



The Intelligent Campus - for 21st Century Education

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Indonesian Education has Changed

A black and white aerial photograph of Hong Kong, showing the dense urban landscape, the harbor, and the surrounding mountains. The sky is filled with dramatic, dark, and textured clouds. The text "THE WORLD HAS CHANGED" is centered in the upper half of the image.

THE WORLD HAS CHANGED

THE WORLDS LARGEST TAXI COMPANY... OWNS NO TAXI'S – UBER

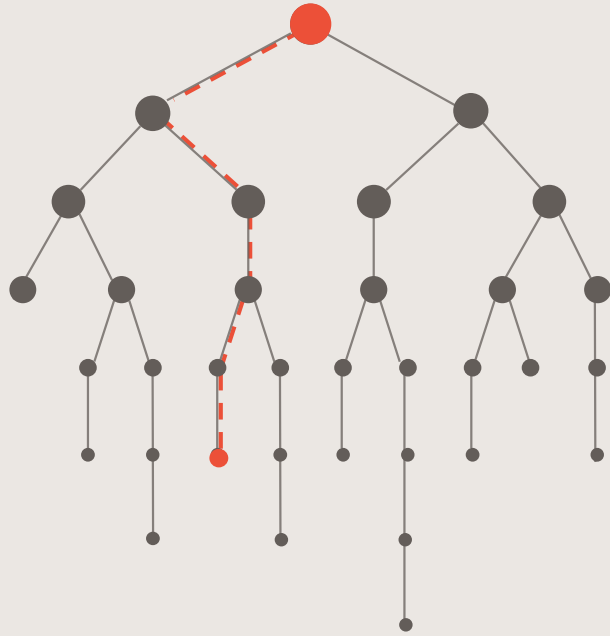
THE WORLDS LARGEST HOTEL COMPANY OWNS NO HOTELS - AIRBNB

What if... INDONESIA's LARGEST UNIVERSITY ISN'T IN INDONESIA...

What if... JAKARTA's LARGEST UNIVERSITY HAS NO STUDENTS IN JAKARTA...

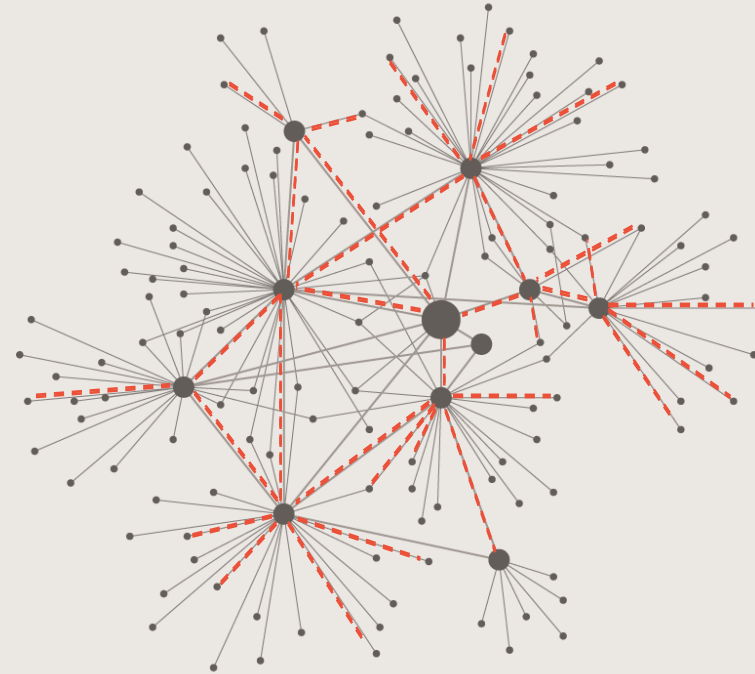
An aerial photograph of a city with a network of white lines and circular icons overlaid. The icons include a person, a speech bubble, a Twitter bird, a Facebook 'f', a LinkedIn 'in', a group of people, and a document. The text 'THE WORLD IS NOW A GIANT NETWORK' is centered in white, bold, uppercase letters.

**THE WORLD IS NOW A
GIANT NETWORK**



TRADITIONAL HIERARCHIES

**INFORMATION MOVES SLOWLY
COMMAND AND CONTROL**



RESPONSIVE NETWORKS

**INFORMATION TRAVELS FAST
LEARN AND ADAPT**

**LEVERAGE THE ON-DEMAND
GLOBAL TALENT POOL**



THE MODERN STUDENT

Always mobile, always moving

Collaborate early, often, and always

Grown up on social networks



21st Century
Institution

The digital screen displays a presentation with the following content:

- 16% increase cycling commuters since 2012
 - Healthier Alternative
 - Fitness
 - Reduced vehicular traffic
- CITY-SPONSORED BIKE RENTAL PROGRAM
- > Young professionals
 - ↑ URBAN
- CYCLING/COMMUTING FASHION FASHIONABLE?

Microsoft

MICROSOFT 2016

Optimize Education



Imagine If You could

.. holistically measure and predict student success and proactively identify students needing additional support ?

.. provide users the means to effectively connect, collaborate, learn and research no matter their location?

A man in a dark sweater is standing in a modern, brightly lit room, interacting with a large, vertical digital display. The display shows a detailed, 3D model of a prosthetic hand with visible internal mechanical components. The man is pointing at the model with his right hand. In the background, there is another large digital display on a stand, tilted at an angle. This second display shows a technical diagram of a hand with the text "Bi-hybrid Neural Interfaces" and a detailed view of a finger's internal structure. A small, round, silver table with a pair of glasses and a tablet on it is positioned between the two displays. The overall scene suggests a high-tech research or exhibition environment.

Optimize Research

Imagine If You Could

.. use "on demand", unlimited statistical and computing capabilities, and become known for research capability?



Optimize Institution

Imagine If You Could

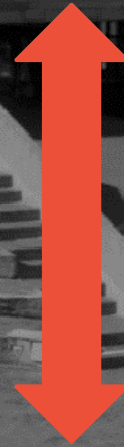
.. manage relationships with all of the institutes stakeholders, whether current or potential?

.. deploy campus facilities that could manage themselves to and adapt dynamically to the needs of the environment and users?

.. have the IT infrastructure to allow you to scale on demand to support the needs of the institution?



Empower Every Educator,
Student, Researcher,
Administrator and Parent to
Achieve More



Intelligent Platform to
Empower Stakeholders & the
Institution

The Intelligent Platform

How our solutions transform your institution

Improving Outcomes with Insights

Personalized learning and outcomes management through student insights and analytics.

Empower Anywhere Anytime Learning

Flexible and secure learning, to students anywhere, anytime.

Managing the Student & Partner Lifecycle

Enhancing the identification, acquisition and management of key relationships through an institutional wide platform.

Optimizing Research

Providing researchers with capacity & agility needed in a platform do deliver exceptional research output with far greater efficiency.

Managing the Institution

Institution Management, Energy Efficiency, Safety & Security and transport across the institution.



The Intelligent Platform

Improving
Outcomes with
Insights

Empower
Anywhere Anytime
Learning

Managing the
Student & Partner
Lifecycle

Optimizing
Research

Managing the
Institution



The Intelligent Platform

Improving Outcomes with Insights

Empower Anywhere Anytime Learning

Managing the Student & Partner Lifecycle

Optimizing Research

Managing the Institution





Thank You



Improving Outcomes with Insights

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Learning

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Optimizing
Research

Managing the
Institution

Personalised
Learning

Improving Student
Retention

Managing
teacher/lecturer
effectiveness



Imagine if you could resolve critical education challenges by arming stakeholders with the data and analytics they needed to generate insights, take proactive action, and improve outcomes.



Real-World Improvements Through Data

Improving Outcomes with Insights

Empower Anywhere Anytime Learning

Managing the Student & Partner Lifecycle

Research Computing

Managing the Institution

Heating and A/C optimization

Graduation rates

School and region rankings

Personalized learning

Parking optimization

Book store sales

Student enrollment and retention

Bullying prevention

Cafeteria improvements

Teacher effectiveness

Marketing effectiveness

Enabling at-risk and disabled students



Student achievement

Equipment reliability

Improving Outcomes with Insights

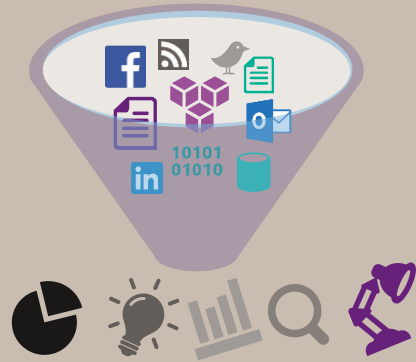
Improving
Outcomes with
Insights

Empower
Anywhere
Anytime
Learning

Managing
the Student
& Partner
Lifecycle

Research
Computing

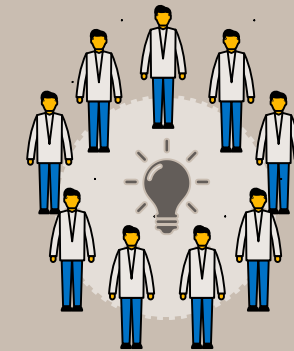
Managing the
Institution



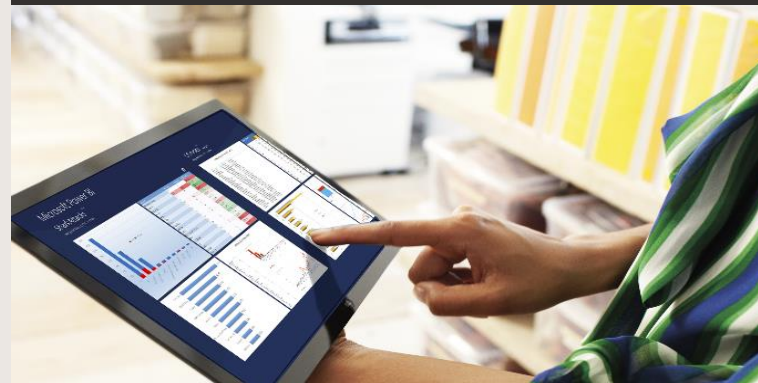
Find, combine, manage



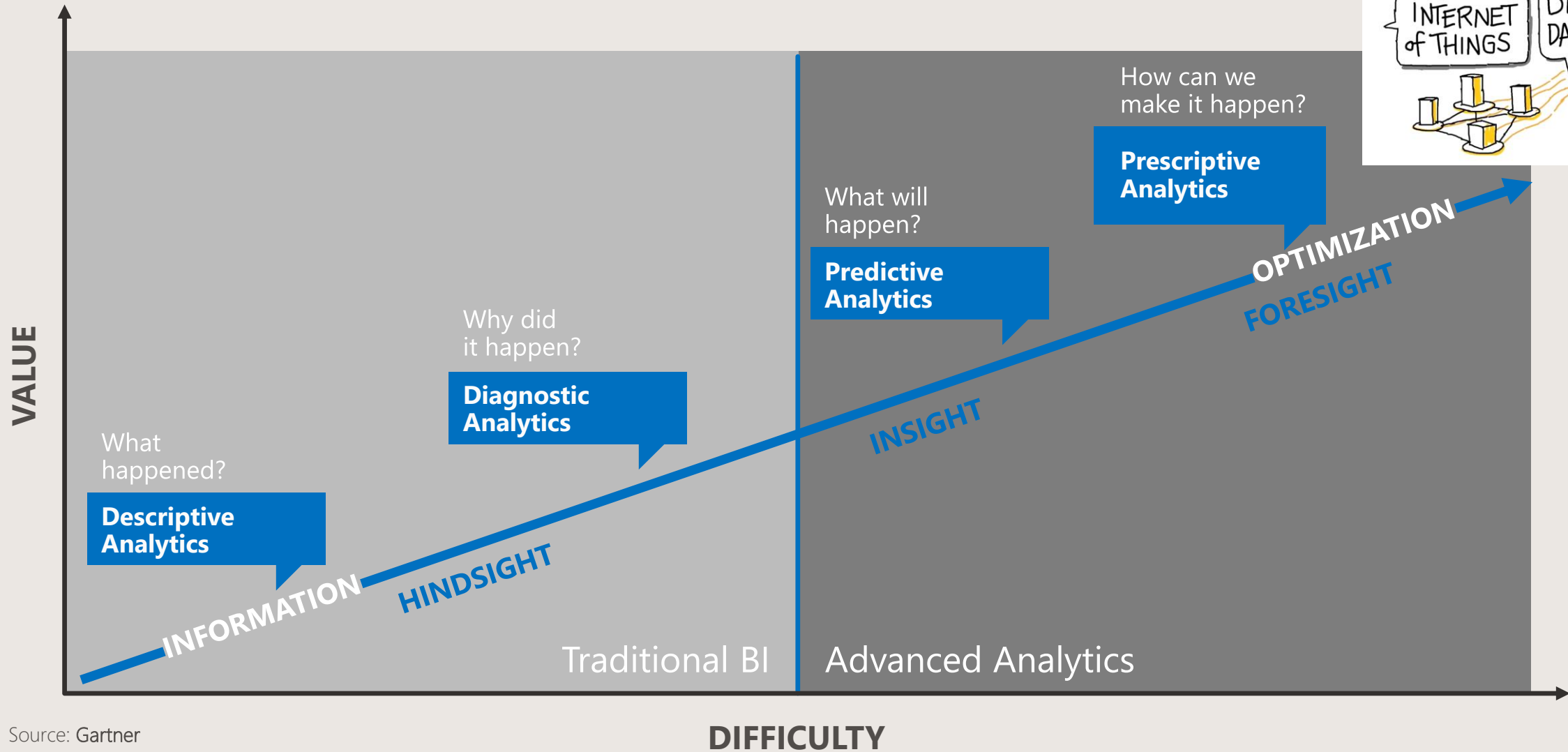
Form theories, analyze,
predict, visualize



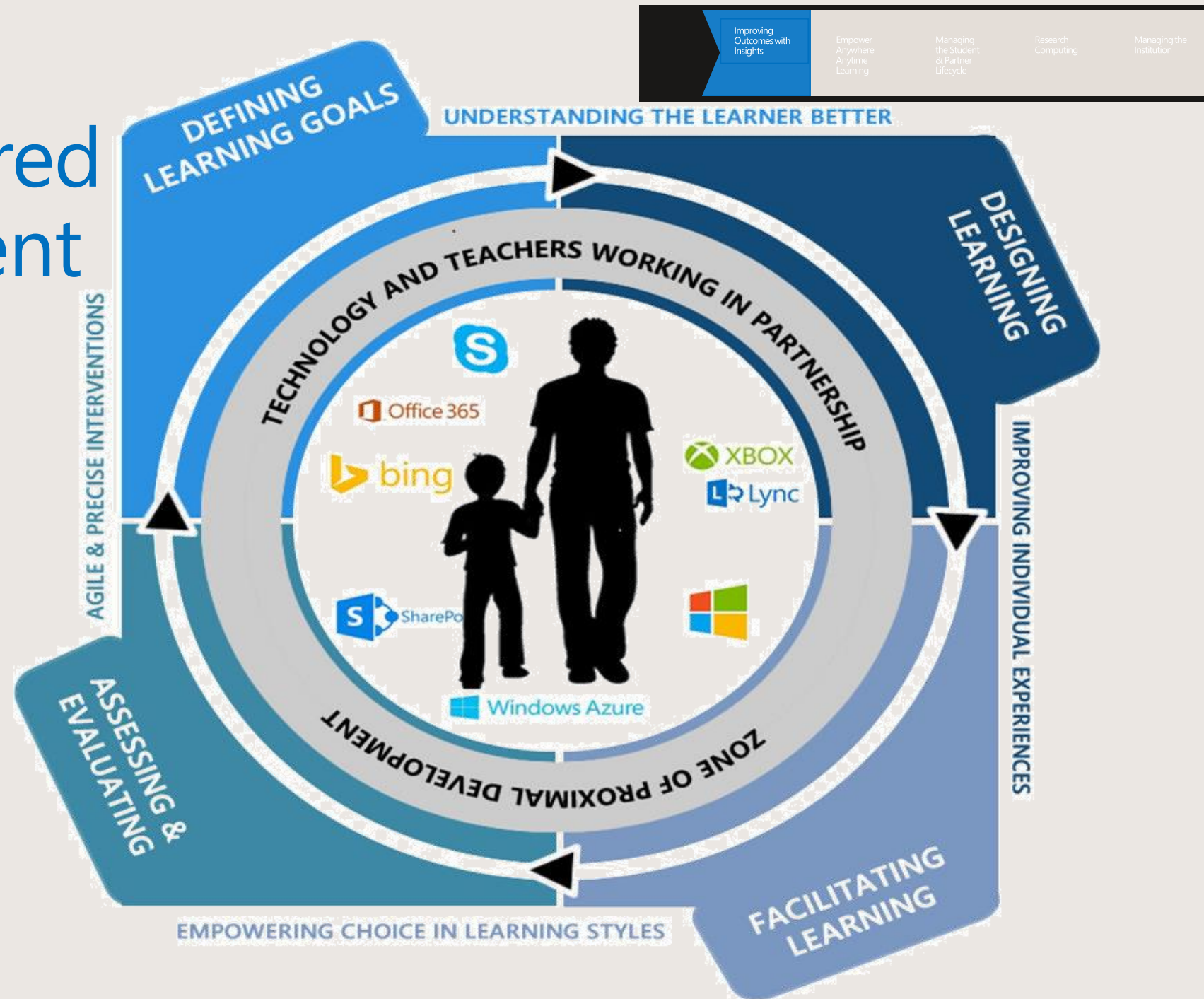
Take action,
operationalize



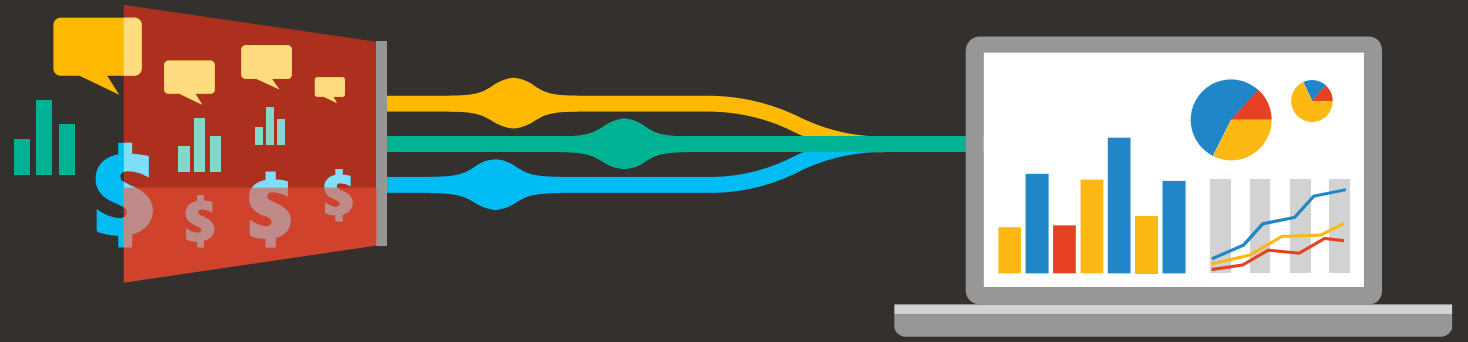
Beyond Business Intelligence



Personalized Learning Powered by The Intelligent Platform



Show me???



Case Study District -



Improving
Outcomes with
Insights

Empower
Anywhere
Anytime
Learning

Managing
the Student
& Partner
Lifecycle

Research
Computing

Managing the
Institution

EXCLUSIVE FIRST LOOK

SPECIAL REPORT

DROPOUT NATION

30% of America's
high school students
will leave without
graduating. Here is
what one town tells
us about the crisis

BY NATHAN THORNBURGH

Case Study – Tacoma Schools District - Seattle

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Four Core Dropout Prevention Strategies

1. After School Opportunities
2. Alternative Schooling
3. Mentoring/Tutoring
4. Service-Learning



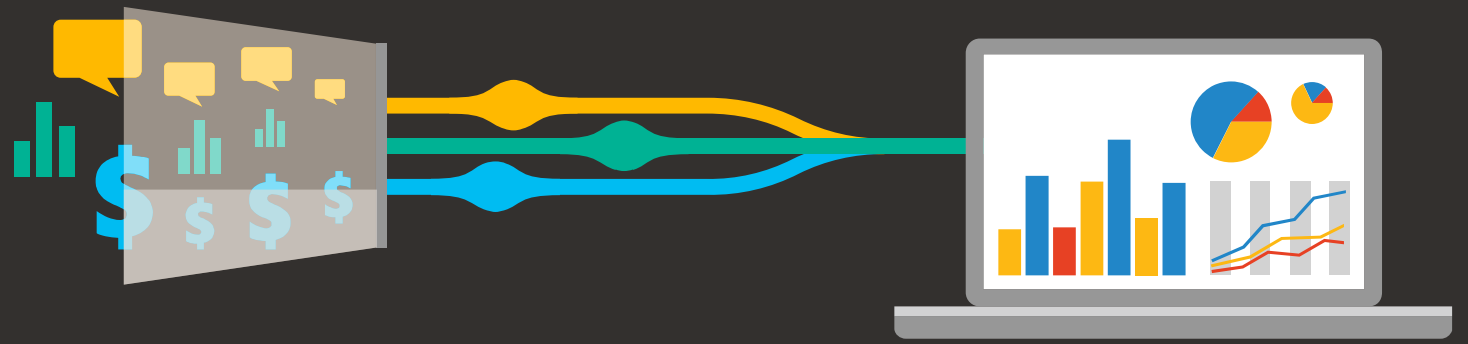
Programs of Study as State Mandate:
A Longitudinal Study of the Personal Pathways to Success Initiative

[Read the Report](#)

NATIONAL DROPOUT PREVENTION CENTER / NETWORK
SUPPORTING LEARNERS AND TRANSFORMING LIVES

NRC CTE
National Research Center for Career and Technical Education

Show me???



How it works?

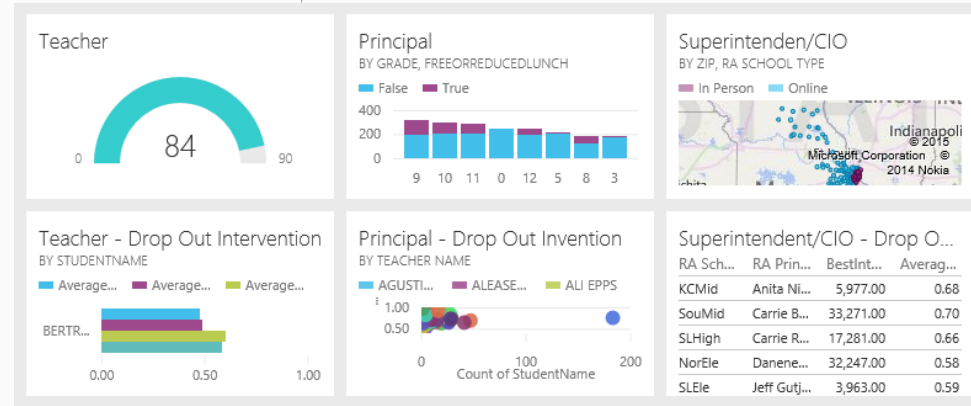
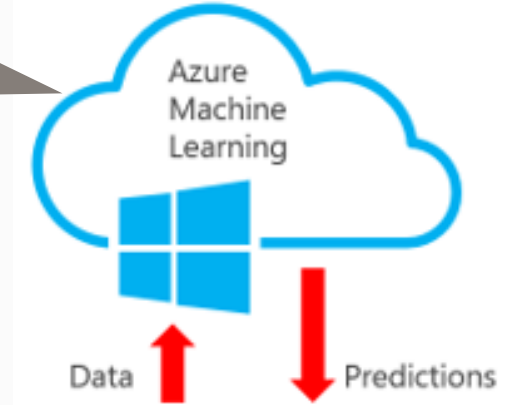
Source Data

- Historical performance
- Student demographic and Census
- Diagnostic
- Disciplinary
- Extra-Curricular
- Health

Step3: Leverage Self Service BI

Step2: Leverage the most powerful cloud on the planet

Massive Data: No Problem
Complexity: No Problem



Power BI Visualization

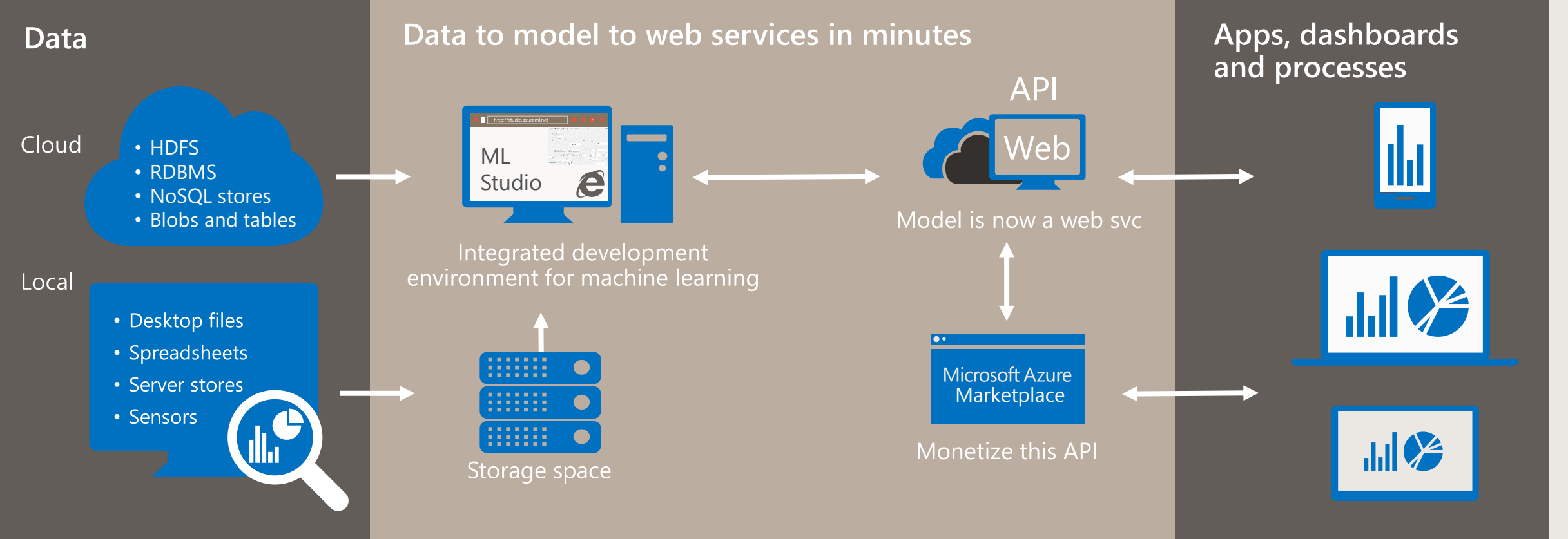


Excel

Step1: Start with tool you know well, and data you already have

Existing Worksheets

Architecture



Data preparation **Modeling** **Deployment** **Business value**

- Data factory
- Stream analytics

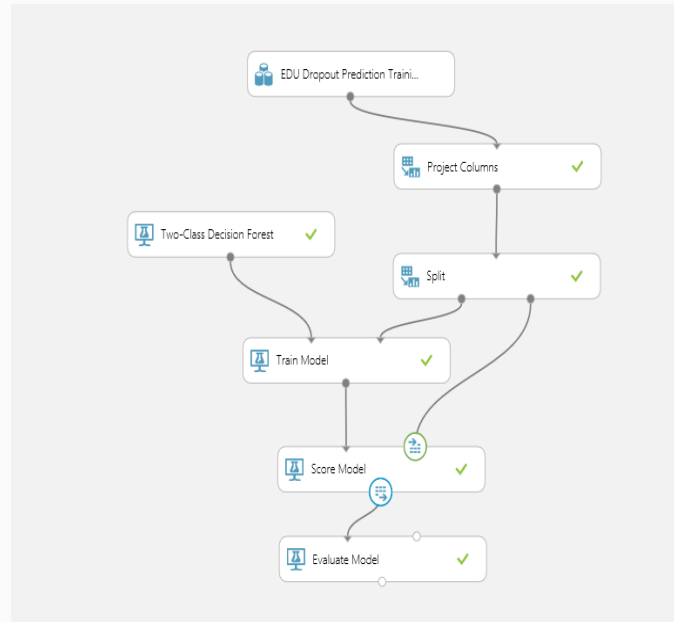
- Machine learning
- HDInsight

- Marketplace
- Azure portal

- Power BI
- Apps

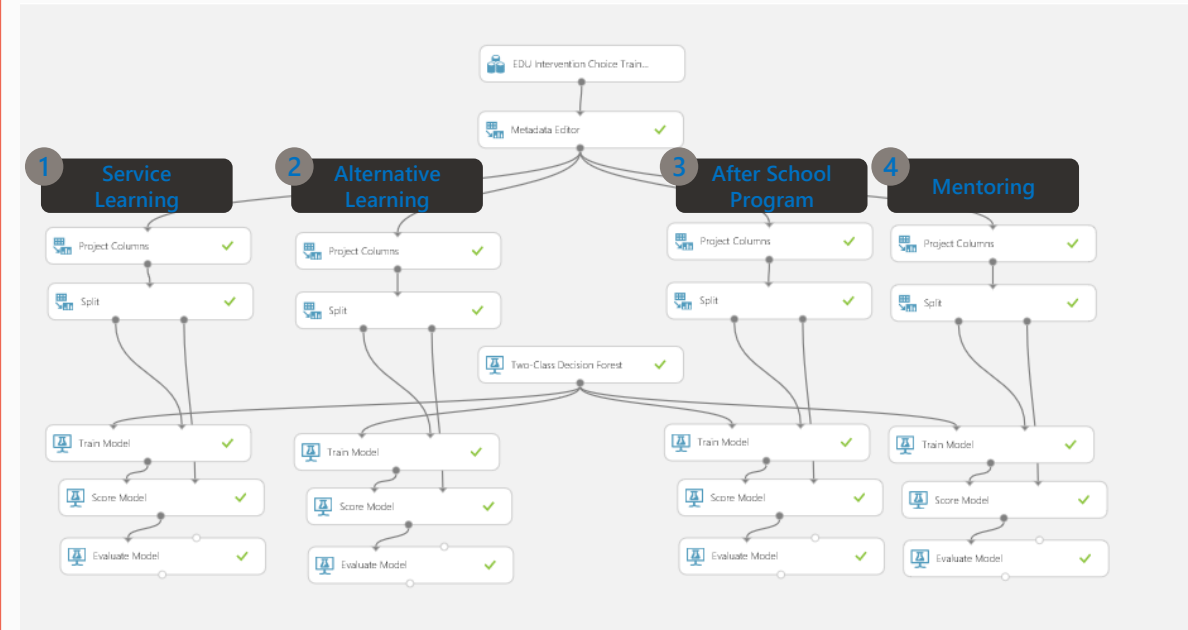
Drop Out Prediction Model

Drop Out Prediction Model



- Single model that predicts drop out on individual student basis
- Outputs of prediction include binary 1/0 prediction whether student will drop out and relative certainty of prediction
- Model is web-service ready. – Indicated by green and blue circles

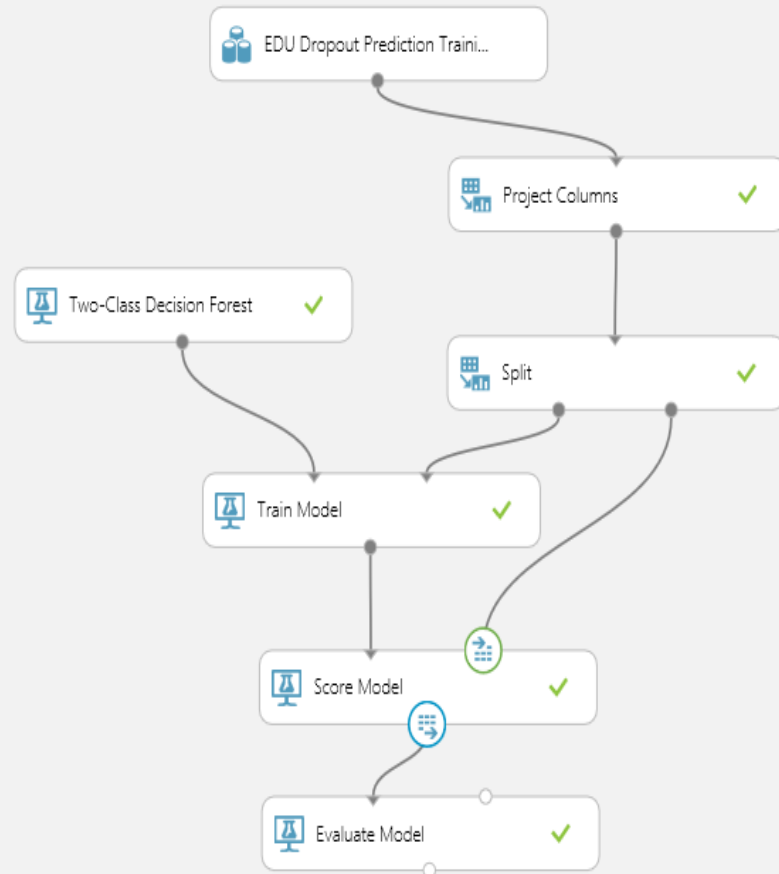
Intervention Effectiveness Model



- Model composed of four prediction sub-models. Each sub-model creates a prediction for an intervention method
- Output of model includes binary 1/0 prediction of success and relative certainty 0-1.0 rating for each intervention
- Intervention methods covered:
 - Service Learning
 - Alternative Learning
 - After School Programs
 - Mentoring

How Good is the Dropout Prediction Model?

Existing Worksheets



EDU Demo Dropout predictor > Evaluate Model > Evaluation results



Azure Machine Learning Model is 80% Accurate predicting who will drop out from class data

Enable student achievement

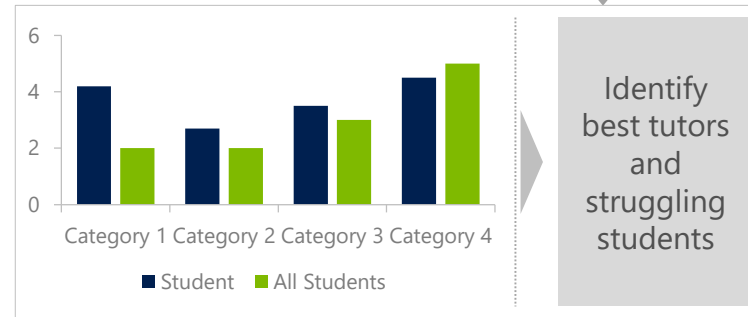
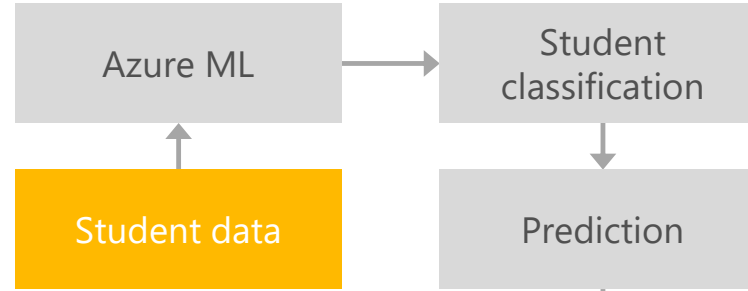
Assess knowledge and ability

Student Status						
Student	Lesson 1	Lesson 2	Lesson 3	Lesson 4	Lesson 5	Lesson 6
Cindy	●	●	●	●	●	●
Ravi	●	●	●	●	●	●
David	●	●	●	●	●	●
Zach	●	●	●	●	●	●
Bill	●	●	●	●	●	●
Dylan	●	●	●	●	●	●

Stuck?
Potential tutor?
Bored?

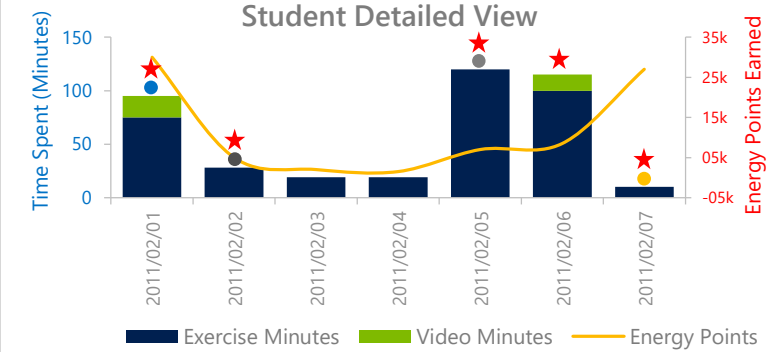


Predict future achievement



Identify best tutors and struggling students

Track progress



Student Status						
Student	Lesson 1	Lesson 2	Lesson 3	Lesson 4	Lesson 5	Lesson 6
Cindy	●	●		●		●
Ravi	●	●	●	●	●	
David	●	●		●		
Zach	●		●	●	●	●
Bill	●		●	●	●	●
Dylan	●	●	●	●	●	●

Assessment of Student's Content Knowledge and Clear Presentation Skills

Measures the student's understanding of lessons through homework and test scores as well as the student's ability to express herself or himself during class participation.

Computation of Student Assessment Data

Inputs assessments into a prediction model to identify which students possess adequate knowledge of teaching materials and ability to explain those concepts. The model also identifies struggling students who need more help.

Detailed Status Report of Each Student in Each Lesson over Time

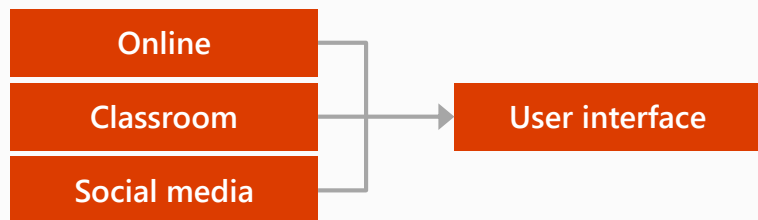
Reports knowledge level and activity completion of students over time. System also enables instructors to receive feedback on lesson effectiveness.

Identify At-Risk Students

Track current performance

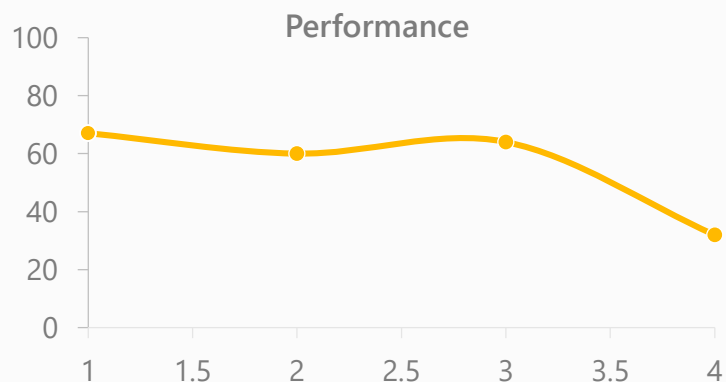
Student	Hours in class	Comments online	Logons
Dylan	0	15	3
David	6		
Bill	10	70	5
Cindy	12	4	6
Zach	6	3	8

Databases



Predict dropout probability

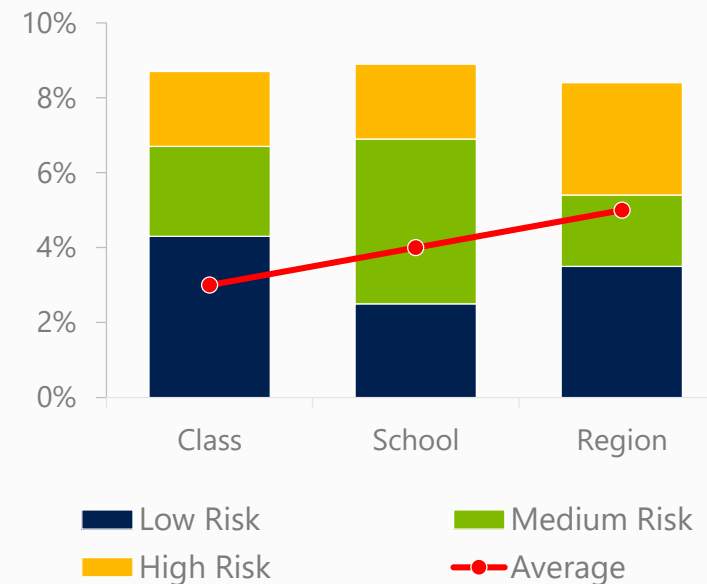
Student "Dylan" Summary



At-Risk Score (5)	Risk Level	Intervention Recommended
4.2	High Risk	Yes

Aggregate and act

At-Risk Student Statistics



Classroom and Online Interaction Data for Individual Students

Collects and tracks how often each student attends class in person, how each performs based on grades, and how much each participates in the class' online discussions. Any student can be individually selected for further details.

Dropout Threat Predictor

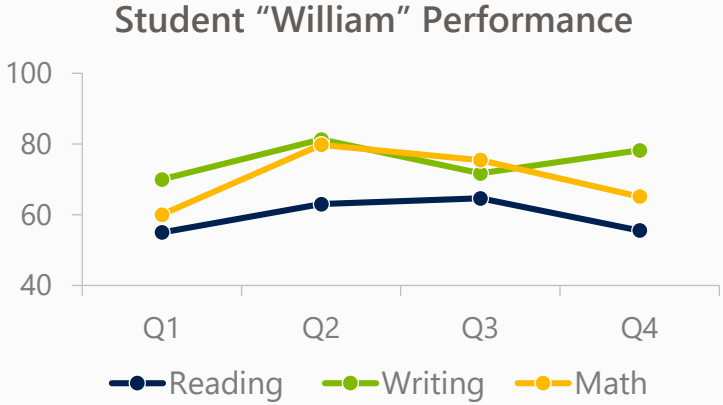
Predicts which students are at high risk of dropping out of school based on either sudden changes in performance or consistent signs of struggle. A machine learning algorithm is used to classify students by risk level: Low, Medium, and High.

Aggregation of Risk Throughout Education System

Sums up and generalizes the number of at-risk students at the classroom, school, and Region level. System enables administrators to measure effectiveness of policy changes in school system.

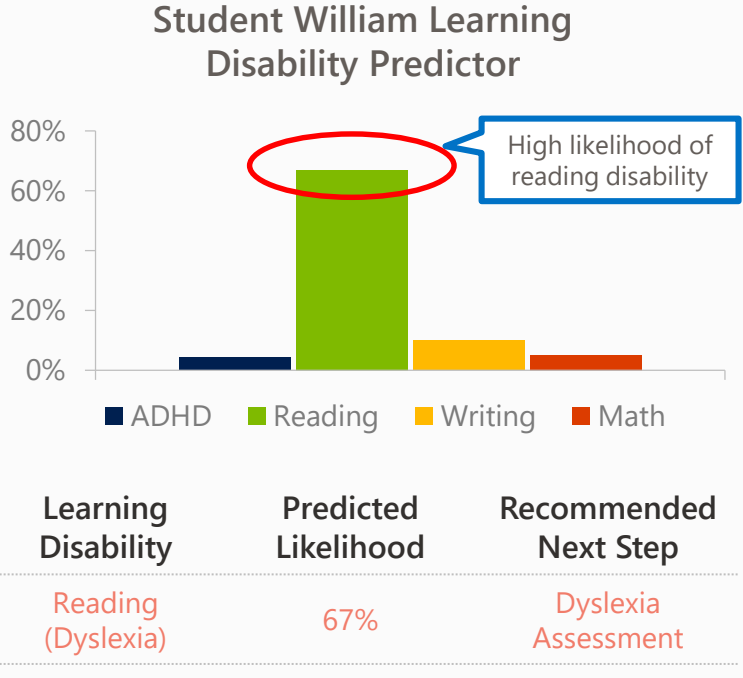
Uncover Student Learning Disabilities

Assess student performance

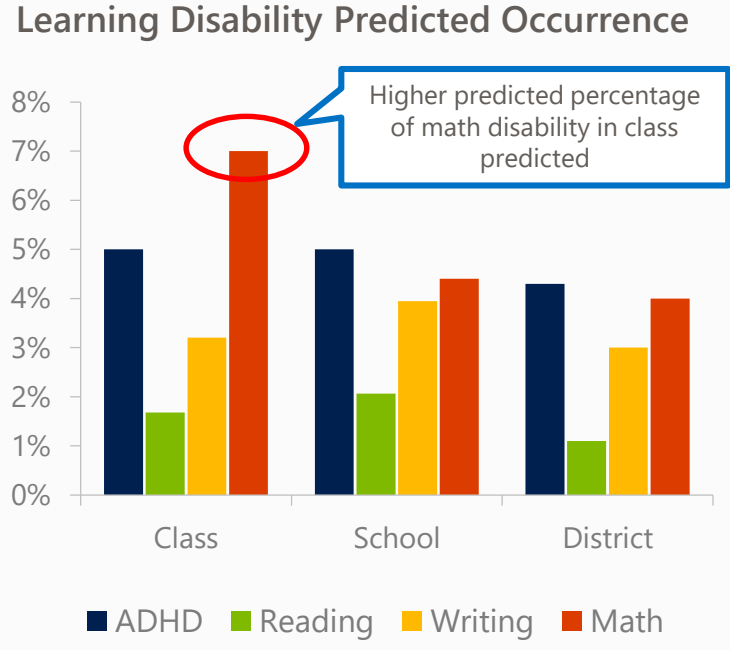


- In-class assignments
- Tests
- Online
- Inventory assessments

Predict learning disability



View in aggregate



Learning Disability Challenges

13 percent of all student in the United States received some form of special education service in 2012.¹ Identifying students with learning disabilities is a major challenge in education.

Over one-third of parents say their child's school inadequately tests for learning disabilities.²

Learning Disability Indicator

Assess likelihood of student having undiagnosed learning disabilities based on data. Recommend further actions for teacher based on predictions and provide concrete data to support discussions with parents.

19 percent of students with learning disabilities drop out of high school.²

Summary Statistics at class, school, and district level

Aggregate predictions and statistics can help identify outliers in class performance and achievement, aiding in evaluation of policy effectiveness. Aggregate statistics can also help identify prevalence of underlying causes of underperformance.

1) National Center for Education Statistics
2) National Center for learning disabilities



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do more

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Managing the
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