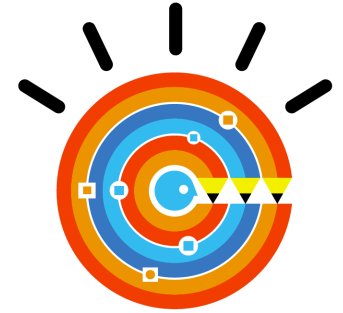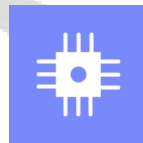# Predictive Risk Modeling and its importance to NEET prevention

IBM

A smarter planet

- Today, IBM is helping clients **change the way the world literally works** - to make the planet not just smaller and "flatter," but **smarter**.
- IBM is applying its expertise, global scope and creativity to build the backbone of 21st century industries and public institutions.

Our world is becoming
INSTRUMENTED

Our world is becoming
INTERCONNECTED

Virtually all things, processes and ways of working are becoming
# INTELLIGENT

A smarter planet requires smarter education.

**Smarter education = an opportunity to nurture students, our most valuable resource**

- Taking a systemic view of education systems
- Providing school leaders with tools and data for better decision making
- Creating shared services models
- Equipping students for higher achievement

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When education systems are <u>instrumented</u>, they …
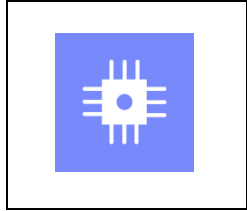
- Assist day-to-day monitoring of student achievement and mastery of homework, quizzes, etc.
- Gain real-time perspective into how a student or school is doing
- Help determine intervention needs; what is working across institutions and throughout student lifetimes
- Create shared services centres for consortia or regions saving precious finances
- Provide teachers and students with innovative tools to help accelerate both teaching and learning
- Enable individualized learning
- Remove classroom isolation

When education systems are <u>interconnected</u>, they …
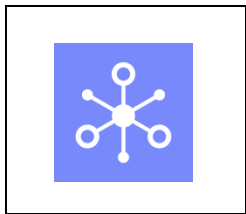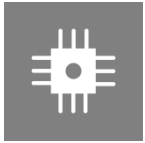
- Allow teachers to access high quality lesson plans and innovative professional development opportunities – anywhere, anytime.

- Empower teacher collaboration across classrooms, schools and systems around the world, sharing best practices to meet student needs

- Allow students to easily collaborate for new learning opportunities.

- Connect to nonprofit agencies, providing child and family services, as well as after-school programs offering science and technology enhancements and arts and cultural opportunities

- Enhance partnerships with the private sector for resources, ideas, and new approaches to old problems

When education systems are <u>intelligent</u>, they …
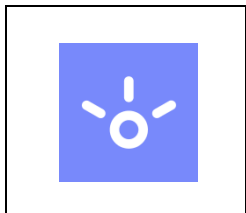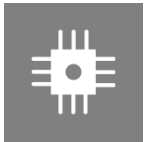
- **Provide leaders with tools and insights to make smarter system level decisions**
  - Gather, integrate, analyze and present information about key performance factors such as demographic trends, program effectiveness, benchmarks
  - Data to inform decisions on resource allocations

- **Give teachers data necessary to:**
  - spot troubling trends earlier and take action
  - make better decisions on instruction and assignments
  - meet each child's individual learning needs
  - ensure all children achieve at highest level
  - instill a sense of common purpose in working toward goals

Business Analytics

BI ←————→ PA

What happened? **Why?** **What to do next?**

IBM
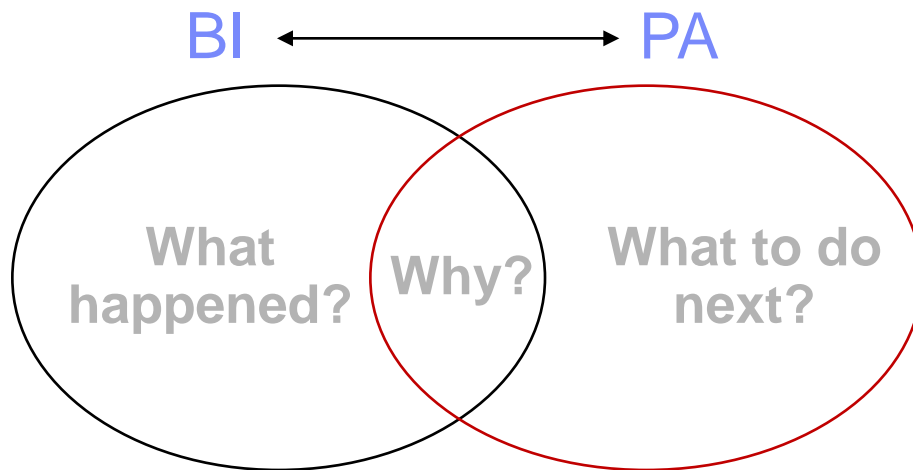
Predictive Analytics – The Approach

IBM
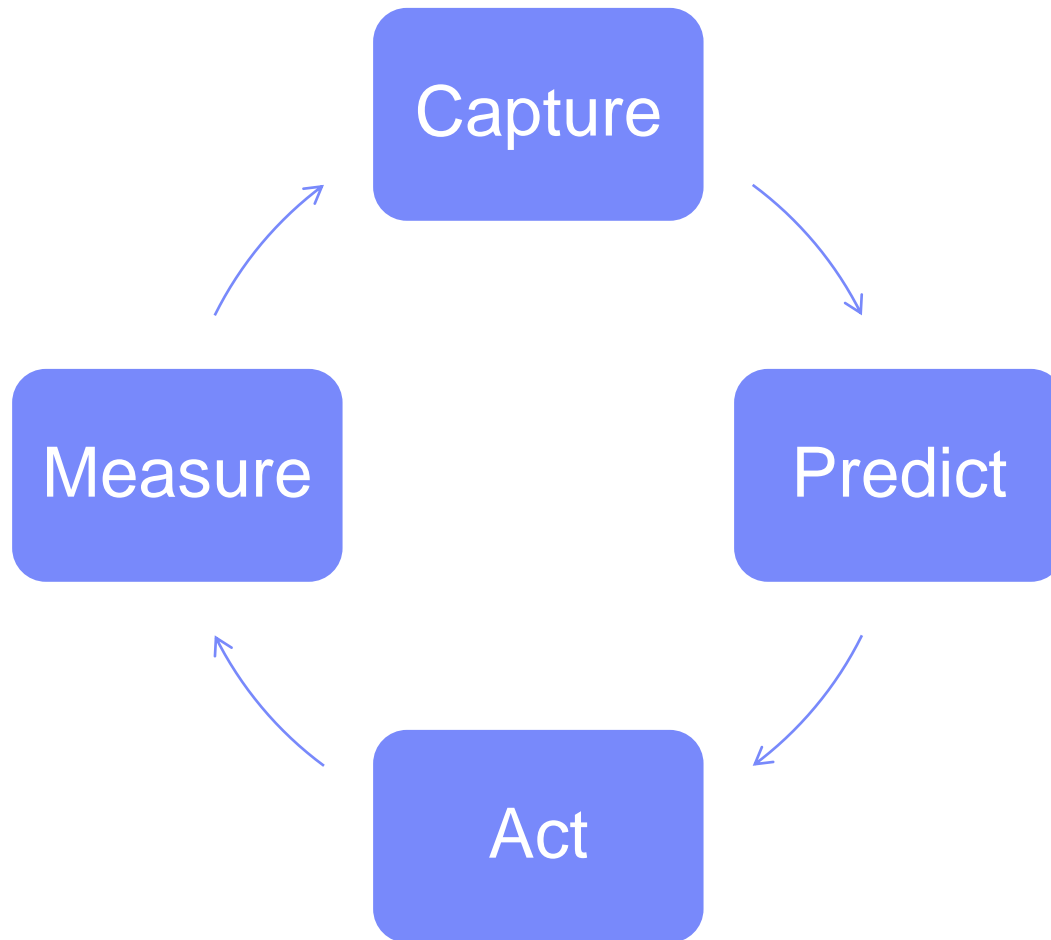
Where's the data?

Social data
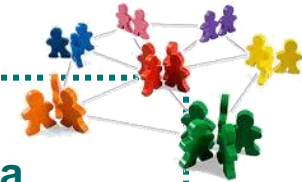- E-Mail / chat transcripts
- Call center notes
- Web Click-streams
- In person dialogues

Attitudinal data
- Opinions
- Preferences
- Needs & Desires

360 degree Student View

Descriptive data
- Attributes
- Characteristics
- Self-declared info
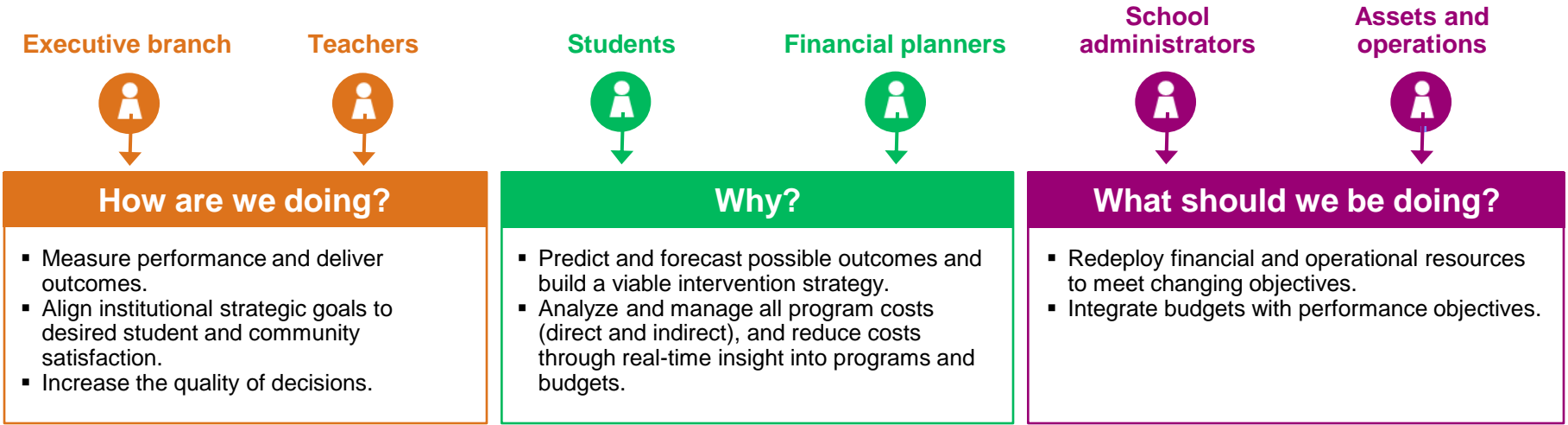- (Geo)demographics
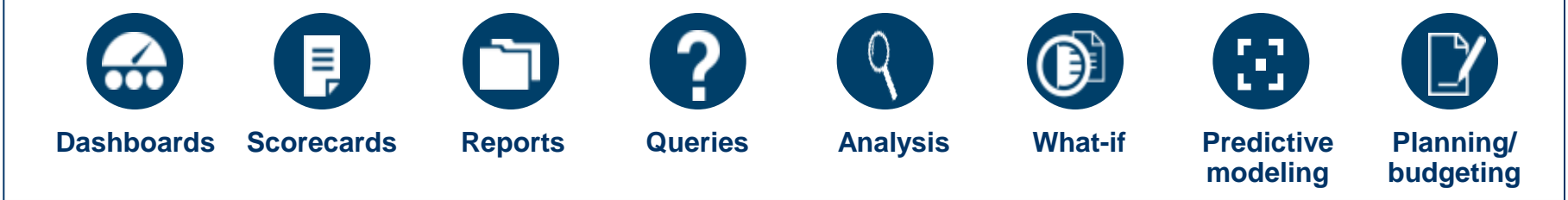- 3rd Party data
- Data aggregations

Behavioral data
- Attendance
- Enrolments
- Test history
- Exam history

The IBM Business Analytics portfolio and platform for education

Executive branch   **Teachers**   **Students**   **Financial planners**   **School administrators**   **Assets and operations**

How are we doing?

- Measure performance and deliver outcomes.
- Align institutional strategic goals to desired student and community satisfaction.
- Increase the quality of decisions.

Why?

- Predict and forecast possible outcomes and build a viable intervention strategy.
- Analyze and manage all program costs (direct and indirect), and reduce costs through real-time insight into programs and budgets.

What should we be doing?

- Redeploy financial and operational resources to meet changing objectives.
- Integrate budgets with performance objectives.

| Smart phone | PowerPoint | Browser | Excel | Email | Tablet |

IBM Business Analytics capabilities

Dashboards   **Scorecards**   **Reports**   **Queries**   **Analysis**   **What-if**   **Predictive modeling**   **Planning/ budgeting**

IBM Business Analytics platform

| Message sources | Relational sources | Unstructured data | Application sources | OLAP sources | Modern and legacy sources |

Predictive Analytics in Education

Wichita State University (Teaching)

Wichita State University (Institutional Research)

Baruch College

Babson College

Penn State

Hamilton County Department of Education

New York University

Washington-Saratoga-Warren-Hamilton-Essex Board of Cooperative Educational Services

Kent State University

Saint Anselm College

Universite des Sciences et Technologies de Lille

Aix-en-Provence (IAE)

l'Ecole des Dirigeants et des Créateurs (EDC)

University of Ulster

American Public University System (APUS)

Israeli Ministry of Education

Bournemouth University

Predictive Analytics in Education – Predicting NEET

Medway's NEET Prevention Strategy

Graham Clewes, Chief Executive, Medway Youth Trust

Data Collection, Development and RPA

Gill Cowan, Post-16 Participation, Department for Education
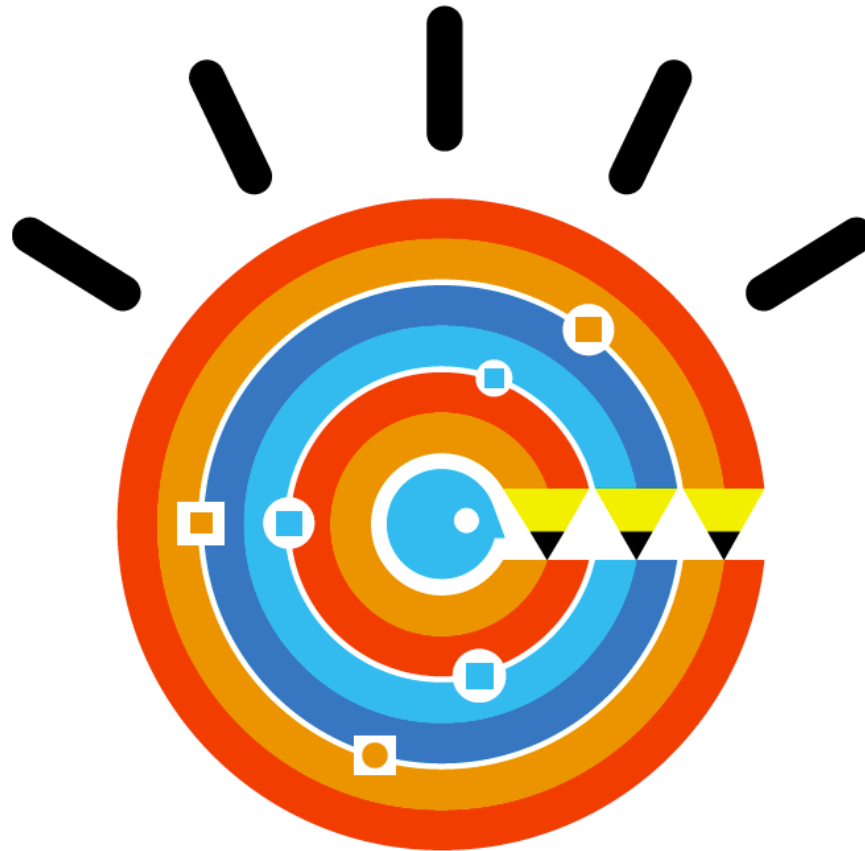
1110-1130 Refreshments Break

Case Study and Demo

Gary Seaman, Medway Youth Trust

Panel Discussion

Graham Clewes, Gill Cowan, Gary Seaman

1245 Lunch and Networking

Visit IBM's smarter education and philanthropy sites for more information