# Agenda

1. Provide a status update to the EBIDM and NSS team on our efforts to model data from EDR and NSS
   1. Short presentation of Power BI dashboard (5 min)
   2. We’ve also started work on ML prediction model for “time to complete BR” (5 min)
2. Review DSAI observations, **questions** and answers. (30 min)
   1. This is most important. Questions are organized below for easy notetaking
3. ~~Identify any gaps or concerns for the team to discuss~~
4. Discuss next steps in incubation efforts. (10 min)
   1. What is the minimum viable model that would provide value?

# Notes

EPM, ESM: these are coming down the pipe and may change things ( 2year from now)

* EPM is already in works: 5 customers onboarded. The rest of them by end of next FY (FY22-23.)
* Service lines aren’t impacted by these changes

The “time to complete” prediction model will help in the mean time

We want to drill into the service level predictions (e.g. “wifi”)

# Questions

* Is there value in knowing how many BRs are active / in a certain **phase**?
* Yes. By *lead product*, and customer is better. \*\* follow up on terms
  1. Granularity of phases? (Is “cycle time phase” OK?)



* 1. What constitutes a “finished” BR? (“Other” phase in Cycle time? “in-service”?)
     1. Correct. \*\* BITS workflow 15.5 chart (request from EBIDM)
     2. Show Sastry the columns in EDR that might indicate this
     3. Jacques: Does “in-service” count? RA: first year. Support: following years of in-service. Finally, agreement-terminate. \*\* Sastry to think on this.

1. Sastry’s mock-up shows 3 Complexity categories: Low, Medium, High. In the data though, there are additional categories:

Medium 20930, Low 16435, High 1557

**Major Initiative (PROJECT) 2030** <- High, Medium, or Low?

* + 1. Project is different from “OAR”. Project is higher complexity.
    2. Try adding financials as proxy for complexity

**Workload Migration 1313** <- High, Medium, or Low?

Not sure \*\* Sastry will confirm

**Vendor-controlled Timelines 65** <- High, Medium, or Low?

\*\* Sastry to confirm

\*\* Jules: look into Real Property data (BR Scope attribute: OAR, RPA, project..)

* clarify what is the purpose of that Excel mockup
  + Human resources assigned to different services, how long do they take for “run/growth/transform” at different complexity?
  + About 40% of BRs aren’t fulfilled due to capacity limits.
  + Jacques: We don’t have HR data aligned with service lines/product.

1. Run, Growth, Transform:

We don’t see these in the EDR or NSS provided tables. How is this determined?

* + 1. Run: Maintenance. ECD data.
    2. Growth, transform: BRs
    3. Safe to disregard these categories for now.
    4. Jacques: You won’t find “run” in BRs.

                (~~Assumption: both Complexity and Run/Growth/Transform are used for estimating LoE per BR in those categories?)~~

1. How is LoE to be determined/estimated?
   1. Are you looking for averages to be filled into each of those cells?

e.g. Average LoE \* Number of BRs gives us total LoE.

Proxy for LoE: Predict time to complete BR?

* 1. If LoE is simply based on BR time spent per phase, we could model how much time a BR will take (possibly time spent in each phase, if this helps)
  2. LoE when proxy is time: Actual effort is intertwined with capacity and total workload (assume that LoE = time \* capacity / total BRs).
     1. Sastry: Joseph Martens, NSSDS. He has a LoE/costing responsibility for NSS. Ask about his models for LoE. Also talk to manager Elizabeth ?
     2. Joseph may be interested in the AI models
     3. Let’s set up a meeting for mid-February to discuss how to extend these models to all products/services in catalogue.

1. ~~(Human) resources available:~~

~~Where would this data come from? It isn’t in EDR or the tables provided by NSS.~~

~~In terms of capacity planning, this would be part of a later “resource optimization” task. First we need to forecast volume / LoE.~~

Lynda Hachey: Director of branch business planning and horizontal srvc NSSDS

1. Desired granularity of forecasts:
   1. Service, or service-line specific?
      1. BRs often have multiple services.
      2. Keep in mind that if there is a very low number of BRs for a particular service, the forecasts may not be useful. We need an appropriate granularity, not the finest possible.
   2. Is there value in having forecasts broken out into the separate phases?
      1. Yes. \*\* Sastry will provide us a cycle time report by lead service as example.

Questions we are looking to answer with data:

* 1. Can we predict likelihood for service lines to miss delivery of BR's by end of fiscal? (Organize by service line by service by impacted department)
     1. This could be answered by predicting the time to complete a BR based on its current state and tombstone attributes.
  2. Can we Predict business requests that will not be fulfilled **on time**? (Organize by likely service, likely department, degree of impact(dollars))
     1. What counts as “on time”? Few BRs actually have a implementation deadline in the data. Can we assume “end of fiscal in which BR was opened” as the implementation deadline? (Put in some cutoff date e.g. Nov 1st where it is assumed to be the following FY)
        1. Jacques: should be a date “client requested impl date” (best); “target impl date” (set by ssc, aka projected date); “revised est completion date” (set by ssc). In priority order: revised, target, client requested.
        2. May have better date information by end of March.
     2. “Likely”? What do you mean. Are we to predict services required for a BR?
        1. No; not a requirement. A BR has to indicate those.
     3. Degree of impact $$: How would this be estimated? Is it recorded anywhere? (Financial table?) (“labels” for historical BRs)? Do we need another prediction model here too?
        1. We can make estimates based on the $ value of BRs done / not done. Difficult to define “value” of a certain BR. This doesn’t impact the “design” phase; $ value is estimated after design. \*\* open question, **TBD**
     4. Note that the more prediction models we stack up, the less reliable it gets.
        1. e.g. 3 models with 80% accuracy = 0.8 \* 0.8 \* 0.8 = 0.512  
           (coin toss accuracy)
  3. Can we Determine/Forecast how many BR’s we can fulfill (partially or in full) for a given timeframe?
     1. Define “partially” and “in full” concretely in terms of Statuses, Cycle Time phase etc.
        1. Sastry: I didn’t ask about this
        2. Olesia: This has financial impacts (lapsing of funds for depts)
        3. For modeling, let’s push off to later
        4. Jacques: “fully delivered” = in-service. “partially delivered”: there’s a flag for “partial billing” \*\* Jules needs to find that in the EDR / NSS data (Patricia can help)
     2. What is the value in predicting “Partial”. For optimization purposes there needs to be a definition of what is the best case. Is it related to cycle time phase? (e.g. in service = 1 (most value), agreement-ssc = 0.5 (some value), etc.)
        1. Don’t need this info right away as this relates to optimization.
  4. Can we use the data to determine the impact of the departmental current funding allocation model play in service lines inability to deliver/ramp up on time?
     1. Out of initial scope; perhaps EBIDM can add this kind of analysis “on top”
     2. Sastry: TBD. Not part of MVP.

Based on these notes, let’s prioritize a few things feasible for this FY