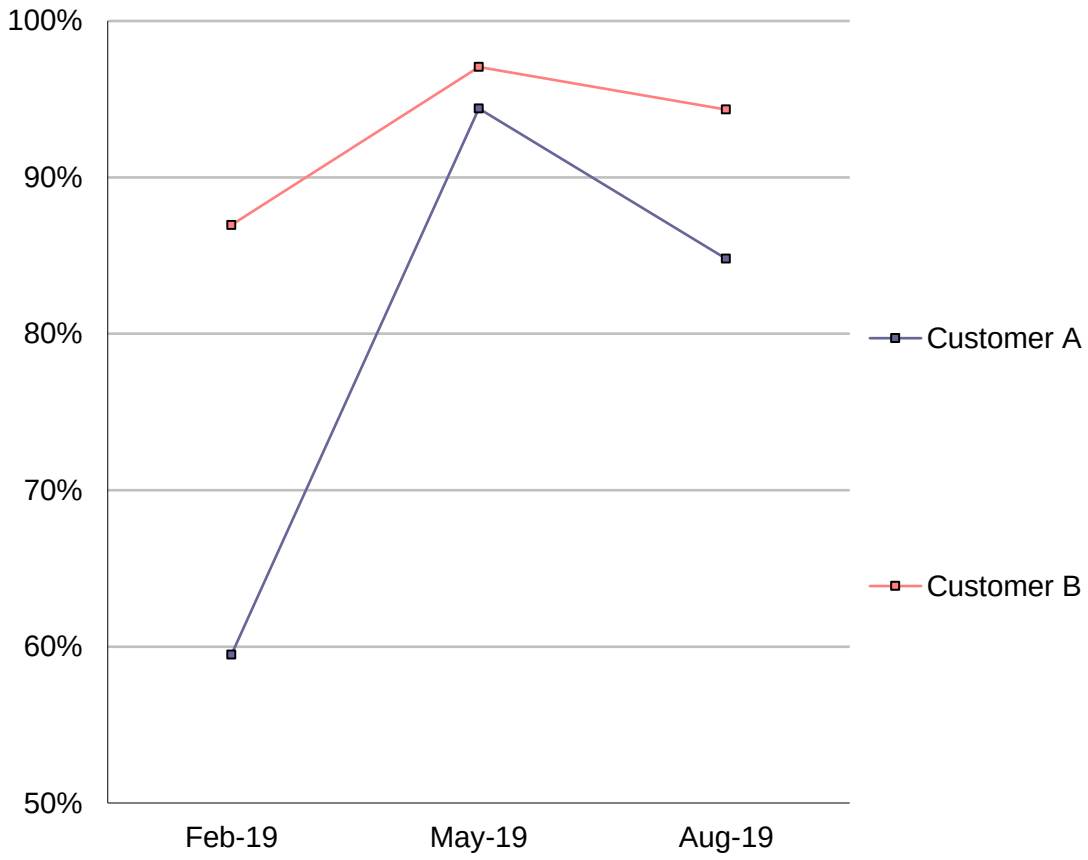
Chorus continues to have a programme of work underway to continually improve our restoration performance. This includes initiatives targeting reducing repeat fault rates, a nationwide reactive maintenance programme, and ongoing customer training for fault diagnosis and management.

EQUIVALENCE OF INPUTS REPORTING

BASEBAND COPPER – PROVISIONING METRICS

Met Commit Rate

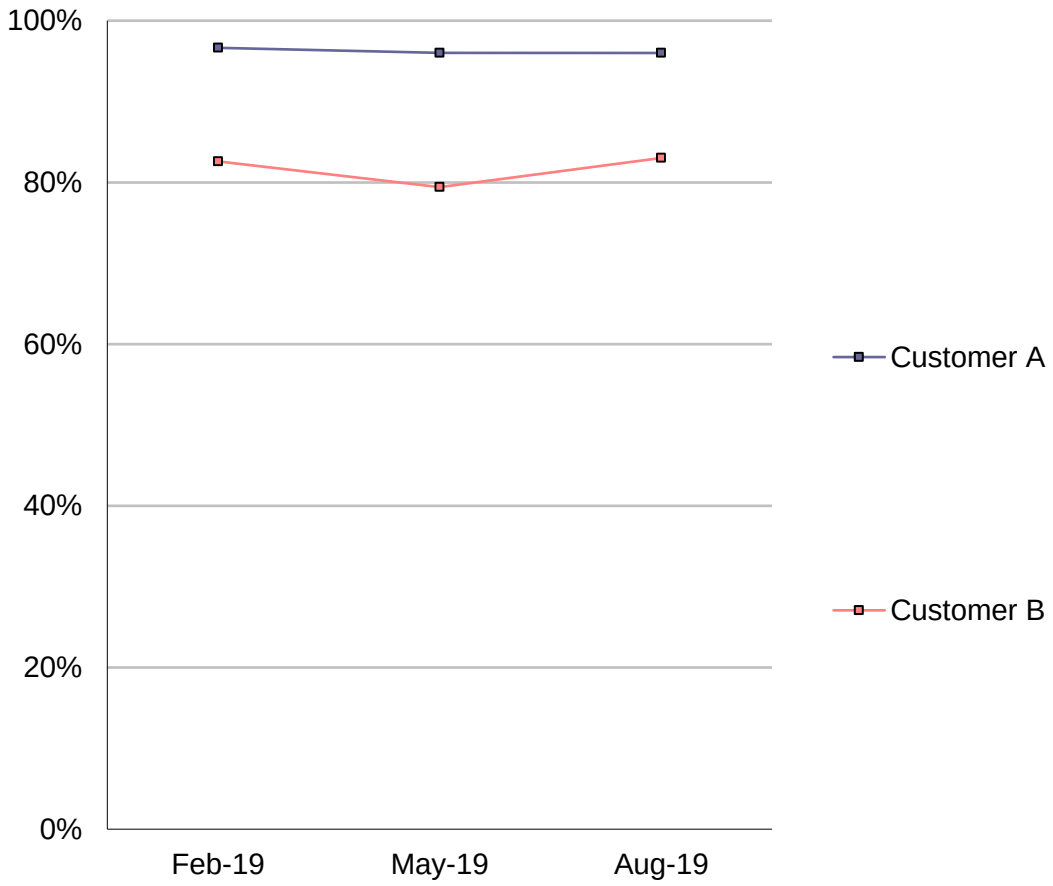
Met Commit	Feb-19	May-19	Aug-19
Customer A	59%	94%	85%
Customer B	87%	97%	94%



Results for Customer A were due to its ordering behaviour.

Right First Time

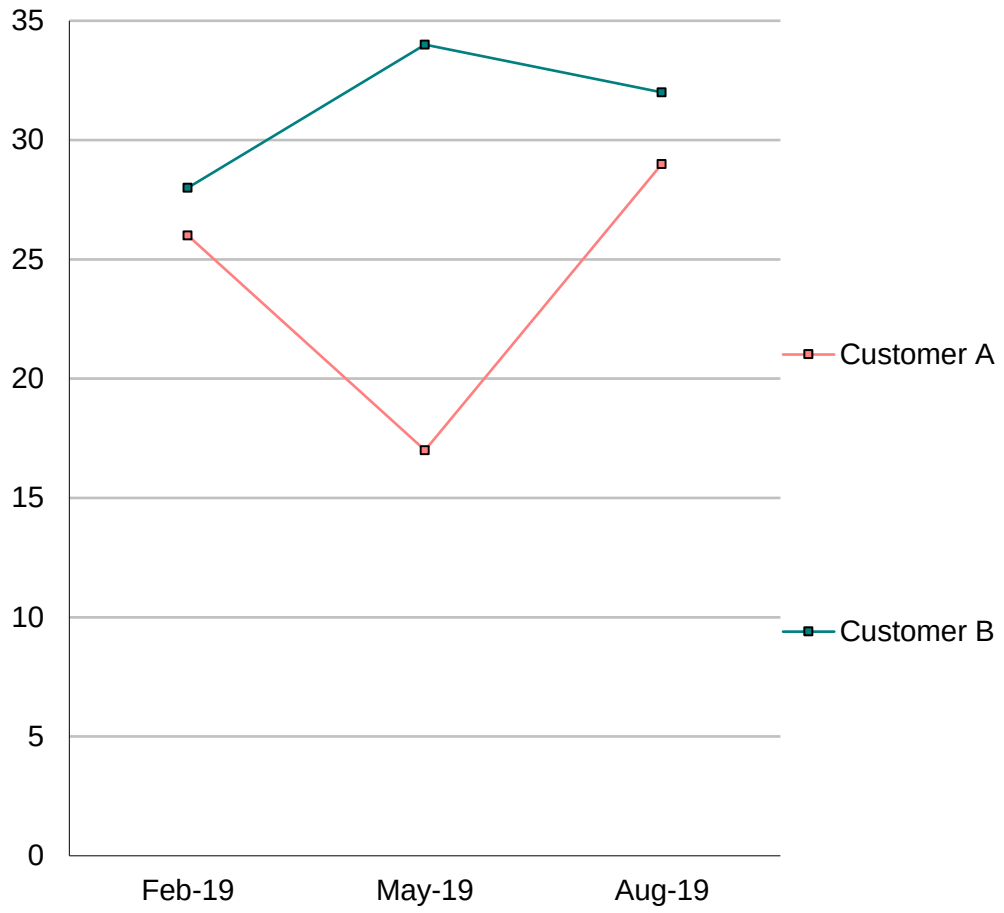
Right First Time	Feb-19	May-19	Aug-19
Customer A	97%	96%	96%
Customer B	83%	79%	83%



Results for Customer B were affected by network errors and customer reschedule behaviour.

Time to Complete

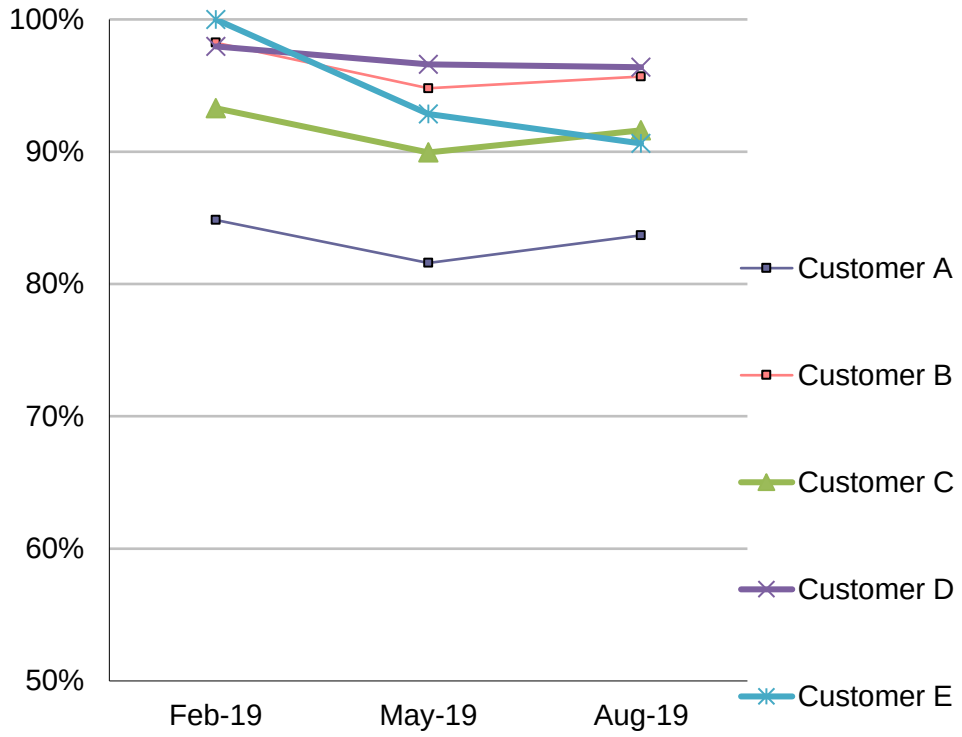
Time to Complete	Feb-19	May-19	Aug-19
Customer A	26	17	29
Customer B	28	34	32



BASEBAND COPPER WITH UBA - PROVISIONING METRICS

Met Commit Rate

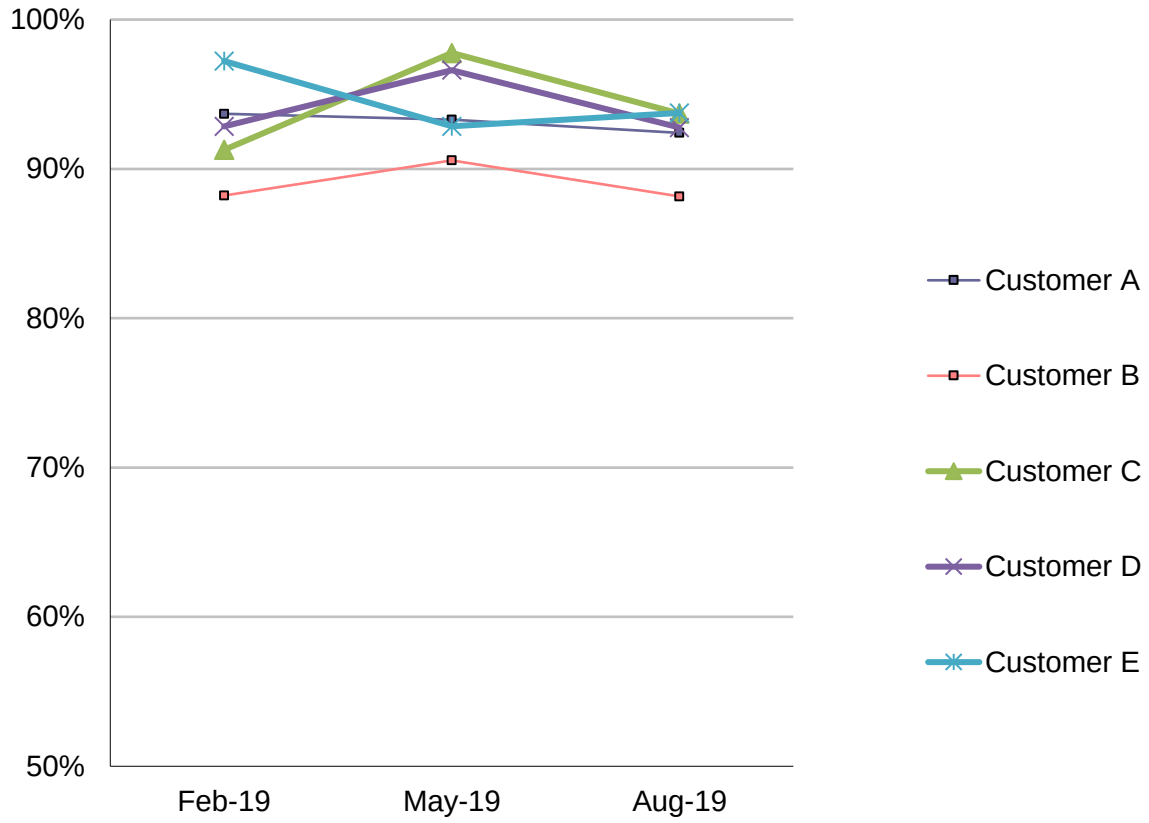
Met Commit	Feb-19	May-19	Aug-19
Customer A	85%	82%	84%
Customer B	98%	95%	96%
Customer C	93%	90%	92%
Customer D	98%	97%	96%
Customer E	100%	93%	91%



Results for Customers A and C were due to system and technician processing delays as well as network faults.

Right First Time

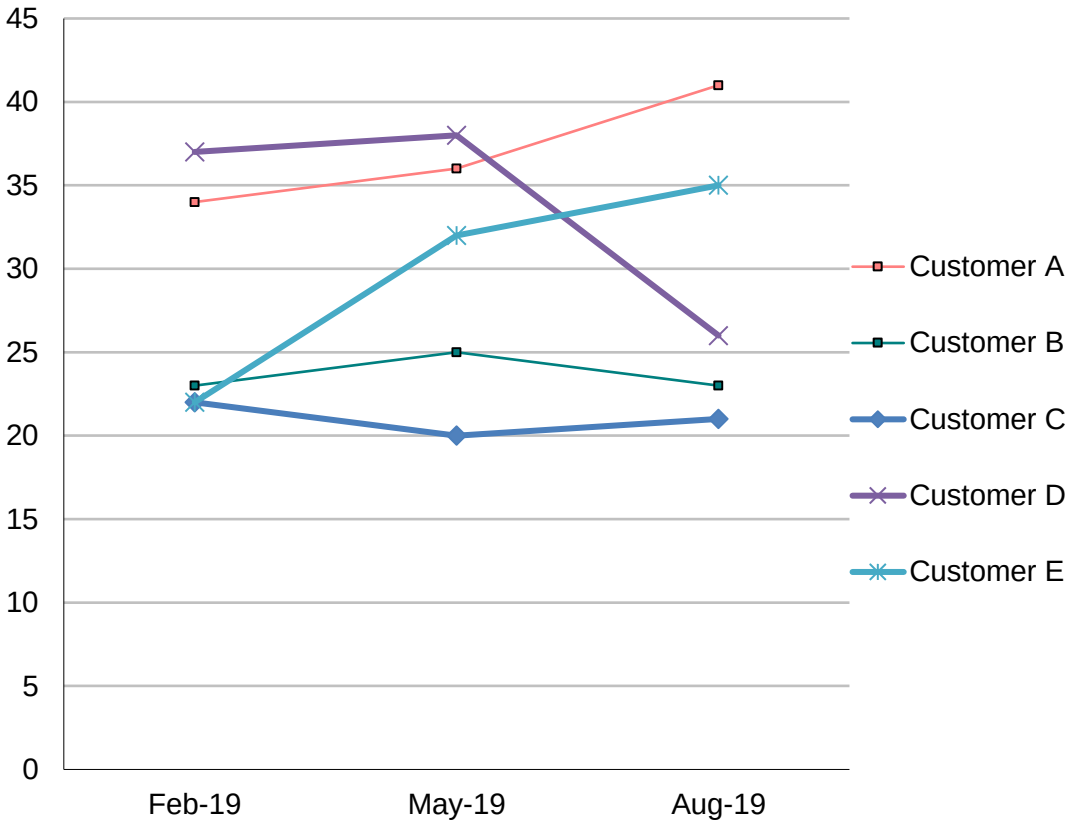
Right First Time	Feb-19	May-19	Aug-19
Customer A	94%	93%	92%
Customer B	88%	91%	88%
Customer C	91%	98%	94%
Customer D	93%	97%	93%
Customer E	97%	93%	94%



Results for Customer B were affected by customer specific faults.

Time to Complete

Time to Complete	Feb-19	May-19	Aug-19
Customer A	34	36	41
Customer B	23	25	23
Customer C	22	20	21
Customer D	37	38	26
Customer E	22	32	35

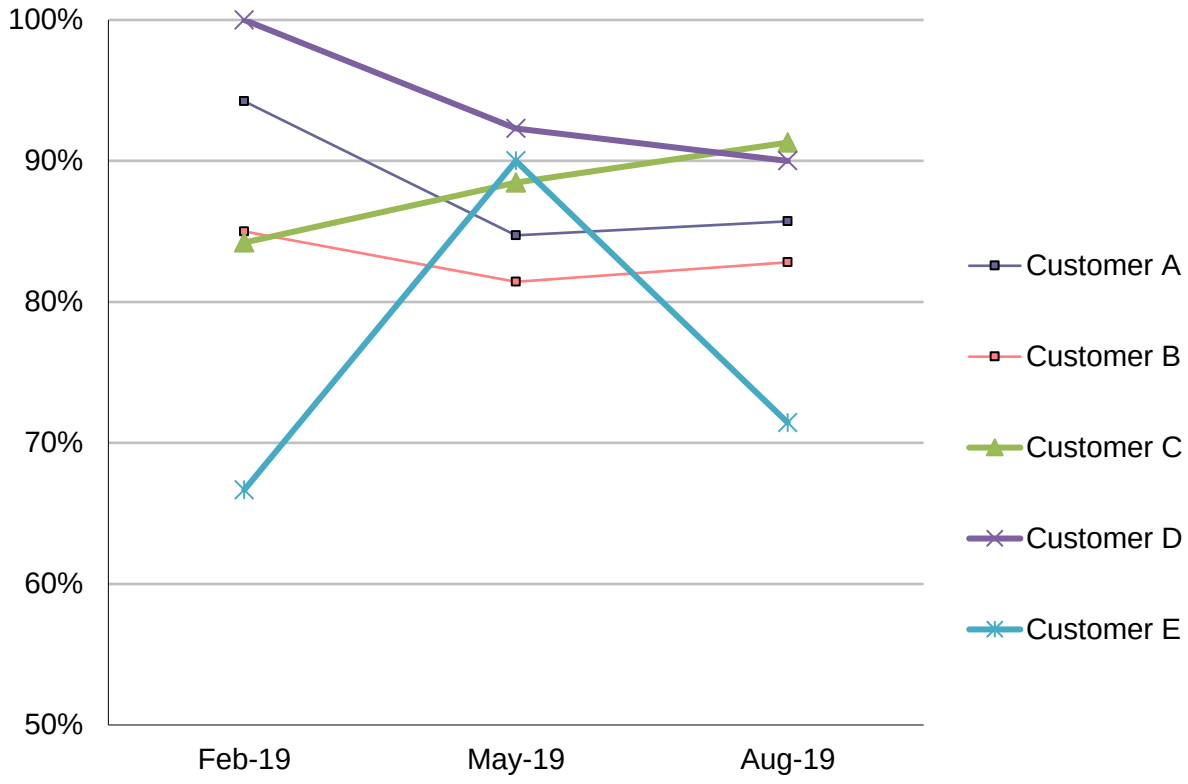


Results for Customers A and E were affected by Chorus network errors. Customer A was also affected by customer ordering behaviour.

BASEBAND IP - PROVISIONING METRICS

Met Commit Rate

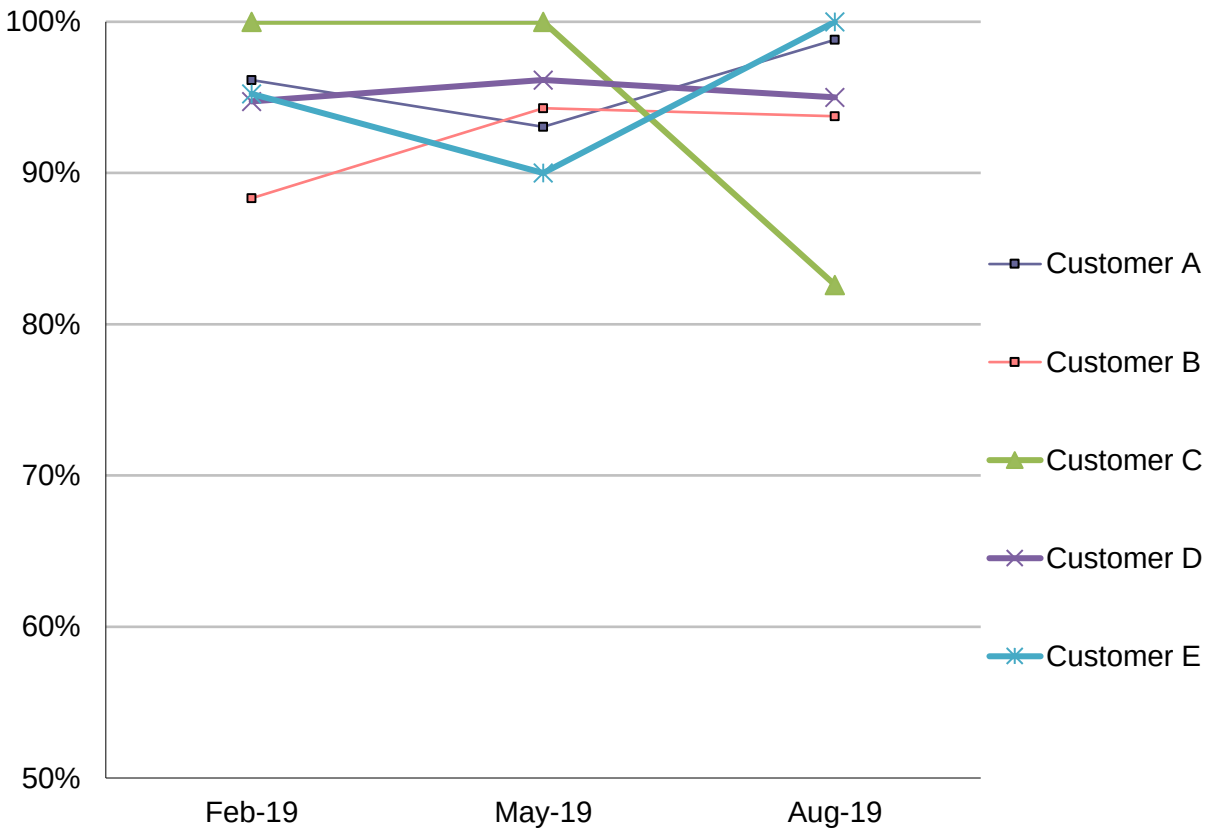
Met Commit	Feb-19	May-19	Aug-19
Customer A	94%	85%	86%
Customer B	85%	81%	83%
Customer C	84%	88%	91%
Customer D	100%	92%	90%
Customer E	67%	90%	71%



Results for Customers A, B and E were affected by system processing delays.

Right First Time

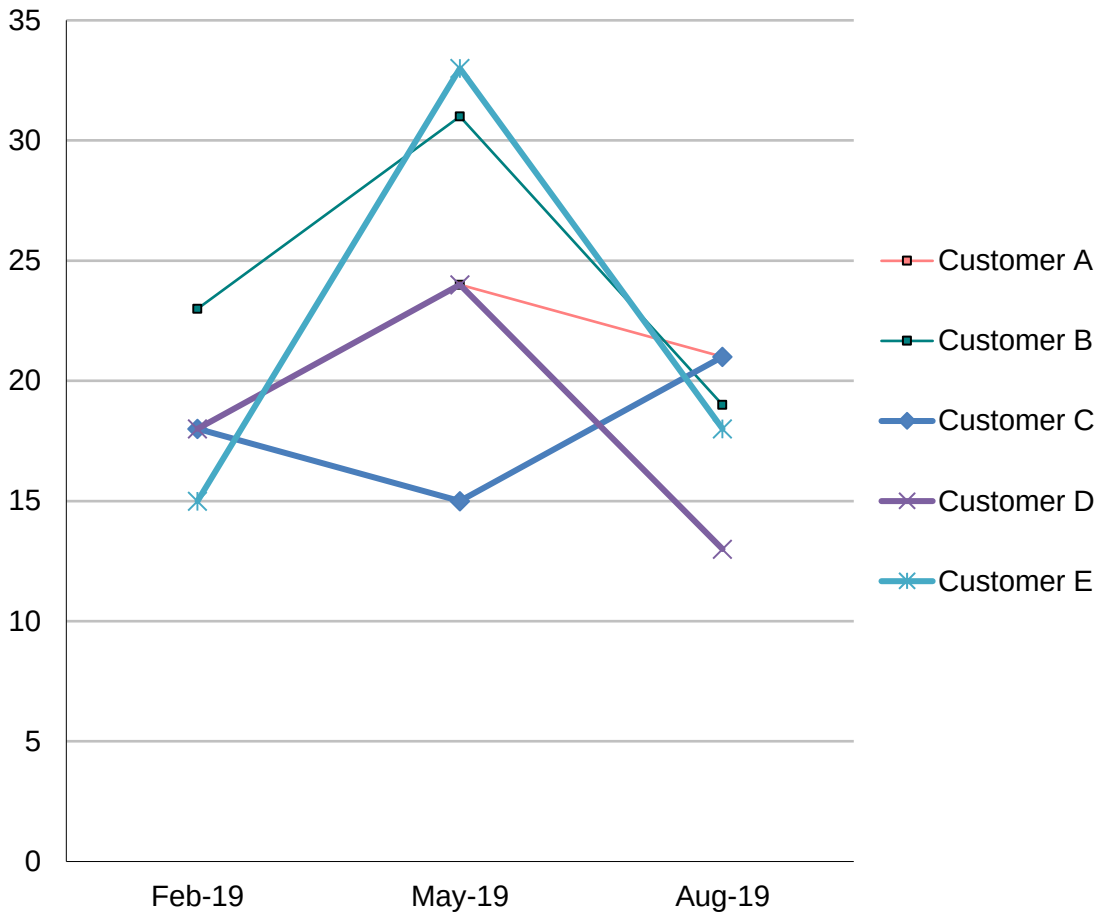
Right First Time	Feb-19	May-19	Aug-19
Customer A	96%	93%	99%
Customer B	88%	94%	94%
Customer C	100%	100%	83%
Customer D	95%	96%	95%
Customer E	95%	90%	100%



Results for Customer B and C were affected by network faults. Customer A was also affected by end customer troubleshooting while Customer B was also affected by customer site issues.

Time to Complete

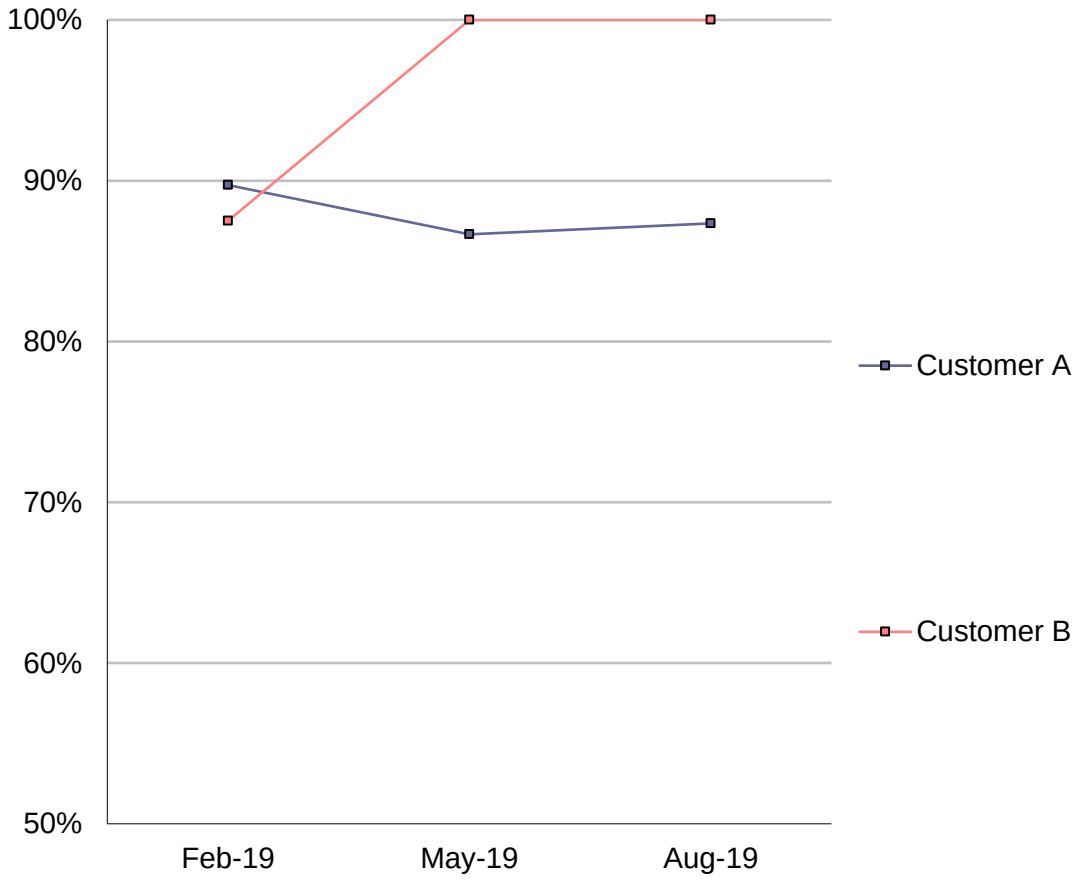
Time to Complete	Feb-19	May-19	Aug-19
Customer A	18	24	21
Customer B	23	31	19
Customer C	18	15	21
Customer D	18	24	13
Customer E	15	33	18



UCLL - PROVISIONING METRICS

Met Commit Rate

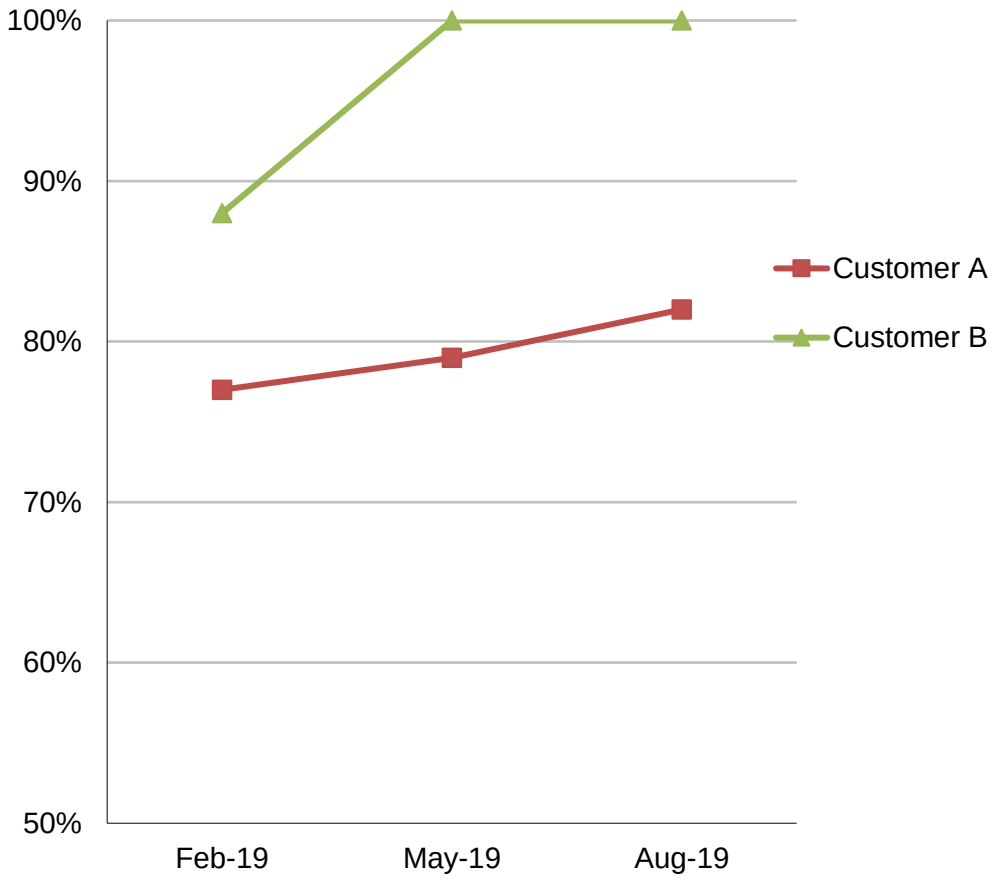
Met Commit	Feb-19	May-19	Aug-19
Customer A	90%	87%	87%
Customer B	88%	100%	100%



Results for Customer A were affected by a Chorus internal processing error.

Right First Time

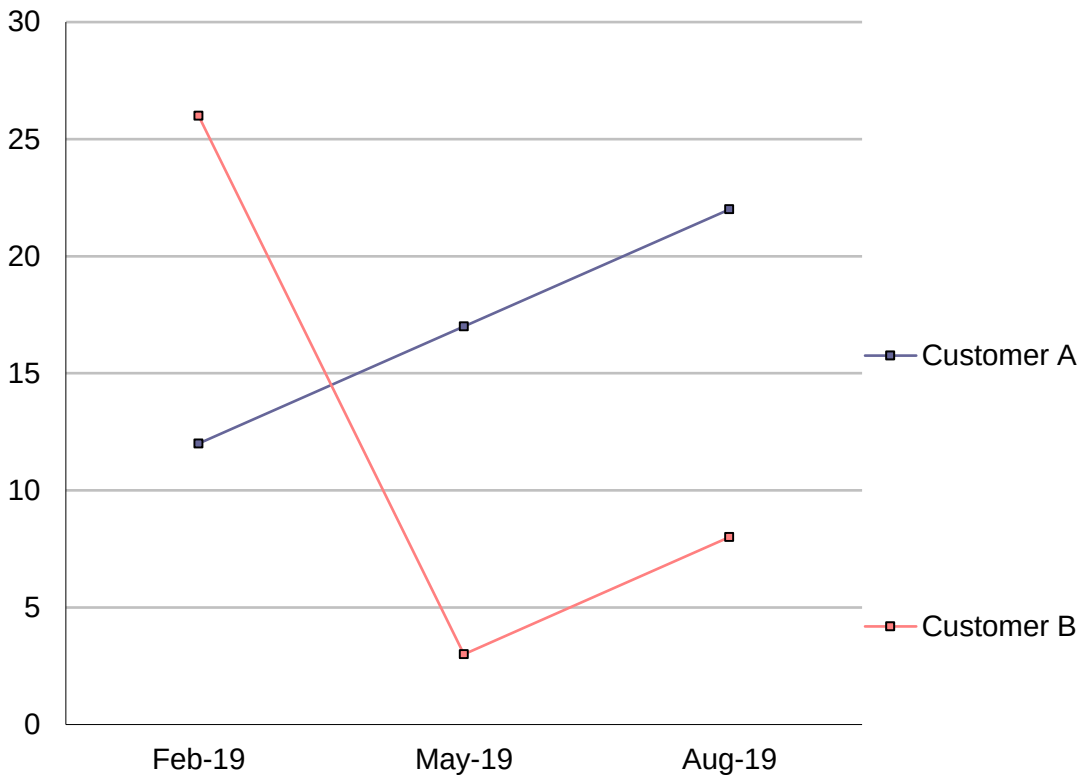
Right First Time	Feb-19	May-19	Aug-19
Customer A	77%	79%	82%
Customer B	88%	100%	100%



Results for Customer A were affected by separate network faults and end customer hardware.

Time to Complete

Time to Complete	Feb-19	May-19	Aug-19
Customer A	12	17	22
Customer B	26	3	8

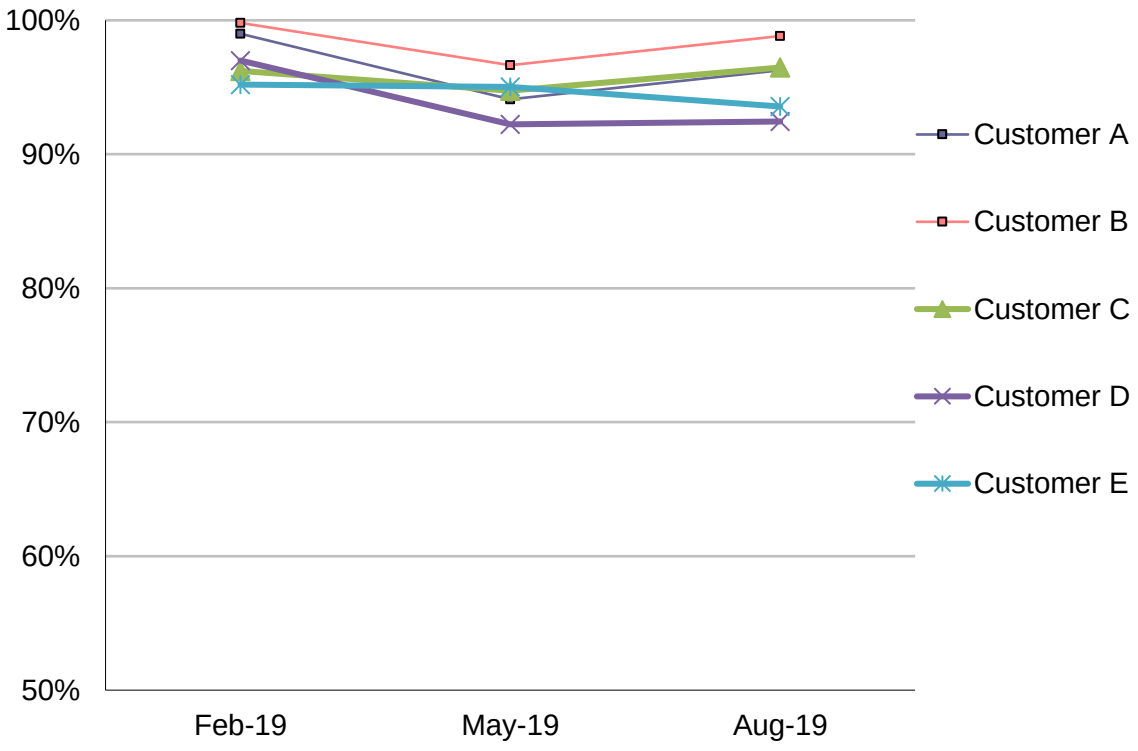


Results for Customer A were affected by its internal processing behaviours.

UBA WITH AGENCY VOICE - PROVISIONING METRICS

Met Commit Rate

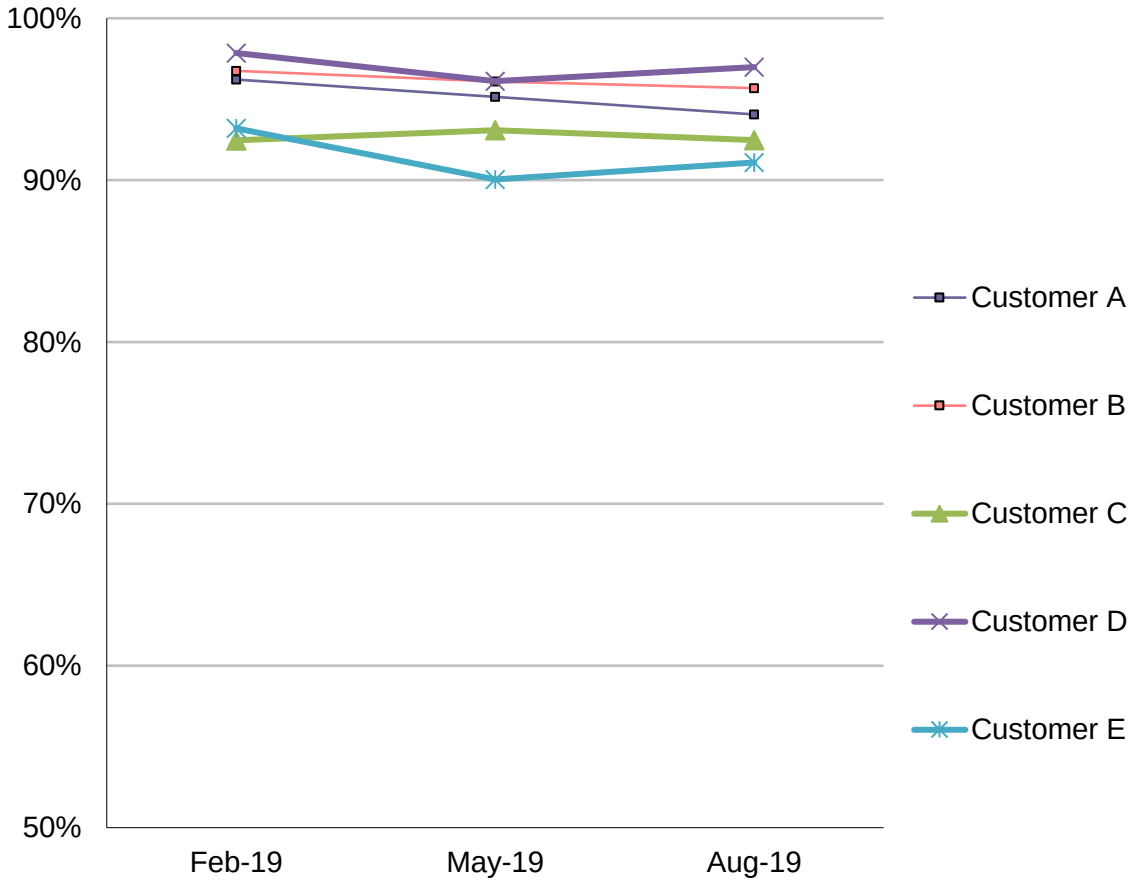
Met Commit	Feb-19	May-19	Aug-19
Customer A	99%	94%	96%
Customer B	100%	97%	99%
Customer C	96%	95%	96%
Customer D	97%	92%	92%
Customer E	95%	95%	94%



Results for Customers D and E were affected by system processing errors.

Right First Time

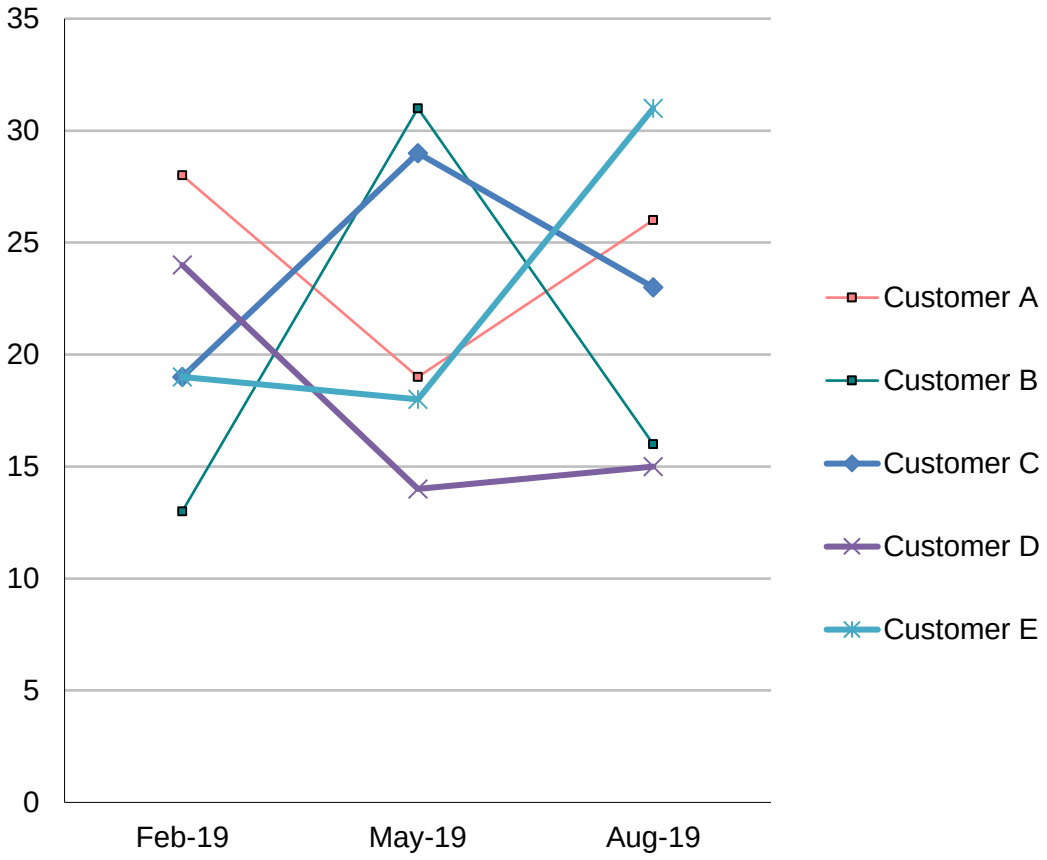
Right First Time	Feb-19	May-19	Aug-19
Customer A	96%	95%	94%
Customer B	97%	96%	96%
Customer C	92%	93%	92%
Customer D	98%	96%	97%
Customer E	93%	90%	91%



Results for Customer E were affected by separate network faults and end customer hardware issues.

Time to Complete

Time to Complete	Feb-19	May-19	Aug-19
Customer A	28	19	26
Customer B	13	31	16
Customer C	19	29	23
Customer D	24	14	15
Customer E	19	18	31

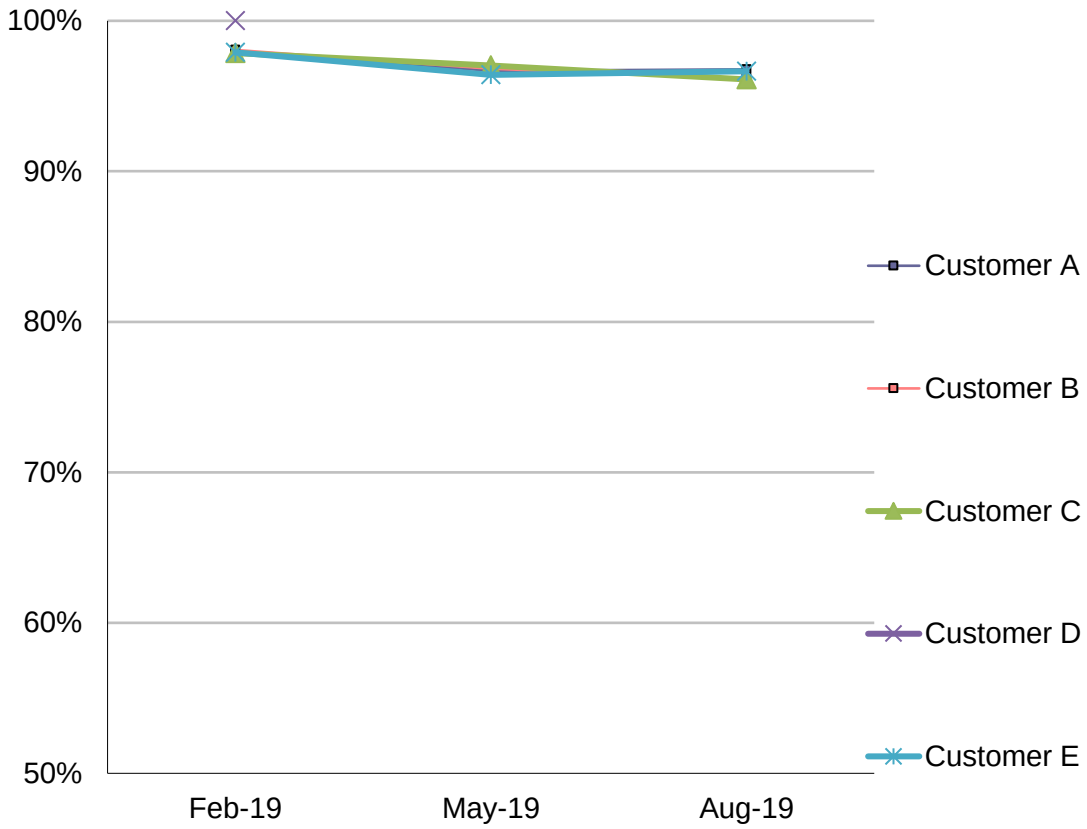


Results for Customer E were due to Chorus internal processing delays and end customer reschedules.

UBA ONLY (NAKED) - PROVISIONING METRICS

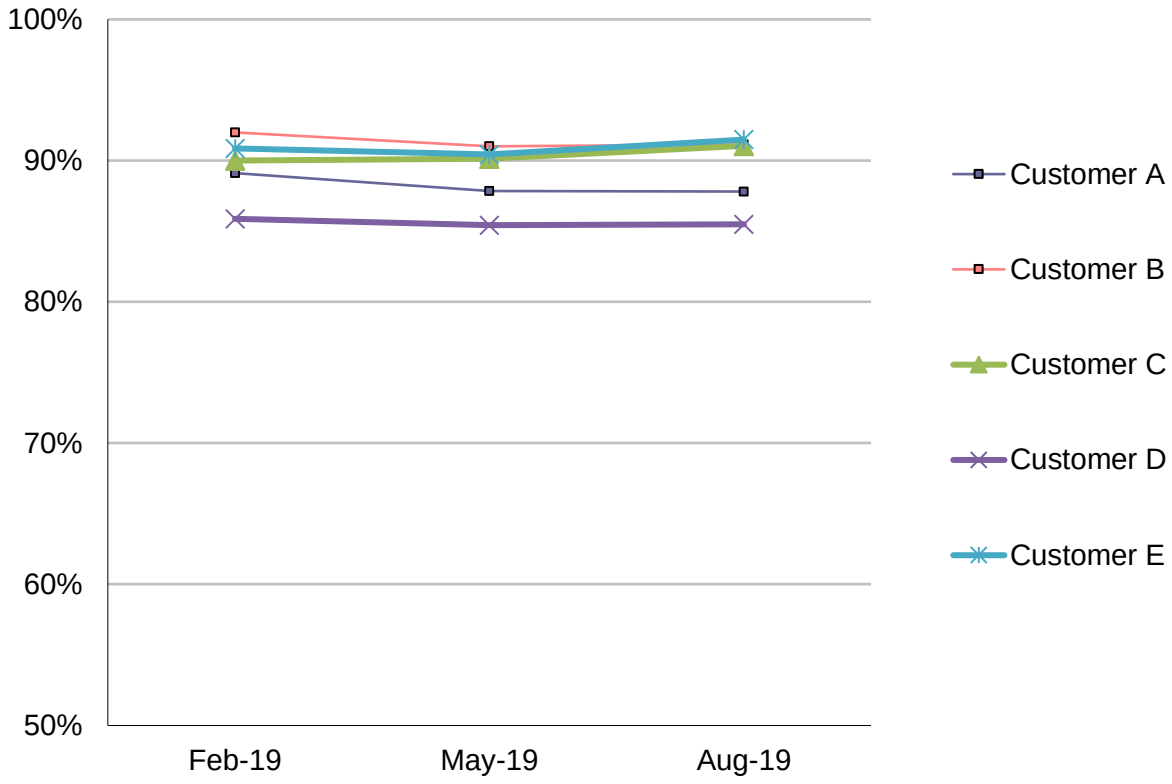
Met Commit Rate

Met Commit	Feb-19	May-19	Aug-19
Customer A	98%	97%	97%
Customer B	98%	97%	96%
Customer C	98%	97%	96%
Customer D	98%	97%	96%
Customer E	98%	96%	97%



Right First Time

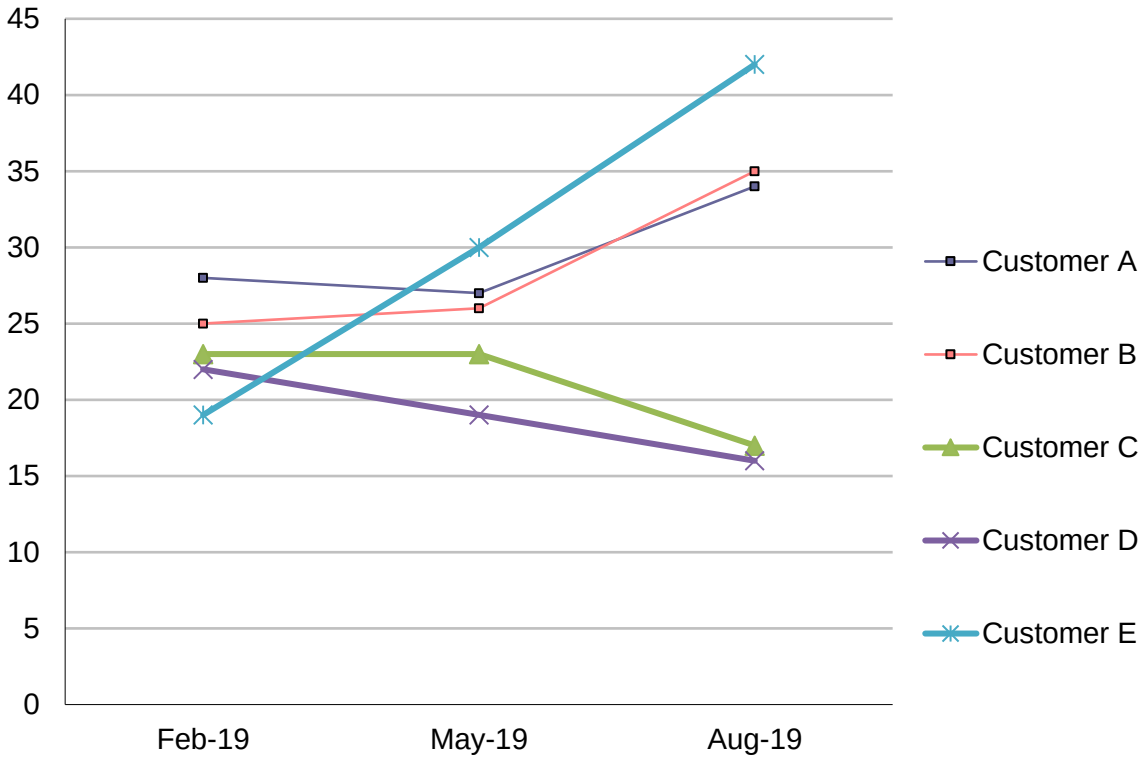
Right First Time	Feb-19	May-19	Aug-19
Customer A	89%	88%	88%
Customer B	92%	91%	91%
Customer C	90%	90%	91%
Customer D	86%	85%	85%
Customer E	91%	90%	91%



Results for Customer D were affected by separate network faults, end customer site readiness issues and reschedules.

Time to Complete

Time to Complete	Feb-19	May-19	Aug-19
Customer A	28	27	34
Customer B	25	26	35
Customer C	23	23	17
Customer D	22	19	16
Customer E	19	30	42

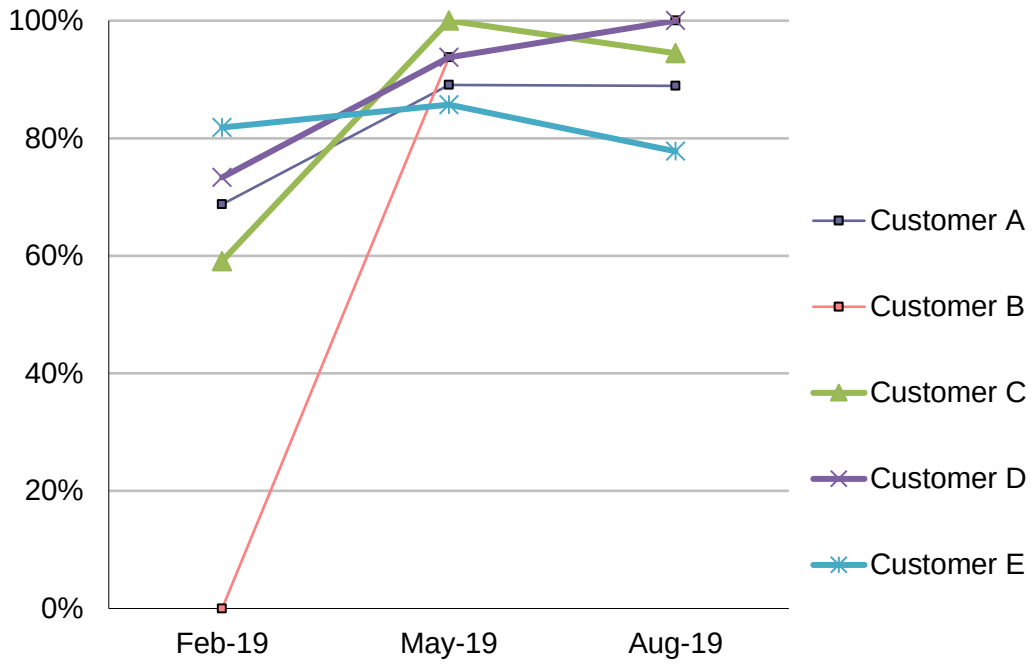


Results for Customers A, B, and E were affected by Chorus internal processing errors. Customers A and B were also affected by end customer reschedules. Customer E was also affected by separate network errors.

DFAS - PROVISIONING METRICS

Met Commit Rate

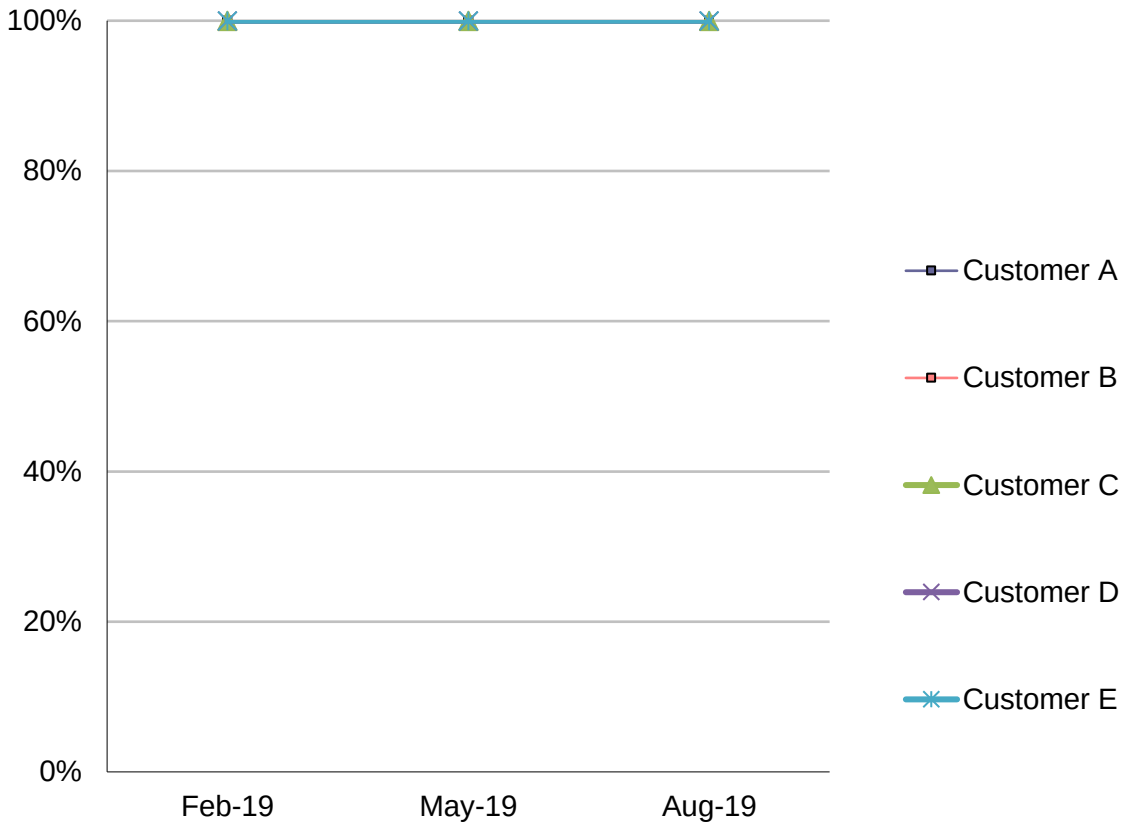
Met Commit	Feb-19	May-19	Aug-19
Customer A	69%	89%	89%
Customer B	0%	94%	100%
Customer C	59%	100%	94%
Customer D	73%	94%	100%
Customer E	82%	86%	78%



Results for Customers A, C, and E were affected by system processing delays.

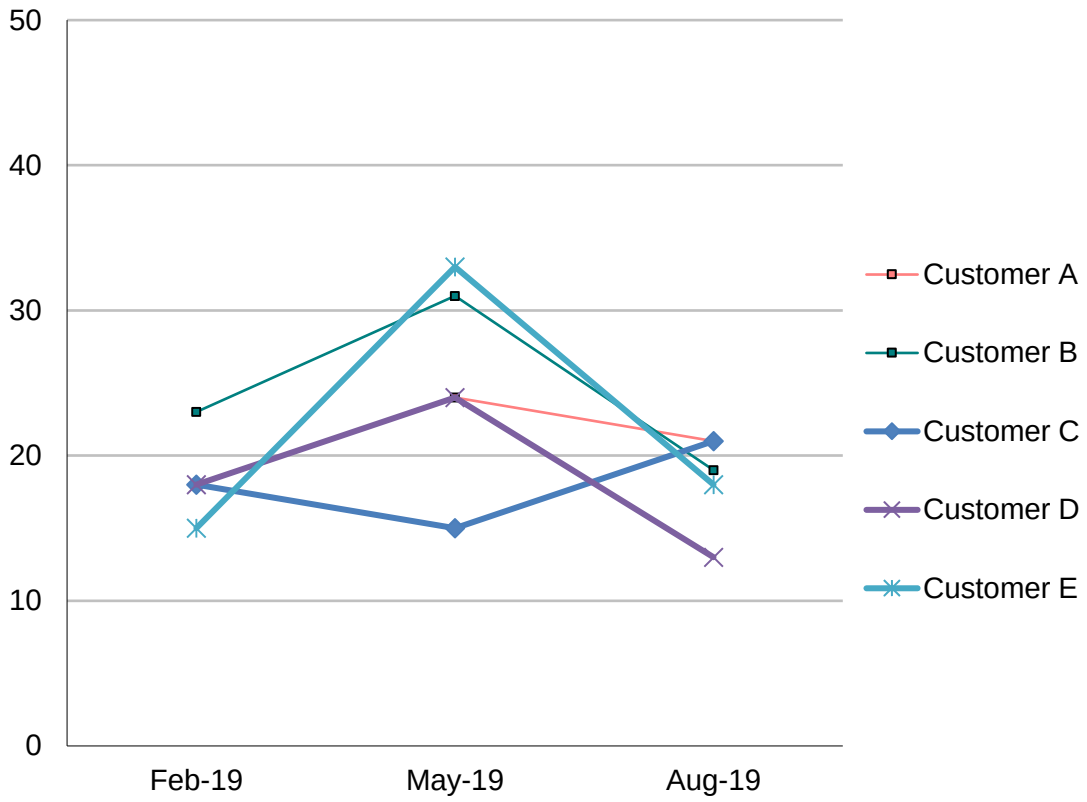
Right First Time

Right First Time	Feb-19	May-19	Aug-19
Customer A	100%	100%	100%
Customer B	100%	100%	100%
Customer C	100%	100%	100%
Customer D	100%	100%	100%
Customer E	100%	100%	100%



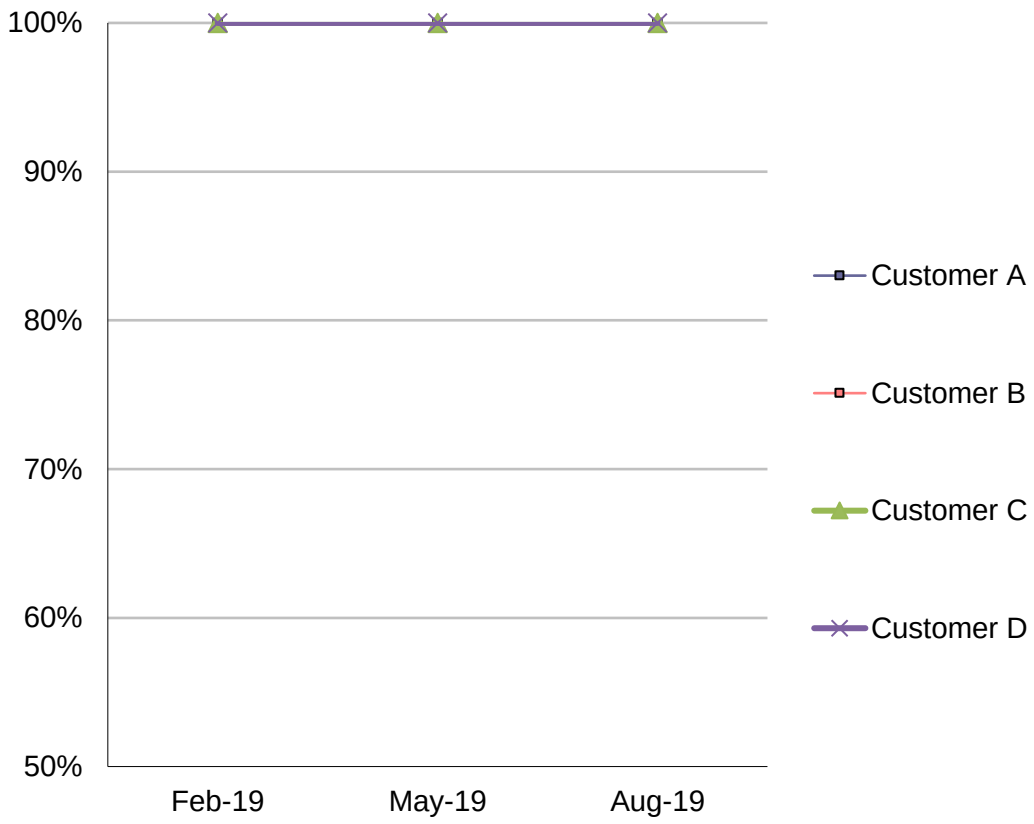
Time to Complete

Time to Complete	Feb-19	May-19	Aug-19
Customer A	18	24	21
Customer B	23	31	19
Customer C	18	15	21
Customer D	18	24	13
Customer E	15	33	18



Met Commit Rate

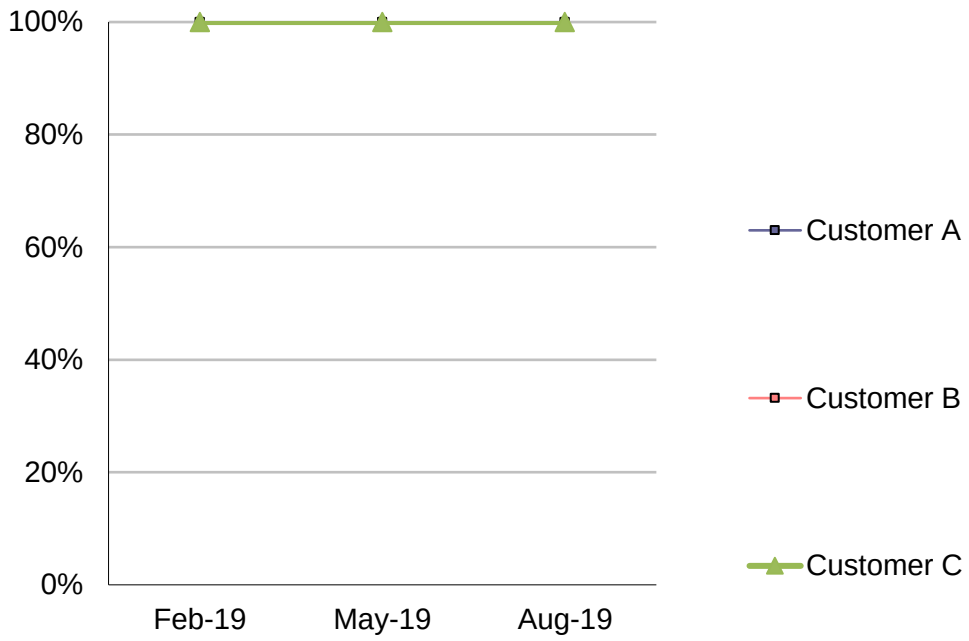
Met Commit	Feb-19	May-19	Aug-19
Customer A	100%	100%	100%
Customer B	100%	100%	100%
Customer C	100%	100%	100%
Customer D	100%	100%	100%



ICAB - PROVISIONING METRICS

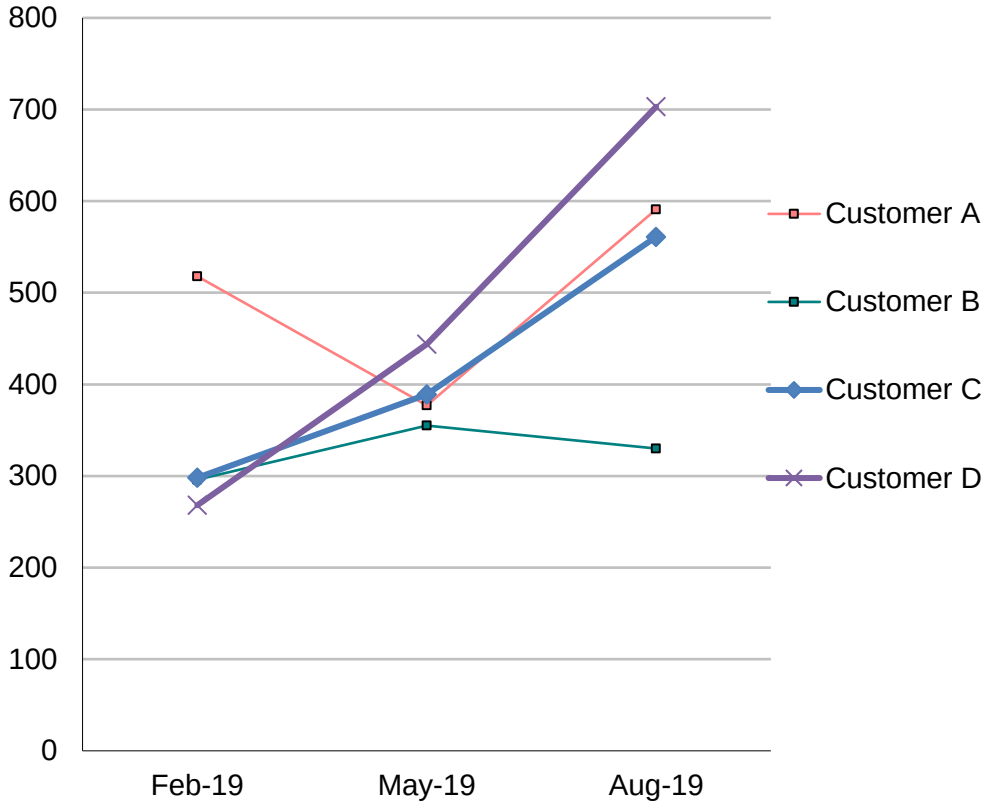
Right First Time

Right First Time	Feb-19	May-19	Aug-19
Customer A	100%	100%	100%
Customer B	100%	100%	100%
Customer C	100%	100%	100%



Time to Complete

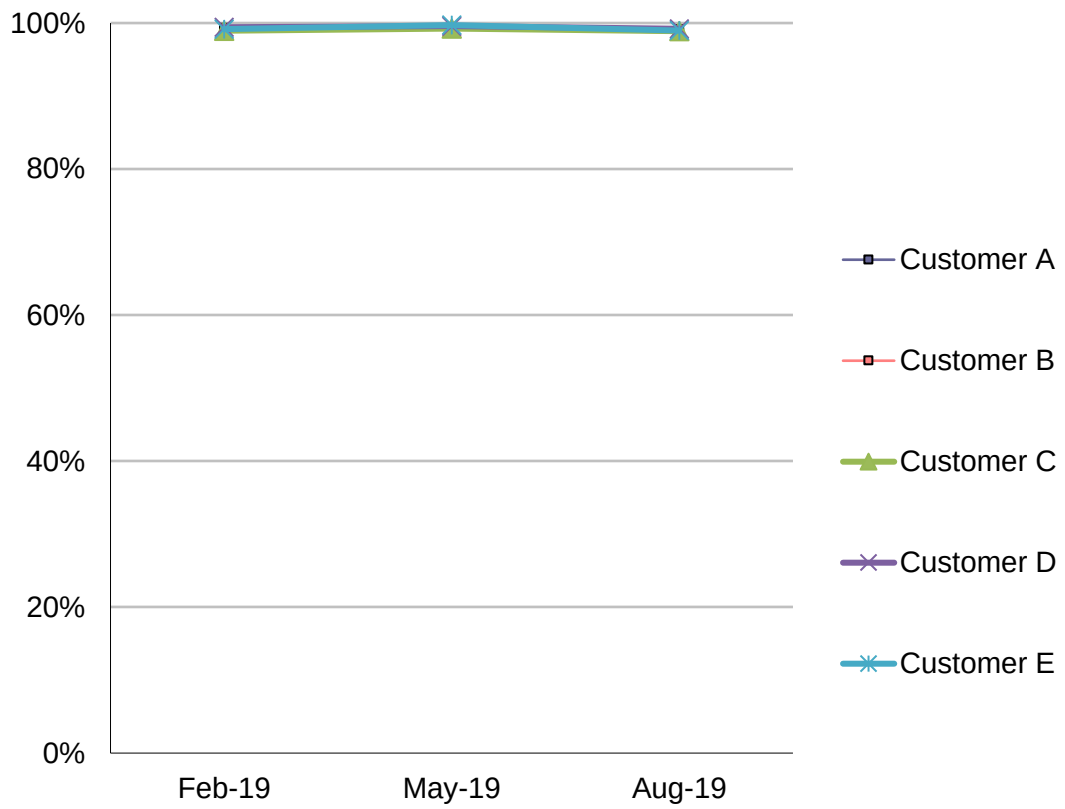
Time to Complete	Feb-19	May-19	Aug-19
Customer A	518	377	591
Customer B	296	355	330
Customer C	298	389	561
Customer D	268	444	703



Results for Customers A, C and D were affected by end site readiness issues. Customer D was also affected by consenting delays.

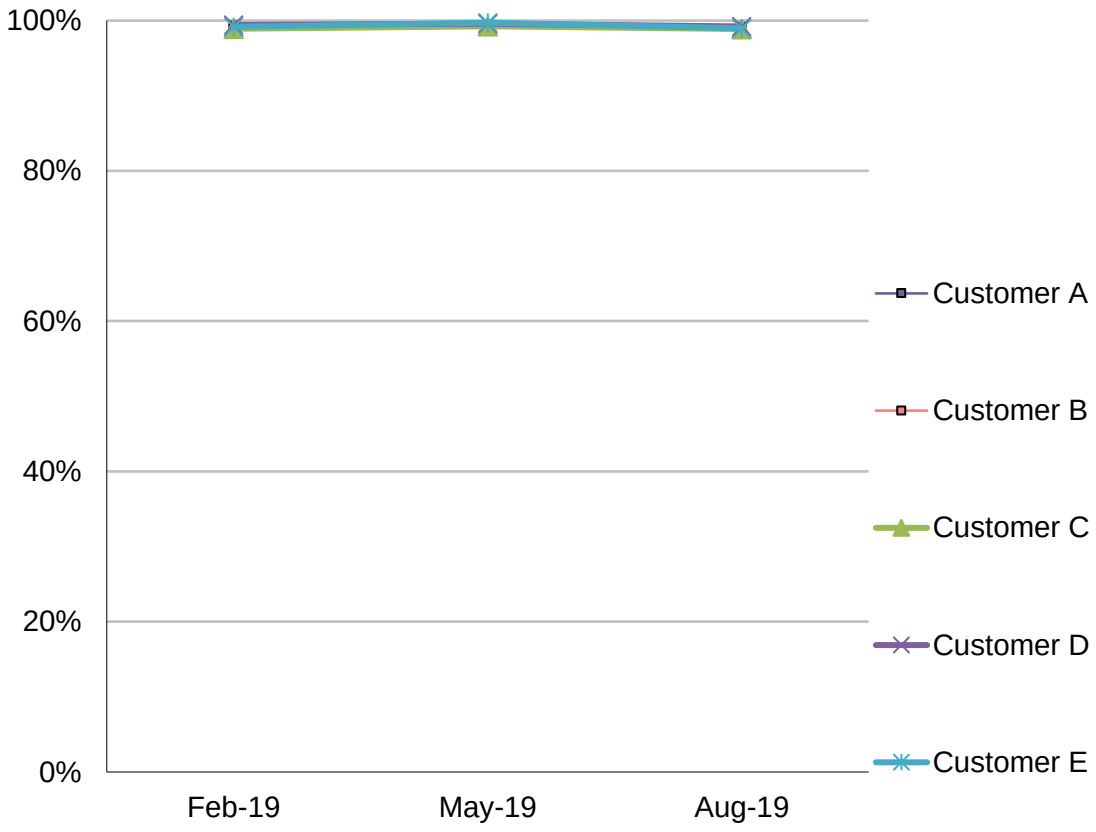
Met Commit Rate

Met Commit	Feb-19	May-19	Aug-19
Customer A	99%	99%	99%
Customer B	99%	99%	99%
Customer C	99%	99%	99%
Customer D	99%	100%	99%
Customer E	99%	100%	99%



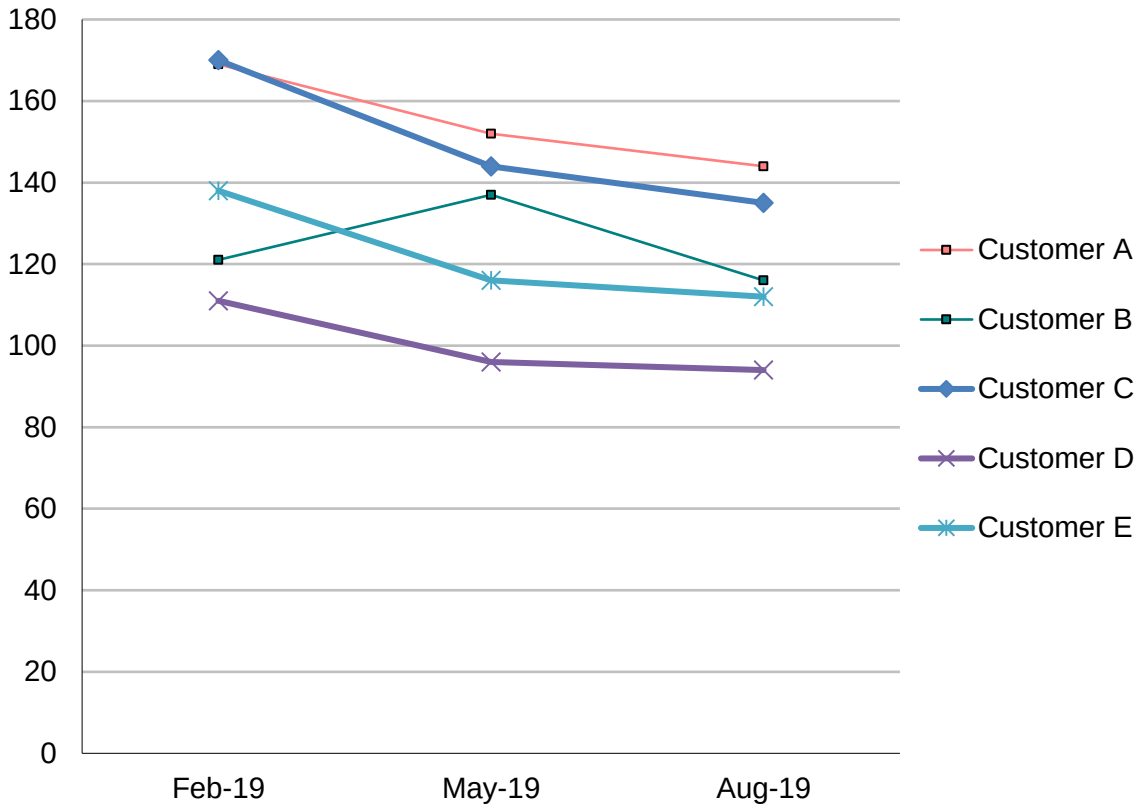
Right First Time

Right First Time	Feb-19	May-19	Aug-19
Customer A	95%	96%	96%
Customer B	96%	98%	98%
Customer C	97%	98%	98%
Customer D	95%	97%	97%
Customer E	96%	97%	98%



Time to Complete

Time to Complete	Feb-19	May-19	Aug-19
Customer A	169	152	144
Customer B	121	137	116
Customer C	170	144	135
Customer D	111	96	94
Customer E	138	116	112

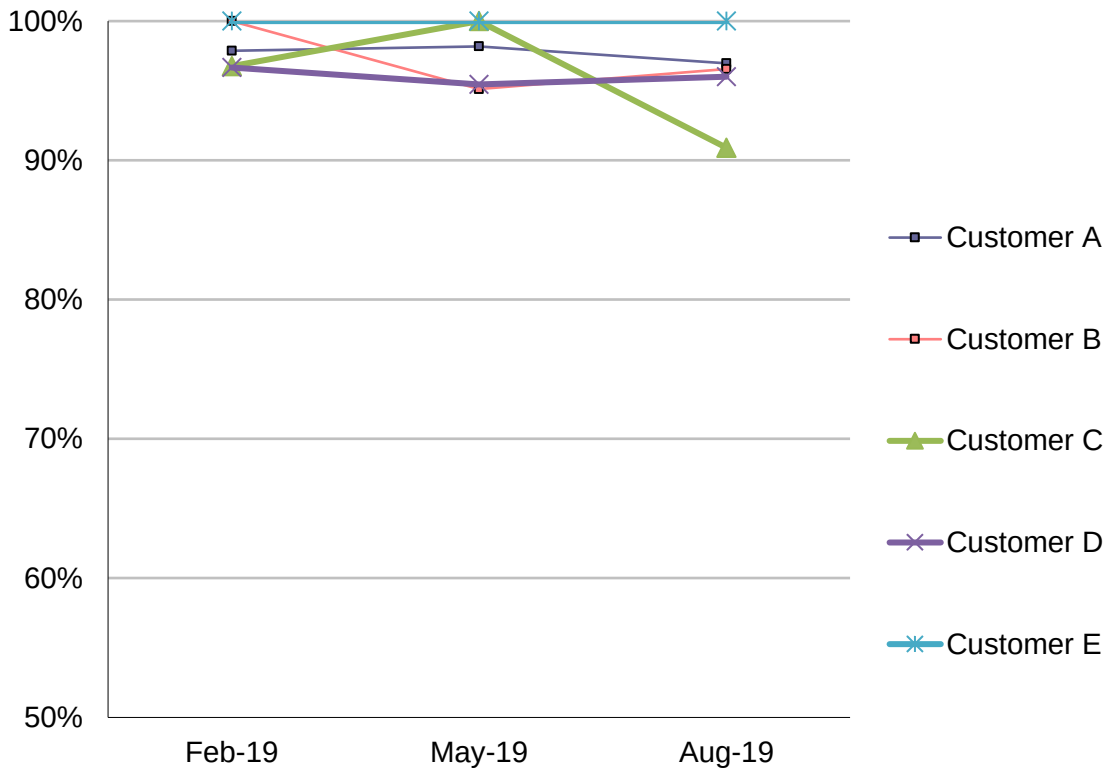


Results for Customers A, C, and E were affected by their internal ordering behaviour. Customer B was affected by consenting requirements.

NGA BITSTREAM 3 - PROVISIONING METRICS

Met Commit Rate

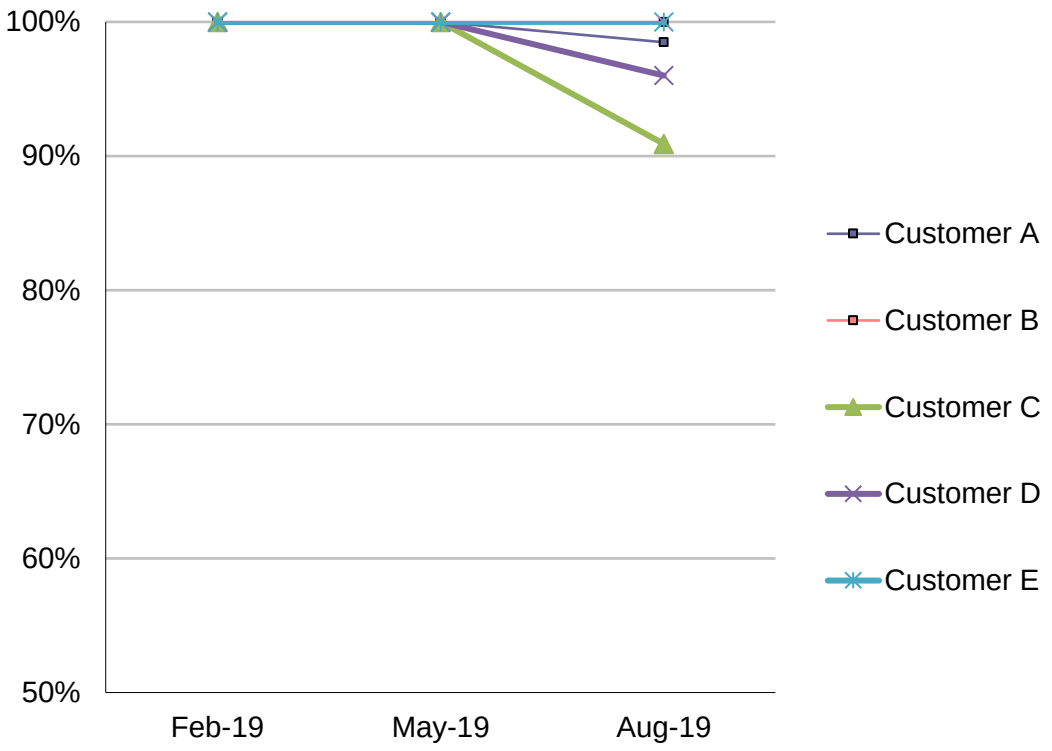
Met Commit	Feb-19	May-19	Aug-19
Customer A	98%	98%	97%
Customer B	100%	95%	97%
Customer C	97%	100%	91%
Customer D	97%	95%	96%
Customer E	100%	100%	100%



Results for Customer C were affected by a Chorus processing error.

Right First Time

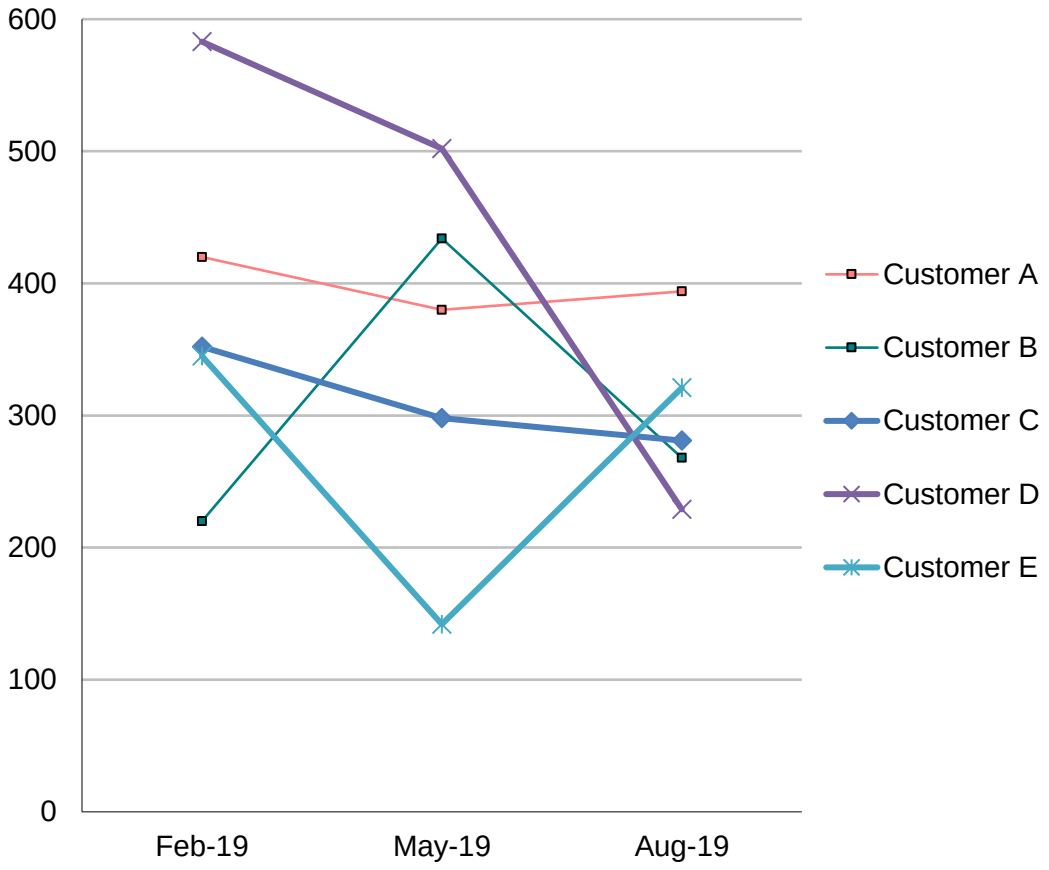
Right First Time	Feb-19	May-19	Aug-19
Customer A	100%	100%	98%
Customer B	100%	100%	100%
Customer C	100%	100%	91%
Customer D	100%	100%	96%
Customer E	100%	100%	100%



Results for Customer C were affected by separate network faults.

Time to Complete

Time to Complete	Feb-19	May-19	Aug-19
Customer A	420	380	394
Customer B	220	434	268
Customer C	352	298	281
Customer D	583	502	229
Customer E	345	142	321

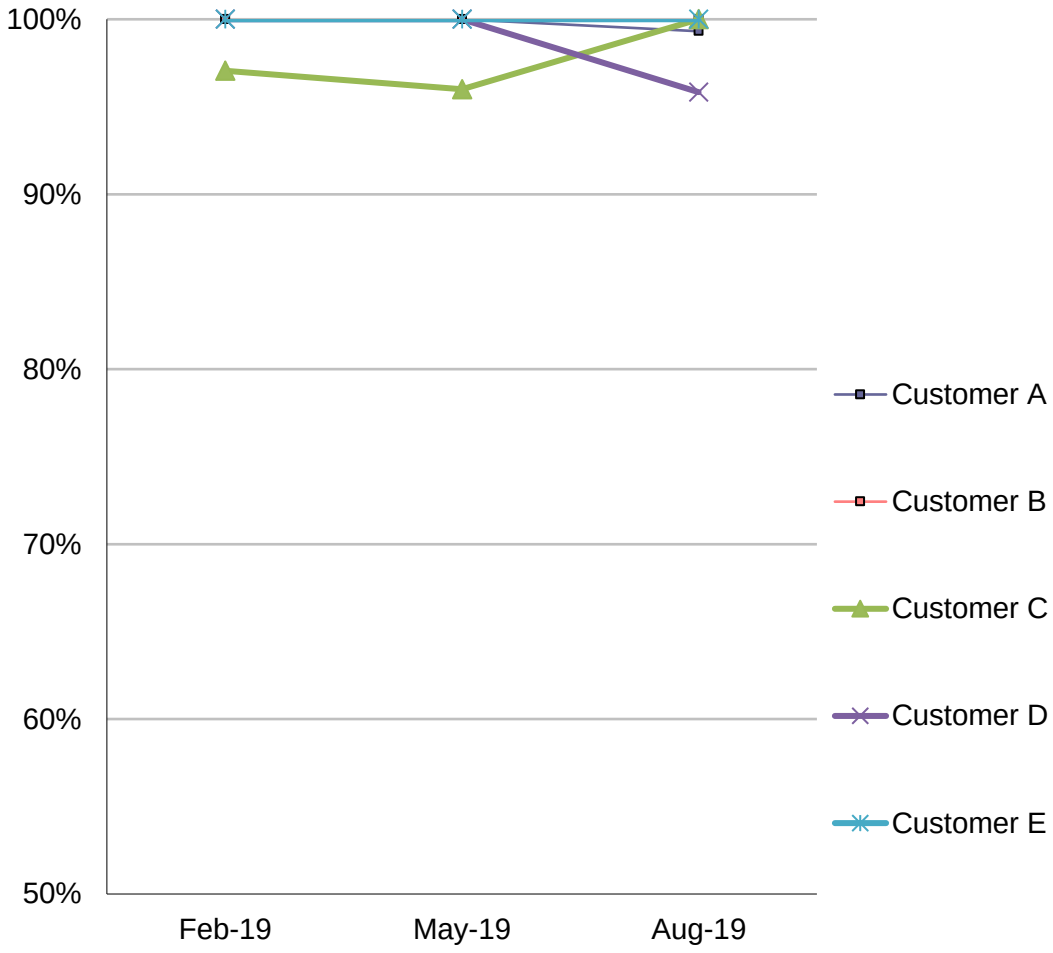


Results for Customers A, B, C and E were affected by complex builds and consenting requirements.

NGA BITSTREAM 3A - PROVISIONING METRICS

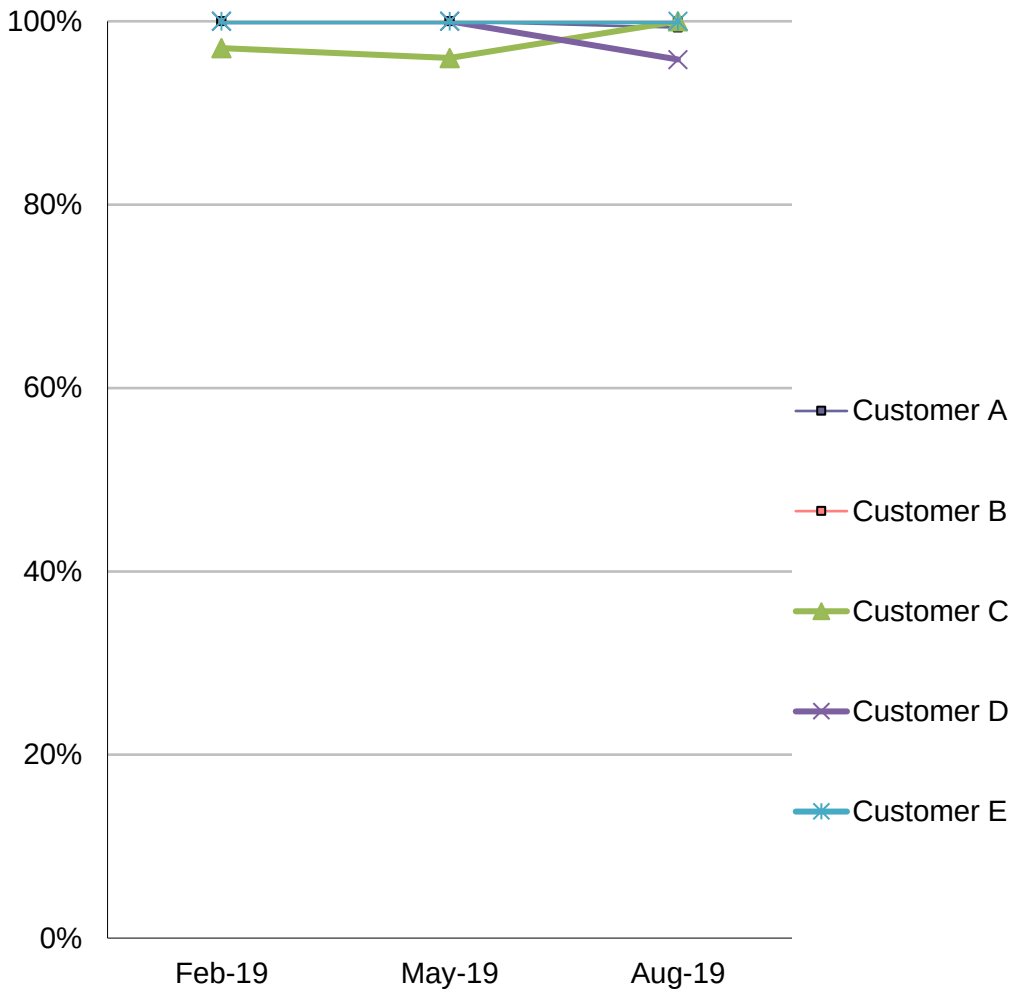
Met Commit Rate

Met Commit	Feb-19	May-19	Aug-19
Customer A	100%	100%	99%
Customer B	100%	100%	100%
Customer C	97%	96%	100%
Customer D	100%	100%	96%
Customer E	100%	100%	100%



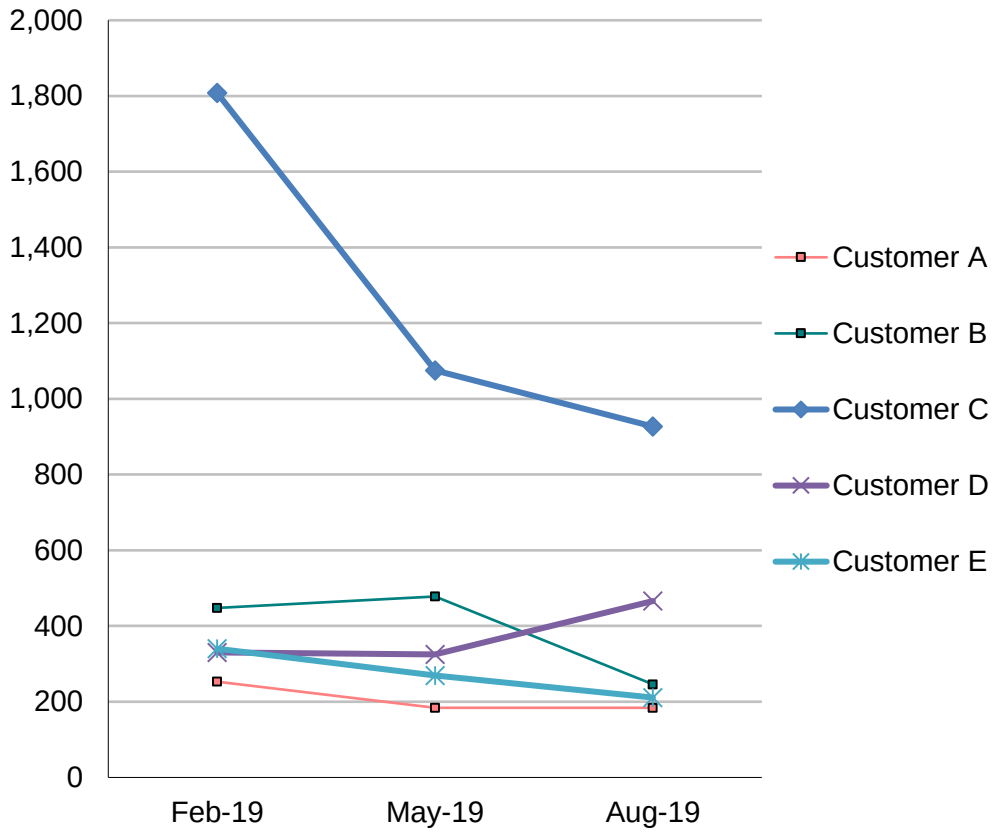
Right First Time

Right First Time	Feb-19	May-19	Aug-19
Customer A	100%	100%	99%
Customer B	100%	100%	100%
Customer C	97%	96%	100%
Customer D	100%	100%	96%
Customer E	100%	100%	100%



Time to Complete

Time to Complete	Feb-19	May-19	Aug-19
Customer A	253	184	184
Customer B	448	478	246
Customer C	1808	1075	927
Customer D	330	325	466
Customer E	340	269	211

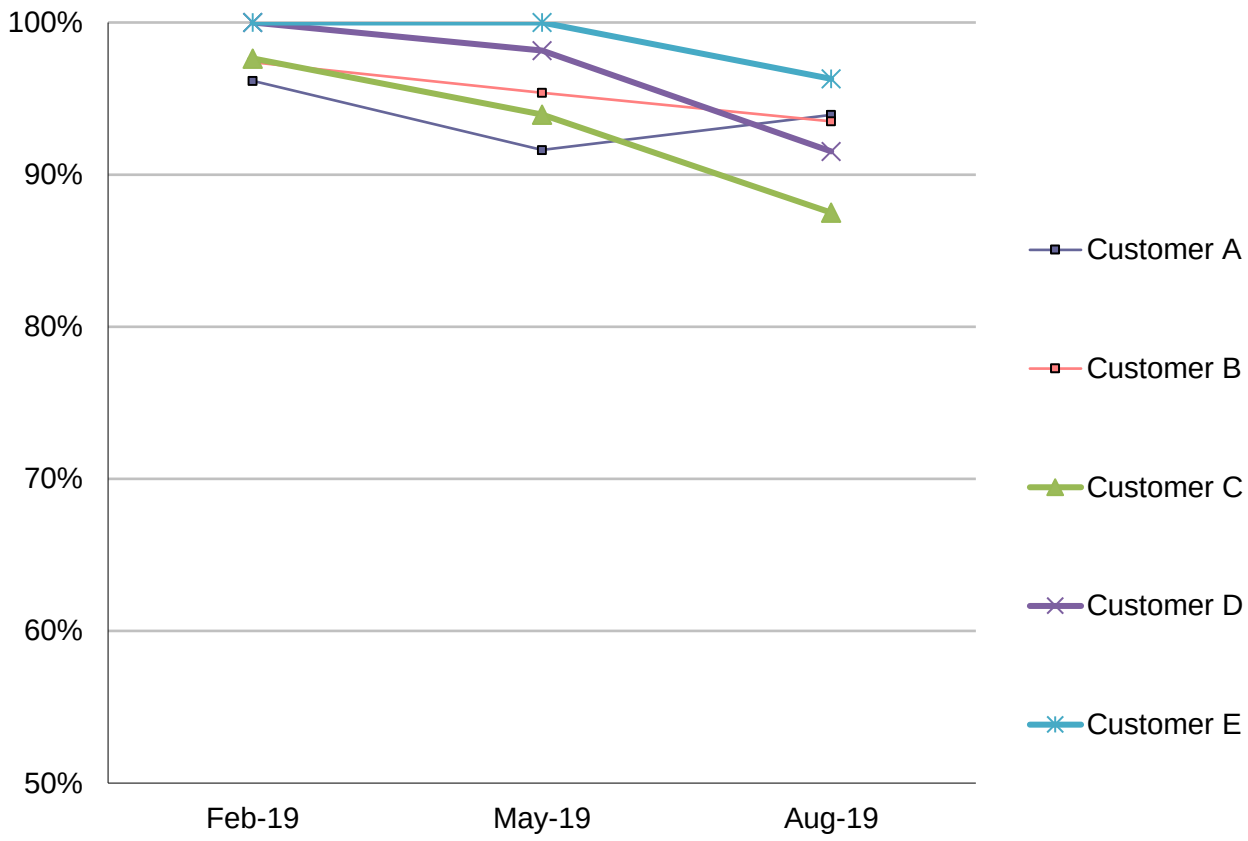


Results for Customers B, C, D and E were affected by complex orders and civil build requirements.

BASEBAND COPPER - RESTORATION METRICS

Met Commit Rate

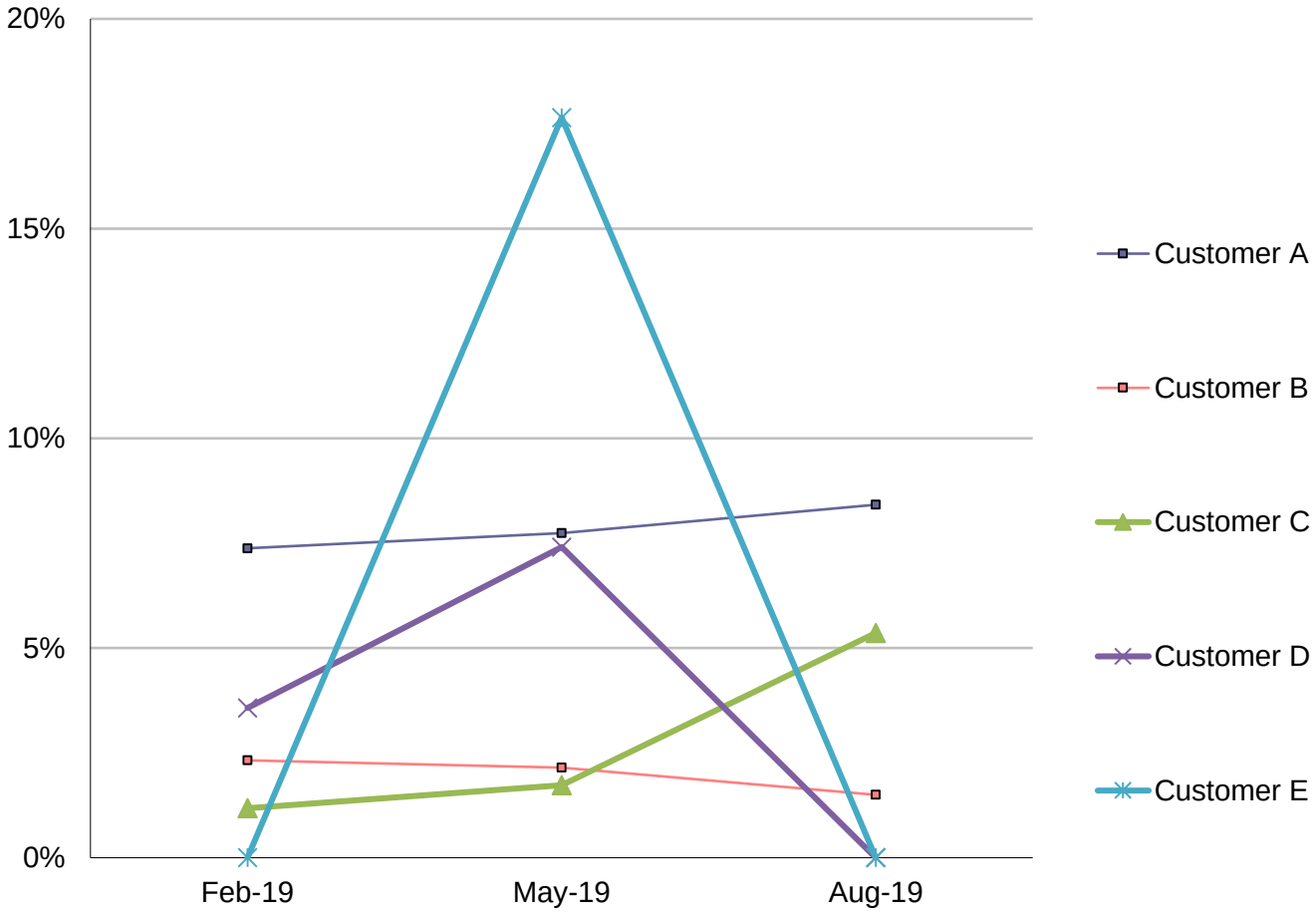
Met Commit	Feb-19	May-19	Aug-19
Customer A	96%	92%	94%
Customer B	97%	95%	94%
Customer C	98%	94%	88%
Customer D	100%	98%	92%
Customer E	100%	100%	96%



Results for Customer C were affected by complex faults requiring multiple technician visits, and an availability of specialists.

Repeat Fault Rate

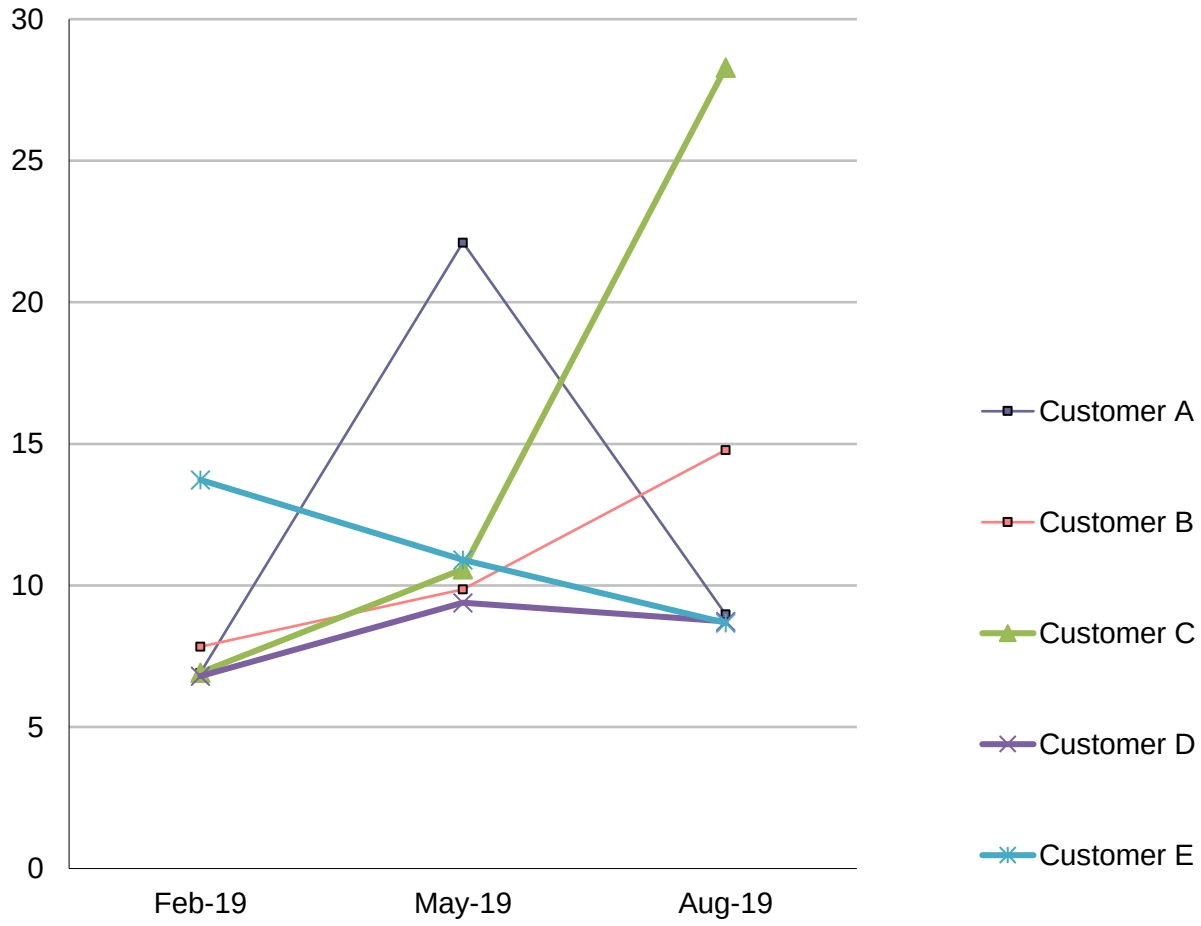
Repeat Fault	Feb-19	May-19	Aug-19
Customer A	7%	8%	8%
Customer B	2%	2%	2%
Customer C	1%	2%	5%
Customer D	4%	7%	0%
Customer E	0%	18%	0%



Results for Customers A and C were affected by multiple faults that required extra visits.

Time to Complete

Time to Complete	Feb-19	May-19	Aug-19
Customer A	7	22	9
Customer B	8	10	15
Customer C	7	11	28
Customer D	7	9	9
Customer E	14	11	9

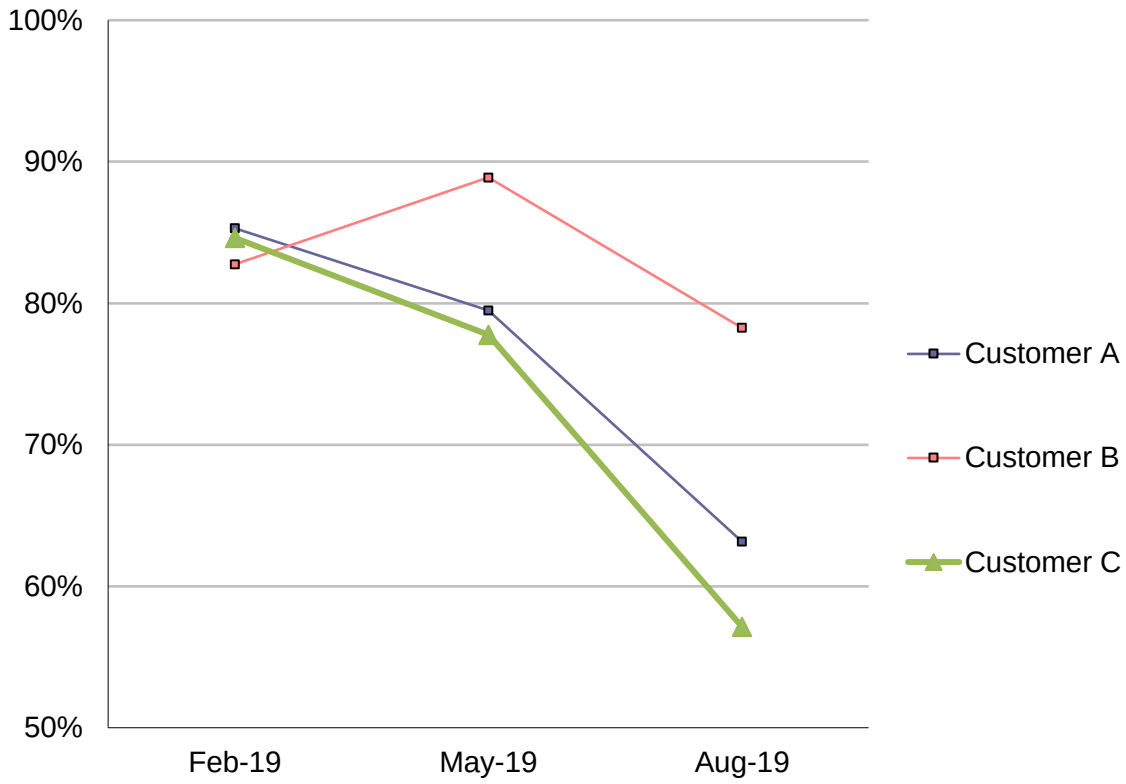


Results for Customer C were affected by multiple faults that required extra visits.

HSNS LITE - RESTORATION METRICS

Met Commit Rate

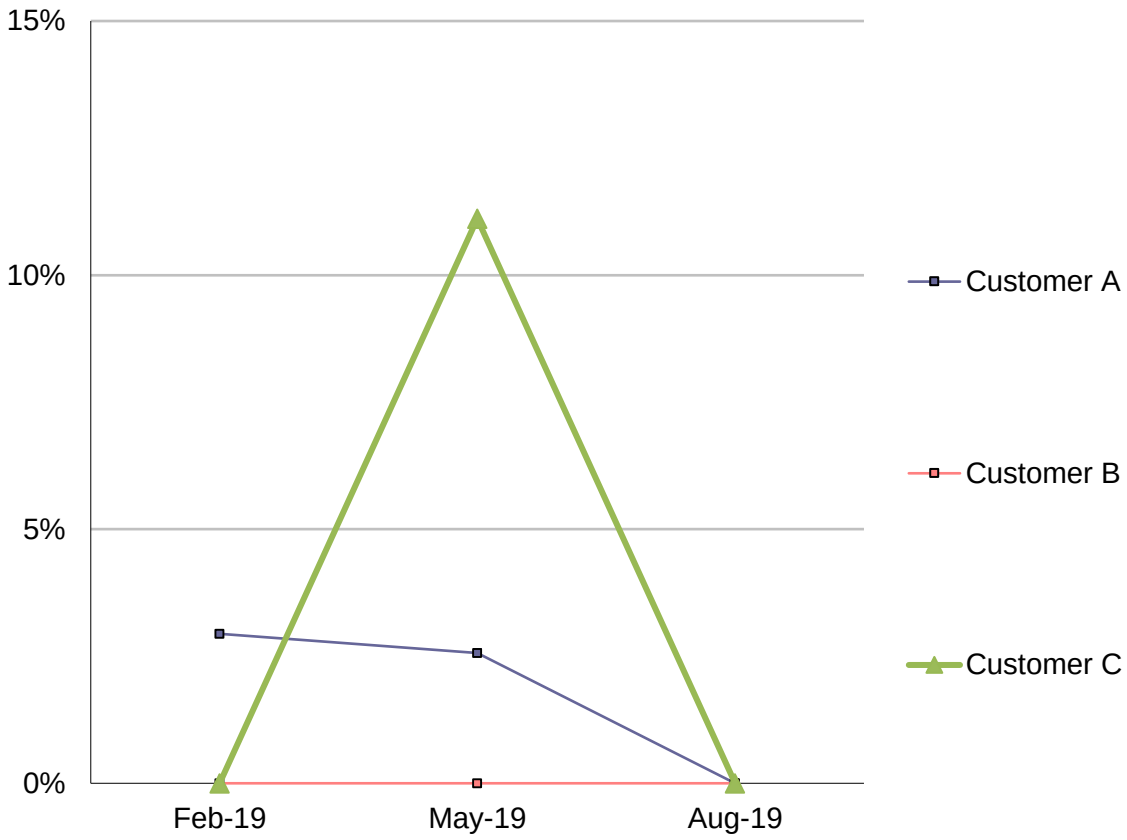
Met Commit	Feb-19	May-19	Aug-19
Customer A	85%	79%	63%
Customer B	83%	89%	78%
Customer C	85%	78%	57%



Customers A and C were affected by complex faults and limited specialist requirements.

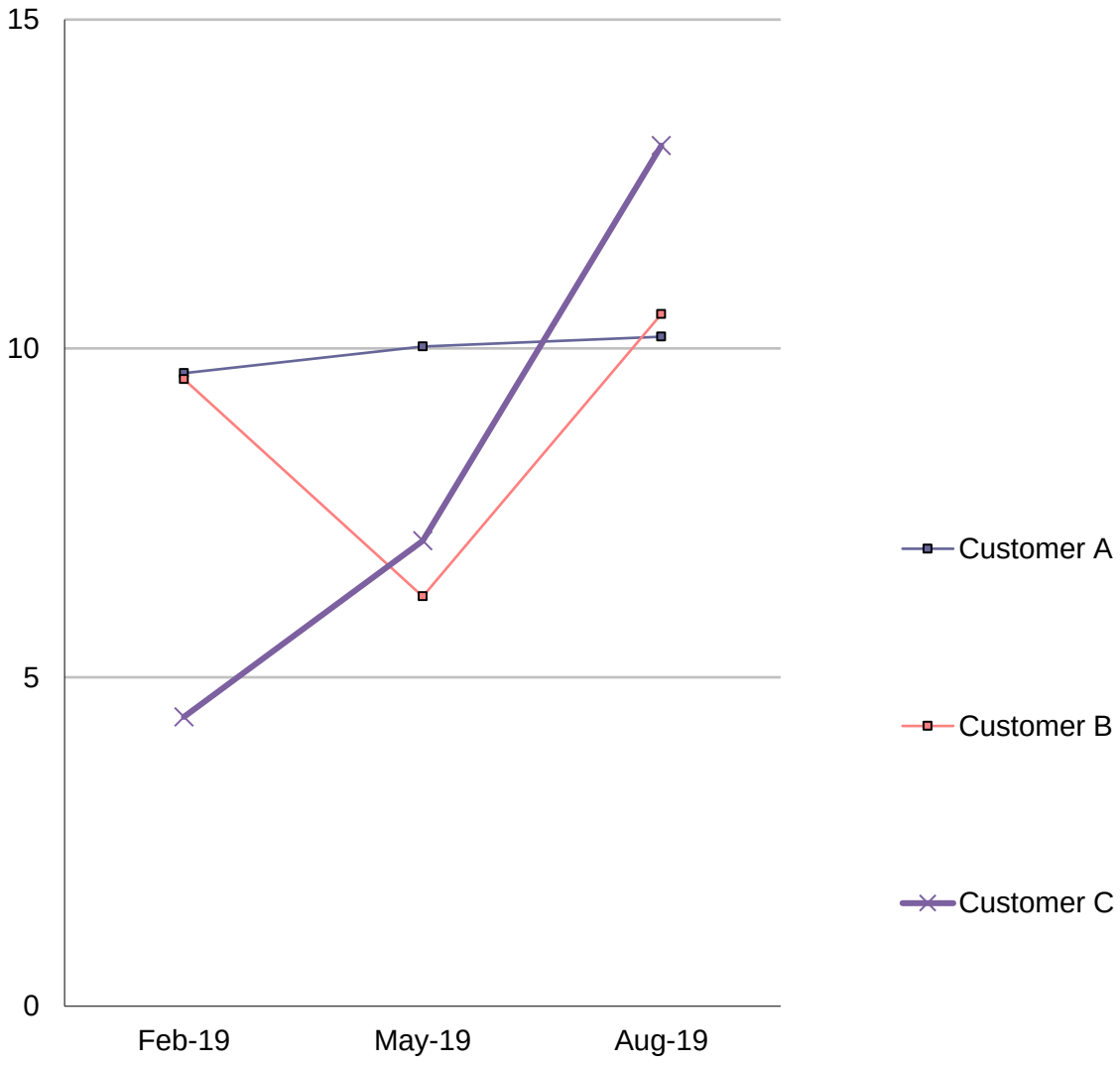
Repeat Fault Rate

Repeat Fault	Feb-19	May-19	Aug-19
Customer A	3%	3%	0%
Customer B	0%	0%	0%
Customer C	0%	11%	0%



Time to Complete

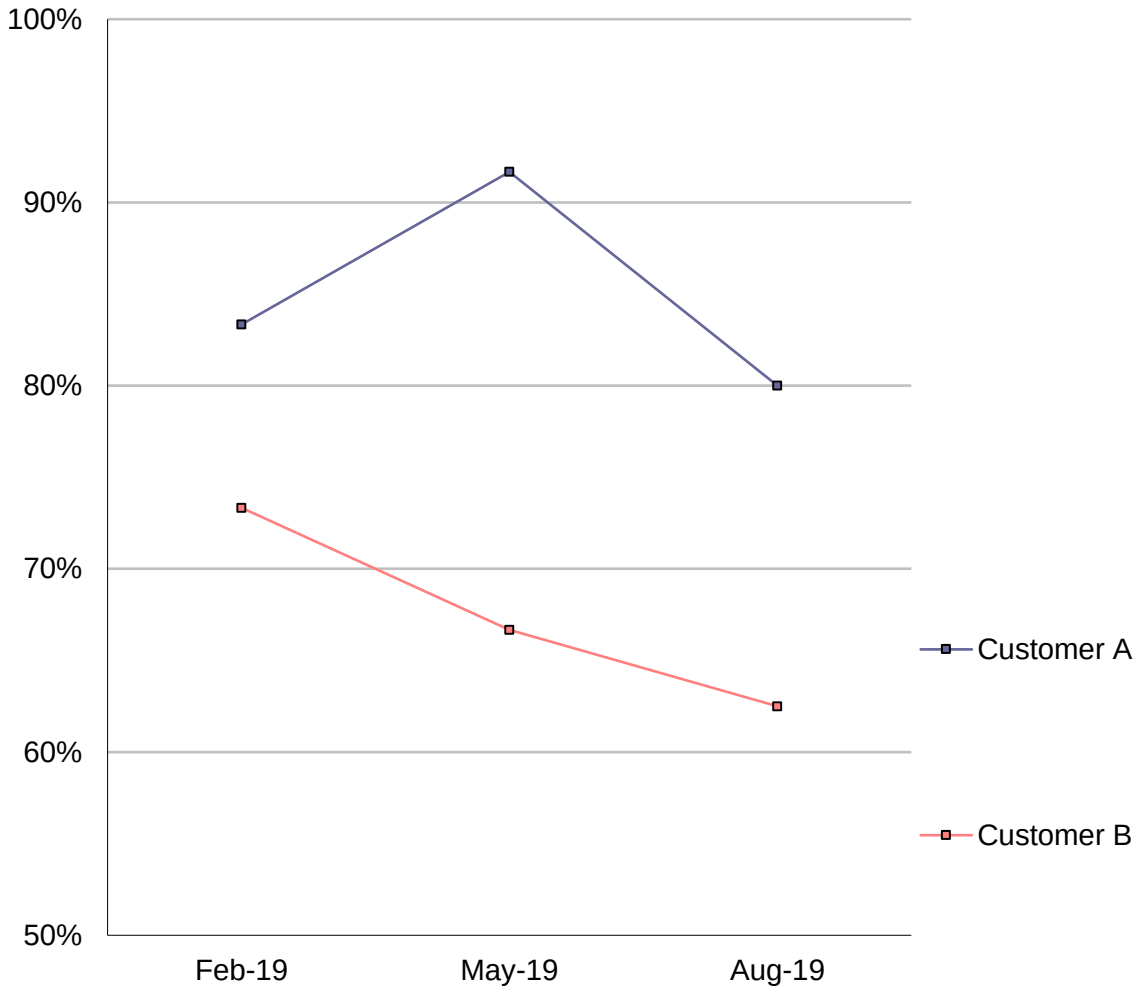
Time to Complete	Feb-19	May-19	Aug-19
Customer A	10	10	10
Customer B	10	6	11
Customer C	4	7	13



HSNS PREMIUM - RESTORATION METRICS

Met Commit Rate

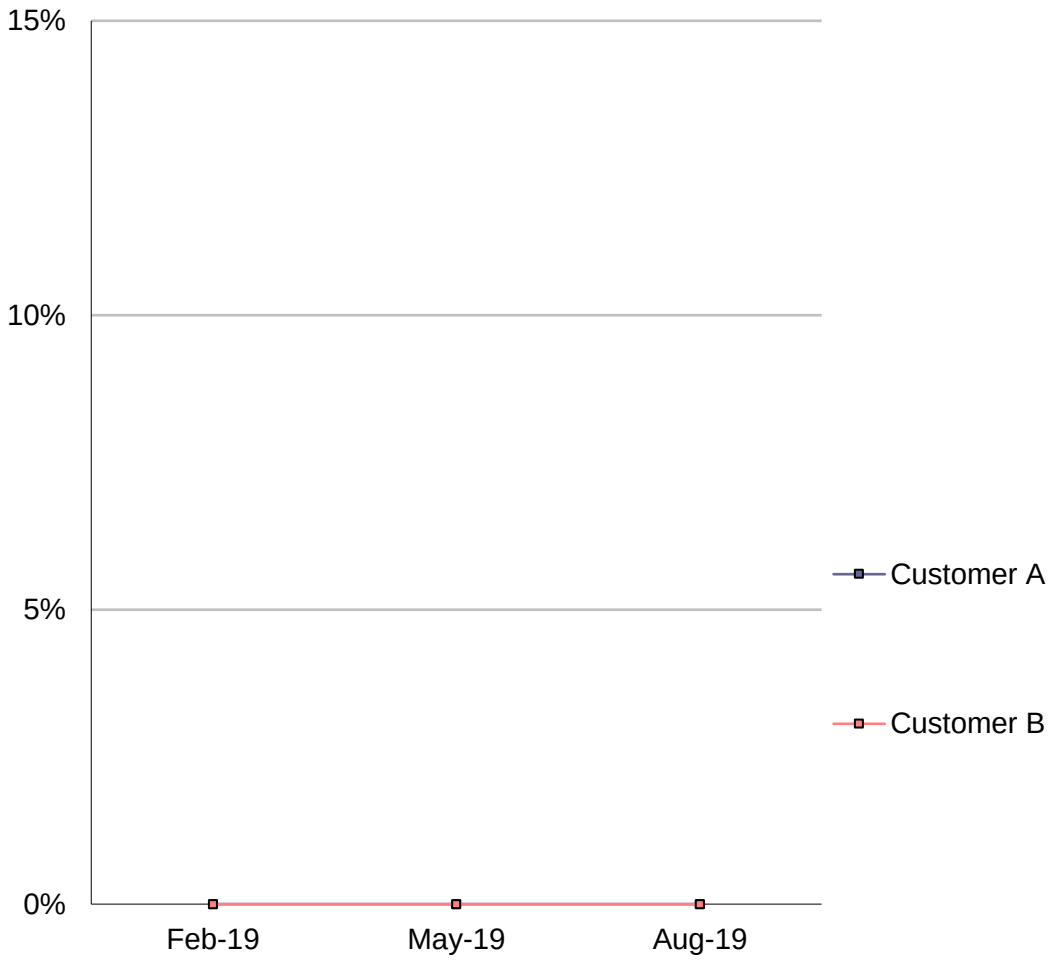
Met Commit	Feb-19	May-19	Aug-19
Customer A	83%	92%	80%
Customer B	73%	67%	63%



Results for Customer B were affected by complex faults.

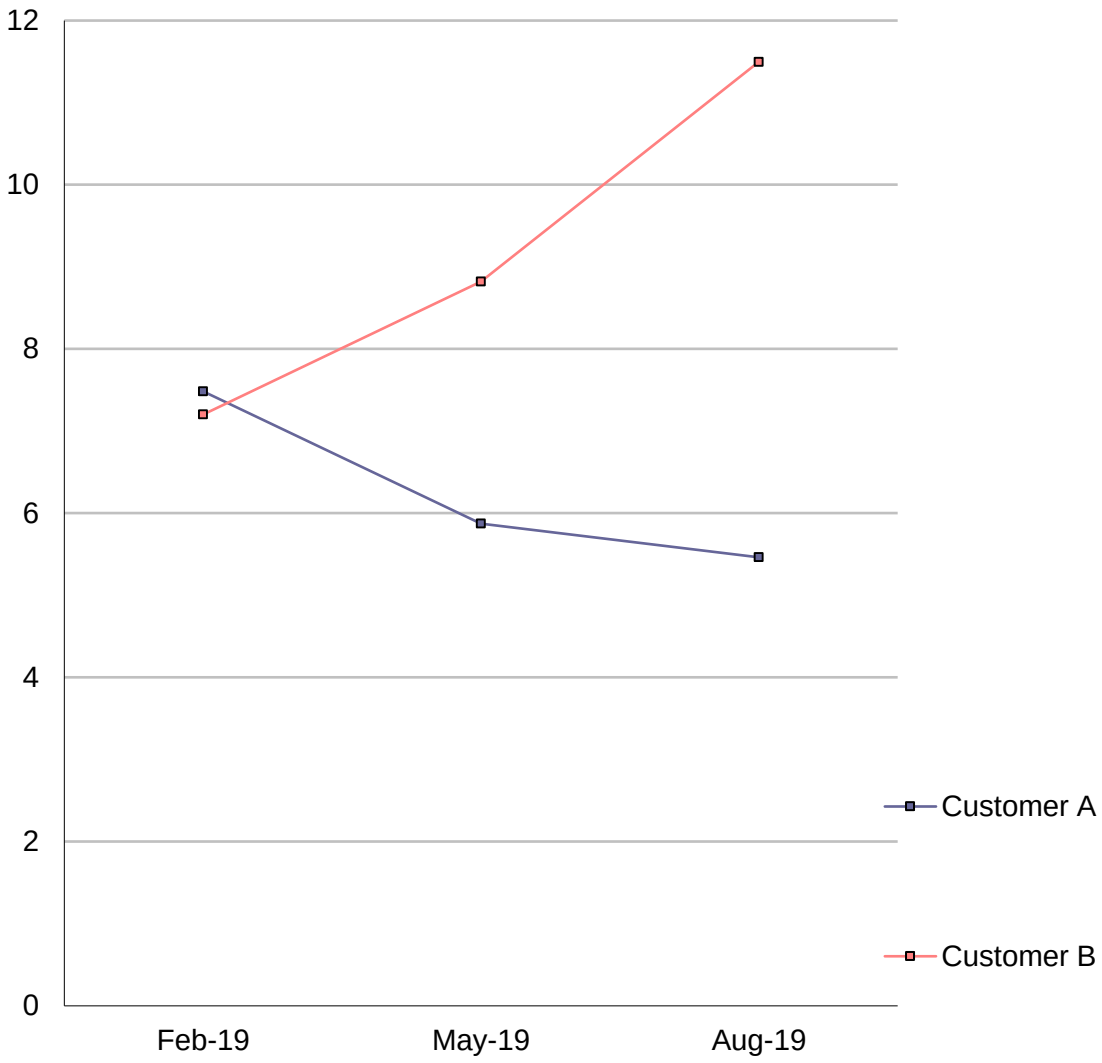
Repeat Fault Rate

Repeat Fault	Feb-19	May-19	Aug-19
Customer A	0%	0%	0%
Customer B	0%	0%	0%



Time to Complete

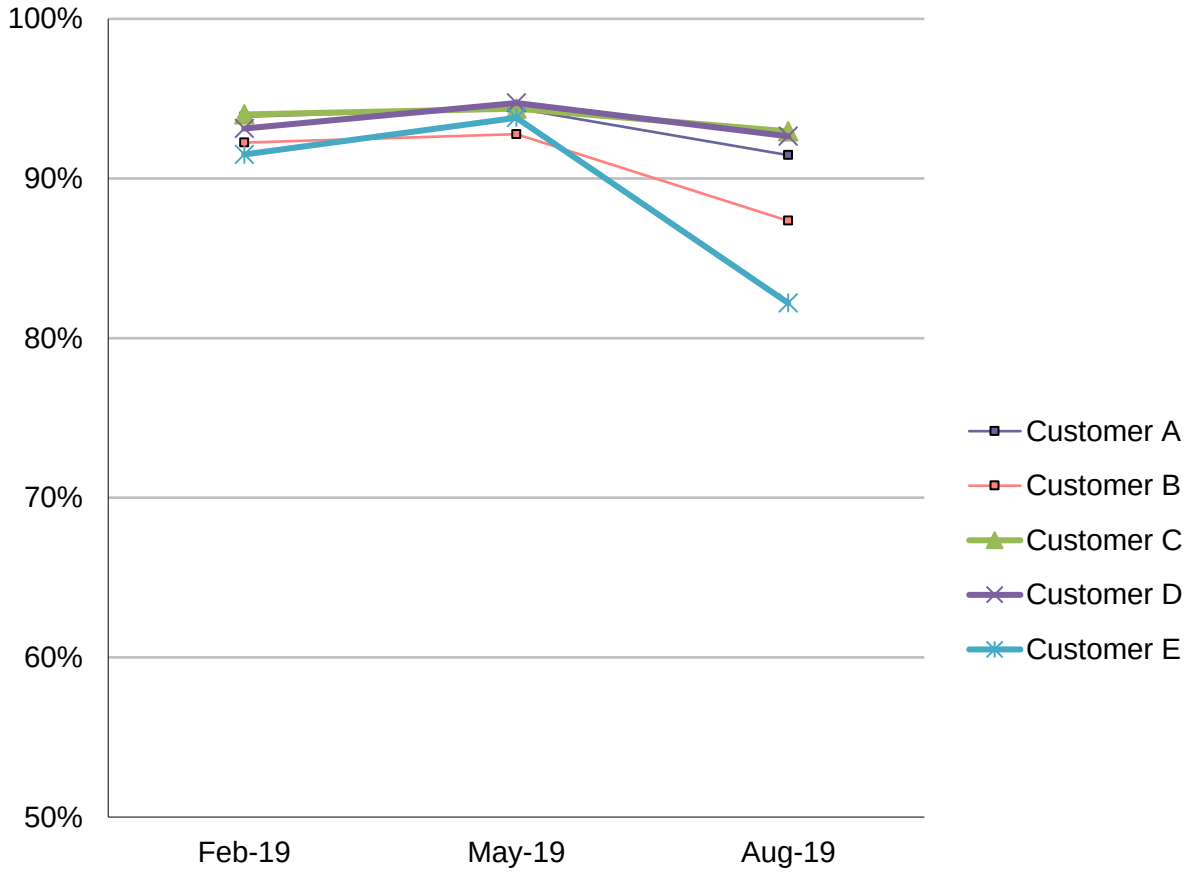
Time to Complete	Feb-19	May-19	Aug-19
Customer A	7	6	5
Customer B	7	9	11



NGA- RESTORATION METRICS

Met Commit Rate

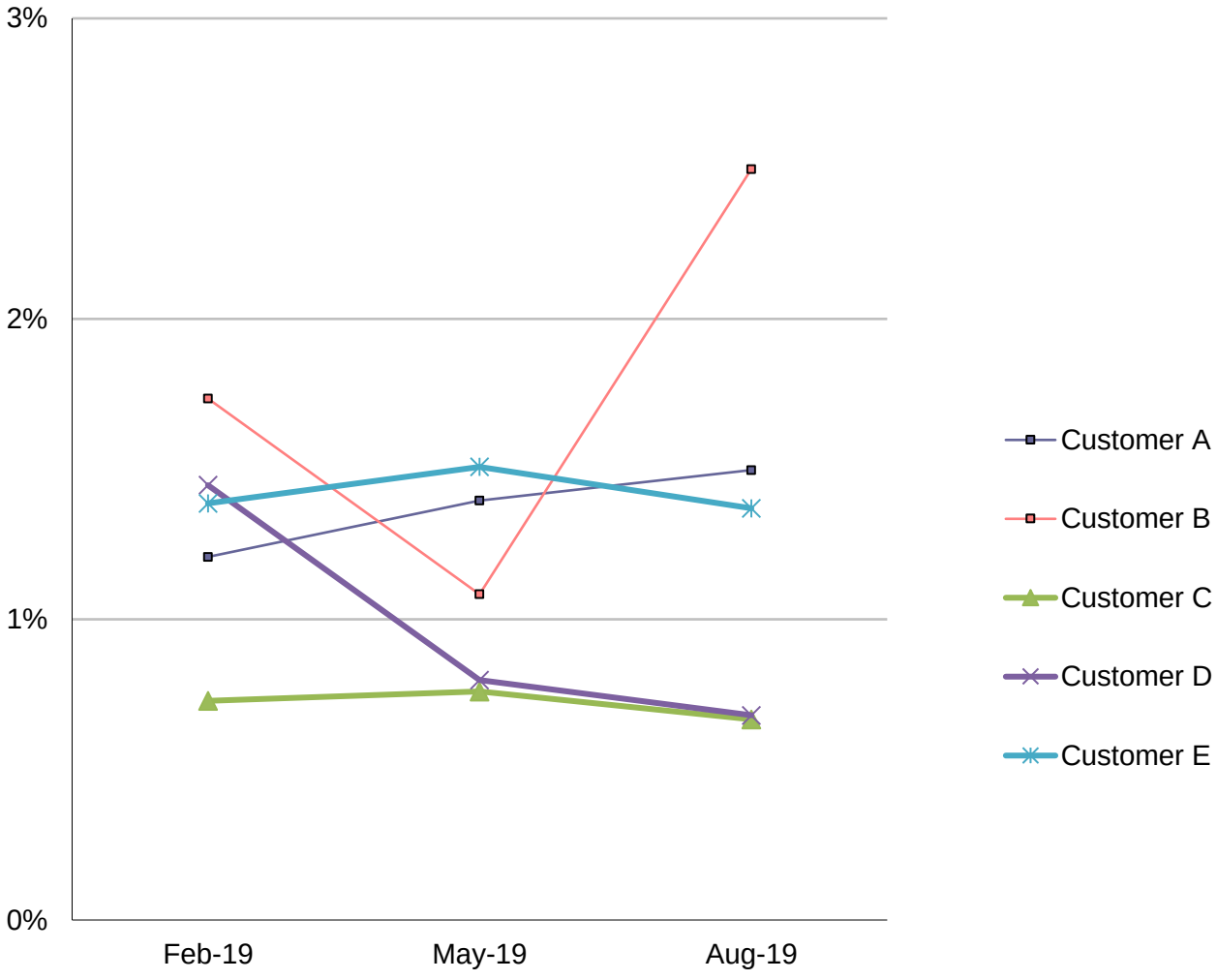
Met Commit	Feb-19	May-19	Aug-19
Customer A	94%	94%	91%
Customer B	92%	93%	87%
Customer C	94%	94%	93%
Customer D	93%	95%	93%
Customer E	92%	94%	82%



Customers B and E were affected by complex faults and the limited availability of specialists.

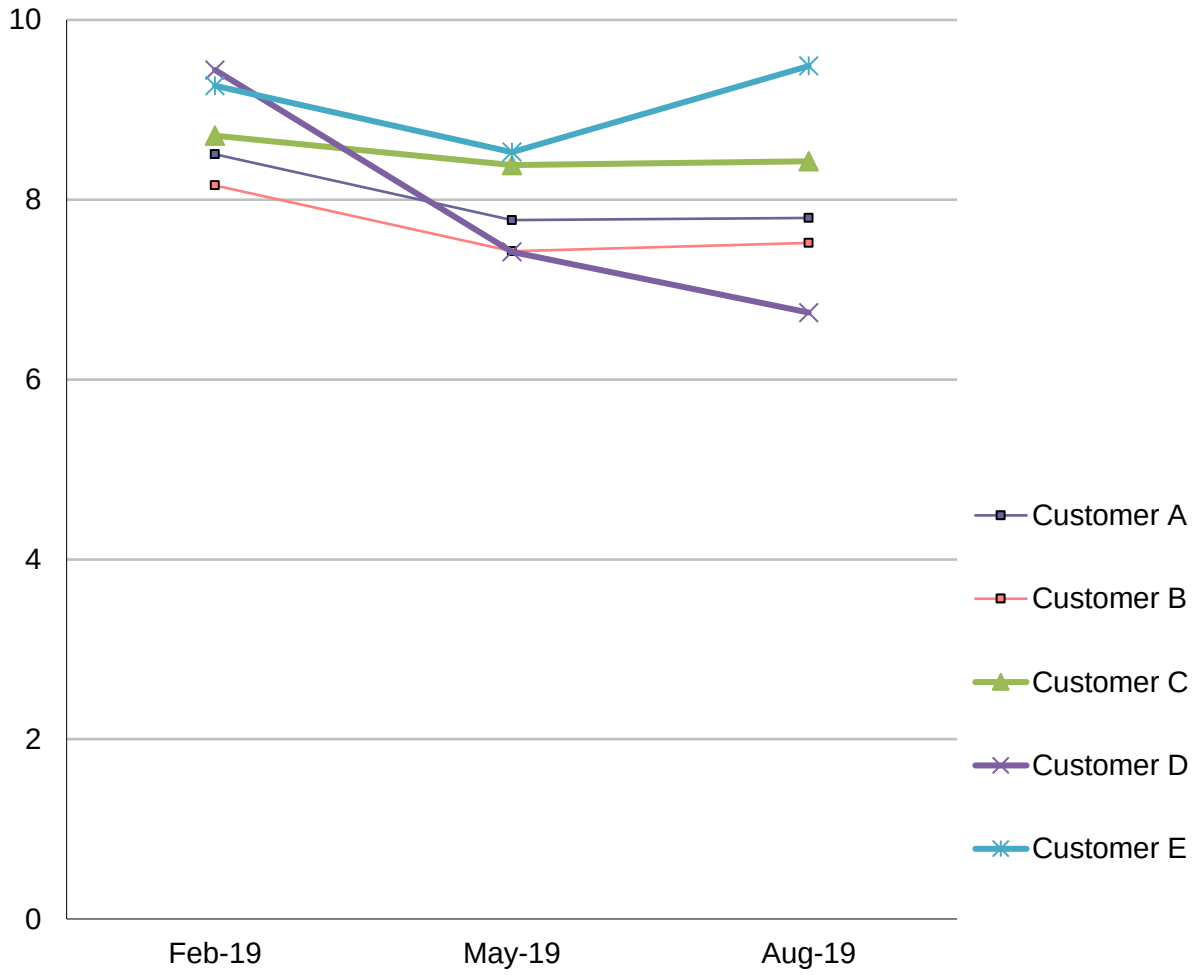
Repeat Fault Rate

Repeat Fault	Feb-19	May-19	Aug-19
Customer A	1%	1%	1%
Customer B	2%	1%	2%
Customer C	1%	1%	1%
Customer D	1%	1%	1%
Customer E	1%	2%	1%



Time to Complete

Time to Complete	Feb-19	May-19	Aug-19
Customer A	9	8	8
Customer B	8	7	8
Customer C	9	8	8
Customer D	9	7	7
Customer E	9	9	9

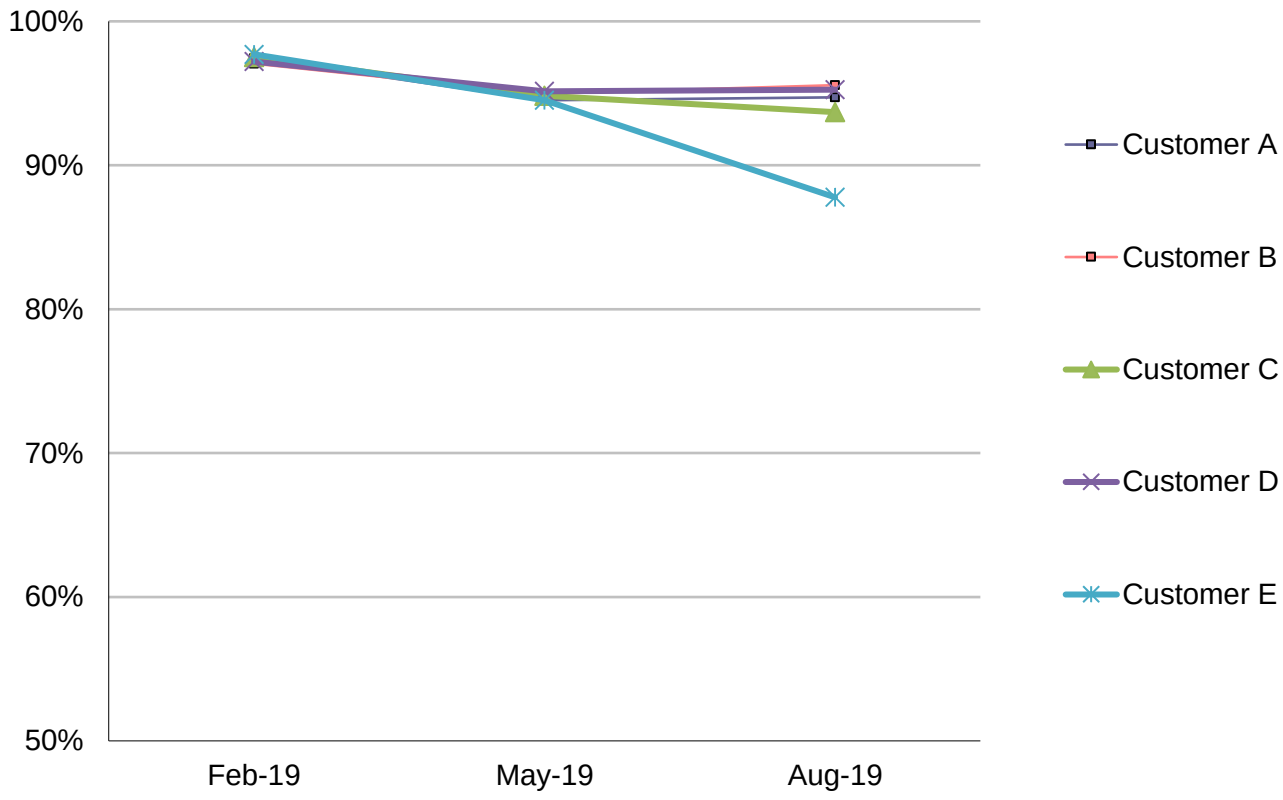


UBA - RESTORATION METRICS

Both UBA only (naked) and UBA with POTS (clothed) faults are presented in these metrics.

Met Commit Rate

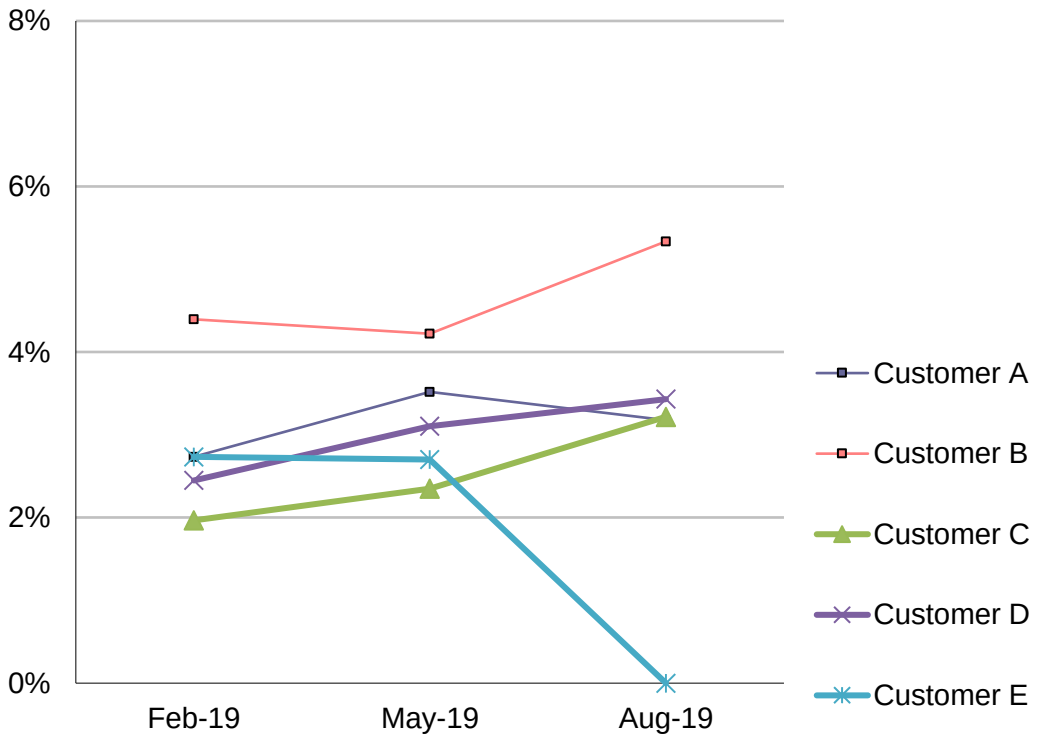
Met Commit	Feb-19	May-19	Aug-19
Customer A	97%	95%	95%
Customer B	97%	95%	96%
Customer C	98%	95%	94%
Customer D	97%	95%	95%
Customer E	98%	95%	88%



Customer E's results were affected by complex faults, limited specialist availability and end customer reschedules.

Repeat Fault Rate

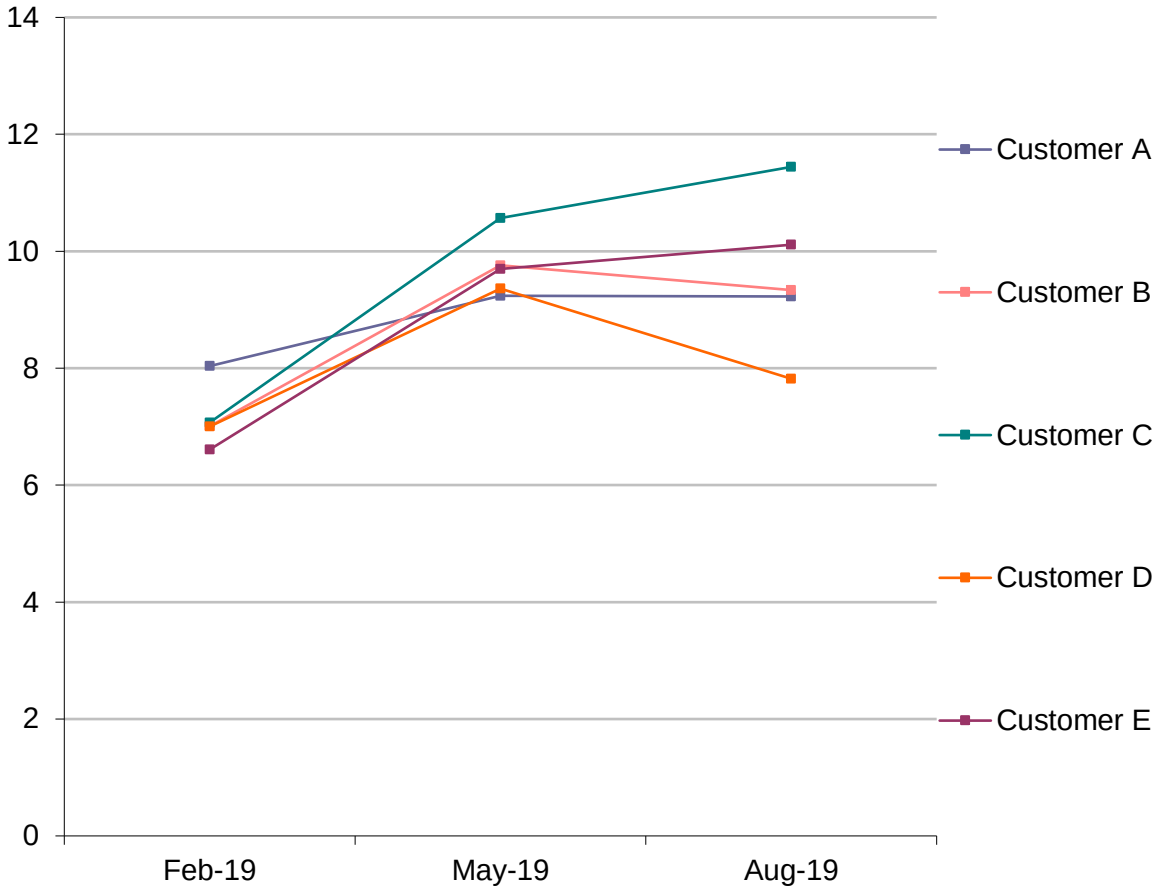
Repeat Fault	Feb-19	May-19	Aug-19
Customer A	3%	4%	3%
Customer B	4%	4%	5%
Customer C	2%	2%	3%
Customer D	2%	3%	3%
Customer E	3%	3%	0%



Customer B's results were affected by complex faults and its internal troubleshooting processes.

Time to Complete

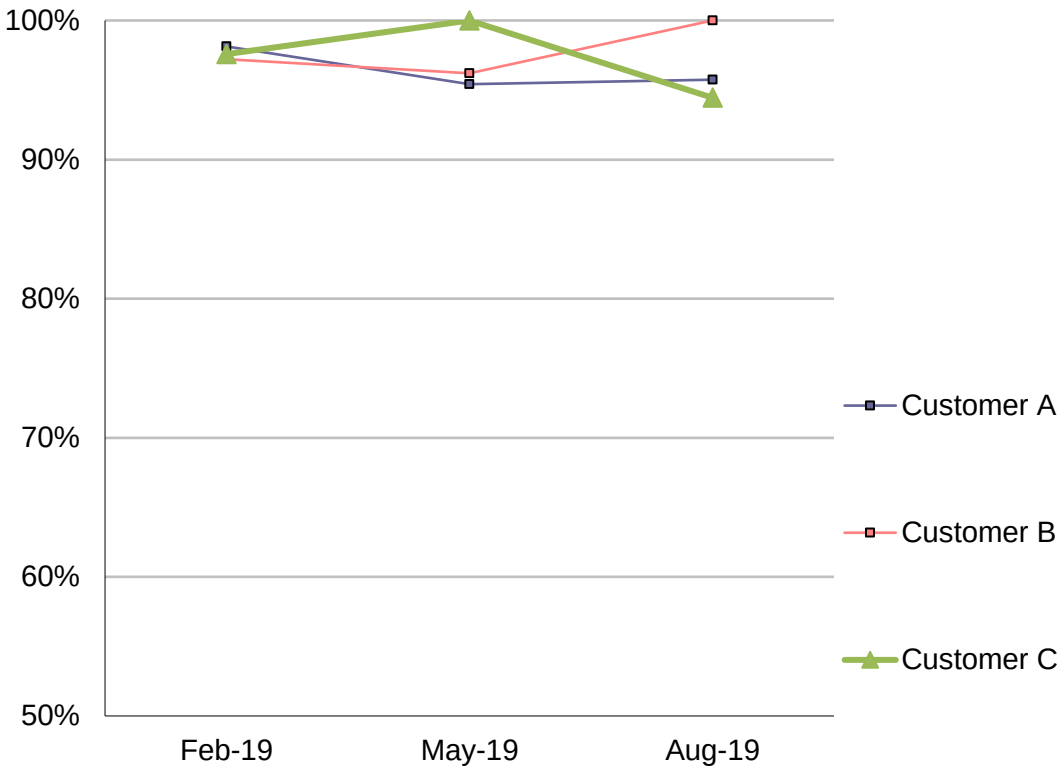
Time to Complete	Feb-19	May-19	Aug-19
Customer A	8	9	9
Customer B	7	10	9
Customer C	7	11	11
Customer D	7	9	8
Customer E	7	10	10



UCLL - RESTORATION METRICS

Met Commit Rate

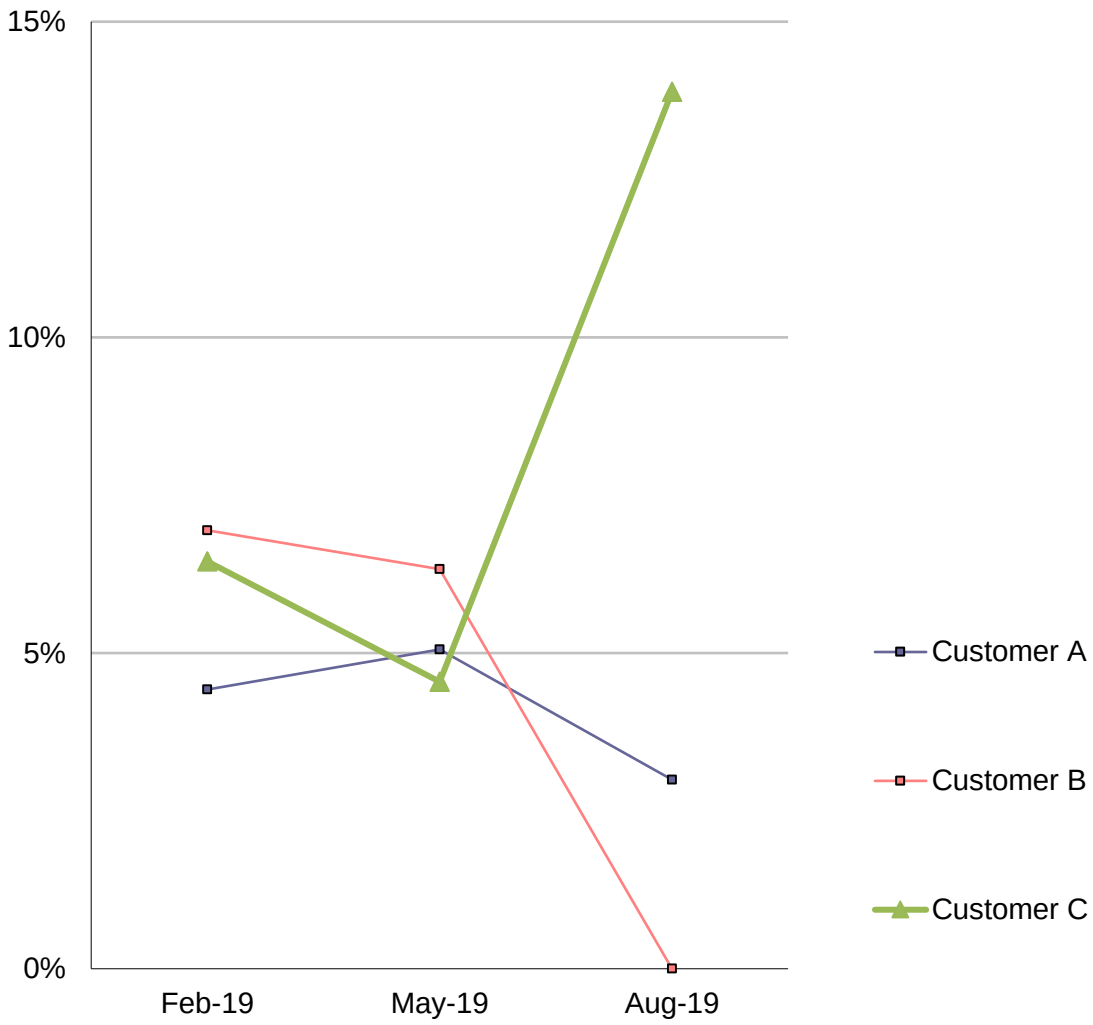
Met Commit	Feb-19	May-19	Aug-19
Customer A	98%	95%	96%
Customer B	97%	96%	100%
Customer C	98%	100%	94%



Customer B's results were affected by an outage and the limited specialist availability.

Repeat Fault Rate

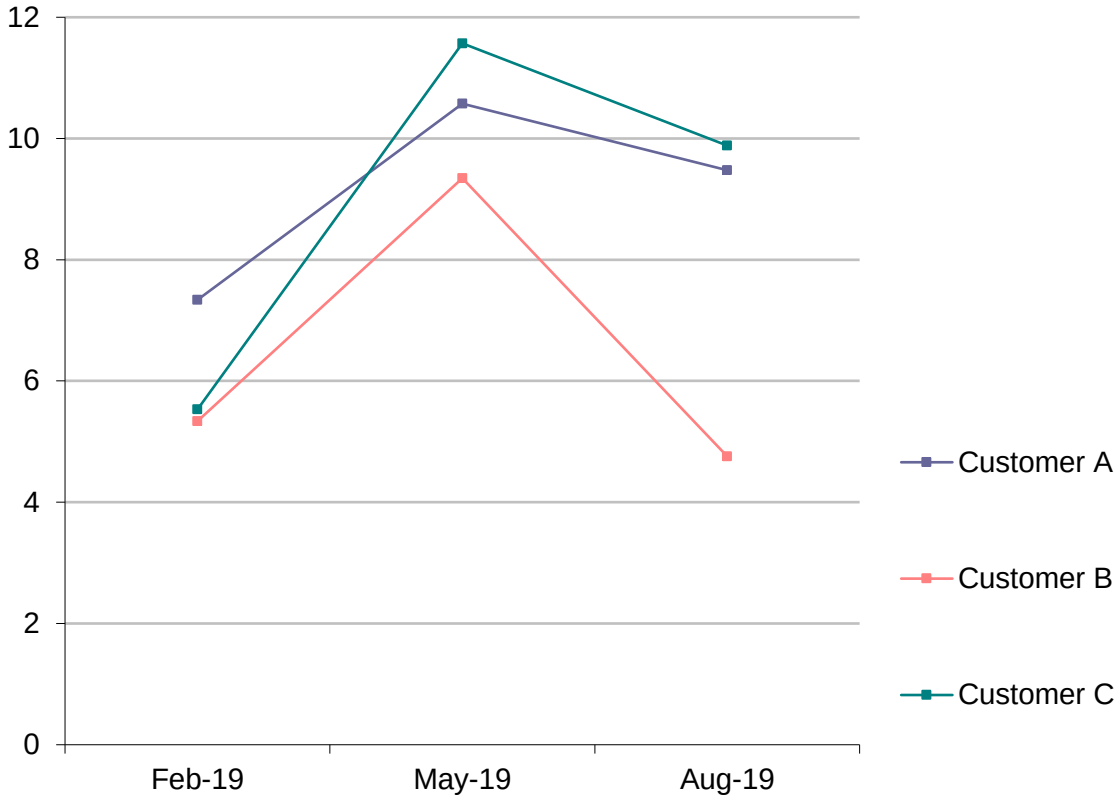
Repeat Fault	Feb-19	May-19	Aug-19
Customer A	4%	5%	3%
Customer B	7%	6%	0%
Customer C	6%	5%	14%



Results for Customer C were affected by separate complex faults and internal troubleshooting process.

Time to Complete

Time to Complete	Feb-19	May-19	Aug-19
Customer A	7	11	9
Customer B	5	9	5
Customer C	6	12	10



Appendix PROVISIONING METRICS Products that did not meet the inclusion Threshold

SLU - PROVISIONING METRICS

Met Commit Rate

This metric did not meet the inclusion threshold.

Right First Time

This metric did not meet the inclusion threshold.

Time to Complete

This metric did not meet the inclusion threshold.