U.S. General Services Administration

Federal Acquisition Service

GSA Transition Coordination Center

Predictive Analysis

Using Networx Installation Intervals
to Aid EIS Transition Planning

Version 1.0

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Introduction

To assist agencies with project planning, GSA convened a Predictive Analysis Collaboration Team (PACT) made up of representatives from eight (8) Federal agencies and the nine (9) EIS contractors to design an approach that could be used following EIS task order award to develop realistic high-level timelines and highlight risk areas. This approach is hereby referred to as predictive analysis.

Time Remaining for the EIS Transition

There is limited time remaining to transition to the EIS contracts given the volume of active services on the expiring contracts. Figure 1 provides the critical GSA milestones associated with the EIS Transition. It highlights the limited amount of time remaining to foster an increased sense of urgency among stakeholders.

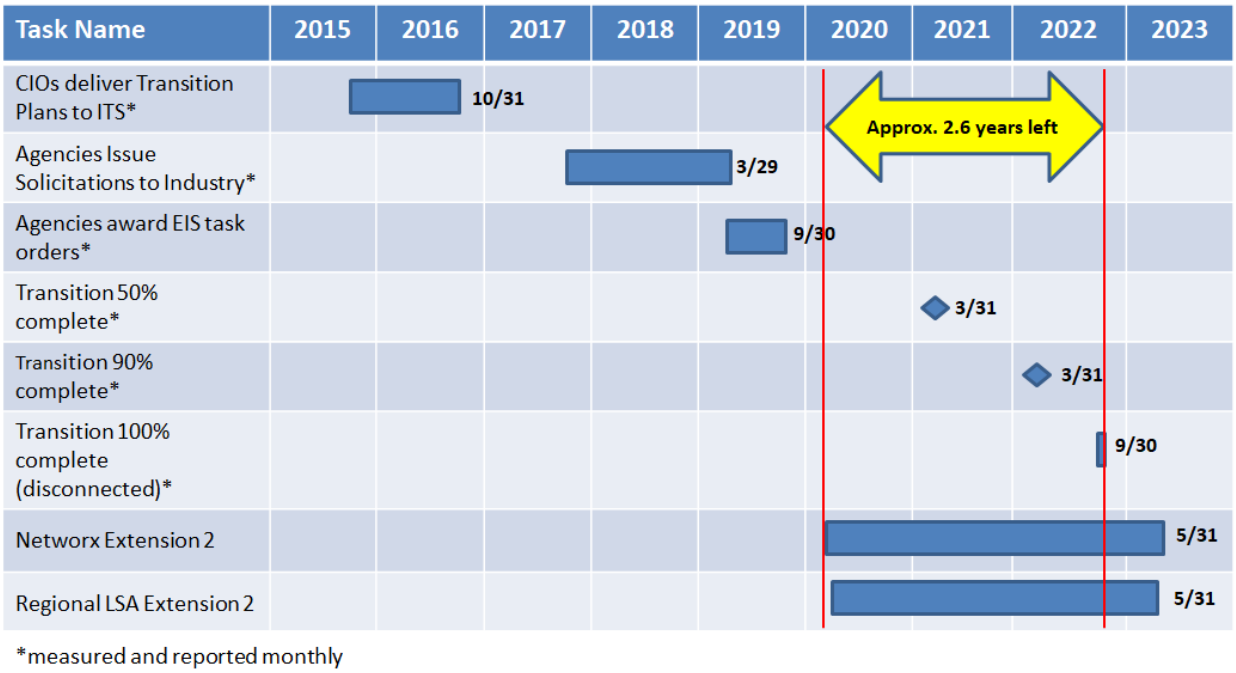

Figure 1. ***Remaining EIS Timeline***

Predictive Analysis Approach

Predictive analysis assigns conversion factors (or weighting) to similar installation intervals from the FTS 2001 to Networx transition, which can then be applied to transition inventory and used to predict installation intervals in preparation for EIS task order/service order execution.

GSA's Transition Coordination Center (TCC) calculated Networx installation intervals by subtracting the Order Receipt Acknowledgement (ORA) date from the Service Order Completion Notice (SOCN) date for any new orders on active Networx records with data

through November 19, 2019. Data was blended across all agencies. Common situations that may have impacted Networx installation intervals include:

- Customer Want Date (CWD) was/is in the distant future
- Multiple rejections of an ORA
- Errors in order writing [impacts notifications]
- Local access contractor delays [impact Firm Order Commitment (FOC) date]
- Back Office Transitions that tend to be reported as the same date
- Project level installations that tend to be reported as the same date

Data Analysis Assumptions

The following assumptions were used to develop Networx installation intervals:

- Data is for planning purposes only and not recommended for use with contractual Service Level Agreements (SLAs), which are based on the Service Order Confirmation (SOC) date
- Data was measured for new orders only and does not include change orders
- Data does not include instances where ORA date was listed after the SOCN date

Each agency should view its own installation interval data to provide context on how its transition was previously executed, and determine how items such as non-conus sites, construction required, and other time consuming items should be factored into this analysis.

For additional guidance, the TCC encourages agencies to review video presentations of the “Mitigating Transition Delays Workshop” and the “Transition Order Sequencing Workshop” at:

https://www.gsa.gov/technology/technology-purchasing-programs/telecommunications-and-network-services/enterprise-infrastructure-solutions/eis-transition/transition-resources#2.

Networx Installation Intervals

Table 1 provides Networx installation intervals alongside the number of Networx orders used to derive the data.

Table 1. *Networx Installation Intervals and Volume*

Service Description	Average (days)	Longest (days)	Last 5% Average (days)	No. of Networx Orders (#)
LAYER 2 VPN	156	944	619	932
MANAGED NETWORK	140	998	719	14,534
MANAGED TRUSTED INTERNET PROTOCOL SERVICES	120	618	462	134
NETWORK-BASED IP VPN	111	994	465	31,445
PRIVATE LINE	101	966	621	9,925
INTERNET PROTOCOL	92	980	413	1,976
PRIMARY RATE INTERFACE	57	997	284	2,964
VOICE OVER IP	47	641	240	6,513
CIRCUIT SWITCHED DATA SERVICE	34	379	115	15,254
VOICE SERVICE	29	994	252	3,260,632
TOLL-FREE	11	926	118	46,909
AUDIO CONFERENCING	17	388	62	4,830
BROADBAND ACCESS	183	395		8
CALL CENTER/CUSTOMER CONTACT CENTER	153	698	594	90
CALLING CARD	15	531	162	2,873
CELLULAR DIGITAL PACKET DATA	189	980	808	188
CELLULAR/PCS	30	781	131	2,104
CLOUD COMPUTING SERVICE	11	60	60	59
CO-LOCATED HOSTING	106	977	713	441
COMBINED (LOCAL AND LONG DISTANCE)	249	644	641	72
COMBINED DIRECT INWARD DIALING	62	954	287	75,429
CONTENT DELIVERY NETWORK	27	226	226	35
CONVERGED IP	84	819	435	191
CUSTOMER SPECIFIC DESIGN AND ENGINEERING	112	859	708	170
DARK FIBER SERVICE	18	25	25	21
DEDICATED HOSTING	184	577		11
DEDICATED TRANSMISSION CONNECTION	99	469		11
DEDICATED VOICE SERVICE	30	629	159	1,889
E-CLOUD	222	363		2
ETHERNET	132	733	507	149
FIXED SATELLITE	101	909	489	364
FRAME RELAY SERVICE	176	329		4
INCIDENT RESPONSE	159	639	639	23
INTRUSION DETECTION AND PREVENTION	237	997	902	327
IP TELEPHONY	102	987	412	3,510
IP VIDEO TRANSPORT	147	965	522	818
MANAGED FIREWALL	210	997	870	423
MISCELLANEOUS OTHER	209	825	597	715
MULTIMODE/WIRELESS	154	701	497	170
OPTICAL WAVELENGTH	99	417	417	35
PREMISES-BASED IP VPN	68	162		5
STORAGE SERVICES	181	472		3
SYNCHRONOUS OPTICAL NETWORK (SONET)	140	383	383	33
VIDEO TELECONFERENCING SERVICE	19	80	51	558
VOICE OVER IP TRANSPORT	52	641	256	5,620
VULNERABILITY SCANNING	90	90		1
WEB CONFERENCING	180	994	927	1,444
WIRELINE ACCESS	97	593	432	141
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WIRELINE ACCESS	97	593	432	141

Average: the average new order installation period for each service type; measured in calendar days from the placement of an order to the implementation of the service. *This information can be helpful to determine the amount of time it will take to install the majority of an agency's orders for each service type.*

Longest: the longest new order installation period for each service type; measured in calendar days *to show real-world data on how long it has actually taken agencies to install each service type*. Note: these numbers are not anomalies, where one order far exceeded the next longest interval. For most service types, there were multiple orders close to the longest interval.

Last 5% Average: the average number of calendar days it took to complete installations for the longest 5% of new orders. *This information is useful in determining how long it may take to finish out challenging or problem sites.* Note: if a service did not have enough orders to provide a valid statistical sampling, it was left blank.

Assigning Weighting

Table 2 provides weighting that can be applied to the blended interval data from Networx. The PACT concurred with the weighting ranges, noting that agencies and EIS contractors should use this as a directional aid, applying adjustments based on their specific situation.

Table 2. *Weighting by Transition Type*

Transition Type	Weighting	Reason
Like-for-Like with incumbent	.60 – .80	In most instances, like services can be moved onto a new contract using a back-office process, thereby avoiding the time it takes for physical installations.
Like-for-Like with new provider	1 – 1.5	Installation intervals are expected to be equal to or higher than historical intervals depending on the new provider's knowledge of customer sites.
Transformation with incumbent	.75 – 1.25	Installation intervals vary depending on the technology selected and the maturity of its implementation process.
Transformation with new provider	1.25 – 2	Installation intervals vary depending on the technology selected and the maturity of its implementation process, and the new provider's understanding of agency practices, locations, and resources.

Example of How Predictive Analysis can be used for Scheduling

The PACT members determined that high-level predictive schedule can be useful for project and risk planning. In this example, actual agency-specific data for a large department's Networx NBIPVPN services was used to develop a sample predictive schedule.

Sample Agency: Large Agency

Inventory Applied: 1,736 NBIPVPN SIRs currently active on Networx

Transition End Target: September 30, 2022 (to meet the EIS transition milestone)

Awardee: New provider

Transition Type: Like-for-Like

Weighting Applied: 1:1

Transition Strategy: Place all orders up front and hold the EIS contractor accountable to deliver an average of 60 per month

Assumptions:

- Planning activities will take 90 days to complete
- The implementation period spans the time it took to install the site with the "longest" historical interval.

For an agency or EIS contractor using project planning software, the three types of installation interval metrics from Table 1 were compared to the agency's actual installation intervals to determine schedule elements. The schedule shown in Figure 2 uses the actual Networx intervals highlighted in green below.

Type of Installation Interval Metric	Blended Networx Interval (Table 1)	Actual Networx Interval
Average	111 days	50 days
Longest	994 days	29 months
Last 5%	465 days	18 months

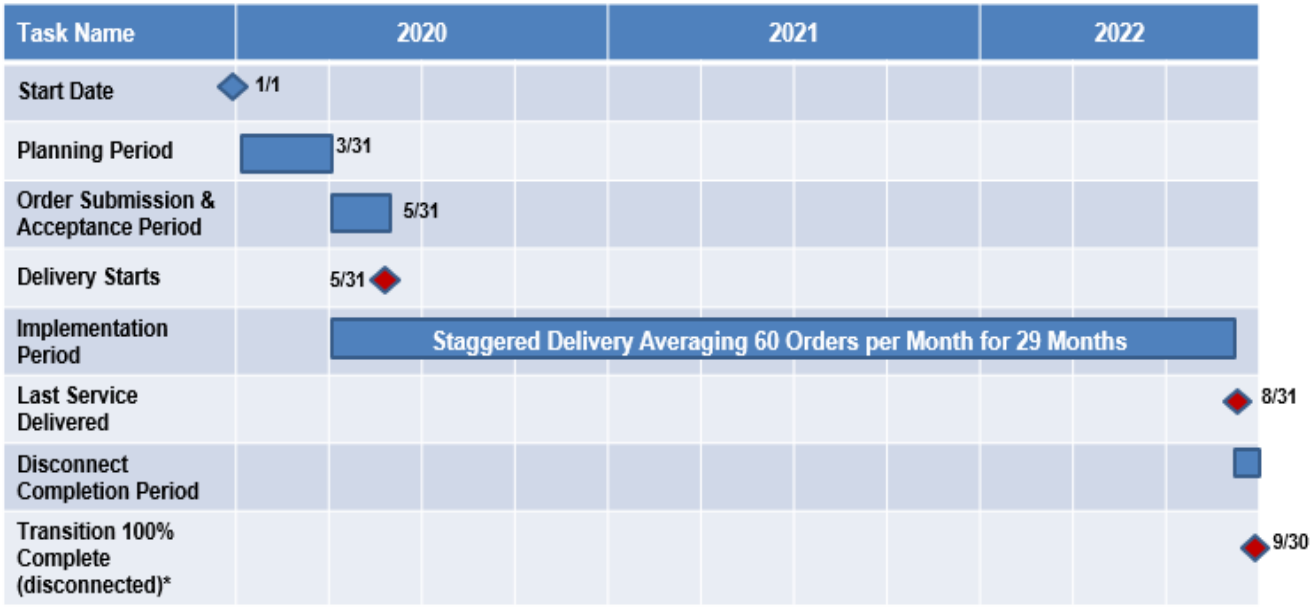

Figure 2. ***Sample Predictive Schedule***

Risks and Considerations:

1. If the order(s) that takes the longest time is not submitted on April 1st, it is in danger of being delivered too late to make the end date.
2. Can the agency and the EIS contractor consistently support an average of 60 installations every month for 29 months?
3. Implementation of service typically follows more of a "bell curve" (with more installations occurring during the middle/peak months and less installations at the beginning and at the end) than a straight line average.
4. Any slippage near the end of the project jeopardizes the ability to disconnect all services from the expiring contract by 9/30/2022.