

Analytics to Make Hybrid Work, Work



verizon[✓]

BUSINESS PROBLEM

Hybrid work is a coordination problem at heart—how frequently and on which days of the week should hybrid employees come into the office? The COVID-19 pandemic accelerated a remote work revolution and caused the hybrid model—where employees split time between in-office and remote work—to become the norm as employees return to the office in 2022 and beyond. The shift to fully remote work during the pandemic highlighted numerous remote work benefits. To name a few, zero commute cost, more focus time and more flexibility. The challenge is that remote collaboration is more time consuming to orchestrate—potentially decreasing innovation.

DATA SOURCES

HR Scheduler Data - Hybrid Employee Schedules submitted through HR System by Directors Book-A-Space Booking Data - Standard booking app with a variety of data fields describing the employee characteristics (line of business, level, function) and reservation details. Badge Data - Site level badge data at the employee level G-Suite Calendar Data - Standard meeting/appointment data from Google

Data Types and Format

Time Series Booking Data, Time Series Badge Data, Worker Schedule Type Data, Time Series Calendar Data

APPROACH

Acknowledging that remote and in-person work have different, and at many times complementary goals, our study tests whether employee collaboration data can help organizations solve the coordination problem inherent in hybrid work. We find that collaboration data can align work groups to maximize in-person collaboration gains while minimizing the number of days in office per week.



IMPACT

This affects business outcomes because large corporations invest significant capital in work campuses— is there excess capacity at campuses with the shift to hybrid work? We use data to recommend the optimal in-office frequency and simulate office space capacity. We find that offices will be 60% under capacity when employees return. Most importantly, we think about offices as networks—the value of being in the office scales non-linearly as users increase. We find that organizations can use collaboration data to model employee networks and appropriately align work communities. Ultimately, we develop a scheduling system that will help stabilize office space demand in 2022 and beyond, and enable real estate strategists to make proactive portfolio consolidation decisions. We use unsupervised machine learning to cluster employees into communities and recommend in-office time based on historical relationships. This model properly aligns 93% of work relationships in our sample and increases stakeholder schedule alignment by four times. We estimate the enterprise value of properly aligned schedules is \$16.3M per year—this estimate is based on studies examining employee productivity in the remote work environment. While this estimate values an important part of the equation—employee collaboration—it does not include downstream real estate cost reductions. We believe this type of scheduling model will stabilize office space demand and enable portfolio consolidation.

DRIVERS

Our solution looks to answer how hybrid work is impacting organizations. The framing was driven by research and senior leader guidance across industries stating in office time needs to be used for collaboration – we plan to measure how hybrid schedules affect the number of in-person interactions.

BARRIERS

Data Sharing between Global Real Estate & Human Resources. Employee Privacy Concerns. Uncertainty about how long Hybrid Work Trends will last.

ENABLERS

Ongoing implementation of a hybrid work program. Established data management system and talented data engineering team.

ACTIONS



We executed a pilot study within our business unit and worked to build a relationship with the human resources lead in order to think about scaling long term. The pilot study served as a proof of concept which convinced leadership that the core problem was schedule misalignment. We were able to quantify the results of data driven scheduling and then establish a partnership with human resources for larger scale testing.

INNOVATION

We used employee calendar data to model employee networks and cluster employees into communities. When building these communities we also took into account how frequently each employee planned to come into the office—this enabled us to spread system demand across the week at a work site. Another interesting aspect we applied were Exponential Random Graph Models to understand what employee attributes cause relationships to develop.

IMPROVEMENT

In our pilot program, we increased stakeholder alignment from 13% with heuristically set schedules to 45% aligned with optimized schedules. These results were achieved with a constrained solution space; we only changed one director's schedule based on data available and system coupling beyond our data sample. To estimate the true improvement we simulated a full clustering solution—this delivered 93% schedule alignment.

BEST PRACTICES

This solution is powerful if the data pipeline is established enough to make real-time recommendations on schedules, but this is an extremely challenging task at the start. Since network modeling is very visual a good tactic we used was selected a small sample, building models and presenting insights visually to leaders. By building this understanding we had support across the organization.

OTHER APPLICATIONS

We believe networks can be applied in a number of industries where there is a large number of digital interactions and the data is logged for a period of time.