Agenda

1. Current State of Data
2. Data Strategy Refresher
3. Strategy for ROI focus
4. Real world strategy and use cases
5. Our Learning

Challenges of Data Organizaiton - Show me the money!!

According to the NewVantage survey, which included 94 executives from Fortune 1000 companies, nearly three in four companies have a CDO in place. But individuals in those roles find progress to be slow:

- Only half of CDOs are able to drive innovation using data.
- Just 40% of CDOs manage data as a business asset.
- Roughly 26% of CDOs have succeeded in creating a data-driven organization.
- About 25% of CDOs have no single point of accountability for data within their organization.
- Only 40% of respondents said the CDO role is successful and established within their organization.
- CDO Tenure is short – 2.5 years compared to 4.5 years for CFO / CIO (MIT report)

What’s your strategy?

Are you a data driven organization?

Do you have a data strategy for Enterprise Value?

Do you have data monetization as strategy?

According to Bi Survey, though 91% of companies say data-driven decision-making is essential for their business growth, only 57% said they make data-based decisions.

Business drivers for Digital Transformation with Data

Increase revenue, market share, customer relations

Lower operations cost, increase profitability

Improve risk, security and data governance

Innovation, new products and services, speed to market

Cool tech applications, real time solutions for action/ ChatGPT?

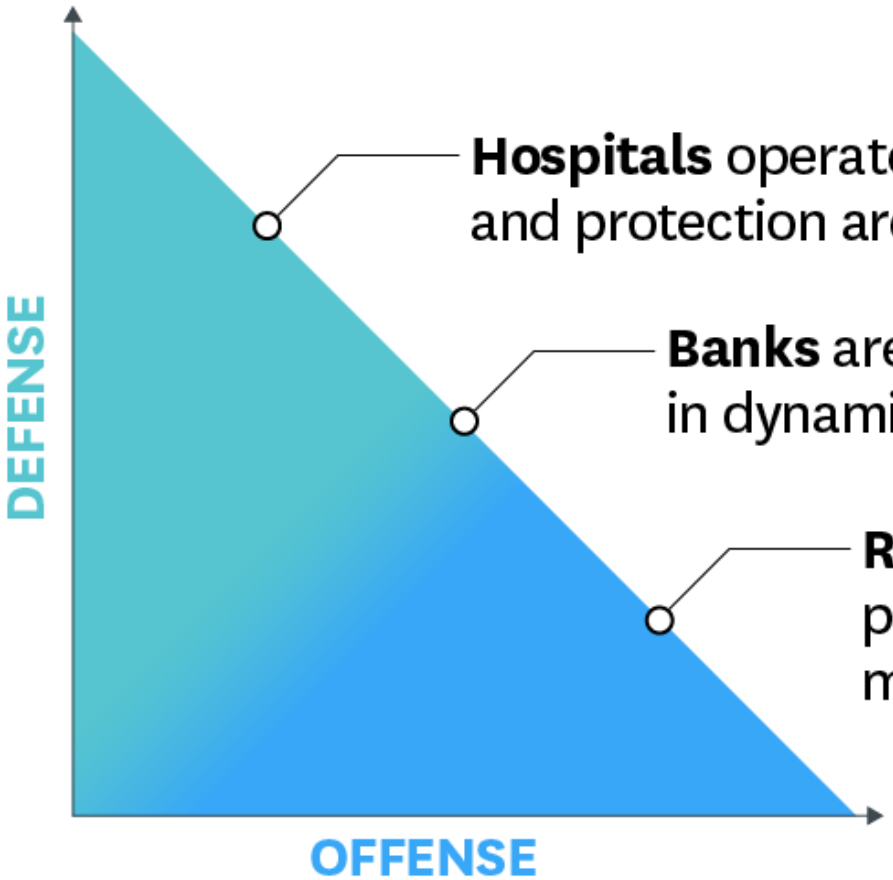
Tom Davenport on Data Strategy

	DEFENSE	OFFENSE
KEY OBJECTIVES	Ensure data security, privacy, integrity, quality, regulatory compliance, and governance	Improve competitive position and profitability
CORE ACTIVITIES	Optimize data extraction, standardization, storage, and access	Optimize data analytics, modeling, visualization, transformation, and enrichment
DATA MANAGEMENT - ORIENTATION	Control	Flexibility
ENABLING ARCHITECTURE	SSOT (Single source of truth)	MVOT (Multiple versions of the truth)

From "WHAT'S YOUR DATA STRATEGY?" BY LEANDRO DALLEMULE AND THOMAS H. DAVENPORT, MAY–JUNE 2017, HBR

The Data-Strategy Spectrum

A company's industry, competitive and regulatory environment, and overall strategy will inform its data strategy.



Hospitals operate in highly regulated environments where data quality and protection are paramount. They emphasize defense over offense.

Banks are heavily regulated and require strong data defense. But they operate in dynamic markets and so typically devote equal attention to data offense.

Retailers are less regulated, work with limited sensitive personal data, and must react rapidly to competition and market changes. They typically emphasize offense over defense.

FROM "WHAT'S YOUR DATA STRATEGY?," BY LEANDRO DALLEMULE AND THOMAS H. DAVENPORT, MAY–JUNE 2017

State of Data Driven Organizations

Data-driven organizations are growing an average of 30%+ annually

Forrester

68% of organizations reported they're still unable to realize value from data

Accenture

Only 28% (from 500+ survey participants) have a data strategy in place

Accenture

"Until we understand that the entire business runs on data, we are going to consistently challenges with and limited by the project-based mindset around the CDO role."
Grace Lee, CDAO Scotia Bank

ROI Focused Data Strategy

Building data analytics as a business

Always align with Business

- Create measurable value for business
- Stay with business change
- Create ‘Speed to value’ culture

Think Big, start small and now

- Create the vision, evangelize
- Show value incrementally and quickly
- Build architecture for future, but flexible

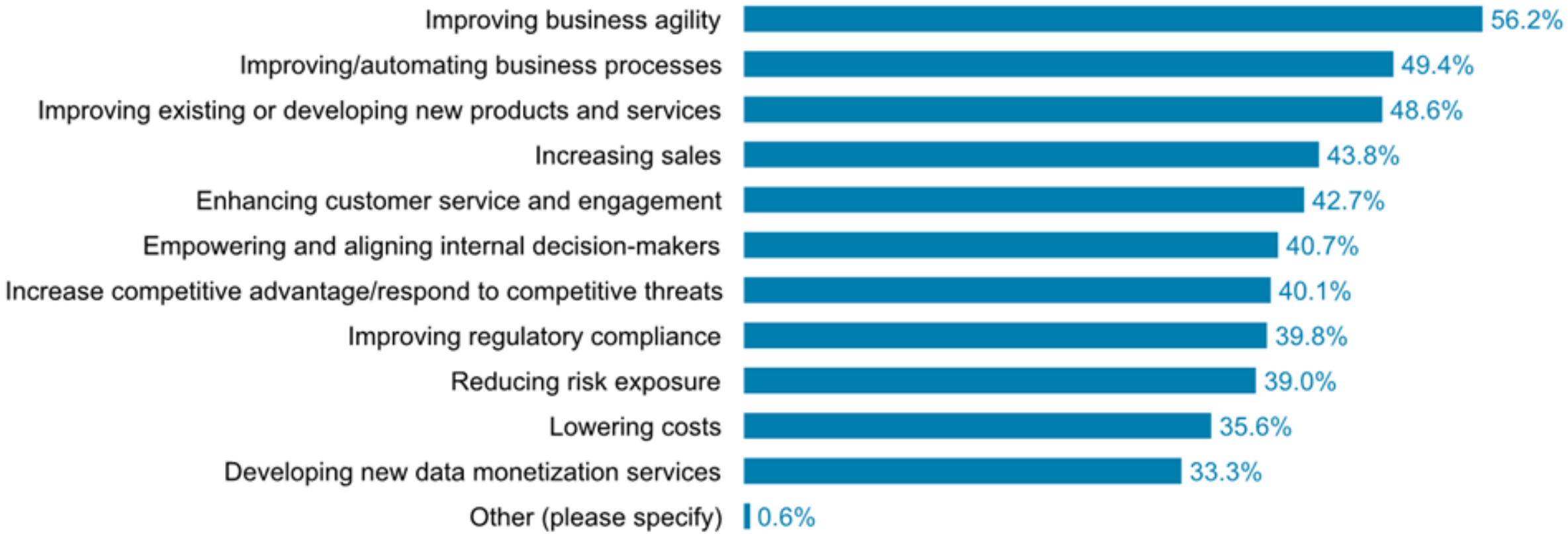
Data driven Innovation

- Its ok to fail and focus on new shiny thing
- Democratize data for speed and adoption
- Self Service Analytics with enterprise support

Data products and monetization

- Think like a business, be a business
- Data partnership and service
- Risk, Security and Compliance are your friends

What are the most significant benefits your organization would expect from being more data-driven? Please select all that apply.



Q. What are the most significant benefits your organization would expect from being more data-driven? Please select all that apply.

Base: All respondents (n=354)

Source: 451 Research's Voice of the Enterprise: Data & Analytics, Data Management & Analytics 2021

451 Research

S&P Global
Market Intelligence

ROI Focused Data Strategy

Building data analytics as a business

Always align with Business

- Create measurable value for business
- Stay with business change
- Create ‘Speed to value’ culture

Think Big, start small and now

- Create the vision, evangelize
- Show value incrementally and quickly
- Build architecture for future, but flexible

Data driven Innovation

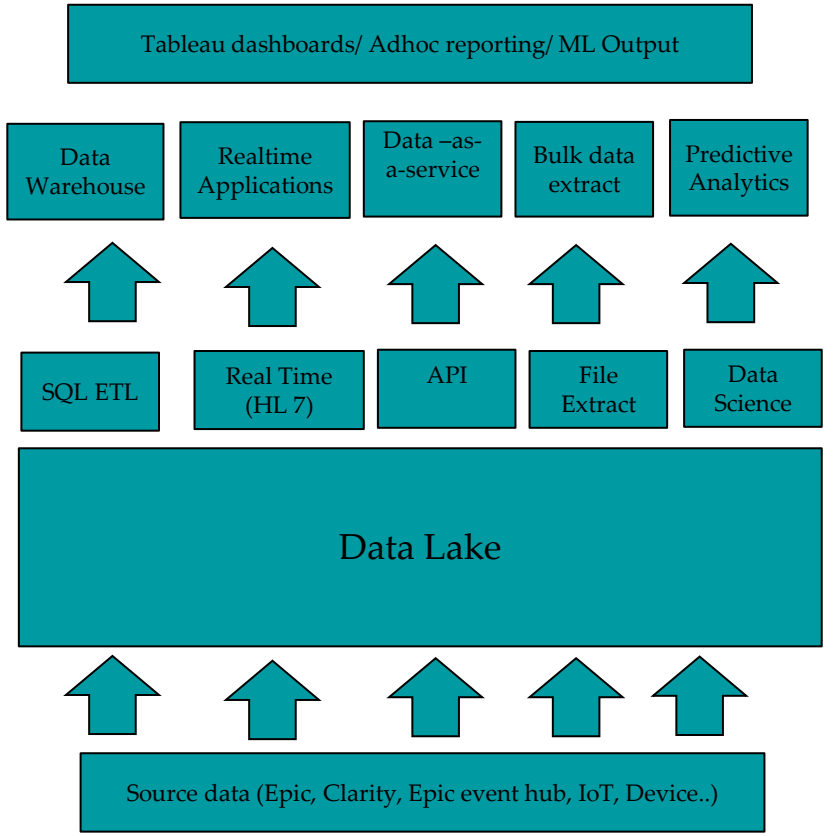
- Its ok to fail and focus on new shiny thing
- Democratize data for speed and adoption
- Self Service Analytics with enterprise support

Data products and monetization

- Think like a business, be a business
- Data partnership and service
- Risk, Security and Compliance are your friends

Data Architecture Vision

- A large **data platform that stores** all types of **structured and unstructured** data from **various sources virtually**
  - Ensures **consistent, high-quality data** with robust data governance, security and privacy
  - Includes **data sources beyond EDW** (image data, streaming data, RTLS etc.)
- Provides **real-time data** for operational use cases
- Enables high volume **batch processing**
- Allows for **data APIs** that enable **model automation** (closed loop)
- Drives self service analytics, playground for Data Scientists with proper security and access control, DevOps and model operationalization
- Cloud based (Azure) with **highly scalable**, managed **unlimited compute, storage** enabling advanced **big data analytics** technologies and capabilities

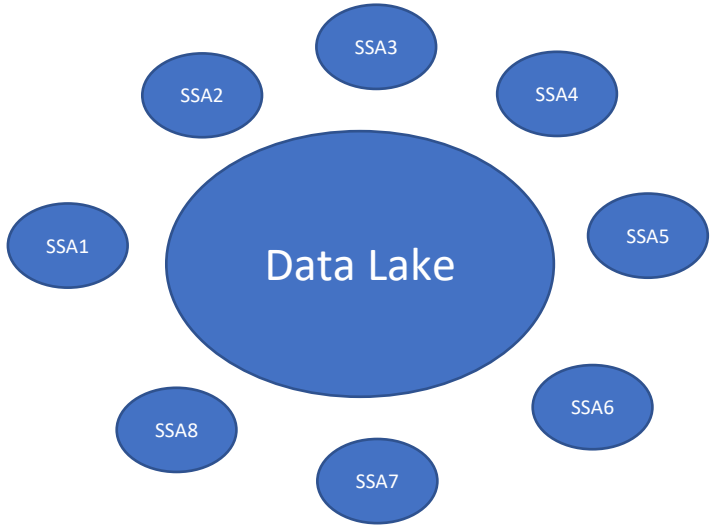


Data Lake Conceptual Flow

DAO Vision for Supporting Data Scientists with Self-Service Analytics

Self-Service Analytics for Data Scientists

- Centrally supported with **adequate and scalable compute**, **analytic sandbox** and **storage** for local work
- Tools: Will have all standard set of **analytics and data science tools available**
- Data Capability:
  - Can **read data** directly from Data Lake
  - Can **import data** from any and all sources into the SSA as needed
  - Will have **connectors** readily available **to all corporate data assets**
  - Will have prebuilt common **organized file system and data layers** on the SSA
- Governance: **centralized governance** of administration and user access



Will Enable:

- Quick and easy access to Data
- Experimentation for Data Scientists with tools and data
- Fail Fast – Innovate
- Speed to market

ROI Focused Data Strategy

Building data analytics as a business

Always align with Business

- Create measurable value for business
- Stay with business change
- Create ‘Speed to value’ culture

Think Big, start small and now

- Create the vision, evangelize
- Show value incrementally and quickly
- Build architecture for future, but flexible

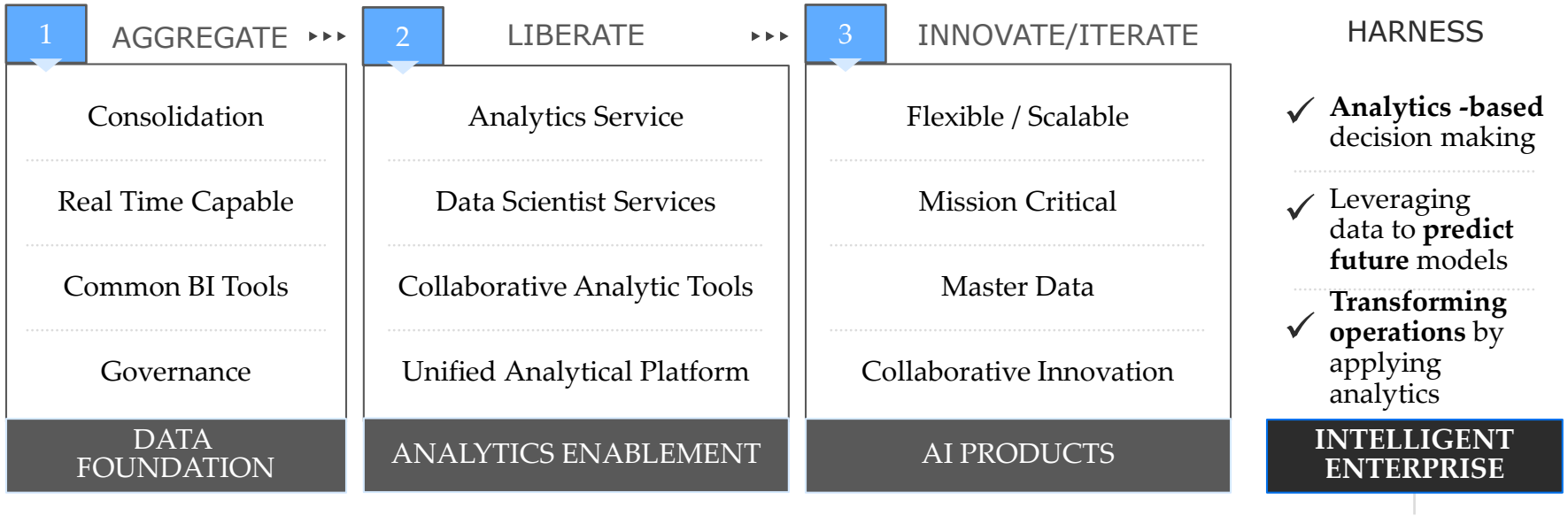
Data driven Innovation

- Its ok to fail and focus on new shiny thing
- Democratize data for speed and adoption
- Self Service Analytics with enterprise support

Data products and monetization

- Think like a business, be a business
- Data partnership and service
- Risk, Security and Compliance are your friends

DATA MATURITY JOURNEY



- Start on foundation with core Data
- Build new solutions delivering value, incrementally and quickly
- Integrate Data Stores - rebuild where it makes sense
- Expand Data Science capabilities and innovation with Self-Service

Common Healthcare Analytics Use Cases:

Patient 360

- Patient profile, history for better service, outcome
- Navigating across clinical, provider, pharmaceutical, genomic, diagnostics at one place
- Proactive scheduling, preventive care

Research

- Expedite new cure through vast clinical, genomic, trial data
- Discover most effective treatments, best practices

Value Based Quality Care

- Better medical and financial decisions through analytics
- Increased quality of care
- Optimal patient outcome by predictive, timely intervention

AI at work

- Accelerate and automate diagnostics analysis, to increase accuracy and efficiency
- Use NLP to reduce manual work (note taking, analysis for treatment)

Population Health

- Increased measurement and tracking
- Predictive population health monitoring, disease trends
- Demographics, Socio-economic data driven strategy

Precision and Preventive Medicine

- Predicting possible infection, strokes, afib etc. with wearables
- Proactively following up on high risk patients
- Personalized medicine, treatment relating patient profile, genetics, environment,

Operations Efficiency

- Improved EHR usage, reduce physician burn out
- Optimizing scheduling, predicting Patient length of stay
- Bed and instrument capacity, utilization monitoring,

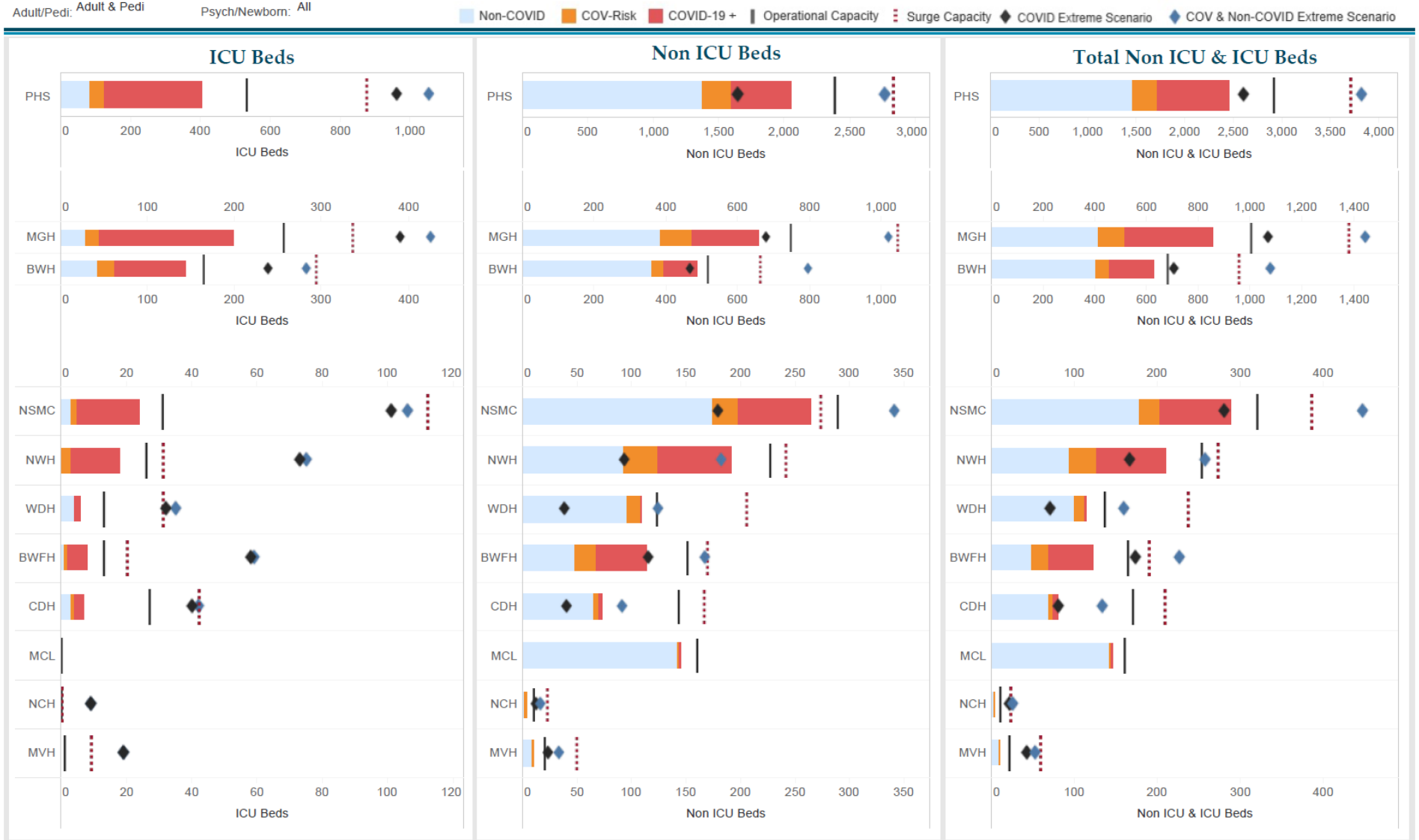
Cost, Fraud, Financials

- Identify fraud billing
- Reduce coding and financial errors
- Optimize pricing and charges

COVID-19 Bed Capacity & Surge Planning | Data as of: April 24, 2020 6:50 AM

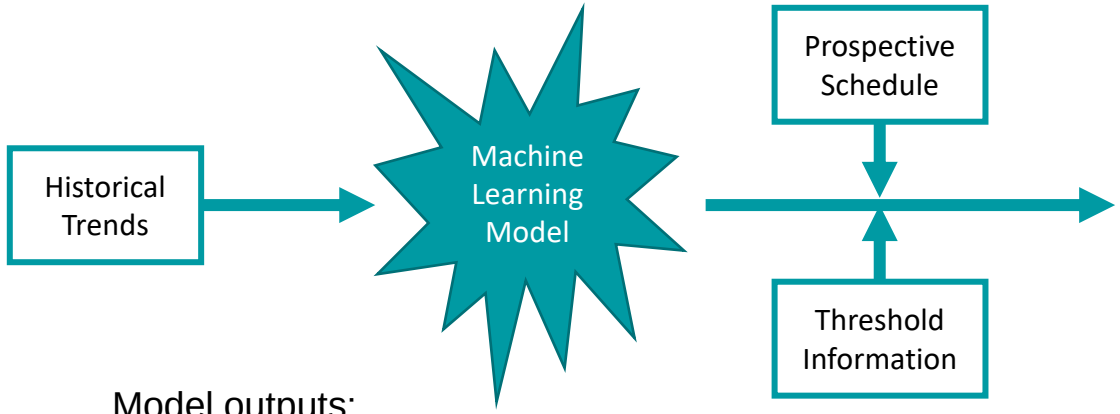
Report Definitions ↗ | Refresh Schedule: 7:30am, 11:30am and 3:30pm daily

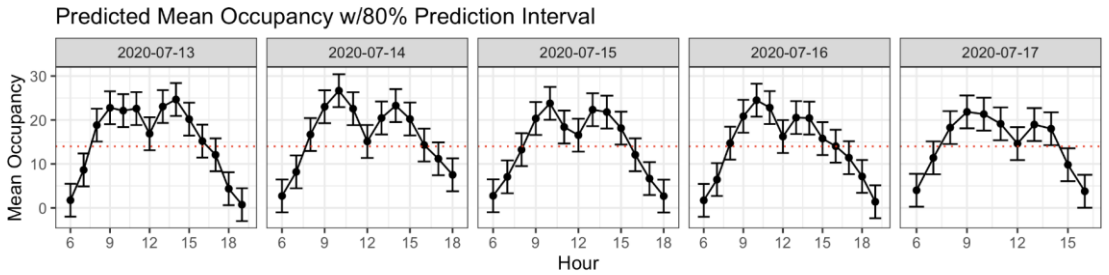
Adult/Pedi: Adult & Pedi Psych/Newborn: All



Waiting Room Capacity Management: Overview

- As ambulatory sites reopened after the first surge of COVID, new waiting room capacity thresholds had to be observed
- Clinic managers needed a tool that can help them identify days of week and hours of day when the new capacity threshold could pose a challenge, so that they can manage the demand using one of several tools (early rooming of patients, extended waiting areas, conversion to virtual visits, etc.)
- Data Science and Analytics (DSA) team, in collaboration with the ambulatory care leadership, created a machine learning model that helps with optimal use of the limited waiting room capacity, keeping our *Safe Care Commitment* as the top priority





Model outputs:

(1) Ranked list of ambulatory sites based on their likelihood to surpass their threshold if no intervention is done

(2) Predicted **number of patients in the waiting room** for each hour of each workday in the upcoming 2 weeks

(3) Predicted **probability of surpassing the waiting room capacity threshold** for each hour of each workday in the upcoming 2 weeks

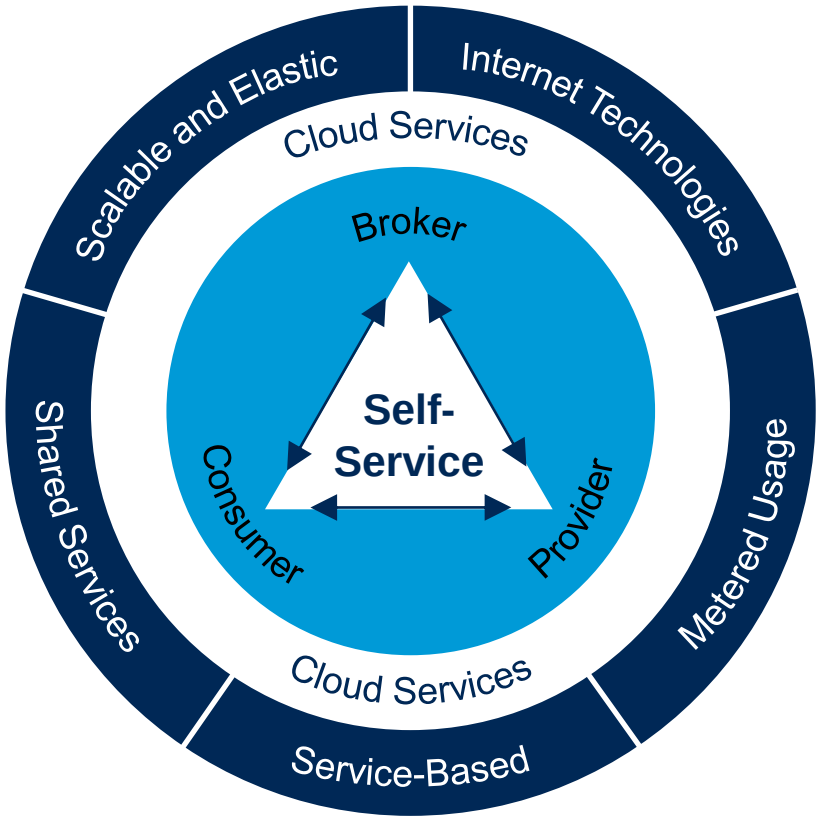
Credit: TechCrunch

Evangelize, build strategy top down and ground up for buy in

‘What’s in it for me?’ Ensure value and participation for all

Partner, Partner, Partner ‘It takes a village to do Analytics and transformation’

Key Learning



- Understand business and establish a preliminary roadmap, a decision path and reference architecture, and define the migration - it is critical to identify the right value model for your data and analytics platform.
- Don’t go alone, build partnership, communicate and evangelize. Invest on building data culture and lingo.
- Invest in building the right team – hybrid approach with upskilling current, new and consulting
- Establish governance and security model, manage risks upfront, going slow is sometimes ok.
- Take an iterative approach, starting small to deliver a core set of cloud-based services, and expanding over time toward a broader set of use cases. This approach allows delivering value, technical professionals to manage change, build competency in managing cloud services and avoid security risks.
- Stay focused on value and monetization. Do not hesitate to change and course correct.

Thank you!