



CHORUS OPEN ACCESS DEEDS OF UNDERTAKING

KEY PERFORMANCE INDICATORS REPORTING

MARCH 2020

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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 33rd 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 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 May 2019 to 31 July 2019 (Quarter 3)
- 1 August 2019 to 31 October 2019 (Quarter 4)
- 1 November 2019 to 31 January 2020 (Quarter1)

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 January 2020. 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 November 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;** 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.

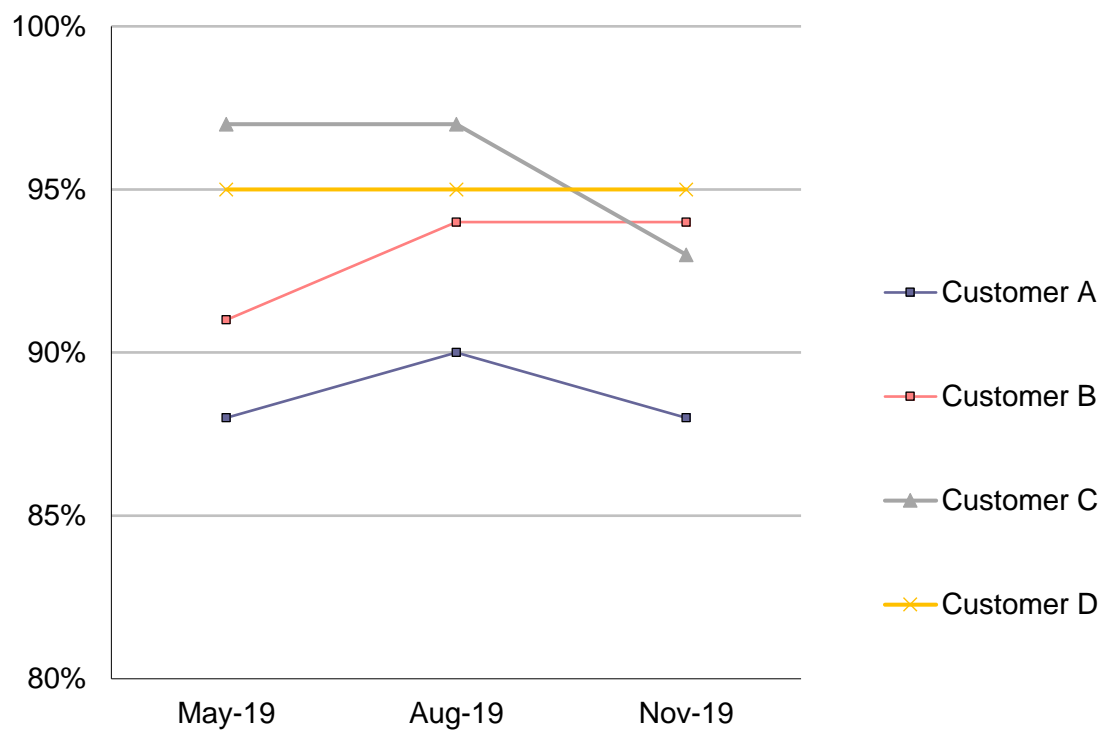
Chorus continues to have a programme of work underway to continually improve our restoration performance. This includes initiatives targeting reducing repeat fault rates, a nationwide reactive maintenance programme, and ongoing customer training for fault diagnosis and management.

EQUIVALENCE OF INPUTS REPORTING

BASEBAND COPPER – PROVISIONING METRICS

Met Commit Rate

	May-19	Aug-19	Nov-19
Customer A	88%	90%	88%
Customer B	91%	94%	94%
Customer C	97%	97%	93%
Customer D	95%	95%	95%

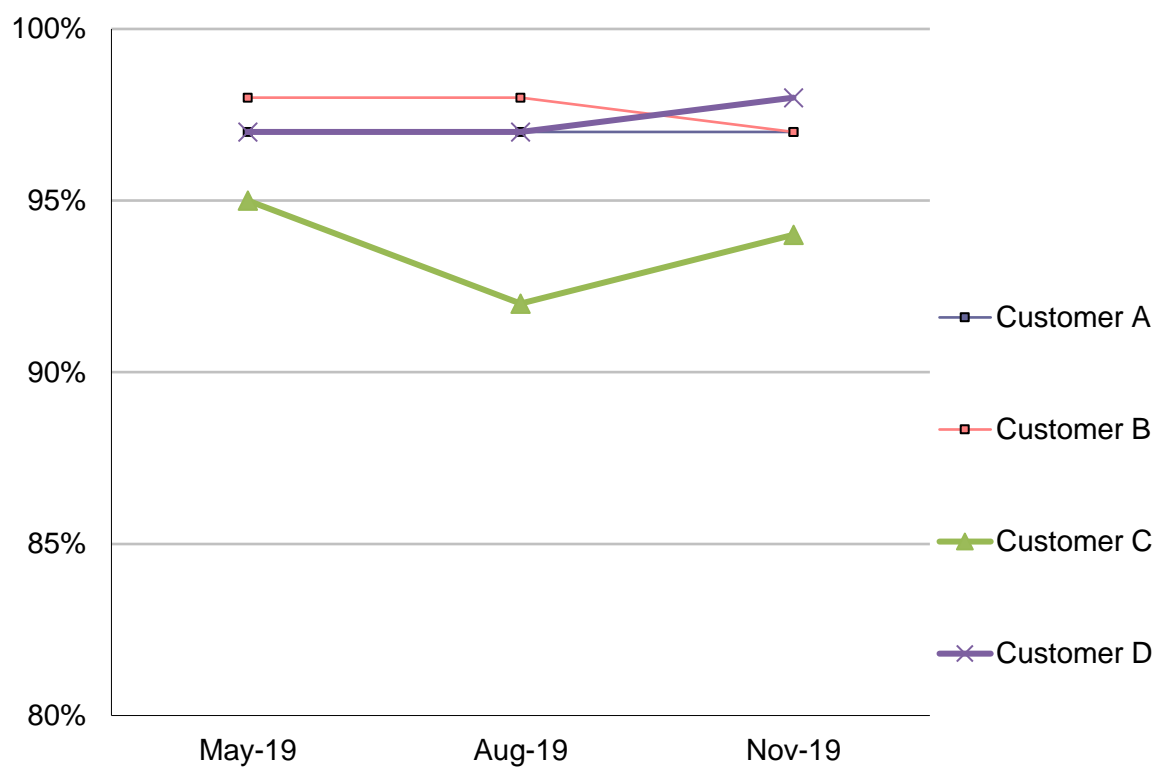


Results for Customer A were due to its ordering behaviour and processing delays.

BASEBAND COPPER – PROVISIONING METRICS

Right First Time

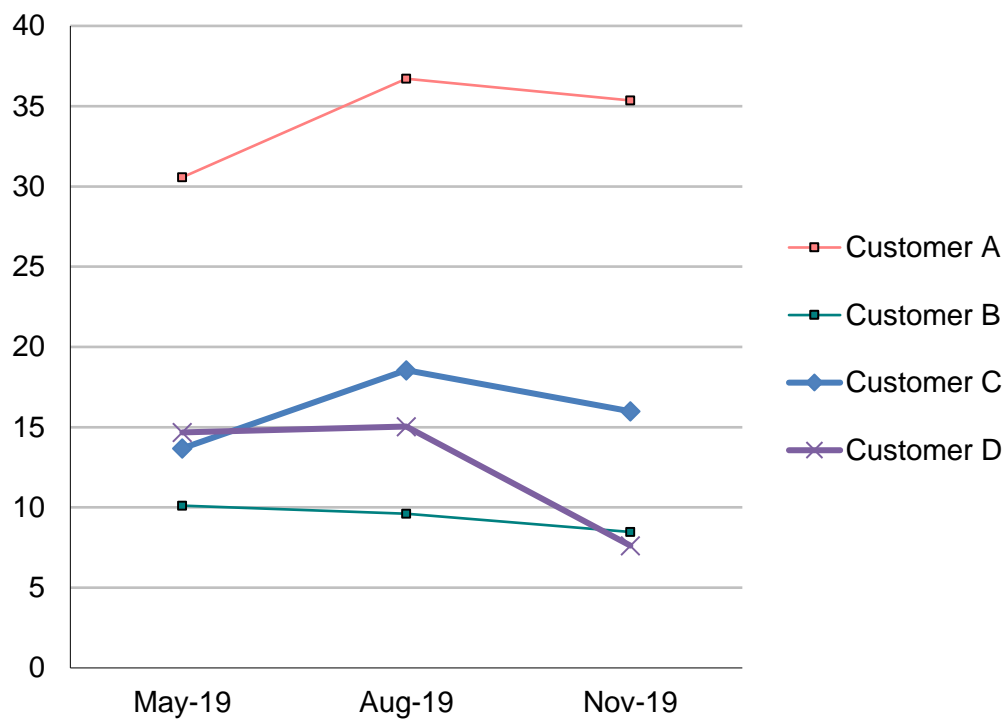
	May-19	Aug-19	Nov-19
Customer A	97%	97%	97%
Customer B	98%	98%	97%
Customer C	95%	92%	94%
Customer D	97%	97%	98%



BASEBAND COPPER – PROVISIONING METRICS

Time to Complete

	May-19	Aug-19	Nov-19
Customer A	31	37	35
Customer B	10	10	8
Customer C	14	19	16
Customer D	15	15	8

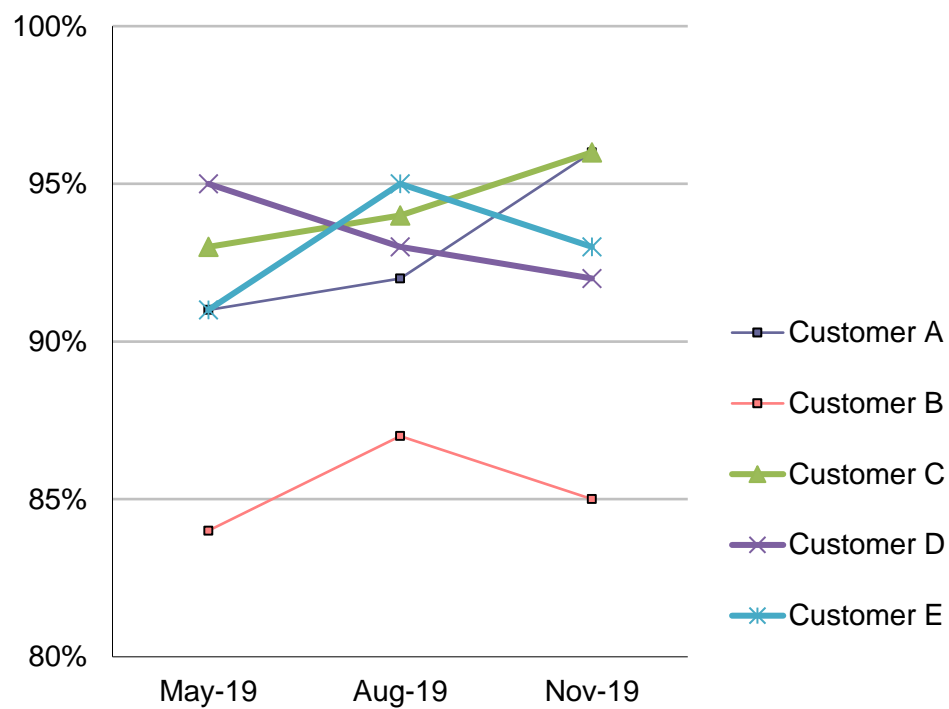


Results for Customer A were affected by customer reschedules.

BASEBAND COPPER WITH UBA - PROVISIONING METRICS

Met Commit Rate

	May-19	Aug-19	Nov-19
Customer A	91%	92%	96%
Customer B	84%	87%	85%
Customer C	93%	94%	96%
Customer D	95%	93%	92%
Customer E	91%	95%	93%

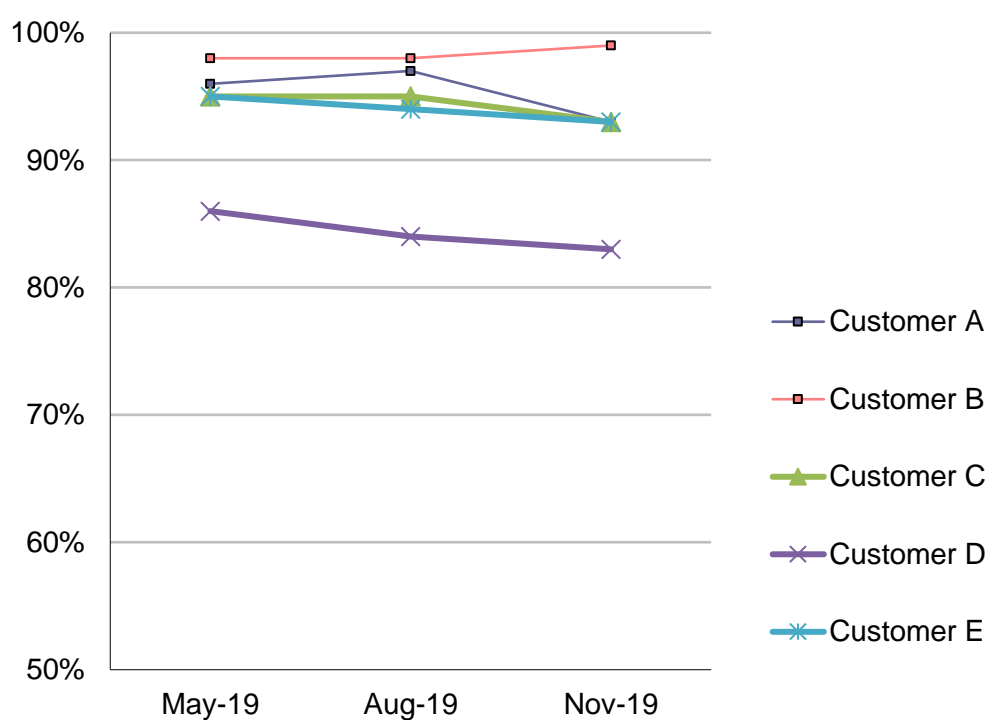


Results for Customer B were affected by ordering behaviour and processing delays.

BASEBAND COPPER WITH UBA – PROVISIONING METRICS

Right First Time

	May-19	Aug-19	Nov-19
Customer A	96%	97%	93%
Customer B	98%	98%	99%
Customer C	95%	95%	93%
Customer D	86%	84%	83%
Customer E	95%	94%	93%

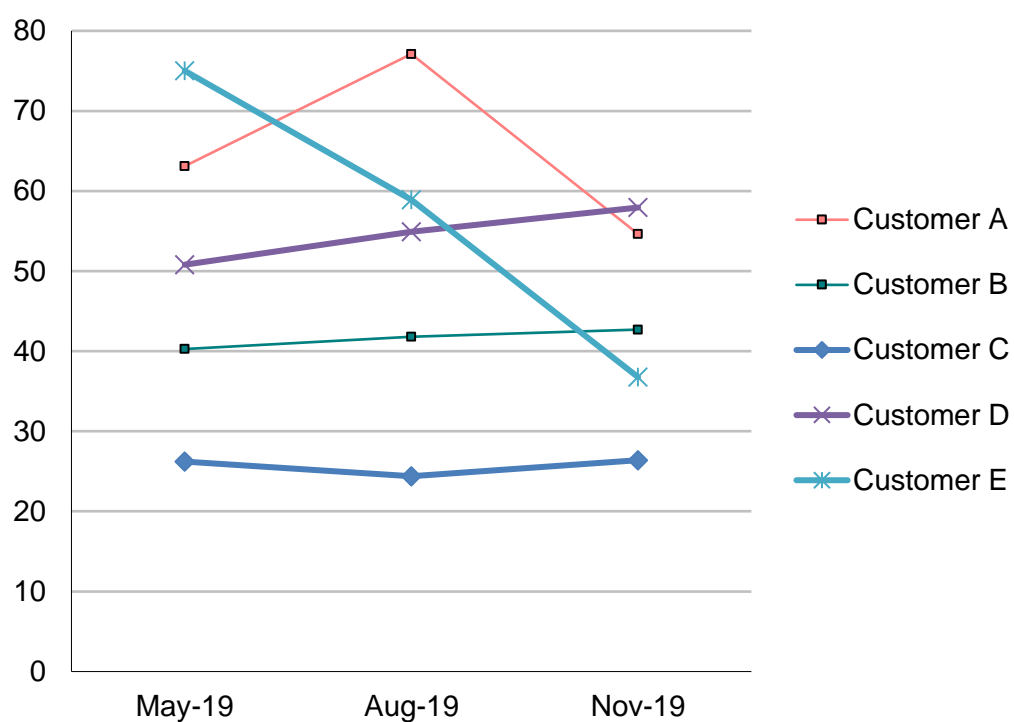


Results for Customer A, C, D and E were affected by customer specific faults.

BASEBAND COPPER WITH UBA – PROVISIONING METRICS

Time to Complete

	May-19	Aug-19	Nov-19
Customer A	63	77	55
Customer B	40	42	43
Customer C	26	24	26
Customer D	51	55	58
Customer E	75	59	37

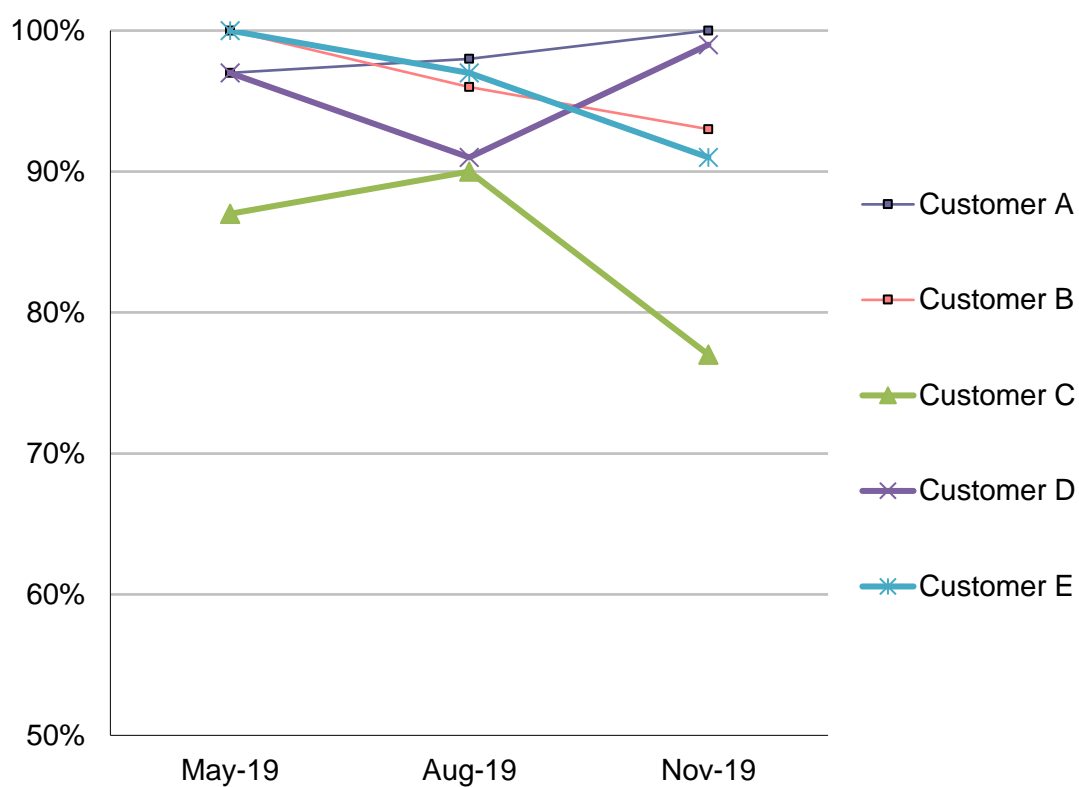


Results for Customers A, B and D were affected by customer reschedules. Customer B was also affected by network build requirements.

BASEBAND IP - PROVISIONING METRICS

Met Commit Rate

	May-19	Aug-19	Nov-19
Customer A	97%	98%	100%
Customer B	100%	96%	93%
Customer C	87%	90%	77%
Customer D	97%	91%	99%
Customer E	100%	97%	91%

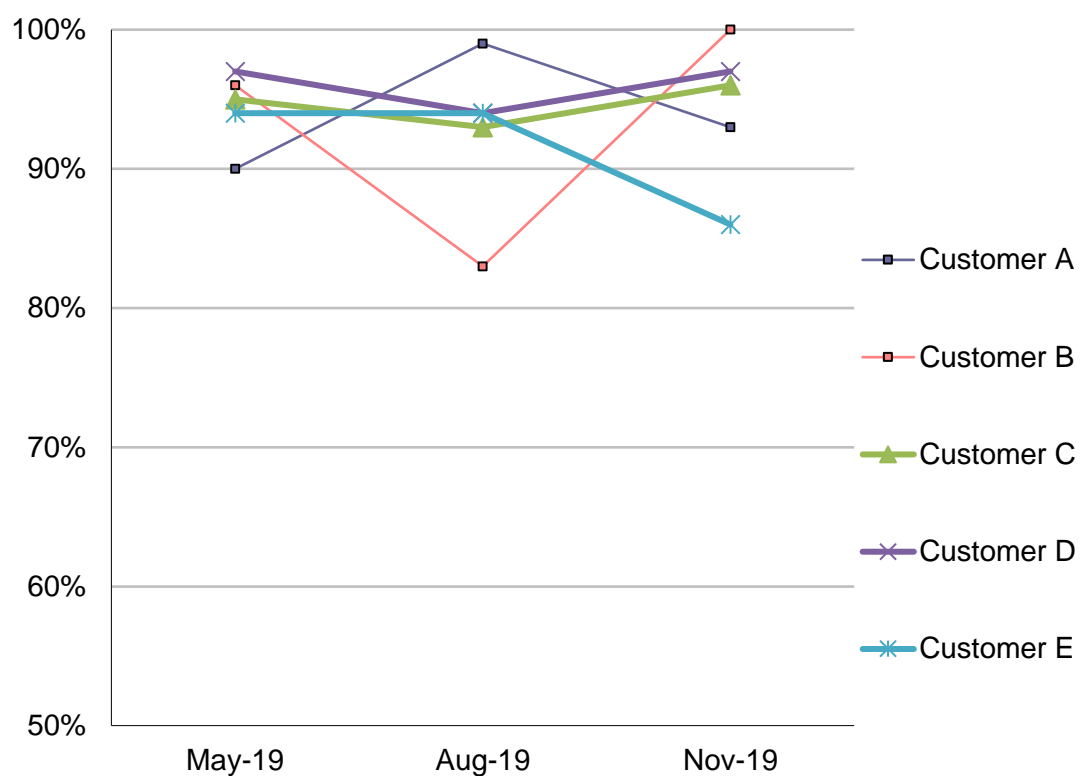


Results for Customers B, C and E were affected by system processing delays. Customer B was also affected by customer delays.

BASEBAND IP - PROVISIONING METRICS

Right First Time

	May-19	Aug-19	Nov-19
Customer A	90%	99%	93%
Customer B	96%	83%	100%
Customer C	95%	93%	96%
Customer D	97%	94%	97%
Customer E	94%	94%	86%

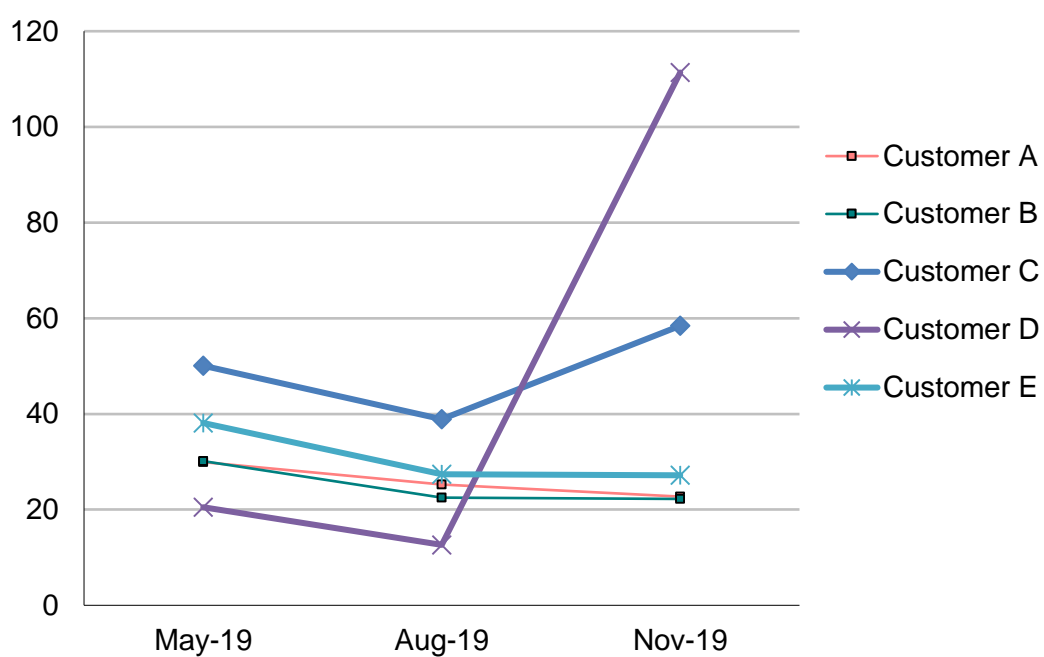


Results for Customer A and E were affected by network faults and customer troubleshooting behaviour.

BASEBAND IP – PROVISIONING METRICS

Time to Complete

	May-19	Aug-19	Nov-19
Customer A	30	25	23
Customer B	30	22	22
Customer C	50	39	58
Customer D	21	13	111
Customer E	38	27	27

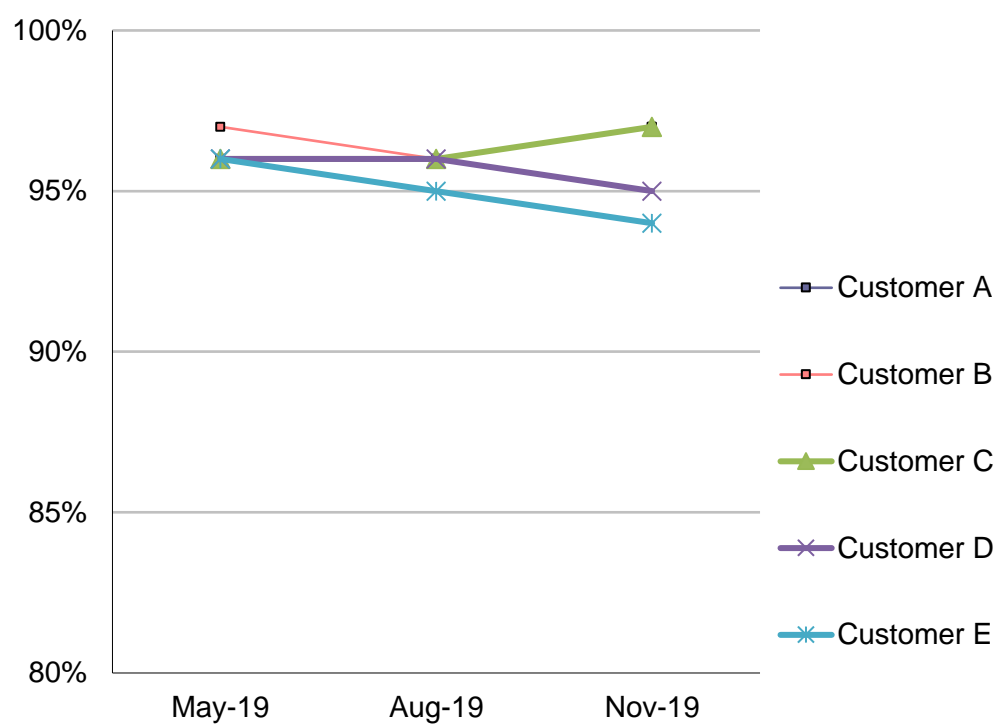


Results for Customer C and D were affected by RSP ordering behaviour. Customer C was also affected by individual network faults and customer reschedules.

UBA ONLY (NAKED) - PROVISIONING METRICS

Met Commit Rate

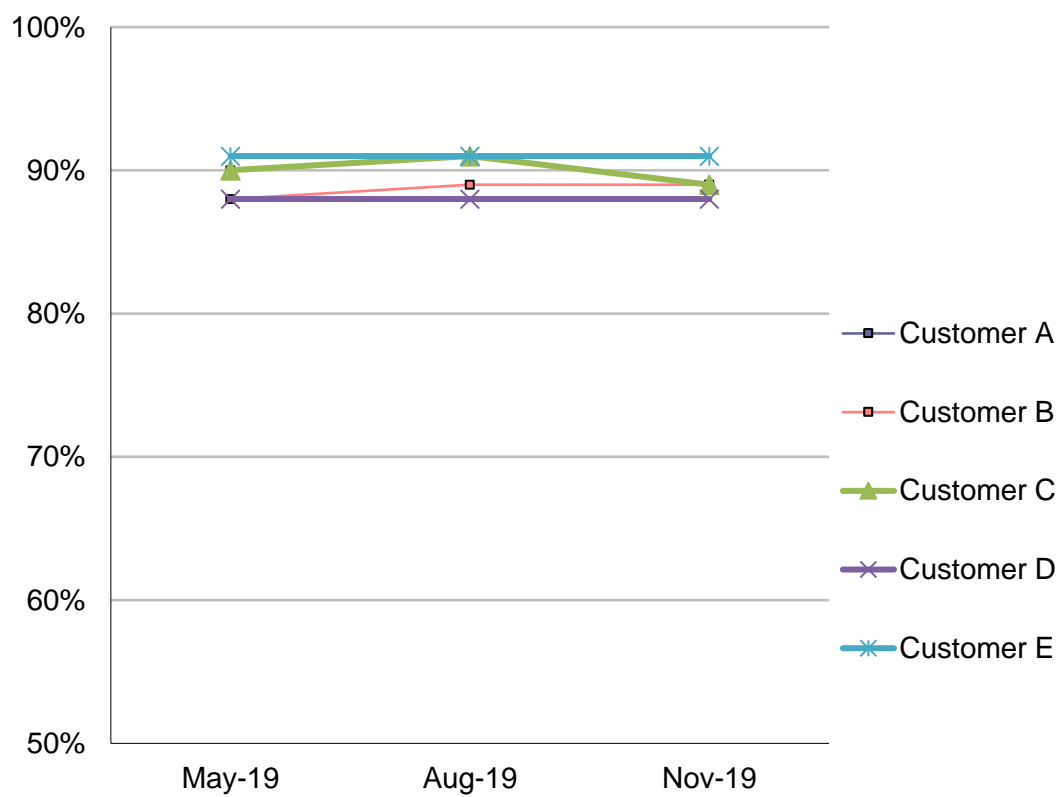
	May-19	Aug-19	Nov-19
Customer A	96%	96%	97%
Customer B	97%	96%	97%
Customer C	96%	96%	97%
Customer D	96%	96%	95%
Customer E	96%	95%	94%



UBA ONLY (NAKED) - PROVISIONING METRICS

Right First Time

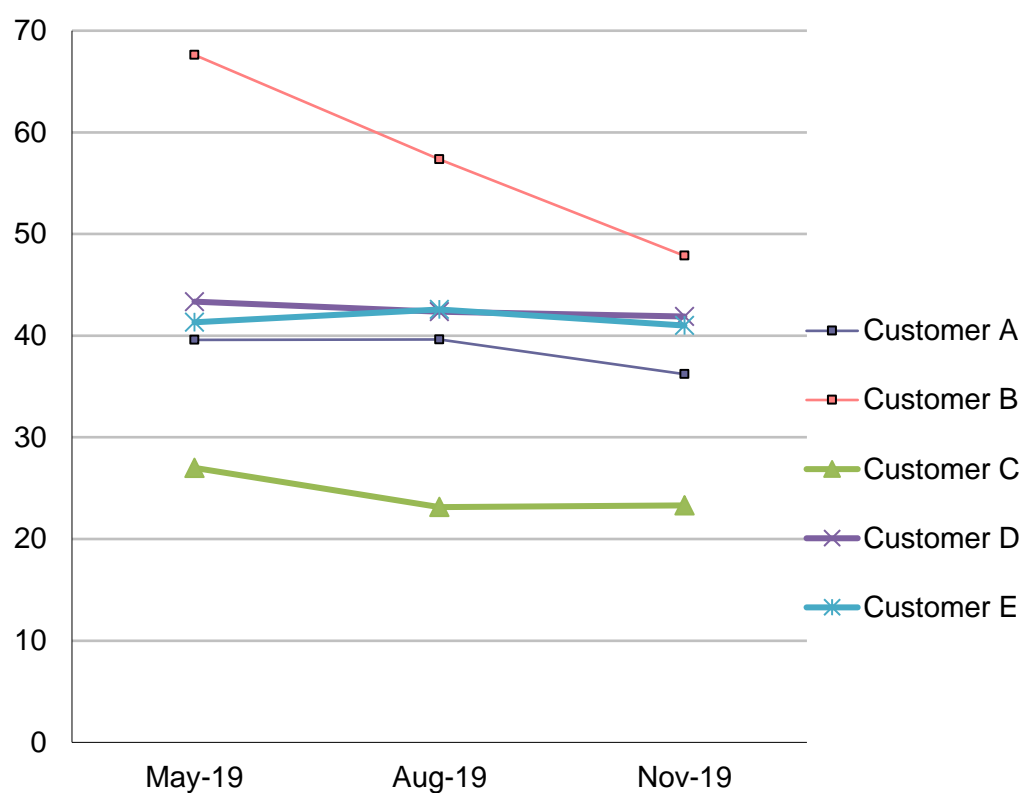
	May-19	Aug-19	Nov-19
Customer A	90%	91%	89%
Customer B	88%	89%	89%
Customer C	90%	91%	89%
Customer D	88%	88%	88%
Customer E	91%	91%	91%



UBA ONLY (NAKED) - PROVISIONING METRICS

Time to Complete

	May-19	Aug-19	Nov-19
Customer A	40	40	36
Customer B	68	57	48
Customer C	27	23	23
Customer D	43	42	42
Customer E	41	43	41

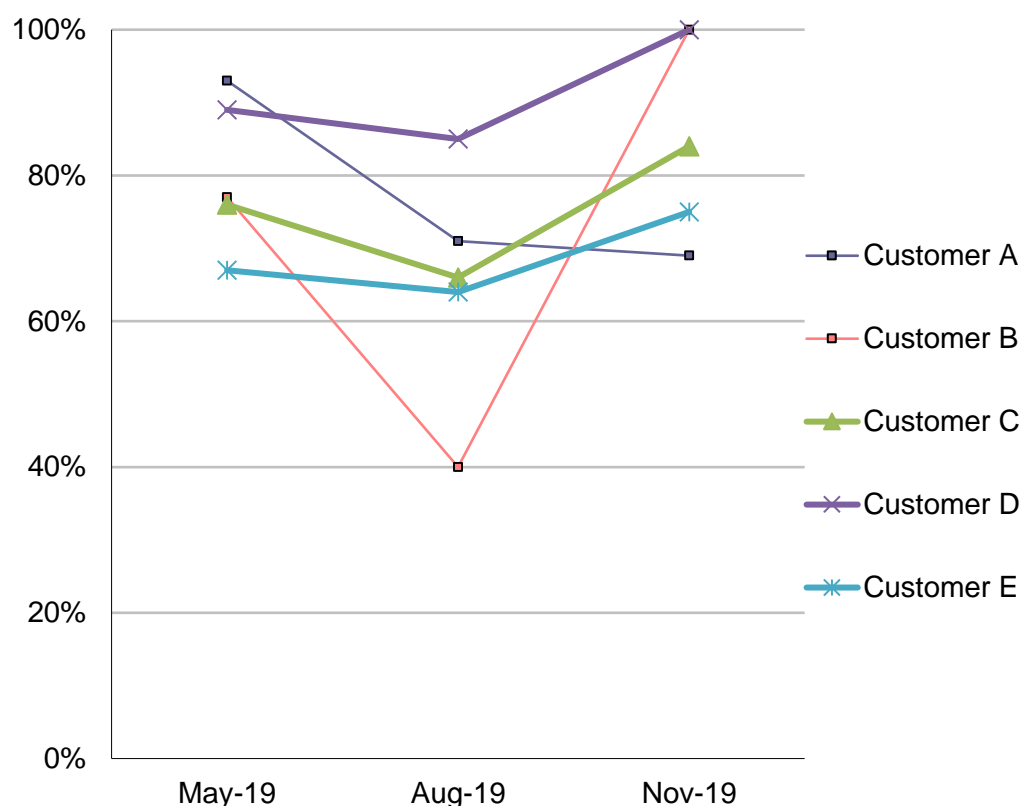


Results for Customers A, B, D and E were affected by customer reschedules. Customers B,D and E were also affected by civil build requirements.

DFAS - PROVISIONING METRICS

Met Commit Rate

	May-19	Aug-19	Nov-19
Customer A	93%	71%	69%
Customer B	77%	40%	100%
Customer C	76%	66%	84%
Customer D	89%	85%	100%
Customer E	67%	64%	75%

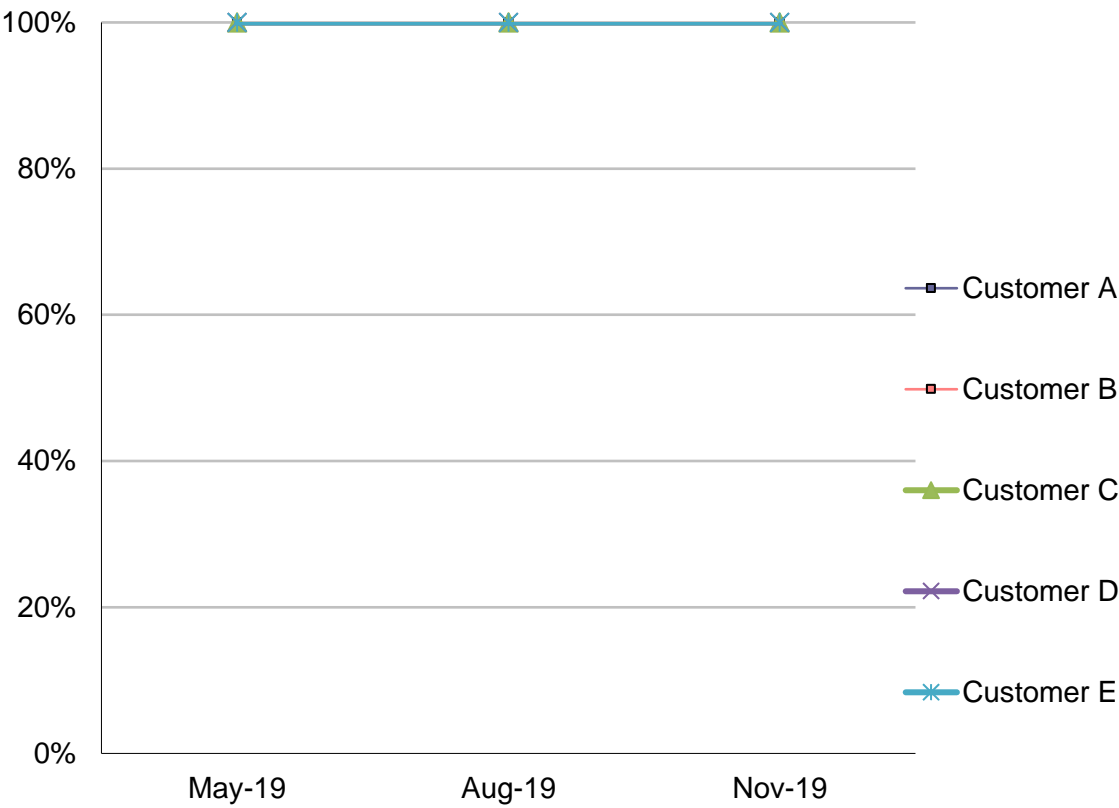


Results for Customers A, and C were affected by consenting delays. Results for Customers A and E were due to civil build requirements. Customer C was also affected by site readiness issues.

DFAS - PROVISIONING METRICS

Right First Time

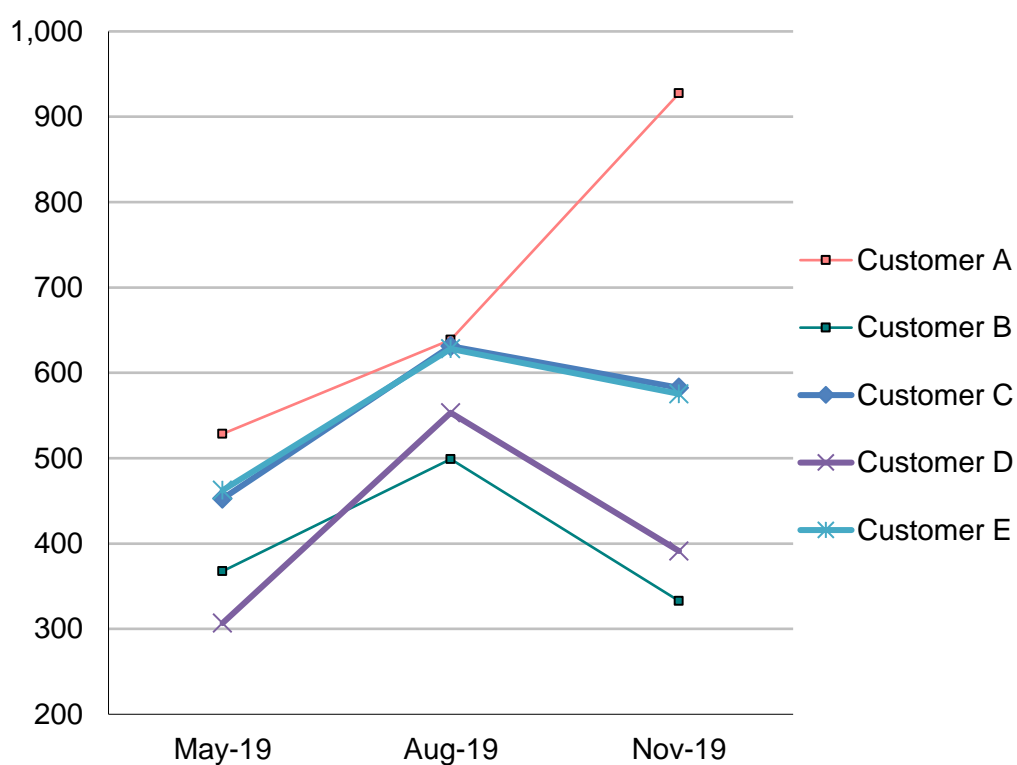
	May-19	Aug-19	Nov-19
Customer A	100%	100%	100%
Customer B	100%	100%	100%
Customer C	100%	100%	100%
Customer D	100%	100%	100%
Customer E	100%	100%	100%



DFAS - PROVISIONING METRICS

Time to Complete

	May-19	Aug-19	Nov-19
Customer A	529	639	927
Customer B	368	499	333
Customer C	453	631	582
Customer D	307	553	391
Customer E	462	628	575

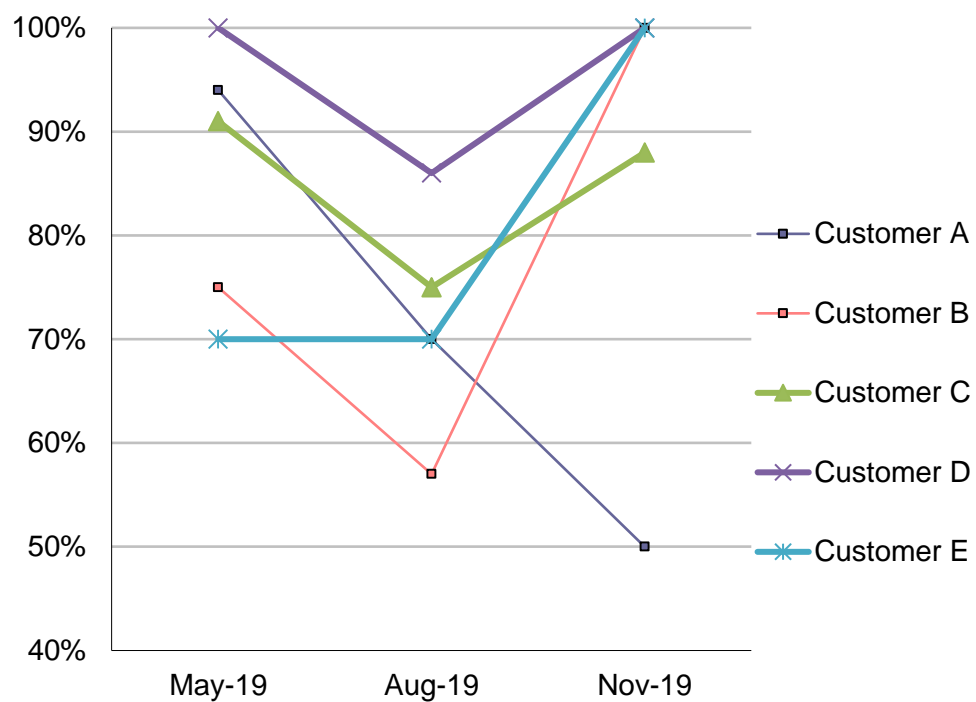


Results for Customers A, C, D and E were affected by site readiness issues. Customers A, C and E were also affected by civil build requirements.

ICAB - PROVISIONING METRICS

Met Commit Rate

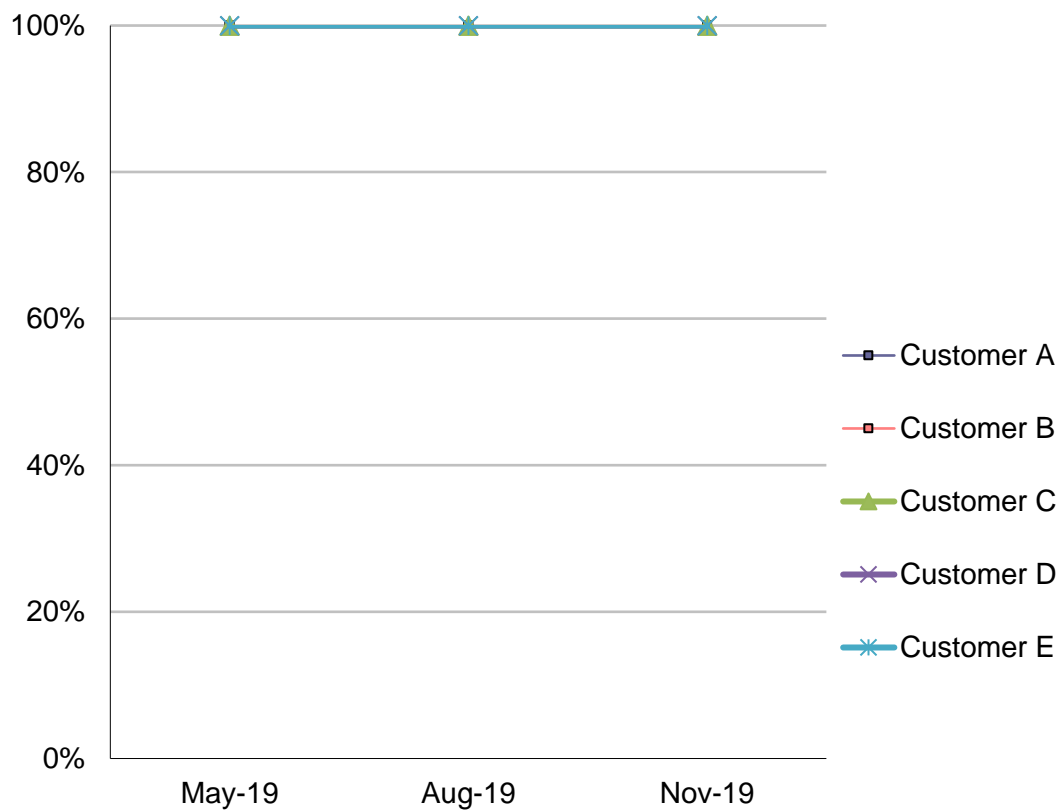
	May-19	Aug-19	Nov-19
Customer A	94%	70%	50%
Customer B	75%	57%	100%
Customer C	91%	75%	88%
Customer D	100%	86%	100%
Customer E	70%	70%	100%



Results for Customer A were affected by site readiness issues while Customer C was affected by civil build requirements.

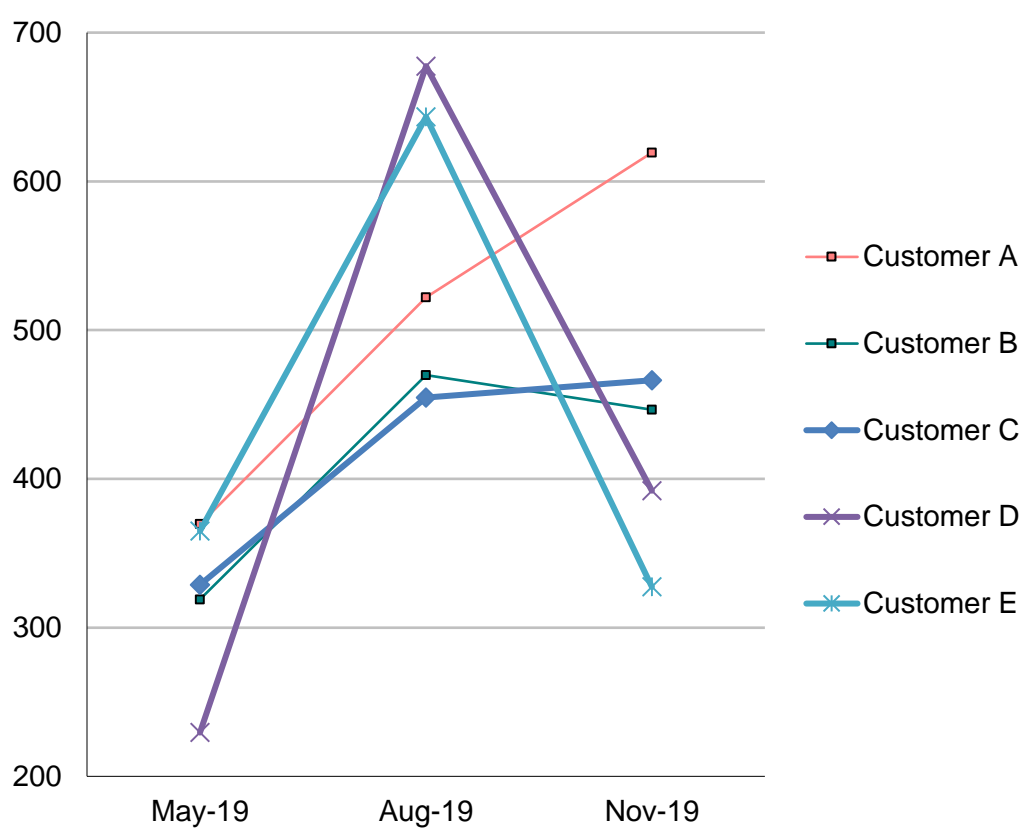
Right First Time

	May-19	Aug-19	Nov-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

	May-19	Aug-19	Nov-19
Customer A	370	522	619
Customer B	319	470	447
Customer C	329	455	466
Customer D	229	677	392
Customer E	365	643	327

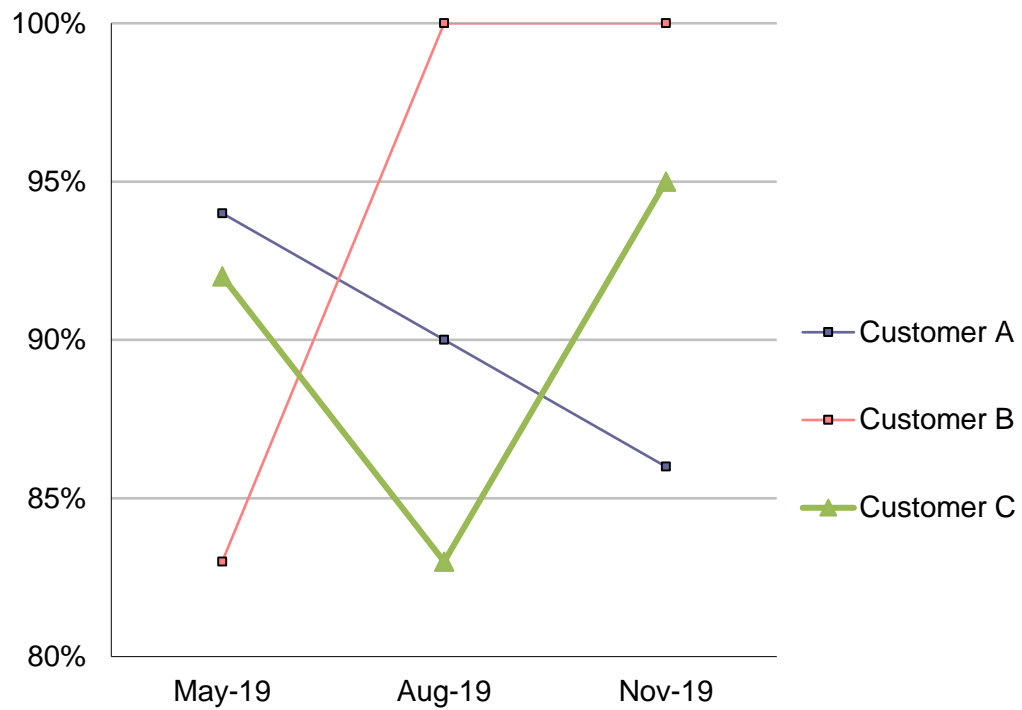


Results for Customer A were affected by civil build requirements and site readiness issues. Results for Customer B and C were affected by site readiness issues. Customer D's results were affected by their ordering behaviour.

HSNS PREMIUM - PROVISIONING METRICS

Met Commit Rate

%	May-19	Aug-19	Nov-19
Customer A	94%	90%	86%
Customer B	83%	100%	100%
Customer C	92%	83%	95%

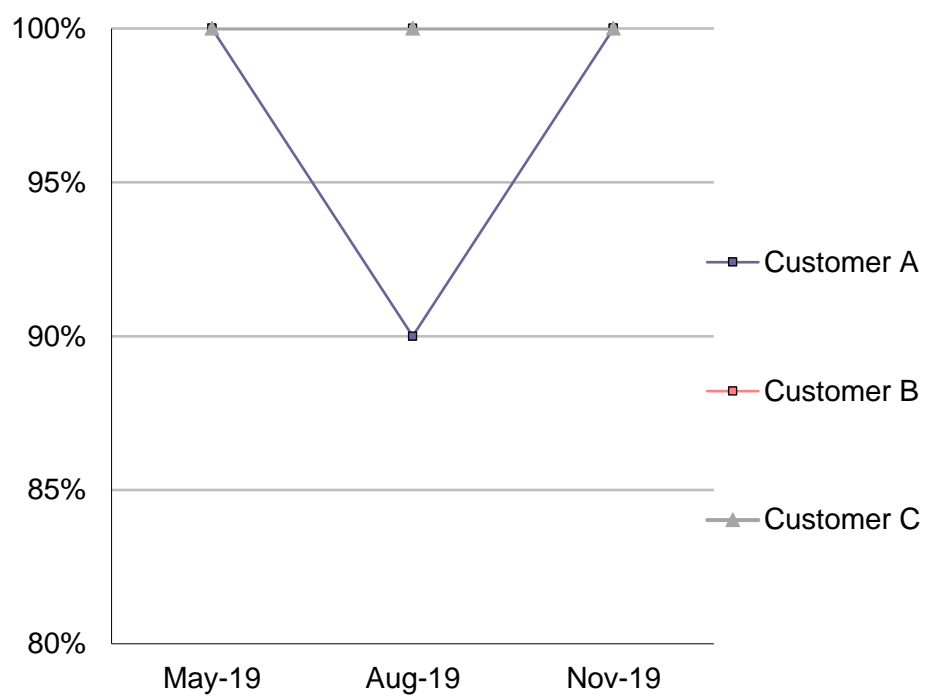


Results for Customer A were affected by consent requirements.

HSNS PREMIUM - PROVISIONING METRICS

Right First Time

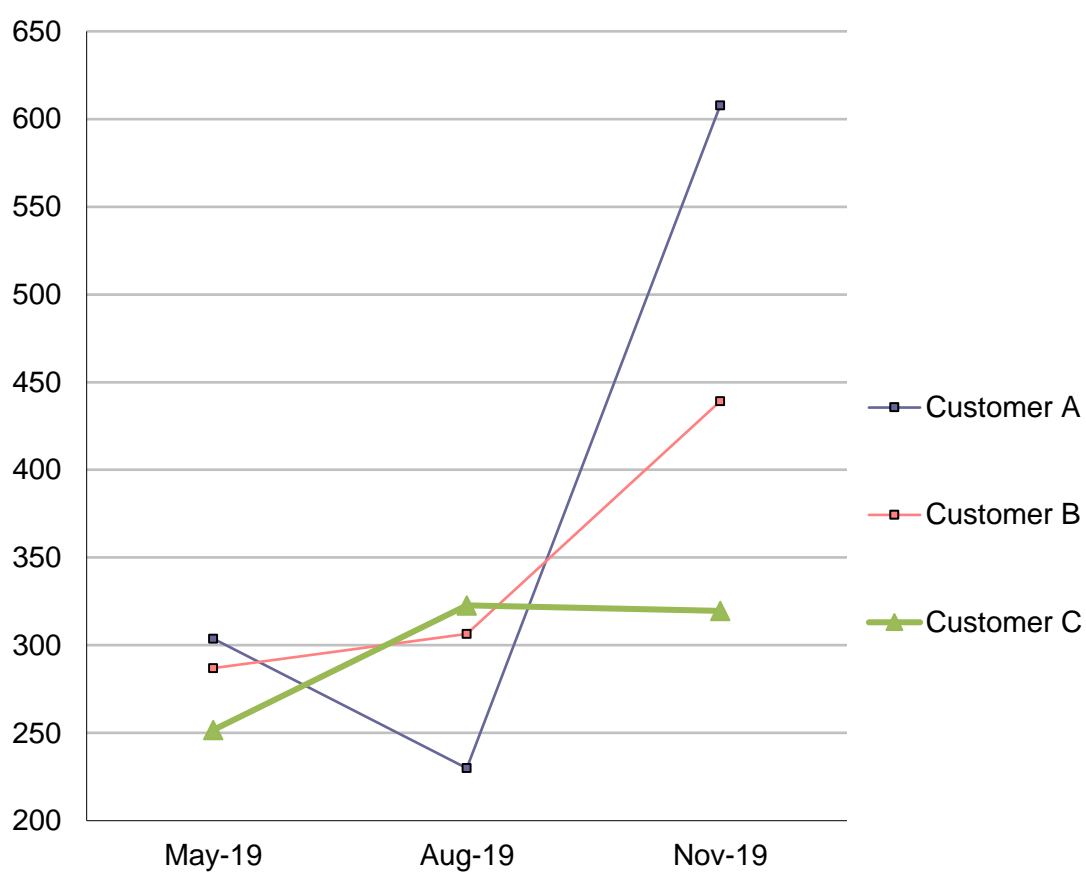
	May-19	Aug-19	Nov-19
Customer A	100%	90%	100%
Customer B	100%	100%	100%
Customer C	100%	100%	100%



HSNS PREMIUM - PROVISIONING METRICS

Time to Complete

	May-19	Aug-19	Nov-19
Customer A	304	230	608
Customer B	287	306	439
Customer C	252	323	320

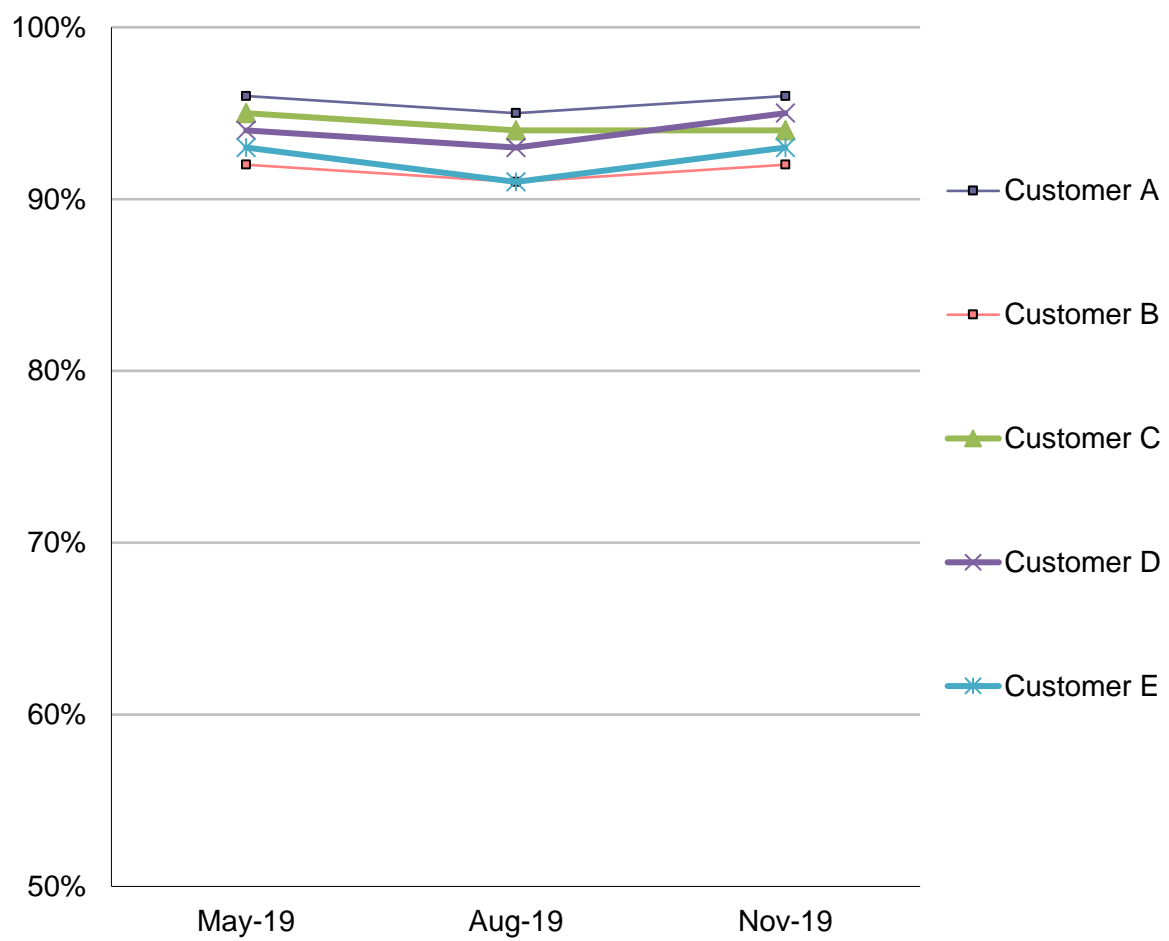


Customer A's results were affected by site readiness issues. Customer B's result was affected by consent requirements and site readiness issues.

NGA BITSTREAM 2 - PROVISIONING METRICS

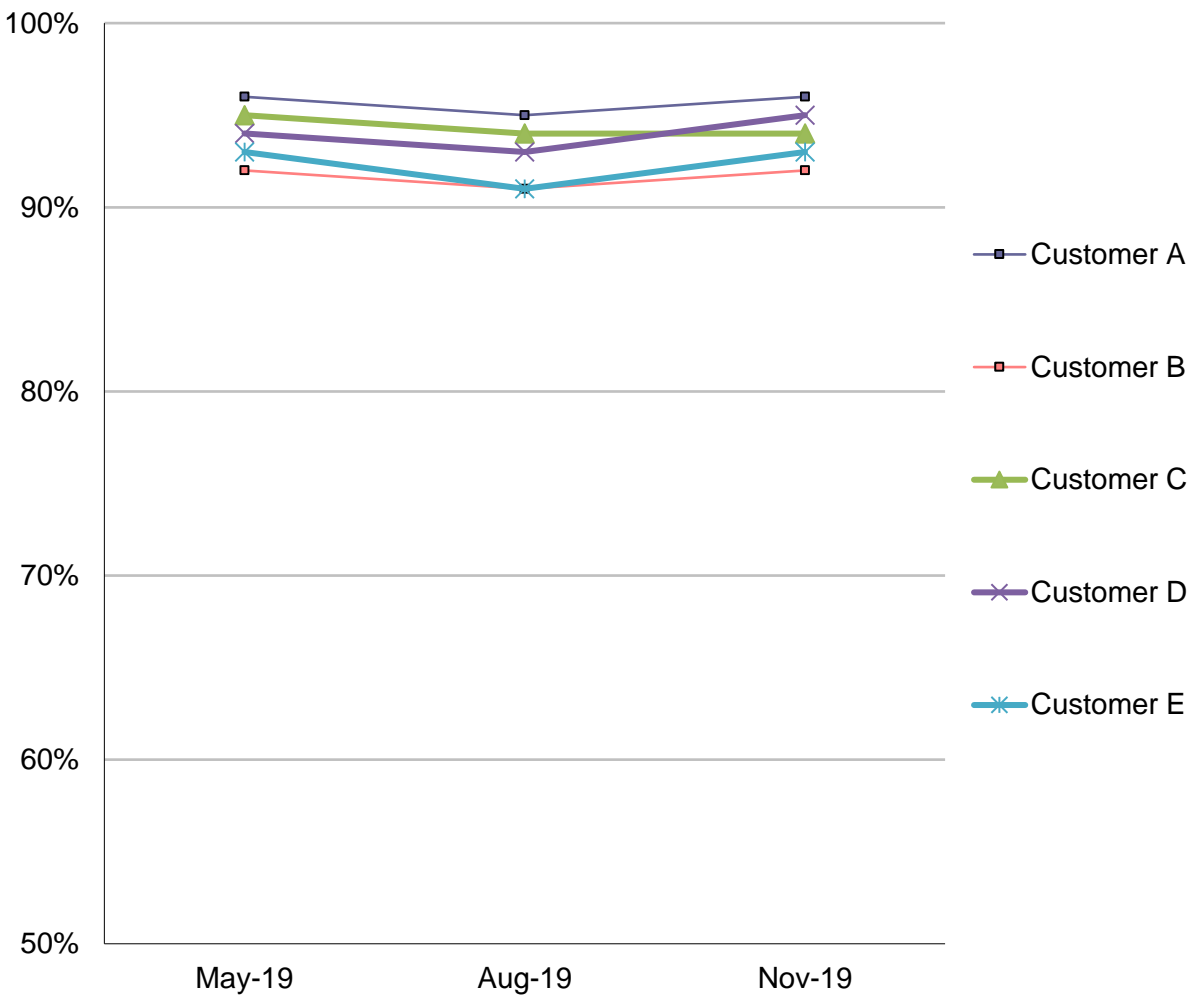
Met Commit Rate

	May-19	Aug-19	Nov-19
Customer A	96%	95%	96%
Customer B	92%	91%	92%
Customer C	95%	94%	94%
Customer D	94%	93%	95%
Customer E	93%	91%	93%



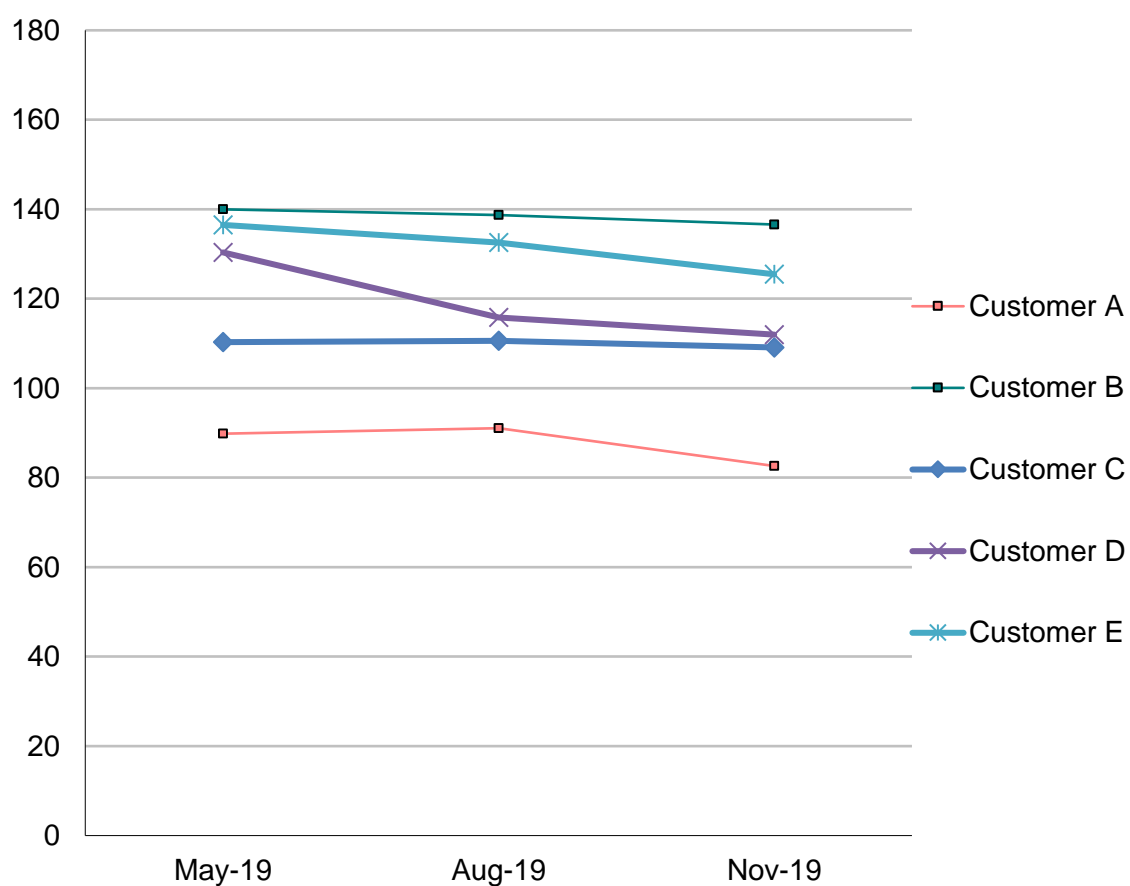
Right First Time

	May-19	Aug-19	Nov-19
Customer A	97%	97%	97%
Customer B	99%	100%	100%
Customer C	97%	98%	98%
Customer D	98%	98%	98%
Customer E	98%	98%	98%



Time to Complete

	May-19	Aug-19	Nov-19
Customer A	90	91	83
Customer B	140	139	137
Customer C	110	111	109
Customer D	130	116	112
Customer E	137	133	125

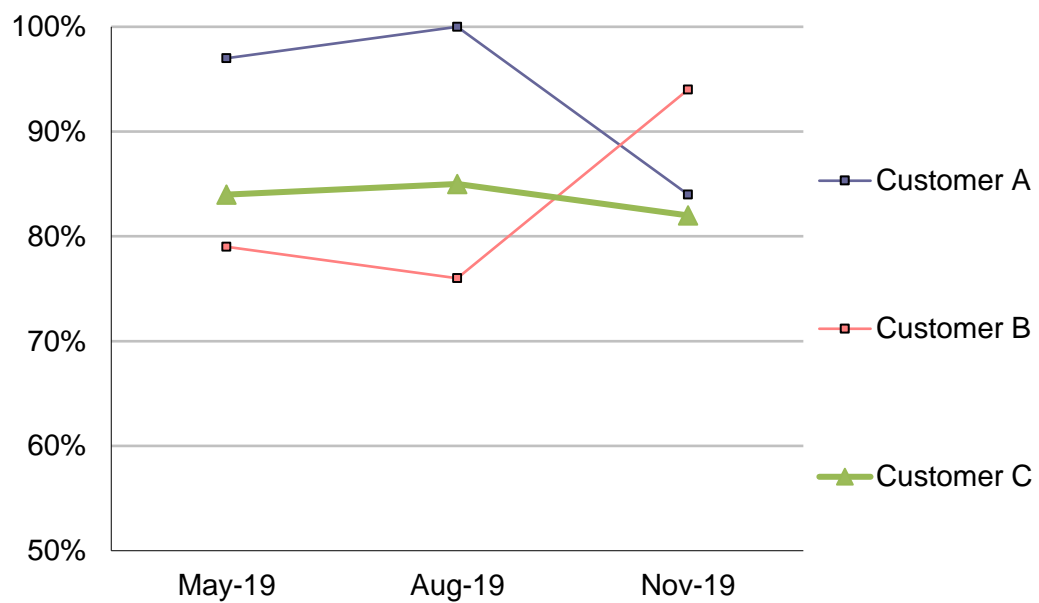


Results for Customers B, C, D and E were affected by consent delays as well as extra civil build requirements.

NGA BITSTREAM 3 - PROVISIONING METRICS

Met Commit Rate

	May-19	Aug-19	Nov-19
Customer A	97%	100%	84%
Customer B	79%	76%	94%
Customer C	84%	85%	82%

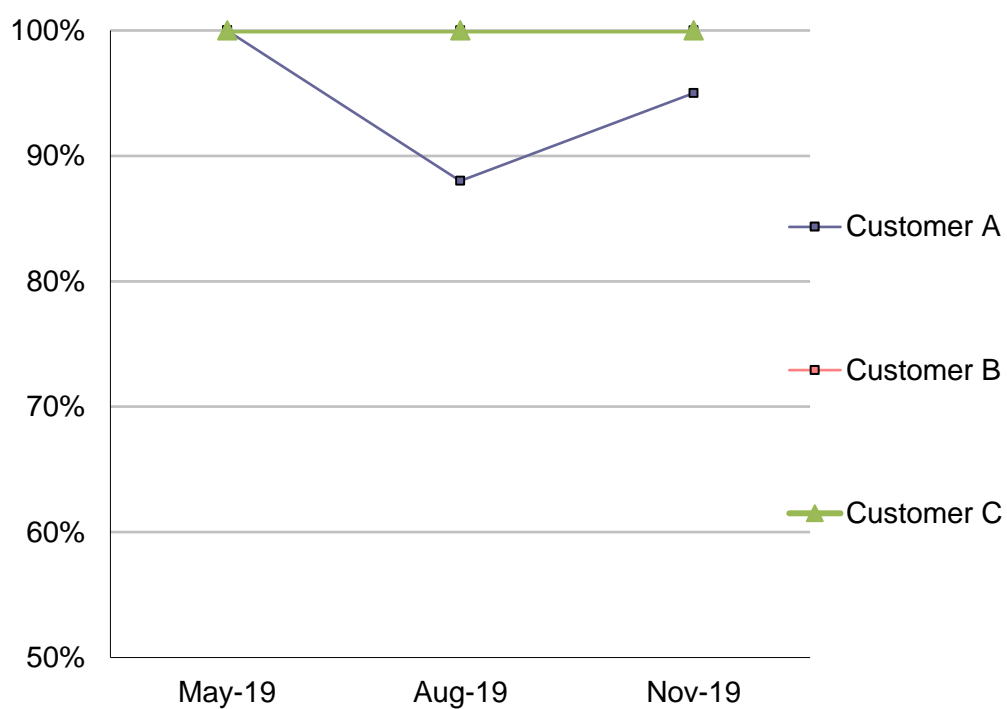


Results for Customers A and C were affected by customer reschedules and complex build issues.

NGA BITSTREAM 3 - PROVISIONING METRICS

Right First Time

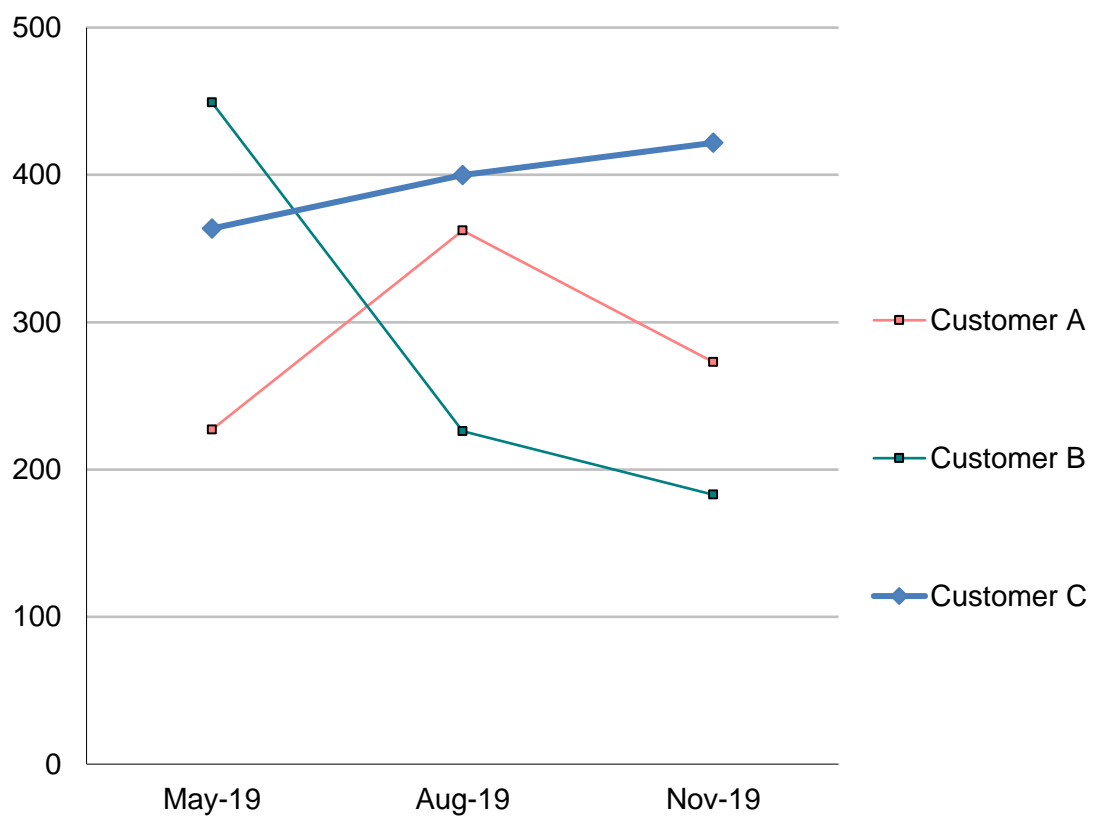
	May-19	Aug-19	Nov-19
Customer A	100%	88%	95%
Customer B	100%	100%	100%
Customer C	100%	100%	100%



NGA BITSTREAM 3 - PROVISIONING METRICS

Time to Complete

	May-19	Aug-19	Nov-19
Customer A	227	362	273
Customer B	449	226	183
Customer C	364	400	422

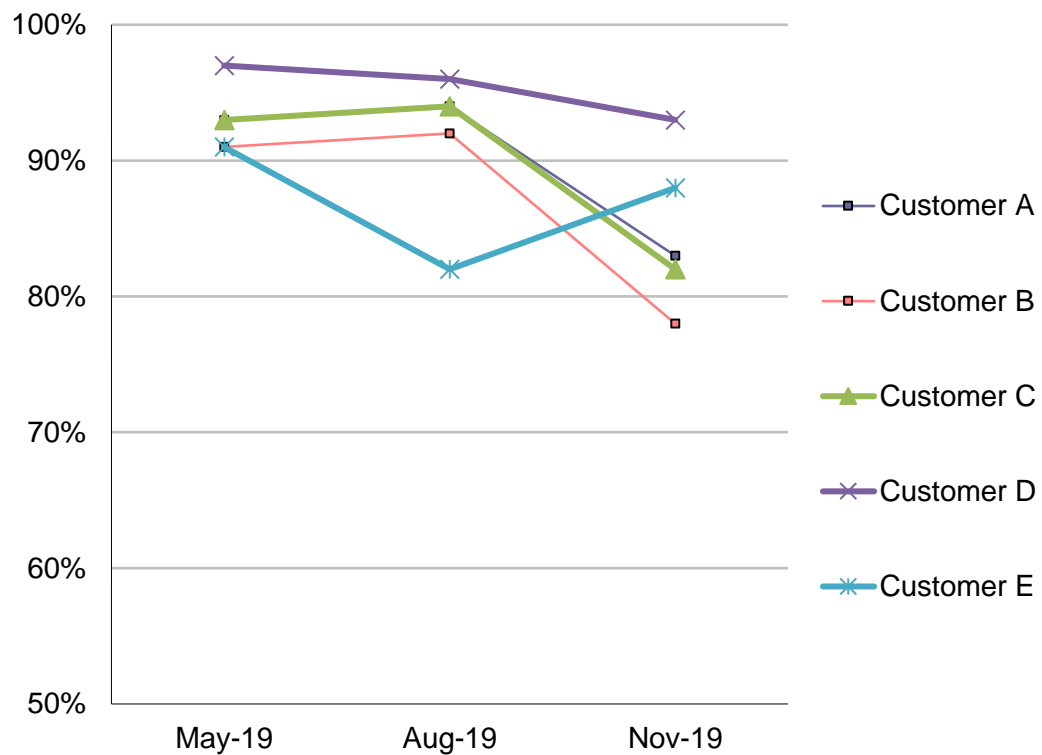


Results for Customers A and C were affected by complex builds and customer reschedules.

NGA BITSTREAM 3A – PROVISIONING METRICS

Met Commit Rate

	May-19	Aug-19	Nov-19
Customer A	93%	94%	83%
Customer B	91%	92%	78%
Customer C	93%	94%	82%
Customer D	97%	96%	93%
Customer E	91%	82%	88%

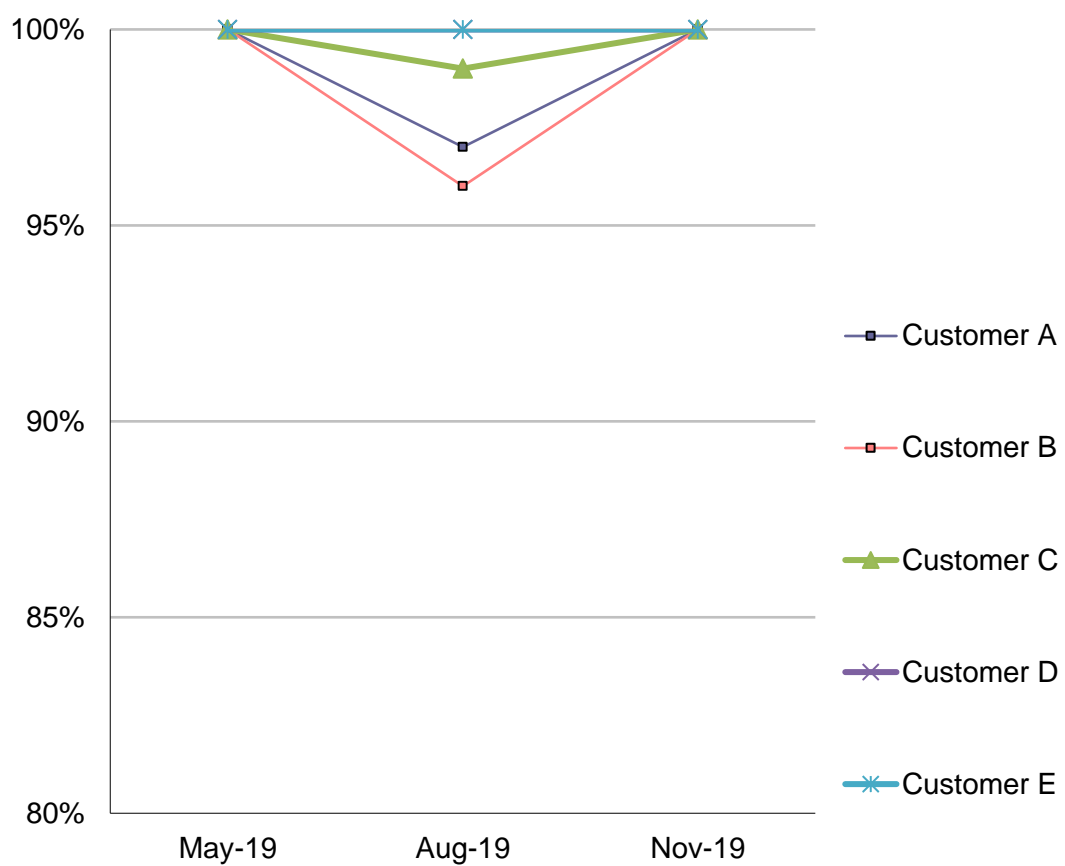


Results for Customers A, B and C were affected by civil build and internal processing errors.

NGA BITSTREAM 3A - PROVISIONING METRICS

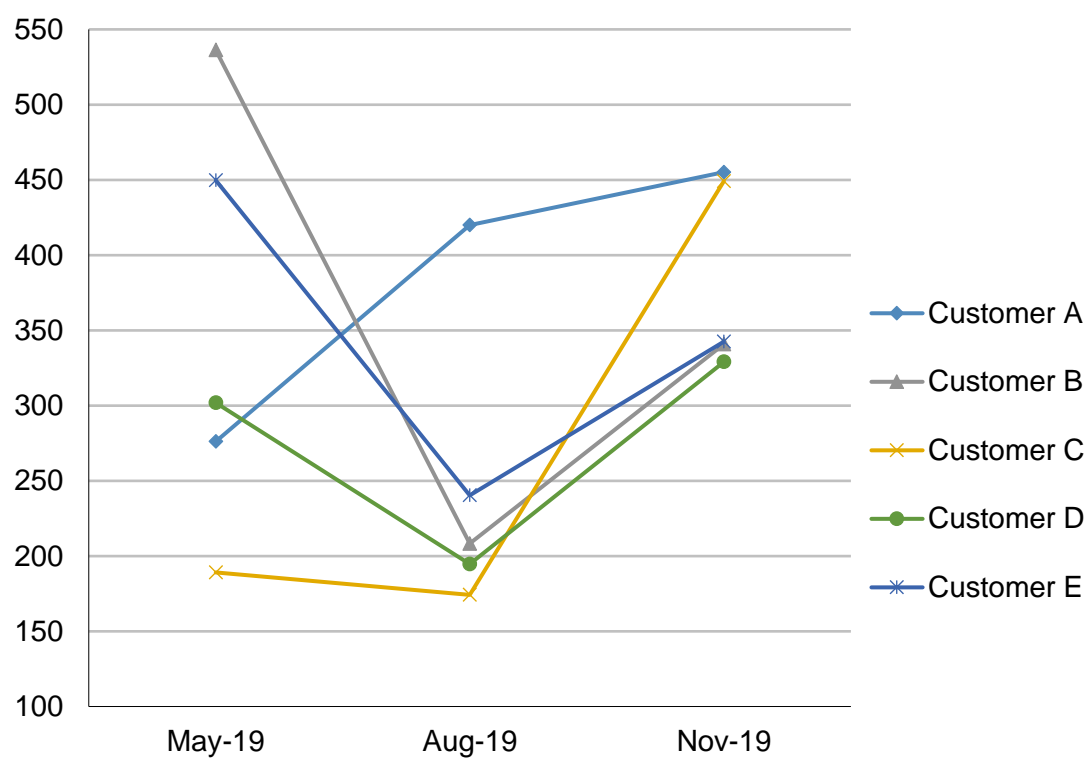
Right First Time

	May-19	Aug-19	Nov-19
Customer A	100%	97%	100%
Customer B	100%	96%	100%
Customer C	100%	99%	100%
Customer D	100%	100%	100%
Customer E	100%	100%	100%



Time to Complete

	May-19	Aug-19	Nov-19
Customer A	276	420	455
Customer B	536	208	341
Customer C	189	174	449
Customer D	302	195	329
Customer E	450	240	343

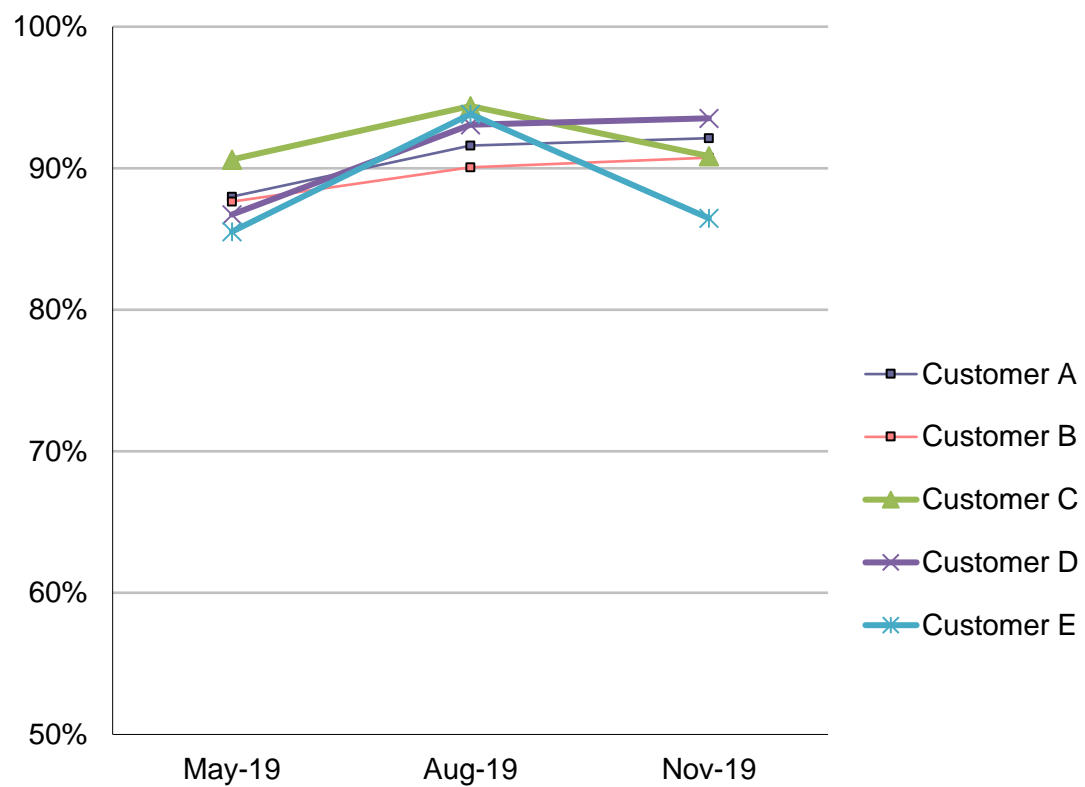


Results for Customers A, C and E were affected by internal processing errors and civil build requirements.

BASEBAND COPPER - RESTORATION METRICS

Met Commit Rate

	May-19	Aug-19	Nov-19
Customer A	88%	92%	92%
Customer B	88%	90%	91%
Customer C	91%	94%	91%
Customer D	87%	93%	94%
Customer E	86%	94%	86%

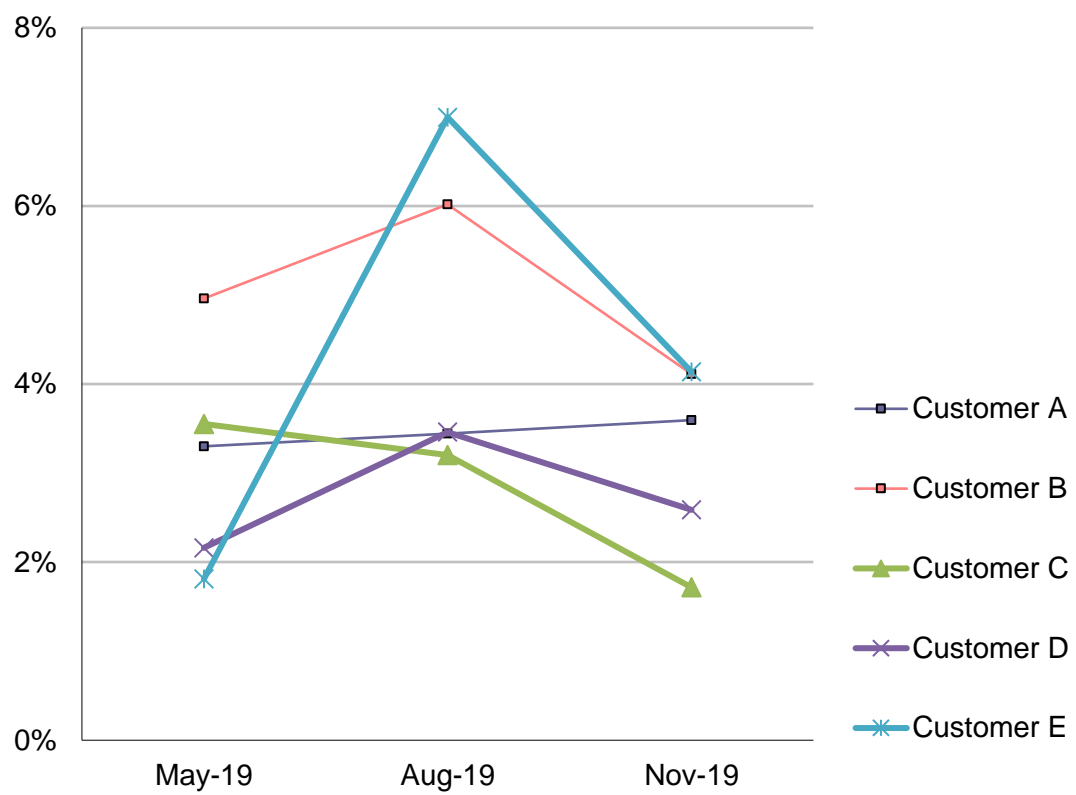


Results for Customer E were affected by customer reschedules, complex faults requiring multiple technician visits, and limited availability of specialists.

BASEBAND COPPER - RESTORATION METRICS

Repeat Fault Rate

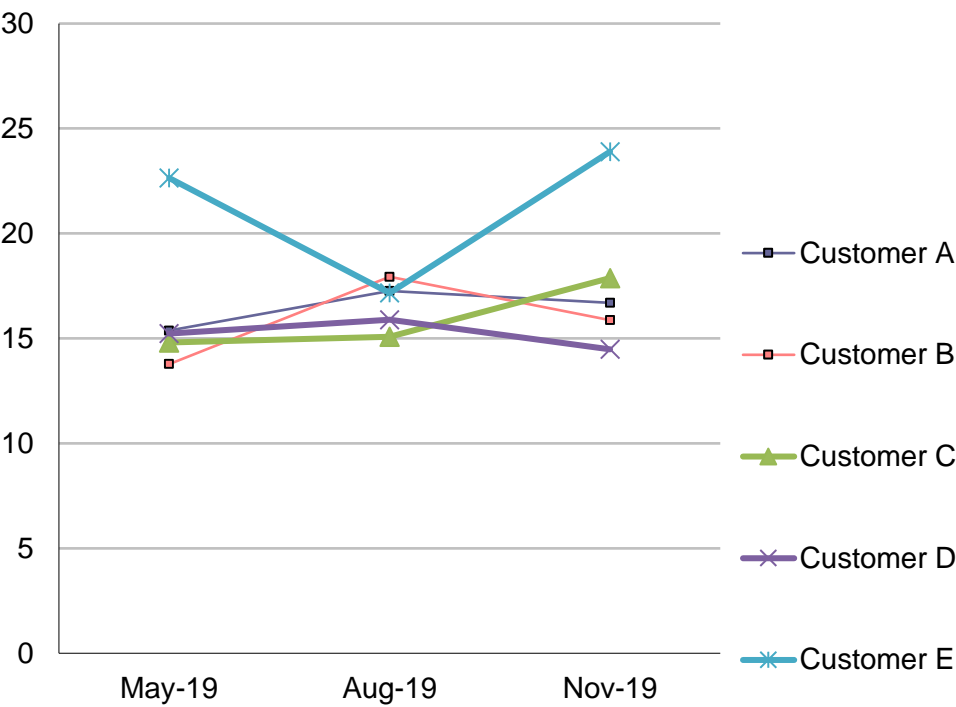
	May-19	Aug-19	Nov-19
Customer A	3%	3%	4%
Customer B	5%	6%	4%
Customer C	4%	3%	2%
Customer D	2%	3%	3%
Customer E	2%	7%	4%



BASEBAND COPPER - RESTORATION METRICS

Time to Complete

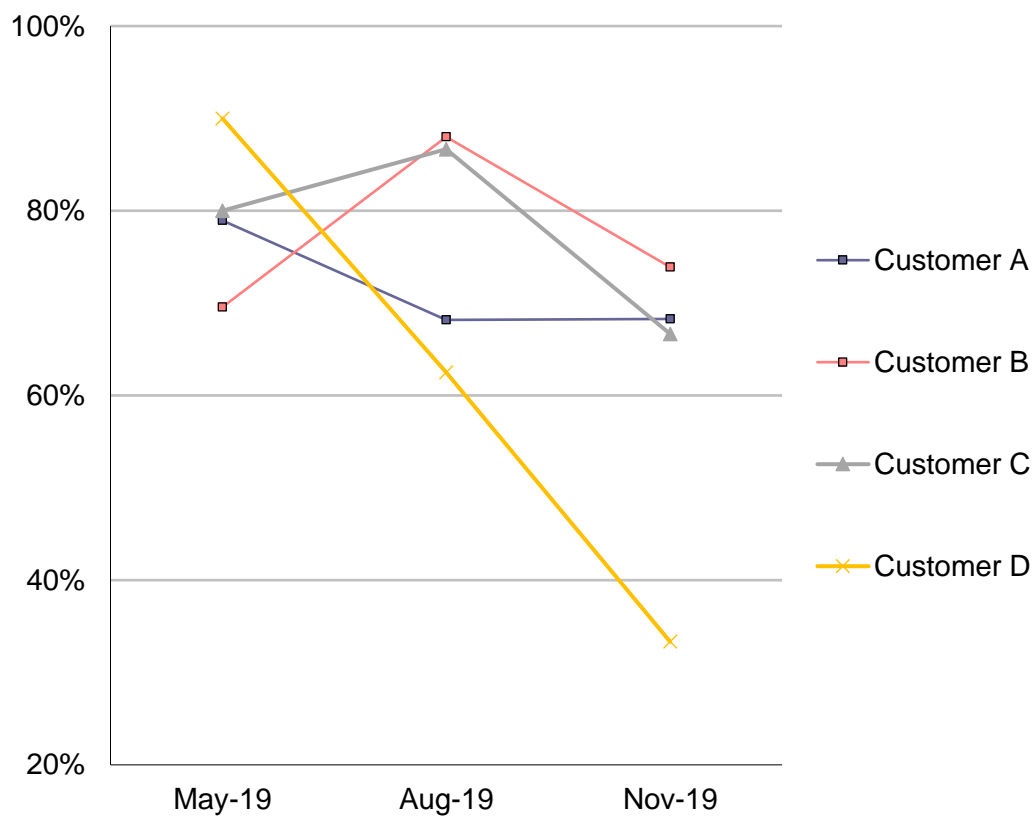
	May-19	Aug-19	Nov-19
Customer A	15	17	17
Customer B	14	18	16
Customer C	15	15	18
Customer D	15	16	14
Customer E	23	17	24



HSNS LITE - RESTORATION METRICS

Met Commit Rate

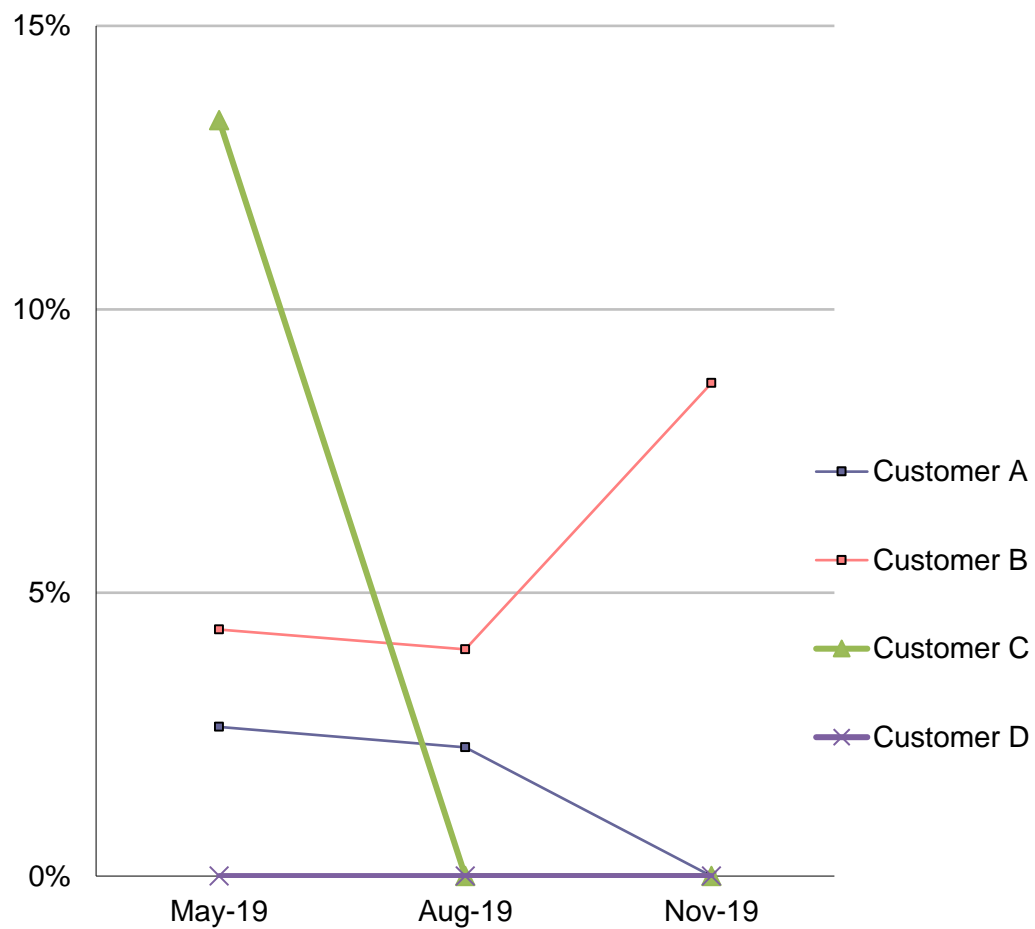
	May-19	Aug-19	Nov-19
Customer A	79%	68%	68%
Customer B	70%	88%	74%
Customer C	80%	87%	67%
Customer D	90%	63%	33%



Results for Customers A and C were affected by complex faults and customer reschedules. Customer D's results are affected by site readiness issues.

Repeat Fault Rate

	May-19	Aug-19	Nov-19
Customer A	3%	2%	0%
Customer B	4%	4%	9%
Customer C	13%	0%	0%
Customer D	0%	0%	0%

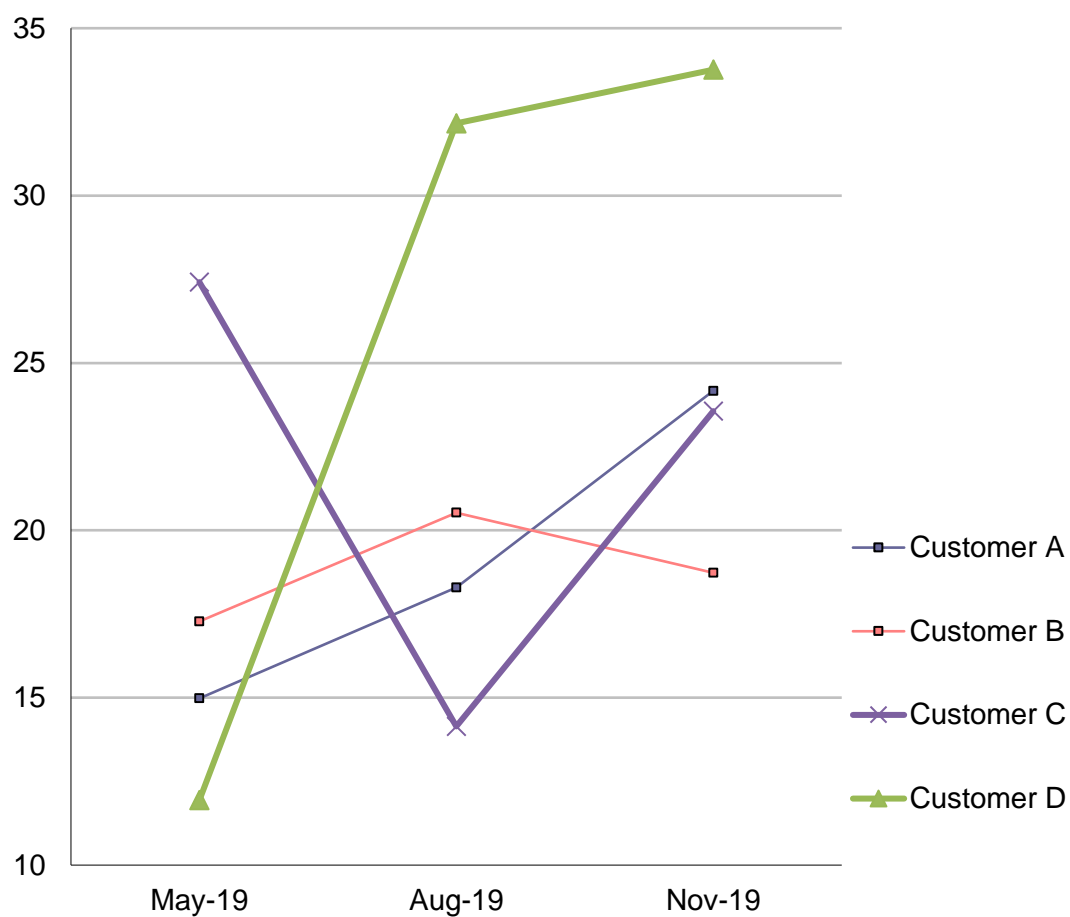


Results for Customer B were affected by complex faults, Chorus processing errors and customer reschedules.

HSNS LITE - RESTORATION METRICS

Time to Complete

	May-19	Aug-19	Nov-19
Customer A	15	18	24
Customer B	17	21	19
Customer C	27	14	24
Customer D	12	32	34

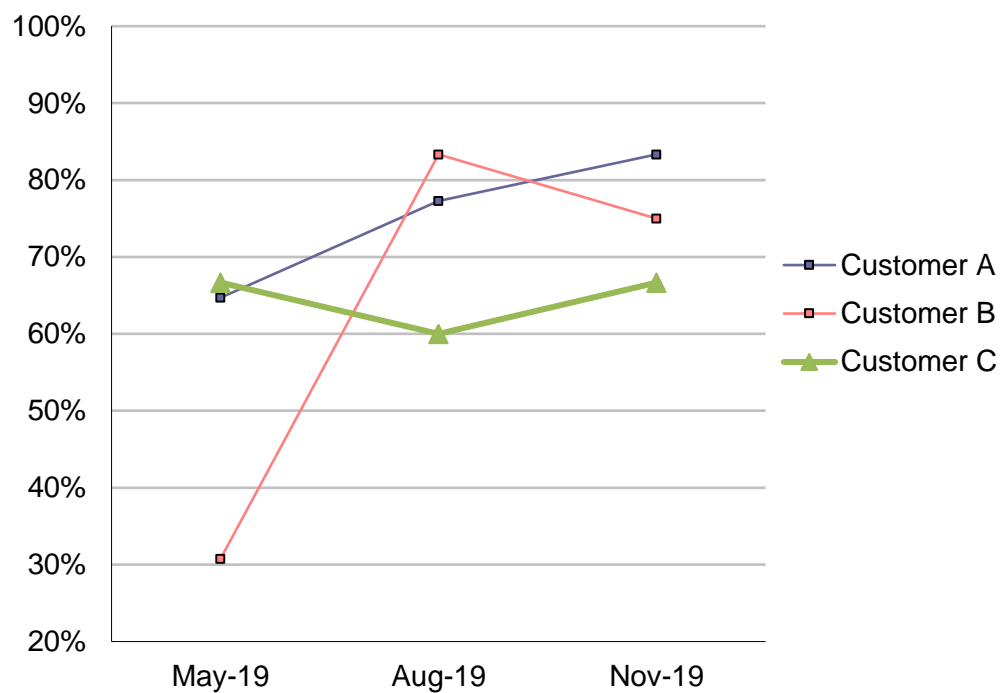


Results for Customer D were affected by complex faults that needed further investigation.

HSNS PREMIUM - RESTORATION METRICS

Met Commit Rate

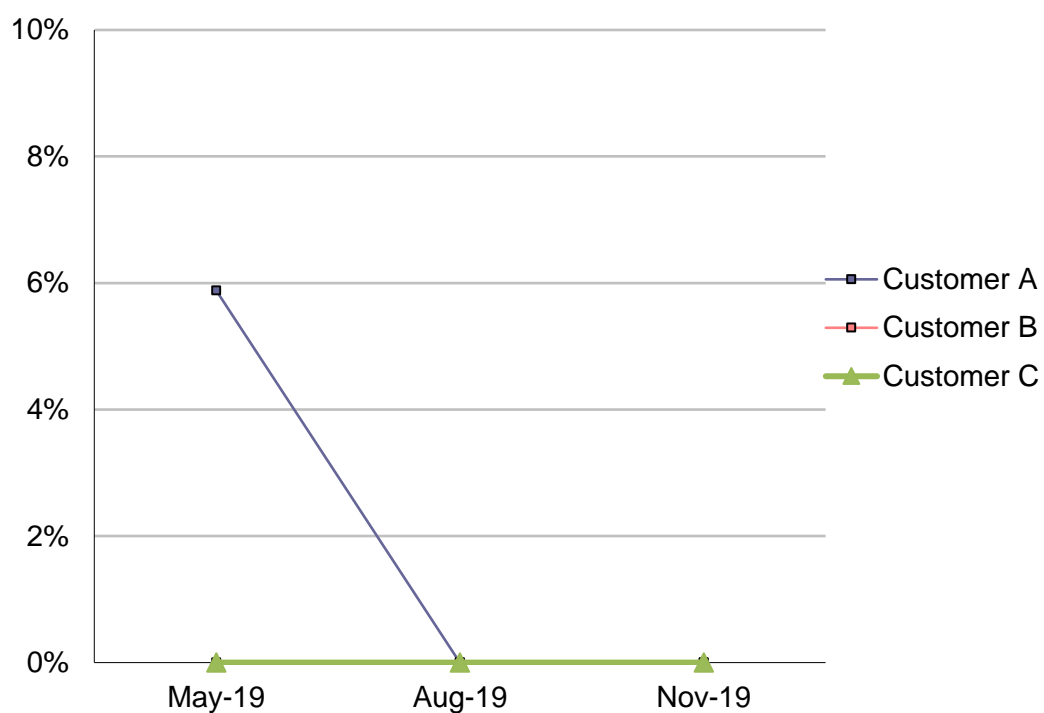
	May-19	Aug-19	Nov-19
Customer A	65%	77%	83%
Customer B	31%	83%	75%
Customer C	67%	60%	67%



Results for Customer C were affected by complex faults and customer reschedules.

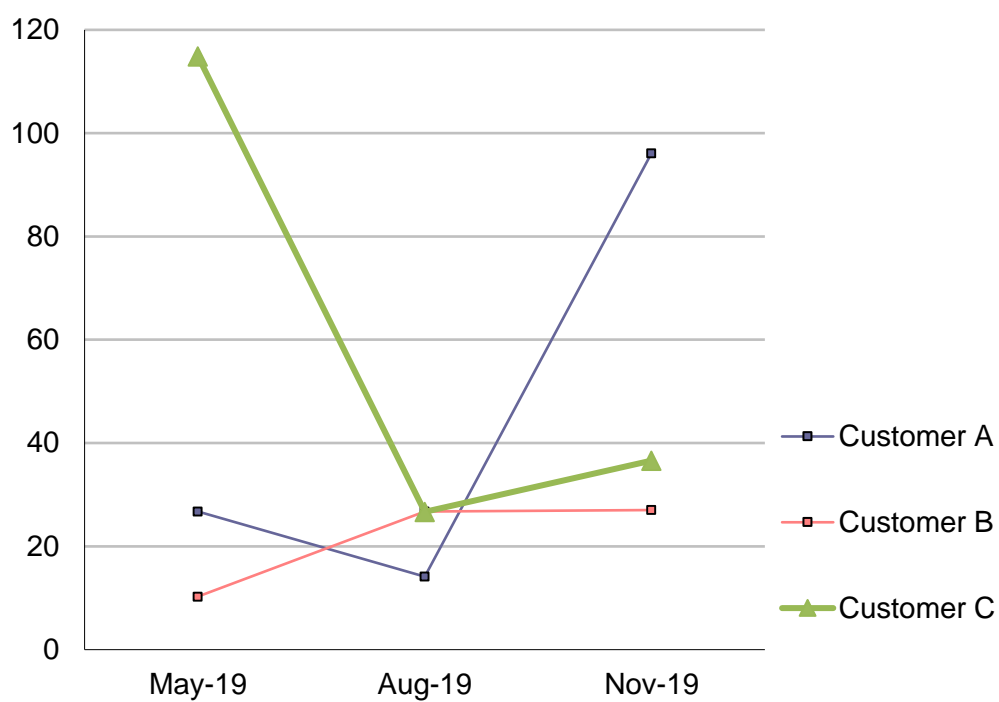
Repeat Fault Rate

	May-19	Aug-19	Nov-19
Customer A	6%	0%	0%
Customer B	0%	0%	0%
Customer C	0%	0%	0%



Time to Complete

69	May-19	Aug-19	Nov-19
Customer A	27	14	96
Customer B	10	27	27
Customer C	115	27	37

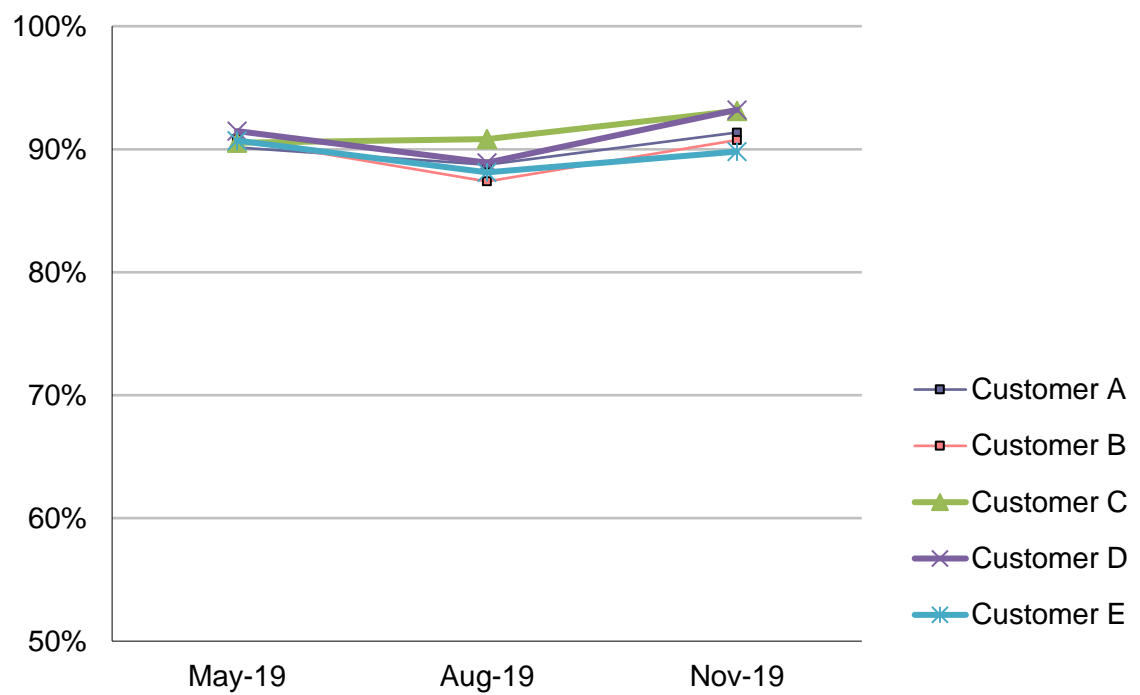


Customer A's results were affected by complex faults.

NGA- RESTORATION METRICS

Met Commit Rate

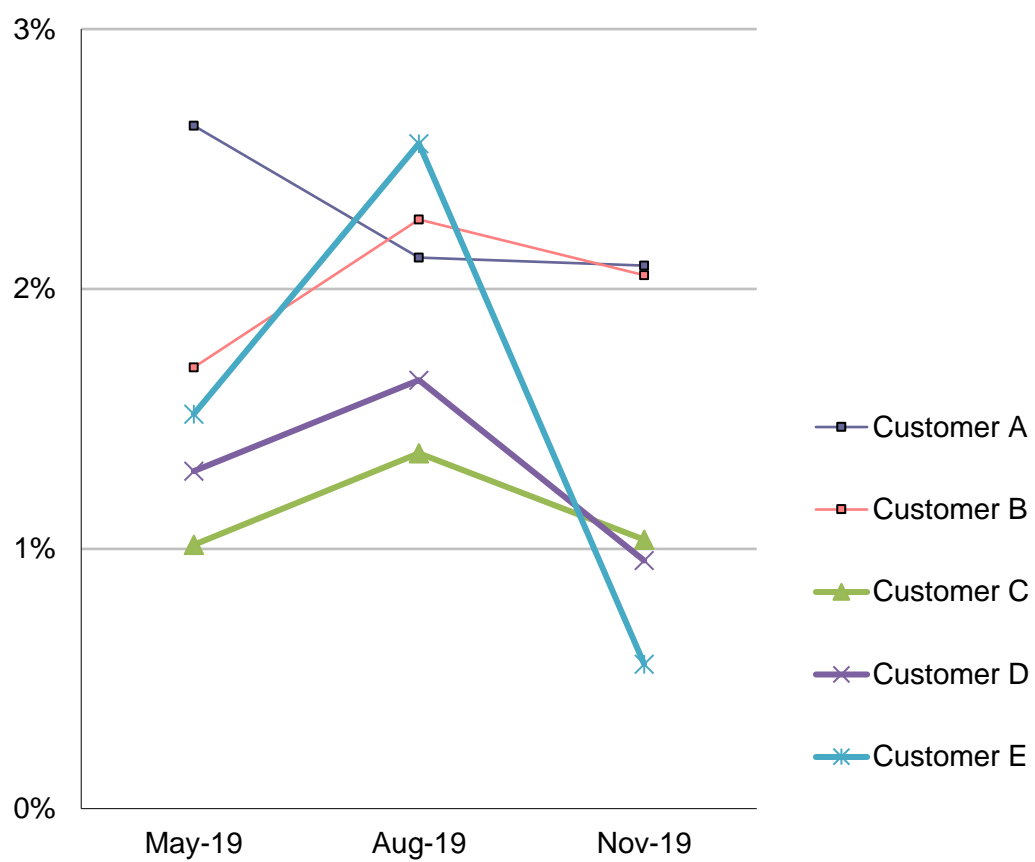
	May-19	Aug-19	Nov-19
Customer A	90%	89%	91%
Customer B	91%	87%	91%
Customer C	91%	91%	93%
Customer D	91%	89%	93%
Customer E	91%	88%	90%



NGA- RESTORATION METRICS

Repeat Fault Rate

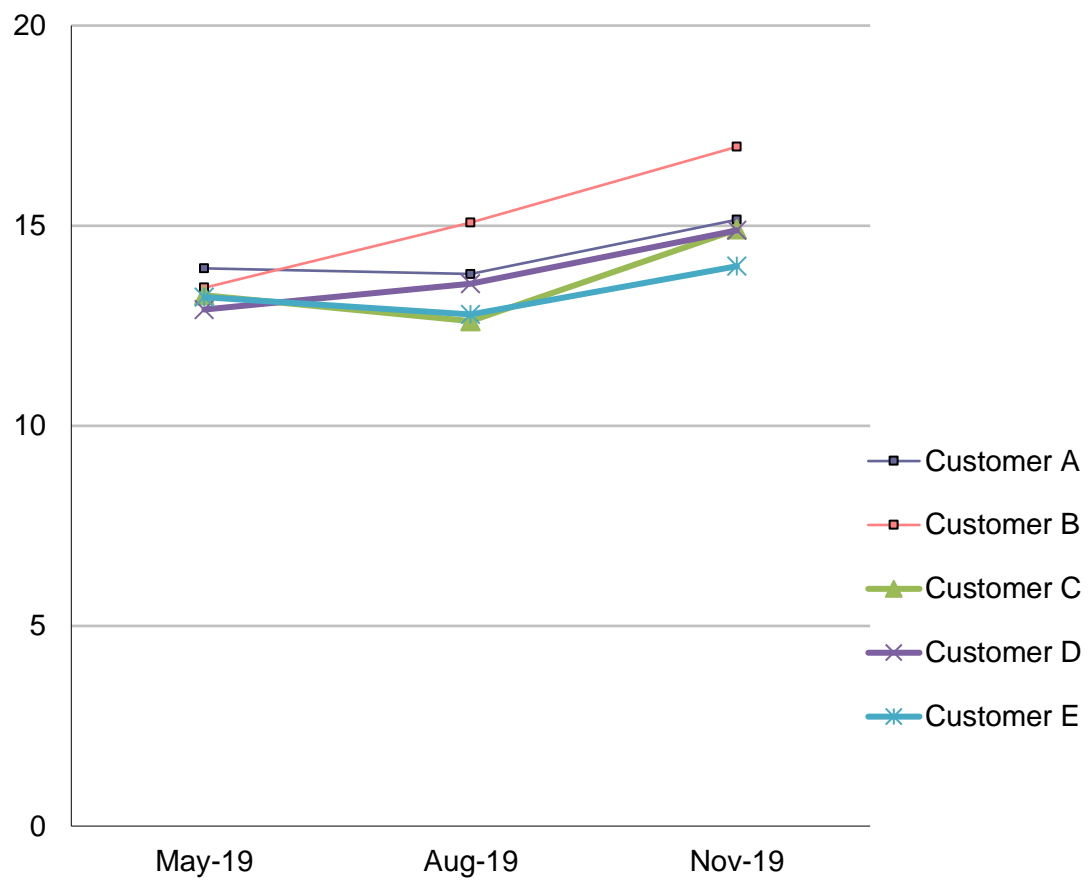
	May-19	Aug-19	Nov-19
Customer A	3%	2%	2%
Customer B	2%	2%	2%
Customer C	1%	1%	1%
Customer D	1%	2%	1%
Customer E	2%	3%	1%



NGA- RESTORATION METRICS

Time to Complete

	May-19	Aug-19	Nov-19
Customer A	14	14	15
Customer B	13	15	17
Customer C	13	13	15
Customer D	13	14	15
Customer E	13	13	14

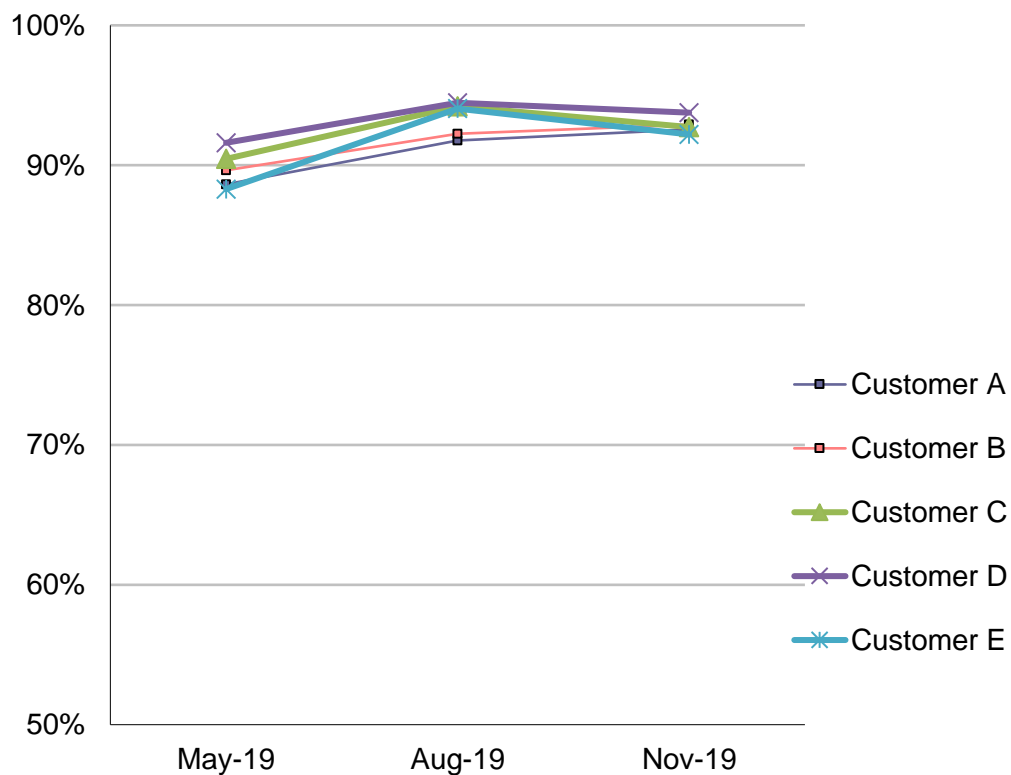


UBA - RESTORATION METRICS

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

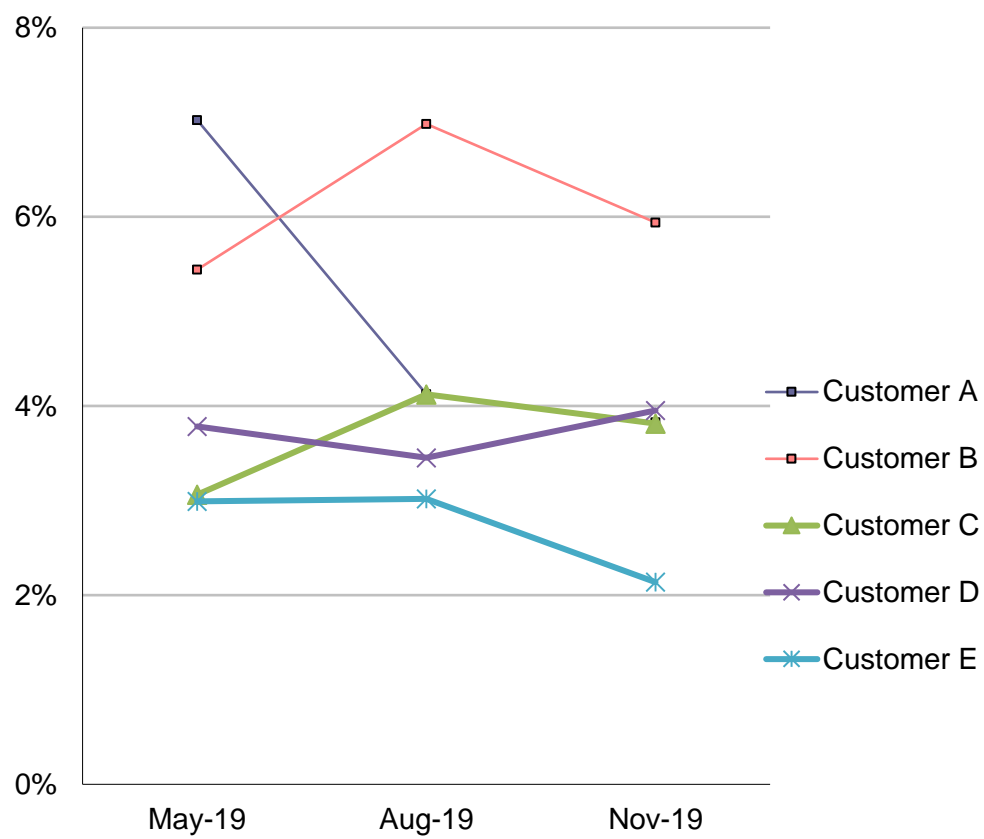
Met Commit Rate

	May-19	Aug-19	Nov-19
Customer A	89%	92%	93%
Customer B	90%	92%	93%
Customer C	90%	94%	93%
Customer D	92%	94%	94%
Customer E	88%	94%	92%



Repeat Fault Rate

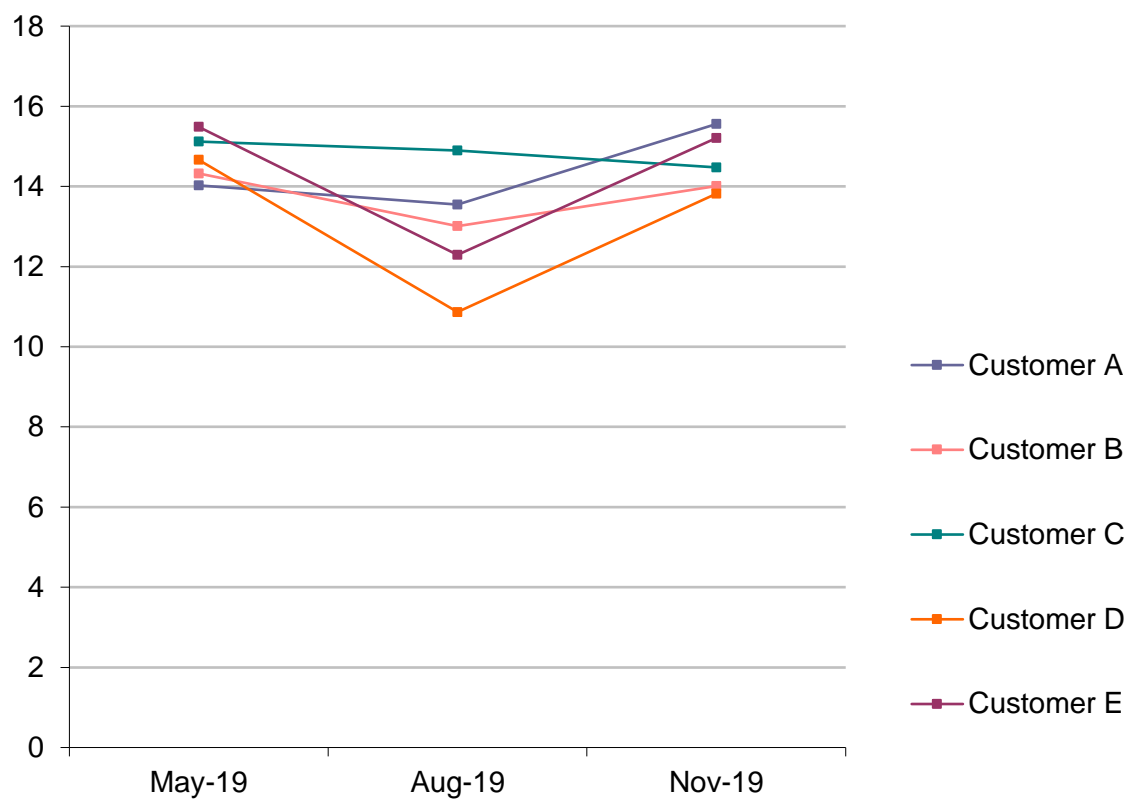
	May-19	Aug-19	Nov-19
Customer A	7%	4%	4%
Customer B	5%	7%	6%
Customer C	3%	4%	4%
Customer D	4%	3%	4%
Customer E	3%	3%	2%



UBA - RESTORATION METRICS

Time to Complete

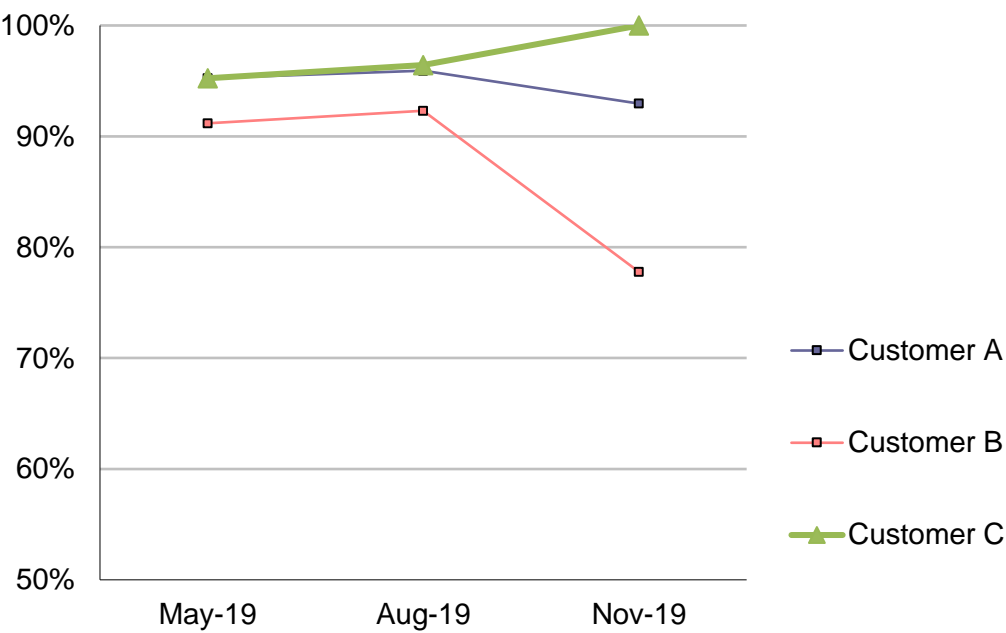
	May-19	Aug-19	Nov-19
Customer A	14	14	16
Customer B	14	13	14
Customer C	15	15	14
Customer D	15	11	14
Customer E	15	12	15



UCLL - RESTORATION METRICS

Met Commit Rate

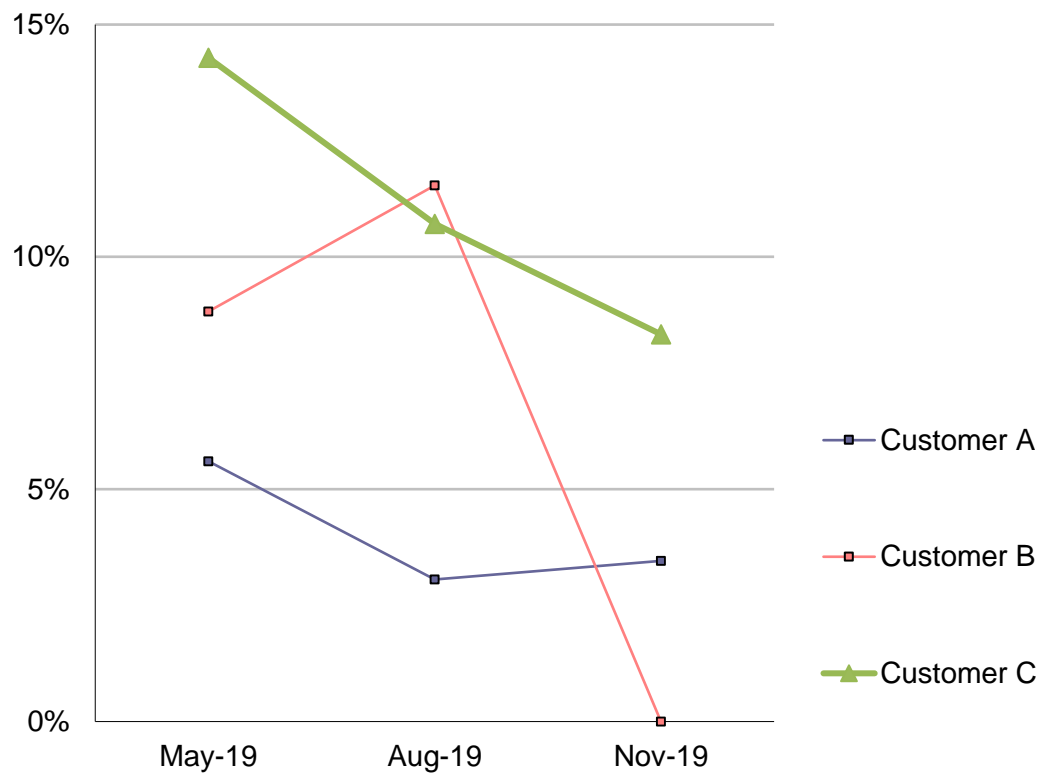
	May-19	Aug-19	Nov-19
Customer A	95%	96%	93%
Customer B	91%	92%	78%
Customer C	95%	96%	100%



Customer B’s results were affected by a Chorus processing error.

Repeat Fault Rate

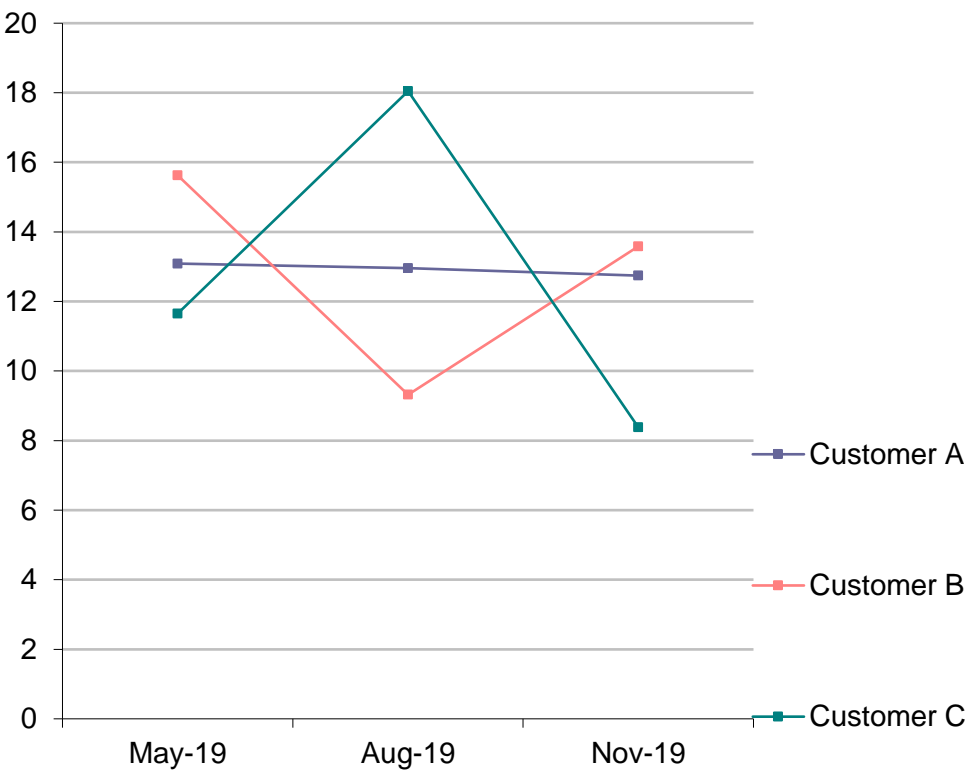
	May-19	Aug-19	Nov-19
Customer A	6%	3%	3%
Customer B	9%	12%	0%
Customer C	14%	11%	8%



Results for Customer C were affected by a complex fault and customer troubleshooting.

Time to Complete

	May-19	Aug-19	Nov-19
Customer A	13	13	13
Customer B	16	9	14
Customer C	12	18	8



Appendix PROVISIONING METRICS Products that did not meet the inclusion Threshold

SLU - PROVISIONING METRICS

HSNS LITE (OVER COPPER) - PROVISIONING METRICS

UCLL - PROVISIONING METRICS

UBA WITH AGENCY VOICE - PROVISIONING METRICS